Final Report

What drives Australian housing careers? an examination of the role of labour market, social and economic determinants

Paul Flatau, Patric Hendershott, Richard Watson and Gavin Wood

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TABLE OF CONTENTS

TABLES

FIGURES

GLOSSARY

Borrowing Constraint	The constraint placed on the size of a housing loan as a result of the liquid asset holdings and income levels of intending purchasers.
Cash Requirement	The sum of the deposit and up-front transaction costs required for home purchase.
Cash Requirement Gap	The difference between cash requirements and the savings of potential homebuyers.
Deposit Constraint	The requirement that purchasers of owner-occupied property must have liquid assets equal to a given proportion of the property price.
Economic Costs	A measure of costs that includes the cost of alternative actions (opportunity cost), recurrent costs such as repairs and property taxes, and amortised lump-sum costs on the purchase or sale of an asset (e.g., stamp duty, brokerage fees and capital gains taxes).
Effective Marginal Tax Rate	The proportion of each additional dollar of private income that a person does not receive due to increased tax liabilities or reduced social security payments.
Entry Replacement Ratio	The ratio of income while out of work to income while in work for employed persons.
Exit Replacement Ratio	The ratio of income while out of work to income while in work for unemployed persons or persons not in the labour force.
HILDA Survey	The Household Income and Labour Dynamics in Australia Survey
Housing Career	The sequence of housing stages that an individual or household moves through over a lifetime.
Hysteresis	Hysteresis arises when a negative (positive) shock has long-lasting impacts so that when the shock is reversed, the affected person(s) does not return to the same position they were in before the shock.
Imputed Housing Demand	The market value of housing a renter would purchase on choosing to become a homeowner.
Income Unit	An income unit is defined as one or more individual persons whose command over income is assumed to be shared between the persons comprising the unit.
Liquid Assets	Assets that generate an observable income flow.
Loan to Value Ratio	The ratio of mortgage debt to property value.

Marginal Effect	The change in the dependent variable (of an estimated model) for a marginal change in the independent variable.
Microsimulation Model	A quantitative model which exploits real-world data at a highly disaggregated level (person, household or income unit) to estimate the impact of policy actions or of shocks to the system being examined.
Mortgage Insurance	Insurance that protects a lender against loss should the borrower default on the loan.
Oswald Thesis	Hypothesis that homeownership causes higher unemployment.
Poverty Trap	Measure of the deterrence in small upward adjustments in work effort because of increasing tax liabilities and loss of government benefits.
Predicted Replacement Ratio	The ratio of predicted unemployment benefits to predicted earnings.
Public Housing Rent Subsidy	The indirect subsidy applied to public renters where rental payments are set at a proportion of assessable income and capped at a market rent level.
Relative Price	Homeowner economic costs expressed as a ratio of the market rental rate that represents the price of rental housing.
Rent Assistance	A cash payment to eligible low-income families and welfare recipients to meet a part of the costs of private rental housing.
Retirement Annuities	Income streams for retirement purposes from non-government sources, e.g., superannuation funds.
SIHC Survey	Survey of Income and Housing Costs Survey.
Stamp Duties on Conveyances	Duty levied on the purchase price of the property with the applicable rate determined by the purchase price.
Survival Curve	A curve representing the cumulative proportion of those who remain in a given state (i.e., unemployment) over time rather than exit the state.
Transaction Costs	Up-front costs incurred in the purchase of a home, e.g., stamp duties on conveyances and mortgages, mortgage insurance premiums.
Unemployment Trap	Measure of the deterrence of transitions into the employed labour force because disposable incomes when not working replace a large proportion of disposable incomes when working.

EXECUTIVE SUMMARY

Aims of the Study

- An individual makes a number of decisions about their housing arrangements over the course of their lifetime. The decisions individuals make in their 'housing career' will be driven by a host of potential influences including:
  - Underlying housing tenure preferences and trends in housing market signals (house prices, rents etc.);
  - Household formation aspirations and outcomes;
  - Labour market effects (wages, employment, unemployment, and retirement);
  - Wealth accumulation outcomes and objectives; and,
  - Housing assistance, income support, tax, and welfare programs.
- This study was motivated by the desire to understand, in an integrated way, how these key drivers impact on housing choices of individuals. Our analysis is motivated by a vision of the housing career that can be represented as a ladder that the individual climbs up through his/her life course. The typical housing career model envisages a smooth progression from leaving the parental home into rental housing, where the household saves the deposit necessary for a transition into homeownership. Once that transition is complete the typical couple household trades up as child-rearing responsibilities prompts a higher demand for housing space. As children leave the family home there may be some trading down to a smaller house.
- This project seeks to model the main drivers of transitions from one step of the housing career ladder to another. We do so by specifying and estimating econometric models of these transitions. The models are designed to shed light on the relative importance of the various socio-economic and demographic drivers that determine the pace at which households are able to climb up the housing career ladder. The estimates can also be used to simulate the impact that changes in drivers, including policy parameters, can have on the probability of a transition from one rung of the career ladder to another. This feature of the models will be of particular interest to policy makers.
- Our housing career model has two novel features that distinguish it from previous contributions in the literature. Firstly, there is a recognition that households can fall down as well as up the housing career ladder. Our modelling encompasses factors such as separation and divorce that can result in such reversals in fortune. Secondly, socio-economic drivers and in particular labour market variables are typically considered to be causes of housing career transitions. Reverse causation, where housing career transitions can impact on labour market outcomes, are less commonly considered. In this project, various modelling exercises are conducted into reverse causation and its significance in the context of labour market outcomes.
- Chapters 2, 3 and 4 deal with the factors driving important household formation (and dissolution) decisions – from the decision to leave the parental home through to first home purchase, to when the household might dissolve (through, for example, divorce and separation) and further housing decisions might need to be made. Some housing market commentators (e.g., Winter and Stone, 1999) argue that Australians are increasingly departing from a *linear housing career* pathway in which individuals move quickly from the parental home through the private rental market and into home ownership (the last stop representing the

'great Australian dream' in popular discourse). Furthermore, there exists a groundswell of opinion, backed by age-specific home ownership attainment rates and reflected in recent policy debates in Australia, that this transition is becoming increasingly difficult. In this part of the study, we test whether this conjecture (the departure from the traditional Australian linear housing career pathway) is substantiated by the evidence, and seek to understand how any changes in housing tenure and formation might be connected to the drivers listed above.

- In particular, we ask three key policy related questions:
  - Are young Australians taking longer to make the transition from the parental home, and if so what is driving this change? Is this likely to have an impact on home ownership rates for this generation? (Chapter 2)
  - Are financial barriers constraining access to homeownership for many Australians? (Chapter 3);
  - Are Australians increasingly experiencing an *interrupted* housing career trajectory? Does divorce or separation have significant and permanent impacts on homeownership and other patterns of tenure and remarriage improve outcomes? (Chapter 4)
- Chapters 5 and 6 deal with the way the labour market might be affected by tenure decisions. There has been some evidence, produced by an economist Andrew Oswald in the UK, to suggest that rising homeownership in Western countries may have increased unemployment since the 1970s. One reason put forward for this potential link between homeownership and unemployment is that, homeownership, like public rental, diminishes a person's potential mobility (high transaction costs in moving) and therefore job opportunities. This part of the study aims to answer two key overarching policy related questions:
  - Does housing tenure (and in particular homeownership) have a significant impact on unemployment? Does the so-called 'Oswald thesis' hold for Australia?
  - Do housing subsidies in private and public rental housing create work disincentives?

Data

- The key database which we shall utilise (Chapters 2, 3 and 4) is the *Household Income and Labour Dynamics in Australia* (HILDA) survey (Wave 1). HILDA represents arguably the most comprehensive longitudinal survey of the Australian population relevant to social, housing, labour market, and mobility modelling although the research in this paper is confined to Wave 1 of HILDA.
- This study shall also utilise the Australian Bureau of Statistics' *Survey of Income and Housing Costs* (SIHC) Confidentialised Unit Record Files (Chapters 5 and 6). We also make use of the AHURI 3M model to undertake a microsimulation analysis using the SIHC data set in Chapter 6 (the modelling in Chapter 3 also relies on the AHURI 3M model).

Findings

The First Housing Career Moves of Young Australians

- An independent housing career begins when an individual decides to either stay in or leave the parental home. The report provides evidence from the HILDA Survey of first home leaving patterns over the 20th Century in Australia.
- Post-war cohorts left the parental home somewhat earlier than their pre-war counterparts. The move to earlier parental home leaving continued through the post-war period reaching lows in the 1980s (men; median age of 19.6) and early 1990s (women; median age of 18.9).
- The evidence presented in chapter 2 of this report suggests, however, a recent rise in the age at which young people are leaving the parental home (the median age is moving closer to the 21 age point). A delay in parental home leaving has broader housing market implications as it means that demand for housing accommodation will be lower than it would otherwise be.
- Our modelling of the parental home leaving process reveals very strong links between the period of time an individual spends in education and the age at which they leave the parental home. The recent rise in higher school retention rates and improved higher education participation rates has contributed to the recent trend to delayed parental home leaving. Housing affordability problems together with high unemployment rates in the early 1990s also represent potentially important drivers of delayed home leaving patterns in the 1990s.
- Our model of the home leaving process shows that women exit the parental home more quickly than do men. Indigenous Australians also tend to leave the parental home faster than non-indigenous Australians. Significant cultural factors appear to influence parental home leaving patterns. Those born in non-main-English-speaking countries and those who went to a Catholic school tend to leave the parental home somewhat later than others. Children who are brought up in a family where one or more parents was absent during their formative years (early teenage years) are more likely to exit the parental home than otherwise as are those whose father was unemployed during the early teenage years.
- The report also finds that those (currently) residing in Sydney and Melbourne experienced lower rates of parental home exit than others. Housing affordability problems in these markets may be a driver of this outcome.
- Finally, our examination of the HILDA Survey data reveals that many parents provide relief for their children facing difficulties in the labour and housing market by providing a refuge for their children who experience difficulties with independent living. A significant minority of teenagers in difficult labour market circumstances (e.g., those experiencing unemployment) return to the parental home. We refer to this process as the boomerang effect.

Financial Barriers to Homeownership

- In the linear housing career model, individuals move relatively quickly into home ownership following their exit from the parental home. There exists a groundswell of opinion, backed by age-specific home ownership attainment rates and reflected in recent policy debates in Australia, that this transition is becoming increasingly difficult. Chapter 3 moves on to an examination of the drivers of this crucial stage in Australian housing careers. Here attention moves away from social and educational drivers of housing careers to economic drivers.

- The ability of a household to enter into homeownership depends on more than just the family's or individual's ability to service a mortgage. It also depends on being able to meet home purchase cash requirements made up of a deposit and transaction costs. The most important transaction costs are stamp duties on mortgages and conveyances and mortgage insurance premiums.
- In chapter 3 of the study, we estimate the hurdle faced by prospective home purchasers by comparing an estimate of the market value of housing a renter would purchase on choosing to become a homeowner (the 'imputed housing demand' of the renter) and an estimate of the savings accumulated. From such estimates we (a) derive the deposit that the potential homeowner must fund and calculate the up-front transaction costs that must be met at purchase (the 'cash requirement' of home purchase) and (b) identify those households and individuals who would be unable to fund a home purchase given their savings. Such households are labelled 'constrained' because they cannot find the cash necessary to meet up-front transaction costs and deposit requirements, yet they could be better off on a recurrent (annual) costs basis if they purchased rather than rented housing.
- We use the HILDA Survey Wave 1 data to derive empirical estimates of up-front cash requirement hurdle problems faced by prospective home buyers. Of a sample of 2,769 rental tenant income units, 87.3 per cent (2,417) lack sufficient savings to enter homeownership at their imputed housing demand. The majority (2,370) of these 2,417 constrained income units are unable to meet even the 10 per cent deposit requirement.
- At what we estimate to be the mean purchase price of tenants if they become homebuyers ($172,482), cash requirements on purchase are $24,380. These cash requirements are 14.1 per cent of the purchase price. For those constrained tenants whose savings are less than cash requirements, average savings are only $1,947.
- The mean deposit requirement is $17,248, or 70.7 per cent of total cash requirements. Transaction costs, therefore, account for almost 30 per cent of total cash requirements, and stamp duties on conveyances make the most important contribution at $4,396 (or 18 per cent of cash requirements).
- The evidence presented in chapter 3, therefore, unequivocally shows that house prices have reached levels where up-front cash requirements far exceed the savings a typical tenant has managed to accumulate.

The Housing Career Impacts of Household Dissolution

- Chapter 4 examines the effects of household dissolution on the trajectory of Australian housing careers. The linear housing career model posits that housing equity consolidation typifies the housing careers of mature age Australians (35 – 64 years of age). However, separation and divorce rates have increased significantly in recent decades leading to the possibility of higher rates of housing equity reversals and unanticipated downward housing tenure transitions (from homeownership to the rental market).
- Divorce is an adverse shock that can erode a rental household's stock of liquid assets and make first transition into homeownership more difficult. It can also leave homeowners in a financially precarious position, so much so that it results in loss of their homeownership status. These adverse impacts on homeownership prospects could be reversed on remarriage if a divorcee's new partner helps replenish liquid assets to levels necessary to meet down payment requirements or is a homeowner who can restore that status for the divorcee.

- Our modelling of the effects of marital dissolution is based on Wave 1 of the HILDA Survey. Simple cross-tabulations of homeownership rates against marital status outcomes indicate that the divorced and separated have much lower rates of homeownership than continuously married couples and similar rates to the single never married group. We find that divorcees have a 9-percentage point lower probability of homeownership in comparison to the continuously married all other things being equal.
- Separation has an even larger negative impact on homeownership prospects. Separated individuals have a 21-percentage point lower probability of attaining or retaining homeownership as compared to the continuously married. In contrast, household dissolution due to the death of a partner does not impact on the homeownership prospects of the widow.
- Divorcees who have remarried exhibit rates of homeownership very similar to that of married couples who have never been through a separation or divorce. Remarriage seems to offset the negative impacts of divorce. On remarriage, couples have the same likelihood of homeownership as continuously married couples, and the length of time between divorce and remarriage is irrelevant. Hysteresis effects are absent. (Hysteresis occurs when the negative impact of an adverse effect continues beyond the point at which the adverse event was reversed.) A likely explanation for the absence of hysteresis effects is that divorcees remarry to partners who are wealthier than their first partners. This may, in part, be attributable to remarriage with partners older than first marriage partners.

Housing Careers and Unemployment in Australia

- In chapter 5, we turn our attention from an examination of the drivers of housing outcomes to the impact that housing tenure outcomes have on the drivers. More precisely we examine the impact of housing tenure states on unemployment.
- There exists a relatively well-developed literature which suggests that public housing may impede the flexibility of the labour market. More recently this argument has been extended to the case of homeownership (the Oswald thesis). The argument is effectively the same in both cases, namely that both housing tenures are potentially associated with significant mobility transaction costs relative to the private rental market. As such, public housing tenants and homeowners are locked in to their current dwelling and do not readily move to take account of labour market opportunities elsewhere.
- In Chapter 5 we test the Oswald thesis for Australia. We analyse the Oswald thesis using individual-level data from the Australian Bureau of Statistics (ABS) Survey of Income and Housing Costs (SIHC) Confidentialised Unit Record Files (CURFs) for the years 1994-95 to 1997-98. We also analyse locality level data from the 2001 Census.
- Our statistical modelling of unemployment outcomes using both sets of data provides no evidence in support of the Oswald hypothesis that homeowners have worse employment outcomes that private renters, and in most cases we find evidence of the opposite—higher homeownership is associated with lower unemployment outcomes. Further, owners have significantly quicker exits from unemployment than do private renters. But the effect is much greater among mortgagees than outright owners. Male homeowners—and especially those *owners with mortgage* —display a lower probability of being unemployed and are more likely to quickly re-enter a job after becoming unemployed.

- We do find some limited evidence that the Oswald thesis holds for certain groups: female outright homeowners and homeowners in outer regional areas are more likely to be unemployed all other things being equal. At least in the latter case, this may reflect the fact that homeowners in these circumstances are constrained in searching for jobs elsewhere because of high transaction costs and potentially high house prices in destination localities.
- As expected, public renters are shown to have higher probabilities of unemployment than private renters and longer durations of unemployment. However, since State housing authorities prioritise the most disadvantaged on their waiting lists in order to target assistance this finding is hardly surprising, and the implications are not straightforward. The causal links are particularly complex and hence no firm conclusions can be reached on the role that public housing plays in relation to labour market outcomes.

Housing Programs and Work Disincentive Effects

- Chapter 6 examines whether housing subsidies in private rental and public rental housing contribute to work disincentives. Poverty trap and unemployment trap measures of work disincentives (effective marginal tax rate and replacement rate data) by housing tenure are developed to test this proposition.
- Our findings show that poverty and unemployment traps are more severe among working-age public housing tenants than the rest of the working-age population. Rent setting arrangements are generally a major cause of work disincentives for public housing tenants.
- In contrast, poverty and unemployment traps are generally less severe among private rental tenants than the rest of the working-age population. This is principally because residents in this tenure are younger single person income units who receive lower government cash benefits when not employed. It also reflects Commonwealth Rent Assistance arrangements that avoid the multiple stacking of government cash benefits.
- Outright homeowners generally have more severe unemployment traps than the rest of the population. This is because they are typically older persons (and hence can access retirement annuities) in couple relationships, so that partner incomes cushion living standards in the event that one of the partners becomes unemployed or retires. This finding also reflects the exemption of housing equity under asset tests governing eligibility to government cash benefits. It also helps explain the positive relationship we find between income unit disposable incomes and replacement ratios.

Policy Responses

- Parental home leaving is generally not an area for policy intervention. However, there are certain features of the parental home leaving process that are relevant to policymakers. Policymakers need to be involved, for example, in supporting those that leave home at a young age and are not successful in the labour market and are reliant on the rental market. At a more general level, policy makers need account for delayed parental home leaving in their forecasting models of housing demand and should also be cognisant of the fact that the recent rise in the age at which young people are leaving the parental home is potentially, in part, a symptom of perceived housing purchase and housing affordability problems (although again we would stress that high school completion trends and household formation influences are perhaps more important determinants).

- On the other hand, our results point to the fact that relatively large numbers of young people entering tertiary education and a relatively large number of unemployed young people reside outside the parental home. In this context it is worthwhile noting that the 1998 Youth Allowance reforms entitled full-time students to Commonwealth Rent Assistance and so helped create a 'level playing field' in terms of rent assistance. Under the previous system, choices on education, employment and housing may have been distorted by arbitrary Commonwealth Rent Assistance eligibility rules that deterred young renters from entering full time education (see Burke et al. 2004).
- In relation to the issue of financial barriers facing people entering homeownership, our findings suggest that exempting rental tenants from stamp duties would significantly alleviate accessibility problems. However, this policy response could be flawed because the escalation in up-front cash requirements is in large part due to house price inflation against a background of lagging growth in earnings. Stamp duty exemptions do not tackle the root causes of house price inflation (and might even cause acceleration). This kind of policy response risks treating the 'symptoms rather than the causes of the disease'.
- Our results on household dissolution, which show the negative impact on homeownership of divorce and separation effects, have important policy implications. Divorce rates are rising but remarriage rates are not. An increasing number of divorcees will remain unmarried, and if this eventuates there will be a negative impact on Australia's high levels of homeownership. From a policy perspective there would seem to be a potentially important role for options such as the Housing Lifeline Proposal that is designed to address the adverse impacts on homeowners of short-term shocks to income and/or wealth (Menzies Research Centre, 2003).
- There are two important policy implications from our research on housing tenure and unemployment.
  - First, governments should not introduce policies to deter homeownership on the misguided belief that higher rates of homeownership directly cause higher unemployment. (Such a view would be a mistaken reading of the policy implications of the Oswald thesis even if it were true.) However, high transaction costs may act to deter labour mobility and policy makers need to be aware of the potentially adverse impacts of such transaction costs on the efficiency of the labour market.
  - Second, our research points to strong public housing-unemployment links. Caution must be exercised, however, when interpreting these results. Many public housing tenants experience a range of disadvantages which are not directly controlled for in our research (because they remain unmeasured in the relevant dataset). These disadvantages increase the chances of households gaining subsidised public rental housing and, therefore, result in worse labour market outcomes than would otherwise be expected. Moreover, given public housing eligibility rules, labour market success stories do not remain in public housing tenancies for long. This biases the effect of public housing itself on unemployment (by default we pick up poor labour market effects from public housing).
- In relation to the results on housing tenure and work disincentive effects, there are a number of possible policy responses. One is a piecemeal one of severing the link between rents and assessable incomes of tenants in public housing. While directly addressing poverty and unemployment trap issues, it is arguably a punitive policy response that risks adverse impacts on housing policy objectives (e.g., affordability). Furthermore, at this stage we lack the evidence to confirm

the hypothesis that inferior employment outcomes of public housing tenants are due to poverty and unemployment traps, rather than other factors such as lack of skills or lack of employment opportunities in the vicinity.

- A Home Credit Fund (HCF) program is an alternative worthy of serious consideration. It is intended as a 'whole of government' approach that seeks to integrate both labour market and housing policy goals, and is based on the principle of rewarding desired outcomes to motivate economic participation. The 'reward' takes the form of assistance to make the transition into homeownership. Finally, rather than a piecemeal approach restricted to public housing, the reform measure extends across all the rental tenures.
- The HCF permits economically inactive transfer payment recipients in rental tenures that move into full-time or part-time employment to receive a share in the public expenditure savings. Their share is 'credited' in a trust fund called the Home Credit Fund that can be subsequently drawn down to meet deposit requirements or mortgage repayments on home purchase.

1. INTRODUCTION*

1.1. Aims

Over the course of a lifetime an individual passes through different phases in a 'housing career'.[1] While each housing career follows a unique path, a set of general social, labour market and economic forces act to influence the overall direction taken by individual housing careers.

As documented by Kendig (1984, and 1990), Australian housing careers in the immediate post-war decades increasingly followed a pattern in which individuals moved quickly from the parental home through the private rental market and into home ownership (the 'great Australian dream'), and finally into home equity consolidation. Some housing market commentators have recently argued, however, that Australians are increasingly departing from what we shall describe as the *linear housing career model* (e.g., Winter and Stone, 1999) and that this may have significant implications for housing tenure outcomes.

This study was motivated by the desire to understand, in an integrated way, how key drivers impact on housing choices of individuals. Our analysis is motivated by a vision of the housing career that can be represented as a ladder that the individual climbs up through his/her life course. The typical housing career model envisages a smooth progression from leaving the parental home into rental housing, where the household saves the deposit necessary for a transition into homeownership. Once that transition is complete the typical couple household trades up as child-rearing responsibilities prompts a higher demand for housing space. As children leave the family home there may be some trading down to a smaller house.

This project seeks to model the main drivers of transitions from one step of the housing career ladder to another. We do so by specifying and estimating econometric models of these transitions. The models are designed to shed light on the relative importance of the various socio-economic and demographic drivers that determine the pace at which households are able to climb up the housing career ladder. The estimates can also be used to simulate the impact that changes in drivers, including policy parameters, can have on the probability of a transition from one rung of the career ladder to another. This feature of the models will be of particular interest to policy makers.

Our housing career model has two novel features that distinguish it from previous contributions in the literature. Firstly, there is a recognition that households can fall down as well as up the housing career ladder. Our modelling encompasses factors such as separation and divorce that can result in such reversals in fortune. Secondly, socio-economic drivers and in particular labour market variables are typically considered to be causes of housing career transitions. Reverse causation where housing career transitions can impact on labour market outcomes are less commonly considered. In this project various modelling exercises are conducted into reverse causation and its significance in the context of labour market outcomes.

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[1] The term 'housing career' has an analogous meaning to that of a 'career' in the labour market where it is used to refer to an individual's profession or vocation or to the moves the individual makes up a job ladder. The idealised Australian housing career involves quick transitions from the parental home to outright home ownership.

By modelling some of the key drivers, we get a picture as to whether broader societal and demographic changes are likely to have a negative impact on housing outcomes in the future. Key drivers of housing careers include:

- Housing tenure preferences and trends in housing market signals (house prices, rents etc.);
- Household formation aspirations and outcomes;
- Labour market effects (wages, employment, unemployment, and retirement);
- Wealth accumulation outcomes and objectives, and,
- Housing assistance, income support, tax, and welfare programs.

This study is unique in that it examines such broad range of drivers at different stages of Australian housing careers and utilises data from both the Household Income and Labour Dynamics (HILDA) Survey as well as the Survey of Income and Housing Costs (SIHC) to investigate some key policy issues.

We focus attention on three distinct phases of the Australian housing career:

- Early adulthood when the first independent housing career transitions are made (we particularly focus on the exit from the parental home and on early household formation and housing tenure transitions).
- The move into home ownership which largely affects those between 25 and 40.
- The mature phase of the housing career and the effect of family dissolution on the housing career. This is a subject that is central to the housing careers of Australians aged 35 to 65, since this is when separation and divorce is most likely to occur.

The first three chapters focus on three key stages at which people make decisions in their housing career: leaving the parental home; buying a home and dissolving a household unit. These chapters focus on household formation issues, financial determinants, education determinants and labour market outcomes as drivers of housing outcomes. The last two chapters examine the interactions between the tenure choice and unemployment and work disincentives. The key research questions examined in the report are outlined below.

1.2. Research Questions

1.2.1. First Moves in the Housing Career

The first specific research question we address in this study is whether present-day young Australians are leaving the parental home later than Australians from previous generations? Are they also taking longer to make the transition to home ownership? A fall in Australian age-specific home ownership rates (Yates, 1999) provides indirect evidence that delays are being experienced in making housing career transitions but we need more direct evidence on the timing of major housing career transitions in the current generation as compared with previous generations before we can give a more definitive answer to the question of whether the time taken to make housing career transitions has lengthened. If delays are being experienced in making housing career moves we need to understand *why* these delays are being experienced: What are the key drivers of the parental home leaving process and that of entry into homeownership? Addressing this question represents an important aim of the present study and is covered both with respect to the parental home leaving process (chapter 2) and that of entry into home ownership (chapter 3).

1.2.2. Financial Barriers to Homeownership

In chapter 3 of the report, we focus attention on the transition into homeownership and, in particular, examine the crucial role played by economic drivers in this fundamental housing career transition.

When households decide to make the move into homeownership they must comply with the borrowing rules employed by financial institutions when lending to homebuyers and must also meet the impost represented by up-front charges such as stamp duties and mortgage insurance premiums. State governments in Australia levy three charges on homebuyers who finance the purchase of a property via a mortgage. These charges are stamp duties on conveyance, mortgages, and mortgage insurance contracts.

An important research and policy question, therefore, is: *has the growth in house prices reached levels where up-front cash requirements far exceed the savings a typical tenant has managed to accumulate?* In recent Australian policy debates concerning the hurdles faced by new homebuyers, emphasis has been put on the potentially adverse role of stamp duties, which represent the major transaction cost involved in home purchase, in impeding the transition into homeownership. However, there has been little by way of detailed research on this question and in this report we help to fill this gap.

1.2.3. The Housing Career Impacts of Household Dissolution

Australians are increasingly experiencing interruptions to their family and work life. These interruptions can be expected to influence the trajectory of their housing careers. Housing careers built on stability and success in family and work life, are more likely to produce linear housing careers than ones built on labour market and family formation interruptions. Rather than a linear housing career model, a snakes and ladders type model of the housing career may be more applicable. In such a world individuals experience both 'good' (ladders) and 'bad' (snakes) events and outcomes in their housing careers. Those that experience bad events, such as the loss of a job or a marriage breakdown and loss of a partner may be unable to sustain mortgage repayments and so make a slide from home ownership back into the private rental market. Hysteresis effects may exacerbate the impact of such a downward movement.[2]

Marriage and relationship breakdowns influence the position of many mature-aged Australian households and may represent a major source of hysteresis in the housing market. While many mature aged Australians are making their last mortgage payments and refining retirement options others experience a sharp reversal in their housing careers. Divorce is an adverse shock that can make first transition into homeownership more difficult and leave homeowners in a financially precarious position. These adverse impacts on homeownership prospects could potentially be reversed on

[2] The term 'hysteresis' is a Greek word meaning 'shortcoming', 'to be late', 'fall short' or 'coming behind' and has been used in physics for over a century and in economics over the last thirty years to refer to the 'history dependence' (the present state is a function of its past history) of physical systems or economic phenomena. In the world of physics, a hysteresis effect is evident (in 'layman's terms') when a force applied to a body is released but the body doesn't spring back completely. In an economics context, the hysteresis effect is applied in the context of models of unemployment — if an adverse demand shock, for example, occurs and forces up unemployment, a hysteresis model suggests that the rate of unemployment will not fall back symmetrically to its previous point when that shock is removed. This is because the experience of high unemployment creates its own negative adverse consequences (e.g., loss of human capital among the unemployed) which partially help steer the time-path of unemployment. In the context of housing careers, events such as divorce and unemployment may create a negative shock to an individual's housing career and the movement down the housing ladder in itself creates negative outcomes such that when the negative shock is 'removed' (e.g., remarriage or reemployment), the individual does not bounce back to where they were prior to the shock.

remarriage. In chapter 4 of the report, we examine the role of divorce and re-marriage in influencing the trajectory of Australian housing careers.

1.2.4. Housing Careers and Unemployment in Australia

The main focus of this study is on the role played by the drivers of the housing system in influencing the housing careers of Australians. However, we shall also examine the reverse causal connection. That is, how do housing careers influence non-shelter outcomes? We focus on one particular channel, namely, the impact of housing on the labour market. This investigation is the subject of chapters 5 and 6.

We focus on two important areas. Firstly, we shall explore the relationship between housing tenure states and unemployment (chapter 5). There exists a relatively well-developed literature, which suggests that public housing may impede the flexibility of the labour market. More recently this argument has been extended to the case of homeownership (the Oswald thesis). The argument is effectively the same in both cases, namely both housing tenures are potentially associated with significant mobility transaction costs relative to the private rental market. As such, public tenants and homeowners are locked in to their current dwelling and do not readily move to take account of labour market opportunities elsewhere (see Bridge, Flatau, Whelan, Wood, and Yates, 2003).

1.2.5. Housing Programs and Work Disincentive Effects

In chapter 6, we extend the analysis of housing career impacts on the labour market by considering whether housing subsidies in private rental and public rental housing contribute to work disincentives. Poverty and unemployment trap measures of work disincentives by housing tenure are developed to test this proposition.

2. THE FIRST HOUSING CAREER MOVES OF YOUNG AUSTRALIANS

2.1. Introduction

Housing careers begin when individuals 'come of age' and reach the point when independent choices about housing can be made. The first housing career choice a young person faces is whether or not to leave the parental home. The leaving-the-parental-home decision, therefore, represents an obvious starting point in our examination of the drivers of Australian housing careers. A large range of drivers influence young people in their choices as to whether or not to leave the family home. Many of these drivers reflect broad educational and social forces. They include:

- The drive for independence and freedom (versus the security, or otherwise, of the home environment);
- Parental support (or lack thereof);
- Personal and family income and wealth status;
- Current partnering status and future cohabitation and marriage plans;
- Current education status and future study plans;
- Housing costs in the external market relative to housing costs (if any) at home;
- Labour market forces (availability of jobs, wages, job location);
- Religious and cultural norms relating to marriage and cohabitation, family responsibilities and independence from the family;
- External shocks (e.g., war or famine).[3]

Significant social, housing, and labour market changes have occurred in recent decades, which can be expected to have had major impacts on the housing career pathways for young Australians.

- First, the mid-1970s witnessed a delayed entry into marriage (but much less so into cohabitation), first childbirth and smaller families (see for example, Weston, Stanton, Qu, and Soriano, 2001, ABS 1994, ABS, 2002, and ABS, 2003c).
- Second, the mid-1970s (again) saw a rise in unemployment and a consequent restriction in the income and wealth generating opportunities of many young people together with a rise in the labour force participation rates for women rose (see, for example, Dawkins, 2000).
- Third, high school completion rates and tertiary education participation rates increased significantly, particularly from the late 1980s. This had the effect of delaying the advent of independent income streams for young people.
- Fourth, in the housing market, real house prices in a number of markets (particularly Sydney) rose significantly. This created potential accessibility problems for those totally reliant on low to middle earnings (see, for example, Yates and Wulff, 1999).

In this chapter, we examine trends in the 'leaving the parental home' process of Australians and explore the role played by various social and economic drivers in affecting the pattern of parental home leaving. We utilise the first wave of the Household Income and Labour Dynamics in Australia (HILDA) survey for this purpose.

[3] Jones (1995) and Heath (1999) provide reviews of the literature on leaving the parental home.

The HILDA Survey represents the first comprehensive longitudinal survey covering social and economic issues in Australia. HILDA contains information on the age at which individuals leave the parental home for the first time. When this information is combined with a range of other recall questions included in the HILDA Survey questionnaire, a picture can be drawn of patterns of home leaving over a number of generations in Australia.

Previous Australian research on social issues (confirmed again utilising HILDA in this report) reveals that significant shifts occurred in a number of Australian social series in the mid-1970s.[4] Both the age first married and age of first child series, for example, move sharply upwards from the mid-1980s. Marriage and first-childbirth was delayed. But did the age at which Australians left the family home also significantly rise in the last two decades? To answer this question we undertake what is called survival-hazard analysis (which involves the modelling of time-related and duration data) of the home leaving process across generations of Australians in the HILDA sample and test for significant cohort and determinant effects.[5]

Section 2.2 provides an overview of the HILDA database and clarifies the nature of the leaving home data in HILDA. Section 2.4 presents an empirical survival analysis and estimates a hazard model of the leaving home decision over the generations in Australia. In section 2.5 of the report, we provide a detailed examination of the leaving home, household formation and early housing tenure decisions of the present-day 15 to 24 age cohort so as to examine what is happening at present in the leaving the parent home process.

2.2. HILDA, Housing Formation and Housing Tenure

The Household Income and Labour Dynamics (HILDA) dataset provides a unique opportunity to examine the housing formation decisions and trajectories of Australians. As a panel dataset, the key benefit of the HILDA dataset arrives with the arrival of future waves of the data, as these will enable the tracking of individuals over time. Nevertheless, the first wave of the data which took place in the second half of 2001, treated as a cross-section, provides an impressive snapshot of the housing formation decisions of both young and older Australians (given the utilisation of recall questions). The HILDA database contains information on 6872 fully-responding private dwelling households and 13,159 fully responding persons (aged 15 or over) in these households. The HILDA database also has the advantage of not being restricted to a particular age or gender category. It, therefore, affords the researcher the ability to follow the family formation and housing career trajectories of all current Australian birth cohorts.

Our key point of interest is in determining the age at which a respondent first left the parental home and the pattern of independent and non-independent living among respondents (defined here as not living in the parental home). A personal household relationships grid is provided in the HILDA dataset from which it is possible to establish whether an individual in the household is a child, stepchild or foster child of another resident in the dwelling. The second crucial piece of information on household formation that we use is a question in the Person Questionnaire (PQ) of the HILDA Survey (administered by a trained interviewer) relating to the age when the respondent first left the parental home. This is the means by which we determine when a person leaves the parental home. Hence, age when first left the parental home is measured by

[4] For surveys of Australian social trends see Weston, Stanton, Qu and Soriano (2001) and Winter and Stone (1999).

[5] In the language of survival-hazard analysis, the 'hazard' refers to the process of exit from the parental home while the 'survival' process reflects the continued maintenance of the child in the parental home.

using a self-identified indicator rather than on the basis of tracking information. The precise wording of the question (B5; PQ) is:

> How old were you when you first moved out of home as a young person (or are you still living at home with your [parents/guardians])?

We divide up respondents into five-year age intervals beginning with those aged 15 to 19. The final category refers to those aged 80 and over. The birth cohorts corresponding to these age categories are specified in Table 2.1 below.

One of the unique properties of the HILDA dataset is that it contains information on the parental background and early life of the respondent. This information allows us to assess the role of a variety of causal factors that have influenced the leaving home decision in Australia over a number of generations. For all persons, we know the country of birth of both the individual and their parents, the number of siblings the individual had, the early schooling background of the person, the age the individual left full-time education, whether the parents of the person were separated prior to age 15, whether the father and/or mother were present in the household at the age of 14, the occupational background of both the mother and the father and whether the father had been unemployed. This list of early-life determinants allows us to consider a range of causal factors such as family structure, family dissolution, cultural background, socio-economic status and income (via occupation) in affecting the exit process from the parental home.

Table 2.1 Age Cohorts in HILDA Wave 1

Current Age	*Birth Cohort*	*Time period when the Birth Cohort is/was in their early 20s*
15-19	Mid-1980s	Early-2000s
20-24	Early-1980s	Late-1990s
25-29	Mid-1970s	Early-1990s
30-34	Early-1970s	Late-1980s
35-39	Mid-1960s	Early-1980s
40-44	Early-1960s	Late-1970s
45-49	Mid-1950s	Early-1970s
50-54	Early-1950s	Late-1960s
55-59	Mid-1940s	Early-1960s
60-64	Early-1940s	Late-1950s
65-69	Mid-1930s	Early-1950s
70-74	Early-1930s	Late-1940s
75-79	Mid-1920s	Early-1940s
80 +	Pre-1920s	Late-1930s

2.3. Leaving the Parental Home in Australia in the 20th Century

Our first piece of analysis sets the leaving of the parental home in the context of other key life cycle events. Figures 2.1 and 2.2 present HILDA-based information on trends in key life cycle events for men and women and for all cohorts in the 20 and over age categories. The four life cycle events selected are: (1) age first left the parental home, (2) age first left full-time education, (3) age first time cohabited with a partner, and (4) age first time legally married. In each case, the life event is measured in terms of the

median age when the event first occurred, where the median age has been derived from survival analyses of each life cycle event.[6]

We focus attention first on the leaving the parental home series.[7] As evident from Figures 2.1 and 2.2, the median age at which Australians first left the parental home was around 21.7 for those (currently) aged 80 and over — the experience of high unemployment during the depression may well have delayed exit. The median age at which men aged 75-79 left the parental home then dramatically drops. The reason for this structural break is that those aged 75-79, were in their late teens at the time of mass mobilisation for the Second World War. Leaving the parental home to begin war service clearly affected men more than women.

In the immediate post-war period, the median age at which people left the parental home increased over what it had been during the war but was well below the pre-war level. The median age at which young people left the parental home proceeded to slowly decline throughout the 1950s, 1960s, 1970s, and even into the 1980s. The minimum point occurs for those aged 25-29 (the mid-1970s birth cohort). For women aged 25-29, the median age at which Australians left the parental home was 18.9, the corresponding age for men of 19.7. The one-year gap between women and men evident since the mid-1950s reflects the joint influence of women cohabiting with a partner younger on average than men. Among those aged under 25, our analyses suggest a rise in the median age at which young people are leaving the parental home but we shall leave further examination of this important issue to the following section.

The age at which individuals first leave the parental home is influenced by a number of drivers and the HILDA dataset provides some strong clues as to the role of these drivers over the 20th Century. One of these drivers is the age at which Australians first completed full-time education. This series shows a very clear strong upward trend for both women and men over the 20th Century. For those aged 80 and over, the median age for leaving full-time education was 15, whereas among those aged 20-24 at the time of the HILDA Survey, the median age was 17.7. A rise in the median age at which people first leave full-time education would be expected, all other things being equal, to raise the age at which young people leave the parental home.

Partnering and marriage trends are also fundamental drivers of the parental home leaving process.[8] As evident from Figures 2.1 and 2.2, the age first partnered series (first partnering is defined to be based on cohabitation which invariably occurs outside the parental home so there is an important relationship between these two series) reveals an interesting wave-like trend across the various cohorts. Reading from the right hand side of the graph to the left, we find that, the median age of first partnering falls slightly as we move from the older to the middle-aged cohorts. The trend towards earlier partnering in the immediate post-war era appears to represent an important social driver in reducing the age at which young people first left the parental home.

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[6] Right censoring significantly affects the age first married series for the 20-24 and 25-29 age cohorts but the right censoring in this case is a function of the underlying upward trend in the series itself.

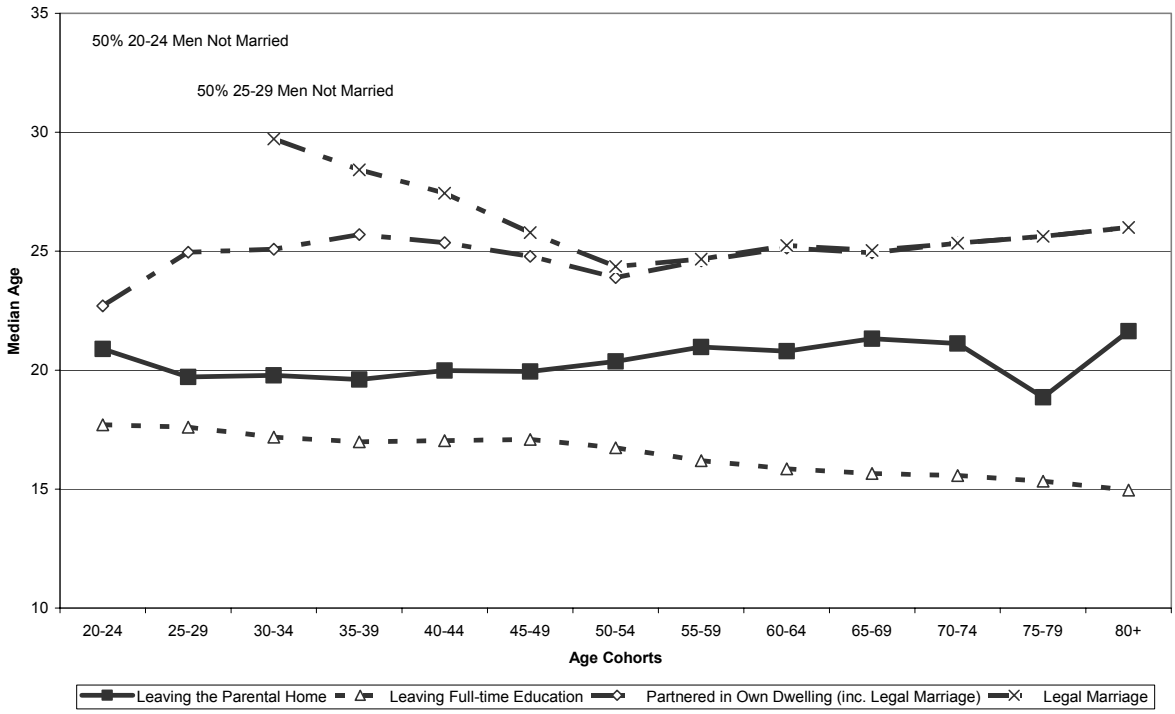
[7] There are, of course, significant right-censoring bias issues with the median age value for the 15-19 age cohort and so this category has been omitted from the median age life cycle graphs (figures 2.1 and 2.2) and is given more detailed treatment at a later point in this chapter.

[8] While the age-first partnered series shows significant shifts over the 20th Century, an even more dramatic effect occurs when we consider the age first legally married series. Prior to the 50-54 age cohort (the 60s teenage generation), the age first cohabited series tracks precisely the age first legally married series. At the point of the 50-54 age cohort, the two series break apart. More and more young people began cohabiting first prior to legal marriage (if they legally marry at all) so that the age of first legal marriage rises significantly.

A more complicated process between partnering and home leaving is at work for those born in the 50s and 60s. These cohorts aged in their 40s and late 30s left the parental home earlier than their predecessors but partnered later. A gap of close to five years opens up between the two series indicating that more young people were living as singles either independently or in group houses and waiting longer to partner. In more recent times, however, the gap between the two series narrows as a result of a drop in the age at which first partnering occurs and a slight rise in the age at which young people first leave the parental home.

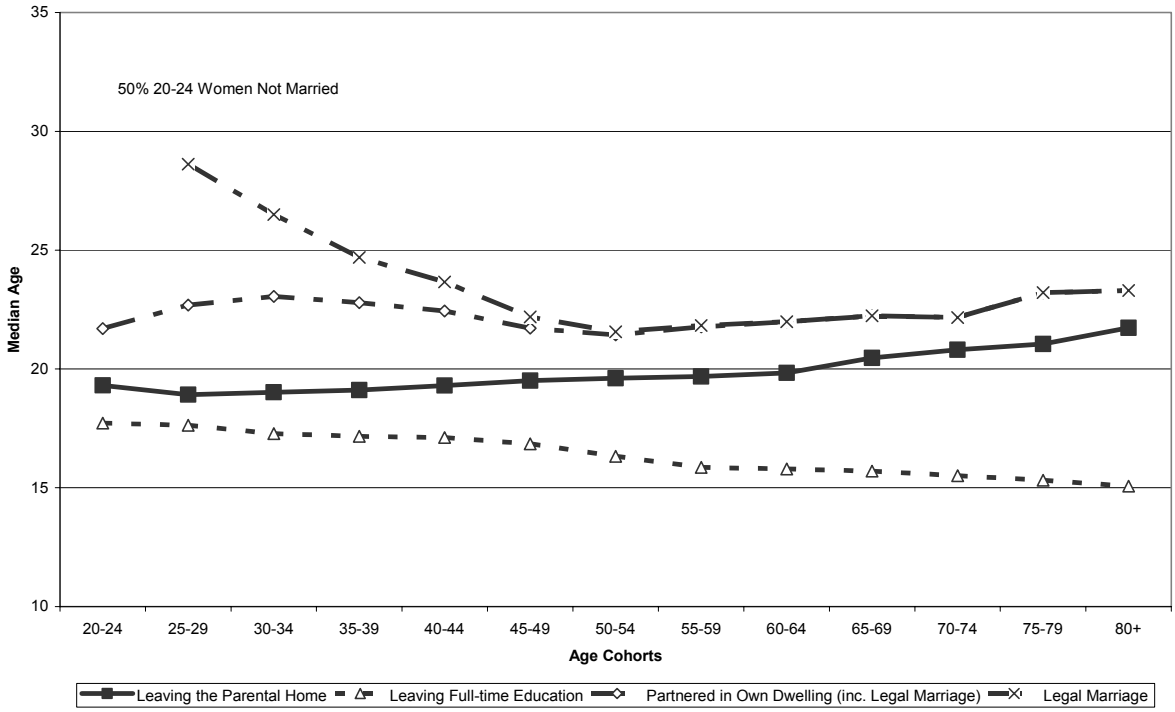
In summary: the median age at which Australians have left the parental home has moved over time, falling in the post-war period, stabilising and then apparently rising recently. This series has, however, exhibited much greater stability than any of the other life course trends examined. However, it is not immune from these influences. Very importantly, the age young people first left full-time education which has drifted upwards over time, provides a 'floor' to the leaving home process. The longer a person takes to complete education (at least the high school component), the longer it takes them to leave the parental home. Patterns of partnering also influence the leaving home process. The drop in the age first partnered (a series itself influenced by increased school retention rates) up to the early 1970s influenced the trend to earlier leaving the parental home, while the reversal of that trend over the last three decades has helped to increase the age of first leaving the parental home.[9]

Figure 2.1 Median Age of Major Life Events, Male Cohorts, HILDA Wave 1



[9] It is possible that parental home leaving results for older age groups may be influenced by survival bias — those in older age categories who left home at a relatively early age may also have died younger and therefore not been represented in the HILDA Survey.

Figure 2.2 Median Age of Major Life Events, Female Cohorts, HILDA Wave 1



The next stage of our examination involves the estimation of a statistical model that relates observed characteristics of individuals sampled in the HILDA database to the exit from the parental home process. (More formally, we estimate what is referred to as a hazard model – the hazard in this case being that of leaving the parental home.)[10] We shall not report the full results here but will focus on the major themes arising from that research. Table 2.2 presents the Cox Proportional Hazard model hazard ratio results. If the hazard ratio is greater than one (and the effect is significant), people with the designated characteristic are exiting the parental home state more quickly than the relative default category (their relative risk of an exit from the parental home is higher than the default) and if it is less than one, individuals with a given characteristic have a greater chance of 'survival' in the parental home.

From the HILDA dataset, we have information on country of birth, the number of siblings the individual had, the early schooling background of the person, the age the individual left full-time education, the family background of respondents aged 14 and the labour market position of parents. We do not know where the individual lived in their formative teenage years. However, to test the hypothesis that the leaving home process is influenced by regional location (through possibly a housing costs channel) we include *current* location indicators in our model. Clearly, because people have migrated in and out of that region prior to the survey such a test will only be suggestive (and not conclusive) of locational impacts.

[10] A full set of results is available in the *HILDA Conference 2003* paper 'Leaving the Parental Home in Australia Over the 20th Century: Evidence from the Household Income and Labour Dynamics in Australia (HILDA) Survey', Paul Flatau, Ian James, Richard Watson and Gavin Wood (Murdoch University) and Patric H. Hendershott (Aberdeen University and NBER) See http://www.melbourneinstitute.com/hilda/pdffiles/PFlatau.pdf

The results of the statistical model suggest that, all other things being equal, women exit the parental home more quickly than do men. Women were estimated to have a 20 per cent higher 'risk' (using the language of hazard models) of leaving the parental home than men controlling for all other factors. While we have described the leaving home process as a more stable social series than other key life course events, the results indicate that statistically significant differences do exist between the various age cohorts. The older age cohorts have *lower* relative risks of exit than the 40-44 age cohort (the default age group) with the relative risk declining as we move to older age cohorts. The difference between the 40-44 age cohort and the older age cohorts is significant. There is, however, no significant difference between the 25-29 through to 40-44 age cohorts suggesting relative stability through the 1980s and into the early 1990s in the leaving home process. However, those aged 20-24 at the time of the HILDA Survey display a lower hazard of leaving the parental home than does the control 40-44 age cohort. The difference is only statistically significant at the 10 per cent level.

In other words, there is some evidence of young people leaving the parental home later now than their immediate predecessors controlling for all observable influences. However, we need to consider this question in more detail and do so below in the following section.

Higher crowding levels in the parental dwelling (more siblings) increases the risk of exit from the parental home as does being the oldest sibling. Indigenous Australians also display a significantly higher risk of leaving the parental home. Significant cultural factors influence parental home leaving outcomes. Those born in non-main-English-speaking countries and those who went to a Catholic school tend to have a lower relative risk of leaving the parental home than those born in Australia and those who went to a non-Catholic school. In terms of the former effect, country of birth has less impact in the second generation (the Australian born of parents from non-main-English speaking countries) as compared to the first (born in non-main-English speaking countries) as is evident in the higher relative risk of exiting the parental home in the second generation as compared to the first.

The literature on the parental home leaving process suggests that family dissolution acts to increase the chance of exit from the parental home. Our study supports this finding in that those whose parents separated prior to the age of 15 are more likely to exit the parental home. Children who are brought up in a family where one or more parents was deceased or absent are also more likely to exit the parental home than otherwise. A higher risk of exit is also found for those whose father was unemployed for at least 6 months or more prior to the respondent reaching the age of 15. Relative to the default of father (mother) not in paid employment at 14, all other father (mother) occupational effects are positive on the risk of exit from the parental home. The effect is strong and consistent for fathers but not for mothers. What this means is that individuals whose father was not in paid employment were more likely to stay in the family home than leave it. (The caveat to this is that extended periods of father's unemployment produces the opposite effect.) Finally, in terms of regional effects, we find that those *currently* residing in Sydney and Melbourne have a lower hazard of exiting the parental home (i.e., they stay at home longer) than the ACT default while those currently residing in inner and outer regional areas have a higher hazard than a capital city default. Whether high relative home purchase costs in Sydney and Melbourne over the generations lies behind lower exit rates from the parental home, however, remains an open question.

Table 2.2 Relative Risk of Exit from the Parental Home (Cox Proportional Hazard Equation, Time to First Left Home), HILDA Wave 1

	Hazard Ratio Exp(B)		*Hazard Ratio Exp(B)*
Female	1.203	**Parental Background (Father and Mother Defaults – Not in Paid Employment at 14)**	
Current Age (Default 40-44)		Father Deceased at 14	1.440
20-24	0.885	No Father Present at 14	1.457
25-29	0.966	Father-Manager and Administrator	1.365
30-34	0.983	Father-Professional	1.387
35-39	1.030	Father-Associate Professional	1.445
45-49	1.020	Father-Tradesperson or Related Worker	1.382
50-54	1.021	Father-Advanced Clerical, Sales or Service Worker	1.448
55-59	0.915	Father-Intermediate Clerical, Sales or Service Worker	1.285
60-64	0.904	Father-Intermediate Production and Transport Worker	1.392
65-69	0.803	Father-Elementary Clerical, Sales or Service Worker	1.184
70-74	0.771	Father-Labourer or Related Worker	1.353
75-79	0.790	Mother Deceased at 14	1.485
80 and over	0.618	No Mother Present at 14	1.436
Education (Default – Govt. School)		Mother-Manager and Administrator	1.105
Never Went to School	1.050	Mother-Professional	1.178
Catholic Non-Government School	0.901	Mother-Associate Professional	1.108
Other Non-Government School	0.984	Mother-Tradesperson or Related Worker	1.019
Never Left Full-time Education	0.485	Mother-Advanced Clerical, Sales or Service Worker	1.215
Age Left Full-time Education	0.975	Mother-Intermediate Clerical, Sales or Service Worker	1.105
Number of Siblings	1.045	Mother-Intermediate Production and Transport Worker	0.995
Oldest Sibling	1.055	Mother-Elementary Clerical, Sales or Service Worker	1.102
Indigenous	1.404	Mother-Labourer or Related Worker	1.107
Current Location (ACT default)		**Father Unemployed-6 Months or More-Growing Up**	1.120
		Parents Separated Prior to Age 15	1.559
Sydney	0.751	**First Spoken Language other than English**	0.950
Balance of NSW	0.891	**Country of Birth** (Default Australian Born)	
Melbourne	0.763	**Aus. Born - Parent(s) Main Eng. Sp. Countries**	1.047
Balance of Victoria	0.870	**Aus. Born – Parent(s) Other Countries**	0.879
Brisbane	1.027	**Main English Speaking Country of Birth**	1.211
Balance of QLD	1.075	**Other Countries of Birth**	0.832
Adelaide	0.816	**Current Regional Location** (Capital City Default)	
Balance of SA	0.891	Inner Regional Australia	1.121
Perth	0.959	Outer Regional Australia	1.143
Balance of WA	0.996	Remote & Very Remote Australia	1.111
Tasmania	0.822		
Northern Territory	1.073		

Effects which are significant at the 5 per cent level are shaded.

2.4. Leaving the Parental Home, Household Formation, and Housing Tenure Patterns in Recent Generations

Having established the role of key social drivers which influence the parental leaving home process over the 20th Century (e.g. gender, age cohort, family background, religious and schooling background etc.), we now move on to consider, in more detail, the leaving the parental home, household formation, and housing tenure patterns of *those currently aged 15-24*.

This analysis is difficult as 15-24 year old persons are still in the process of making their household formation decisions and so a complete picture of the housing career choices of young people will not be available until future waves of the HILDA data become available. In spite of this, problems in examining the housing career path of young people can be reduced through appropriate statistical techniques. It is possible to examine each age-year cohort of persons within the HILDA 15-24 sample to find out the cumulative proportion of each age-year cohort that left the family home at ages prior the age-year cohort point. So, for example, we can map out the number of 21 year olds that left the parental home at various ages, so that 9 of the 212 persons in the 21 year old age-year cohort left at age 14, 7 left at age 15, and 10 at age 16 and so on. Thus the cumulative proportion of those that had left the parental home by 16 is 12 per cent (9+7+16/212). Performing the same task across each of the cohorts means we can gain an idea of whether there has been a change over time in the proportion to leave home by a certain age.

Figure 2.3 depicts the pattern in home leaving rates over each cohort, which is analogous to a trend over time. The positive slopes in the graphs indicate that the cumulative proportion of individuals who left the family home at a specific age is higher for the older age group than the younger age groups. For example, among current 19 year olds, 29 per cent had left by age 18 whereas 45 per cent of current 23 year olds had left by age 18. The evidence from this exercise, therefore, points clearly towards a recent trend of staying in the family home longer. The one deviation from this pattern occurs for those aged 24 who stayed in the parental home longer than 23 year olds. This may represent a statistical artefact arising from smaller numbers when using individual ages rather than cohort intervals but is more likely to reflect the impact of the 1991 recession on the parental home leaving process. The onset of high unemployment meant more teenagers staying on in the parental home than leaving it.

Our final piece of analysis is a more detailed housing career examination of the current generation. Here we extend our profile of the housing careers of Australians beyond the parental home leaving point and into early independent household formation and housing tenure transitions. Figures 2.4 to 2.7 provide a descriptive snapshot of the current living arrangements of those respondents aged 15-24.

Unsurprisingly, school students remain largely in the parental home. So too do tertiary students in the 15 to 19 age category but the proportion of those who have never the left the parental home falls as we move from full-time tertiary students to part-time tertiary students. Among the latter we also pick up evidence of what we call the parental home *boomerang* effect—the process whereby those who have left the parental home at some point in the past return to it. Our returnee estimates only represent a point-in-time estimate of the boomerang phenomenon; the proportion of respondents who had returned to the parental home *at some point* (not necessarily the present) during their history is a potentially much larger number (particularly as we move into older age categories).

Figure 2.3 Cumulative Proportion of Individuals Leaving Home by Age Category, HILDA Wave 1

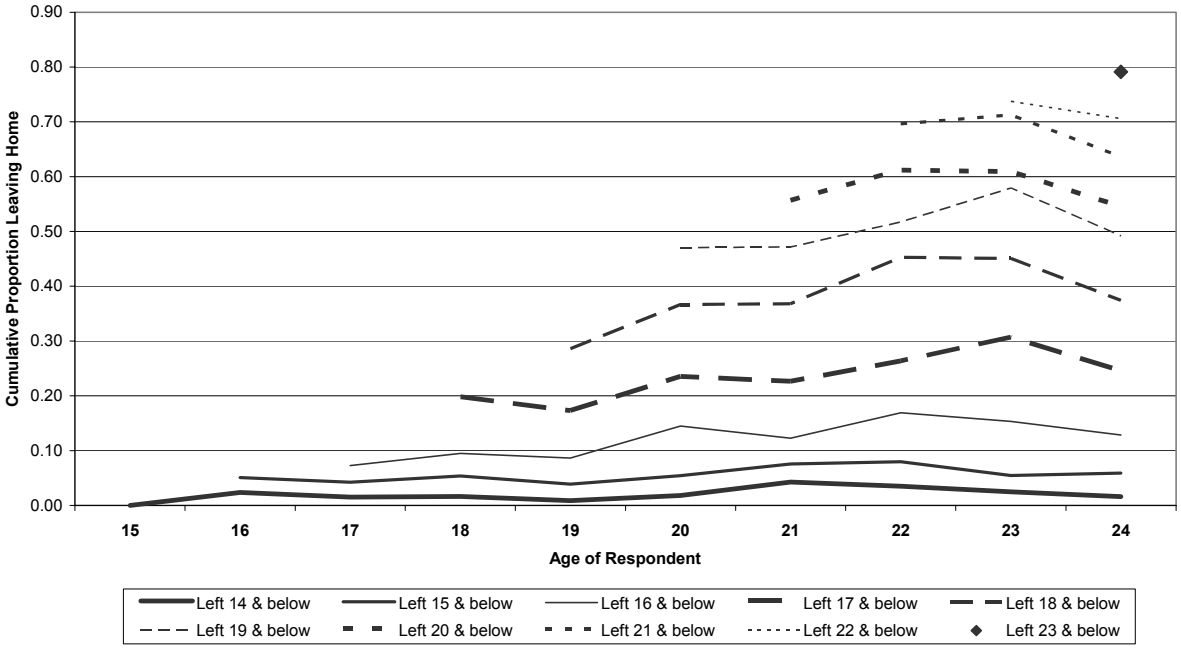


Figure 2.4 Household Formation by Study and Employment Status Age 15-19 (n=1,182)

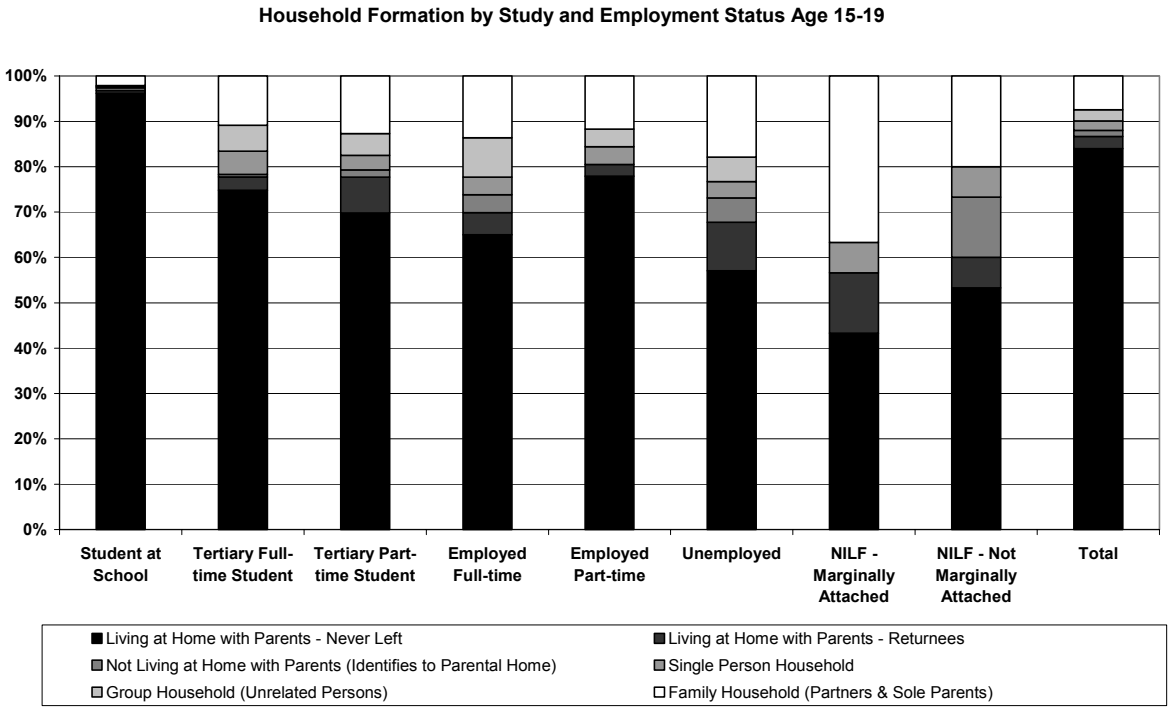


Figure 2.5 Household Formation by Study and Employment Status Age 20-24 (n=1,023)

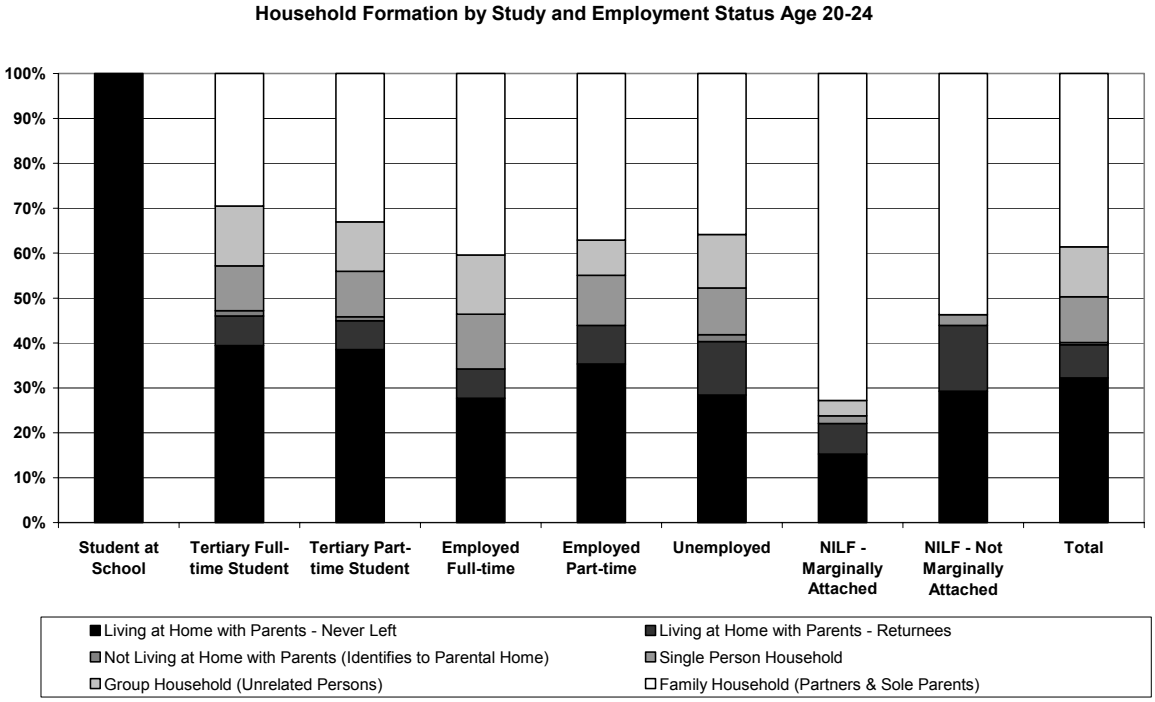


Figure 2.6 Housing Tenure by Study and Employment Status Age 15-19 (n=1,182)

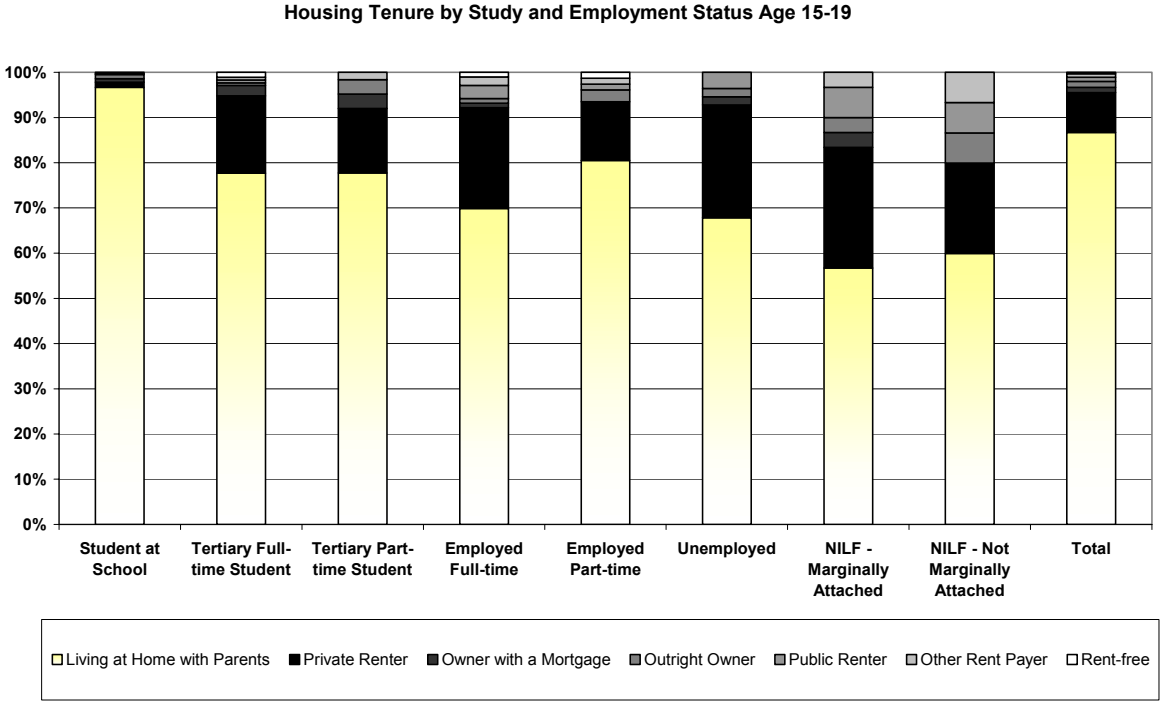


Figure 2.7 Housing Tenure by Study and Employment Status Age 20-24 (n=1,023)

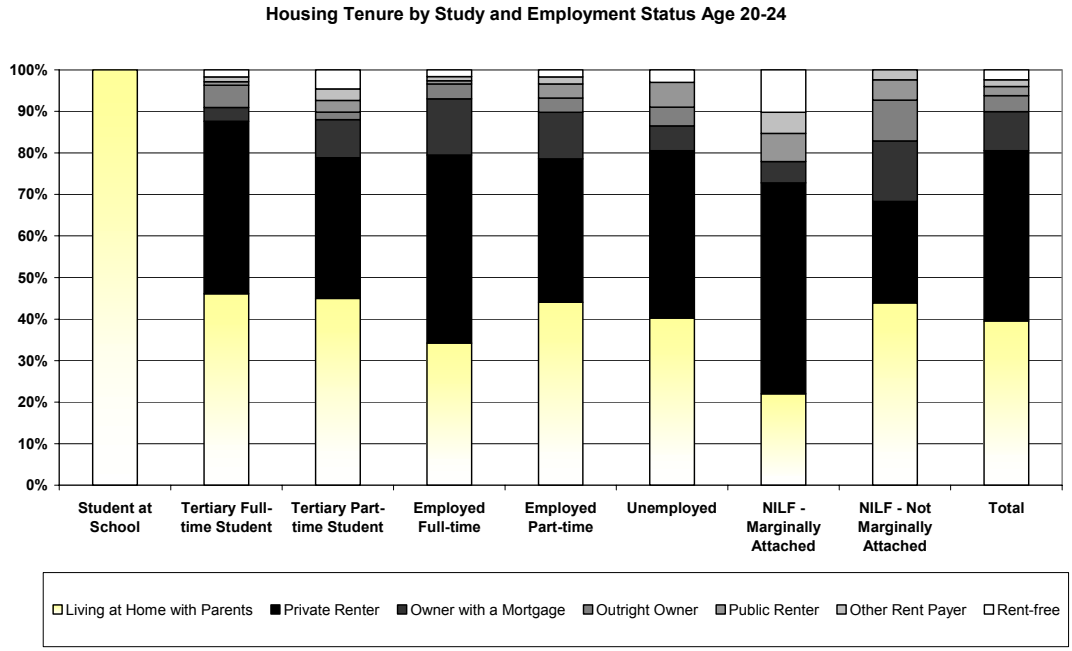


Figure 2.4 indicates that relatively few teenagers currently unemployed and marginally attached to the labour force have 'never left the parental home', but a relatively high proportion have returned to the family home.[11] This suggests that those who are less successful in the labour market actually leave home earlier than others but that the parental home acts as a refuge for this group. Figure 2.6 also indicates that a significant minority of unemployed and marginally attached teenagers, who often have low incomes, are nevertheless in the private rental market (which can often involve high rent).

The vast majority of full-time employed persons aged 15-19 remain in the parental home and have never left it (65 per cent). When they do leave the parental home they are likely to be either in a group house or a partnering formation rather than on their own. They will also typically reside in the private rental market. The same is also true of tertiary students who had left the parental home.

As we move from those aged 15-19 to the 20-24 age category, the proportion of those still in the home falls dramatically. What also begins to take on greater importance (and is clearly linked to the leaving of the parental home) is the role of partnering. While around 7.5 per cent of 15-19 year old respondents either reside with a partner or are a sole parent, among the 20-24 age group that proportion rises to 38.6 per cent and by the early 30s close to 80 per cent have established their own home.

Figures 2.6 and 2.7 depict housing tenure patterns by education and employment status. Among those aged 20-24, private rental tenancies compete with living in the parental home as the dominant housing tenure position. The private rental market has its strongest influence among those aged 25-29. Home ownership only begins to take a prominent position for those in the 30 to 34 age group. However, even among 20-24 year olds, close to 15 per cent of full-time employed persons have made the transition

[11] According to ABS conventions, the marginally attached are those who want to work and were either looking for work but not available to start work in the reference week, or available to start work but not actively looking for work.

to home ownership. Slightly even more of those in the not in the labour force (NILF) category have made this transition. On the surface, this appears to be an anomaly. However, the majority in this category are in fact partners of full-time employees. Public housing provides a supporting role to the unemployed and the NILF-marginally attached group who reside outside the parental home although by far the most important form of housing assistance to this group comes from Commonwealth rent assistance payments to those in the private rental market.

2.5. Conclusion and Policy Implications

Existing Australian research on the leaving the parental home process has relied on datasets focused on particular age cohorts. In this report, we have utilised the HILDA dataset to study the parental home leaving process. HILDA not only covers all relevant age cohorts, but increases by a factor of 5 the size of the sample (over existing relevant Australian) surveys and includes a large array of relevant determinants providing greater scope to researchers to model housing career movements.

Our findings on the parental home leaving process over the 20th Century in Australia can be summarised as follows. Judged against trends in a number of other life-cycle events (such as age of first marriage), the age at which people leave the parental home has remained relatively stable over the last 60 odd years. Nevertheless, some differences can be found between different age cohorts. In general terms, the post-war cohorts left the parental home earlier than their pre-war counterparts. The move to earlier parental home leaving continued through the post-war generations up to the present generation of young people. In terms of the current generation, however, the evidence presented in this report suggests a rise in the age at which those in their teens and early 20s are leaving the parental home.

In terms of the major drivers of the parental home leaving stage of the housing career, our study points to a number of important household formation, cultural and locational determinants. Our modelling of the parental home leaving process reveals very strong links between the period of time an individual spends in education and the age at which they leave the parental home. The recent rise in higher school retention rates and improved higher education participation rates has contributed to the recent trend to delayed parental home leaving. Housing affordability problems together with high unemployment rates in the early 1990s also represent potentially important drivers of delayed home leaving patterns in the 1990s. Our model of the home leaving process shows that women exit the parental home more quickly than do men. Indigenous Australians also tend to leave the parental home faster than non-indigenous Australians. Those born in non-main-English-speaking countries and those who went to a Catholic school tend to leave the parental home somewhat later than others. Children who are brought up in a family where one or more parents was absent during their formative years (early teenage years) are more likely to exit the parental home than otherwise as are those whose father was unemployed during the early teenage years.

The research also shows that those (currently) residing in Sydney and Melbourne experienced lower rates of parental home exit than others. Housing affordability problems in these markets may be a driver of this outcome. Finally, our examination of the HILDA Survey data reveals that many parents provide relief for their children facing difficulties in the labour and housing market by providing a refuge for their children who experience difficulties with independent living. A significant minority of teenagers in difficult labour market circumstances (e.g., those experiencing unemployment) return to the parental home. We refer to this process as the boomerang effect.

What are the policy implications of our results? Parental home leaving has generally not been viewed, in itself, as a site for policy intervention. The decisions young people make in regard to when, how and for what reason they leave the parental home are generally personal choice decisions and not ones that should generally be influenced by policy. The parental home leaving 'site' is not generally a site of *need* or of *disadvantage* in which government can help through well-targeted interventions. However, there exist specific points at which policy-makers need to connect to this site and to research related to the parental home leaving process.

First, some young people leave not through choice but through family and home circumstance and leave at too young an age with few resources. Agencies need to provide strong support for such young people. Second, teenagers, who have recently left the parental home and find themselves unemployed (or in the marginally attached labour force category) typically find themselves facing housing stress difficulties in the private rental market. Both of these groups require policy action. Our research shows, however, that many parents act to provide relief for those facing difficulties in the labour and housing market as a significant minority of teenagers in difficult labour market circumstances return to the parental home. Third, changes in society, which have been influenced by policy action, have flow-on effects on Australian housing careers and on the workings of the housing market. So, for example, policies to improve school retention and higher education participation also feed through to a delayed parental home leaving process, which in turn means that fewer people than otherwise enter the housing market on an independent basis. This affects the demand for housing in the wider housing market. Fourth, the recent rise in the age at which young people are leaving the parental home may be seen, in part, as symptomatic of perceived housing purchase and housing affordability problems. In this sense, the parental home leaving series represents for the policy maker a useful lagging indicator of perceived housing stress problems among young people.

Finally, our results point to the fact that significant numbers of young people in full time study at a tertiary education institution or who are unemployed have left the parental home. Since most young people who leave the parental home reside in private rental housing, the implication is that young people in full-time employment, unemployment or full-time study have not faced insuperable barriers to entering the private rental market. The 1998 Youth Allowance reforms, which entitled full-time students to Commonwealth Rent Assistance, helped create a more level playing field' with respect to private rent assistance arrangements. Under the previous system, choices on education, employment and housing were distorted by arbitrary Commonwealth Rent Assistance eligibility rules that deterred young renters from entering full time education (see Burke et al. 2004). Young people who enter tertiary education are perhaps less likely to stay in the parental home than they might otherwise because they now they can rent privately and be eligible for Commonwealth Rent Assistance.

3. ENTRY INTO HOMEOWNERSHIP[12]

3.1. Introduction

In chapter 2 we examined the first stages of the Australian housing career — the process of leaving the parental home and the first housing tenure and household formation transitions from that point. Our focus was on social and labour market drivers. In this chapter we emphasize the role played by economic and financial determinants in housing careers in our examination of the entry into home ownership, the next stage in the idealised Australian housing career.

Recent policy debate in Australia has reflected the belief that the transition into homeownership is becoming increasingly difficult.[13] In part, this focus on the transition to homeownership reflects growing concern about housing affordability issues in a climate of rapid house price appreciation. Increases in house prices raise the mortgage a potential homebuyer must take on if purchase is to go ahead. However, the ability of a household to enter into homeownership depends on more than just the family's or individual's ability to service a mortgage. Previous research by the authors (Wood, Watson and Flatau, 2003) found that many households who could afford to service a mortgage were prevented, at least temporarily, from entering home ownership by the need to save a deposit.

Bank lending practices involve the application of a rule of thumb with respect to the minimum deposit that must be provided by the loan applicant. However, in addition to the minimum deposit requirement, intending homebuyers must also meet several up-front transaction costs out of their savings. Stamp duties on mortgages and conveyances and mortgage insurance premiums, paid by those who borrow in excess of 80 per cent of the value of a property, effectively increase the deposit requirement faced by those wishing to purchase a home.

In this chapter, we measure the deposit requirements and the transaction costs associated with purchasing a home. As in the previous chapter of this report, we utilise the Household Income and Labour Dynamics in Australia (HILDA) Survey as a key source of information. More specifically, we take the rental tenants sampled by the HILDA Survey and estimate a notional purchase price they face if they chose to become homeowners. This estimate of purchase price is used to measure the minimum deposit requirement (10 per cent of purchase price), and the transaction costs of the purchaser. The HILDA Survey is also used to measure each rental tenant's savings. We then analyse how the gap between cash requirements (deposit plus transaction costs) and savings varies across subgroups of the renter sample.

The remainder of the chapter is organised as follows. Section 2 identifies the transaction costs that are the focus of our modelling exercises. Section 3 briefly surveys the existing literature on the impact of borrowing constraints on homeownership. Section 4 outlines the methodology adopted in the modelling exercises. Section 5 presents the findings from the simulation exercises and Section 6 discusses the implications of these findings for policy.

[12] The authors are grateful to Jeff Hole of the Productivity Commission for helpful comments. A more detailed version of this chapter is available from the authors on request. It explains the methods used to estimate the purchase price that renters would pay on becoming homeowners, and their savings.

[13] The Productivity Commission's recent First Home Ownership Discussion Draft (2003) is one example of the importance of this policy issue.

3.2. Stamp Duties and Mortgage Insurance

State governments in Australia levy three charges on homebuyers who finance the purchase of a property via a mortgage. These charges are stamp duties on conveyance, mortgages, and mortgage insurance contracts respectively. Stamp duties on conveyances are levied on the purchase price of the property with the applicable rate determined by the purchase price. Most states provide some form of relief from stamp duties for first-homebuyers although the extent of, and eligibility for, such relief varies depending on the jurisdiction. Stamp duties on mortgages are levied on the amount borrowed by the purchaser.

Stamp duty schedules are not indexed to the rate of house price appreciation so that 'bracket creep' eventuates over time, and the real value of relief given to first-home buyers is eroded. The period between the collection of Wave 1 of the HILDA Survey and this research has seen high rates of house price growth in many capital cities. As a result, our estimates are likely to *understate* the current transaction costs of first homebuyers.

Mortgage insurance protects a lender against loss should the borrower default on the loan. Homebuyers, who purchase a property at a loan-to-value ratio in excess of 80 per cent, pay the premium, set at a fraction of the mortgage value at the time of purchase. Mortgage insurance allows lenders to diversify mortgage risk and is provided by private insurance firms. We base our premium calculations on the rates charged by General Electric Mortgage Insurance Service (GEMICO), a major Australian mortgage insurance provider.

3.3. Literature Review

The economic analysts emphasise three key factors behind tenure choice: the price of owner occupied housing (relative to rental housing), income and wealth. The first of these factors, the relative price of owner occupied housing, is central to so-called tax arbitrage models. In turn, in these models, a major factor determining the relative price variable is the extent to which the taxation system favours owner-occupation. Anstie, Findlay and Harper (1983) and Wood (2001) in Australia, Gordon, Hines and Summers (1987), Follain and Ling (1988), and Hendershott (1988) in the USA, and Nordvik (2000) in Norway investigate the role of taxation. These models assume that housing consumers have some quantity of housing that they are seeking to obtain, and choose that tenure which supplies this housing at least cost.

The early econometric models of tenure choice included prices, incomes and demographic variables such as marital status and number of children thought to prompt moves into homeownership (Rosen and Rosen, 1980; King, 1981; Hendershott and Schilling, 1982). However, Jones (1995) has argued that these variables do not provide a satisfactory explanation of tenure choice. Rather, he argues, households have a fundamental preference for ownership; the only households who rent are prevented from purchasing because savings are insufficient to meet deposit requirements, or income is insufficient to service mortgage payments. In Linneman and Wachter (1989) and Linneman, Megbolugbe, Wachter and Cho (1997) tenure choice models are estimated that allow for the role of borrowing constraints.[14] These models generally confirm the importance of borrowing constraints, and in particular deposit requirements. In Australia Bourassa (1995) reaches similar conclusions using a sample of Australian households with heads aged 25-34.

[14] Important contributions have also been made by Bossons (1978) Linneman and Wachter (1989), Linneman, Megbolugbe, Wachter and Cho (1997), Goodman and Nichols (1997) and Rosenthal (2001).

Though the recent literature emphasises deposit constraints, only Wood, Watson and Flatau (2003) take transaction costs into account. This is surprising since transaction costs will impact most on borrowing constraint variables (rather than recurrent annual cost), since they represent a financial requirement over and above that necessary to put a deposit down on purchase.

3.4. Methodology

An analysis of the extent to which deposit requirements and up-front transaction costs are an impediment to renter households seeking to become home owners requires an estimate of the market value of housing a renter would purchase on choosing to become a homeowner. We use the term 'imputed housing demand' to describe estimates of this variable. An estimate of the savings accumulated by households is also needed. Estimates of imputed housing demand and savings make it possible to:

- Derive the deposit that the potential homeowner must fund and calculate the up-front transaction costs that must be met at purchase; and
- Given available savings, identify households and individuals who would be unable to fund a home purchase. These households are labelled constrained because they cannot find the cash necessary to meet up-front transaction costs and deposit requirements, yet they could be better off on a recurrent (annual) costs basis if they purchased rather than rented housing (see Wood, Watson and Flatau, 2003). We use the term 'cash requirements' to describe the sum of up-front transaction costs and deposit requirement on home purchase.

3.4.1. Value of Housing Purchased by Renters

Imputed housing demand is obtained from a housing demand regression model that is estimated using the market values of the homes occupied by the sample of homeowners in HILDA. The housing demand regression model is used to predict the market values of housing a renter would purchase if they become homeowners.

3.4.2. Savings

Households can accumulate savings in a variety of different assets that range from highly liquid forms such as cash to illiquid forms such as superannuation funds. The relevant magnitude, as far as meeting the cash requirements on home purchase is concerned, is liquid wealth. This is savings accumulated in readily realisable assets that we define as interest bearing deposits, shares and rental property.

Wave One of the HILDA Survey does not directly report the value of liquid assets held by households and their members.[15] As a result it is necessary to estimate liquid wealth using the Survey's reported income streams from rental property, interest bearing deposits and share portfolios. To do this we employ the yield multiplier methodology suggested by Dilnot (1990). This methodology uses the income streams from investments reported in HILDA (interest, dividends and income from rental properties) and infers the value of the asset generating the income stream by dividing that stream by a rate of return that is representative of rates of return earned on that class of liquid asset. The mean liquid wealth holdings of income units in our sample are reported later in Table 3.6.[16]

[15] Wave Two of the HILDA Survey includes a wealth module which will allow a better understanding of housing wealth effects.

[16] A more detailed explanation of the application of this methodology can be found in Wood, Watson and Flatau (2003).

3.4.3. First-Home Buyers

HILDA does not permit identification of renters who would be first homebuyers and those who would be repeat buyers if they purchased. In order to calculate concessions to first-home buyers with respect to stamp duties we therefore need to identify income units in the sample who can reasonably be assumed to have never owned their own home. A common approach is to assign all income units with a reference person aged less than 35 years to first-home buyer status. In the absence of any direct evidence we use this method for our simulations.

Our empirical analysis proceeds by first measuring typical (average) cash requirements, the breakdown into deposit requirements and up-front transaction costs, and the contribution of government charges to up-front transaction costs.[17] We then distinguish between constrained and unconstrained rental tenants, and explain why unconstrained rental tenants who can meet the cash requirements of purchasers nevertheless remain renters. Finally, we measure the cash requirement gap (CRG) of constrained rental tenants as the difference between cash requirements and their savings. The CRG is a hurdle that renters must 'jump' if they are to make the transition into homeownership. We analyse how the height of the hurdle varies across subgroups of tenants.

3.5. Findings

3.5.1. The size of transaction costs and deposit requirements

At what we estimate to be the mean purchase price of tenants if they become homebuyers ($172,482)[18], cash requirements on purchase are $24,380 (see Table 3.1). These cash requirements are 14.1 per cent of the purchase price. The average savings of tenants are $22,361. But for those constrained tenants whose savings are less than cash requirements, average savings are only $1,947.

The mean deposit requirement is $17,248, or 70.7 per cent of total cash requirements. Transaction costs therefore account for almost 30 per cent of total cash requirements, and stamp duties on conveyances make the most important contribution at $4,396 (or 18 per cent of total cash requirements). All stamp duties, including mortgage duty and duty on mortgage insurance, total $5,083 that are just over one-fifth of cash requirements and add 2.95 per cent to the mean purchase price. Mortgage insurance premiums add $2,049 to cash requirements and are 8.4 per cent of total cash requirements. These estimates suggest that up-front cash requirements are a formidable barrier for typical rental tenants who have savings that fall well short of these cash requirements.

There is considerable variation in the cash requirement measure across the states and territories due to differences in stamp duty burdens. Table 3.2 reports state government charges as a proportion of the mean purchase price and the cash requirement by state. A home purchaser faces an average rate of state government taxes of between 1.4 per cent and 3.7 per cent of the purchase price of a home depending upon which state they live in. State government taxes represent between 10.9 per cent and 24.7 per cent of the cash requirement that an income unit needs to meet both deposit and transaction costs. Stamp duties are most onerous in Western Australia and Victoria and lowest in Tasmania and Queensland. The burden of stamp duties appears to have risen during the 1990s. Wood (1996) estimates that, in 1990,

[17] Government charges are estimated using current stamp duty schedules as at the 1st of January 2004.

[18] This is the average predicted value obtained from the regression model described on the previous page. It is a 'national average' that will not be representative of any particular city, but the *relative* size of the components of up front cash requirements will be nationally representative.

the average rate of stamp duty was 2.4 per cent across the six Australian states *assuming that all purchases were repeat purchases*. Allowing for first-home owner exemptions and assistance we find an average rate of stamp duty of 3.1 per cent in 2004.

Table 3.1 Deposit Requirement and Transaction Costs

		Mean	*Share of Cash Requirement* *Per cent*
Deposit	(LVR = 0.9)	$17,248	70.7
Transaction Costs		$7,132	29.3
Cash Requirement		$24,380	100.0
Transaction Costs			
Stamp Duty			
	Conveyance	$4,396	18.0
	Mortgage	$502	2.1
	Mortgage Insurance	$185	0.8
	Total	*$5,083*	*20.9*
Mortgage Insurance		$2,049	8.4

Transaction costs are adjusted for discounts offered to first home buyers
N = 2,769

Of our sample of 2,769 rental tenant income units, 87.3 per cent (2,417) lack sufficient savings to enter homeownership at their imputed housing demand. The majority (2,370) of these 2417 constrained income units are unable to meet even the 10 per cent deposit requirement. However, there are 47 (1.9 per cent of the total) who could meet deposit requirements but any purchase intentions would be thwarted by insufficient savings to also cover transaction costs. Many in this small group would *immediately* benefit if stamp duties were abolished.

Table 3.2 State Government Stamp Duties as a Proportion of House Price and Cash Requirement

	NSW	*VIC*	*QLD*	*SA*	*WA*	*TAS*	*NT*	*ACT*
House Price (per cent)	3.0	3.6	1.4	3.2	3.7	2.1	3.1	2.6
Cash Requirement (per cent)	21.2	24.6	10.9	22.3	24.7	15.7	21.7	18.9

Transaction costs are adjusted for discounts offered to first-home buyers
N = 2,769

Unconstrained rental tenants are often highly educated, young, single and less likely to have dependent children. This small group of 352 tenants have very high average annual wage and salary income if employed ($67,857 compared to $45,538 for constrained tenants in employment), very high savings ($162,775 compared to $1,911 for unconstrained tenants) and 31 per cent own a rental investment property. They are also highly mobile with one in four considering it very likely that they will move in the

next year. It seems likely that many of this group are managers and professionals who have moved for job related reasons and are leasing their home. From a policy perspective it is the much larger (2,417) constrained tenant group who are the focus of interest.

3.5.2. Cash Requirement Gaps

The mean (median) CRG for constrained rental tenants is $21,896 ($18,713) and this represents 83.5 per cent of the average annual income of rental tenants. Unless assisted by gifts or inheritances the typical rental tenant's access to home ownership will be impeded at present house price levels, since it is difficult to see how they can accumulate sufficient savings to close such a large CRG.[19]

In Tables 3.3, 3.4, 3.5 and 3.6, the 2,417 sample of constrained rental tenants is classified into quartiles according to the size of their CRGs. The 25 per cent of constrained tenants with the lowest CRG have CRGs ≤ $13,581, while the 25 per cent of constrained tenants with the highest CRGs have CRGs ≥ $27,537. Tables 3.3 to 3.7 analyse the socio-economic and demographic characteristics of constrained tenants belonging to these three groups.

We find that large CRGs are typically experienced by:

- Higher income groups, particularly high wage and salary earners, since these groups typically have a higher demand for housing - see dot point 3 below (Table 3.6)
- Households with low savings [20](see Table 3.6)
- Households with a high demand for housing – those with CRGs in the highest quartile have a mean demand for housing of $271,316, while those with CRGs in the lowest quartile have a mean demand for housing of only $103,569 (see Table 3.4)
- Those households renting in the more expensive rent segments (see Table 3.4)
- Those households whose head is in full-time employment, and possesses a higher education qualification (see Table 3.5)
- Married couples with or without children (see Table 3.3), since they have a higher demand for housing.

There is an important point to emerge from this analysis. The recent house price cycle that has witnessed rapid price increases in most Australian housing markets has particularly adversely impacted on the CRGs of well educated, higher income *tenants* who have high levels of housing demand (in part due to larger household size), and have not yet had the opportunity to save, or have chosen to consume most of their income. Some if not many renter households will receive gifts and inheritances that enable them to bridge the gap.[21] But others will find that despite higher than average incomes, access to homeownership opportunities are limited unless they trade-down in terms of housing aspirations, or relocate to cheaper housing submarkets. These people have accessibility problems.

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[19] Financial institutions may be prepared to relax deposit requirements, but this comes at the expense of a higher mortgage insurance premium. There is a second qualification here. Many of the sole person renter households will marry, and if it is to an existing homeowner their CRG is irrelevant.

[20] Note that higher income groups with low savings will typically have large CRG, but that this is not necessarily due to tight financial constraints. It could reflect a preference for spending on other consumer good and services.

[21] This is a critical research question that deserves further attention.

Those renters with relatively low CRGs are in a different housing market situation. These people generally have weaker economic circumstances and have a correspondingly low demand for housing, though they are more likely to have relatively healthy savings. With generally low incomes this group are likely:

- To experience mortgage repayment difficulties if they purchased, that is housing affordability problems and/or
- Find that annual economic costs as a renter are lower than as a homeowner because of tax considerations and Commonwealth Rent Assistance (see Wood, 2001; Wood, Watson and Flatau, 2003).

Table 3.3 Demographic Characteristics by Cash Requirement Gap Quartile[1]

	Cash Requirement Gap				
	$1 – $13,581	*$13,582- $18,712*	*$18713- $27,537*	*$27,537+*	*Mean CRG*
	% of subgroup	*% of subgroup*	*% of subgroup*	*% of subgroup*	
Age of Reference Person					
15-24	33.5	28.7	20.1	17.7	$19 097
25-34	19.5	23.6	28.8	28.1	23 080
35-64	23.0	24.1	25.4	27.5	23 376
65+	24.9	21.9	26.2	27.0	21 874
Family Type					
Couple	13.8	21.8	25.4	39.0	25 976
Couple with Children	18.5	19.4	35.3	26.8	24 311
Sole Parent	28.4	32.1	21.9	17.6	19 488
Lone Person	31.4	27.1	26.0	15.5	18 740
Related Family Member	38.1	22.2	20.6	19.0	18 747
Non-family Member	29.8	18.9	22.0	29.5	22 316
Dependent Children	73.2	75.4	76.0	75.4	23 065
Marital Status					
Married	11.2	17.1	29.9	41.9	28 122
De facto	14.5	25.0	26.4	34.1	25 685
Separated	25.8	27.7	24.5	17.7	19 844
Divorced	30.1	27.7	24.5	17.7	19 480
Widowed	21.1	31.6	27.8	19.5	19 981
Single	33.3	26.8	21.8	18.1	19 127

1. The sample numbers in each quartile is 604. The mean cash requirement gap for the total sample (2416) is $21,896

Table 3.4 Housing by Cash Requirement Gap Quartile

	Cash Requirement Gap				
	$0 – $13,581	*$13,582- $18,712*	*$18713- $27,537*	*$27,537+*	*Mean CRG*
Estimated Housing Demand	103 569	131 231	169 271	271 316	21 896
Weekly Rent[1]	116	126	143	191	22 219
Tenure & Landlord					
Renter	21.9	25.1	26.8	26.3	22 507
Private Rental	21.8	23.9	27.2	27.1	22 829
Public Rental Tenant	23.8	30.5	24.4	21.3	20 747
Employer	23.5	23.5	29.4	23.5	18 583
Community	18.8	33.3	20.8	27.1	22 077
Other	37.8	29.7	27.1	5.4	18 243
Rent-free	39.0	24.0	17.0	20.0	18 725
Boarder	31.4	24.3	21.5	22.8	20 980
Rent-free (Parental Home)	28.7	27.8	23.1	20.4	19 898
Dwelling Type					
Separate House	27.9	26.3	24.4	21.4	20 892
Semi-detached House/Terrace	15.3	27.0	29.1	28.6	23 168
Flat/Apartment/Unit	23.3	19.2	24.2	33.3	24 134
Other	44.4	44.4	11.2	0	13 394
Property in Poor to Derelict Condition	33.2	25.1	23.2	18.5	19 822
3 or more Bedrooms	24.8	26.0	25.2	24.0	21 738
Moved 5 or more times in last 10 years	24.7	28.1	25.0	22.2	21 240
Very Likely to Move in Next Year	27.0	25.4	23.5	24.1	21 714
N	604	604	605	604	2 417

1. Mean weekly rent for all rent paying income units.

Table 3.5 Labour Force Status and Education by Cash Requirement Gap Quartile

			Cash Requirement Gap		
	$0 – $13,581	*$13,582- $18,712*	*$18713- $27,537*	*$27,537+*	*Mean CRG*
Labour Force Status					
Employed					
Full-time	21.5	22.2	25.6	30.7	23 727
Part-time	22.7	24.4	26.6	26.3	22 489
Unemployed	44.7	28.3	16.8	10.2	16 885
Not in Labour Force					
Retired	25.3	22.3	26.7	25.7	21 692
Home Duties	21.2	32.1	24.5	22.1	21 345
Non-Working Student	33.9	25.8	24.2	16.1	18 195
Other	23.1	28.8	29.8	18.3	20 786
Education					
Post-Grad	7.9	23.7	18.4	50.0	30 008
Grad Dip	15.8	14.8	26.3	43.9	27 970
Bachelor	23.8	17.3	19.1	39.7	25 848
Diploma	15.9	24.2	26.1	33.8	24 609
Trade	25.4	25.1	27.2	22.3	21 389
High School	27.2	27.0	25.5	11.9	20 435
Undetermined	25.0	31.3	20.3	23.4	20 182
N	604	604	605	604	2 417

Table 3.6 Income and Assets by Cash Requirement Gap Quartile

	Cash Requirement Gap				
	$0 – $13,581	*$13,582- $18,712*	*$18713- $27,537*	*$27,537+*	*Mean CRG*
Gross Annual Income	16456	20 523	26 678	39 719	21 896
Wages and Salaries[1]	40405	34 691	41 133	56 694	26 525
Pensions & Allowances	1 407	1 224	1 670	1 809	21 896
Dividend	11	4	3	6	21 896
Interest	21	6	4	7	21 896
Rental	0	0	0	0	21 896
Mean Liquid Assets	3 419	1 247	1 290	1 689	21 896
Receives Government Pension or Allowance (per cent)	30.5	28.4	24.5	16.6	19 340
Financial Difficulties (per cent)					
Rent	23.2	25.2	29.2	22.3	21 639
Utilities	26.6	27.9	25.0	20.5	20 711
N	604	604	605	604	2417

1. Mean wage and salary income is for income units where at least one member receives wage or salary income. Other income types are mean values for each group as a whole rather than recipients only.

Table 3.7 State Government Stamp Duties by Income Decile and Housing Demand

Income Deciles	*Mean Income[1] $*	*Mean Housing Demand $*	*Mean Wealth $*	*Stamp Duty[2]*			
				$	*Per cent of Income*	*Per cent of Housing Demand*	*Per cent of Wealth*
$1 - $5 663	2 479	124 856	858	2 149	86.7	1.7	250
$5 664-$9 648	8 013	140 607	685	3 541	44.2	2.5	517
$9 649-$11 000	10 394	140 570	1 049	3 911	37.6	2.8	373
$11 001-$14 694	12 781	144 713	1 341	3 627	28.4	2.5	270
$14 695-$18 742	16 654	154 427	1 310	4 234	25.4	2.7	323
$18 743-$25 000	22 025	171 388	1 183	5 179	23.5	3.0	438
$25 001-$31 000	27 875	169 727	1 817	5 066	18.2	3.0	279
$31 001-$40 090	35 718	182 598	2 628	5 680	15.9	3.1	216
$40 091-$57 116	47 672	208 308	3 355	6 937	14.6	3.3	207
$57 117+	86 425	262 929	5 538	9 633	11.1	3.7	174
Total	**26 954**	**170 002**	**1 971**	**4 997**	**57.5**	**2.9**	**253**

1. Income unit gross financial year income from all sources.

2. Estimated stamp duties on conveyance, mortgage and mortgage insurance premium. Estimates include first-home buyer concessions for eligible income units.

3.6. Conclusion and Policy Implications

Home ownership provides several benefits to households. First, there are the strictly financial benefits in terms of untaxed wealth accumulation through capital gains and the untaxed stream of housing services that a household enjoys (imputed rental income)[22]. Second, home ownership is often seen as being socially beneficial in its own right. Given these benefits, impediments to homeownership such as the requirement to meet up-front cash requirements from savings deserve serious consideration by policy makers.

This chapter has examined the impact of the deposit rules employed by banks when lending to homebuyers and the impost represented by up-front charges such as stamp duties and mortgage insurance premiums. The evidence presented in this chapter unequivocally shows that house prices have reached levels where up-front cash requirements far exceed the savings a typical tenant has managed to accumulate. Hence, our study has illustrated the importance of two important financial drivers of the second stage (the first being the transition from the parental home into independent living arrangements) of the Australian housing career; namely the role of house prices and home entry transaction costs.

[22] Net imputed rental income of homeowners was taxed as income under Australian federal taxation arrangements until 1924. It is the income that a homeowner would earn if their housing equity were realised and reinvested. Since this is forgone by the homeowner it must be less than or equal to the value of the services yielded by the house that the owner occupies.

Stamp duties are a controversial policy lever that governments have at their disposal in this context.[23] They typically account for 21 per cent of the total up-front cash requirements that a rental tenant must meet on becoming a homeowner. But among those rental tenants who lack the savings to meet up-front cash requirements, only 1.7 per cent could *immediately benefit* if rental tenants were exempted from stamp duties. The introduction of such an exemption would have its impact in the future, by advancing the transition into homeownership of those who can also overcome affordability hurdles.

Who would benefit most if rental tenants were exempt from stamp duties? Table 3.7 divides the sample of rental tenants into ten equally sized groups (deciles) ranked by income. Average income ranges from a low of $2479 in the lowest decile to a high of $86,425 in the highest decile. It is clear that stamp duties are a highly regressive tax among this population sub-group. It would need 86 per cent of the $2479 average annual income of the poorest 10 per cent of tenants to meet stamp duties on the housing they would need to purchase ($124,856) in order to meet housing demand. On the other hand it needs only 11.1 per cent of the $86,425 average income of the richest 10 per cent of tenants to meet stamp duties on the housing they would need to purchase ($262,929) in order to meet housing demand.

For middle to lower income groups in particular, stamp duties would be met from savings not income. The capacity of different income groups to meet stamp duties from savings does not differ in any systematic way (see final column, Table 3.7). All income groups have liquid wealth that generally fall well short of the up-front stamp duty requirements. Stamp duties are typically 2.5 times the savings that the average renter has managed to accumulate.

It is clear that house prices have reached levels at which up-front cash requirements will prevent many rental tenants from becoming home owners, unless they benefit from gifts or inheritances or are single and marry existing homeowners. Exempting rental tenants from stamp duties would, to the extent that low income tenants manage to make the transition into homeownership, have a progressive incidence as stamp duties are particularly onerous on low income tenants. However, this policy response could be flawed because the escalation in up-front cash requirements is in large part due to house price inflation against a background of lagging growth in earnings. Stamp duty exemptions do not tackle the root causes of house price inflation (and might even cause acceleration). This kind of policy response risks treating the ‘symptoms rather than the causes of the disease’.

[23] See Wood, Watson and Flatau (2003) for an analysis of First Homeowner Grants.

4. THE HOUSING CAREER IMPACTS OF HOUSEHOLD DISSOLUTION

4.1. Introduction[24]

In this chapter we explore the neglected issue of household dissolution and its impact on housing outcomes and in particular its impact on home ownership. This is a subject that is central to the housing careers of mature age Australians (35 – 64 years of age), since this is when separation and divorce is most likely to occur. It is a neglected topic because analysts have traditionally conceived of housing careers as a progression culminating in homeownership. The transition into homeownership was commonly associated with marriage and childbirth, and given marital stability as the norm, there has been little consideration given to divorce and separation as factors driving housing tenure outcomes.

The more recent tenure choice modelling literature suggests ways in which marriage, divorce and separation can impact on the transition into homeownership, and the retention of homeownership status. This is evident from the research contributions of Jones (1989; 1995) and others who emphasise the role of wealth and the asset price of housing.[25] Jones (1995) argues that households have a fundamental preference for homeownership. Binding borrowing constraints prevent those households observed renting from becoming homeowners. They have insufficient liquid assets to meet deposit requirements, and/or they cannot afford to meet repayment requirements on a mortgage. Using a microsimulation model of the Australian housing market Wood, Watson and Flatau (2003) confirm the importance of binding borrowing constraints in shaping the tenure outcomes of a sample of 9,276 Australian income units.

Marital status is of importance to satisfaction of borrowing constraints because on marriage the wealth of two singles (typically sole person households) is combined. Using the American National Longitudinal Survey of Youth, Haurin et al. (1996) find that two years before marriage the homeownership rate is 0.08, while the rate when married for two years is 0.48. Household dissolution due to divorce or separation could have the reverse effect. One or both partners typically move out of the family or de facto home, and property settlement will involve some division of accumulated assets that may be insufficient to permit one or both partners from immediate restoration of their housing position. This could mean that divorcees lose homeownership status at the time of household dissolution, or if they are tenants, their liquid wealth position deteriorates relative to deposit requirements.[26]

[24] The authors would like to thank Judy Cockburn-Campbell and Sarah Hickson for invaluable research assistance in the preparation of this chapter.

[25] The early tenure choice modelling studies emphasised relative prices and income as the principal economic drivers of tenure outcomes (see Laidler, 1969; Rosen, 1979; Rosen and Rosen, 1980; King, 1981; Hendershott and Schilling, 1982). More recent contributions that emphasise wealth and the asset price of housing include Linneman and Wachter (1989), Linneman, Megbolugbe, Wachter and Cho (1997), Goodman and Nichols (1997) and Rosenthal (2001).

[26] The timing of household dissolution can be important. If it occurs at or near a trough in house prices the chances of restoring housing circumstances are adversely affected, because any property settlement occurs at a time of low housing prices, and a subsequent recovery in house prices can leave divorcees further behind savings targets. Consider an Australian divorcee reaching a settlement in the December quarter of 1998. By the March 2003 quarter house prices had increased by 66 per cent (ABS Catalogue No. 6416.0, table 2b), but average weekly earnings of employees increased by only 21 per cent (ABS Catalogue No. 6302.0, full time ordinary earnings, persons).

One might expect the adverse impact of divorce on the attainment or retention of homeownership status to be reversed on re-marriage. The original impulse impacting on homeownership outcomes has, after all, been corrected. On this argument, the homeownership outcomes of re-married couples will mirror those of continuously married couples. However, this argument ignores possible *hysteresis* effects on housing tenure outcomes and the role of such effects on housing tenure is one focal point of the present chapter.

A hysteresis effect refers to a negative (positive) shock that has long-lasting impacts so that when the shock is reversed, the affected person(s) does not return to the same position they were in before the shock. A divorcee, for example, who loses home ownership status on household dissolution, could find that the consequent erosion of wealth and income losses impede restoration of homeownership status on re-marriage. There are a number of adverse consequences that divorce can have in this respect:

- Settlement costs and division of assets on household dissolution, combined with a likely lower rate of saving when a divorcee[27], make deposits more difficult to accumulate.
- On the other hand, income losses due to ongoing maintenance requirements and the reduced borrowing and earnings capacity of sole parents (whose labour force participation suffers due to additional child care responsibilities) makes it more difficult to meet the recurrent costs of home purchase.

These adverse impacts on post-divorce wealth and asset accumulation could provide important sources of hysteresis effects on homeownership outcomes. Their possible presence also has significant methodological implications since researchers will need to include variables capturing the history of household formation and dissolution, as well as contemporaneous household and marital status variables. The HILDA Survey is helpful in this respect because it contains a detailed family history for each member of a household, as well as the social and economic data required for measurement of the explanatory variables that typically feature in tenure choice models.

This topic has a wider significance. In 1970 the crude divorce rate was 1 per 1000 Australians, and there were 12,198 divorces. By 2001 this crude divorce rate had reached 2.8 per 1000 Australians, and there were 55,300 divorces. Between 1990 and 1999 488,200 divorces affected nearly one million Australians and represented 7.9 per cent of the number of households in 1991. It would appear that around one in 10 households dissolved during the 1990s.[28] Australia also has a relatively high divorce rate by international standards. In 1998 the Australian divorce rate of 48.1 per 100 marriages exceeded the OECD average of 41.9 per 100 marriages. Of 27 OECD countries, 9 countries have higher divorce rates. *If divorce has adverse impacts on homeownership outcomes, the high homeownership rates that Australia has become accustomed to will prove unsustainable*. This expectation is strengthened if hysteresis

[27] According to the 1998-99 Household Expenditure Survey married couples manage to save $13.24 per week on average. This contrasts with sole parents who dissave (i.e. spend more than their income) an average $42.26 per week (ABS (2000), Household Expenditure Survey: Summary of Results. Cat No. 6530.0. Average household disposable income is calculated as the sum of average household income and mortgage principal repayments less income tax; average household savings is calculated as average household disposable income less goods and services expenditure and superannuation and life insurance payments.

[28] See Australian Social Trends (2003) ABS Cat. No. 4102.0, table 2 and Australian Historical Population Statistics, Tables, 86, 90, 91 and 95. These figures do not include separations or the fracture of de facto relationships.

effects are present since re-marriage rates suggest that most divorcees re-marry at some later stage in life.[29]

The housing literature has nevertheless given little attention to the impact of divorce on tenure outcomes. The next section of the chapter uses the Household Income and Labour Dynamics in Australia Survey (HILDA) to compare housing tenure outcomes by marital status. In Section 4.3 we report the findings from an econometric model of tenure choice. A concluding section discusses some policy implications.

4.2. Descriptive Analysis

Tables 4.1 to 4.3 use the HILDA Survey to explore the tenure patterns of 4974 mature age income units whose reference person is aged between 35 and 64. The currently divorced and separated account for 1180 (23.7 per cent) of this sample; widows (191, or 3.8 per cent of sample) are also a product of household dissolution and we therefore examine their tenure outcomes also.[30]

Table 4.1 Mature Age Australians: Tenure Shares by Relationship History

	N	*Owner %*	*Renter %*	*Public %*	*Total %*
Never Married					
Single	882	48.7	42.1	9.2	17.7
De Facto	141	66.7	24.9	8.4	2.8
Married	1980	87.5	10.5	2.0	39.8
Separated	394	43.2	40.3	16.5	7.9
Divorced	786	52.5	37.2	10.3	15.8
Widowed	191	75.4	15.7	8.9	3.8
Remarried					
Divorced	357	84.3	13.7	2.0	7.2
Widowed	51	86.3	11.7	2.0	1.0
De Facto	192	69.3	27.1	3.6	3.9
Total	**4974**	**69.8**	**24.4**	**5.8**	**100**

From Table 4.1 it is evident that:

- The divorced and separated have much lower rates of homeownership than continuously married couples.
- The divorced and separated have homeownership rates very similar to the single never married group.
- Divorcees who have remarried exhibit rates of homeownership very similar to that of married couples who have never been through a separation or divorce.

[29] A re-marriage occurs when one or both partners have been married before. In 1990 there were 0.9 re-marriages for every divorce. By the end of the decade there were 0.7 re-marriages for every divorce. Details are:

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Divorces '000	41.4	42.6	45.6	45.7	48.4	48.3	49.7	52.5	51.3	51.4
Re-marriages '000	38.1	37.0	37.6	37.3	36.1	35.6	35.6	35.6	36.8	37.8

Source: Australian Social Trends (2003) ABS Cat. No. 4102.0, table 2

[30] Women comprise 82.7 per cent of all widows and widowers. We use the term 'widows' throughout to refer to both female and male widows and widowers.

- Widows have homeownership rates somewhat lower than those of the continuously married, but much higher than those of divorcees and the separated.

So the divorced and separated come to 'look like' the single never married group in terms of housing tenure status. On the other hand divorcees who remarry come to 'look like' married couples that have never divorced or separated.

In Table 4.2 we ask whether these findings hold for all age cohorts in the mature age spectrum. The main findings are:

- The divorced and separated have much lower rates of homeownership (as compared to continuously married couples) regardless of age.
- Divorcees who remarry have rates of homeownership that converge on those of the continuously married as age increases.
- Those aged between 35 and 54, currently in De Facto relationships and have never been married have home ownership rates intermediate between singles who have never married and currently married couples.
- It is impossible to draw inferences for widows because of small sample numbers.

It seems from Tables 4.1 and 4.2 that divorce and separation has sizeable and adverse impacts on housing tenure status. These effects appear to be permanent if there is no re-marriage. However, if a divorcee remarries it seems that the negative impact is reversed and remarried couples tenure status mirrors that of continuously married couples. This suggests that as far as tenure status is concerned, there is no evidence of hysteresis effects. Care must be taken when interpreting these findings. Continuously married couples are likely to be younger at date of marriage, as compared to re-married couples at date of re-marriage. Thus the second partner of a divorcee, who re-marries, is likely to be older than the partners of a single entering a continuous marital relationship. The older partner will have had more time to accumulate wealth, and is more likely to have attained homeownership. This age effect could account for the failure to detect hysteresis effects. But on holding age constant, hysteresis effects might be evident. Multivariate statistical techniques are used to address this issue (see section 4.3 below).

Table 4.2 Mature Age Australians: Tenure Shares by Relationship History and Age Band

	35-44				*45-54*				*55-64*			
	N	*Owner*	*Rental*	*Public*	*N*	*Owner*	*Rental*	*Public*	*N*	*Owner*	*Rental*	*Public*
		%	*%*	*%*		*%*	*%*	*%*		*%*	*%*	*%*
Never Married												
Single	525	43.5	47.4	62.2	240	54.2	35.4	10.4	117	61.6	31.6	6.8
De Facto	110	62.8	32.8	4.5	29	79.3	13.8	6.9	2	100.0	0.0	0.0
Married	868	83.9	15.0	1.1	647	92.1	6.5	1.4	465	87.9	7.9	4.1
Separated	148	35.8	53.3	10.8	137	55.5	35.0	9.5	109	53.2	29.4	17.4
Divorced	235	45.1	48.1	6.8	319	53.6	37.9	8.5	232	58.6	25.0	16.3
Widowed	7	57.1	28.6	14.3	47	82.9	10.6	6.4	137	73.7	16.8	9.5
Remarried												
Divorced	104	75.0	20.2	4.8	149	87.2	12.1	0.7	104	89.5	9.6	0.9
Widowed	8	87.5	0.0	1.0	15	73.3	20.0	6.7	28	93.0	7.0	0.0
De Facto	39	51.3	48.7	0.0	96	71.9	22.9	5.2	57	77.2	19.3	3.5
Total	**208**	**63.2**	**31.9**	**4.9**	**1663**	**74.3**	**20.5**	**5.2**	**1227**	**75.0**	**16.9**	**8.1**

Table 4.3 Owner-Occupation Rates by Marital History: Income Units 35-64 Years

Year of Marriage		*1955-64*	*1965-74*	*1975-79*	*1980-84*	*1985-89*	*1990-94*	*1995-99*
Married	per cent	0.877	0.923	0.903	0.89	0.842	0.843	0.777
	N	196	505	258	334	336	223	99
Remarried	per cent	0.872	0.869	0.879	0.88	0.667	0.706	0.0
	N	55	153	66	49	39	17	0
Divorced, widowed or separated	per cent	0.571	0.616	0.599	0.5	0.511	0.465	0.478
	N	259	575	256	252	272	155	46
Male (Divorced, widowed or separated)	per cent	0.657	0.604	0.569	0.54	0.46	0.479	0.666
Female (Divorced, widowed or separated)	per cent	0.542	0.624	0.625	0.45	0.563	0.441	0.211
Total	**N**	**511**	**1233**	**580**	**635**	**647**	**395**	**145**

Table 4.3 presents owner-occupation rates by year of first marriage for income unit heads. The married group in the first row are those income units who remain in their first and only marriage. The remarried group are income units who have experienced at least one household dissolution event and have re-married. The final group are those income units who are divorced, widowed or separated at the time of the first wave of the HILDA Survey.

Some interesting observations can be made on the basis of the figures in Table 4.3:

- No matter which marriage cohort we examine the homeownership rate is lower among those who are divorced, widowed or separated. Homeownership rates for the divorced, separated and widowed do not converge to the rates of the married over time.
- Among the earlier cohorts, those who have remarried have very similar rates of homeownership to their cohort peers who have not experienced some form of household dissolution. Among later cohorts (1985-89 and 1990-94) those who remarry appear to have lower rates of homeownership, but sample numbers in these cohorts are small.
- Males, who have been divorced, widowed or separated exhibit rates of homeownership that do not systematically differ from females with the same history of household dissolution.[31]

This last finding is somewhat surprising. According to Sheehan and Hughes (2001), women typically receive two-thirds of a divorced Australian couple's basic assets (which includes property), though their share of non-basic assets (e.g. liquid financial assets) is much lower at one-fifth. Accordingly we might expect female divorcees to have higher rates of homeownership, particularly in the early years following divorce.

That these patterns are not evident in the data could be due to:

- Male divorcees ability to leverage home purchase given a relatively healthy earnings profile, and/or
- Female divorcees subsequently losing home ownership status because their income is insufficient to meet housing costs.

Subsequent waves of the HILDA Survey (wave 2 includes a wealth module) will permit exploration of this important issue.

4.3. Econometric Model Estimates

The bivariate analyses of section 4.2 are vulnerable to the objection that variables related to divorce, separation and re-marriage could account for our findings. Thus differences in homeownership rates are wrongly attributed to divorce and separation, when they are really due to related factors that are driving tenure outcomes. Multivariate statistical techniques have been employed to estimate the contribution of determinants of the probability of being observed as a homeowner. The determinants include variables representing earnings, geographic differences in median house prices, the annual economic cost of homeownership relative to the market rents of private rental housing, marital and relationship histories, and a range of socio-economic characteristics. The list of variables included in the model and their

[31] In four cohorts males have higher homeownership rates, and in three cohort's females have higher homeownership rates. . A separate analysis shows that the presence or otherwise of children makes little difference to the tenure outcomes of divorcees. The homeownership rates of divorcees with children are marginally below that of divorcees with no children.

definitions are listed in Appendix 1. Technical details as well as a more wide-ranging presentation of the findings are presented in Wood, Watson and Flatau (2003).

The statistical technique adopted is capable of predicting the probability that an income unit will be a homeowner.

Table 4.4 shows the probabilities of becoming a homeowner according to one's relationship history. The regression model estimates indicate that relative price and permanent income variables are statistically significant and their signs accord with our expectations.[32] An increase in the price of owning relative to renting leads to a fall in the probability of homeownership. An increase in permanent income relative to house prices will lead to an increased probability of homeownership. Current and past relationship status is also a significant determinant of tenure. As expected, being single, separated or divorced reduces the probability of being a homeowner. The probability of homeownership when single is 18 percentage points lower than it is for a continuously married couple. The probability is 21 percentage points lower for those who have separated and 9 percentage points lower for those who have been divorced. The relatively poor outcome for those who have separated is not unexpected. Separation is normally a transitory state between marriage and divorce. It is also only at the time of divorce that distributions of assets enforced by the law occur. As such housing arrangements are likely to be temporary for those who are separated.

In the sample used for estimation of our model, 78.9 per cent of income units are observed as owner-occupiers. Table 4.5 presents the results of assigning income units to a tenure based on the predicted probability of homeownership. The model improves on a random assignment of income units to tenures, correctly assigning 68.2 per cent of all rental tenants and 94.3 per cent of all owner-occupiers. Overall, the model assigns 88.8 per cent of all income units to their observed tenure.

Table 4.4 Estimated Probabilities of Homeownership by Relationship History*

Relationship History	*Probability*
Continuously Married	0.937
Single	0.837
Defacto	0.937
Defacto (one member previously divorced)	0.814
De facto (both members previously divorced)	0.804
Remarried (one member previously divorced)	0.937
Remarried (both members divorced)	0.937
Separated	0.821
Divorced	0.850
Widowed	0.937

* Calculated at sample means for the independent variables. Probability is calculated by solving the odds ratio for the probability of homeownership.

[32] Detailed results are available from the authors on request.

Table 4.5 Classification Table

	Rental Tenant/ Rent-free *N*	*Homeowner* *N*	*Percentage Correct*
Rental Tenant/ Rent-free	386	180	68.2
Homeowner	121	1997	94.3
Overall Percentage			88.8

While separation and divorce reduce the probability of homeownership there is little evidence of statistically significant effects on homeownership probabilities of past marital dissolution once people have entered into a new relationship. With the exception of the coefficient on de facto relationships where one member has been previously divorced, the estimated effects are statistically insignificant. This suggests that the forming of new relationships tends to redress tenure changes that result from marital relationship breakdowns.

The estimated coefficients on the length of current relationships, time since divorce or separation, and the period of time between divorce and entering a new relationship are statistically insignificant. It would seem that hysteresis effects do not accompany divorce and subsequent remarriage. The loss of wealth on divorce and any reduced rate of wealth accumulation appear to be offset by a trading-up effect, in which divorcees remarry partners that are wealthier than their first partner.

Both a larger number of siblings and having immigrant parents reduce the probability of homeownership. These variables were included in the model to proxy for the receipt of gifts and/or inheritances from one's parents on the basis that these could be used to meet down payment constraints. The results suggest that coming either from a larger family, or a family that is establishing itself in Australia, reduces the probability of receiving financial assistance to aid transition into or retention of homeownership. Finally, age has the expected positive and statistically significant impact on homeownership outcomes. People who have had the opportunity to accumulate financial assets over longer periods are more likely to attain homeownership.

4.4. Conclusion and Policy Implications

Tenure transition models emphasize the role of liquid assets in overcoming down payment constraints that impede access to homeownership. Marriage plays an important role in boosting the accumulation of liquid assets, and is one reason why marriage and the transition into homeownership are correlated. Divorce is an adverse shock that can erode a rental household's stock of liquid assets and make first transition into homeownership more difficult. It can also leave homeowners in a financially precarious position that results in loss of their homeownership status. These adverse impacts on homeownership prospects could be reversed on remarriage if a divorcee's new partner helps replenish liquid assets to levels necessary to meet down payment requirements, or is a homeowner who can restore that status for the divorcee.

We estimate a tenure choice model that includes relative price and permanent earnings variables, but also adds variables that capture households' different capacities and opportunities to accumulate liquid assets. Of particular interest in the present chapter are those variables representing household formation and dissolution. Our principal findings are:

- Divorcees have a 9-percentage point lower probability of homeownership in comparison to the continuously married. But household dissolution due to the death of a partner does not impact on the homeownership prospects of the widow.
- Separation has a large negative impact on homeownership prospects. Separated individuals have a 21-percentage point lower probability of attaining or retaining homeownership prospects as compared to the continuously married.
- Remarriage seems to offset these negative impacts. On remarriage couples have the same likelihood of homeownership as continuously married couples, and the length of time intervening between divorce and remarriage is irrelevant. Hysteresis effects are absent and this may have important policy implications depending upon trends in remarriage rates (see below). A likely explanation for the absence of hysteresis effects is that divorcees remarry to partners who are wealthier than their first partners.

These results have important policy implications. Though we find that divorcees have poorer prospects of achieving or retaining homeownership status the absence of hysteresis effects might mitigate concerns about the longer-term impacts of rising divorce rates on Australia's high level of homeownership. A critical variable is the re-marriage rate. In 1990 there were 41,400 divorces in Australia and 38,100 re-marriages involving couples where at least one partner has been previously divorced. By 1999 the number of divorces had risen to 51,400 despite a declining number of first marriages over the same period (78,900 in 1990 to 73,700 in 1999). Also the number of re-marriages declined slightly to 37,800 by 1999. These figures show that in the 1990s marriages were becoming less permanent, and it would appear as if the propensity to re-marry declined during the 1990s[33].

The implication is that an increasing number of divorcees will remain unmarried, and if this eventuates there will be a negative impact on Australia's high levels of homeownership. From a policy perspective there would seem to be a potentially important role for the Housing Lifeline Proposal that is designed to address the adverse impacts on homeowners of short-term shocks to income and/or wealth (Menzies Research Centre, 2003).

[33] Censoring problems prevent a firm judgement on the propensity to remarry. The figures in this paragraph are sourced from Australian Social Trends (2003) ABS Cat. No. 4102.0, table 2.

5. HOUSING CAREERS AND UNEMPLOYMENT IN AUSTRALIA

5.1. Introduction

In this chapter, we turn our attention from an examination of the drivers of housing outcomes to the impact that housing tenure outcomes themselves have on the labour market.

The housing to labour market causal link was first examined in the UK in relation to the impact that council housing has on unemployment (e.g., Hughes and McCormick, 1981, 1985 and McCormick, 1983). More recently, Andrew Oswald (1996, 1997) has argued that home ownership causes unemployment. He concludes from a series of empirical analyses based on OECD data that if the rate of home ownership rises by five percentage points, unemployment will rise by one percentage point, an effect so large that it would place home ownership at the centre of explanations for the rise in the natural rate of unemployment since the 1960s in OECD countries. Oswald (1996, p.2) suggests '[M]ass unemployment exists because of a secular change that has happened in all but a few Western housing markets – the rise of home ownership and the decline of private renting'.

Two straightforward rationales have been offered for the Oswald result. First, home owners face higher selling and buying costs compared to renters when they consider a move to a new location to accept a job offer. As a result, home owners may be more likely to become unemployed (may be less willing to accept job transfers to or job opportunities in distant locations) and may remain unemployed longer, given their greater reluctance to search in distant locations. Second, home owners may, through their voting power in local government, enforce restrictive planning and land development laws depressing employment options and thus increasing unemployment.

The purpose of the present study is to test the Oswald thesis for Australia. We examine the Oswald thesis using both individual-level data and locality-level data. The individual-level analysis utilises the Australian Bureau of Statistics (ABS) Survey of Income and Housing Costs (SIHC) Confidentialised Unit Record Files (CURFs) for the years 1994-95 to 1997-98. While the data is now rather dated, the SIHC micro datasets are based on a sample of individual respondents and are particularly strong both on the labour market position of the respondents and their housing status.

The results presented in this report suggest that the Oswald thesis is rejected for Australia. While the logic of Oswald's argument seems impeccable it fails to recognise positive benefits from homeownership and importantly fails to take account of the heterogeneity of the homeowner and rental markets. Owners with weak equity positions (with large mortgages) require quick re-employment to enable them to continue making their mortgage payments.[34] The presence of public housing with tenants paying long-term below-market rents also confounds the analysis. Just as it has been shown that significantly leveraged owners with below-market financing rates are reluctant to move if that requires giving up their below-market financing (Hendershott and Hu, 1982 and Quigley, 1987), public housing tenants are likely to be reluctant to give up their below-market rents.

[34] Moreover, homeowners with large mortgages can be subject to negative equity problems resulting in significant housing lock-in effects (see, for example, Henley, 1998).

5.2. The Housing Tenure-Unemployment Nexus — Individual Micro-data[35]

5.2.1. The Data

Our analysis of the effects of housing tenure on unemployment outcomes is based on the Australian *Survey of Income and Housing Costs* (SIHC) Confidentialised Unit Record Files for the four consecutive years 1994-97 years. Roughly 13,500 persons in private resident dwellings are surveyed in each of the four years leading to a sample of 56,370 individual respondents in the pooled 1994-1997 SIHC. These annual surveys were conducted broadly under the same sampling conditions and in a period of stable economic growth in Australia. We have inflated all nominal values in each of the SIHC data sets to their 1997 equivalents using the Consumer Price Index values for Australia in the relevant years.

The SIHC data set is cross-sectional. However, respondents to the SIHC are drawn from Australia's Monthly Population Survey (MPS), which tracks an individual's labour force outcomes during an eight- month window. The MPS labour force data for each individual is linked by the ABS to the rich SIHC questionnaire containing housing-related questions (housing tenure, dwelling structure and location, estimated house value, housing loans and repayments, housing costs, and year of purchase), labour market questions (e.g., wages, labour force position), socio-demographic information (e.g., age, education, country of birth, family type) and detailed income data.

5.2.2. Home Ownership and Unemployment

Under Oswald's thesis, homeownership leads to higher unemployment. We can test this hypothesis both directly and indirectly. The direct test asks whether home owners exhibit higher unemployment rates than non-homeowners *all other things being equal*. In other words, we control for the economic and social determinants that influence unemployment outcomes. The indirect test is based on the fact that the key transmission mechanism through which homeownership is expected to lead to higher unemployment — the relative immobility of homeowners — should also lead to longer durations of unemployment as well. Hence, under the Oswald thesis we would expect that home ownership would result in longer durations of unemployment.

In both our direct and indirect tests we distinguish between five housing tenure states: (1) outright owners, (2) owners with mortgages, (3) private market renters (the default category in the regressions), (4) public renters and (5) free renters. We estimate unemployment incidence and unemployment duration models incorporating these differentiated tenure positions.

Table 5.1 reports separate results from probit models for males and females on the effect housing tenure has on the probability of being unemployed after controlling for a range of confounding influences including human capital effects. Other than the predicted replacement rate (the ratio of predicted unemployment benefits to the expected wage of an individual), the impact of these influences on the probability of unemployment has been omitted from the table. The housing tenure variables in Table 5.1 are all dummy variables and so the stated marginal effects refer to the impact on unemployment of the discrete 0 to 1 jump (from private renting to the housing tenure in question).

[35] The reader is referred to our (Flatau, Forbes, Hendershott, and Wood) NBER Working Paper 10021 *Unemployment and Home Ownership: The Roles of Leverage and Public Housing* http:/www.nber.org/papers/w10021 for further details on the modelling strategy and our results.

Table 5.1 Probit Model: Probability of Being Unemployed, Males and Females, Tenure Effects, 1993-94 to 1996-97 SIHC

	Males			*Females*		
	Coef.	*Sig.*	*DF/dx*	*Coef.*	*Sig.*	*DF/dx*
Constant	-1.592	0.000		-1.487	0.000	
Outright owner	-0.371	0.000	-0.041	-0.522	0.000	-0.051
Owner with a mortgage	-0.656	0.000	-0.073	-0.624	0.000	-0.066
Public renter	0.728	0.000	0.148	0.336	0.000	0.050
Other renter	0.042	0.340	0.005	0.074	0.164	0.009
Other controls						

Dependent Variable: Currently Unemployed =1, Employed =0

N = 19,223 Males and 14,744 Females. Sample: In the labour force, aged under 65, homeowner and excluding dependent children over 15.

Marginal effects (DF/dx) for dummy variables are calculated as discrete changes as the variable moves from 0 to 1.

The first conclusion we can draw from the results presented in Table 5.1 is that homeownership is associated with a lower probability of unemployment, controlling for confounding factors, relative to private renters. However, the effect is much larger for owners with a mortgage than outright owners. In other words, outright owners are more likely to exit from the unemployment pool than are private renters but mortgagees have an even stronger exit pattern. In stark contrast, public renters are significantly more likely to be unemployed than private renters. Female public renters have a significantly higher probability of being unemployed as compared with female private renters, but the public renter effect is much smaller than in the case of men. The 'other' rental category (the rent free category) also displays a marginally higher unemployment propensity than private renters.

How does housing tenure affect the *duration* of unemployment? To examine this issue we first present unemployment spell 'survival' curves by housing tenure type for males and females. The survival curve plots the cumulative proportion of those who remain in unemployment (i.e., they 'survive' in the state of unemployment) at different monthly points. Unemployment spells may end in a number of ways – to full-time employment, part-time employment and to the not-in the labour force category. By far the most successful exit from a labour market perspective is that to full-time employment and so we focus on this exit form in Figures 5.1 (men) and 5.2 (women) below.

There are a number of striking features of the survival curves presented in Figures 5.1 and 5.2. The first is the steepness of the survival curve in the first two or so months of the 8-month window. This shows that significant numbers of the unemployed exit the state of unemployment quickly. The second striking feature is the diverse survival outcomes evident on a housing tenure basis. Consider first the case of men (Figure 5.1). At one end of the survival curve spectrum lies the survival curve for owners with a mortgage, which exhibit more rapid exit from the unemployment spell than the other housing tenures. At the other end of the spectrum lie the survival curves for public renters, which reveal relatively slow exit from unemployment. In between these two boundaries lie the survival curves of the remaining three tenure categories: owners without mortgages, private renters and the other tenure (rent-free) category. A different pattern is evident for women. Women in the private rental and other rental categories display more rapid exit from unemployment (to full-time employment) than owners with mortgages (see Figure 5.2). This is evidence in favour of the Oswald thesis.

Figure 5.1 Survival Functions, Males, Spells End on Full-time Re-employment

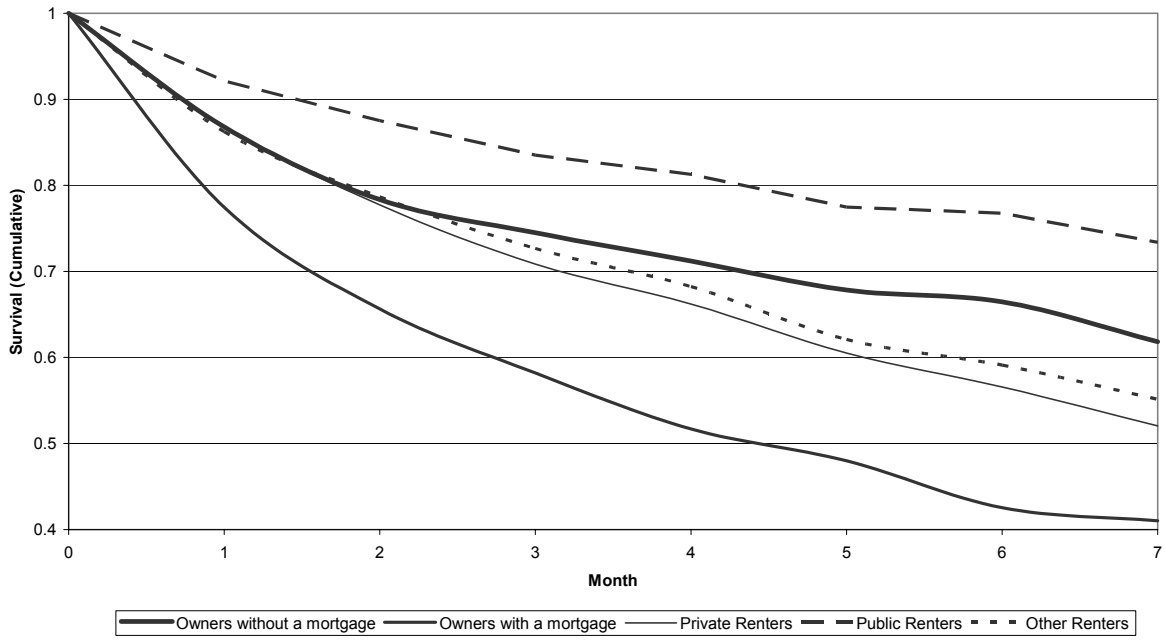
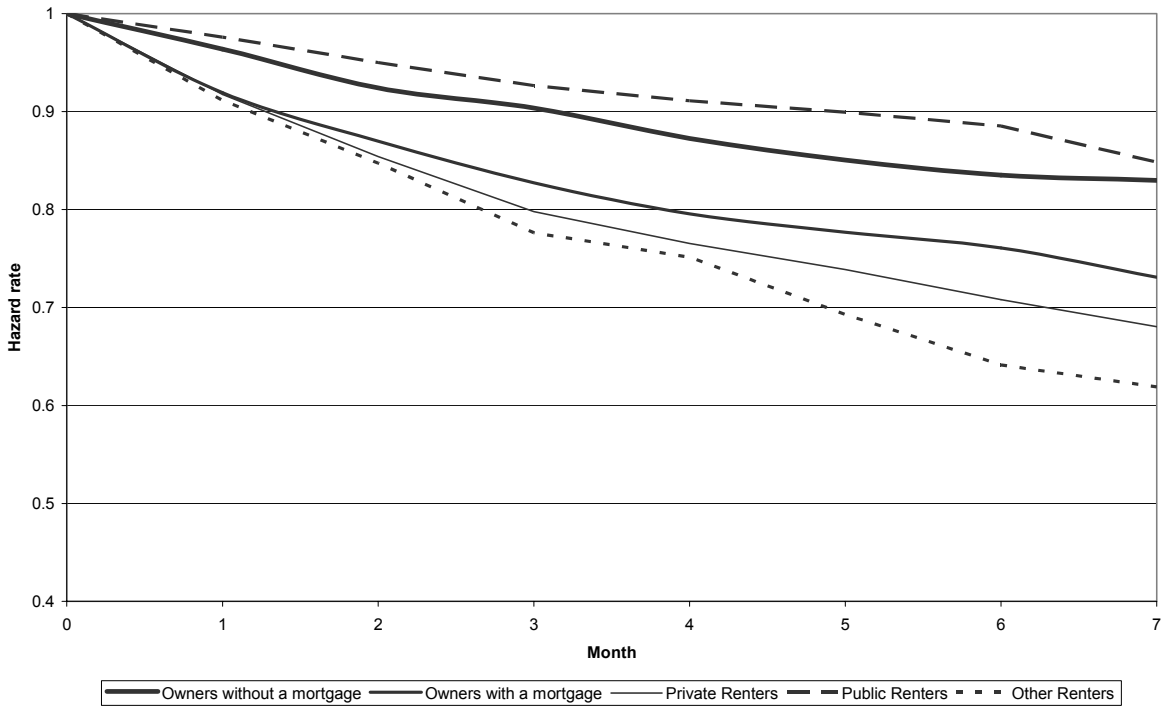


Figure 5.2 Survival Functions, Women, Spells End on Full-time Re-employment



The survival curves displayed in Figures 5.1 and 5.2 do not control for confounding factors. We, therefore, move to formal modelling of unemployment spells. Our results are presented in Table 5.2. For space reasons, we only report the estimated coefficients of the key variables of interest (housing variables and the replacement ratio) and include hazard ratios for ready interpretation. For continuous variables, the hazard ratio gives the percentage increase (if the ratio is greater than one; decrease if less than one) in the hazard rate for a unit increase in the covariate. If the variable is

dichotomous, the hazard ratio gives the risk of exit relative to the default. A hazard ratio greater than one indicates that unemployed people, with the designated characteristic, exit the unemployment state more quickly than the indicated alternative state. If the hazard ratio is less than one, unemployed people with the given characteristic have a greater chance of 'survival' in unemployment than the default category with the degree of lower risk given by the hazard ratio value

As can be seen from Table 5.2, male public renters are likely to exit unemployment to full-time employment far less rapidly than private renters. On the other hand, male owners with mortgages are likely to exit unemployment to employment and especially to full-time employment far more quickly than are private renters. There is no significant impact for outright owners (no Oswald effect).

To test the role of leverage in influencing the exit from unemployment behaviour of homeowners we restrict the sample to homeowners and include the loan-to-value ratio as an explanatory variable (the LVR model). We find that an increase in the loan-to-value ratio significantly increases the 'risk' of an exit from unemployment to full-time employment. We conjecture that these results are due to the potential loss of one's own home owing to an inability to make mortgage payments while unemployed.

Table 5.2 Hazard Models: Spells of Unemployment, Males and Females, Tenure Effects, 1993-94 to 1996-97 SIHC

	Exits to Ft-employment		
	Coef.	*Sig.*	*Hazard Ratio*
WOMEN			
Outright owner	-0.535	0.001	0.586
Owner with a mortgage	0.144	0.282	1.155
Public renter	-0.554	0.008	0.575
Other renter	-0.104	0.412	0.902
Predicted replacement ratio	-1.979	0.001	0.138
Homeowners (LVR model)			
Loan to value ratio	0.556	0.029	1.744
Predicted replacement ratio	-2.927	0.006	0.054
MEN			
Outright owner	-0.170	0.087	0.844
Owner with a mortgage	0.367	0.000	1.444
Public renter	-0.664	0.000	0.515
Other renter	-0.058	0.535	0.944
Predicted replacement ratio	-0.755	0.234	0.470
Homeowners (LVR model)			
Loan to value ratio	0.690	0.000	1.995
Predicted replacement ratio	-3.598	0.015	0.027

Turning to the case of unemployment spells among women, we find that female private renters and owners with mortgages are indistinguishable in terms of the full-employment exit hazard model results. However, both female outright owners and public owners have a sharply lower risk of exit from unemployment than the private rental group. The Oswald effect holds with a vengeance for outright female owners.

5.3. The Housing Tenure-Unemployment Nexus — Locational Data[36]

5.3.1. The Data

We now move on to an examination of the Oswald thesis using locality data. Here we use 2001 Census data at the neighbourhood or Collection District (CD) level.

The Collection District is at the base of the Australian Bureau of Statistics' (ABS) geographical classification structure. The CD is an area designed for 'efficient data collection at census times' (ABS, 2002 p. 4). In terms of population characteristics, the CD is the most homogeneous area unit (conversely, the most heterogeneous area is, of course, the whole country). The greater homogeneity within CDs results in sharper distinctions between units, which tend to become more blurred as the geographic unit of analysis increases in size.

In Oswald's empirical models, all homeowners are grouped together and a rate of homeownership is derived for a region or country and compared and modelled against the unemployment rate (the dependent variable). The alternative approach Oswald takes is to use a private rental rate. In both cases, he does not differentiate between other housing tenure forms.

For the purposes of the current research exercise, we have differentiated between the following tenure categories:

<u>Home owners</u>

- Outright homeowners.
- Home purchasers (general).
- Home purchasers (rent-buy scheme) (a very small sector).

<u>Renters</u>

- State housing authority sector.
- Real estate agent private rental market sector (which acts as the default category).
- 'Other' rental category which comprises the employer (government and private) rental sector and other specified private rental arrangements (non-real estate private rental agreements).
- Rent: Rent sector not stated.

<u>Other tenures</u>

- Rent free, life tenure, and other tenure type.
- No tenure type specified.

[36] Lisel O'Dwyer and Lee Russell-Brown together with Paul Flatau, Patric Hendershott, Richard Watson and Gavin Wood are the authors for this section of the final report.

In each case, the relevant tenure variable included in the model represents the proportion of dwellings in a locality that are in the specified tenure category. In addition to housing tenure controls, our estimated model of the unemployment rate (the dependent variable is the rate of unemployment in a specific locality) includes a set of controls for key socio-demographic forces thought to influence unemployment rates. These controls are established for each spatial unit and represent the proportion of the relevant total in each locality in a designated category. [37]

5.3.2. Results

Table 5.3 presents results of an Ordinary Least Squares (OLS) model of locational unemployment rates at the CD level of analysis for the 2001 Census. Table 5.4 undertakes the same analysis but at four different regional levels: capital city (21,669 CDs with full data), inner regional (7,870 CDs), outer regional (4,967 CDs), and remote and very remote (1,698 CDs). Results for the control effects are not included in the table. In undertaking a disaggregated locational analysis, we wish to know whether the relationship between housing tenure and unemployment found at an all-Australian level also applies for each regional area or whether differences between regional levels in terms of the housing tenure and unemployment relationship can be found.

Across all regions, the estimated relationship between the rate of home ownership and the unemployment rate is negative and significant. The default against which the estimates should be judged is the proportion of real-estate rental properties let in a given CD. Our results stand in sharp contrast to Oswald's findings of a positive and significant relationship between homeownership and unemployment (implying that a rise in homeownership is associated with a rise in unemployment). As set out in Table 5.3, the coefficient estimate for outright owners is –0.011. Hence, a 1 percentage point increase in the proportion of dwellings in a locality which are owned outright (and a corresponding drop of one percent in dwellings that are let by real estate agents) is associated with a reduction, all other things being equal, in the unemployment rate of 0.11 percentage points. Importantly, and in line with our individual-level results, the association between home ownership and unemployment is even stronger in the case of home purchasers. The coefficient on the 'House being purchased' term is -0.052 or nearly five times the outright owner effect.

In terms of non-home ownership tenure categories, a significant positive relationship between the proportion of dwellings in a locality in public rental housing and the unemployment rate is evident (see Table 5.3) consistent with the individual-level results set out in the previous section. The same relationship exists for the 'Other rental' category suggesting perhaps that the non-real-estate private rental market samples from a less labour-market successful cohort of applicants. Conversely, a significant negative relationship exists between unemployment and the 'other tenure' category.

[37] They include age bands (15-19, 20-24); Born overseas (by region of birth); Language spoken; Indigenous status; marital status (married, separated, divorced, widowed, never married); Education (postgraduate degree, graduate diploma and certificate, bachelor degree, advanced diploma, certificate); and Family status (family with children, family without children, one parent family).

Table 5.3 OLS Model of the Unemployment Rate, Census Districts, 2001 Census

	Coefficients	*t-statistic*	*Significance*
(Constant)	0.023	1.327	0.184
Fully owned house	-0.011	-2.987	0.003
House being purchased	-0.052	-12.802	0.000
Purchased rent buy scheme	0.004	0.210	0.834
Rent state housing	0.073	18.584	0.000
Rent not stated	-0.030	-6.717	0.000
Rent other	0.127	4.160	0.000
Other tenure type	-0.098	-17.828	0.000
Tenure type not stated	-0.075	-9.505	0.000
Other Controls			

Dependent Variable: Unemployment rate; Independent Variables: Proportion of the CD's relevant population in a particular category. The default for the housing tenure variables is the proportion of dwellings in the relevant CD in the real estate private rental market.
Observations: 36,125
Adjusted R squared: 0.474

We turn now to our sub-regional analysis (see the summary results in Table 5.4). At the capital city level we find that the home ownership (owner and purchaser) and public rental effects are even stronger than at the aggregate level. However, as we move out from the capital cities, the home ownership effects become much weaker. At the inner regional level, the home purchaser effect is still negative and significant implying that home purchasers are less likely to be unemployed than the default private rental tenant. However, the outright owner effect is insignificant, while at the outer regional level, the Oswald effect is apparent particularly in the case of outright owners. Now an increase in the proportion of dwellings that are owned is associated with an increase in the unemployment rate with the effect relatively strong for outright owners but weak for purchasers. This suggests that transaction cost and mobility forces may have a greater effect at the outer regional level than at the capital city level.

5.4. Conclusion and Policy Implications

In this chapter we have examined the impact that housing tenure outcomes have on the labour market and in particular the Oswald thesis that higher homeownership rates leads to higher unemployment. The key explanation offered by Oswald for this outcome is that homeowners who lose their job face high housing-related transaction costs if they take the option of moving to another region to obtain employment. There is obvious truth in this. However, it is also true that a range of housing-related channels link housing and labour markets. One of these is that homeowners with large mortgages might be more willing to accept wage cuts and/or ratchet up work effort (productivity) in order to remain employed or to exit unemployment quicker than renters (or owners without large mortgages) because of the requirement to meet mortgage repayments to save their house. This housing-labour link suggests that we should expect significant differences within the homeowner group in terms of labour market behaviour.

Table 5.4 OLS model of the Unemployment Rate, Census Districts, by Region, 2001 Census

	Major Cities			*Inner Regional*			*Outer Regional*			*Remote and Very Remote*		
	Coeff.	t-stat.	Sig.	Coeff.	t-stat.	Sig.	Coeff.	t-stat.	Sig.	Coeff.	t-stat.	Sig.
(Constant)	0.073	3.824	0.000	-0.068	-1.379	0.168	-0.317	-4.792	0.000	0.234	2.036	0.042
Fully owned house	-0.035	-9.440	0.000	0.002	0.276	0.782	0.070	5.080	0.000	0.013	0.230	0.818
House being purchased	-0.066	-16.228	0.000	-0.055	-6.427	0.000	0.028	1.771	0.077	0.006	0.084	0.933
Purchased rent buy scheme	-0.010	-0.389	0.698	0.091	1.995	0.046	0.162	2.534	0.011	-0.007	-0.078	0.938
Rent state housing	0.083	22.259	0.000	0.097	10.990	0.000	0.051	3.054	0.002	-0.022	-0.353	0.724
Rent not stated	0.018	3.664	0.000	-0.030	-3.079	0.002	0.000	0.007	0.994	-0.039	-0.680	0.497
Rent other	0.064	1.873	0.061	-0.100	-1.606	0.108	0.229	2.931	0.003	0.336	1.871	0.062
Other tenure type	-0.030	-3.689	0.000	-0.107	-7.892	0.000	-0.030	-1.731	0.084	-0.044	-0.777	0.437
Tenure type not stated	-0.049	-5.110	0.000	-0.027	-1.438	0.150	0.037	1.498	0.134	-0.051	-0.860	0.390
Other controls												
Dependent Variable: Unemployment rate; The default for the housing tenure variables is the proportion of dwellings in the relevant CD in the real estate private rental market.												
Observations:	21,669			7,870			4,888			1,698		
Adjusted R squared:	0.623			0.573			0.424			0.147		

Likewise, Oswald's thesis ignores the role of public housing and rent-free housing. Transaction costs are not the key driver of potential adverse labour market outcomes as in the case of homeowners; rather the key to the poor labour market outcome is the potential loss of secure low-rent tenancies that are, in the main, location-specific. What this implies is that unless account is taken of homeowner leverage and multiple rental categories, we are unlikely to obtain an accurate and comprehensive overview of how housing affects the labour market.

Our analysis of the probability of being unemployed and of the duration of unemployment spells is based on the pooling of four consecutive annual surveys of the *SIHC* during the mid-1990s. In the duration analysis we distinguish carefully between the labour force states that a person may exit to (the competing risks they face). We therefore, distinguish between an exit from unemployment to employment and from unemployment to out of the labour force.

A variety of estimations are performed. In terms of the probability of being unemployed, we find that owners have worse employment outcomes that private renters, and in most cases we find evidence of the opposite – higher homeownership causes lower unemployment. Further, owners have significantly quicker exits from unemployment than do private renters, male to full time employment and females out of the labour force.

Male homeowners – and especially those *owners with mortgages* display a lower probability of being unemployed and are more likely to quickly re-enter a job after becoming unemployed. The evidence in support of the Oswald hypothesis is limited. Outright owners, especially females, have significantly slower exits from unemployment, especially to full time employment. Homeowners in outer regional areas are also more likely to be unemployed controlling for other influences. In the latter case, this may reflect the fact that homeowners in these circumstances are constrained in searching for jobs elsewhere through high transaction costs of moving and high home prices and housing costs in potential destination localities with higher perceived job opportunities.

Just as the degree of leverage affects homeowners' probability of becoming unemployed and their duration if unemployed, the rental type affects renters' probabilities of unemployment and duration of unemployment. Both public housing tenants and those living rent-free are more likely than private renters to become unemployed, and public renters who become unemployed have longer durations than do private or rent-free renters.

There are a number of important policy implications from our research on housing tenure and unemployment.

First, governments should not introduce policies to deter homeownership on the misguided belief that higher rates of homeownership directly cause higher unemployment. The real point of Oswald's work, of course, remains relevant, namely, that high transaction costs may act to deter labour mobility and that policy makers need to be aware of the potentially adverse impacts of such transaction costs on the efficiency of the labour market. We would simply argue that such transaction costs appear not to have a strong direct impact on the Australian labour market dominated as it is by capital city labour markets which exhibit only small differences in unemployment rates.

Second, our research points to strong public housing unemployment links. Caution must be exercised, however, when interpreting these results. Many public housing tenants experience a range of disadvantages which are not directly controlled for in our research (because they remain unmeasured in the relevant dataset). These

disadvantages enhance the ability of households to gain subsidised public rental housing. Moreover, given public housing eligibility rules, labour market success stories do not remain in public housing tenancies for long. This biases the effect of public housing itself on unemployment (by default we pick up poor labour market effects from public housing). Nevertheless, it remains of considerable importance to examine both how rent subsidies may impact on work disincentives and how other dimensions of public housing such as security of tenure may improve labour market outcomes for public housing tenants. It is important to unbundle the various links that connect public housing assistance and employment outcomes. In the following chapter we pick up on the rent subsidies and work disincentives.

6. HOUSING ASSISTANCE PROGRAMS AND WORK DISINCENTIVE EFFECTS[38]

6.1. Introduction

In chapter 5 we suggested that some public housing tenants and those living in rent-free accommodation could be immobile because they are reluctant to give up long-term below market rents. These lock-in effects could translate into higher rates of unemployment because the unemployed in such housing arrangements are averse to changing residential location in order to take advantage of employment opportunities elsewhere, if suitable employment opportunities exist elsewhere.

These lock-in effects are but one of a range of channels linking housing tenure and labour markets. Another channel is work disincentives and in this chapter we explore whether housing subsidies in private rental and public rental housing contribute to work disincentives. This is a particularly important issue in view of our chapter 5 findings, which show that public housing residents (but not rent-free residents) have a higher likelihood (and duration) of unemployment spells after controlling for socio-economic and demographic factors. The difference in labour market outcomes between public housing and rent-free residents suggests that lock-in effects are not a root cause of inferior labour market outcomes.

In this chapter we offer measures of work disincentives – poverty and unemployment traps – by housing tenure.[39] Poverty traps deter small upward adjustments in work effort because of increasing tax liabilities and loss of government benefits. Effective marginal tax rates (EMTRs) are commonly invoked to measure poverty traps (see section 6.3 below). Unemployment traps deter transitions into the employed labour force because disposable incomes when not working replace a large proportion of disposable incomes when working. Replacement Ratios (RRs) are commonly invoked to measure employment traps (see section 6.4 below).

We begin this chapter by discussing the data sources and methods employed in our measurement exercises. This is followed by a review of relevant Australian studies and a presentation of our main findings. A final section presents conclusions and policy implications.

6.2. Data and Tax-Benefit Modelling

The dataset used in our modelling of work disincentive effects is the *1996-97 Survey of Income and Housing Costs* (*SIHC*), conducted by the Australian Bureau of Statistics (ABS) from July 1996 to June 1997. The survey provides detailed information on the income and housing circumstances of persons, income units and households throughout Australia.

The main tax parameters of the 2001-02 Australian tax system are modelled using AHURI-3M, a microsimulation model of the Australian housing market (see Wood, Watson and Flatau, 2003). The principal components of the tax system included in the model are:

[38] A longer more detailed version of this chapter is available from the authors on request. Rachel Ong and Gavin Wood are the authors of this chapter.

[39] The modelling exercise in chapter 5 uses a measure of unemployment traps, but it does not take into account the effect of public rental subsidies.

- The personal income tax schedule;
- The Medicare levy which is payable above a lower income limit. Families and persons eligible for the Senior Australians or Pensioner tax offsets are eligible for concessions[40];
- The Superannuation surcharge which is a levy on surchargable contributions when adjusted taxable income (ATI)[41] is higher than the minimum surcharge threshold;
- Tax offsets or rebates that reduce income tax liabilities. Tax offsets that are modelled include Dependent Spouse, Senior Australians, Pensioner, Beneficiary, Superannuation Pension or Annuity, Low Income and Franking tax offsets.

All the main federal government benefit programs are incorporated in the model, and this includes:

- The core means-tested benefits including pensions, allowances, Special Benefit, Parenting Payment, Austudy and DVA Service Pension;
- The core non-means-tested benefits including Carer Allowance, DVA War Widow's Pension and DVA Disability Pension;
- The supplementary benefits including Rent Assistance (RA), Family Tax Benefit (FTB), Pharmaceutical Allowance (PhA) and DVA War Widow's Income Support Supplement. Supplementary government benefits can only be received by those eligible for core government benefits. The exception is FTB, which can be paid on its own to families with dependent children.

The government benefit parameters are the parameters applicable on 1 July 2001. The parameters are deflated to 1996-97 prices using a CPI deflator of 1.131.

In addition to these federal government programs, the microsimulation model incorporates concessional or rebated public housing rents into calculations of EMTRs and RRs. Thus an increase in income will generally result in an increase in concessional rents for public housing tenants, and the increase in rent is treated as equivalent to a reduction in government benefits (or increase in tax liabilities).

6.3. Effective Marginal Tax Rates (EMTRs)

The EMTR is the proportion of each additional dollar of private income above current levels that a person does not receive due to increased tax liabilities or reduced social security payments (Barber et al., 1994). High EMTRs can blunt both work and savings incentives. Recent EMTR studies include Whitlock (1994), Barber et al. (1994), Harding and Polette (1995), Polette (1995), Beer (1998), Beer and Harding (1999), Flatau and Wood (2000), Beer (2003), and Hulse et al. (2003). The Australian literature on EMTRs generally shows that relatively high EMTR are concentrated among;

- Wage and salary earners in the lower to middle income ranges.
- Families with children that experience reductions in FTB (A) when income rises, and
- Sole parents

[40] The Medicare levy surcharge is not modelled in the microsimulation model as the *1996-97 SIHC* does not contain information on whether individuals have private patient hospital cover or not.

[41] The adjusted taxable income for superannuation surcharge purposes is generally the sum of taxable income and surchargeable contributions.

The New Tax System appears to have made little difference to the incidence of high EMTRs. Beer (2003) compares the EMTR distributions between 1997 and 2002, and finds little change in the EMTR distributions before and after the introduction of the new tax system. Key studies in the present context are Flatau and Wood (2000) and Hulse et al. (2003), which examine the impact of housing assistance on EMTRs. Hulse et al. (2003) show that unemployed private renters experience high EMTRs of over 60 per cent across a wider range of income than non-private renters, regardless of family type, because of the withdrawal of RA after allowance or FTB (A) entitlements cuts out.

6.3.1. Calculating EMTRs

When person *i* in income unit *x* is offered a one dollar per week increase in private income the EMTR formula is given by;

$$E_x = 1 - \left[\Delta Y_x^d / \Delta Y_i^p\right]$$

where E_x = EMTR of income unit *x*

ΔY_i^p = change in annual private income of person *i* in income unit *x*, that is, $52

ΔY_x^d = change in annual disposable income of income unit *x*

The EMTRs are calculated on an income unit basis. This is because the determination of the receipt of government benefits and direct tax liabilities of each person is not simply dependent on his/her own income, but also the income of a partner in that income unit. Thus for any couple income unit two EMTRs are calculated, one for the reference person and one for the partner of the reference person. An important assumption is that the income of the partner (reference person) is held constant when the EMTR of the reference person (partner) is computed. [42]

6.3.2. Results

Table 6.1 lists the EMTRs of persons classified by housing tenure. In the total sample we find a mean (median) EMTR of 25.4 per cent (30.4 per cent). There are very nearly 1 in 10 persons (9.7 per cent) with EMTR above the highest marginal income tax rate (MITR), and 4 per cent have EMTR above 60 per cent, the commonly used benchmark for identifying high EMTRs and hence severe poverty traps. However, the incidence of severe poverty traps varies across residents in different housing tenures.

Public renters' EMTRs are concentrated in the 20 to 30 per cent range and the median EMTR of public renters is 25 per cent. This can be attributed to the fact that many public renters have such low 'income test' assessable and taxable incomes that increasing their private income by $1 per week leaves them in the income test-free and tax-free areas respectively. Under current public housing rent arrangements, rebated rents are set at 25 per cent of assessable incomes. Thus, the only factor contributing to their EMTRs is a reduction of their rent subsidy.

As judged by the mean EMTR, public housing tenants typically make the smallest financial gain from marginal adjustments to work effort. At 37.4 per cent the mean EMTR is 12 percentage points higher than the sample mean (25.4 per cent). The difference is even larger in comparison to private rental tenants. In spite of Commonwealth Rent Assistance (CRA) a mean EMTR of 23.3 per cent puts the typical private rental tenant on a lower EMTR than the typical person in the total sample. CRA does not impact on private rental tenants EMTR because supplementary allowance

[42] Other studies adopting this method include Polette (1995), Beer and Harding (1999) and Beer (2003).

arrangements avoid the multiple stacking of benefits. In fact only two private renter income units in the sample suffer from a reduction in CRA when their private incomes increase by $1 per week.

At 27.5 per cent public renters have the highest proportion of persons facing EMTRs in excess of 47 per cent among all housing tenures. The highest incidence of severe poverty traps is also to be found among public housing tenants, with over one in ten persons (13.6 per cent) confronting EMTR in excess of 60 per cent. In all other housing tenures, the incidence is less than 1 in 20 persons. As we shall now show, rebated rents in public housing represent a major factor explaining these important findings.

Table 6.1 EMTRs of Working Age Persons by Housing Tenure, 1996-97, per cent

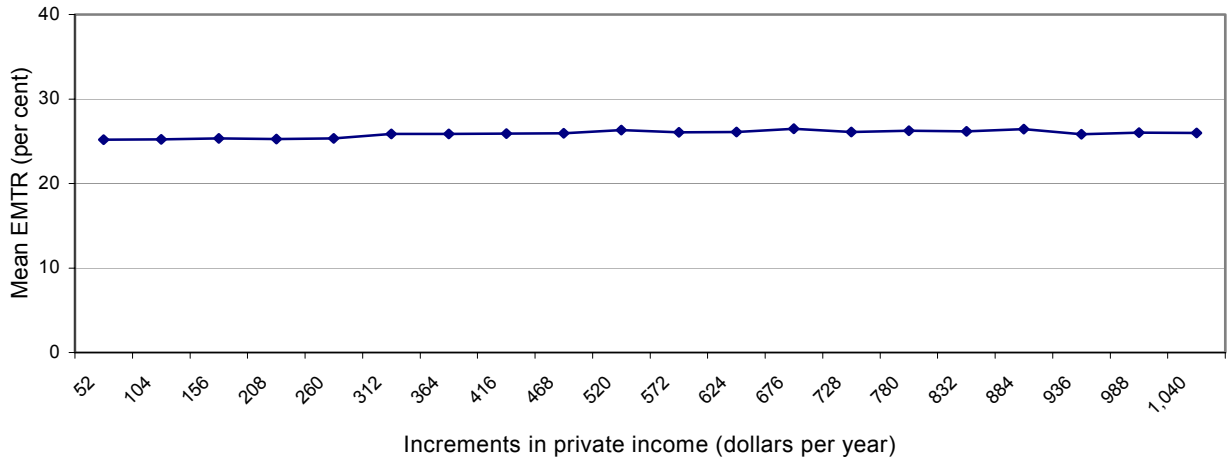
EMTR range	*Outright owner*	*Owner purchaser*	*Private renter*	*Public renter*	*Rent-free*	*Total*
E = 0	30.1	15.1	28.6	0.0	38.7	25.0
0 < E <= 10	0.3	0.1	0.0	0.0	0.0	0.1
10 < E <= 20	13.3	10.6	14.2	0.0	20.0	13.0
20 < E <= 30	5.5	5.2	2.6	62.7	0.6	6.1
30 < E <= 40	32.2	45.8	43.0	1.1	34.4	38.5
40 < E <= 50	10.6	12.1	5.9	9.8	3.9	9.0
50 < E <= 60	4.3	6.9	2.0	12.7	1.2	4.4
60 < E <= 70	1.3	1.6	1.3	5.6	0.4	1.4
70 < E <= 80	1.9	2.2	1.6	4.6	0.8	1.9
80 < E <= 90	0.2	0.2	0.2	2.2	0.1	0.3
90 < E <= 100	0.3	0.1	0.4	0.6	0.0	0.3
E > 100	0.1	0.2	0.2	0.5	0.0	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number in sample	3,224	3,657	3,180	471	1,002	11,534
Number in population ('000s)	3,106.1	3,350.5	3,271.2	391.6	1,110.6	11,230.0
Summary statistics						
Mean	23.8	30.0	23.3	38.8	17.7	25.4
Median	30.1	30.4	30.4	25.0	17.6	30.4
Highest EMTR	102.7	191.7	191.7	110.2	86.8	191.7
E > 47	9.7	12.4	7.2	27.5	2.6	9.7
E > 60	3.8	4.3	3.7	13.6	1.2	4.0

The impact of public housing rent subsidy arrangements on EMTRs is determined by simulating public renters' EMTRs under two scenarios. In the first public housing rents are determined in accordance with current arrangements. In the second scenario it is assumed that rents and assessable incomes are de-coupled. No public renters have EMTRs of less than 20 per cent when public housing rents increase with assessable income. In contrast, all public renters, who are in the 20 to 30 per cent EMTR range, have zero EMTRs when we assume that public housing rents are de-coupled. The proportions of public renters with EMTRs over 47 per cent falls from 27.5 to 10.9 per cent, and public renters' mean EMTR falls from 38.8 to 14.2 per cent. The proportion of public housing tenants caught in severe poverty traps falls from 13.6 per cent to 4.1 per cent.

These are sizeable impacts and suggest that rebated rents linked to assessable rents make a significant contribution to poverty traps among public housing tenants. There is one further important piece of evidence here, and it comes from a second hypothetical exercise in which we 'freeze' government cash benefits at current levels thus de-coupling them from marginal income changes.[43] The mean EMTR of public housing tenants falls by only 5 percentage points from 37.4 per cent to 32.4 per cent, and the median is unchanged at 25 per cent. The typical public housing tenant is unaffected because many tenants have such low 'income test' income and taxable incomes, that increasing their private income by $1 per week leaves them in the income test-free and tax-free areas respectively. On the other hand, the proportion of public renters with EMTRs in excess of 60 per cent falls from 13.6 to 2.7 per cent. It therefore appears that relatively more public housing tenants have their work incentives adversely affected by rebated rents than government cash benefits. But rebated rents and benefits have similarly large impacts on the proportion of tenants caught in severe poverty traps.

A common criticism of this type of EMTR measure is its calculation at current income levels. If some persons adjust their work effort to avoid spikes in EMTRs, measures will underestimate the incidence and severity of poverty traps because measured EMTR will not detect the spike in EMTR that would be evident at higher levels of work effort. To address this weakness we have applied 20 successive one dollar per week increases to each income unit's private income, and re-calculated the EMTR at each new level of income. Figure 6.1 shows the mean EMTR profile generated by this simulation exercise. The profile is flat over the increments in private income suggesting that spikes in EMTR are not widespread across the sample. This finding is also evident among the housing tenure sub samples.

Figure 6.1 Mean EMTR Profile of the Working-age Population Across a Private Income Range of $1,040, 1996-97, Per Cent



[43] These include pensions, allowances or FTB but excludes public rent subsidies.

6.4. Replacement ratios

Replacement ratios are defined as the ratio of disposable income while out of work to disposable income while in work. Thus, the higher is the replacement rate the blunter is the financial incentive to seek employment. Exit replacement rate is the term used to describe the measure when calculated for the non-working pool of unemployed persons and persons not in the labour force (NILF).[44] Entry replacement rate is the term used to describe the measure when calculated for currently employed persons.

Recent Australian replacement rate studies include Saunders et al. (1989), Bradbury et al. (1991), Bradbury (1992; 1993a; 1993b), Daly (1992), DSS (1993), Whitlock (1994), Martin (1996) and Redmond (1999). Most replacement rate studies in the 1990s have been conducted with a view to analysing the work disincentives created by unemployment benefits or family assistance. Studies generally agree that replacement ratios are higher for families with dependent children than those without dependent children, even though family payments (e.g., FTB) have the effect of increasing the disposable income of working families earning low wages. However, these studies do not take into account the loss or gain in public housing rent subsidy that public renters face when they gain or lose employment respectively.[45]

6.4.1. Calculating Replacement ratios

The replacement rate formula used in this analysis is

$R_i = Y_i^u / Y_i^e$

where R_i = replacement rate of the income unit

Y_i^u = disposable income while not working

Y_i^e = disposable income while working

For exit replacement ratios, we impute disposable income when working as a function of personal characteristics and previous unemployment and NILF history. For entry replacement ratios, we impute government cash benefits assuming that persons aged less than 45 years old stop working because they become unemployed, while persons aged 45 years or over stop working because they retire early. We impute retirement annuities for these persons by assuming that retirement annuities received by the current sample of persons aged 45 years or over who are not in the labour force, are representative of retirement annuities that currently employed persons aged 45 years or over would receive if they retire early.

In addition to the inclusion of retirement annuities, there are a number of other important methodological differences between this and earlier studies:

- This is the first Australian study to compute replacement ratios taking public housing subsidies into account. So, for example, the reduction in rent a tenant is awarded on becoming unemployed or economically inactive is treated as equivalent to an increase in their disposable income. An unemployed tenant who finds work will have their rent increased to the lesser of market rent or 25 per cent of assessable income. To apply the market rent cap market rents have

[44] The ABS (2003, Cat. No. 6105.0) defines the economically active population as persons who are working or unemployed. Thus, economically inactive persons are persons who are not in the labour force.

[45] Martin (1996) states that housing benefits are included in the OECD replacement rate calculations but does not indicate what the housing benefits are.

been imputed from a hedonic rent regression using the sample of private rental properties in the SIHC.

- For a couple income unit two replacement ratios are calculated, one for each adult in the couple relationship. When computing the reference person's (partner's) replacement rate we assume that the partner's (reference person's) wage income remains constant. Some other studies (Bradbury, 1992; Bradbury, 1993a; Bradbury, 1993b) restrict their attention to income units where the partner's wage income is zero when calculating the reference person's replacement rate.
- The sample used for analyses includes both unemployed persons and persons NILF. Some studies restrict their attention to the unemployed (Bradbury, 1992; Bradbury, 1993a; Bradbury, 1993b). However, labour force participation rates are an increasingly important issue as the Australian population ages. The financial incentives to participate in the labour force can then be explored.

6.4.2. Results

Exit Replacement ratios

Table 6.2 shows the exit replacement ratios of unemployed or economically inactive (non-working) persons aged 16 – 64, and broken down by housing tenure and income unit disposable income deciles.[46] The median and mean exit replacement ratios are 60.3 and 58.2 per cent respectively. This indicates that when the typical non-working person gains employment, his income while working will be slightly less than double that achieved when not working.

Just over one in ten of non-working persons have replacement ratios greater than 75 per cent, so that income while working will be one-third more than that achieved when not working. Less than 1 per cent of the sample is better off not working than employed, and they are all outright homeowners. The right most column shows that median exit replacement ratios increase with increases in disposable income, from about 30 per cent in the bottom decile to over 73 per cent in the highest decile. Thus, the higher the income unit disposable income of a non-working person, the stronger the financial incentives to remain unemployed or economically inactive.

[46] The disposable income of the income unit is used because our analysis recognises that in a couple income unit, the income of partners can be shared. Thus, a non-working person is better off than another such person if the former has a partner who is employed while the latter has no partner or has an unemployed partner.

Table 6.2 Exit Replacement Ratios of Non-working Working Age Persons[b] by Income Unit Disposable Income Deciles and Housing Tenure, 1996-97, per cent

Disposable income decile	*Outright owner*	*Owner purchaser*	*Private renter*	*Public renter*	*Rent-free*	*Total*
			Median R_i^x			
1	19.1	2.2	34.0	52.9	35.1	30.9
2	40.1	40.7	43.5	41.3	41.3	42.0
3	44.0	43.1	48.2	44.6	44.8	45.7
4	58.7	57.7	52.0	59.1	58.7	58.2
5	53.6	53.5	59.1	55.2	62.9	54.4
6	60.2	63.8	64.5	64.3	67.5	63.0
7	65.9	70.6	68.5	69.3	68.6	67.9
8	65.6	66.5	72.3	73.7	67.9	67.9
9	67.7	67.4	71.3	73.9	67.8	67.8
10	75.1	72.2	75.0	73.6	72.3	73.8
Total	60.8	67.3	55.7	60.6	45.0	60.3
			Mean R_i^x			
1	17.8	15.8	32.6	45.5	33.9	30.1
2	39.7	39.1	44.2	41.4	41.6	42.2
3	43.4	42.8	47.9	44.5	44.8	45.9
4	57.8	58.6	51.2	59.7	58.5	57.2
5	54.6	54.8	60.3	57.7	62.5	56.6
6	62.6	63.3	64.0	65.8	65.2	63.6
7	66.5	67.4	69.0	69.1	70.2	67.9
8	69.2	67.7	70.8	71.7	67.9	69.4
9	71.1	67.7	72.3	73.0	66.9	70.0
10	76.2	72.8	77.2	71.4	71.7	74.9
Total	60.3	64.7	55.8	58.7	46.2	58.2
R_i^x >75	11.6	13.7	10.1	8.3	3.1	10.4
R_i^x >100	1.3	0.0	0.0	0.0	0.0	0.5

Socio-economic groups that have higher exit replacement ratios than the rest of the working-age population tend to have the following characteristics (mean replacement rate in brackets):

- they are in couples with children (69.2 per cent)
- they are married or de facto (66.4 per cent)
- they have three or more dependent children (71.4 per cent)
- they are owner purchasers (67.3 per cent)
- they have working or unemployed partners (68 per cent)

There are at least two factors working here. First, income units with dependent children are entitled to relatively high government cash benefits if eligible. Second, a couple income unit with one adult unemployed or NILF will *ceteris paribus* have higher income than a single unemployed person. Thus couple income units tend to have high replacement ratios, particularly if they have children. Since they are typically observed in high income deciles, a positive relationship between income and replacement ratios is evident among the non-working pool of income units (see table 6.2).

Now consider the relationship between replacement ratios and housing tenure. We obtain somewhat different findings from those evident from analyses of EMTRs (poverty traps). Table 6.2 shows that severe unemployment traps (> 75 per cent) are slightly less common among public renters as compared to the rest of the sample, and in particular owner purchasers. Mean and median public housing reservation rates are more or less equal to sample mean and median replacement ratios. The incidence and severity of unemployment traps among tenants in other rental sub-tenures is also low relative to the rest of the sample. The surprising finding here concerns homeowners, and in particular home purchasers. Unemployment traps are more severe among owner occupiers, despite the absence of direct recurrent housing subsidies in this tenure.

An important reason for these findings is that relative to impacts on EMTRs, public housing rental subsidy arrangements have a smaller impact on replacement ratios. This is because rebated rents are capped at market levels.[47] On repeating the simulation exercise in which current rent subsidy arrangements are replaced by rents de-coupled from tenant incomes, we find that mean (median) exit replacement ratios fall from 58.7 per cent (60.6 per cent) to 57.5 per cent (58.3 per cent). The proportion of non-working public renters with exit replacement ratios greater than 75 per cent decreases from 8.3 to 7.7 per cent. These are small impacts. If rebated rents were not capped mean (median) replacement ratios fall from 66.1 per cent (67.1 per cent) to 57.5 per cent (58.3 per cent).

Entry Replacement Ratios

Table 6.3 shows the entry replacement ratios of employed persons by housing tenure and income unit disposable income deciles. The median and mean entry replacement ratios are 60.4 and 60.1 per cent respectively. In the sample 20 per cent (1 in 5 persons) have entry replacement ratios that exceed 75 per cent; 1.3 per cent have replacement ratios exceeding 100 per cent and would be financially better off quitting employment. The economically active with high entry replacement ratios (>75 per cent) are typically older, have high income, and belong to couple relationships. The income of partners and retirement annuity incomes help to cushion their economic position on quitting employment. These same factors help explain the positive relationship between disposable income and replacement ratios[48].

The exception to these patterns is public housing tenants.[49] Public renters have the highest median and mean entry replacement ratios of 77.9 and 79.6 per cent respectively; 61.5 per cent of employed public housing tenants have replacement ratios

[47] On imputing wage income as if all non-working public renters were employed, we find that 32.1 per cent pay rents above market levels. We therefore cap their rent payments at market levels. There is an important qualification here; because the hedonic rent regression has been estimated using income units rather than properties as the unit of measurement, it is likely that we underestimate the market rents of public housing. Future research will seek to correct for any bias.

[48] The Pearson's correlation coefficient between an income unit's disposable income and its entry replacement rate is 0.25

[49] Their small sample size means that their socio-economic characteristics have a limited influence on overall replacement rate patterns.

exceeding 75 per cent, and 4.2 per cent would be better off if they quit employment. Replacement ratios are much higher for employed public housing tenants than non-working tenants. This is largely because the market rent cap is irrelevant to the housing subsidy received if an employed tenant quits. His or her housing subsidy simply increases by 25 per cent of the fall in assessable income. If subsidy arrangements were de-coupled from assessable income, the mean (median) replacement rate of public housing tenants would be 69.3 per cent (66.9 per cent) instead of 79.6 per cent (77.9 per cent). The proportion of employed public renters with entry replacement ratios greater than 75 and 100 per cent also decreases significantly from 61.5 to 37.4 per cent and 4.2 to 1.1 per cent respectively.

The difference in mean and median entry replacement ratios across housing tenures are much greater than those displayed by exit replacement ratios. The private rental and rent-free sub-tenures have relatively low replacement ratios, a low incidence of high replacement ratios (>75 per cent), and of persons better off if they quit employment. This is because tenants in these sub-tenures are typically younger, single person income units who have no partner income stream, family payments or retirement annuity income to cushion standards of living if they quit employment. CRA is clearly insufficient to offset these factors for private rental tenants. So, for example, the typical private rental tenant's disposable income is halved on quitting employment, while the typical public housing tenant's loss is less than one-quarter of disposable income (see table 6.3).

The entry replacement ratios of homeowners lie between those of public and private renters. Outright owners typically have higher replacement ratios than home purchasers, and this reflects an older age profile and higher retirement annuity incomes on quitting employment. A little less than one-third of outright homeowners have replacement ratios in excess of 75 per cent, and nearly 2 per cent would be better off quitting employment.

Table 6.3 Entry Replacement Ratios[a], R_i^n, of Employed Working Age Persons[b] by Income Unit Disposable Income Deciles and Housing Tenure, 1996-97, Per Cent

Disposable income decile	*Outright owner*	*Owner purchaser*	*Private renter*	*Public renter*	*Rent-free*	*Total*
			Median R_i^n			
1	79.8	61.7	52.1	75.8	48.9	51.9
2	68.7	42.8	44.3	72.8	39.5	43.3
3	65.2	38.0	39.4	76.4	35.7	39.7
4	67.4	64.8	39.0	78.9	29.5	57.5
5	71.9	70.6	59.7	90.7	49.3	68.1
6	68.8	67.2	61.1	79.7	55.6	66.3
7	66.4	62.4	59.8	76.7	55.5	63.4
8	64.8	61.2	59.9	78.1	62.0	62.1
9	66.0	62.7	60.4	74.5	64.7	63.6
10	74.0	68.0	68.9	70.1	75.2	70.9
Total	68.1	63.1	49.6	77.9	44.7	60.4
			Mean R_i^n			
1	81.1	68.7	54.1	82.6	60.9	59.2
2	67.5	52.9	45.6	75.1	39.7	48.3
3	62.0	48.5	44.2	77.6	38.3	47.6
4	67.5	62.0	51.2	79.7	39.2	57.8
5	70.4	67.9	56.7	86.8	51.0	64.7
6	69.6	67.1	61.5	81.2	56.2	66.3
7	67.2	63.1	59.7	77.0	56.3	63.7
8	64.9	61.5	60.2	77.9	59.9	62.3
9	65.4	61.9	60.9	74.0	64.7	62.9
10	71.9	66.9	67.1	75.3	72.0	68.7
Total	68.1	63.1	52.8	79.6	50.5	60.1
R_i^n >75	27.9	22.5	13.4	61.5	10.0	20.4
R_i^n >100	1.9	0.7	1.0	4.2	3.0	1.3

6.5. Conclusion and Policy Implications

The evidence presented in this chapter clearly shows that poverty and unemployment traps are more severe among working-age public housing tenants than the rest of the working-age population. Rent setting arrangements are generally a major cause of work disincentives for public housing tenants. The one exception is unemployment traps for unemployed or economically inactive public housing tenants, because market rent caps are binding for almost one-third of these tenants if they secured employment.

In contrast, poverty and unemployment traps are generally less severe among private rental tenants than the rest of the working-age population. This is principally because residents in this tenure are younger single person income units who receive lower government cash benefits when not employed. It also reflects CRA arrangements that avoid the multiple stacking of government cash benefits.

Outright homeowners typically have higher replacement ratios and hence more severe unemployment traps than the rest of the population. This is because they are typically older persons (and hence can access retirement annuities) in couple relationships, so that partner incomes cushion living standards in the event that one of the partners becomes unemployed or retires. This finding also reflects the exemption of housing equity under asset tests governing eligibility to government cash benefits. It also helps explain the positive relationship between income unit disposable incomes and replacement ratios.

A cautious approach is always warranted when drawing policy implications from analyses of secondary data. The evidence offered above seem to justify reforms that would break the link between public housing rents and tenant incomes. However, the evidence is not conclusive. There are differences between public housing tenants and the rest of the working-age population that are unobservable using secondary data. These unobservable differences (eg access to childcare, location of housing relative to employment opportunities, access problems with respect to transport…etc) could be as, if not more important than work disincentives (see Hulse et al., 2003). Validating findings using different methods and alternative data sources is a critical requirement. State housing authorities have a potentially important role in this respect. Pilot programs, such as 'rent holiday' schemes that offer tenants stability in rents for a period following transition into employment, can help provide persuasive evidence on whether rent reforms would really make a difference to labour market outcomes.

The finding that outright homeowners have more severe unemployment traps than the rest of the working-age population sheds some light on possible reasons why labour market participation rates have trended downwards among mature age males. Outright homeowners are typically older and have high levels of housing equity. Some studies have suggested that private wealth is an important determinant of labour market participation among mature age males (Miller, 1983). Our findings indicate that this is because high levels of private wealth can coexist alongside high replacement ratios, particularly if that wealth is held in housing equity and/or superannuation funds. The role of income and asset means tests in government pension, benefit and allowance programs is worthy of attention in this respect.

7. POLICY IMPLICATIONS

In chapter 2 we analysed the age at which people leave the parental home and begin their housing careers. We find that the post-war cohorts left the parental home earlier than their pre-war counterparts. The move to earlier parental home leaving continued through the post-war generations up to the present generation of young people. In terms of the current generation, however, the evidence presented in this report suggests a rise in the age at which those in their teens and early 20s are leaving the parental home. Increases in school retention and higher education participation rates are clearly one important factor pushing this series in an upwards direction. However, another possible cause could be housing affordability problems in high home price markets.

It is important that policy makers monitor this important change to Australian housing careers as later home leaving has implications for levels of housing demand and has 'knock-on' effects on the transition to homeownership. At a more micro-level, however, home leaving is not a direct site for policy action. There are several exceptions to this general rule cited in chapter 2 of the report. Most importantly, some young people leave not through choice but through family and home circumstance (the evidence presented in this report points to family dissolution and parental labour market disadvantage as a driver of parental home leaving). This group leave at too young an age with few resources. Agencies need to provide strong support for these home-leavers and need to be aware of trends emerging in this area.

In chapter 3 we offered evidence confirming that house prices have reached levels where up-front cash requirements far exceed the savings a typical tenant has managed to accumulate. This impediment to home purchase impacts on most tenants, regardless of income. Stamp duties contribute to these accessibility problems; indeed they typically account for 21 per cent of the up-front cash requirement of a renter who seeks to make a transition into homeownership at their preferred level of housing demand. Exempting rental tenants from stamp duties would alleviate these accessibility problems. To the extent that low-income tenants manage to make the transition into homeownership, the exemption would have a progressive incidence, as stamp duties are particularly onerous on low-income tenants. However, this policy response could be flawed because the escalation in up-front cash requirements is in large part due to house price inflation against a background of lagging growth in earnings. Stamp duty exemptions do not tackle the root causes of house price inflation (and might even cause acceleration). This kind of policy response risks treating the 'symptoms rather than the causes of the disease'.

In chapter 4 we also documented the threat that household dissolution poses using the Household Income and Labour Dynamics in Australia Survey. Using a sample of mature age Australians we find that divorcees have inferior homeownership outcomes as compared to continuously married couples. The disparity in homeownership outcomes is even more apparent for those who are separated but have not yet divorced. Remarriage seems to offset these negative impacts. On remarriage couples have the same likelihood of homeownership as continuously married couples.

The rising divorce rate but falling remarriage rate in Australia suggests that there will be an increasing number of divorcees who will permanently fall off the 'homeownership ladder'. The Housing Lifeline Proposal (Menzies Research Centre, 2003) is a potentially valuable policy initiative that can address this issue, and is complementary to low-income homeownership initiatives such as Home Credit Fund (HCF) that will encourage the entry into homeownership of households whose ownership status is particularly vulnerable to household dissolution. The Housing Lifeline would make a

line of credit available to those who separate to help meet mortgage repayments and/or deposit requirements. Repayments would be contingent on subsequent improvements in the financial position of the recipient.

Household dissolution is typically a driver of housing outcomes in the mature age segment (35 – 64 years of age) of housing careers. In chapters 2 and 3 we consider the early housing careers of young Australians. For the mature age Australian suffering household dissolution homeownership has already been attained; for many younger Australians homeownership remains an aspiration and accessibility rather than affordability is the critical impediment to first transition into homeownership (see Wood, Watson and Flatau, 2003). That is the up-front cash requirements of home purchase are a more important impediment than meeting recurrent annual costs (that are generally dominated by mortgage repayments).

It is evident that drivers of housing outcomes such as labour market forces (e.g., availability of jobs, wages, job location) are themselves affected by housing outcomes. In other words, there can be a complex two-way relationship between labour market forces and housing outcomes. A disadvantaged position in the labour market will likely translate into poor housing outcomes where a household can suffer housing stress.

In chapter 5, we presented evidence that that housing outcomes, and in particular tenure status, is systematically related to unemployment with outright owners and tenants in public housing more likely to be unemployed than residents in other tenures, and on becoming unemployed the duration of unemployment spells is relatively long.

Caution in the interpretation of these policy findings is warranted, as the causal mechanisms linking tenure and employment have not been spelt out. This reservation is particularly relevant in connection with the link between public housing and unemployment. State housing authorities prioritise the most disadvantaged on their waiting lists in order to target assistance on those most in need of assistance. Public housing tenants should then have relatively poor employment records, as this reflects the targeting of assistance. It does not necessarily follow that public housing assistance is the cause of inferior employment outcomes.

In chapter 6 we explored another potential causal link between unemployment and tenure by exploring tenure's link to poverty and unemployment traps. The evidence offered in this chapter clearly shows that poverty and unemployment traps are more severe among working-age public housing tenants than the rest of the working-age population. Rent setting arrangements are generally a major cause of work disincentives for public housing tenants.

There are a number of possible policy responses to these findings. One is a piecemeal one of severing the link between rents and assessable incomes of tenants in public housing. While directly addressing poverty and unemployment trap issues, it is arguably a punitive policy response that risks adverse impacts on housing policy objectives (e.g., affordability). Furthermore, at this stage we lack the evidence to confirm the hypothesis that inferior employment outcomes of public housing tenants are due to poverty and unemployment traps, rather than other factors such as lack of skills, lack of employment opportunities in the vicinity.

Alternative worthy of serious consideration in addressing work disincentive issues is the Home Credit Fund (HCF) proposal. It is intended as a 'whole of government' approach that seeks to integrate both labour market and housing policy goals, and is based on the principle of rewarding desired outcomes to motivate economic participation. The 'reward' takes the form of assistance to make the transition into homeownership. Rather than a piecemeal approach restricted to public housing, the reform measure extends across all the rental tenures.

The HCF permits economically inactive transfer payment recipients in rental tenures that move into full-time or part-time employment to receive a share in the public expenditure savings. Their share is ‘credited’ in a trust fund called the Home Credit Fund that can be subsequently drawn down to meet deposit requirements or mortgage repayments on home purchase. Further detail about the Home Credit Fund idea can be found at Appendix 2.

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APPENDIX 1

Chapter 4 Appendix Table – Variable Definitions

Variable Name	Definition
Dependent Variables	
Relative Price	Measured by expressing homeowner economic costs as a ratio of the market rental rate that represents the price of rental housing
Adjusted Permanent Income	
Independent Variables	
Single	A dummy variable with 1 denoting that the reference person is single, otherwise zero.
De facto	A dummy variable with 1 denoting that the reference person is in a de facto relationship, otherwise zero.
De facto (1 member divorced)	A dummy variable with 1 denoting that the reference person is in a de facto relationship where one member is divorced, otherwise zero
De facto (Both divorced)	A dummy variable with 1 denoting that the reference person is in a de facto relationship where both members are divorced, otherwise zero.
Remarried (1 member divorced)	A dummy variable with 1 denoting that the reference person is remarried where one member has been divorced, otherwise zero.
Remarried (Both divorced)	A dummy variable with 1 denoting that the reference person is remarried and both members have been divorced, otherwise zero.
Separated	A dummy variable with 1 denoting that the reference person is separated, otherwise zero.
Divorced	A dummy variable with 1 denoting that the reference person is divorced, otherwise zero.

APPENDIX 2

Home Credit Fund

A Home Credit Fund (HCF) program is an alternative worthy of serious consideration. It is intended as a 'whole of government' approach that seeks to integrate both labour market and housing policy goals, and is based on the principle of rewarding desired outcomes to motivate economic participation. The 'reward' takes the form of assistance to make the transition into homeownership. Finally, rather than a piecemeal approach restricted to public housing, the reform measure extends across all the rental tenures.

The HCF permits economically inactive transfer payment recipients in rental tenures that move into full-time or part-time employment to receive a share in the public expenditure savings. Their share is 'credited' in a trust fund called the Home Credit Fund that can be subsequently drawn down to meet deposit requirements or mortgage repayments on home purchase. Access to the fund is conditional on sustaining a continuous qualifying period of employment. The HCF addresses two policy questions:

- How can we offer homeownership assistance that is targeted on low-income households?
- How can we achieve this in ways that avoid blunting work incentives?

HCF strives to achieve targeting objectives by making receipt of a Federal pension, benefit or allowances a passport to HCF eligibility. It will do so imperfectly because there will be low wage earners in rental housing who are ineligible for HCF assistance. However, if the First Homeowners Grant program is retained this low-income group will still have access to a direct subsidy program. This aspect of the proposed HCF program has the advantage of combining promotion of low-income homeownership with potentially powerful work incentives. By sharing the public expenditure savings that accrue as a result of transitions into employment, HCF actually sharpens work incentives.

There are, of course, policy design issues that a proposed HCF needs to address:

- Moral hazard problems might arise if there is 'gaming' of the eligibility rules such that some people deliberately make labour market decisions that ensure eligibility for HCF assistance.
- Adverse selection problems arise in the sense that HCF assistance is targeted on those who could be least able to sustain the longer run financial responsibilities of homeownership.
- What share in transfer payment 'savings' and duration of entitlement will offer meaningful assistance to the target group?

Careful design of eligibility and entitlement rules can address these issues. The requirement that households complete a qualifying period of continuous employment before eligibility for HCF assistance is a response to adverse selection issues. However, it has to be acknowledged that the homeownership status of low-income groups targeted by HCF is more vulnerable to adverse shocks that threaten that status. It is demographic events and, in particular, the breakdown of couple relationships that poses the biggest threat to homeownership status, as McDonald and Merlo (2002) have shown using the Negotiating the Life Course Survey.

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Australian Housing and Urban Research Institute
Level 1 114 Flinders Street Melbourne Vic 3000
Phone +61 3 9660 2300 Fax +61 3 9663 5488
Email information@ahuri.edu.au Web www.ahuri.edu.au