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Transitions into home ownership: a quantitative assessment

From the AHURI Inquiry: Inquiry into financing first home ownership: opportunities and challenges

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Inquiry into financing first home ownership: opportunities and challenges

https://www.ahuri.edu.au/research-in-progress/Inquiry-into-financing-first-home-ownership-opportunities-and-challenges

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AHURI undertakes evidence-based policy development on a range of priority policy topics that are of interest to our audience groups, including housing and labour markets, urban growth and renewal, planning and infrastructure development, housing supply and affordability, homelessness, economic productivity, and social cohesion and wellbeing.

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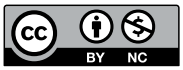


Contents

List of tables

List of boxes

List of figures

Acronyms and abbreviations used in this report

ABS	Australian Bureau of Statistics
AHURI	Australian Housing and Urban Research Institute Limited
CRA	Commonwealth Rent Assistance
FHB	first homebuyer
FHLD	First Home Loan Deposit
FHOG	First Home Owners Grant Scheme
GFC	global financial crisis
HES	Household Expenditure Survey
HILDA	Household Income and Labour Dynamics in Australia Survey
LMI	lenders mortgage insurance
LTI	loan-to-income ratio
LVR	loan-to-value ratio
NSW	New South Wales
OLS	ordinary least squares
PSID	Panel Survey of Income Dynamics
RBA	Reserve Bank of Australia
SA	South Australia
SIH	Survey of Income and Housing
2SLS	two-stage least squares
WA	Western Australia

Glossary

A list of definitions for terms commonly used by AHURI is available on the AHURI website ahuri.edu.au/glossary.

Executive summary

Key points

- Measuring housing affordability for first homebuyers is challenging, as a range of variables affect the cost of housing services. Exogenous factors such as market prices and interest rates play a key role in determining the 'affordability' of housing, and buyers also make choices that impact on the cost of housing services.

- Housing has become less affordable over time. As one of the largest single transactions—if not the largest—that households enter into over the life cycle, there are specific challenges around financing the purchase of a dwelling because of credit-market constraints.

- One constraint faced by households wanting to enter into home ownership is the need to accumulate savings towards a deposit or downpayment. Increases in house prices relative to income have lengthened the time required to accumulate a 'typical deposit' in markets such as Sydney and Melbourne, and it is now over six years.

- Successive cohorts of Australians have experienced lower rates of home ownership at any given age. Home ownership rates at age 30 have fallen from a high of 65 per cent among those born in the late 1950s to around 45 per cent among those born in the 1980s. By age 50 there is incomplete catch-up in home ownership rates—which means that younger cohorts do not close the gap and catch up with their older counterparts. Around 25 per cent of the home ownership gap remains.

- **Parental direct and in-kind transfers are associated with more rapid transition into first-time home ownership. Relative to renters, an extra year co-residing in the parental home is associated with an increase of approximately 40 per cent in the likelihood of transitioning into home ownership.**

- **Bequests and parental transfers are more likely to flow to homeowning individuals. The net effect of such transfers is to increase wealth inequality over time.**

Key findings

This report forms part of the *Inquiry into financing first home ownership: opportunities and challenges.* This project uses quantitative techniques to analyse the transition into home ownership. The analysis adopts a life-cycle approach, with the decision to enter into home ownership assessed using an economic framework. The purchase of owner-occupied housing represents one of the largest single transactions entered into by households, and is usually facilitated via a mortgage. In the presence of imperfect credit markets and constraints on borrowing against future earnings, households face constraints on financing the debt of housing they intend to occupy. Those constraints are generally characterised as:

- the deposit or downpayment requirement
- debt-servicing limits.

Both constraints limit the magnitude of housing services that aspiring first homebuyers (FHBs) can purchase. Together with other factors—such as the price of housing—these constraints impact housing affordability.

The evidence on housing affordability is mixed. While higher housing prices have been offset somewhat by lower interest rates and innovative mortgage products that provide buyers with additional opportunities to access credit, there is a consensus that housing for FHBs has become less affordable over time. To alleviate this development, FHBs have been provided with a range of demand-side subsidies. Traditionally such measures included direct grants to first-time buyers and concessional tax treatment of first home purchases.

More recently, other programs have:

- provided tax-favoured treatment of savings when directed to first-time home ownership
- reduced the requirement to accumulate savings for a downpayment
- provided opportunities for shared equity.

Such measures can be directly characterised as circumventing or relaxing some of the constraints imposed by credit markets on buyers seeking to finance home ownership. They do so by increasing the capacity to pay a higher price for dwellings, or relaxing the constraints associated with the accumulation of savings to enable access to a mortgage. These measures are predominantly characterised as demand-side in nature. However, as discussed in Pawson, Martin et al. (2022), there have been far fewer supply-side policies in Australia designed to facilitate home ownership for FHBs.

Most young people have delayed entry to home ownership but only 75 per cent 'catch up' by age 50

Coinciding with the deterioration in affordability, successive cohorts of Australians have entered home ownership at lower rates at any given age. At age 30, home ownership rates across cohorts have fallen from a high of 65 per cent among those born in the late 1950s to around 45 per cent among those born in the 1980s. This development reflects a range of social, demographic and economic influences. Perhaps most importantly, financing of owner-occupied housing presents a challenge to meet the deposit requirement in a setting in which wages have generally risen at a slower rate than house prices.

This report highlights that the lower rates of home ownership achieved by successive cohorts of younger Australians represent, in part, simply a delay in entry into home ownership. Home ownership rates rise for each cohort as they age through the life course, as we would expect, but our statistical analysis of successive surveys of income and housing (SIHs) indicates that by age 50, there is only partial catch-up in the rate of home ownership relative to earlier generations. This means that the gap in ownership rates across cohorts remains even when measured at age 50. Critically, this means that as individuals reach retirement age, it is likely that home ownership rates will be lower than in earlier generations.

Demand subsidies improve entry to home ownership but this may just bring forward purchases

Demand subsidies such as the First Home Owners Grant scheme (FHOG) and concessional tax treatment of purchases by FHBs may have little if any effect on aspiring FHBs attaining home ownership, given the potential for such grants to be amortised into higher prices. Nonetheless, analysis of demand-side assistance available to first-time buyers in Queensland in the early 2000s indicates that the assistance was actually associated with greater activity by first-time buyers. We find that the stamp-duty concessions extended to FHBs by the Queensland government increased the number of first dwellings financed by 4.5 per 10,000 individuals—an increase of roughly one-third on the pre-policy quarterly average number of FHB dwellings financed. While this suggests there may be an effect of demand-side subsidies, we cannot rule out that these measures simply temporally bring forward the purchase of dwellings, as other studies have found.

Inter-generational barriers are in part mediated through the 'Bank of Mum and Dad'

Changes in housing affordability have focussed attention on what, at least anecdotally, appears to be an increasingly important source of financing for FHBs—namely the 'Bank of Mum and Dad'. Such a development appears to have been driven in part by the increasing levels of wealth held by earlier generations who benefited from rapid property price appreciation. When considering the role played by intra-family assistance to prospective FHBs, it is important to consider its nature and magnitude. Parental support may take a range of forms including:

- direct cash transfers
- in-kind support through the provision of co-residence
- acting as guarantor.

In this way, parents assist in circumventing the constraints imposed by credit markets on prospective buyers. The variety of means by which intra-family transfers may facilitate entry into home ownership make it challenging to quantify such measures, although estimates suggest that the role played by the Bank of Mum and Dad in aggregate places it among the top 10 mortgage providers in the country.

Intra-family wealth transfers improve chances of entry to home-ownership

Analysis of the Household Income and Labour Dynamics in Australia Survey (HILDA) data confirms the importance of the relationship between intra-family transfers and first-time home ownership. The analysis indicates that receipt of a bequest is associated with doubling in the rate of the transition into home ownership relative to those who do not receive a bequest. However, it is worth noting that bequests—while generally large—will often be received during the latter part of an individual's life cycle. The impact of such transfers on younger cohorts is likely to be limited. Among younger cohorts, parental transfers are likely to be more important. The analysis in this report identifies a significant relationship between parental transfers and the transition into first-time home ownership. A transfer of $10,000 is associated with an approximately 90 per cent increase in the likelihood of transition into first-time home ownership.

Co-residing with parents helps access to home ownership

A novel component of this research is the analysis of in-kind transfers in the form of co-residence and first-time home ownership. There is an increasing tendency for younger Australians to reside in the parental home. The Productivity Commission (2020) has estimated that the savings associated with co-residence are substantial, in the order of $300–$400 per week. This provides opportunities for younger Australians to accumulate savings that may be used to facilitate entry into home ownership. The statistical evidence in this report suggests that each additional year residing in the parental home, relative to residing in rental property, leads to an increase in the odds of transitioning into first-time home ownership of approximately 30–40 per cent. Similar to direct transfers, in-kind assistance appears to provide an important albeit informal mechanism that facilitates entry into home ownership.

Intra-family wealth transfers add to wealth inequality

The final component of the study addresses the relationship between housing tenure and the level of inequality over time. This analysis builds directly on the association identified between intra-family transfers and entry into home ownership. Some recent evidence suggests that such transfers tend to increase absolute inequality but not relative inequality. The analysis in this report identifies a pattern of sustained increases in wealth among home owners coupled with low and stagnant levels of wealth among renters. To the extent that intra-family wealth transfers facilitate home ownership—which in turn leads to more rapid accumulation of wealth over the life cycle—there is a potential for such transfers to exacerbate existing levels of inequality. This pattern highlights the need for policies that are designed to assist FHBs to be well targeted, and the long-term consequences of lower rates of catch-up identified in this report to be addressed.

Policy development options

First home ownership access policies

The examination of home ownership rates and catch-up behaviour provides novel insights into patterns of home ownership over time. Existing evidence has highlighted that younger cohorts of Australians are less likely to attain home ownership compared to earlier generations. What was unknown was the extent to which this simply represented a delay in attaining owner-occupation, as opposed to a systemic decline in home ownership rates. The finding that catch-up in home ownership rates by age 50–54 is approximately 75 per cent has implications across a range of policy dimensions. Despite the significant efforts and funds expended over the past few decades, attaining home ownership is becoming increasingly less likely over the life cycle. This highlights the need to assess past and existing policy settings targeted at FHBs. As Pawson, Martin et al. (2022) note, over $35 billion in cash grants have been expended by Australian governments since the mid-1960s to facilitate the purchase of housing by FHBs. In light of this expenditure, the continued decline in home ownership rates among younger cohorts *even as they age* highlights the need to assess past and current policies ostensibly designed to facilitate home ownership.

Lower ownership rate has implications for higher income support or tax transfers in retirement

The decline in attaining home ownership over the life cycle also has important implications for income support or transfer policy. It is well documented that housing represents a key pillar in the Australian social insurance system. Lower rates of home ownership across cohorts will have direct fiscal impacts over time on payments such as Commonwealth Rent Assistance (CRA) and the age pension. Lower rates of home ownership have the potential to increase poverty rates among older Australians (Yates and Bradbury 2010). Such an outcome may be alleviated to some extent by two other developments:

1. The increasing maturity of the superannuation system provides an alternative source of savings that can support living standards into the future (Commonwealth of Australia 2021).
2. There is evidence that younger cohorts will be beneficiaries of increasing levels of inherited wealth over time (Productivity Commission 2021).

Such developments may alleviate the impact of lower rates of home ownership documented in this report. Nonetheless, given the critical role played by home ownership in supporting living standards throughout retirement, systemic decline in home ownership rates over the life cycle has the potential to increase the fiscal costs associated with retirement income support.

Intra-family support is a key element in home ownership access and so needs to be factored into policy

The analysis in this report also identifies evidence that intra-family support is alleviating some of the important credit constraints that impede entry into home ownership. While such a development might be welcomed, as it reduces the impact of broader economic and financial constraints on attaining home ownership, it also has implications for public policy. It is likely that the capacity of families to provide support varies substantially by socio-economic status. Hence, there is a potential for wealth—and especially housing wealth—to become progressively more concentrated if home ownership becomes increasingly out of reach of those individuals who are unable to draw on familial financial support. The analysis in this report highlights increasing levels of wealth inequality over time. Such inequality has been driven, at least in part, by growth in house prices that has benefited existing home owners.

Pawson, Martin et al. (2022) discuss the range of policies adopted over time designed to assist entry into home ownership. Evidence suggests that those policy settings have, in general, had little impact on aggregate housing outcomes. Rather, demand-based subsidies have been amortised into higher prices or simply brought forward entry into home ownership that would have occurred anyway. Given the less than full catch-up identified in this report and the potential for intra-family transfers to facilitate home ownership, it is critical that policy measures are well targeted. Specifically, if the policy objective is to increase home ownership rates, then measures should be targeted at individuals who may not otherwise attain owner-occupation because of credit-market constraints or the absence of alternative forms of assistance such as familial transfers. Moreover, given the specific financing challenges associated with the purchase of a dwelling, those measures should focus on credit-market imperfections that limit the capacity of households to achieve their desired tenure status.

The final lesson to be drawn from the analysis is that existing policy settings may have unintended consequences. Rather than alleviating the constraints that impede the transition into home ownership, measures that directly contribute to a deterioration in affordability have the potential to make it increasingly difficult for those at the margin of home ownership to attain that goal.

The study

This research is part of a wider AHURI *Inquiry into financing first home ownership: opportunities and challenges.* The Inquiry consists of four complementary projects that adopt a multi-disciplinary approach to understanding the challenges and opportunities of financing first home ownership. This project provides quantitative evidence on how home ownership has evolved over time, an analysis of demand subsidies provided to FHBs and an examination of an increasingly important source of support for first home ownership, namely the 'Bank of Mum and Dad'.

The project uses statistical analysis to address the research questions, by drawing on secondary data that captures the housing behaviours and experiences of Australians over time. That analysis provides insight into the association between the housing careers of Australians, and, policies, behaviours and economic circumstances that shape the transition into homeownership.

The analysis in this report has two original features. The first is the identification of the extent of catch-up. The quantitative analysis exploited Australian data from the 1980s onwards to gain an understanding of how home ownership rates have evolved over time. Using synthetic cohorts or panels, the analysis considered whether the lower rate of home ownership identified in younger age groups (20–30 years of age) is likely to become a permanent feature of the Australian housing landscape, or whether those cohorts are simply delaying entry into home ownership. The analysis identified the extent of catch-up by those cohorts as they age.

The second novel contribution is the examination of the role of parental co-residence on the transition into home ownership. In Australia, young adults are remaining in the parental household for longer periods of time and are increasingly likely to return to the parental household. Drawing on longitudinal data stretching back two decades, the study examined how the time spent co-residing with parents is associated with entry into home ownership.

1. The contemporary challenge of financing first-home ownership

- **Overall home ownership rates have remained relatively stable at approximately 70 per cent since the 1980s—however, fewer younger Australians are entering into owner-occupation.**
    - Lower rates of home ownership reflect a range of social, demographic and economic considerations. There is a broad consensus that housing affordability has declined over the past three decades, coinciding with a systemic decline in home ownership rates among younger Australians.
- **Successive Australian governments at the federal and state levels have enacted demand-based policies designed to encourage and enable entry into home ownership.**
    - Owner-occupation as a form of tenure receives explicit and implicit support via the tax and transfer system.
- **Entry into home ownership generally requires borrowing against future income via a mortgage. Credit-market imperfections require that potential borrowers satisfy a series of conditions before accessing mortgage finance.**
- **Over the past four decades, governments have increasingly relied on demand subsidies or concessional tax settings for first homebuyers to assist entry into home ownership.**
    - Demand subsidies are unlikely to benefit those seeking to enter into home ownership as they tend to increase prices paid by buyers. There is empirical evidence that such subsidies simply bring forward the purchase of owner-occupied housing rather than increase rates of home ownership.

- **The analysis contributes to the evidence-base around patterns of home ownership. The analysis considers if lower rates of owner-occupation represent a systemic decline or simply a delay in entering home ownership. Evidence is presented on the role of intergenerational transfers as a means to facilitate home ownership.**

    - The report contributes to our understanding of how home ownership has evolved over time, and the role of intra-family transfers as a form of financing owner-occupation. The findings inform policy and help identify unintended consequences of alternative policy settings.

This report forms part of the AHURI *Inquiry into financing first home ownership*. The broader Inquiry examines the economic, social, demographic and policy developments that have impacted on the transition into home ownership by Australians over time. In this report we present quantitative evidence on how home ownership has evolved for successive cohorts of Australians and the challenges associated with financing that transition. For individuals, that challenge is one that reflects policy settings, along with economic and social developments that have shaped the pathway into home ownership.

The report addresses four research questions:

- **RQ1:** How has entry into home ownership changed over cohorts of Australians? If more recent cohorts do not enter home ownership at the same rate by age 30 as older cohorts, do they subsequently catch-up and simply enter later, or are their home ownership rates lower across the life cycle?
- **RQ2:** What is the evidence around the role of formal policy tools to support home ownership, including the FHOG and concessions in transaction costs such as stamp duty?
- **RQ3:** How do direct and in-kind parental transfers facilitate entry into home ownership?
- **RQ4:** What are the distributional implications of home ownership facilitated by direct and in-kind transfers?

Home ownership needs to be considered in a broader life-cycle context. The purchase of an owner-occupied dwelling often represents the largest single transaction an individual—or household—enters into over the course of their life. In general, it requires individuals or households to accumulate savings for a downpayment or deposit, and to borrow against future earnings through a mortgage. Those decisions and the transition into home ownership occur in a broader setting in which personal, social, economic and institutional developments shape decisions and outcomes. This report presents evidence on those developments by assessing economic considerations related to entry into home ownership. Statistical analysis identifies how patterns of entry into the housing market have changed over successive cohorts of Australians, as well as the role of enablers and constraints on home ownership—for example, intergenerational transfers, government policy settings and credit-market constraints.

The analysis takes an economic model of behaviour as its starting point. Although somewhat stylised, this represents a robust and rich framework to analyse the behaviour of aspiring FHBs, and to assess how various socio-demographic characteristics, economic factors and policy settings have shaped housing outcomes.

The analysis gleaned two key results:

1. The lower rates of home ownership experienced by younger cohorts of Australians continue throughout the life cycle. Younger cohorts that experience lower levels of home ownership at ages 30–34 years do exhibit some catch-up over time—in other words, home ownership rates of that group as they age approach the home ownership rates of older cohorts. However, that catch-up remains incomplete. After 10 years, less than half of the gap at age 30–34 years has closed, and between two-thirds and three-quarters of the gap is closed after 20 years.
2. The identification of the relationship between co-residence and the transition into home ownership. Statistical analysis highlights that additional time spent co-residing with parents is associated with higher transition rates into home ownership in the order of 50 per cent, relative to those who are privately renting.

The findings of this project have implications for policy settings that extend beyond those designed specifically to facilitate the transition into home ownership. Over the past five decades, significant expenditures have been directed into programs and policies targeted at FHBs (Pawson, Martin et al. 2022). However, despite those policy settings, home ownership rates have declined and the evidence in this report identifies that catch-up over the life cycle is incomplete. While highlighting the shortcomings of past policy settings, less than complete catch-up also points to broader policy challenges as those individuals who do not attain home ownership age and transition into retirement. At best, policies directed at FHBs in the past have been only partly effective in increasing rates of home ownership. Indeed, there is a broad consensus that such policies tend to be absorbed into higher house prices or simply lead to a faster transition into owner-occupation among those who would have achieved that outcome anyway. Owner-occupied housing represents an important fourth pillar of social insurance, and poverty rates among older non-home owners are high relative to comparable OECD countries. Over time, lower home ownership rates among older Australians will present challenges to individuals and policy makers to ensure an adequate standard of living in retirement.

Where public policy is directed towards encouraging home ownership it should clearly be targeted to where it is most effective. The analysis of co-residence and intra-family transfers more generally indicates that these represent an important mechanism by which entry into owner-occupation may be facilitated. This creates the potential for some individuals—but not all—to draw on familial support to achieve owner-occupation. Policies that require expenditures should be well targeted to provide opportunities—especially for those individuals who are not able to draw on such support.

1.1 Why this research was conducted

There is evidence that home ownership rates in Australia are declining. The decline is particularly pronounced among younger cohorts for whom entry into home ownership is being delayed or simply not achieved (Beer, Faulkner et al. 2006; Burke, Nygaard et al. 2020). The decline in home ownership rates among younger cohorts has occurred in some countries, but not all. For example, Andrews and Caldera Sánchez (2011) document marked declines in home ownership rates among younger individuals in Canada in the 1990s and 2000s, but not in Germany nor in the United States. At the same time a range of socio-demographic developments has occurred, including:

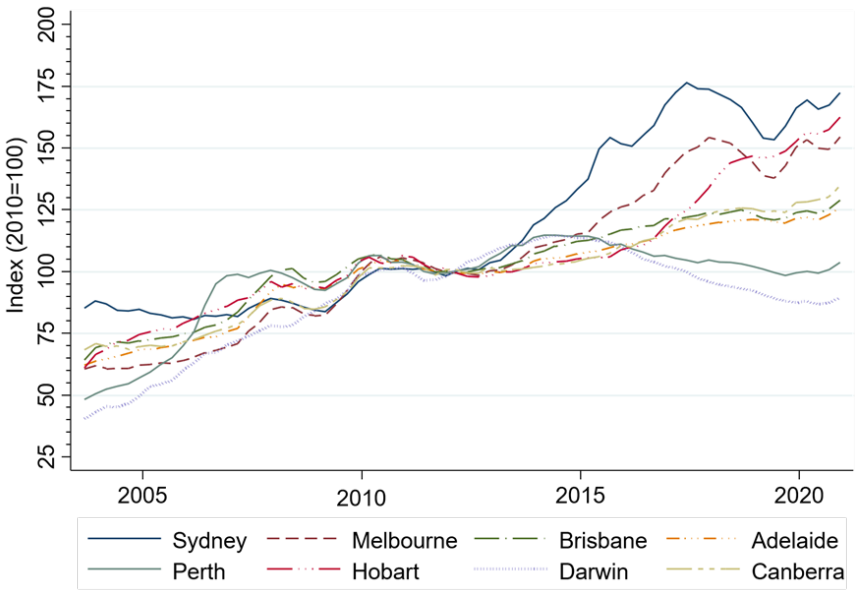
- increased enrolment in education
- delays in the formation of independent households
- later fertility (Cobb-Clark 2008).

Such developments are consistent with trends across other countries including the United Kingdom, Canada and the United States, although there are country-specific factors at play (Andrew, Haurin et al. 2006). For example, Andrew (2010) highlights how higher levels of student debt have limited access to credit and thereby delayed entry into home ownership among younger cohorts in the United Kingdom. Moreover, relative to earlier generations, younger adults are spending longer periods co-residing in the parental home or exhibiting a higher tendency to return there (Bond and Eriksen 2021; Cooper and Luengo-Prado 2018; Matsudaira 2016).

In the case of Australia, these socio-demographic changes have been accompanied by significant developments in the economic environment. In particular, the institutional and financial settings that shape decisions around saving and wealth accumulation have evolved considerably over the past four decades. Traditionally, owner-occupation has been the dominant form of tenure among Australian households, and this savings mechanism provided an important means to accumulate wealth and maintain consumption throughout retirement (Yates and Bradbury 2010).

Since the 1980s, developments in financial services have provided opportunities for Australians to utilise an increasingly sophisticated set of financial tools to access home ownership and draw on housing wealth. In Australia, the increasing maturation of the superannuation system provides an alternative opportunity to save and accumulate wealth over the course of an individual's working life (The Treasury 2020). Indeed, the pool of savings locked up in superannuation has increasingly led to calls for younger Australians to have access to those savings to facilitate the purchase of dwellings, and some policy decisions have facilitated such actions—although in a limited manner (Pawson, Martin et al. 2022; Standing Committee on Tax and Revenue 2022). These developments have coincided with sustained house prices, and in some cases rapidly rising house prices, especially in major capital cities such as Sydney and Melbourne (see Figure 1). That increase in house prices has led to concerns that home ownership is becoming increasingly unaffordable for younger Australians.

Figure 1: House price indices in eight capital cities



Source: ABS Catalogue No. 6416.0.

While house prices have increased in real terms over time (Kohler and Van Der Merwe 2015), the 'cost' or affordability of owner-occupied housing reflects a range of factors, not simply the 'price' of the dwelling. This reflects the financial and economic constraints associated with entering into such a large transaction in the life-cycle context. Households undertaking the purchase of a dwelling generally finance such a transaction through a mortgage.[1] Due to the nature of imperfect credit markets, financial institutions generally impose a series of conditions on households that wish to borrow funds for the purchase of a dwelling, each of which potentially impacts on the affordability of housing. These conditions include:

1 Purchases of housing are often made by households consisting of more than one individual. Throughout the report, the reference to households should be interpreted as referring to the joint decision of adult individuals within a household.

- the requirement for a deposit to demonstrate a capacity to save and defer consumption
- limits on the size of the mortgage loan relative to the purchase price[2]
- a requirement for lenders insurance (in some cases).[3]

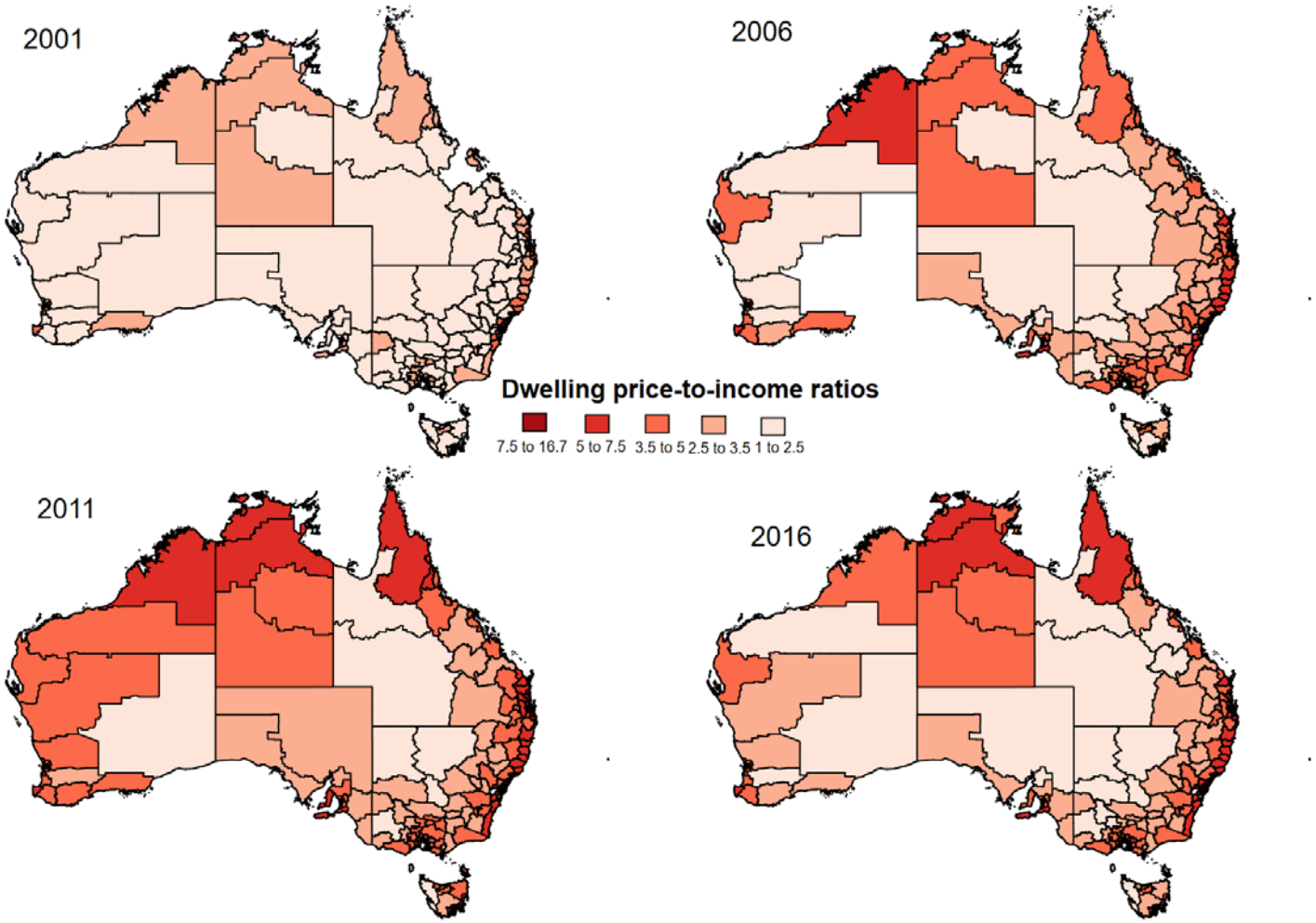
Such constraints may reflect the decision of financial institutions to mitigate the risk faced by lending significant funds against future streams of income, or broader prudential regulations that are designed to mitigate the risk that financial institutions or buyers are exposed to. Together, these factors influence the affordability of housing along with broader economic or market conditions. In Australia, the most important of these market conditions is the level of interest rates on home loans. Mortgage loan terms are typically 20–30 years. While Australian home loans traditionally had variable interest rates, fixed-interest rate loans have also become available since the early 1990s.[4,5] For a mortgage debt of a given size, the interest rate will impact the loan repayments required to extinguish the mortgage over the term of the loan and the borrowing capacity of the household. While interest rates have declined over the past decade to historic lows—and in doing so made housing more affordable—this has been offset by other developments such as increases in house prices and more stringent prudential regulations limiting the size of loans.

There are a range of alternative approaches to measuring housing affordability and a simple metric measures the price of housing relative to household income (La Cava, Leal et al. 2017). Though exhibiting substantial regional variability, typically house prices in Australia throughout the 1990s were two to three times average annual household incomes. An increase in this ratio is consistent with a deterioration in affordability, as the capacity of a household on a given income to service a mortgage will decline as house prices increase, if all other things remain the same. Figure 2 highlights changes in this measure over time, and suggests that housing has become less affordable nationally—especially in major centres such as Sydney (Figure 3) and Melbourne (Figure 4) which have experienced relatively rapid increases in prices.

A similar pattern emerges when an alternative measure of housing affordability that focusses on the deposit requirement is considered. That metric assesses the time required to save for a deposit for a 'typical' dwelling for an 'average' household. This is an important challenge faced by FHBs, namely the requirement to accumulate savings for a deposit. In the period 2020–2021, Powell (2021) reports that the time required to save a 'typical' deposit has increased in all capital cities except Brisbane by an average of four months. The increases were more pronounced in Canberra (nine months) and Sydney, Hobart and Darwin (six months), reflecting the rapid increase in prices in those markets. Over the preceding five years, the increase in the time required to save for a deposit increased by as much as 22 months (Hobart) and approximately one year in both Sydney and Melbourne (Powell 2021).

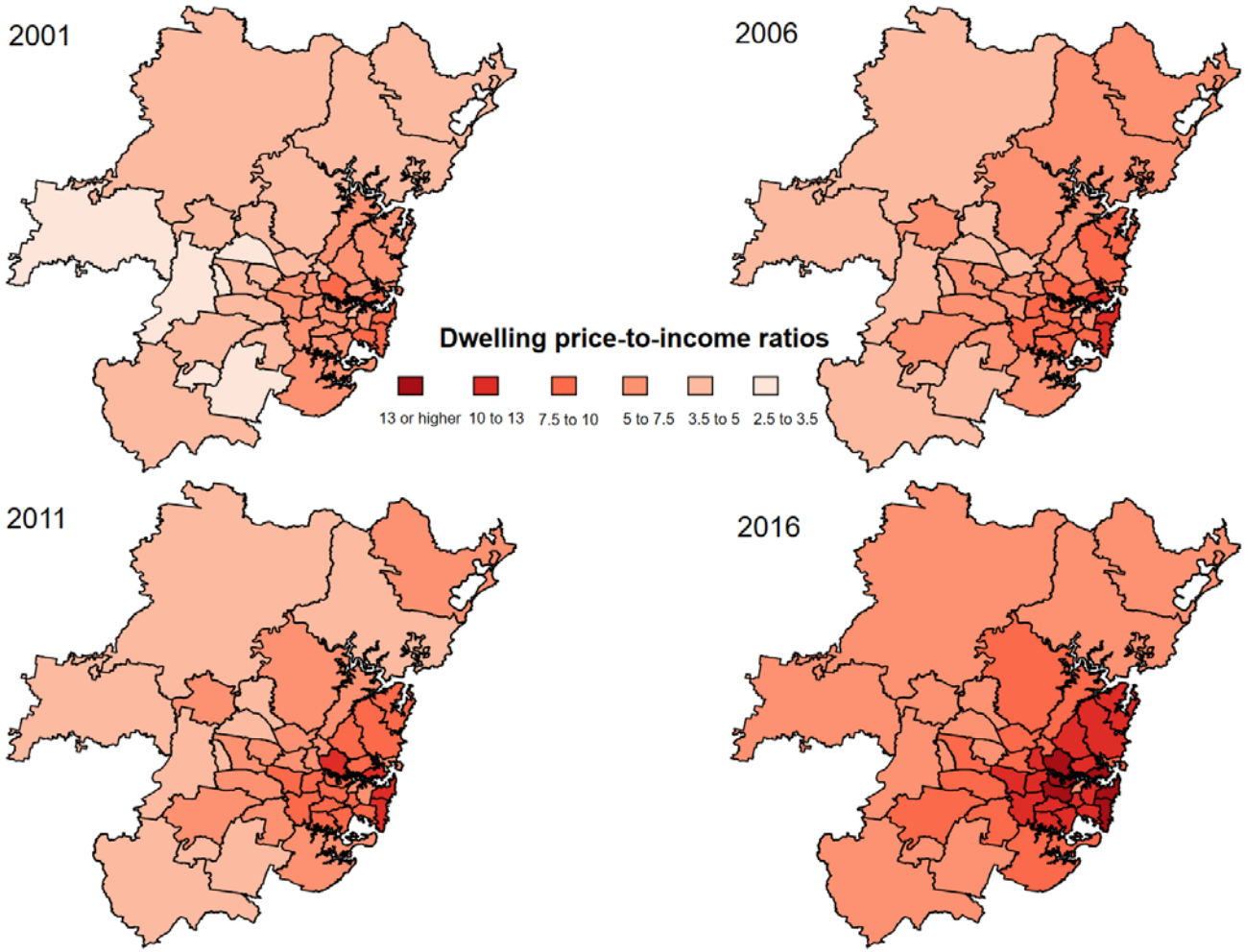
2 Such constraints are generally referred to as loan-to-value ratios or LVRs. Traditionally, maximum LVRs were set equal to 0.8 so that the purchase of an owner-occupied dwelling required a downpayment of approximately 20 per cent.
3 Lenders mortgage insurance (LMI) is generally added to home loans when buyers do not meet a threshold downpayment requirement. It is generally calculated based on the size of any deposit and any mortgage taken out. LMI protects the financial institution in the event the buyer is unable to repay the loan.
4 Mortgages may have a component that has a fixed interest rate, typically for a period of one to five years, along with a variable interest rate. Developments in financial products over time have meant that other types of mortgage interest rates such as holiday or honeymoon rates have been used in some institutional settings (Ellis 2006).
5 The nature of mortgages and the institutional environment faced by borrowers differs substantially across OECD countries. For example, variable rate mortgages tend to be more common in Australia, although the maturity of mortgages is similar to most other OECD countries (van Hoenselaar, Cournède et al. 2021).

Figure 2: Evolution of housing affordability across Australia, 2001–2016



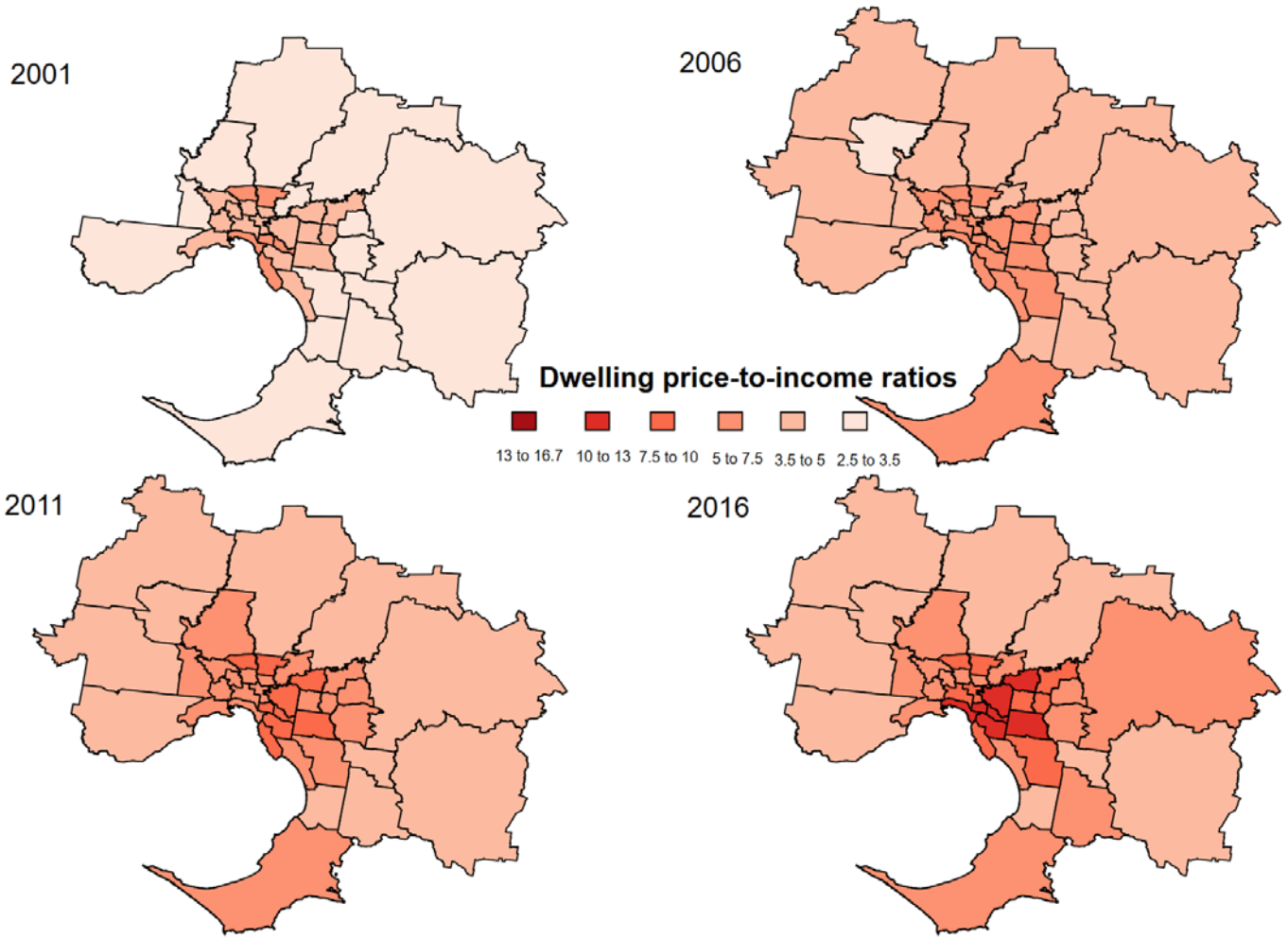
Source: Author's calculations using census data and CoreLogic Residential Property (RP) data for each Statistical Area Level 3 (SA3). Census data sourced from the ABS. RP Data sourced from SIRCA (Securities Industry Research Centre of Asia-Pacific).

Figure 3: Evolution of housing affordability in greater Sydney, 2001–2016



Source: Author's calculations using census data and CoreLogic Residential Property (RP) data for each Statistical Area Level 3 (SA3). Census data sourced from the ABS. RP Data sourced from SIRCA (Securities Industry Research Centre of Asia-Pacific).

Figure 4: Evolution of housing affordability in greater Melbourne, 2001–2016



Source: Author's calculations using census data and CoreLogic Residential Property (RP) data for each Statistical Area Level 3 (SA3). Census data sourced from the ABS. RP Data sourced from SIRCA (Securities Industry Research Centre of Asia-Pacific).

While useful in providing an overview of aggregate developments, measures of affordability based on ratios of house prices to income, or housing expenditures to income, are limited in their capacity to reflect affordability—especially for individuals financing first-time home ownership (Meen and Whitehead 2020). For example, the first step in the property ladder for a typical first-time homebuyer will generally not be an 'average' or 'typical' dwelling. Rather, such buyers generally purchase smaller, lower-priced dwellings, often located in more geographically isolated locations. La Cava, Leal et al. (2017) argue that while the set of affordable dwellings a typical FHB may access has contracted over time, this development has not been as dramatic as suggested by a simple metric that considers dwelling prices or price-to-income ratios.[6]

The level of interest rates is likely to play a pivotal role in determining the affordability of owner-occupation, and forms part of the broader economic environment in which purchasing decisions are formulated. After reaching historic highs in the late 1980s, the past two decades have been associated with significantly lower interest rates. Though interest rates have increased at various times, the global financial crisis (GFC) and, more recently, the COVID-19 pandemic have led to historically low interest rates on mortgage debt. One metric which incorporates the effect of interest rates on housing affordability is the mortgage debt-service ratio, which is calculated as the monthly required repayment on a new mortgage divided by monthly disposable income (La Cava, Leal et al. 2017).[7] Over time, the aggregate mortgage debt-servicing ratio across the economy has varied but in general remains below historical peaks in the late 1980s and the mid-2000s.

Importantly, metrics designed to measure housing affordability often do not account for policy measures that are targeted towards first-time homebuyers, which may have a direct impact on FHBs. Despite such measures and the substantial differences across various affordability metrics, there is a broad consensus that housing affordability has deteriorated over time. Households desiring owner-occupation may respond to such a development by:

- purchasing housing of a lower quality or quantity
- deferring the transition into home ownership
- turning to alternative sources of funding, such as parental transfers, to circumvent credit constraints imposed by markets that limit the set of 'affordable' properties.

The economic approach that provides the framework for the empirical analysis in this report is useful, as it explicitly acknowledges the behavioural responses that accompany changes in the economic and institutional environment faced by aspiring homebuyers. This provides an opportunity to explain observed outcomes and provide insight into how policy changes may shape future housing choices. It is that policy context, and the settings put in place to assist FHBs as they face the challenge of financing first-time home ownership, to which we now turn.

1.2 The policy context

Home ownership rates in Australia rose steadily in the post-war years, reaching a peak of around 70 per cent in the 1960s. The increase in home ownership rates was achieved in an institutional and economic environment that bears little resemblance to that observed today. Up until the 1980s, an array of financial institutions such as building societies played a key role in facilitating home ownership in a regulatory environment that constrained their lending behaviour through both price and quantity restrictions such as mortgage interest-rate caps. Financial deregulation in the 1980s and 1990s led to changes in the number and nature of lenders in the housing finance markets. Similarly, financial innovation opened a range of new products to borrowers, including fixed-rate mortgages, low deposit loans and opportunities for mortgage equity withdrawal (Yanotti 2013). Housing policy and outcomes

6 Meen and Whitehead (2020) propose a novel approach that uses Lorenz curves to identify the proportion of households across income deciles that could potentially purchase a first dwelling in a given location. Such an approach is similar to that adopted by La Cava, Leal et al. (2017), by adopting a richer measure of affordability that takes into account the choices available to potential FHBs, such as location.

7 The mortgage debt-service ratio is generally defined as the required repayment given the loan-to-valuation ratio and dwelling price at the time of loan origination. It assumes a per period interest rate and a given number of months remaining in the term of the loan.

throughout the post-war period were also shaped by the prevailing economic environment, including the stagflation of the 1970s and recessions in the early 1980s and 1990s—the latter accompanied by mortgage interest rates that reached a peak of 17 per cent in the late 1980s. More recently, low inflation and economic shocks in the form of the GFC and the COVID-19 pandemic have been accompanied by relatively low interest rates, but also a systemic and at times rapid increase in house prices. It is in this context that the policy settings designed to facilitate home ownership of successive governments can be assessed.

Governments at the federal and state level have promoted and continue to support home ownership as a specific policy objective. They do so with a variety of direct and indirect subsidies or concessions administered through the tax or transfer system and programs specifically targeted at FHBs (Dungey, Wells et al. 2011; Pawson, Martin et al. 2022; Pawson, Milligan et al. 2020). Although some demand subsidies ostensibly appear to have been motivated by high or increasing house prices, more recently it appears that policy responses have been shaped with the specific financing challenges faced by FHBs in mind. For example, measures that facilitate low deposit loans and enabling access to a portion of superannuation for the purpose of first home purchase recognise the credit constraint associated with the deposit hurdle (Pawson, Martin et al. 2022).

From an economic perspective, various rationales have been proposed as to why home ownership may be a desirable policy goal. Such arguments generally point to wider social benefits over and above those that accrue to individual home owners or what are commonly referred to as externalities (Aaronson 2000). While such assertions are being subjected to increasing levels of scrutiny, it remains the case that there is a consensus across the political spectrum of the innate desirability of owner-occupation (Yates 2010). In the Australian context, an important consideration in implementing policy measures is evidence that home ownership is critical for maintaining living standards during retirement. In a flat-rate, means-tested system such as the Australian social welfare system, if households do not attain home ownership during their working life there is the potential for relatively high levels of poverty to be experienced among older individuals. Significantly, it is widely acknowledged that the exclusion of owner-occupied housing from the means-tests for pensions provides an implicit incentive to accumulate savings in the form of home equity (Freebairn 2016).

A variety of tax concessions are specifically targeted to FHBs. Stamp duty imposed on the transfer of real property represents one of the major sources of revenue for state governments, and most jurisdictions offer lower rates or exemption from stamp-duty tax liabilities for those purchasing their first home.[8] Support for home ownership also takes the form of demand subsidies or cash grants explicitly targeted at FHBs. Although such measures have been made available since at least the early 1980s (Bourassa, Haurin et al. 1994), specific measures were put in place in 2000 as part of the tax reform package associated with the introduction of the GST. The FHOG was administered by state governments and represented a direct cash grant to first-time buyers which, over time, was supplemented by additional measures at both the state and federal level. During the GFC, concerns around the impact of a marked economic downturn prompted a temporary increase in the value of the cash grant under the FHOG scheme, which was differentiated by the nature of the purchase. Hence, eligible purchasers of newly constructed dwellings were eligible for grants of up to $21,000, while for existing dwellings the grant was equal to $14,000. More recently, during the COVID-19 pandemic, governments have provided additional means-tested subsidies for the construction of new housing in conjunction with the FHOG scheme.[9]

8 See the following: New South Wales: https://www.nsw.gov.au/living-nsw/housing-and-property/first-home-buyer-grants-and-assistance; Victoria: https://www.sro.vic.gov.au/first-home-owner/apply-first-home-buyer-duty-reduction; Queensland: https://www.qld.gov.au/housing/buying-owning-home/advice-buying-home/transfer-duty/how-much-you-will-pay/concessions-on-transfer-duty/concessions-for-homes/first-home-concession; Tasmania: https://www.sro.tas.gov.au/property-transfer-duties/concessions-exemptions/duty-concession-for-first-home-buyers-of-established-homes; Western Australia: https://www.wa.gov.au/organisation/department-of-finance/transfer-duty-assessment#rates-of-duty.

9 See for example https://treasury.gov.au/sites/default/files/2021-04/homebuilderfactsheet2704.pdf.

There has also been increasing recognition that the deposit hurdle poses particular challenges for FHBs. In response, policies initiated at both the federal and state levels allow:

- the purchase of a home with a deposit as low as 5 per cent of the purchase price and without the need to purchase lenders mortgage insurance (LMI)[10], or
- the ability to use funds drawn from superannuation towards the purchase of a first home under the First Home Super Scheme (FHSS).[11]

In effect, the FHSS provides opportunities to accumulate some savings towards the purchase of a first home under concessional tax rates.

The measures that have been put in place have ostensibly been designed to assist FHBs by alleviating some of the financial hurdles associated with entering owner-occupation. The net effect of such measures will vary depending on the constraints imposed on buyers by financial institutions—which typically impose maximum LVRs and LTI levels that effectively limit buyers' borrowing capacity—and the specific nature of the assistance provided. Similarly, there has been a systemic increase in real house prices over time and a concomitant extension of the period that a typical buyer will take to accumulate a deposit to be in a position to enter into home ownership.

Measures such as FHOGs may directly enhance the quantity or quality of housing services that a household can purchase—if such assistance is not capitalised in the form of higher house prices. Alternatively, FHOGs may enable a first-time buyer to bring forward in time their intended purchase of a dwelling by reducing the time required to accumulate a deposit. Policies that facilitate the purchase of a property with a low deposit may hasten the transition into home ownership, assuming that the first-time buyer has sufficient funds to satisfy any LTI requirements. Such policies are typically characterised as demand-side measures that are designed to facilitate entry into home ownership, rather than support it in an ongoing manner (Pawson, Martin et al. 2022).

Evidence around the effectiveness of demand subsidies is mixed and suggests that increases in home ownership associated with such measures represent changes in timing rather than a systemic increase in home ownership levels. For example, Bourassa, Haurin et al. (1994) analyse an early version of a demand subsidy targeted at first-time buyers and find that its removal lowered the home ownership rate among young households by around a quarter, roughly equivalent to delaying the transition into ownership by two years. More generally, evidence suggests that demand subsidies such as the FHOG have led to increased first-time buyer activity in the housing market.

For example, recent figures suggest that lending to first-time homebuyers increased substantially during 2020 following historic lows reached during the mid-2010s. The increase in FHB activity was precipitated by large cash grants being made available to potential buyers. Similar patterns were identified in the late 2000s as government payments associated with the GFC were provided to first-time home purchasers (Figure 5). What remains less clear is the long-term implications of such measures on home ownership rates. While demand subsidies such as the FHOG and stamp-duty concessions may alleviate some credit-market constraints, there is evidence that such measures simply bring forward the entry into home ownership rather than increase home ownership rates permanently (Wood, Watson et al. 2006). Enhanced levels of FHOGs during the GFC appear to have had little or no impact on the total number of new home loans over the medium term (Pawson, Martin et al. 2022). While such measures may have important short-term macro-economic implications, there is less evidence they result in a systematic increase in rates of home ownership over time.

10 For New South Wales, information on the First Home Loan Deposit (FHLD) scheme can be found here: https://www.nsw.gov.au/life-events/living-nsw/buying-residential-property-nsw/financial-support-for-first-home-buyers/first-home-loan-deposit-scheme.

11 Detailed information is available at https://www.ato.gov.au/individuals/super/withdrawing-and-using-your-super/first-home-super-saver-scheme/.

Figure 5: New loan commitments, first homebuyers, Australia

Source: ABS Leading Indicators, series A108271214W.

One reason that demand subsidies such as the FHOG and stamp-duty concessions may have little long-term impact on home ownership rates reflects the likelihood that such subsidies are simply capitalised in the form of higher house prices (Davidoff and Leigh 2013). A standard result in the taxation literature is that the economic incidence of taxes such as stamp duty are actually borne by sellers when supply is relatively inelastic. In other words, following the imposition of stamp duty, sellers simply receive lower prices and the total amount paid by buyers to the vendor and governments in total is unchanged. It follows then, that reductions in stamp duty payable by buyers actually assists sellers who receive a higher price, with little or no benefit to buyers. Similarly, if the increased buying capacity of FHBs that flows from schemes such as FHOG is matched by equivalent increases in house prices, such measures will have at best a marginal impact on affordability and home ownership rates over the long term.

The role of government policy in encouraging or facilitating entry into home ownership by alleviating the credit-market constraints carries with it important implications for individual households, and for the economy more broadly. Lending practices such as maximum LVRs impose on households a requirement to accumulate savings—and thus signal a capacity to defer consumption and service a mortgage. LTI ratios ensure that households have the capacity to service a loan in an ongoing manner. Policies that circumvent or alleviate these constraints imposed by markets potentially expose individual households—and the broader economy—to risk. The experience of the GFC suggests that incentivising home ownership where it may be a marginal proposition for the household exposes that household to heightened risks, and may also present systemic risks to the economy (van Hoenselaar, Cournède et al. 2021). In Australia, existing research suggests that despite the relatively high cost of housing, households that have entered into the property market have not taken on a level of mortgage debt that is excessive. Nonetheless, current and future increases in interest rates coupled with uncertainty associated with ongoing economic conditions may leave some households exposed to future risks (Simon and Stone 2017).

The delayed or non-entry into home ownership that characterises the recent experience of younger Australians has been associated with broader social developments. For one, it has coincided with an increase in the tendency for Australians to remain in or return to the parental home. While there is uncertainty around the causal nature of the relationship between patterns of home ownership and other social and economic developments, it is in this context that increasing attention has been paid to the role of parental support for potential FHBs. There is evidence for Australia and internationally that parental support—sometimes referred to as the 'Bank of Mum and Dad'—represents an increasingly important facilitator for younger individuals to achieve home ownership. While lower than that reported for other countries, the amount of wealth transferred in Australia annually across generations exceeds 6 per cent of national income, with a large majority of those transfers being in the form of inheritances (Productivity Commission 2021). In a quantitative sense, the financial support provided by parents to their children in the forms of loans, gifts or as guarantors to facilitate home ownership is claimed to place the Bank of Mum and Dad among the top ten mortgage lenders in Australia (Hughes 2021).

Increases in young adult–parental co-residence and the significance of the Bank of Mum and Dad have important economic and policy implications. Such patterns may be considered as part of an evolving policy environment in which governments are increasingly relying on households to provide financial support for younger cohorts (Cobb-Clark and Ribar 2012). The ability to provide that support will differ across households, and it is important to consider how that support may impact on entry into home ownership and the potential implications for individuals over the life cycle. Given the role that home ownership has traditionally played in the accumulation of wealth, this is likely to have implications for the level of inequality over time (Productivity Commission 2021). Moreover, it has important long-term consequences given the critical role played by home ownership in supporting older Australians during retirement. In turn, it raises questions as to whether asset-based welfare may complement traditional sources of publicly provided support over time (Ronald, Lennartz et al. 2017).

1.3 Existing research

The literature examining tenure choice in Australia is extensive and the discussion here is limited to a brief overview of some of the key contributions that have focussed on economic considerations related to entry into home ownership. This includes how patterns of transition into home ownership have changed over successive cohorts of Australians, along with the role of financial enablers and constraints on first home ownership.

The decline in home ownership rates described in Section 1.1 has been examined in studies that have considered both the causes and consequences of this development. While the overall decline in home ownership rates has been relatively modest, existing trends indicate a pattern whereby successive cohorts of younger Australians appear to be entering home ownership at lower rates than preceding generations at any given age (Burke, Nygaard et al. 2020). A key question to be addressed in this report is whether such a pattern is consistent with simply a delay in attaining home ownership, or the decline is indicative of a systemic shift in home ownership rates reversing the upward trend of the latter half of the twentieth century.

One explanation for the decline in home ownership rates among younger cohorts is associated with what has been termed the 'transition to adulthood'. That transition is generally accompanied by a series of life events such as partnering, completion of formal education, fertility and the formation of an independent household. International and Australian evidence suggests that, over time, those key life events have been extended or delayed, as has the transition into home ownership (Cobb-Clark and Gørgens 2014; Cobb-Clark and Ribar 2012; Liu and Esteve 2021). An important part of the analysis in this report will be statistical analysis that controls for the observable characteristics of individuals and households, such as partnered status, when identifying how the attainment of home ownership has evolved over time. This will provide insight into how those socio-demographic developments may influence the evolution of home ownership rates over time.

The economic framework highlights the need to consider home ownership in a life-cycle context. The purchase of an owner-occupied dwelling will generally be premised on an expectation that housing services will be consumed over time and financed by borrowing against future incomes. As noted in Section 1.2, the financing of home ownership has undergone significant change since the mid-1980s, following a period of deregulation that led to:

- an increase in the number of financial institutions
- the removal of regulations governing loans, such as interest-rate ceilings
- the development of new financial products (Yanotti 2013).

This pattern was exhibited across countries and, along with macro-economic developments such as lower inflation, led to increases in the demand for housing finance. In Australia and other countries such changes have coincided with the rapid increase in house prices (Ellis 2006). These developments are likely to have a mixed impact on potential FHBs. For example, Williams (2008) argues that financial innovations provided new opportunities for FHBs to enter into the housing market, but also an impetus for the rapid increase in house prices experienced over the late 1990s and 2000s.

Traditionally, mortgages in Australia took the form of a fully documented, full-recourse, variable-rate loan. In general, changes in the interest rate on such loans tracked variation in the Reserve Bank's benchmark interest rate relatively closely. While such loans exposed borrowers to risks associated with income and interest-rate uncertainty, they were relatively flexible and allowed borrowers to increase payments beyond the minimum required (Yanotti and Dungey 2014). The entry of non-bank lenders led to the development of new products such as interest-only loans and revolving credit lines. Lending standards tended to be relative stringent prior to the deregulation of the 1980s, with a loan-to-value ratio (LVR) of 80 per cent and debt-to-income limits commonly applied by financial institutions. Rationalisation within the sector led to many non-bank institutions such as building societies merging with or becoming banks. One of the consequences of the development of new mortgage products following deregulation was that mortgages could be used to finance a broader range of products. The availability of relatively cheap credit coincided with an increase in the size of mortgages both in an absolute and relative sense (Burke, Stone et al. 2014), which left household debt to GDP in Australia among the highest across OECD economics (van Hoenselaar, Cournède et al. 2021). As the set of loan instruments on offer expanded, there is evidence that FHBs tended to choose products that provided opportunities to access home ownership with lower downpayments and fixed or 'honeymoon' interest-rate loans (Dungey, Wells et al. 2013; Yanotti and Dungey 2014).

In Australia, as in other countries, home ownership is supported through a broad range of policies including tax and transfer settings that treat owner-occupied housing concessionally relative to other asset classes. In terms of measures specifically directed at FHBs, targeted subsidies such as the FHOG or incentives for housing-related savings have been used by successive governments since the 1960s (Randolph, Pinnegar et al. 2013). The impact of such measures depends on how they are structured and the behavioural responses they induce from actual and potential recipients. From a financing perspective, demand subsidies reduce a potential buyer's after-tax economic cost of home ownership. Where such measures can be used to meet deposit requirements and reduce the amount of funds required to be borrowed, they alleviate the deposit constraint faced by households and potentially enable earlier transition into owner-occupation (Wood, Stewart et al. 2008). However, it is important to stress that the existing empirical evidence does not support the argument that FHOGs lead to a long-term increase in the level of home ownership, but rather simply bring forward that transition among constrained households (Bourassa, Haurin et al. 1994; Wood, Watson et al. 2006). Moreover, the impact of such measures will be mitigated to the extent that subsidies are capitalised into higher housing prices (Eslake 2013; Randolph, Pinnegar et al. 2013; Williams 2008).

There is increasing evidence in Australia and internationally that parents represent an important source of finance for the purchase of owner-occupied housing. Rising house prices across major industrialised economies appear to have been both an enabler and cause of this development (Ma and Kang 2015; Scanlon, Blanc et al. 2019). As house prices have increased, this has led to substantial increases in the housing wealth of existing home owners —especially older home owners—and accentuated the financing constraints faced by those wishing to transition into owner-occupation. Coupled with financial innovations that have allowed households to draw on housing equity, parental transfers appear to have become one of the key enablers of the transition into home ownership by facilitating the purchase of additional housing services (Engelhardt and Mayer 1998). Importantly, while there has been analysis of how direct transfers—both inheritances and financial gifts—are associated with transitions into home ownership, there is less evidence of the role played by in-kind transfers such as co-residence. Residing with parents offers young adults the opportunity to share housing-related costs and accumulate savings (Productivity Commission 2020). In doing so, it potentially provides an important mechanism to facilitate entry into home ownership (Chia and Erol 2021; Cooper and Luengo-Prado 2018).

The final component of the analysis in this report examines the implications of intergenerational transfers for inequality. In Australia (Burke, Stone et al. 2014) and internationally (Ronald, Lennartz et al. 2017; Scanlon, Blanc et al. 2019) the potential for the housing market to exacerbate inequalities has been identified, as rising prices preclude some groups from accessing home ownership. Existing research has identified a greater tendency among home owners to receive transfers in the form of bequests or inter-vivos financial gifts, and for those transfers to be associated with an increase in inequality (Barrett, Cigdem et al. 2015). Analysis by the Productivity Commission has found that while wealthier Australians tend to receive larger transfers, in a proportional sense they are smaller than those received by poorer Australians. Hence, transfers do not increase inequality measured in a relative sense (Productivity Commission 2021). The analysis in this report will shed additional light on how transfers shape wealth inequality over time.

1.4 Research methods

This report is quantitative in nature, and uses statistical or econometric methods to provide insights into the housing behaviours and outcomes of Australians. The conceptual framework that underpins the empirical analysis is economic in nature. While a formal theoretical model will not be developed, the economic approach will be used to motivate and inform the statistical analysis. A key advantage of the economic method is that it provides a coherent theoretical framework through which the behaviours of economic agents—individuals or households—can be modelled. While one potential limitation of the approach is that it provides a relatively stylised way with which to characterise decision-making, it nonetheless provides a robust and flexible framework within which behaviours and outcomes can be examined.

The general approach in economics is to argue that individuals or households maximise their utility subject to the constraints they face. Utility can simply be considered a measure of wellbeing or satisfaction, where that wellbeing is derived from consumption of goods, including housing. In other words, it is assumed that individuals or households make the best possible decisions given the constraints they face, where those constraints may reflect financial or economic considerations, or restrictions imposed by institutional settings. A very simple model is one in which an individual allocates their expenditure across different goods or services so as to maximise their utility. In the absence of any wealth holdings, current period income will constrain or limit expenditure.

Decisions around housing, such as tenure choice and the quantity and quality of housing consumed, can all be examined using an economic framework. Tenure-choice decisions, particularly owner-occupation, introduce at least two additional complications into the economic model of behaviour.

First, tenure choice is one that is generally considered in the context of life-cycle models. That is, models that take into account that forward-looking individuals or households make choices that have consequences over multiple periods of time, and that constraints faced are intertemporal in nature. For example, saving today leads to the accumulation of wealth that can be consumed in future periods.

Second, saving and borrowing can be used to smooth consumption over the course of an individual's life. While the accumulation of home equity represents an important savings mechanism over the course of an individual's working life, saving is also an important precursor to transition into owner-occupation, given the deposit constraint that potential FHBs face. In a life-cycle sense, in the absence of bequests, the net discounted value of lifetime consumption cannot exceed the net discounted value of lifetime income.

The life-cycle approach posits that individuals undertake different activities over the course of their life, which shape their behaviours and choices. For example, in the early part of the life cycle individuals gain education and accumulate human capital. In the initial years of employment, individuals accumulate savings while income grows rapidly. Subsequently, income growth generally declines, and income from employment may fall to zero as individuals retire. At this point, consumption is maintained by dissaving—drawing on accumulated wealth.

There are several reasons why the life-cycle model is particularly useful for conceptualising decisions such as the purchase of owner-occupied housing, the services from which are generally consumed over multiple future periods. For example, entry into home ownership is likely to be correlated with observable characteristics, such as the presence of children, and statistical models can readily incorporate information on the socio-demographic characteristics of individuals. Similarly, the purchase of an owner-occupied dwelling generally requires borrowing against future earnings and imperfect credit markets limit the capacity of individuals to do so. Credit-market imperfections manifest themselves in the form of constraints imposed by lenders, such as deposit hurdles and maximum repayment to income ratios (Andrew 2010; Wood, Stewart et al. 2008). Meeting the requirement for a deposit or downpayment requires a period during which saving occurs and the life-cycle approach can readily capture this process. Existing theoretical (Artle and Varaiya 1978) and empirical studies (Andrew 2012; Wood, Watson et al. 2006) highlight the role that constraints such as the deposit requirement play in shaping housing careers over time.

The quantitative or statistical analysis in this report draws on secondary data in the form of the Household Income and Labour Dynamics in Australia (HILDA) survey, and successive Survey of Income and Housing (SIH) data collected by the ABS. These datasets provide detailed socio-demographic and economic information about a sample of Australians. In the case of the HILDA data, the same respondents are interviewed repeatedly, which allows for longitudinal analysis to be undertaken. The successive waves of the SIH data facilitate the construction of pseudo-panels that allow for longitudinal analysis to be undertaken. Additional details of the data used, and the analysis, are presented in Section 2 and Section 3.

2. Cohort analysis of first-time home ownership

- **Over the past 30 years, home ownership rates for younger Australians have fallen substantially.**
- **This fall in ownership rates has coincided with rising house prices and deteriorating affordability. The decline remains after controlling for changing socio-demographic trends.**
- **As they age, home ownership rates of younger Australians do partially catch-up to their predecessors. However, this catch-up is incomplete. By age 50, one-quarter of the overall gap in home ownership rates remains.**
- **Our analysis suggests that government support and concessions on housing transaction costs for FHBs increase first home purchases. However, we cannot rule out that the effect is simply to bring forward the timing of first-time home purchase.**

This section explores whether different housing market conditions have led to differences across birth cohorts in terms of their progress along the housing ladder in Australia. The following research questions are addressed:

- **RQ1:** How has entry into home ownership changed over cohorts of Australians? If more recent cohorts do not enter home ownership at the same rate by age 30 as older cohorts, do they subsequently catch-up and simply enter later, or are their home ownership rates lower across the life cycle?
- **RQ2:** What is the evidence around the role of formal policy tools to support home ownership including the FHOG and concessions in transaction costs such as stamp duty?

Changes in patterns of entry into home ownership across cohorts are important because of how tenure evolves over the life cycle and the central role played by housing financing in facilitating owner-occupation. Consider the stylised pattern for a household for which the preferred tenure is owner-occupation. Typically, such a household may have resided in a rental tenure while accumulating savings required to meet the deposit hurdle in the early part of the life cycle. After entering home ownership, the mortgage used to finance the purchase of housing would be amortised over the household's working life. The household would then enter retirement free of mortgage debt. Delays in entering home ownership will extend the period of working life over which the mortgage must be serviced or require that mortgage debt be carried into retirement. If the transition into home ownership is delayed for a sufficiently long period, it is possible that attaining the desired tenure will not be possible, as the present value

of lifetime income will not be sufficient to service the mortgage debt. Hence, understanding how transitions into home ownership have evolved across successive cohorts is central to understanding how home ownership rates are likely to evolve over time, the effect of past policy and appropriate policy settings in the future.

Section 2.1 provides a brief literature review. Section 2.2 describes the data and provides descriptive statistics for research question 1. Section 2.3 summarises the econometric model and Section 2.4 presents the estimation results. In both Section 2.3 and Section 2.4, a non-technical description of the statistical model is provided. Section 2.5 evaluates a policy change in late 1990s in Queensland in which the stamp duty imposed on FHBs was reduced. This reform provides an opportunity to undertake quasi-experimental analysis of a reform that created exogenous variation in the transaction costs for FHBs, enabling some insights in response to research question 2.

2.1 Literature review

The price of housing is one factor that determines housing affordability. Early studies in Australia that rely on cross-sectional data indicate that rising house prices create greater challenges for potential buyers to transition into home ownership. As might be expected, that transition is even more challenging for low-income households. Also, the timing of that transition in the life cycle is also potentially important. Analysis by Winter and Stone (1998) suggests that not owning a home is a persistent state—in other words, a large proportion of individuals who do not enter home ownership by the age of 35 never obtain home ownership.

Yates (2000) compares the tenure status of individuals from different cohorts using Housing Expenditure Survey (HES) data collected in 1975 and 1984, and shows that more recent cohorts of Australians have experienced declines in home ownership. In follow-up work, Yates, Kendig et al. (2008) simulate home ownership rates for the same cohorts. The projections in that study suggest that lower rates of home ownership among young people would persist until the age of retirement. Stebbing and Spies-Butcher (2015) re-examine the issues researched by Yates et al. (2008) using more recent data. They find that home ownership among young people continued to fall among recent cohorts and that these cohorts continue to struggle to 'catch-up' later in their lives. The simulation results in these studies are sensitive to modelling choices, so an empirical assessment of these questions remains important.

A study by Baxter and McDonald (2004) using data from the Australian Housing Surveys and the Negotiating the Life Course Survey conclude that little change in home ownership rates has taken place across birth cohorts. Instead, they suggest that the fall in home ownership at young ages for recent cohorts reflects changes in life-cycle preferences, including:

- more time in education
- delays in the commencement of paid employment
- delays in the age of marriage (Baxter and McDonald 2004; Mudd, Tesfaghiorghis et al. 2001).

Recent research suggests that home ownership rates in Australia are declining and that this pattern is particularly pronounced among younger cohorts (Beer, Faulkner et al. 2006; Burke, Nygaard et al. 2020).

In summary, the Australian literature shows that, in the short run, recent cohorts faced with more challenging housing market conditions on average experience delays in 'getting on the property ladder'. An important question that is left unanswered is whether these cohort differences persist in the long run. Does the cohort catch up with its older counterpart as they age and close the gap in rates of home ownership? Or do some members of a cohort, delayed in their initial entry into home ownership, find that they are never able to make the transition to owning home? That is, does the initial cohort difference in home ownership rates persist?

Recent international studies focus on quantifying this 'catch-up' effect. Bottazzi, Crossley et al. (2015) suggest that housing market conditions early in a cohort's housing career matter both in the short run and long run in the United Kingdom. Similarly, Clark, Deurloo et al. (1994) and Clark and Mulder (2000) explore tenure changes in the United States. These papers use either true panel or pseudo-panel datasets to explore the cohort catch-up effects in the long run. Our analyses closely follow the Bottazzi, Crossley et al. (2015) approach and examine the cross-cohort home ownership in Australia over the last 40 years.

The literature also suggests important factors that delay ownership may be associated with long-run changes in economic and social outcomes. Research show that house prices and tenure status have significant impacts on labour supply, consumption, indebtedness, and the health and fertility decisions of Australians (Atalay and Edwards 2022; Atalay, Barrett et al. 2020; Atalay, Edwards et al. 2017; Atalay, Li et al. 2021; Atalay, Whelan et al. 2017; Eccleston, Verdouw et al. 2018). Hence, analysing how housing market conditions are associated with differences in home ownership is important for understanding broad economic and demographic trends in Australia.

2.2 Data description and descriptive statistics

The empirical analysis focusses on differences in life-cycle consumption of housing across birth cohorts. Potential data sources should cover long time periods where different birth cohorts can be observed at different ages. One option is to use panel data that follows the same individuals across time, allowing for a comparison of housing consumption across cohorts as they pass through key ages of interest. However, true panel data of this nature covering a sufficiently long period does not exist for Australia. To overcome this data constraint, we will adopt a pseudo-panel methodology. Developed by Deaton (1985), the method has been widely employed in the life-cycle literature (Atalay, Whelan et al. 2017; Attanasio, Blow et al. 2009; Campbell and Cocco 2007). Using successive SIH data, cohorts will be defined by year of birth and state of residence. These pseudo-cohorts are used to:

1. Track birth cohorts to document the cross-cohort variation in life-cycle housing consumption as measured by home ownership.
2. Assess how house prices affect tenure status and entry into home ownership.
3. Quantify the extent of catch-up in terms of home ownership rates for cohorts that experience lower home ownership rates at early ages.

Given house prices are a key determinant of whether households are observed to enter into home ownership, the aim is to identify the quantitative relationship between housing prices and first-time home ownership using regression analysis on the pseudo-panel. To the best of our knowledge, our comparison of cohort experiences over such an extensive time frame is the first of its kind in Australia.

The main data source is the SIH, conducted by the ABS. The SIH collects information on the housing characteristics and socio-economic characteristics of Australian households. Although not a true panel dataset, the benefit of the SIH is the comprehensive set of information it provides on Australian households over an extended period. The SIH is available annually from 1994–95 to 1997–98. Then the survey was conducted in 1999–2000, 2000–01, and 2002–03. Starting with the 2003–04 fiscal year, the SIH has been conducted every two years (ABS, 2009). We supplement the SIH data with HES data from surveys in 1984, 1988–89, 1993–94 and 1998–99. Our final sample includes years from 1984 to 2017.

These two datasets also provide information on each home owner's estimated house value, which we use to calculate annual state average house prices. This calculated average house price is used for the main analysis. However, these self-reported house prices may contain measurement error since they reflect the respondents' personal perceptions of the property value, rather than the market value. While employing the state-year *average* of individual self-reported prices largely alleviates this concern, we will also conduct sensitivity testing to confirm our findings using external sources of house price data.

A sample of household heads was selected for analysis, as the methodology is better suited to the analysis of individuals rather than households. First, an age is required to allocate the individual to a birth cohort. Allocating a household to a particular cohort is more difficult, as households often comprise a number of individuals belonging to different birth cohorts. In addition, home ownership is correlated with the formation and dissolution of households. Thus, estimates would be biased unless controls for household composition and characteristics are incorporated into the model. For these reasons, Bottazzi, Crossley et al. (2015) also use the individual as the unit of measurement. The household head (or reference person) is defined in both the HES and the SIH first by housing tenure, then by income and then by age (ABS 2009). The tenure types are ranked from low to high as follows: renting, owner with mortgage, outright owner. Restricting the analysis to household heads is intended to prevent complications associated with allocating home ownership to members within one household. It provides a clear rule by which home ownership can be assigned among married or de facto couples, and ensures that children are not identified as home owners.

Table 1 presents summary statistics for 30–34-year-old household heads across birth cohorts for those born in 1950–54 to 1985–1989. There is a steady decline in home ownership across cohorts coupled with substantial changes in socio-economic characteristics, including a decline in the proportion of married individuals and of individuals with at least one child. For example, at 30–34 years of age, those born in the period 1950–54 had a home ownership rate of 63 per cent. In comparison, those born in the period 1985–89 had a home ownership rate of only 45 per cent at the same age. Further, 72 per cent of those born between 1950 and 1954 report having dependent children at age 30–34 whereas only 50 per cent of those born 1985–89 report the presence of dependent children. These coincident trends highlight the need to use multivariate analysis when examining the evolution of home ownership across cohorts.

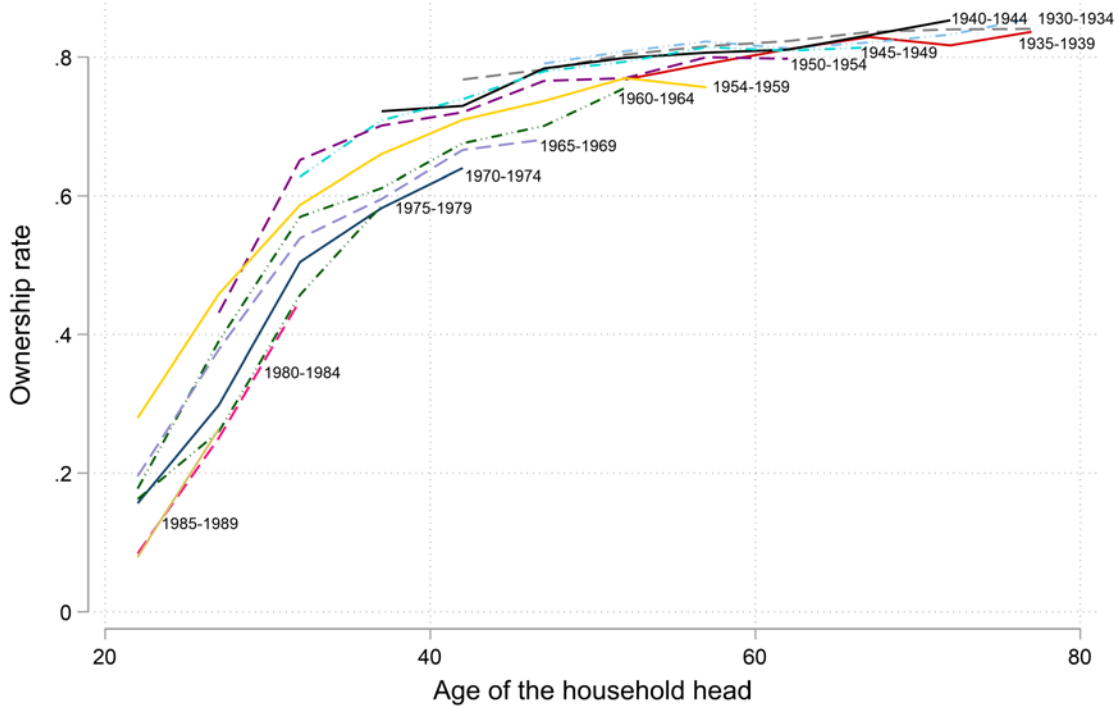
Table 1: Summary statistics: individuals at age 30–34, by birth cohort

Birth Cohort	1950–54	1955–59	1960–64	1965–69	1970–74	1975–79	1980–84	1985–89
Home ownership rate (%)	63	65	59	57	54	50	46	45
Mean national house price (2016 $)	202,772	215,683	260,013	295,329	465,328	532,538	539,079	717,031
Mean household income (2016 $)	78,149	75,841	74,831	82,505	97,598	71,025	76,577	128,595
Married (%)	78	71	71	67	63	66	72	72
Born overseas (%)	24	22	28	24	23	29	35	40
Have dependent child (%)	72	68	64	60	51	51	52	50
Post-sec. educ. or more (%)	-	-	55	58	67	68	79	85

Source: Authors' own calculations using SIH and HES data, various years.

Figure 6 plots the home ownership rates of various birth cohorts across ages. Each line represents a different five-year birth cohort. The pattern in Figure 6 indicates that home ownership follows a concave shape, which reflects the age or life-cycle pattern of home ownership. As individuals age, home ownership rates tend to increase rapidly before plateauing. When we compare different cohorts to each other, a significant decline in the home ownership rate at around age 30 is evident for recent cohorts. The cohort born in 1965 had a home ownership rate of 50 per cent, while the cohort born in 1980 had a home ownership rate of 40 per cent, indicating a 10-percentage-point decline in the home ownership rate at age 30 over 15 years. The figure suggests that the timing of the decline in the home ownership rate at age 30 coincides with the sharp increases in Australian house prices over more recent decades. This negative correlation between house prices and ownership at age 30 suggests that rising house prices may be a contributing factor in the significant cross-cohort variation in young people's ability to transition into home ownership.

Figure 6: Home ownership rates for different cohorts across ages



Source: Authors' own calculations using SIH and HES data, various years.

Table 2 summarises the home ownership rate (expressed as proportions) among birth cohorts in which we can observe both the young (those aged 30–34 years) and middle-aged (those aged 40–44 or 50–54 years). These descriptive statistics speak to the second part of research question 1, concerning the catch-up of younger cohorts with their older counterparts.

Panel 1 displays the home ownership rates for cohorts at 30–34 years and 40–44 years. Panel 2 similarly indicates the home ownership rates for those observed at both 30–34 and 50–54 years. We see that the standard deviations for older ages (especially the 50–54 age group) are smaller than those for younger ages: home ownership rates at age 50–54 do not vary as much across cohorts. Also, the difference between minimum and maximum values are smaller at older ages. These summary statistics suggest that there is at least partial catch-up as part of the variation in ownership rates across cohorts at age 30–34 disappears by middle-age.

Table 2: Home ownership rates by age

	Mean	St.Dev.	Min	Max
(1) Ownership rate at ages 30–34 and 40–44, among cohorts observed at both ages				
Ownership rate at age 30–34	0.580	0.055	0.504	0.651
Ownership rate at age 40–44	0.692	0.038	0.640	0.739
(2) Ownership rate at ages 30–34 and 50–54, among cohorts observed at both ages				
Ownership rate at age 30–34	0.608	0.037	0.569	0.652
Ownership rate at age 50–54	0.772	0.017	0.756	0.793

Source: Authors' own calculations using SIH and HES data, various years.

2.3 Empirical methodology

This section sets out the econometric or statistical methodology used in addressing research questions 1 and 2. Box 1 provides a non-technical description.

Box 1: A non-technical description of econometric analysis

The econometric or statistical analysis described in this section quantifies the relationship between home ownership, observable characteristics of the individual or birth cohort, and other relevant considerations such as house prices. The analysis itself consists of a series of steps, and in each case the technique used is regression analysis. Specifically, regression analysis is used to identify the relationship between an outcome of interest—such as the level of home ownership—and a key variable or variables that influence the outcome of interest, such as housing affordability, holding other characteristics such as age, gender or marital status constant.

The first outcome of interest is individual home ownership at age 30–34 years. We seek to understand how this outcome is related to housing affordability, measured by the level of house prices, after controlling for observable characteristics of individuals. Differences in ownership rates at age 30–34 years across birth cohorts will highlight how home ownership rates have declined over time.

Second, the analysis looks at the extent to which those who experience lower rates of home ownership at age 30–34 (specifically younger birth cohorts) close the gap in home ownership rates with older cohorts as they age. To identify the extent of catch-up, a series of models are estimated where the outcome of interest is the change in the home ownership rate between age 30–34 and age 40–44. By including the level of home ownership at age 30–34 in the specification as our key explanatory variable, it is possible to quantify the extent of catch-up in home ownership rates as birth cohorts age. The coefficient on the variable measuring the home ownership rate at age 30–34 will reveal the extent of catch-up.

The statistical challenges of quantifying the degree of catch-up exhibited by younger age cohorts necessitates the use of a technique referred to as two-stage least squares (2SLS). While the use of 2SLS necessitates a number of additional steps in the estimation procedure, the intuition and interpretation of the results remains similar.

The main objective is to observe differences in life-cycle consumption of housing and entry into home ownership across cohorts. The foremost empirical difficulty is separating the age effect from the cohort effect. The natural solution is to track individuals across time; this approach will allow for a comparison of housing consumption across cohorts as they pass through key ages of interest. However, panel data covering a sufficiently long period does not exist for Australia, while retrospective data—for example, the Negotiating the Life Course Survey data—does not provide information on home ownership over the past 20 years. Thus, as noted earlier, the project adopted the pseudo-panel methodology. The method was developed by Deaton (1985) and has been widely employed in the life-cycle literature (Attanasio, Blow et al. 2009; Campbell and Cocco 2007). Cohorts are defined by year of birth and state of residence.

Regression analysis is used to identify the quantitative relationship between housing prices and home ownership at age 30–34. Young people tend to have formed households and to have accumulated savings by around that age and are thus motivated to move from renting to the next stage of the housing ladder: purchasing a home with a mortgage. Limiting the scope of inquiry to young people has the additional advantage of avoiding having to make assumptions regarding how the relationship between house price and tenure choice varies with age (Myers, Megbolube et al. 1998).

To quantify the effect of house prices on the tenure choice relative to other contributing factors, our specification is as follows:

$$Own_{ist} = \beta_0 + \beta_1 Affordability_{st} + \beta_2 r_t + \beta_3 FinCon_t + \beta_4 X_{it} + \delta_s + \mu_{ist} \quad \text{(Eq.1)}$$

Own_{ist} is a dummy variable that takes the value of 1 if the head of household aged between 30–34 living in state s at time t owns property and takes the value of 0 otherwise. Note that, in examining ownership at age 30–34 years of age over time, this is equivalent to analysing ownership at age 30–34 years of age across birth cohorts.

$Affordability_{st}$ is the key explanatory variable of interest. Two measures for affordability are used: the state average house price and the ratio of the state average house price to the state average income. House prices and income are in real 2016 dollars. The nominal interest rate, r_t, is included to control for the changing average cost of a mortgage. $Fincon_t$ is a financial condition index constructed by the Reserve Bank of Australia (RBA) (Hartigan and Wright 2021). This measure is used to control macro-economic conditions, including credit conditions at the national level. X_{it} is a set of individual-level covariates, including controls for demographic characteristics (marital status, presence of a child in the household, gender, education, and country of birth) and an individual's financial situation (household income). Finally, state fixed effects (δ_s) are included to control for time-invariant cross-state differences. Eq.1 is estimated as a linear probability model and the robustness of the results confirmed to a probit specification. (The results are shown in Appendix 1). Standard errors are clustered on the year level to reflect the fact that the most aggregated regressors in the specifications vary at the annual level.

In order to assess catch-up effects, specification and use data is adapted at the state-cohort level. Eq.2 shows the study's specification: the cohort-state specific change in home ownership rates between ages 30 and 40 (ΔOwn_{cs}) was examined and regressed on the home ownership rate at age 30 in that state (Own_{cs}).

$$\Delta Own_{cs} = \beta_0 + \beta_1 Own_{cs} + \beta_2 X_{cs} + \beta_3 FHOG_c + \varepsilon_{cs} \quad \text{(Eq.2)}$$

A negative estimate for β_1 suggests that cohorts with lower ownership rates at age 30–34 experience a greater increase in ownership rates in the subsequent 10 years. If the coefficient were , catch-up would have been complete and 100 per cent of the variation in the home ownership rate at age 30–34 across cohorts will be compensated for by age 40–44. The extent of catch-up by age 50–54 was separately estimated. The term X_{cs} denotes the demographic characteristics of the cohort 'c' in state 's'—this includes the share of cohort c in state s that is married and the share of households with at least one child at age 30–34 years for the relevant cohort in the corresponding state. $FHOG_c$ is a binary variable indicating whether the ownership rate at 40–44 years is measured after the implementation of the FHOG that was made available on 1 July 2000. Recall that specific measures targeted at FHBs were put in place in 2000 as part of the tax reform package associated with the introduction of the GST. The estimate for β_3, the coefficient on the $FHOG_c$, will provide suggestive evidence as to whether and by how much the introduction of the grant increased the extent of catch-up over the 10 years from age 30–34 to age 40–44.

Eq.2 was initially estimated by ordinary least squares (OLS). However, the dependent variable ΔOwn_{cs} and the key regressor Own_{cs} are potentially measured with error. In particular, the cohort-state specific ownership rate at age 30–34 and at age 40–44 will be overestimated for some cohorts and underestimated for others due to sampling error.[12] This measurement error affects both the dependent variable and an independent variable and causes potential bias in the OLS estimates. Thus, Eq.2 is estimated using 2SLS to correct for the measurement error.

12 A formal derivation of the measurement error problem is shown in Appendix 1.

When estimating the model by 2SLS, the home ownership rate at age 25–29 is used as an instrument for the same cohort's home ownership rate at age 30–34. For example, the home ownership rate at age 25 for the cohort of 1970 is calculated from the 1995 dataset, while the home ownership rate at age 30 for the cohort of 1970 is constructed from the 2000 dataset. Since these two ownership rates are obtained from different datasets that contain different measurement errors, the measurement error in the instrument is thus uncorrelated with the error associated with home ownership rate at age 30–34. The mechanical link between the dependent variable and the key regressor caused by the measurement error is eliminated. The 2SLS specification comprises the first stage (Eq.3) and the structural equation of interest (Eq.4):

$$Own30_{cs} = \beta_0 + \beta_1 Z_{cs} + \beta_2\ Own25_{cs} + \beta_3 X_c + \delta_s + \mu_{st} \quad \text{(Eq.3)}$$

$$\Delta Own_{cs} = \beta_0 + \beta_1\ \widehat{Own30}_{cs} + \beta_2 X_{cs} + \beta_3 FHOG_c + \varepsilon_{cs} \quad \text{(Eq.4)}$$

Eq.3, the first stage, models the home ownership rate at age 30–34 for cohort c in state s ($Own30_{cs}$) as a function of home ownership rate at age 25–29 for the same cohort in the corresponding state. The fitted values of home ownership rate at age 30–34 obtained from estimating Eq.3 ($\widehat{Own30}_{cs}$) were used as the key regressor in Eq.4, correcting the standard errors for the two-step procedure. It is important to note that, by construction, the instrument is independent of the error term in Eq.4. The instrument, the home ownership rate at age 25–29 (Own_{cs}), is constructed using data from a survey that is independent from the survey used to construct the same cohort's home ownership rate at age 30–34 and the same cohort's change in ownership (ΔOwn_{cs}). The instrument affects the subsequent change in home ownership rate only through the home ownership rate at age 30–34. Hence instrument validity holds by construction. Further, the instrument is relevant: the home ownership rate at age 25–29 is strongly correlated with the home ownership rate at age 30–34 because of the persistence in home ownership.

2.4 Results: home ownership rates and catch-up

This section describes the results from the empirical analysis. Box 2 provides a non-technical description.

Box 2: A non-technical summary of our results

The key results from the statistical analysis can be summarised as follows:

a. There is evidence that falling housing affordability is associated with a lower likelihood that an individual is observed as an owner-occupier at age 30–34. For example, a $100,000 increase in house prices is associated with a decrease in the probability of owning a house by 2.5–3.0 per cent.

b. The gap in ownership rates experienced by younger birth cohorts at age 30–34 years decreases over the life cycle as individuals age. Of the gap that exists at age 30–34 years, approximately half is closed by age 40–44 and three-quarters by age 50–54.

c. There is some evidence, albeit limited, that demand subsidies in the form of the FHOG are associated with a greater level of catch-up for those birth cohorts that were able to access the program in the 2000s.

d. The 2SLS estimates, which address some of the statistical challenges with estimating the relationships of interest, confirm our main results and show similar rates of catch-up by earlier birth cohorts as the OLS estimates.

2.4.1 Impact of rising house prices on tenure status

Table 3 presents results for Eq.1. Column 1 and Column 3 presents the baseline model with state fixed effects, but without any additional controls. In Column 1, house prices are the main explanatory variable, while in Column 3 we use the ratio of house prices to average income. Column 2 and Column 4 add demographic controls, including the gender of the individual, whether they are a member of a couple, whether they have any children, and the family income. Importantly, we also control for the prevailing macro-economic and financial conditions, adding the interest rate and a financial conditions index, as described earlier.

These variables capture macro-economic conditions. For example an increase in the nominal interest rate usually coincides with economic expansion, which is positively correlated with the probability of owning a house. At the same time, higher interest rates may make it more challenging for potential FHBs to service a mortgage—and thus reduce their capacity to borrow to purchase a house. The financial conditions index proxies the prevailing credit conditions, which are known to be an important factor affecting the level of house prices in Australia.

From Table 3 we observe a negative and statistically significant impact of both of our affordability measures, house prices or the ratio of house prices to income, on the home ownership rate at age 3034. In Column 1, the estimate indicates that a $100,000 increase in the house price is associated with a 3 per cent decrease in the probability of owning property at age 30–34. The size of the effect is slightly smaller when controlling for macro-economic conditions and individual socio-demographic characteristics. In Column 2, the observed effect is 2.6 per cent. The life-cycle events of marriage and childbirth are both positively correlated with the probability of owning a house. Neither interest rates nor the financial condition index are statistically significant, and do not substantially affect the estimated impact of house prices on the probability of ownership. It is worth noting that, unlike the house price variable, the financial conditions index and the interest rate do not vary at the regional level, which means they are likely to proxy macro-conditions at the national level. The findings using the ratio of house prices to income in Column 3 and Column 4—an oft-cited measure of housing affordability—are qualitatively similar. In particular, Column 4 shows that an increase in the ratio of the house price to income ratio from 6 to 7 (where the average is a ratio of just under 6) leads to a 0.9 per cent decrease in the probability of owning property at age 30–34.

Table 3: House prices and home ownership at age 30–34 years

	Home ownership and house prices		Home ownership and the ratio of house prices to income	
	Baseline (1)	Controls added (2)	Baseline (3)	Controls added (4)
House price ($100,000)	−0.030*** (0.003)	−0.026*** (0.004)		
House price/average income			−0.021*** (0.004)	−0.009* (0.005)
Nominal interest rate		0.007 (0.005)		0.016* (0.008)
Financial condition index		−0.004 (0.008)		0.004 (0.012)
Household income ($10,000)		0.013*** (0.002)		0.012*** (0.002)
Male		0.033*** (0.010)		0.037*** (0.0102)
Couple		0.268*** (0.017)		0.266*** (0.017)
Dependent child in household		0.027*** (0.007)		0.030*** (0.008)
State dummies	Yes	Yes	Yes	Yes
R^2	0.016	0.144	0.014	0.141
Sample size				15,698
Period				1984–2017

*Notes: Robust standard errors are clustered at the year. *** p<0.01; ** p<0.05; *p<0.1.*

Source: Authors' calculations.

A series of robustness checks were carried out on these key findings. These results are robust to including data from 1975, using household sampling weights, including controls for educational attainment of the household head, and to using the national average house price rather than the state-specific average house price. Eq.1 was estimated using a probit specification to confirm the robustness of these results using an alternative estimation strategy (see Appendix 1).

2.4.2 Catch-up: Do cohort differences disappear at later ages?

The analysis in subsection 2.4.1 shows that home ownership rates in Australia at age 30–34 years vary substantially across birth cohorts. Moreover, unfavourable housing market conditions at these ages are associated with delays in the transition of later birth cohorts into home ownership.

Next, we turn to our analysis of cross-cohort catch-up in ownership rates. Recall that while we have documented that home ownership rates at age 30–34 years have fallen over time, it may be that by age 40–44 or age 50–54, home ownership rates have risen and any cross-cohort gap in ownership rates is subsequently eliminated as the cohort ages. Our analysis here is designed to determine the extent of catch-up—complete or otherwise. As detailed in Section 2.3, this analysis takes a pseudo-panel approach (Deaton 1985) and follows birth cohorts across time. Again, cohorts are defined by year of birth (in five-year bands) and state of residence.

Figure 7 presents descriptive statistics for catch-up analysis. Each data point in each panel of Figure 7 plots the change in a cohort's ownership rate in the 10, 15 and 20 years after that cohort reaches age 30–34 years, against that cohort's ownership rate at age 30–34. Superimposed over the data points is a line of best fit. It is clear that in all panels there is a negative relationship: lower (higher) ownership at age 30–34 is associated with a subsequent greater (lower) increase in ownership. For reference, if catch-up were complete, then the slope of this line of best fit would be –1, in which case we could expect that 100 per cent of any difference between a younger cohort and an older cohort's home ownership rates at age 30–34 would be eliminated within 10, 15 or 20 years.

Consider Figure 7, Panel A. In this panel, the 10-year change in ownership rates (from 30–34 years to 40–44 years) is plotted against the ownership rate at ages 30–34. The slope of the line of best fit in this panel is –0.49. This implies that 49 per cent of the variation in the birth-cohort home ownership rate at ages 30–34 is made up for by age 40–44. In other words, if a cohort's home ownership rate at age 30–34 is 10 percentage points lower than that of another cohort, we can expect that only half of this difference will be eliminated within 10 years.

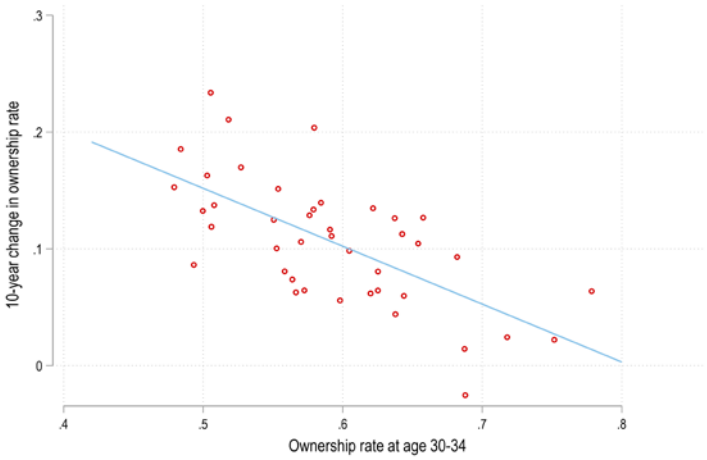
Figure 7 Panel B shows that the slope of the line of best fit becomes slightly steeper—increasing in absolute magnitude—as we allow for 15 years catch-up. The slope of the line of best fit in this panel is –0.52. In Panel C, we observe the steepest line when we allow for 20 years of catch-up: –0.74. Thus, even by age 50–54, catch-up is incomplete, with 74 per cent of the variation in the birth-cohort home ownership rate at ages 30–34 made up for over 20 years.

Since we are utilising synthetic cohorts—that is, cohorts for which information is sourced from different independent data—we need to ensure the comparability of cohort compositions across different surveys. For example, the analysis will be invalid if the composition of the cohorts at age 30 is considerably different from the composition of the cohorts at age 40 (or later ages). This may be a concern in the Australian context, given the surge in immigration in recent decades. If there are more new immigrants entering Australia than past arrivals leaving Australia, then the cohorts will have an increasing proportion of immigrants as age increases. This may bias catch-up results downward.

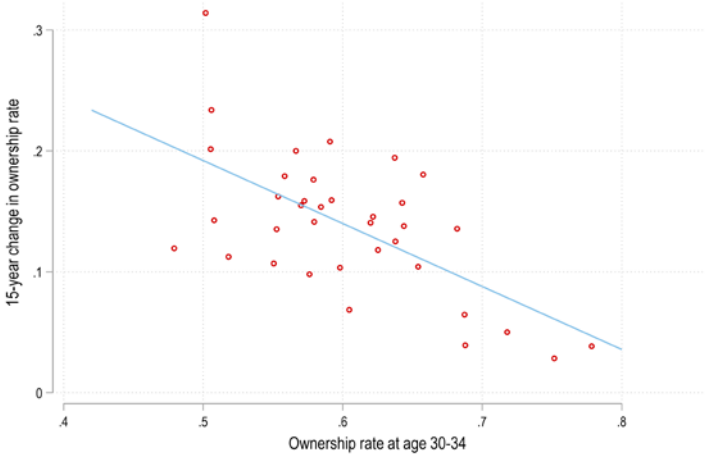
Table 4 estimates catch-up effects for 10 and 20 years, with additional variables to control changes in cohort composition overtime—specifically the share of couples, the share of households with at least one child, and the share of Australian-born in the cohort. We also include a binary variable indicating whether the ownership rate at 40–44 (or 50–54) is measured after the implementation of FHOG on 1 July 2000, to assess whether these cohorts' experienced additional catch-up due to the availability of the grant.

Figure 7: Catch-up? Change in the home ownership rate starting at age 30–34 years

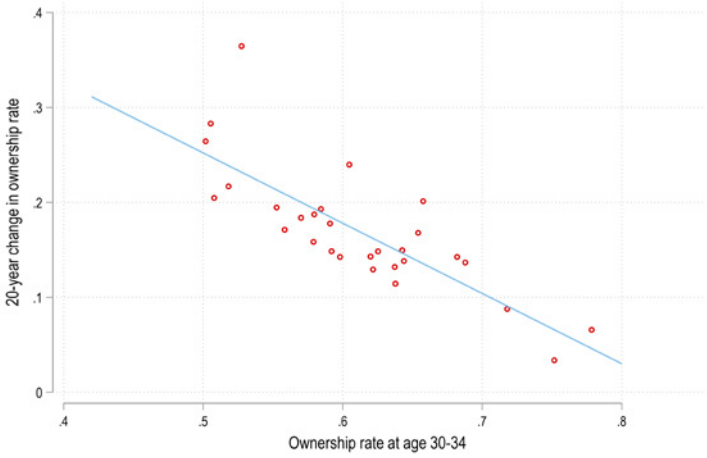
Panel A: 10-year catch-up



Panel B: 15-year catch-up



Panel C: 20-year catch-up



Source: Authors' own calculations using SIH and HES data, various years.

The results confirm that there is incomplete catch-up by age 40–44, as well as greater but still incomplete catch-up by 50–54 years of age. The results also show that the demographic controls do not significantly affect the extent of catch-up. Consider the effect of the FHOG—we observe no effect for 10-year catch-up, but a significant effect on 20-year catch-up. These results provide suggestive evidence that the FHOG increased the extent of catch-up. However, it is important to remember that this analysis is at the cohort level, rather than the individual level. Therefore, we cannot identify the individuals that used the FHOG. Rather, the results show that those cohorts that were eligible for the FHOG appear to experience a greater degree of catch-up than cohorts that were not eligible. As a result, we should be cautious in our interpretation of these results, as FHOG eligibility can coincide with other macro-economic events.

A remaining concern with this catch-up analysis is measurement error. As discussed in Section 2.3, home ownership rates at age 30–34 may be subject to measurement error. For each cohort, the home ownership rate is an estimate based on the representative sample of that birth cohort found in the appropriate year of the survey. Due to sampling errors, the cohort ownership at age 30–34 will be slightly underestimated in some surveys and overestimated in other survey years. This measurement error may bias the results in Table 4 (and Figure 7) in two ways.

First, the measurement error in the home ownership rate at age 30–34, which is used as an independent variable, leads to an attenuation bias and causes the slope of the line of best fit to be biased towards 0. This means that the lines in Figure 7 appear less steep than they actually may be.

Second, the home ownership rate at age 30–34 is also used to construct the change in the home ownership rate for the relevant cohort, so it also appears on the left-hand side of the regression model. As a result, the measurement error at age 30–34 creates a mechanical relationship between the change in ownership at a particular age and ownership at age 30–34. As a result, contrary to the first effect, it leads to overestimation of the extent of catch-up.

Table 4: Catch-up in home ownership in the 10 and 20 years from age 30–34

	10-year catch-up		20-year catch-up	
	Baseline	Controls added	Baseline	Controls added
Ownership rate at age 30–34 years	−0.496*** (0.092)	−0.642*** (0.151)	−0.740*** (0.111)	−0.611*** (0.134)
Whether the cohort benefited from the FHOG before age 42		0.016 (0.028)		−0.101* (0.055)
Share of married couples		−0.022 (0.172)		0.028 (0.175)
Share of households with at least one child		0.143 (0.198)		0.013 (0.177)
Share of Australian-born		−0.054 (0.115)		−0.041 (0.103)
R^2	0.42	0.44	0.63	0.71
Sample size	42	42	29	29

*Notes: Bootstrapped standard errors are in parentheses. *** p<0.01; ** p<0.05; *p<0.1.*

Source: Authors' calculations.

To overcome this measurement error, we re-estimate our regression model by 2SLS, using the ownership rate at age 25–29 as an instrument for our mismeasured independent variable, ownership at age 30–34. As discussed in Section 2.3 this instrument, by construction, is both relevant and valid.

Table 5 reports the estimates from the 2SLS analysis. Panel A presents the 10-year catch-up from age 30–34 and Panel B presents the 20-year catch-up. The first-stage regression for the instrument shows that instrument is sufficiently strong for 10-year catch-up.[13] The 2SLS estimate of the coefficient on the ownership rate at age 30–34 confirms that catch-up is incomplete and indicates an average catch-up effect of 42.4 per cent. This estimate is not significantly different from the OLS estimate report in Table 4, although it is smaller in magnitude, which suggests that measurement error may cause an overestimation of the catch-up effect in our data. In Panel B, we examine the 20-year catch-up. Due to the smaller sample size, the instrument becomes weak. Nevertheless, the results are similar to Panel A and indicate that our main findings in Table 4 are robust. It is also important to note that FHOG indicator becomes highly insignificant, which might be partially due to small sample size and specific cohorts included in the 2SLS estimation. Future research is needed to fully understand the impact of this nationwide policy.

Table 5: Catch-up in home ownership from age 30–34: 2SLS estimates

	10-year catch-up	
Panel A	Baseline	Controls added
Ownership rate at age 30–34	-0.424*** (0.158)	−0.538** (0.269)
Whether the cohort benefited from the FHOG before age 42		0.020 (0.170)
Share of married couples		−0.226 (0.169)
Share of households with child		0.064 (0.238)
Share of Australian-born		−0.053 (0.151)
R^2	0.45	0.44
Cragg-Donald F-statistic	33.2	10.9
Sample size	34	34
	20-year catch-up	
Panel B	Baseline	Controls added
Ownership rate at age 30–34	−0.660*** (0.089)	−0.680*** (0.118)
Whether the cohort benefited from the FHOG before age 42		0.025 (0.051)
Share of married couples		−0.260 (0.216)
Share of households with child		0.023 (0.116)
Share of Australian-born		0.036 (0.081)
R^2	0.73	0.78
Cragg-Donald F-Statistic	13.6	8.18
Sample size	21	21

*Notes: Robust standard errors are in parentheses. *** p<0.01; ** p<0.05; *p<0.1.*

Source: Authors' calculations.

13 The Cragg-Donald F-Statistic has a value greater than 10.

In summary, we investigate whether delayed timing of first-time home ownership, as proxied by ownership rates at ages 30–34, leads to persistent differences in home ownership rates across cohorts in Australia. Theoretical models (Attanasio, Leicester et al. 2011; Chambers, Garriga et al. 2009) predict differences in the entry to the housing market due to price differences will be short-lived and, over time, younger generations will fully catch-up with older generations. However, our empirical analysis shows an incomplete catch-up in Australia: 25 per cent of the overall gap remains after 20 years.

2.5 Results: transaction costs and first home ownership

Research question 2 aims to provide insight into the effectiveness of government policies designed to assist young Australians seeking to become FHBs. In subsection 2.4.2, we assessed whether the FHOG implemented in 2000 supports the catch-up of more recent birth cohorts with entry into home ownership. Our pseudo-panel analysis established a weak impact of the FHOG on the rate of catch-up for those cohorts exposed to the FHOG.

In Section 2.5, we examine whether concessions on housing transaction costs—that is, stamp duty—support first-time home ownership. These transaction costs are an especially significant burden for low-income households and households with low savings. Theoretical models show that lower annualised transaction costs would lead to a decrease in the cost of housing, potentially making housing market entry easier.[14] In addition to this income effect, lower transaction costs would potentially allow individuals with low savings to access the housing ladder earlier. Therefore, stamp-duty concessions that alleviate these transaction costs can be expected to have a positive impact on ownership rates, all else remaining equal.

A number of empirical studies have examined how changes in transaction costs may impact on home ownership. Using simulations, Amior and Halket (2014) show that the elimination of transaction costs significantly affects housing market entry, with the magnitude of the effect similar to removing the downpayment requirement. Hilber (2007) examines the impact of transaction costs on home ownership by exploiting cross-country differences in transaction costs. The results show that transaction costs have a considerable impact on an individual's tendency to own. Besley, Meads et al. (2014) study a tax holiday in the United Kingdom, where stamp-duty exemptions were granted for purchases of houses falling within a specified range of transaction prices. They estimate an increase of 8 per cent in the transaction volume of houses—however, this increase was partially offset by a drop in the number of purchases immediately after the end of the tax holiday. These results suggest that the effect of the temporary tax cut was to change the timing of transactions rather than impact on ownership rates. Best and Kleven (2017) study the same tax holiday and find that removal of the 1 per cent transaction tax increased the volume of housing transactions by 20 per cent, while less than half of the increase was offset by a subsequent decline in transaction volume. These studies provide some support for the role of policy reforms that reduce transaction costs in encouraging home ownership.

In this section, we contribute to this nascent literature by examining a policy change in Australia in late 1990s. Subsection 2.5.1 describes the policy change and our empirical methodology.

14 If supply is perfectly inelastic, changes in stamp duty (or subsidies such as the FHOG) should have no effect on the total price paid by buyers to sellers and government. However, even with perfectly inelastic supply, reductions in stamp duty may increase the volume of transactions and facilitate market entry (Freebairn 2016).

2.5.1 Policy change and empirical methodology

To assess the impact of transaction costs on first home ownership, we exploit exogenous variation in the stamp-duty rates imposed on FHBs in Queensland in 1998. Queensland lowered its stamp-duty rate for FHBs on 1 January 1998. Figure 8 shows the net assistance provided to FHBs as a percentage of state median house prices (Dungey et al. 2011). There is evidence that the reduction in the duty rate led to an increase in net assistance provided to FHBs in Queensland relative to buyers in other states. The empirical analysis exploits this policy change using a difference-in-difference approach. In doing so, it provides some evidence on the causal impact of the duty-rate concession on the number of loans extended to FHBs.

Our difference-in-difference analysis focusses on the period 1996–2000, shown in Figure 8, Panel B. During this period, net assistance provided to FHBs follows the same trend in all states (excluding Victoria) except for the duty-concession policy implemented in Queensland in 1998.[15] We use the policy change and create a panel of data over four years (16 quarters) and five states. Queensland represents the treatment group and the other states in Figure 8 Panel B constitute the control group. Our methodology calculates the change in first home ownership in the treatment group before and after 1998, and compares it to the change in first home ownership for the control groups. Formally, we estimate following regression:

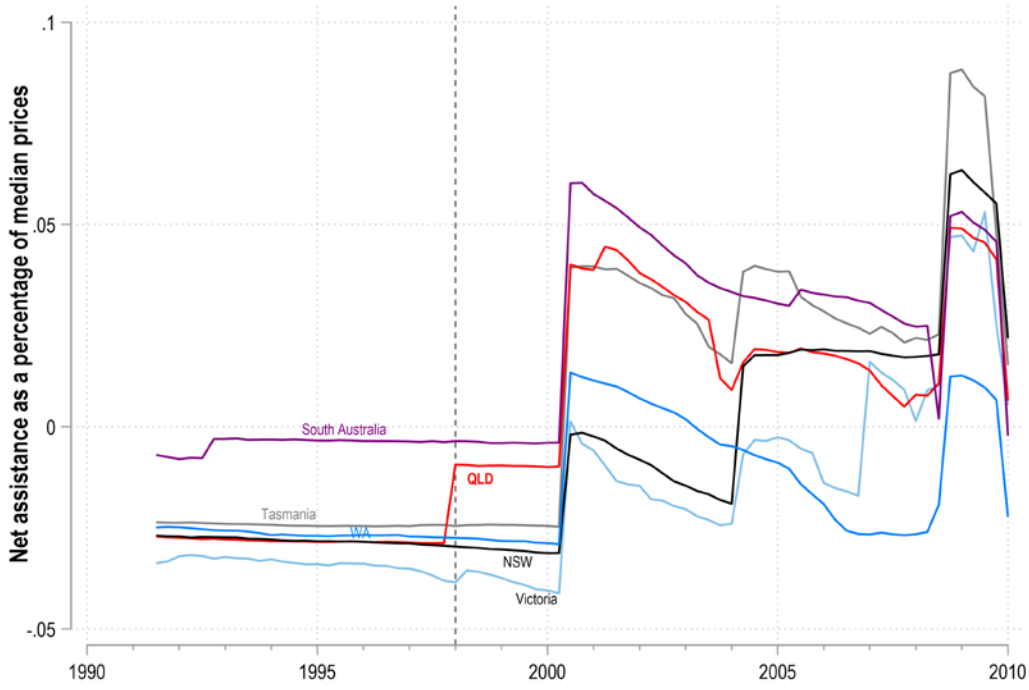
$$Y_{st} = \beta_1 + \beta_2 Treated_s + \beta_3 After_t + \beta_4 Treated_s * After_t + \beta_5 X'_{st} + u_{st} \quad \text{(Eq. 5)}$$

Y_{st} is the quarterly per capita first dwellings financed in state s in quarter t. $Treated_s$ is an indicator variable equal to one if the observation belongs to Queensland and zero otherwise. $After_t$ is an indicator variable equal to one if the observation quarter is after 1 January 1998 and 0 otherwise. The coefficient of interest is β_4 which represents the difference-in-difference estimate. The value of β_4 represents the difference between first-home finance approvals in Queensland (the treatment group) after and before the policy change, minus the difference between first dwelling finance approvals after and before the date of the policy change in the control states. If this estimate is statistically significant and positive, then there is evidence that a reduction in stamp-duty rates has a positive impact on the number of first homes financed—and thus a positive impact on first home ownership rates. X'_{st} is a vector of control variables accounting for time-varying trends that are different across states. We control for quarterly state average income, net interstate migration as a percentage of the state population, and median real house prices.

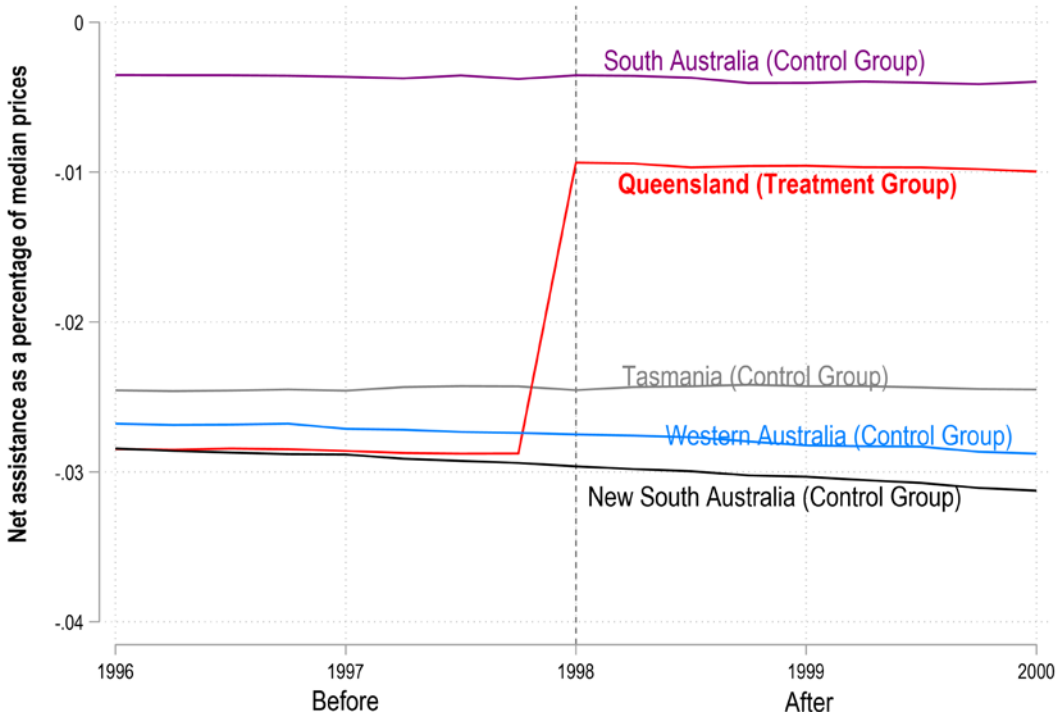
15 Victoria is excluded from the initial analysis, as it shows a differential trend on net assistance in the pre-1998 period. The Australia Capital Territory and the Northern Territory are also excluded from the analysis as data on duty rates for those two states is not available.

Figure 8: Net assistance for first-time homebuyers

Panel A: All states, 1991–2010



Panel B: Study design, 1996–2010



Source: Dungey, Wells et al. (2011).

2.5.2 Data

In order to assess the effect of the policy change, ideally we would use the number of first-home purchases at the state level for the period 1996–2000. However, this data is not publicly available, so for our analyses we use the number of loans extended to FHBs in each state, measured on a quarterly frequency. These data provide information about the finance commitments made by banks and other lenders for the purpose of construction and purchase of dwellings (ABS 2018). The data covers 95 per cent of the total finance commitments in Australia. Given that more than 92 per cent of FHBs purchase with a mortgage, the number of loans will be representative of the total number of first dwellings purchased.[16]

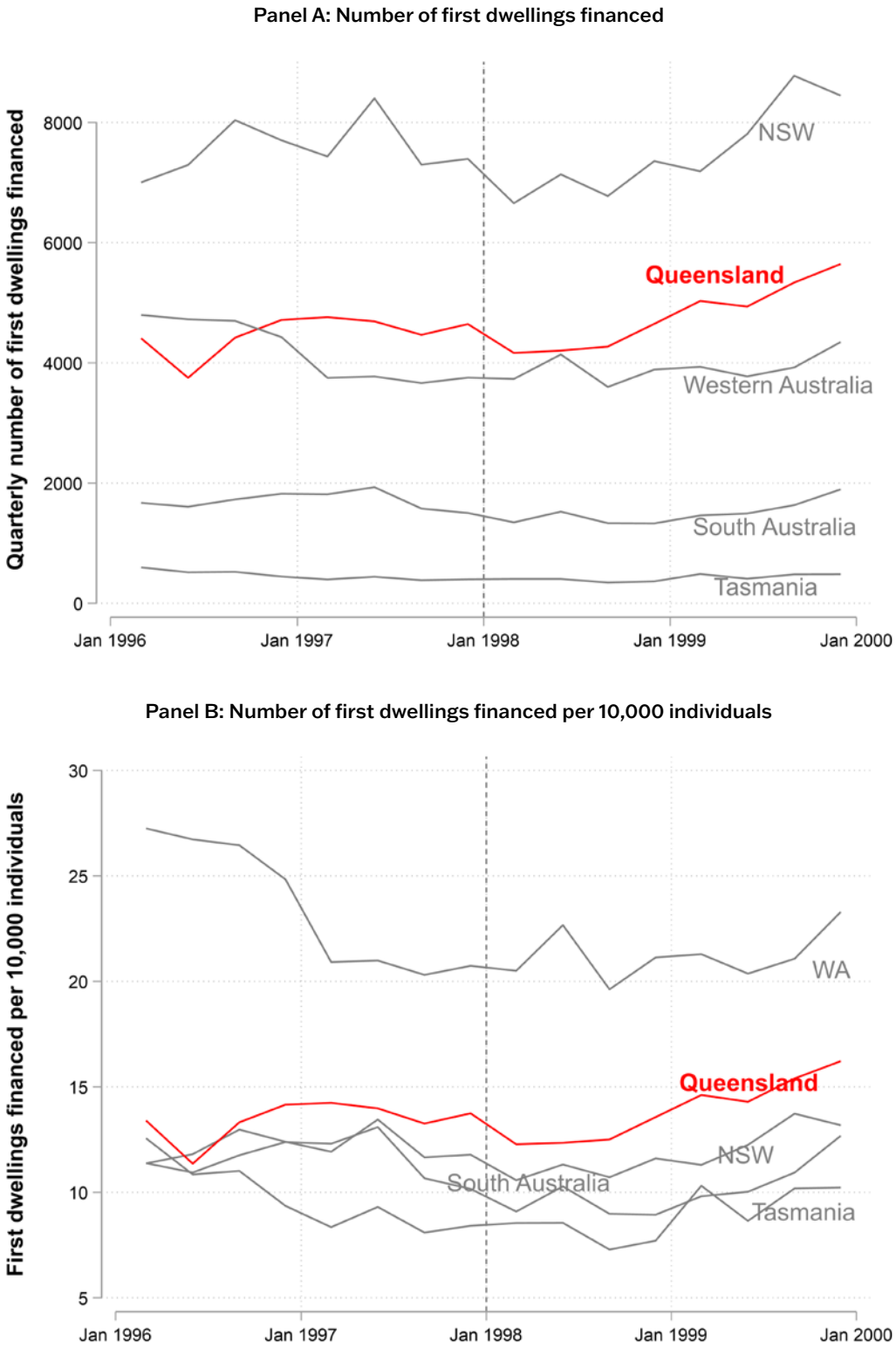
Figure 9 presents the quarterly number of first dwellings financed for Queensland, NSW, WA, SA and Tasmania. Due to population differences, there are large differences across states evident in Panel A—for example, in NSW the average number of loans made to FHBs is 7,544, a number approximately 20 times that of Tasmania. In Panel B, we take these population differences into account and examine dwellings financed using a per capita measure—namely the number of dwellings financed per 10,000 individuals. We observe in all states an uptick in the number of loans for first dwellings financed close to the end of the observation period. It is clear that WA is an outlier in this period. Queensland, the treated state, experiences an upward trend after the implementation of the FHB stamp duty concession policy in January 1998. This upward trend is not observed in Queensland prior to 1998.

2.5.3 Results

Results from estimating Eq.5 are displayed in Table 6. Column 1 presents the results from estimating the difference-in-difference specification for the main sample in which the control group includes NSW, WA, SA and Tasmania. The coefficient on the interaction term is positive and highly statistically significant. The findings suggest that the reduction in housing transaction costs, due to the stamp-duty concession, leads to an increase of 4.5 first dwellings financed in a quarter per 10,000 people. This is equivalent to a 30 per cent increase compared to the pre-policy quarterly average in Queensland. In terms of the control variables, average income—which is a proxy for macroeconomic conditions in each state—is positively related to the number of first dwellings financed per capita. This effect indicates an expected pro-cyclical association between home ownership and macro-economic conditions. The estimate on net interstate immigration suggests that more homes are financed when there is an increase in the net inflow of interstate immigrants: a 1 per cent increase in net interstate immigrants is associated with a 1 per cent increase in population of the relevant state, hence the large effect on number of first dwellings financed. The coefficient on median real house prices is negative, indicating housing affordability is, as expected, negatively associated with home ownership—which is consistent with the results presented in Section 2.4.

16 Based on our calculations from SIH 1996–2000.

Figure 9: First dwellings financed in each state, quarterly



Source: ABS Catalogue No. 5909.0.

Table 6: Stamp-duty concessions: difference-in-difference results

	Main sample (1)	Excluding WA (2)	Including Vic (3)
After the policy change*Queensland	4.566***	2.201***	4.096***
	(0.986)	(0.360)	(0.984)
After the policy change	−0.711	−0.963*	−0.508
	(0.755)	(0.308)	(0.582)
Queensland	−11.69*	−0.149	−10.74**
	(4.387)	(0.324)	(4.017)
Median house price	−0.002*	0.000	−0.002*
	(0.001)	(0.000)	(0.001)
Immigrant %	43.94**	7.574**	42.56**
	(14.59)	(1.373)	(14.04)
Average income	26.34**	9.437*	21.82**
	(7.772)	(2.976)	(6.713)
Queensland average number of first dwellings financed per 10,000 individuals prior to 1998			14
R-squared	0.675	0.748	0.653
Number of obs.	80	64	96
Control states	NSW, SA, WA, Tas	NSW, SA, Tas	NSW, SA, WA, Tas, Vic

Notes: Standard errors are clustered at state level. *** p<0.01; ** p<0.05; *p<0.1.
Source: Authors' calculations.

Column 2 and Column 3 show that this main finding is robust to the inclusion or exclusion of particular states. In Column 2, we exclude Western Australia from the control states. As observed in Figure 9, Western Australia has relatively higher per capita finance approvals compared to other states. In Column 3, we add Victoria to the set of control states. Victoria was initially excluded from the analysis because the net assistance in this state was lower than other states prior to 2000. While the results are smaller in magnitude when Western Australia is excluded from the analysis, it remains the case that the stamp-duty concessions appear to have economically and statistically significant impacts on the number of first-time dwellings financed, and thus on first-time home ownership.

It is important to note some limitations of the analysis. First, there might be some announcement effects. For example, residents in Queensland may have been expecting the implementation of the policy, and hence may have delayed purchasing a home until after the policy was implemented. If this is the case, the estimated effect of the 1998 policy would be biased upwards. In order to assess the robustness of the estimates presented in Table 6, we use an event-study framework. Our estimates indicate that none of the pre-treatment interactions are significant, which indicates that Queensland is not different from the other states before the implementation of the policy. Second, it is also possible that there may be an announcement effect of the FHOG in 2000—if FHBs were expecting this reform, then they may delay their purchase to take advantage of the policy change. Yet, in Figure 9 in the quarters just prior to 2000, we see the opposite—an increase in the first home-loan approvals, rather than a drop due to any announcement effect. Nonetheless, there could be still some general equilibrium effects. For example, people might expect that the FHOG might increase the demand for housing and increase house prices, encouraging them to bring forward their home purchases, and this may have differential effects across states. Third, our sample size is small, as only data at the state level was available for this period. Finally, it is important to stress that we cannot observe the actions of individual homebuyers, but rather rely on aggregate data for the analysis. Our findings using state-level data may hide changes in the purchasing decisions of different sub-groups of FHBs. Nevertheless, on net, we find suggestive evidence that stamp-duty concessions for FHBs do increase the number of first dwellings financed.

2.6 Summary and policy implications

Australian real house prices have nearly tripled over the past 30 years (see Table 1). This significant increase has generated considerable policy debate and concern about the potential impact on young Australians' ability to enter the housing market. In this section, we document important trends in the home ownership of Australians. We find that over the last 30 years, ownership rates at age 30–34 declined substantially across birth cohorts. This variation is negatively correlated with house prices, indicating that increasing house prices and falling affordability are associated with a delay in housing market entry for Australians. Our findings are consistent with earlier findings: the entry of younger cohorts into home ownership is being delayed (Beer, Faulkner et al. 2006; Burke, Nygaard et al. 2020).

Importantly, we further show that those birth cohorts that were less likely to get onto the ladder at younger ages only partially catch-up with older cohorts. This is a novel contribution. Our empirical analysis shows that 25 per cent of the overall gap in home ownership rates at ages 30–34 remains after 20 years. Combined with the relatively modest increases in home ownership rates from age 50 onwards (Figure 6), our findings suggest that concerns regarding falling living standards and poverty among the retired who have not attained home ownership are not misplaced. This has important policy implications because of the central role played by home ownership in retirement. The publicly funded age pension in Australia is a flat-rate, means-tested benefit that is not linked to employment earnings. As noted in Section 1, owner-occupied housing is excluded from the asset test that determines eligibility for the age pension. Existing evidence highlights the critical role played by owner-occupied housing in supporting consumption throughout retirement. Failure to attain home ownership prior to retirement age will likely have deleterious effects on welfare and living standards throughout that part of the life cycle. To date, it is unclear what role other savings such as the superannuation system may play in supporting living standards throughout retirement for younger birth cohorts.

Last, we provide suggestive evidence that a fall in housing transaction costs for first-time buyers has a positive impact on first-time home ownership. This suggests that policy interventions such as stamp-duty concessions may assist with young people's transition into home ownership. However, with the available data we cannot rule out that the change in transaction costs has simply shifted the timing of entry into home ownership, rather than increasing the home ownership rate in the longer run.

Our results provide an up-to-date picture of the Australian housing market for younger individuals. These results highlight the increasing difficulty that younger Australians experience when attempting to enter the housing market. Section 3 discusses potential policy implications.

3. Financing first-home ownership: the role of intergenerational transfers

- **Parents are increasingly making intra-familial transfers to children in the form of direct financial transfers and in-kind support.**
- **The 'Bank of Mum and Dad' now represents an important source of funding for the transition into home ownership, with estimates suggesting parental support is among the top ten mortgage providers in Australia.**
- **Analysis indicates a strong positive association between the receipt of large transfers (greater than $10,000) and the transition into home ownership. Such transfers approximately double the probability of transitioning into home ownership.**
- **Relative to renting, longer periods spent co-residing in the parental home are associated with an increased probability of transitioning into home ownership. Each additional year spent co-residing is associated with an increase in the probability of transitioning into home ownership of around 40 per cent.**
- **Analysis of wealth shows home owners have substantially higher net wealth than renters. The past two decades have been marked by increased wealth for home owners and stagnant wealth holdings among renters.**
- **Renters are more likely to have received a transfer, but the value of transfers received by this group is substantially lower than that received by home owners.**

This section focusses on a channel for the financing of first home ownership that has gained increasing attention in Australia and internationally—namely intergenerational transfers. There is increasing anecdotal and scholarly evidence that transfers from parents are an important enabler of home ownership for younger cohorts. Such transfers potentially play an important role in circumventing the credit-market constraints experienced by FHBs. At the same time, intra-family transfers that facilitate home ownership have the potential to exacerbate existing wealth inequalities over time. We explore these issues in more depth through the following research questions:

- **RQ3:** How do direct and in-kind parental transfers facilitate entry into home ownership?
- **RQ4:** What are the distributional implications of home ownership facilitated by direct and in-kind transfers?

The analysis in this section draws on the detailed information available in the HILDA data. To address research question 3, existing evidence around the role of intergenerational transfers and first-time home ownership (Barrett, Cigdem et al. 2015) is updated. That analysis is then extended to incorporate information on the tenure status of individuals before they transition into home ownership. Co-residence of young adults with parents has become increasingly common, and this form of tenure represents an important mechanism by which parents can provide support to children and facilitate home ownership. Research question 4 is addressed by considering the implications of transfers from parents on the distribution of wealth. Analysis of entry into home ownership identifies a strong association between transfers, both direct and in-kind, and the transition into home ownership. Moreover, there is evidence that financial transfers from parents to children tend to increase inequality over time.

In Section 3.1, we set out a brief conceptual discussion that provides the motivation for the empirical analysis. Following this, Section 3.2 presents a discussion of the literature that has examined intergenerational transfers and their relationship to home ownership. Section 3.3 describes evidence around the extent of intra-family transfers in Australia since the early 2000s, both direct and in-kind. The next two sections address research question 3. Section 3.4 presents descriptive statistics, summarises our statistical model, and presents results on the association between financial transfers and entry into home ownership. Section 3.5 considers the relationship between in-kind transfers (co-residence) and entry into home ownership. Research question 4 is considered in Section 3.6, where evidence around the transfers of wealth across generations, home ownership and inequality is presented.

3.1 Intergenerational transfers: a conceptual framework

Like other parts of this report, the analysis of intergenerational transfers relies on the life-cycle model to provide a conceptual framework to examine the transition into first home ownership. The key features of the life cycle have been described in Section 1.4. Recall that a key requirement of the life-cycle model is that lifetime consumption must be less than or equal to lifetime income.[17] Lifetime income is not confined to earned income and may be derived from a variety of sources. Rosenzweig and Wolpin (1993) argue that transfers from parents are as important as public transfers, and are critical in smoothing consumption over the life cycle. In Australia, there is evidence that transfers are becoming an increasingly important source of lifetime wealth (Productivity Commission 2021).

Existing evidence has identified some stylised patterns associated with transfers of wealth from parents. Schoeni (1997) analysed data from the Panel Study of Income Dynamics (PSID) to examine transfers, both financial gifts and bequests. For downwards intergenerational transfers, the likelihood that a transfer is received and the amount transferred is positively associated with parental wealth. However, for recipients of transfers, the incidence of receipt and the amount received is negatively related to household resources, suggesting that transfers are associated with needs. A similar pattern was identified by Berry (2008). In comparison, McGarry (1999) finds that bequests are more likely to be negatively related to the recipient's permanent or expected lifetime income—a finding that highlights the importance of understanding the context in which transfers are provided, and how they are provided. The pattern described in McGarry (1999) may reflect a situation where relatively wealthy parents have provided

17 Lifetime consumption will be less than lifetime income if individuals bequeath wealth.

opportunities in the form of investments in human capital that facilitate higher income levels in children. Hence, the amount of bequest received may in fact be negatively related to the child's permanent income, masking investments in or transfers to children earlier in the life cycle. In-kind transfers in the form of co-residence and direct parental transfers are unlikely to be independent and will reflect parental resources and preferences, economic circumstances and broader institutional considerations (Manzoni 2016). For example, Zissimopoulos and Smith (2011) argue that average transfers from parents are somewhat lower in Europe relative to the United States, with institutional, social and cultural differences important for explaining the significant cross-country variation in transfers.

Intergenerational transfers are important in the context of the life-cycle model and housing outcomes. Clearly, such transfers increase the lifetime resources available to individuals which will, in turn, tend to increase lifetime consumption. How such transfers change consumption profiles will depend on considerations such as:

- timing
- the quantum of transfers
- whether the transfer was anticipated
- the credit constraints faced by recipients.

For example, the receipt of an unanticipated transfer will likely change optimal consumption choices over the remainder of the life cycle, including the level and timing of housing services consumed. Similarly, if credit-market imperfections or constraints limit the capacity of individuals to borrow against future income, transfers may have no impact on consumption until actually received.

Credit-market considerations are important for housing choices, as they may in part motivate parental transfers.[18] Mathä, Porpiglia et al. (2017) note that in some countries mortgage markets are less sophisticated and access to credit for the purchase of housing is constrained by institutional rigidities. As described in Section 1.2, the increase in house prices in Australia has been associated with an extension of the time required to save for a deposit to purchase an 'average house on an average income'. Similarly, higher house prices and the constraints imposed by LTI requirements may limit the quantum of owner-occupied housing services that can be purchased by FHBs. Given these considerations, parental transfers to their children may play an important role in alleviating the constraints imposed by credit markets. In effect, parental wealth represents another source of funding for the purchase of owner-occupied housing.

The implications of parental transfers for housing choices and outcomes are potentially complex. Mayer and Engelhardt (1996) note that credit-constrained households are more likely to receive gifts or transfers, and the gifts represent a larger share of the downpayment relative to unconstrained households. In fact, transfers may:

- reduce the time required to accumulate savings and hasten the transition into home ownership
- increase the level of deposit, and thereby decrease the level of debt taken on by borrowers
- increase the quantum of housing services purchased.

Moreover, it is likely that the savings decisions of young adults are closely linked to housing tenure preferences, along with the potential for and actual receipt of transfers. Savings behaviour and the accumulation of wealth should, in these circumstances, be treated as an endogenous choice in a comprehensive model of the transition into home ownership (Andrew, Haurin et al. 2006). While structural modelling of this nature is beyond the scope of this report, the empirical analysis will shed light on the association between parental transfers and the attainment of home ownership.

18 Intergenerational transfers may be motivated by a range of considerations, not simply encouraging or facilitating home ownership. Mulder and Smits (2013) note that transfers from parents to their children may be a response to need, a reward for merit, the reinforcement of a good relationship or a desire to promote home ownership. Laferrère and Wolff (2006) argue that transfers from parents to their offspring may have an exchange nature to them or be purely altruistic.

3.2 Literature review

There is evidence across countries that transfers from parents to children, both direct and in-kind, are becoming increasingly important for FHBs (Bond and Eriksen 2020; Cooper and Luengo-Prado 2018). Andrew (2010; 2012) reports evidence that suggests that the parental assistance to young adults for the purchase of owner-occupied housing has increased significantly in the United Kingdom, effectively doubling to almost 20 per cent of FHBs over the decade to the early 2000s. Despite its growing importance, Scanlon, Blanc et al. (2019) note that the circumstances under which assistance is provided to children seeking to enter home ownership is often informal, and bears little resemblance to what might be considered a standard financial transaction.

Interestingly, housing wealth itself has become an increasingly important source of transfers across generations (Ronald, Lennartz et al. 2017). Karagiannaki (2015) examines bequests in Britain over the three decades preceding 2010, noting that the data indicate a substantial increase in the value of assets bequeathed during this period, driven by an increase in the value of estates. The proportion of individuals receiving bequests in any given year remained relatively stable, and the higher value of estates was driven in part by the house price inflation that coincided with the large increase in home ownership in Britain in the late twentieth century (Koppe 2018). Similarly in Australia, the Productivity Commission has noted that the value of inheritances has more than doubled in the two decades to 2018, driven in large part by the increased value of housing assets (Productivity Commission 2021).

A series of existing studies has focussed on the relationship between parental transfers and outcomes among actual or potential FHBs. For the United States, Engelhardt and Mayer (1998) find evidence that transfers hasten the transition into home ownership, with recipients of transfers reducing the time spent saving for downpayments while simultaneously reducing their own saving. Further, there is evidence that the downpayment for housing is higher for transfer recipients, and the value of the house purchased is greater. Luea (2008) presents evidence that recipients of parental transfers increase the amount of housing purchased rather than reducing the value of the mortgage incurred. Lee, Myers et al. (2020) focus on the timing of entry into home ownership. That analysis indicates a significant effect of parental transfers on transitioning into home ownership for individuals aged 25–44 years, increasing the likelihood of entry into home ownership by around 3 percentage points relative to non-recipients.

Analysis for Europe is more nuanced, reflecting the diversity of institutional regimes, housing systems and social norms across countries (Tiefensee and Westermier 2016). Kurz (2004) considers home ownership outcomes for successive birth cohorts in West Germany and finds that the children of home owners are more likely themselves to transition into home ownership. They conclude that intergenerational transfers likely increase that transition, especially among low-income households. While a similar pattern is identified in Mulder and Smits (2013) for the Netherlands, there is no evidence that transfers from parents to children are used to promote home ownership. For Italy, Guiso and Japelli (2002) find that parental transfers are associated with earlier entry into home ownership by reducing the time spent saving for a downpayment. Evidence from Ireland (Duffy and Roche 2007) and France (Spilerman and Wolff 2012) is similarly consistent, with a positive correlation between parental transfers and the purchase of owner-occupied housing. In comparison, Kolodziejczyk and Leth-Petersen (2013) find little evidence that intergenerational transfers are used to support home ownership in Denmark.

For Australia, existing research has highlighted that the receipt of large financial gifts, transfers and bequests are associated with more rapid entry into first-home ownership (Barrett, Cigdem et al. 2015; Cigdem and Whelan 2017). Importantly, the evidence in those studies suggested that financial gift transfers are likely to be made strategically. While a relatively large proportion of individuals report receiving transfers from parents in any given year, it is only large parental transfers that are associated with transition into home ownership.

While the evidence discussed above identifies the importance of transfers of financial resources to support home ownership, less is known about the role of in-kind transfers. Prior to the 1970s, the age that young adults departed the parental home declined across the United States and many European countries (Angelini and Laferrère 2013). More recently that trend has reversed, and young adults are more likely to co-reside with parents for longer periods, or to return to the family home in the event of shocks such as the breakdown of a relationship or loss of employment.

Matsudaira (2016) highlights how economic considerations have contributed to this pattern, including wages, rent levels and the availability of employment opportunities. Examining evidence from the United States, Cooper and Luengo-Prado (2018) note that local housing costs have important impacts on the likelihood that young adults co-reside with parents rather than form an independent household and enter home ownership. Significantly, house prices rather than rent levels were more important for explaining trends in co-residence over time. This suggests that it was young adults seeking to transition into home ownership who were financially constrained that are more likely to co-reside. Bond and Eriksen (2020) note that the co-residence of adult children with parents is likely to be closely linked with desired tenure status and outcomes. Co-residence provides an opportunity to accumulate savings, and also acts as an important insurance mechanism to cushion economic shocks such as the GFC (Kaplan 2012) or in response to credit constraints (Dettling and Hsu 2018). Similarly, in the United Kingdom there is evidence that house prices play an important role in determining whether parents support young adults via co-residence and patterns of home ownership (Ermisch 1999; Ermish and Di Salvo 1997).

In Europe, co-residence patterns reflect social, cultural and institutional considerations, including public support available to young adults to live independently. Hence, in the 'familialistic' southern and eastern European countries, younger adults tended to be supported via co-residence, while in northern European countries financial transfers are more likely to be used to support independent living (Isengard, König et al. 2018; Manacorda and Moretti 2006). Lennartz, Arundel et al. (2016) note that some of these patterns appear to reflect the characteristics of housing systems. Hence, countries that exhibited the highest rates of home ownership pre-GFC experienced the largest decline in home ownership rates in younger cohorts and a larger increase in co-residence with parents. Liu and Esteve (2021) note that differences in patterns of co-residence across Europe are associated with housing market conditions, along with the variation in the level of support offered through mechanisms such as public housing and the available pathways into home ownership. Albertini, Tosi et al. (2018) argue that parental housing tenure is likely to shape the nature and magnitude of transfers to adult children, in part to transmit housing outcomes across generations. They note that wealthier parents and those in northern Europe that have preferences for family privacy, tend to provide financial support for independent living. In comparison, co-residence represents a more common support strategy among less affluent households and those in southern Europe. Similarly in Australia there is some evidence that disadvantaged young adults are less likely to receive direct or in-kind support relative to their more advantaged peers (Cobb-Clark and Gørgens 2014).

Of specific interest in the present study is the role that in-kind support, including parental co-residence, may have on facilitating transitions into home ownership. Such a relationship may be mediated via a number of mechanisms. Perhaps most importantly, housing is effectively an impure public good, which to a point is non-rivalrous in nature. While shared housing may be associated with a loss of some amenities such as privacy, it is offset by a reduction in housing costs across individuals within the household. In this way, co-residence provides an opportunity for parents to support adult children and an opportunity to accumulate savings to facilitate the transition into home ownership. Differences in the capacity of parents to make in-kind versus direct transfers are likely to reflect their own resource constraints (Kaplan 2012). Hence, liquidity-constrained households may provide assistance, in effect intergenerational transfers, to adult children via in-kind transfers rather than direct monetary transfers.

The importance of co-residence and the magnitude of any in-kind transfer it represents will depend on local housing costs and on any requirement for co-residing children to contribute to housing costs. A study by Powles (1991) of Australian students aged 15–20 years found that around 25 per cent of those living in the parental home were contributing to housing costs through the payment of board. Notably, the proportion contributing was substantially lower for students in high socio-economic status (SES) households (21 per cent) relative to low SES households (29 per cent). More recent evidence presented in Chia and Erol (2021) examines housing outcomes in 2017 and finds evidence that enrolment in vocational studies is positively associated with co-residence coupled with the payment of board. The value of co-residence is sizeable. A recent study by the Productivity Commission (2021) estimates that the value of co-residence ranges between $300–$400 per week, depending on local housing costs. However, to date there is limited evidence on how co-residence is associated with transitions into home ownership.

3.3 Data description and descriptive statistics

The analyses to address research questions 3 and 4 use data drawn from the HILDA survey. This is a panel dataset that has followed Australian households and their occupants annually since 2001 (Watson and Wooden 2002). The initial sample of approximately 7,500 households represents around 13,000 responding individuals. Respondents in the initial survey are followed over time and individuals that join the original set of 'HILDA households' are also subsequently sampled on an annual basis. The empirical analyses in this section use up to 20 waves of data collected between 2001 (Wave 1) and 2020 (Wave 20).

A key feature of the HILDA data is the rich set of socio-demographic and economic information collected. This includes information on the receipt and value of transfers, both financial gifts (or inter vivos transfers) and bequests, on an annual basis. We begin by presenting summary statistics that highlight how transfers from parents to children, both direct and in-kind, have evolved over time.

Consider the incidence and magnitude of financial transfers in the form of parental transfers or gifts and bequests (Table 7). The proportion of individuals that report receiving a bequest in any given year is relatively small, although there is some evidence that this increases over time. Similarly, the number of individuals receiving a large parental transfer—defined as greater than $10,000—is relatively small although the incidence appears to increase over time from below 1 per cent of the sample in 2002 to around 2 per cent by the end of the study period (2019). It is important to note that the receipt of a parental gift or transfer of any size is relatively common, reaching around 7 per cent of respondents aged 18–65 years in any given wave. However, previous analysis has indicated that it is large parental transfers that are more closely associated with transitions into home ownership (Barrett, Cigdem et al. 2015).

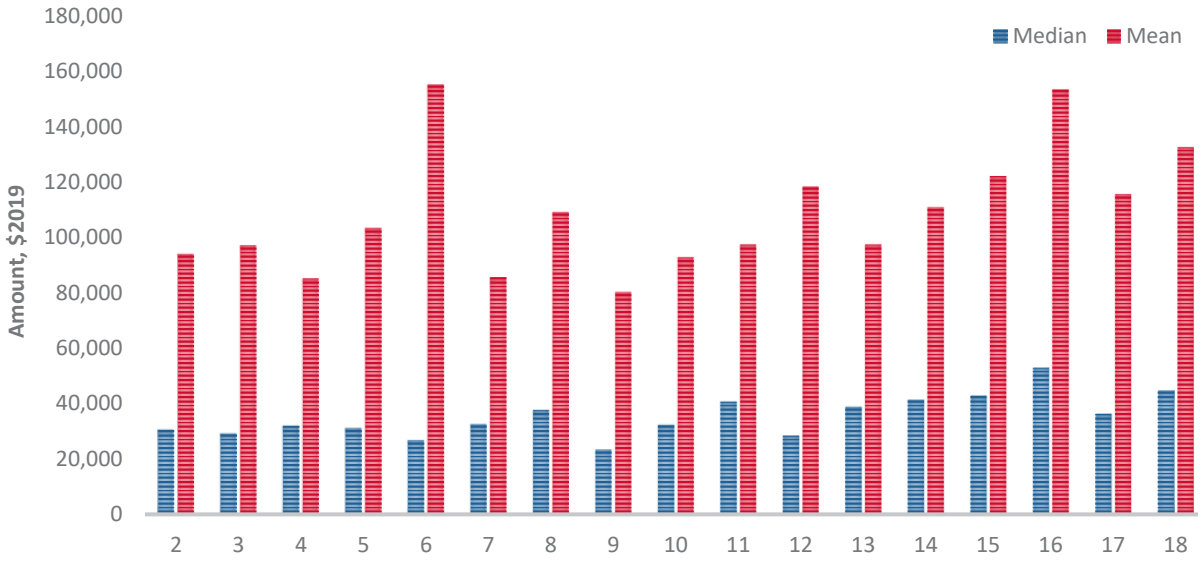
Table 7: Incidence of inheritance/bequests and parental transfers, HILDA waves 2–19

Wave	Inheritances/bequests (%)	Parental transfers (%)	Parental transfers (≥$10,000), (%)
2	1.5	3.5	0.6
3	1.4	3.9	0.6
4	1.4	4.1	0.6
5	1.4	4.6	0.7
6	1.3	4.1	0.8
7	1.3	3.8	0.6
8	1.3	4.0	0.6
9	1.3	4.0	0.6
10	1.3	4.9	1.0
11	1.2	5.4	1.7
12	1.4	5.6	1.6
13	1.6	6.0	1.4
14	1.5	6.3	1.2
15	1.6	6.4	1.3
16	1.5	6.8	1.3
17	1.6	6.6	1.5
18	1.7	7.9	2.0
19	2.2	6.7	1.6
Total	**1.5**	**5.3**	**1.1**

Source: Authors' own calculations using HILDA data, various years. Sample consists of all individuals aged 18–65 years. Sample weights used in calculation of sample proportions.

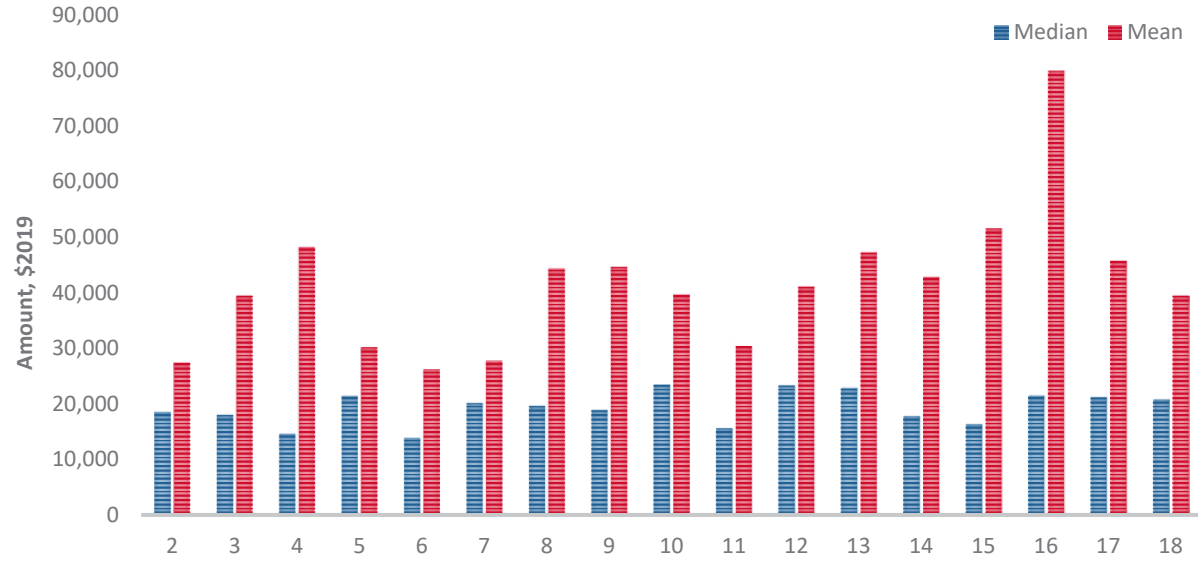
The magnitude of these large parental transfers or bequests is illustrated in Figure 10 and Figure 11, where we report real mean and median levels of those transfers by wave, conditional on receipt of such a transfer. Among those who have received an inheritance or bequest, the average (median) dollar amount of an inheritance increases from around $94,000 ($31,000) in 2002, to approximately $132,000 ($45,000) by 2018. The size of large parental transfers is more modest yet remains sizeable, ranging from an average amount of $27,500 in 2002 and increasing to around $40,000 by 2018.

Figure 10: Yearly amount of inheritances or bequests, 2002–2018



Source: Authors' own calculations using HILDA waves 2–18. All dollar amounts are adjusted for CPI and are reported in $2019 values.

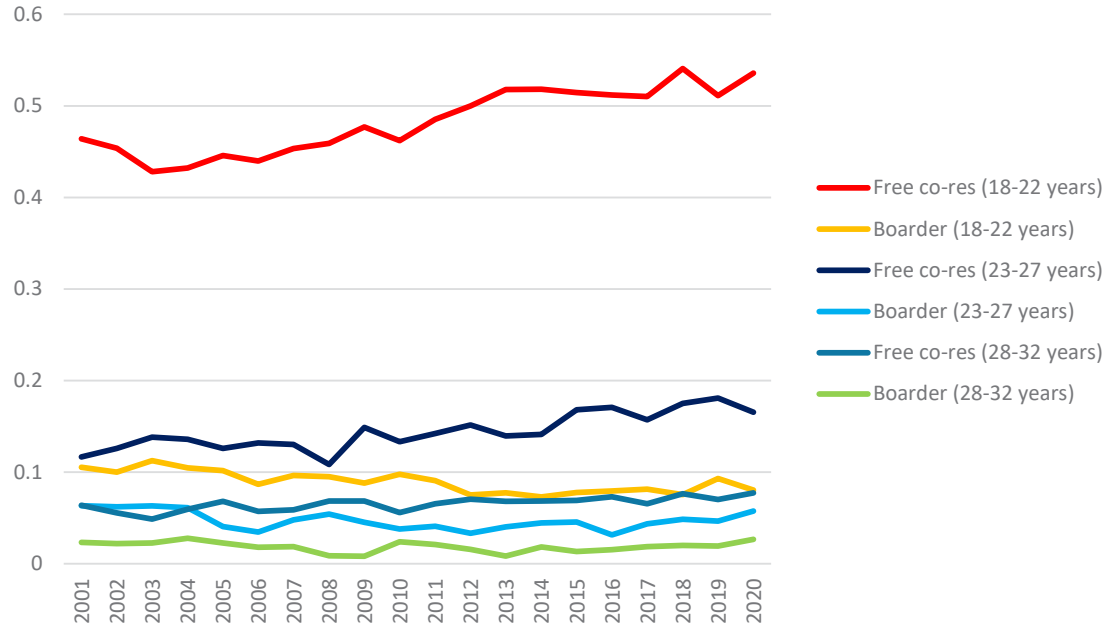
Figure 11: Yearly amount of large parental gifts or transfers, 2002–2018



Source: Authors' own calculations using HILDA waves 2–18. All dollar amounts are adjusted for CPI and are reported in $2019 values.

Figure 12 presents evidence on in-kind transfers by identifying the extent of co-residency of young adults with parents over time. The sample used in the construction of Figure 12 consists of individuals aged 18–32 years. These ages were chosen as most young adults have completed secondary school by age 18, and children will have typically departed the parental home and established an independent household by age 32. There is evidence that among younger Australians aged 18–22 years, the incidence of free co-residence with parents has trended up over time, increasing from around 46 per cent in 2002 to 54 per cent in 2020. A similar although more modest pattern is exhibited by those aged 23–27 years, increasing from 13 per cent to 18 per cent over the same period. There has also been a slight decline in the proportion of individuals who are required to contribute to housing costs via the payment of board (boarders) while living with parents, declining from 11 per cent to 8 per cent among those aged 18 to 22 years.

Figure 12: Proportion of individuals co-residing and boarding with parents, 2001–2020



Source: Authors' own calculations using HILDA waves 1–20.

Patterns in HILDA data point to a trend where parents are providing additional support to their adult children over time. This support potentially provides an important mechanism to facilitate the transition into home ownership either by:

- providing opportunities to accumulate savings through in-kind transfers
- supplementing the existing savings of those seeking to enter into home ownership.

We now consider how those transfers are related to the transition into first-time home ownership.

3.4 Receipt of financial transfers and the transition into home ownership

Previous AHURI studies have identified a positive relationship between the receipt of financial gifts or bequests and the transition into first-time home ownership (Barrett, Cigdem et al. 2015). We begin by updating and augmenting those estimates with additional data available in HILDA since that earlier study. The analysis itself takes the form of a series of duration models that estimate the factors that correlate with the time or duration with the time or duration until entry into first-time home ownership. Of central interest is how that transition is associated with the receipt or the value of an intergenerational transfer such as a bequest or parental gift.

3.4.1 Descriptive statistics

The sample used in the analysis of how transfers are associated with the transition into first-time home ownership consists of all individuals in the HILDA data aged 18–65 years who have not previously entered into home ownership. Given the longitudinal nature of the data and the process of interest, the data consists of respondents who are observed repeatedly over time until they transition into home ownership or are 'censored'—that is, they leave the dataset for some other reason like emigration from Australia, death or simply being unable to be interviewed. This gives rise to a 'person-period' dataset where each observation represents an observation of a respondent in a given year.

Summary statistics for the sample, denoted the 'risk set', are reported in Table 8, Column 5. The sample used in the empirical estimates has an average age of 30 years, and approximately 37 per cent report being partnered. Around 10 per cent of the sample report receiving a bequest at some point prior to transitioning into home ownership. The proportion who receives a large transfer from parents, defined as being over $10,000, is slightly lower at around 7 per cent. Summary statistics for those who did and did not report receiving a bequest (columns 1 and 2) or large parental transfer (columns 3 and 4) are reported separately. Those who report receiving a bequest tend to be somewhat older than the sample as a whole (32 years) whereas those who receive a large parental transfer are somewhat younger (25 years). This reflects life-cycle patterns, in that bequests are generally received later in life, predominantly from parents as they pass away.

3.4.2 Methodology

This section addresses the transition into first-time home ownership and the relationship of that transition to the receipt of a bequest or parental transfer. The analysis of the transition from one state (non-home ownership) into another state (first home ownership) is modelled using the hazard rate. At the start of any given period, individuals who are yet to enter into home ownership can be considered 'at risk' of doing so. The hazard rate is a conditional probability—in other words, it is the proportion of individuals who transition into home ownership for the first time *conditional* on being eligible to experience first-time home ownership. The hazard rate lies between 0 and 1, with a higher hazard rate indicating that the probability of transitioning into home ownership is greater.

The analysis proceeds in two steps. In the first step we present diagrammatic evidence around transition into first-time home ownership using survivor functions. Survivor functions are useful, as they can highlight patterns of behaviour for different groups defined by observable characteristics. The survivor function is defined as follows:

$$S_j = \prod_{k=1}^{j} \frac{n_k - d_k}{n_k} \quad \text{(Eq. 6)}$$

where d_j represents the number of failures or exits into first-time home ownership in the j^{th} period. The number of individuals at risk of transitioning at the start of each period is equal to $n_j = N_j - {}^{m_j}/_{2}$, where m_j is the number of censored observations during the j^{th} period, and is the number of individuals in the initial state at the start of the j^{th} period.

Table 8: Mean characteristics of respondents in risk set

	Never received bequest (1)	Ever received bequest (2)	Never received large transfer (3)	Ever received large transfer (4)	All (5)
Age (years)	29	32	30	25	30
NSW (%)	30.7	31.3	30.6	32.7	30.7
Victoria (%)	24.8	27.4	24.6	30.5	25.0
Queensland (%)	22.2	19.8	22.3	17.0	21.9
South Australia (%)	9.1	9.4	9.3	7.6	9.2
Western Australia (%)	7.4	5.1	7.3	5.5	7.2
Tasmania (%)	3.1	3.4	3.3	1.3	3.1
Northern Territory (%)	0.8	1.0	0.8	0.6	0.8
Australian Capital Territory (%)	1.9	2.8	1.8	4.8	2.0
Partnered (married or de facto) (%)	37.2	39.5	37.7	33.4	37.4
Not partnered (%)	62.8	60.5	62.3	66.6	62.6
Bachelor or higher (%)	16.7	25.7	16.3	35.6	17.7
Diploma/ Advanced diploma (%)	6.1	6.0	6.0	6.8	6.1
Certificate (%)	20.4	17.7	20.7	12.2	20.1
Year 12 (%)	30.5	29.3	29.8	37.5	30.4
Year 11 or lower (%)	26.3	21.3	27.2	7.9	25.8
No. of dependents aged 0–14	0.44	0.39	0.45	0.20	0.43
Ever received bequest (%)	0.0	100.0	9.6	18.4	10.3
Ever received large (>=$10K) transfer (%)	6.6	13.0	0.0	100.0	7.3
Household disposable income, *$'000s*	78,648.5	79,141.3	77,781.0	90,408.6	78,699.2
Individual disposable income, *$'000s*	31,918.6	33,272.5	31,958.8	33,363.6	32,064.9
City-level house prices, *$2019, $'000s*	440.0	440.3	438.3	461.8	440.1
Observations, person-period	49,477	5,997	51,281	4,193	57,827

Note: Data is confined to waves before respondent entered into first-time home ownership (if ever), and to persons aged between 18 and 65 years of age.

Source: HILDA waves 2–18.

In the second step, the hazard or conditional transition into home ownership is estimated using statistical techniques that control for observable characteristics of the individual or household, including measures such as age, gender, disposable income, location of residence and the receipt of transfers. A Cox proportional hazard model is estimated, and the form of this hazard function is as follows:

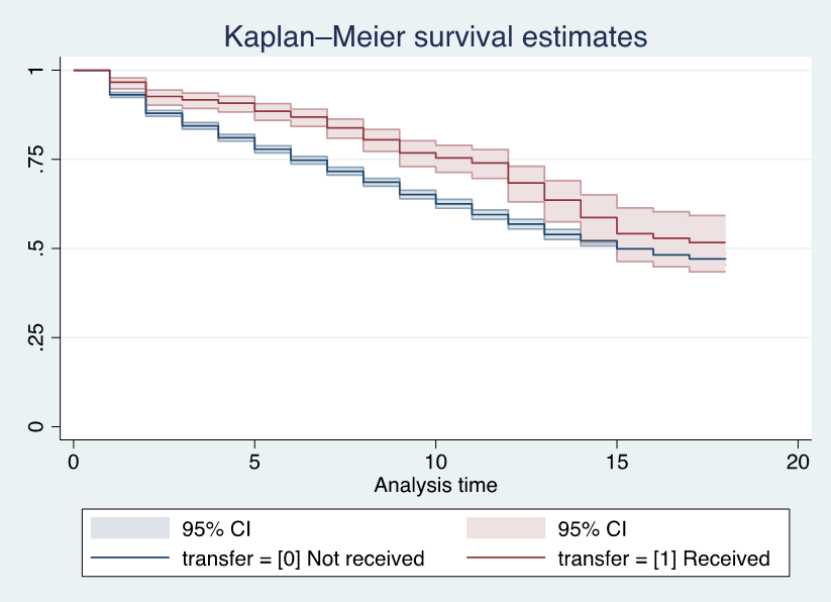
$$h_n(\tau) = h_0(\tau)\, exp\{z_n(\tau)'\beta\} \quad \text{(Eq. 7)}$$

where $h_n(\tau)$ is the hazard rate for person n, $h_0(\tau)$ is the 'baseline' hazard common to all individuals, $z_n(\tau)$ is a vector of observable characteristics that may vary with time, and β is a vector of parameters to be estimated. Duration models allow for the incorporation of both non-time-varying and time-varying covariates that may shift the hazard rate. For example, a non-time-varying covariate for an individual may be gender. Time-varying covariates, as their name suggests, may vary over time and could include the receipt (or value) of a gift or bequest, or a change in income or partnered status. The underlying assumption of a Cox model is that the baseline hazard for individuals in the risk set changes in multiplicative ways in response to changes in the covariates. One of the attractive features of the Cox model is that it is semi-parametric and therefore makes no assumptions about the shape of the underlying hazard function, $h_0(\tau)$. Rather, it simply assumes that the hazards are proportionally the same for all individuals (Cleves et al. 2016).

3.4.3 Results

We begin by presenting the survivor functions (Eq.6) that identify how long an individual 'survives' outside of home ownership conditional on the receipt of a transfer (Figure 13), bequest (Figure 14) or large parental transfer (Figure 15). The height of the survivor function indicates the proportion of individuals in the sample who remain outside of home ownership over time. For example, in Figure 13 approximately 35 per cent of those who had not received a transfer transitioned into first-time home ownership after 10 years, whereas only around 20 per cent of those who had received a transfer had made that same transition.[19]

Figure 13: Survivor function: receipt of any transfer

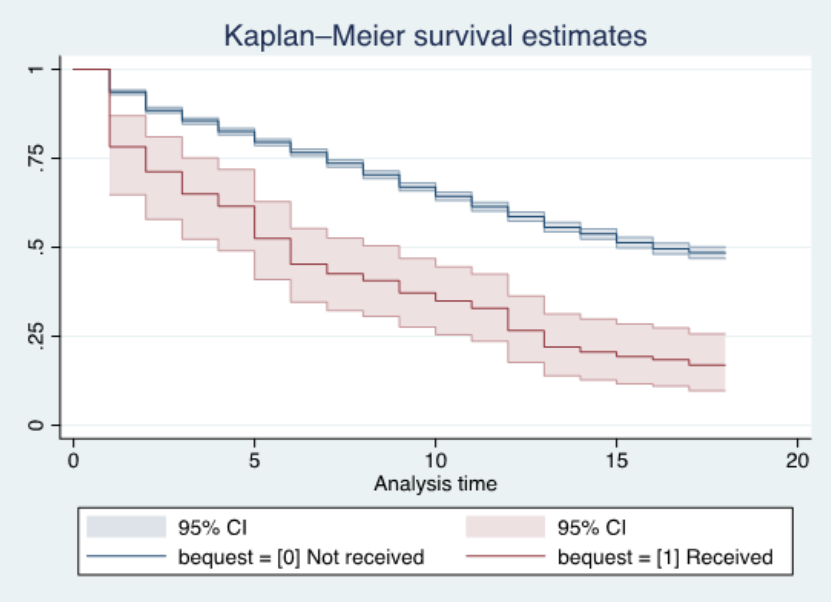


Notes: 95 per cent confidence intervals are shaded. CI = confidence interval.

Source: Authors' own calculations using waves 1–18 of HILDA data.

19 Note that for the 'receipt of any transfer' survivor function (Figure 13), the height of the survivor function at t=10 for those who had not received a transfer is approximately 0.65. This indicates that approximately 65 per cent of non-transfer recipients *had not* transitioned into first-time home ownership within 10 years of receiving a transfer. Alternatively, 35 per cent of those who had not received a transfer *had* transitioned into first-time home ownership within 10 years of receiving a transfer.

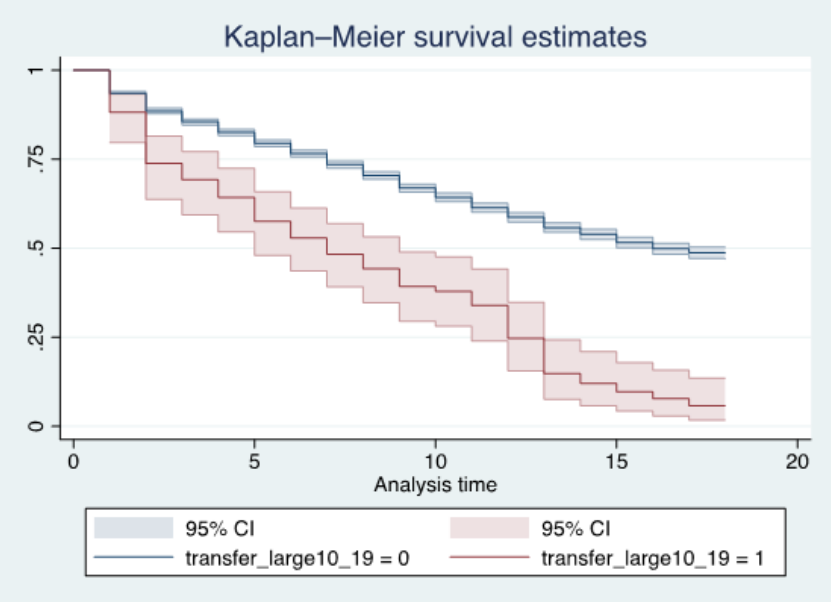
Figure 14: Survivor function: receipt of bequest



Notes: 95 per cent confidence intervals are shaded. CI = confidence interval.

Source: Authors' own calculations using waves 1–18 of HILDA data.

Figure 15: Survivor function: receipt of large parental transfer



Notes: 95 per cent confidence intervals are shaded. CI = confidence interval.

Source: Authors' own calculations using waves 1–18 of HILDA data.

There are two key patterns highlighted by the survivor functions. First, the survivor function for those who receive a transfer of any size generally lies above the survivor function for those who do not receive a transfer (Figure 13). This indicates that the receipt of a transfer as such is not associated with a more rapid transition into first-time home ownership. Second, the survivor function for those who receive a bequest (Figure 14) or a large transfer (Figure 15) lies below those who do not receive a bequest or large transfer. That is, the receipt of a bequest or large transfer is associated with a more rapid transition into first-time home ownership. These patterns are similar to those reported in Barrett, Cigdem et al. (2015) and point to the potentially strategic nature of large transfers for aspiring FHBs.

Results from the duration models (Eq.7) are presented in Table 9. These models incorporate various observable characteristics that may impact on the transition into home ownership, in addition to information about the receipt of transfers.[20] The results from the duration models show patterns consistent with a priori expectations. For example, higher levels of income and being partnered are associated with a more rapid transition into first-time home ownership.[21]

The key variables of interest in this study relate to intergenerational transfers in the form of gifts or bequests. The results indicate that the receipt of a bequest is associated with a large and statistically significant increase in the hazard rate. All other things being equal, the receipt of a bequest is associated with approximately a doubling (coefficient 1.970) of the hazard into first-time home ownership (Column 1). Recall that bequests are generally large, although often received later in the life cycle. It is possible that individuals anticipate the receipt of a bequest and delay home ownership until received, hence the large coefficient on the receipt of a bequest.

Previous analysis identified that the receipt of a parental transfer of any size was associated with a lower hazard into home ownership (Barrett, Cigdem et al. 2015). This is also consistent with the pattern identified in Figure 13. That earlier study identified that it was large parental transfers that were correlated with the transition into home ownership. The estimates reported in Table 9 confirm this pattern. In Column 1 the statistically significant coefficient of 1.989 indicates that the receipt of a large transfer is associated with an approximate doubling of the hazard rate into home ownership. The estimate for the sub-sample of individuals who are followed from age 18 (Column 3) shows a similar pattern albeit with a slightly smaller magnitude. In that case, the large parental transfer is associated with an increase in the hazard rate of around 41 per cent (coefficient 1.410). Note that in this case the association is only weakly statistically significant at the 10 per cent level. The estimates in Column 2 indicate that bequests and parental transfers lagged one period are also correlated with the transition into first-time home ownership though the coefficient is slightly smaller.

The results presented in Table 9 show patterns that are similar to those reported in Barrett, Cigdem et al. (2015). Critically they show that the receipt of bequests and large parental transfers are associated with a more rapid transition into home ownership for FHBs.

20 Results from four specifications are reported in Table 9. In columns 1 and 2, the sample consists of all those aged 18 to 65 years of age who had not entered into home ownership. Columns 3 and 4 use a sample that contains only those individuals who are followed from age 18 and have not entered into home ownership. Summary statistics for the latter sample are reported in Section 3.5. Models reported in columns 1 and 3 measure the bequest and parental transfer variables contemporaneously; models reported in columns 2 and 4 include measures of transfer variables lagged by one period.

21 A coefficient greater than 1 indicates that the covariate is associated with a higher probability of transition (or hazard) into first-time home ownership. For example, the coefficient of 1.789 on 'Age 25–34 years' (Column 1) indicates that relative to individuals aged over 55 years, the hazard into first-time home ownership is approximately 88 per cent higher, all other things being equal. Coefficients less than 1 indicate that that characteristic is associated with a lower hazard into first-time home ownership.

Table 9: Cox regression hazard model estimates: financial transfers

	(1)	(2)	(3)	(4)
Male	0.870*** (0.033)	0.866*** (0.033)	0.795*** (0.058)	0.870*** (0.058)
Aged 18–24	1.257 (0.183)	1.275* (0.185)	0.478 (0.369)	0.480 (0.371)
Aged 25–34	1.956*** (0.281)	1.976*** (0.284)	0.712 (0.542)	0.730 (0.556)
Aged 35–44	1.419*** (0.213)	1.414*** (0.213)	–	–
Aged 45–54	1.105 (0.183)	1.110 (0.183)	–	–
Victoria	0.857*** (0.045)	0.862*** (0.045)	0.869 (0.083)	0.879 (0.084)
Queensland	0.830 (0.047)	0.826*** (0.047)	0.819 (0.086)	0.810 (0.085)
South Australia	0.739*** (0.059)	0.744*** (0.059)	0.741 (0.107)	0.743 (0.108)
Western Australia	1.130* (0.081)	1.126*** (0.081)	0.957 (0.127)	0.947 (0.126)
Tasmania	0.867 (0.108)	0.869 (0.108)	0.756 (0.176)	0.753 (0.175)
Northern Territory	0.995 (0.170)	0.985 (0.169)	0.951 (0.296)	0.934 (0.290)
Australian Capital Territory	0.887 (0.110)	0.881 (0.110)	0.662* (0.152)	0.664* (0.152)
Bachelor or higher	2.501*** (0.159)	2.524*** (0.160)	2.064*** (0.259)	2.093*** (0.262)
Diploma/ Advanced diploma	2.417*** (0.192)	2.459*** (0.195)	1.567*** (0.268)	1.600*** (0.272)
Certificate	1.603*** (0.105)	1.602*** (0.105)	1.523*** (0.192)	1.526*** (0.193)
Year 12	1.333*** (0.092)	1.342*** (0.092)	1.179 (0.145)	1.191 (0.146)
No. of dependents aged 0–14	0.852*** (0.019)	0.850*** (0.019)	0.732*** (0.041)	0.735*** (0.041)
Received bequest, *t*	1.970*** (0.238)	-	1.676** (0.403)	-
Received large (>=$10K) transfer, *t*	1.989*** (0.170)	-	1.410* (0.264)	-
Partnered	3.804*** (0.170)	3.833*** (0.171)	3.511*** (0.260)	3.536*** (0.261)
Household disposable income, *$'000s*	1.012*** (0.003)	1.012*** (0.003)	1.012** (0.005)	1.013** (0.005)
Individual disposable income, *$'000s*	1.110*** (0.006)	1.111*** (0.006)	1.219*** (0.018)	1.221*** (0.018)

	(1)	(2)	(3)	(4)
City-level house prices, *$2019*	0.998*** (0.000)	0.998*** (0.000)	0.998*** (0.000)	0.998*** (0.000)
Received bequest, *t-1*	-	1.652*** (0.234)	-	1.124 (0.349)
Received large (>=$10K) transfer, *t-1*	-	1.478*** (0.203)	-	0.999 (0.250)
Log likelihood	−2782.60***	−2740.68***	−6029.1***	−6053.7***
Observations	60,567	60,471	21,136	20,270

Notes: Reference categories are aged 55–64, New South Wales, Year 11 or lower, not partnered. In Model 1 and Model 2, the risk set includes all persons aged 18–64, while in Model 3 and Model 4 the sample is confined to persons who were aged 18 when they entered the risk set.

**** p<0.01; ** p<0.05; *p<0.1. Standard errors are presented in brackets.*

Source: Authors' calculations.

3.5 Co-residence and the transition into home ownership

We turn now to the association between in-kind transfers, in particular co-residence, and the transition into home ownership.

3.5.1 Descriptive statistics

Summary statistics for the sample used in the analysis of co-residence and the transition into home ownership are presented below. This sample differs from that used in subsection 3.4.2. In particular, the hazard models in this section focus on a set of respondents in HILDA surveys who are observed continuously from age 18 until they enter home ownership or are censored.[22] This represents a smaller sample than that used in subsection 3.4.2, as it is necessary to identify tenure status in every period after age 18 preceding entry into home ownership or censoring.

Summary statistics for the sample used in the duration models are presented in Table 10, broken down by tenure status per period. For individuals, tenure status is defined as being in rental accommodation; co-residing with parents and not paying board; or co-residing with parents and paying board to someone else in the household. As expected, those individuals who rent are slightly older (24 years) than those who co-reside, whether they co-reside at zero cost (22 years) or pay board to someone else in the household (23 years). Respondents who are co-residing are much more likely to be single. Interestingly, the household income among those who co-reside and do not pay board is highest, although this most likely reflects parental income. Weekly wages and salary are similar across individuals in rental accommodation or co-residing and paying board, and somewhat lower for those who co-reside at zero cost. Notably, employment rates for those who co-reside are higher than those who rent.

22 The analysis considers the younger cohort to lessen any selection bias associated with analysing individuals who are more progressed in the life cycle and yet to make a transition into home ownership. Moreover, the duration models control for the time spent co-residing in the parental home, and this requires the sample be confined to those respondents who are followed continuously from age 18 onwards.

Table 10: Summary statistics: co-residence and transition into home ownership

Variable	Rent	Co-reside, no board	Co-reside and pay board
Age	24	22	23
Married	10.6%	1.3%	1.0%
De facto	31.3%	3.8%	6.4%
Separated	0.9%	0.2%	0.1%
Divorced	0.6%	0.3%	0.8%
Single, never married	56.8%	94.4%	91.7%
Bachelor or higher	6.1%	5.9%	7.6%
Advanced diploma/ diploma	19.4%	12.1%	21.9%
Certificate	33.9%	53.1%	42.1%
Year 12	22.2%	9.8%	13.2%
Year 11 or lower	18.4%	19.1%	15.2%
Received large transfer	3.4%	4.3%	1.1%
Annual household disposable income ($)	62,289	147,653	130,838
Weekly wages/salaries, all jobs ($)	533.9	419.6	560.9
Employed	70.3%	77.4%	82.9%
Unemployed	9.7%	7.2%	6.4%
Not in the labour force	19.9%	15.3%	10.7%
Observations	14,861	5,519	1,774

Note: Data is confined to waves before respondent entered into home ownership (if ever). Sample confined to persons aged 18 in the first wave they are observed.

3.5.2 Methodology

The analysis of co-residence and its relationship to the transition into home ownership consists of two steps. The first step builds on the patterns identified in Figure 12, which highlights the increasing tendency for younger Australians to reside in the parental home over time. Insight into what gives rise to this trend is provided by examining how the transitions between different tenures have evolved over time. Four mutually exclusive tenures (i) that an individual may be in are defined: co-residing with parents, renting, owner-occupation, and other.[23] The conditional probability that individuals aged 18–32 years of age transition from one tenure to another between period (t) and ($t+1$) is then considered. For example, the proportion of individuals who transition from co-residence with parents in period (t) to ownership in period ($t+1$) is defined as follows:

$$Probability(i_t = co\text{-}residence, i_{t+1} = homeownership | i_t = co\text{-}residence)$$

Using the longitudinal information available in HILDA data, it is possible to identify how these conditional transitions evolve over the period 2001–2020.

In the second step, we estimate a series of duration models similar to those reported in subsection 3.4.3. Those models use the sample of individuals observed in HILDA data from age 18 (Table 10) and incorporate a measure of the amount of time spent co-residing in the parental home with or without the payment of board.

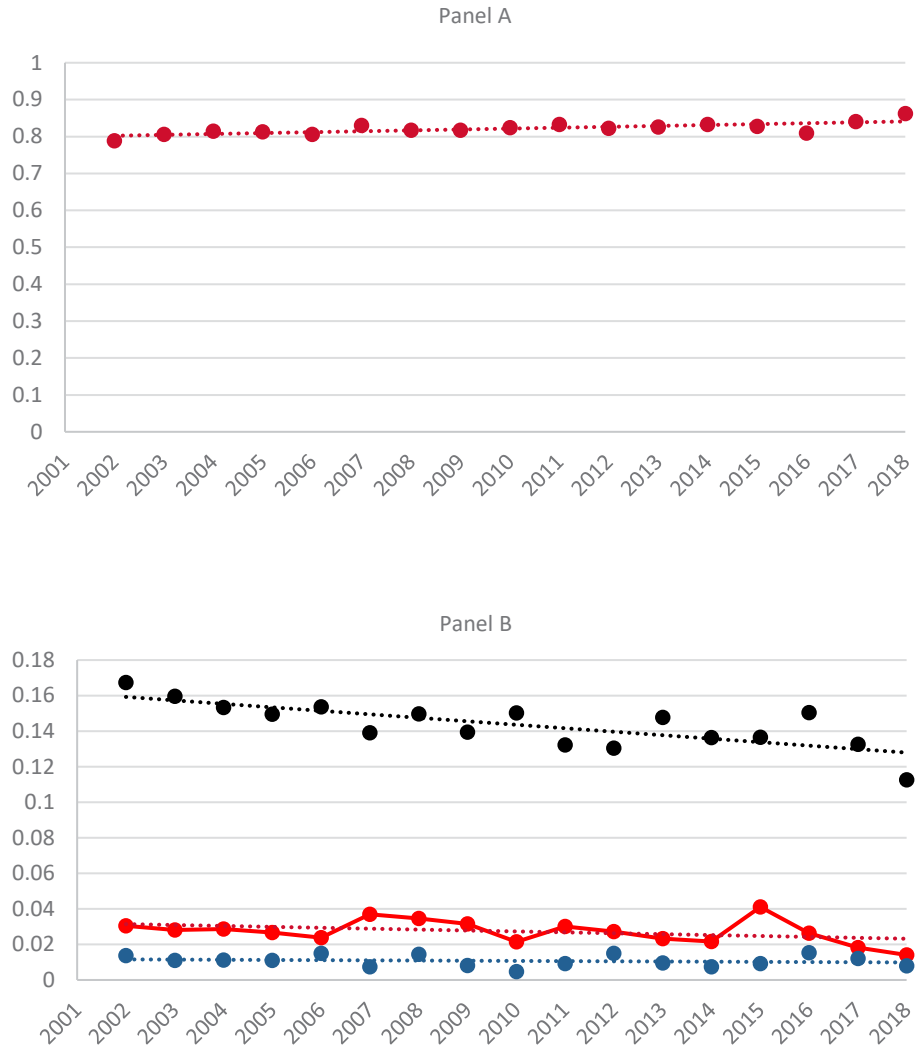
23 The transition probabilities presented in the text are calculated for the same age categories as used in Figure 12—that is, individuals aged 18–32 years of age. The 'other' tenure category is dropped when conducting the duration analysis (Table 11) as this group is small and in some cases home ownership status is difficult to identify. For example, individuals who reside in an owner-occupied home do not report being an owner nor do they pay rent or board.

3.5.3 Results

Figure 16 identifies how transitions from parental co-residency at time (t) have changed over time. Panel A displays the probability that an individual remains in parental co-residency, or transitions from parental co-residency at time (t) into parental co-residency at time $(t+1)$. Panel B shows the transition from parental co-residency into an alternative tenure between (t) and $(t+1)$ has changed over time. A line of best fit or trend line is included for each series.

Figure 16 highlights a source of the increasing likelihood that younger Australians are observed co-residing in the parental home. Over time there is an increasing tendency to remain in the parental home from year to year (Panel A), and a declining probability that a transition from co-residency with parents into rental tenure is made (Panel B). Similarly, there appears to be a lower likelihood of transitioning from parental co-residency into home ownership over time. The line of best fit for that series is negatively sloped, albeit the slope is small in magnitude, and indicates a declining tendency for young adults residing in the parental home to transition into ownership. Such a pattern is consistent with the observed decline in rates of home ownership among younger cohorts over time.

Figure 16: Transitions from co-residence, individuals 18–32 years

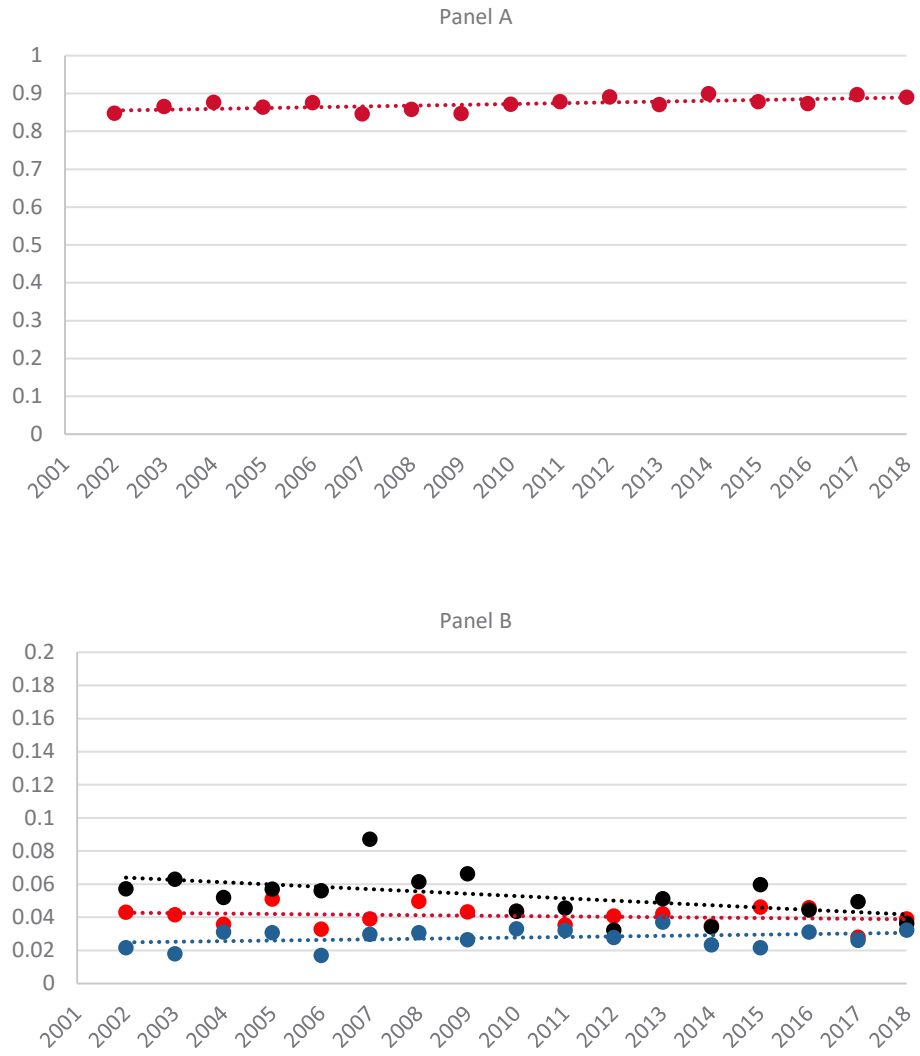


Source: Authors' calculations using waves 1–20 of HILDA data.

In a similar fashion, Figure 17 identifies how the probability of transitioning from rental tenure has changed over time. Panel A shows an increasing likelihood that individuals transition from renting at time (t) into renting at time $(t+1)$, that is, they continue to rent. Panel B shows how the transition from renting into an alternative tenure between (t) and $(t+1)$ has evolved over time. Again, the negative slope on the line of best fit for the renting-ownership transition shown in Panel B highlights how the transition between alternative tenures has changed for younger Australians, consistent with a decrease in home ownership rates over time.

Together, Figure 16 and Figure 17 highlight how a stylised housing career, moving from co-residence into rental property and then into home ownership has changed over time. In particular, the transition into home ownership among younger individuals has become less likely.

Figure 17: Transitions from renting, individuals 18–32 years



Source: Authors' calculations using waves 1–20 of HILDA data.

To assess the association between in-kind transfers and the transition into home ownership, the duration models reported in Table 11 incorporate information on the tenure status of individuals. It is important to stress that co-residence is likely to represent a choice of both parents and young adults, and is likely to be endogenous. Hence, results in Table 11 should be interpreted as highlighting the association between co-residence over time and the transition into first-time ownership. Identifying a causal relationship between co-residence and the transition into first home ownership would require structural modelling that is beyond the scope of this study.

Three specifications are reported in Table 11 to separately assess the effect of dollar transfers and in-kind transfers received by individuals on the likelihood they transition into first home ownership. In Column 1, only information on the effect of the receipt of financial transfers is included. The remaining two specifications incorporate information on cumulative time spent co-residing with parents with or without the payment of board (Column 2), and, a measure indicating if the individual ever co-resided with parents at any time after age 18 (Column 3). In other words, the estimates in columns 2 and 3 incorporate information on the receipt of in-kind transfers.

The preferred specification in Column 3 indicates that each additional year spent residing in the parental home at zero cost (no payment of board) increases the hazard into home ownership by approximately 40 per cent relative to additional time spent renting. Interestingly, additional time spent residing in the parental home and paying board is associated with a slightly higher hazard rate again, with the coefficient indicating an increase in the hazard rate of approximately 43 per cent. These results are consistent with a pattern whereby parents provide in-kind transfers in the form of co-residence, and this support assists individuals transitioning into home ownership. Note that the variables indicating the receipt of a large transfer are large in magnitude but are statistically insignificant.

A somewhat unexpected finding from the analysis reported in Table 11 is that the coefficient on time spent in the parental home coupled with the payment of board exceeds the coefficient on 'free' co-residence. Intuitively, remaining in the parental home provides opportunities for young adults to accumulate savings that can be used for a deposit. Recall that the value of the in-kind transfer provided by co-residence is high, estimated to be in the order of $300–$400 per week (Productivity Commission 2020). While the payment of board may reduce the opportunities to save, it also changes the relative cost of remaining in the parental home for an extended period. It may be the case that the payment of board while co-residing acts as an incentive to save and transition from the parental household.

Some evidence for this hypothesis is provided by questions asked of respondents in the HILDA survey around saving behaviours. Specifically, respondents are asked questions about their savings habits and the time frames that shape their spending and savings decisions. Those questions are:

- Which of the following statements comes closest to describing your savings habits?
  - Don't save: usually spend more than income
  - Save regularly by putting money aside each month.
- In planning your saving and spending, which of the following time periods is most important to you?
  - The next week
  - The next 2 to 4 years
  - More than 10 years ahead.

Table 11: Cox regression hazard model estimates: in-kind support

	(1)	(2)	(3)
Male	1.064 (0.174)	0.996 (0.164)	1.017 (0.167)
Victoria	0.908 (0.187)	0.833 (0.170)	0.862 (0.177)
Queensland	0.536*** (0.154)	0.682 (0.199)	0.722 (0.211)
South Australia	1.007 (0.336)	1.022 (0.342)	1.046 (0.994)
Western Australia	1.395 (0.647)	1.244 (0.591)	1.164 (0.352)
Tasmania	1.981 (0.952)	1.642 (0.804)	1.429 (0.679)
Northern Territory	1.166 (0.848)	2.144 (1.570)	2.077 (1.523)
Australian Capital Territory	0.440 (0.264)	0.470 (0.284)	0.465 (0.281)
Bachelors or higher	1.950** (0.541)	1.414 (0.405)	1.306 (0.371)
Diploma/ advanced diploma	1.131 (0.463)	0.831 (0.345)	0.767 (0.318)
Certificate	1.427 (0.416)	1.174 (0.349)	1.118 (0.332)
Year 12	0.853 (0.237)	0.718 (0.203)	0.643 (0.181)
No. of dependents aged 0-14	0.244*** (0.127)	0.407* (0.209)	0.461 (0.238)
Received large (>=$10K) transfer, *t*	1.294 (0.584)	2.083* (0.924)	1.987 (0.888)
Partnered (married or de facto)	0.439*** (0.103)	0.787 (0.191)	0.812 (0.197)
Household disposable income, *$0'000s*	1.030*** (0.004)	1.022*** (0.006)	1.022*** (0.006)
Individual disposable income, *$0'000s*	1.257*** (0.033)	1.291*** (0.035)	1.285*** (0.035)
City-level house prices, *$2019*	0.999 (0.001)	0.999* (0.001)	0.999 (0.001)
Co-residing with parents, ever	-	-	3.974*** (1.781)
Co-residing with parents, *cumulative*	-	1.489*** (0.060)	1.396*** (0.063)
Paying board to parents, ever	-	-	1.277 (0.258)
Paying board to parents, *cumulative*	-	1.522*** (0.076)	1.434*** (0.092)
Log likelihood	–1181.5***	–1115.3***	–1107.3***
Observations	20,026	20,026	20,026

*Notes: Reference categories are New South Wales, Year 11 or lower, Not in labour force, Not partnered. Risk set includes all persons aged between 18 in first HILDA wave they are observed. *** p<0.01; ** p<0.05; *p<0.1*

Source: Authors' calculations.

Table 12 reports the percentage of individuals, by tenure status, who indicate they save regularly and have a longer-term perspective regarding their spending and savings decisions. Such a perspective is likely to be associated with behaviours that may be conducive to the accumulation of savings and a deposit that would facilitate the transition into home ownership. The responses are further broken down by the periods 2001–2009 and 2010–2018.

Table 12: Savings behaviour: co-residers, boarders and renters

	Free co-residers	Boarders	Renters
Save regularly by putting money aside, 2001–2009 (%)	34	45	27
Save regularly by putting money aside, 2010–2018 (%)	38	49	34
Saving horizon greater than 2 years, 2001–2009 (%)	21	24	18
Saving horizon greater than 2 years, 2010–2018 (%)	24	29	24

Note: Sample consists of those individuals aged 18–32 years of age who are identified as renters, co-resident with parents and not paying board (Free co-residers), or co-resident with parents and paying board to someone in the household (Boarders). Questions are asked in every second wave of the HILDA questionnaire.

Source: Authors' calculations using waves 1–18 of HILDA data.

The responses highlight the association between tenure status and savings behaviour, with boarders reporting the highest tendency to save and identifying a longer-term planning horizon in terms of saving. While such behaviours are consistent with the results reported in Table 11, it is important to emphasise that consumption and savings decisions are likely to be driven by a range of factors, including:

- individual preferences over current and future consumption
- current and expected future income
- current transfers received and anticipation of receiving transfers in the future.

Intuitively, relative to renting, the in-kind transfer provided by co-residence provides additional opportunities for individuals to save. Hence, it is unsurprising that free co-residers and boarders report greater tendency to save relative to renters.

The more challenging exercise is to identify the causal nature of the relationship between tenure status and saving behaviour. For example, is it:

- a preference for saving that induces a decision to co-reside—in other words, individuals who wish to save choose to co-reside in the parental home. Or,
- a decision to co-reside effectively induces saving—in other words, co-residence facilitates saving and those who decide to co-reside have the opportunity to save more.

While beyond the scope of this report, a comprehensive understanding of how tenure outcomes are related to those savings decisions would provide a greater understanding of how intergenerational transfers facilitate the transition into home ownership.

3.6 Intergenerational transfers, home ownership and wealth

One consequence of intergenerational transfers from parents to children is the potential impact on the wealth of recipients and, more broadly, the level of inequality. Estimates of the impact of intergenerational transfers on wealth vary substantially, as they are influenced by assumptions around the consumption of and the returns on transferred wealth (Productivity Commission 2021; Tiefensee and Westermier 2016). Mathä, Porpiglia et al. (2017) examine 15 European countries and find that intergenerational transfers represented approximately 10 per cent of net household wealth on average. While that analysis did not investigate the causal relationship between transfers and home ownership, it did highlight the importance of home ownership for the accumulation of wealth. In particular, home ownership and the associated gains from house price appreciation represented an important determinant of differences in the net wealth of households across Europe.

Home ownership in Australia has historically been an important savings mechanism and means by which to accumulate wealth. A simple model described in Mathä, Porpiglia et al. (2017) highlights how home ownership may have consequences for the distribution of wealth over the life cycle and across cohorts.

Consider two economies in which the income streams of households are the same and certain. Assume that households across economies would make similar decisions and would smooth consumption over the life cycle. The one key difference across the economies is that households in one economy choose to rent housing services while in the other households purchase owner-occupied housing. Further, assume that investment returns are the same over all investment categories and are equal to the interest rate required to repay debt. In such a setting, the desire of households to smooth consumption over the life cycle will completely determine household wealth at any given age. Moreover, wealth levels will be independent of whether a household rents or purchases housing services. At the time housing assets are purchased, financial assets are simply exchanged for real assets in the form of housing. In such a setting, differences in net wealth at any given age across the two economies must reflect either behavioural or institutional considerations, or both. For example, institutional differences may provide incentives to purchase housing assets as a result of subsidies that make housing a more attractive long-term investment because of capital gains. Given owner-occupied housing is treated concessionally relative to other asset classes (Yates 2010), understanding the association between parental transfers, wealth accumulation and inequality is critical for policy settings.

Existing analysis of the HILDA datasets indicates that transfers from parents to children (in the form of financial gifts or bequests) have important distributional implications (Barrett, Cigdem et al. 2015). That analysis highlights that individuals in rental tenure are less likely to receive transfers compared to those in home ownership. Moreover, the transfers that occurred over the period 2001–10 tended to increase overall inequality. In contrast, analysis by the Productivity Commission finds that transfers tend to increase absolute inequality but reduce relative inequality (Productivity Commission 2021). Intuitively, while lower transfers are made to less wealthy households, they represent a greater share of existing wealth and therefore tend to decrease measured (relative) inequality. The study by Mathä, Porpiglia et al. (2017) highlights that while intergenerational transfers play a role in explaining differences in the wealth of households in Germany, this process is dominated by the role of home ownership and house price appreciation. To the extent that intergenerational transfers play an important role in facilitating home ownership, they are likely to be important for understanding inequality and the wealth accumulation process.

In this section, we consider the relationship between intergenerational transfers, home ownership and wealth. We do so by examining how the distribution of wealth has evolved over time in Australia, and the role that home ownership and intergenerational transfers has played in that evolution. In doing so, the analysis begins to shed light on research question 4, namely the distributional implications of home ownership facilitated by direct and in-kind transfers.

3.6.1 Descriptive statistics

The analysis in this section uses household wealth information that is recorded in special modules of the HILDA survey. Detailed wealth information is collected every four years, commencing in 2002. The sample for the analysis of wealth was constructed in a similar manner to that used in Barrett, Cigdem et al. (2015). Initially, a household 'reference' person was defined for each household in Wave 2. The reference person was selected by applying the following criteria, in order: (i) one partner of a couple, (ii) lone parent, (iii) single person, (iv) the person with the lowest 'person number' on the household questionnaire.[24] The household reference person from Wave 2 was followed across subsequent waves to create a longitudinal record for the household. Households composed of multiple families were dropped from the sample due to potential measurement error. Information on household wealth is generally less reliable in multiple family households, so the analysis is conditional on single family households.

24 In the large majority of cases, this method also selected the person who supplied most of the information recorded on the Household Questionnaire.

The focus of the analysis is the distribution of household wealth or 'net worth', and its components, consisting of:

- net home equity
- total property assets
- financial wealth.

Home assets are defined as the value of equity minus debt for the principal residence. Total property assets are home assets in addition to other property (investment) holdings. Financial assets consist of the value of bank accounts, superannuation balances, cash and equity investments, trust funds and life insurance. Other components of net worth include non-financial assets such as business assets, vehicles and collectables. Summerfield et al. (2015, pp. 70–77) provides detailed information on the various components of wealth available in the HILDA data.

To examine intergenerational influences on the observed distribution of wealth, household receipt of bequests and parental transfers are identified using information in the HILDA survey. In particular, household receipt of bequests and parental transfers is identified by determining if such transfers were reported by the household reference person, or the partner of the reference person (where appropriate) in the four years prior to the 2006, 2010, 2014 and 2018 surveys, and in the two years prior to the 2002 survey, respectively. The total amount of bequests and parental transfers received were calculated analogously using either a four-year window or a two-year window. The value of any transfers received was converted into real terms using the ABS Consumer Price Index series.

To better understand the distribution of wealth and its evolution over time, the analysis focusses on the role of housing tenure and intergenerational transfers. The key distinction is between home owners and renters. Within the group of home owners, a distinction is made between those who own the home outright ('outright owners') and those who still have a mortgage ('mortgagees'). A range of demographic factors and socio-economic characteristics such as reference-person educational attainment and household disposable income are incorporated into the analysis.

Table 13 presents descriptive statistics for the sample used in the analysis of wealth transfers and distribution by wave of the HILDA survey. In 2002, the average net worth of Australian households was $767,909 in 2021 dollars. While average net wealth grew in real terms by around 75 per cent between 2002 and 2018, the majority of that growth occurred between 2002 and 2006, and between 2014 and 2018. Macro-economic developments, such as the GFC, limited the growth in wealth in the late 2000s. Home net equity in 2002 accounted for approximately 37 per cent of households' net worth on average and remained relatively constant over time as a proportion of total net worth.

Further details on the relationship between tenure and wealth are presented in Table 14. This presents a series of cross-tabulations between household wealth (and components of wealth) by housing tenure across each year the wealth modules are available in HILDA. Several features stand out.

First, home owners on average have substantially higher average net worth than renters. This reflects the fact that home owners, by definition, have substantial wealth held in the form of equity in the principal residence, and in some cases in other property investment. The most important component of household wealth for renters is financial wealth.

Second, in each wave renters are less likely to receive a bequest and, conditional on receipt, the amount received is lower for renters. Conversely, renters are more likely than home owners to receive a parental transfer although the amount, conditional on receipt, is substantially less for renters. Recall that the receipt of transfers reported in Table 13 relates to the period preceding the wealth module. For example, the receipt of a transfer for the 2006 wave captures transfers reported in waves 3, 4, 5 or 6 of HILDA. Some home owners identified in each of the wealth modules will be FHBs who have entered home ownership since the previous wealth module. The analysis in Section 3.4 highlights that, in some cases, the receipt of those transfers will be associated with the transition into first home ownership. Hence, the patterns in Table 14 are consistent with the findings in Section 3.4 around the importance of large transfers in the transition into first home ownership. Recall that the survivor function associated with the receipt of a transfer of any size (Figure 13) was higher than that for those who did not receive a transfer. In comparison, the survivor function associated with the receipt of a large transfer (Figure 15) was below that for those who did not receive a transfer.

Table 13: Summary statistics: wealth analysis

	2002	2006	2010	2014	2018
Net worth (2021$)	767,909	1,052,560	1,090,435	1,147,862	1,358,225
Net worth if >0	795,611	1,087,703	1,121,692	1,176,370	1,379,220
Home assets ($)	287,936	385,836	434,871	429,694	531,241
Total property assets ($)	358,633	461,049	578,682	570,471	690,958
Financial wealth ($)	297,699	379,233	410,137	495,199	569,814
Received bequest (%)	3.3	10.2	10.4	13.0	14.1
Bequest amount ($)	2,907	10,838	10,522	18,114	20,710
Recv'd parental transfer (%)	8.6	14.4	10.7	9.9	9.7
Parental transfer amt ($)	671	1,706	1,323	2,018	2,164
Tenure					
Owner (w/out mort.)	35.2	35.4	36.5	37.7	41.4
Owner (with mort.)	39.4	38.6	38.7	39.5	36.5
Renter	22.8	23.3	21.7	19.8	19.1
Personal characteristics					
Age (years)	42	46	50	54	56
Married/partnered	76.4	72.4	71.0	72.1	70.1
Household structure					
Coup., no dep. child. (%)	37.2	37.9	39.8	42.2	44.7
Coup. with dep. child. (%)	39.2	34.5	31.2	29.9	25.4
Lone parent with dep. (%)	5.7	4.8	4.2	4	3.3
Lone person (%)	14.3	17.5	19	18.4	20.5
Other household type (%)	3.5	3.5	3.7	3.3	3.9
Number of children	0.699	0.612	0.523	0.483	0.393
Socio-economic characteristics					
H/hold disp. income	1,683	1,855	1,991	2,051	1,975
Education					
Postgraduate (%)	3.0	3.8	4.4	5.0	5.7
Grad. cert./diploma (%)	5.0	5.6	6.2	7.4	7.5
Bachelor (%)	11.9	13	13.3	13.6	13.3
Diploma (%)	8.8	9.3	9.7	11.0	10.8
Certificate (%)	19.2	21.8	22.8	22.9	23.1
Year 12 (%)	13.8	13.1	11.1	10.5	9.9
Year 11 (%)	37.7	32.7	31.8	30.0	30.0
Location					
New South Wales (%)	31	30.1	30	29.4	29.2
Victoria (%)	25.1	24.8	24.8	25.5	25.3
Queensland (%)	19.5	20.3	20.5	20.6	21.1
South Australia (%)	9.4	9.4	9.2	9	9.1

	2002	2006	2010	2014	2018
Western Australia (%)	9.7	9.7	9.7	9.5	9.5
Tasmania (%)	2.9	3	2.9	3.1	3
Northern Territory (%)	0.6	0.7	0.8	0.8	0.8
Aust. Capital Territory (%)	1.7	1.9	1.9	1.9	1.9
Observations	5149	5623	5940	6814	6755

Source: Authors' own calculations using HILDA waves 2, 6, 10, 14 and 18.

Table 14: Wealth, bequests and parental transfers by housing tenure

	Owner (with or without mortgage)	Owner without mortgage	Owner with mortgage	Renter
2002				
Net worth ($)	954,564	1,254,114	726,994	159,242
Home assets ($)	381,483	485,928	302,136	0
Total property assets ($)	465,136	58,5892	373,398	25,263
Financial wealth ($)	358,647	48,2912	264,243	91,763
Rec. bequest (%)	3.7	4.5	3.1	1.7
Bequest amount ($)	3,700	5,079	2,652	255
Rec. par. trans. (%)	8.2	6.0	9.8	10.4
Parental trans. amt ($)	653	428	824	706
2006				
Net worth ($)	1,305,342	1,679,635	1,001,449	24,0731
Home assets ($)	514,374	648,327	405,615	0
Total property assets ($)	679,563	840,339	549,027	62,203
Financial wealth ($)	454,717	596,808	339,350	125,838
Rec. bequest (%)	11.7	13.4	10.3	5.6
Bequest amount ($)	13,252	19,166	8,450	3,454
Rec. par. trans. (%)	12.0	8.9	14.5	22.5
Parental trans. amt ($)	1,644	1,649	1,640	2,020
2010				
Net worth ($)	1,341,753	1,680,057	1,058,493	223,297
Home assets ($)	568,928	718,115	444,014	0
Total property assets ($)	730,467	895,579	592,220	68,800
Financial wealth ($)	485,794	638,158	358,220	143,671

	Owner (with or without mortgage)	Owner without mortgage	Owner with mortgage	Renter
Rec. bequest (%)	11.3	12.3	10.6	7.0
Bequest amount ($)	12,961	16,222	10,232	2,459
Rec. par. trans. (%)	8.9	5.2	12.0	17.2
Parental trans. amt ($)	1,469	1,161	1,729	749
2014				
Net worth ($)	1,399,595	1,757,899	1,057,269	244,268
Home assets ($)	554,741	706,662	409,596	0
Total property assets ($)	718,330	88,1575	562,366	51,465
Financial wealth ($)	581,274	748,867	421,155	181,461
Rec. bequest (%)	14.5	16.3	12.8	8.5
Bequest amount ($)	21,116	31,240	11,443	7,988
Rec. par. trans. (%)	8.7	4.7	12.4	14.8
Parental trans. amt ($)	2,307	1,356	3,214	1,108
2018				
Net worth ($)	1,642,900	1,895,008	135,7138	305,312
Home assets ($)	681,238	820,768	523,082	0
Total property assets ($)	864,179	1,005,197	704,337	59,378
Financial wealth ($)	662,079	775,448	533,578	224,469
Rec. bequest (%)	15.6	16.7	14.3	8.9
Bequest amount ($)	25,020	32,682	16,335	5,646
Rec. par. trans. (%)	9.0	4.5	14.1	13.0
Parental trans. amt ($)	2,373	1,027	3,899	1,613

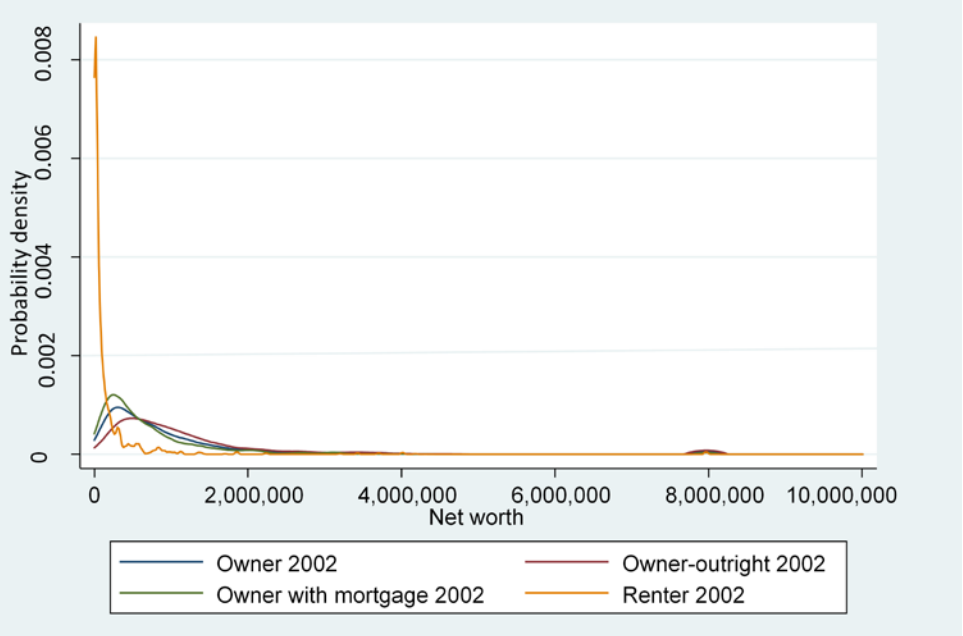
Source: Authors' own calculations using HILDA waves 2, 6, 10, 14 and 18.

3.6.2 Distribution of wealth, by tenure

The results in subsection 3.6.1 highlight important trends in the evolution of wealth holdings over time, but provide limited insight by focussing on mean values. In Figure 18 to Figure 22 we present the complete distribution of household wealth across tenure types for each year in which the wealth module is available in the HILDA survey. We do so by presenting the density function, which shows the proportion of households that report any given wealth level.

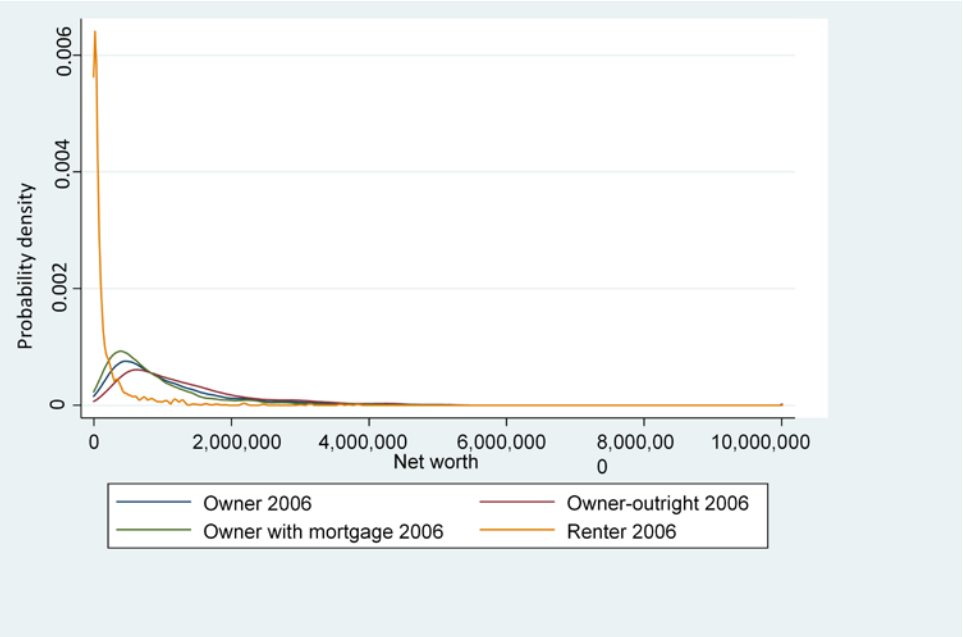
There is a consistent pattern across each of the wealth waves, with renters having substantially less wealth than homeowning households. In Figure 18 to Figure 22 there is a noticeable spike at zero wealth for renter households and, in general, households without a mortgage have a density function that lies furthest to the right given the higher average level of wealth held by this group. It is important to emphasise that the patterns exhibited across tenures reflects life-cycle considerations, with younger individuals likely to have accumulated few assets and more likely to be residing in rental tenure. Wealth levels will also reflect social, demographic and economic factors.

Figure 18: Household wealth distribution in 2002, by tenure



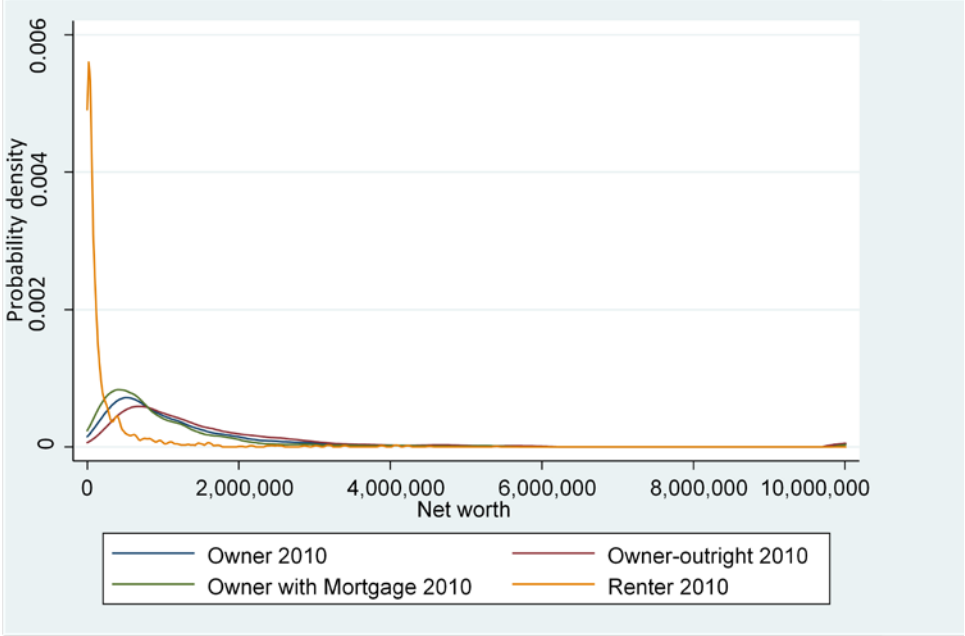
Source: Authors' own calculations using Wave 1-2 of HILDA.

Figure 19: Household wealth distribution in 2006, by tenure



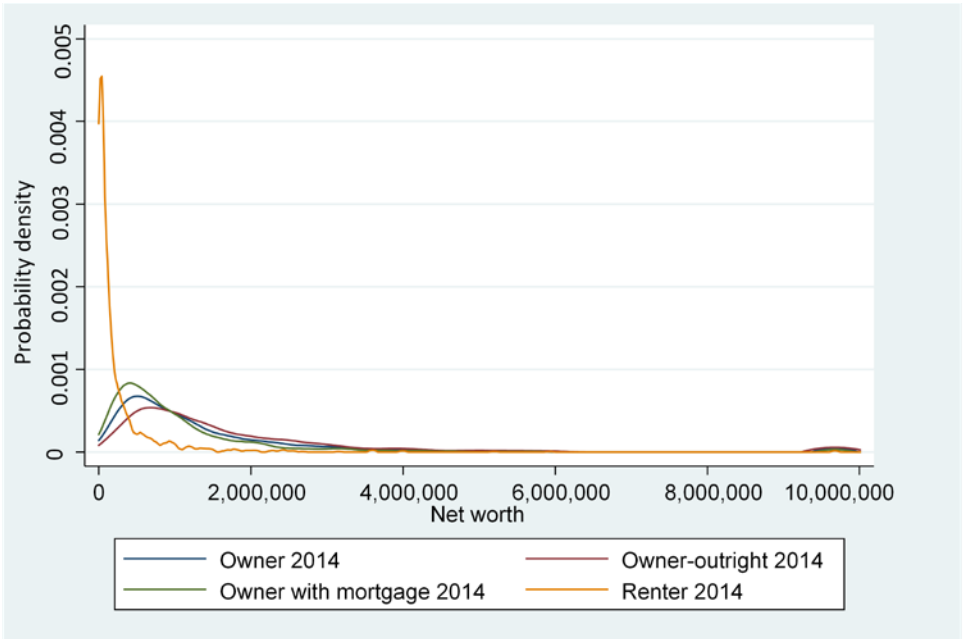
Source: Authors' own calculations using Wave 3-6 of HILDA.

Figure 20: Household wealth distribution in 2010, by tenure



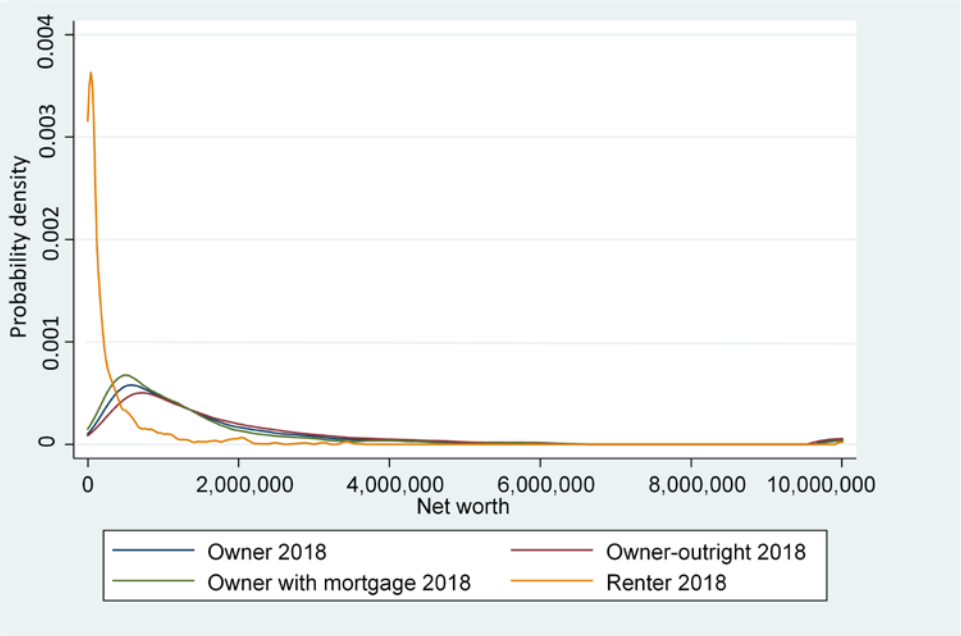
Source: Authors' own calculations using Wave 6-10 of HILDA.

Figure 21: Household wealth distribution in 2014, by tenure



Source: Authors' own calculations using Wave 11-14 of HILDA.

Figure 22: Household wealth distribution in 2018, by tenure

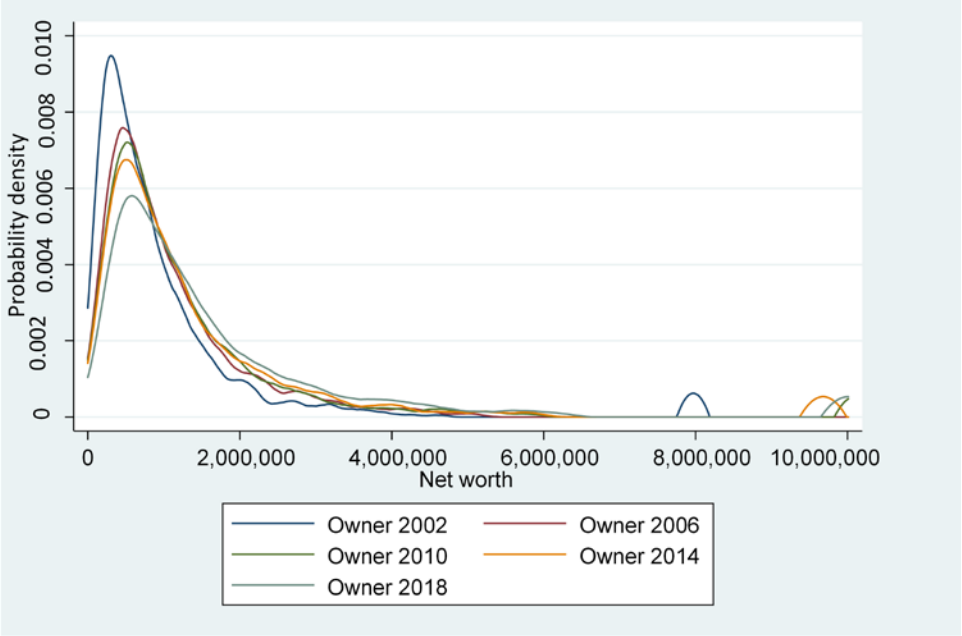


Source: Authors' own calculations using Wave 15-18 of HILDA.

3.6.3 Changes over time in the distribution of wealth, by tenure type

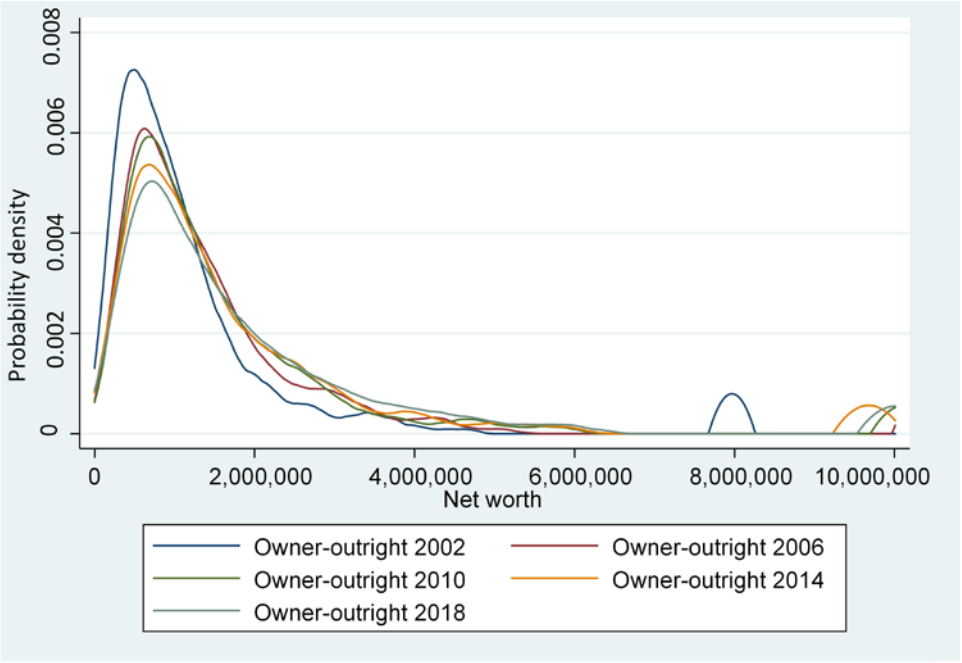
We now consider how the distribution of wealth has changed over time across tenure types. Such an exercise is useful, as it highlights the critical role played by rising house prices in exacerbating increasing inequality. In turn, such an analysis focusses attention on how home ownership enabled by parental transfers may contribute to inequality. Figure 23 focusses on home owners and the density plots show that the peaks of the distributions are sequentially lower and, over time, shift to the right. This points to positive real growth in wealth over time, which tends to be higher in the upper tails of the distribution, indicating growing wealth inequality among home owners. Figure 24 presents plots for outright-home owners, which is the wealthiest subgroup considered. These plots show a trend of growing wealth and increasing inequality over time, which is more accentuated than that observed for the group of mortgaged home owners (Figure 25). The results for renters (Figure 26) are especially striking, highlighting their low net wealth and minimal growth over time.

Figure 23: Household wealth distribution 2002–2018, home owners



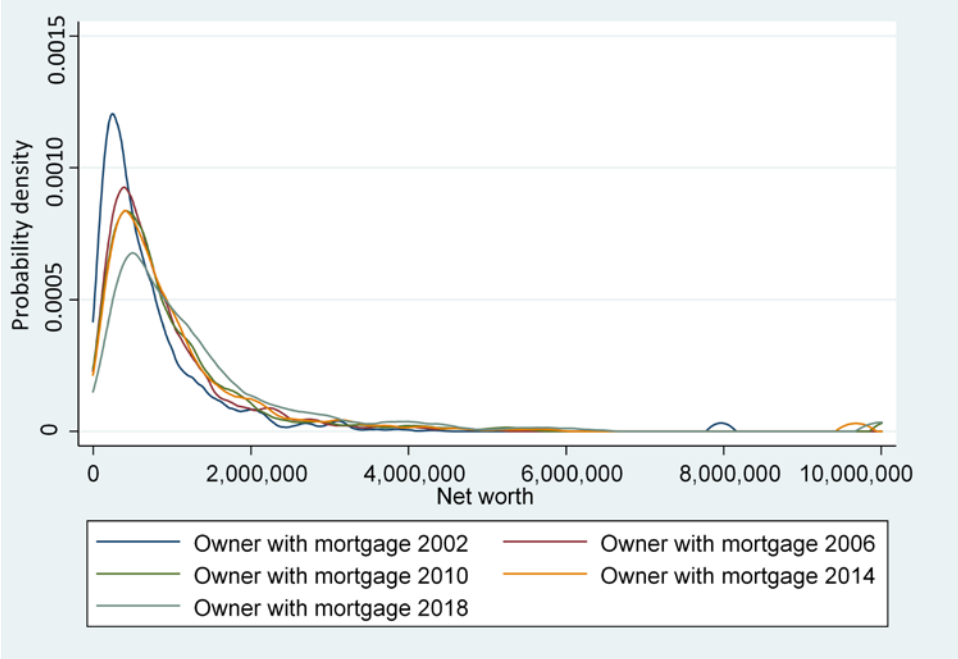
Source: Authors' own calculations using waves 2, 6, 10, 14 and 18 HILDA.

Figure 24: Household wealth distribution 2002–2018, outright-home owners



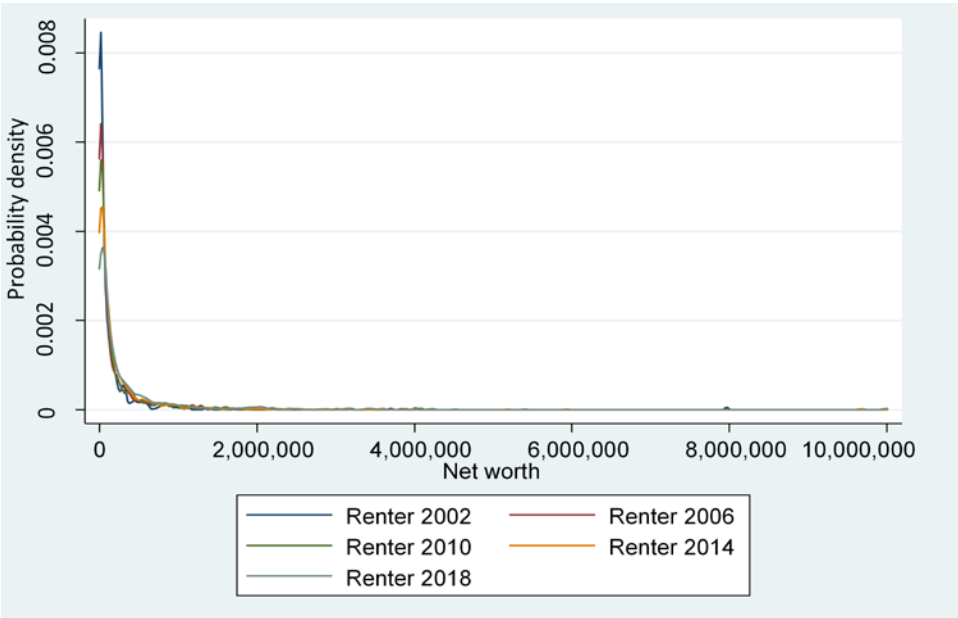
Source: Authors' own calculations using waves 2, 6, 10, 14 and 18 of HILDA.

Figure 25: Household wealth distribution 2002–2018, home owners with mortgages



Source: Authors' own calculations using waves 2, 6, 10, 14 and 18 of HILDA.

Figure 26: Household wealth distribution 2002–2018, renters



Source: Authors' own calculations using waves 2, 6, 10, 14 and 18 of HILDA.

Examining the full distributions of wealth over time and by housing tenure provides a number of important insights. The distributional analysis captures the growth in family wealth over time and the associated increase in wealth inequality. Across countries, different patterns in changes in wealth inequality are closely tied to developments in housing markets (Balestra and Tonkin 2018). For Australia, the comparisons presented in Figure 23–Figure 26 highlight that the evolution of wealth inequality is clearly associated with housing tenure. The largest growth in wealth and wealth inequality is observed among outright-home owners while, renters, the least wealth group, experience very limited changes in wealth levels over time or in wealth inequality.

3.7 What are the policy development implications of this research?

The analysis in this section has examined two issues.

First, the relationship between the transition into first-time home ownership and intra-family transfers in the form of direct financial transfers and in-kind support. This issue is especially pertinent in light of evidence that the Bank of Mum and Dad is playing an increasingly important role for aspiring FHBs. Moreover, transfers in the form of bequests and financial gifts are likely to increase over the coming decades (Productivity Commission 2021). Older cohorts have accumulated large pools of wealth, in part because of rapid increases in housing wealth, while younger cohorts face increasing challenges to access home ownership in a way that earlier generations did via a stylised housing career that required the accumulation of savings while residing in a rental property.

The analysis has identified a significant and positive association between intergenerational transfers within families and the transition into home ownership. This has important implications for policy settings, including those designed to encourage home ownership. Intra-family support may help aspiring FHBs to circumvent credit-market constraints, or provide opportunities to accumulate savings and attain home ownership more rapidly. More generally, intra-family support may substitute for public support. Over time, Australian government policy has increasingly placed the onus on households to provide financial support for younger cohorts (Cobb-Clark and Ribar 2012). While it is unlikely that co-residence and direct financial transfers are simply motivated by a desire to assist FHBs, the analysis in this section suggests such measures are positively associated with that transition. Such support may also be important in light of labour market insecurity that makes it more difficult to accumulate savings for a deposit in a way that previous generations were able to. Critically, familial support is unlikely to be available to all individuals, and this highlights the need for well targeted policies directed at potential FHBs. Without a broad-based wealth-transfer tax, it is not feasible for policy to regulate intra-family transfers.[25] Nonetheless, the support available to individuals is likely to vary substantially by socio-economic status and it is critical that policies designed to assist FHBs are assessed for their potential distributional impacts.

Second, the finding that intra-familial support is positively associated with first-time home ownership, namely the potential for transfers to accentuate existing wealth inequalities. The large increases in wealth that have been observed over the past two decades have been concentrated among homeowning households. As highlighted in Section 2, there is increasing evidence that home ownership is not simply delayed but rather it will not be attained by a large set of individuals. The desirability or otherwise of increased wealth inequality is one that is beyond the scope of this project. However, that increasing inequality does have important implications for the welfare and wellbeing of Australians as they move into retirement, and presents challenges for the current transfer system, which has high rates of home ownership in retirement as one of its pillars. This also speaks to broader issues around the treatment of owner-occupied housing in the tax and transfer system.

The analysis in this section focusses on the need for policy to recognise that attaining home ownership is becomingly increasingly challenging despite the financial innovations that have created opportunities for those seeking to enter home ownership. While there is evidence that some individuals are able to draw on the support of family to facilitate the transition into home ownership, it is unlikely that such opportunities will be available equally. Policies that are designed to enable home ownership should be assessed not simply for their efficacy in enabling or facilitating home ownership, but also for their distributional implications.

25 The Henry Tax Review did consider the merits of a wealth transfer tax on bequests, but did not recommend the introduction of such a tax (Henry, Crescent et al. 2010). However, the report did note that bequest taxes are a 'relatively efficient means of taxing savings' that are unlikely to induce large behavioural distortions (p. 137). Notwithstanding abandonment of taxes of this nature in Australia, the increase in inequality identified in this report and the central role played by housing in the wealth-accumulation process over the life cycle highlights broad issues beyond those simply focussed on policies targeted at FHBs.

4. Policy development options

This report has presented novel quantitative evidence on developments in home ownership and the association between parental support and the transition into home ownership. The analysis speaks to key patterns that have characterised housing markets in Australia in recent decades.

First, the evidence that young Australians have become less likely to attain home ownership and that younger cohorts are not 'catching-up' to older cohorts as they age. While this development has its origins in a range of long-term social, demographic and economic developments, there is also a broad consensus that one of the most important reasons is that housing has become less affordable. Moreover, this decline in home ownership rates has occurred despite numerous state and federal programs, coupled with large fiscal expenditures, ostensibly designed to assist FHBs.

Accessing home ownership generally requires debt financing. Over the past few decades, financial innovations have created opportunities for households to access mortgage finance under more flexible terms. There is a consensus that mortgage markets in Australia have facilitated access to credit for FHBs and this has been coupled with a significant increase in house prices over time (Yates and Yanotti 2016). While house prices alone do not determine affordability, it is the case that home ownership rates have continued to decline over time. There is some evidence that challenges around the capacity of households to overcome the deposit hurdle imposed by credit markets appear to be particularly acute.

Second, the evidence that some individuals are able to draw on what may be considered non-traditional sources of financing to enable home ownership, namely the Bank of Mum and Dad. This increasing reliance on parents reflects broader socio-demographic and economic developments. Older home owners have benefited from the sustained increases in house prices over the past few decades. Increased wealth among older cohorts has provided opportunities for parents to assist their children as they seek to enter home ownership.

Understanding how the transition into home ownership has evolved over time and the forces that shape it, such as parental transfers, is critical when formulating policy. Two key lessons emerge from the analysis:

- there is evidence that some Australians are not simply delaying entry into home ownership, rather many are unlikely to ever achieve it.
- family support may alleviate some of the credit-market constraints faced by those seeking to enter home ownership and the challenges associated with deteriorating housing affordability. Nonetheless, such support is unlikely to be available universally. Hence, policies designed to assist FHBs need to be carefully targeted to assist those who may not otherwise attain a preferred tenure outcome.

4.1 The key questions this research answers

4.1.1 How has home ownership evolved over time?

Section 2 documents a declining rate of home ownership across birth cohorts born over 40 years, between the 1950s and the 1980s. As cohorts have successively delayed marriage and family formation, we might expect the age of entry into home ownership to be delayed. Lower housing affordability may also postpone entry into first home ownership. The research presented here shows that both delayed family formation and falling affordability reduce rates of ownership at age 30. Importantly, we also ask whether this delay in first-time home ownership is temporary. If it is temporary, then we would expect younger cohorts to obtain similar rates of home ownership to their older counterparts, simply at a later age. Our findings do suggest that younger cohorts transition into home ownership later. However, even by the age of 50–54 years their rates of home ownership do not completely catch-up with those of their older counterparts. While this finding should not be interpreted to mean historical policies and expenditures targeted at FHBs have failed, it does highlight that those policies have not supported a level of home ownership among more recent cohorts that is consistent with that experienced by those born during the 1960s.

These novel findings have implications across a range of policy discussions beyond the efficacy of policies specifically targeted at FHBs. Larger proportions of cohorts renting will likely increase the fiscal burden of CRA and the age pension as they enter retirement. More generally, challenges will arise regarding the adequacy of retirement savings as cohorts age. There has been an acknowledgment that CRA does not compensate for the higher housing costs faced by retirees who rent (The Treasury 2020). Moreover, if individuals enter into retirement with mortgage debt, they face a greater risk of poverty, as well as being exposed to economic shocks—such as changes in interest rates—that directly impact on their welfare.

Home ownership was perceived as a cornerstone of asset-based welfare that could complement and support publicly provided welfare. In some countries, the decline in home ownership rates associated with the GFC appears to have undermined the central role of housing wealth in asset-based welfare regimes. At the same time, the deterioration in affordability associated with increasing house prices, along with the reliance on intra-family transfers to facilitate home ownership, is likely to accentuate inequality and the need for a greater reliance on publicly provided welfare as cohorts increasingly enter retirement as renters. Understanding the implications of this and designing policies that can enable those seeking home ownership to achieve their tenure preference is critical for ongoing fiscal sustainability and maintaining welfare throughout retirement (Ronald, Lennartz et al. 2017).

Our analysis also suggests that the FHOG had a positive but only weak impact on the rate of catch-up for those cohorts exposed to the grant. This raises the question of how policies to support entry into home ownership might be better targeted. Further research could assess whether particularly disadvantaged groups, including recent immigrants or those with low levels of education, might have weaker catch-up than their non-immigrant or highly educated counterparts.

4.1.2 Do demand subsidies such as duty concessions or FHOGs really work?

We approach this question in two ways in Section 2, finding weak but supportive evidence for a positive effect of demand subsidies on entry into home ownership.

As noted, we assess whether the catch-up in home ownership rates of younger cohorts with their older counterparts was enhanced if they were exposed to the FHOG. For this, we find only weak support for the effectiveness of FHOG. Results suggest that cohorts who had access to the grant during their 30s experienced greater rates of catch-up than cohorts for whom the FHOG was not available. However, this analysis is not conducted at the individual level and is based on a comparison of the experiences of different cohorts as they age. For this reason, we cannot rule out that other coincident macro-economic events may be contributing to this finding. Further research using data at a smaller geographic area, increasing the sample size, and assessing changes in the generosity of the FHOG may provide additional evidence on the role of the FHOG.

Novel evidence is also presented on the causal impact of duty concessions on the number of first dwellings financed. Recall that demand-side measures such as the FHOG are generally Commonwealth policies, while stamp-duty concessions are state-based initiatives. As they are often implemented at similar points in time, opportunities to apply appropriate econometric approaches to study the causal effect of demand-side measures such as these on entry into home ownership are rare. The implementation of a reduction in mortgage duty from 40 cents to 20 cents for each $100 in Queensland in 1998 provides one such opportunity, as comparable policies were not introduced concurrently in other states. This allows the number of first dwellings financed in other states to act as a point of comparison to the experience in Queensland. The differences between Queensland and the other states at the time can be used to identify the effect of the duty concession.

Concession had an economically and statistically significant impact on the number of first-time dwellings financed, and thus on first-time home ownership. The number of first dwellings financed increased by 4.5 per 10,000 individuals, an increase of roughly 30 per cent on the pre-1998 average number financed. While this suggests a positive impact of demand-side subsidies such as these, there are a number of important caveats to the analysis. For example, the sample size is small and the data is aggregated to the state level. Further, we can only assess the short-term impact of this policy, over a period of just under two years, given the introduction of the FHOG in 2000. Yet over the two-year time frame, we see a consistent upward trend in first dwellings financed per capita in Queensland, which suggests that this policy reform may have supported entry into home ownership. Nonetheless, we cannot rule out that this reduction in duty brought forward the timing of entry into owner-occupation that would have occurred otherwise.

4.1.3 How important is the Bank of Mum and Dad?

Section 3 examines the role of an alternative source of financing first home ownership other than traditional mortgage providers—namely the Bank of Mum and Dad. Intra-family transfers can play a critical role in alleviating the challenge of financing first-time home ownership. This support may occur in a number of different ways. Direct transfers may either:

- reduce the time required to accumulate a deposit
- increase the quantum of housing services purchased
- reduce the level of mortgage debt taken on by new home owners.

Alternatively, in-kind transfers in the form of co-residence provide an opportunity for individuals to accumulate savings and enter into home ownership sooner.

Statistical analysis identified a significant association between the receipt of intra-family transfers and entry into home ownership. It is important to emphasise that that association should not, as such, be interpreted as a causal relationship. Decisions around savings and tenure choice are simply a subset of broader decisions made over the life cycle. An important consideration in those decisions will be the actual or anticipated receipt of transfers from parents. A comprehensive analysis of decisions such as savings and tenure choice, and the role of transfers in shaping those decisions, requires structural modelling that is beyond the scope of this project.

Nonetheless, the statistical analysis does point to an important association between parental transfers and entry into home ownership. The receipt of large parental transfers (over $10,000) is associated with a doubling of the rate of transition into home ownership; additional time spent co-residing with parents increases the probability of transitioning into home ownership by around 40 per cent relative to those in rental tenure.

There are two further considerations to emphasise. First, the relationship between direct financial transfers and entry into home ownership is consistent with international studies, which suggests that such transfers are in fact designed to assist children to attain home ownership. Second, there is evidence that it is large transfers—rather than transfers in general—that are important for explaining the transition into home ownership. While smaller transfers are far more common, they are likely to address short-term needs. Large transfers may be made strategically in a manner designed to enable the transition into home ownership.

A key policy lesson to be drawn from the analysis is that parents can and do play a role in alleviating credit-market constraints faced by individuals seeking to access home ownership. Moreover, they assist potential FHBs in ways other than simply offering direct financial support. Such assistance may be motivated by a range of considerations. It may reflect purely altruistic motivations; represent a response to economic circumstances associated with housing affordability or precariousness in labour markets; or seek to substitute for a lack of public support.

One of the key questions not addressed in this report in a detailed way is: what are the characteristics and behaviours of individuals who receive this support? Perhaps more importantly, we have not considered in detail the characteristics of those who cannot rely on or expect parental support of this nature. The availability and receipt of parental support is likely to vary across socio-economic status. From a policy perspective, insight into this question is critical for ensuring that policies designed to assist FHBs are targeted and effective. In other words, that policy enables home ownership when it may not otherwise be achieved, taking into account the resources that aspiring FHBs can draw on.

4.1.4 Do transfers and home ownership matter for the distribution of wealth?

The analysis presented in Section 3.6 considered how wealth inequality has changed over time across tenure status. At least in the case of Australia, it is not surprising that home owners, especially those without a mortgage, have experienced large increases in wealth given the well documented increase in real house prices over the past few decades. While this has led to predictable changes in inequality across tenure—notably even among the group of non-mortgaged home owners—there is evidence of growing wealth inequality. Perhaps most striking is that renters as a group have exhibited very little change in wealth over time. This is despite broader developments, such as the superannuation system, that have provided alternative mechanisms for individuals to save and accumulate wealth. This points to a growing divide, at least in terms of wealth, between home owners and non-home owners.

The evidence presented in Section 3.6 is consistent with patterns identified elsewhere in this report, namely that receipt of parental transfers is positively correlated with home ownership. Moreover, it serves to highlight the challenges faced by policy makers. Getting onto the property ladder has played a critical role in the accumulation of wealth over the life cycle. If policies designed to assist FHBs do not enable the achievement of this outcome, this will have consequences for individuals over the life cycle and present broader policy challenges as those individuals enter retirement. Moreover, it is likely to exacerbate existing inequality between those who do and do not own property.

4.2 Final remarks

This report forms part of the AHURI *Inquiry into financing first home ownership: opportunities and challenges.* The patterns identified in this report add to the broader evidence-base around the evolution of first-time home ownership in Australia and have some specific implications for policy. Those policy settings will need to reflect the challenges associated with attaining home ownership in light of constraints imposed by affordability and credit markets. Those policy settings should also recognise that not all individuals will seek to attain home ownership, nor should they be encouraged to attain it. While owner-occupation presents benefits such as security of tenure, it also comes with costs and risks to the individual. Moreover, it is important to recognise that there are alternative opportunities other than through home ownership to save and accumulate wealth over the life cycle.

The policy challenge is to enable home ownership for those who desire it, where market imperfections or other circumstances may otherwise prevent that transition from occurring. Affordability remains a key challenge, and there is broad consensus that tax and transfer policy in Australia has contributed to this problem. The tax and transfer system treats housing generously, especially owner-occupied housing (Freebairn 2016; Yates 2010). The first key lesson from the analysis relates to the limitations of current and past policy settings. It is broadly acknowledged that some of those policy settings—such as FHOGs and stamp-duty concessions—have contributed to housing affordability challenges rather than alleviating them. While a comprehensive analysis of

such settings is beyond the scope of this report, it is important to recognise that housing policy is multi-dimensional and avoids unintended consequences. Ideally, the suite of policies designed to support FHBs will be complementary, recognise the range of choices available to households, and support those choices in a non-distortionary manner. In this context, it is critical that such policies be considered in light of the risk that home ownership may create for individuals and the broader economy. Those policies should be measured and targeted, while ensuring that home ownership is accessible to those that seek it.

The second key lesson from the analysis reflects recent developments in home ownership rates. Namely, that policies designed to enhance home ownership need to be assessed in a setting in which, over time, it is likely that home ownership rates for those entering retirement are likely to be lower than currently experienced. This speaks to the role of housing and home ownership in the broader policy context and the fiscal challenges faced by governments over time. Settings in the tax and transfer regimes shape housing choices and outcomes over the life cycle. Preferences for owner-occupation and the challenge of financing home ownership must be considered in that broader context.

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Appendix 1: Results from catch-up model

Measurement error in catch-up models

This technical section demonstrates the measurement problem in Equation 2. Assume the explanatory variable x is the home ownership rate at age 30, and y is the home ownership at later ages (such as at age 40). Hence, the dependent variable in Equation (2) is $(y - x)$, that is, the subsequent 10-year change in the home ownership rate. Let x and y be the true home ownership rates, and let x' and y' be the home ownership rates observed with error. Note that for ease of notation, x and y and x' and y' are deviations from means throughout the derivation. Thus:

$$y - x = \beta x + \varepsilon$$
$$y' = y + v$$
$$x' = x + u$$

We assume that the true home ownership rate at age 30 is uncorrelated with the measurement errors (v and u) and the residual (ε). We further assume that the measurement errors themselves are uncorrelated with the residual. The assumptions are as follows:

$$plim\frac{1}{n}\sum x\varepsilon = plim\frac{1}{n}\sum x\,v = plim\frac{1}{n}\sum x\;u = 0$$

$$plim\frac{1}{n}\sum u\varepsilon = plim\frac{1}{n}\sum v\varepsilon = 0$$

The variances are as follows:

$$plim\frac{1}{n}\sum x^2 = \sigma_x^2$$
$$plim\frac{1}{n}\sum u^2 = \sigma_u^2$$
$$plim\frac{1}{n}\sum xy = \sigma_{yx}$$
$$plim\frac{1}{n}\sum uv = \sigma_{uv}$$

We obtain the home ownership rate at age 30–34 and the home ownership rate at age 40–44 for the same cohort using data collected in different survey years. As a result, the variables u and v are measurement errors from independent surveys, and thus can reasonably be assumed to be uncorrelated with each other. Hence, $\sigma_{uv} = 0$.

The OLS estimator can be expressed as:

$$\hat{\beta}^{OLS} = \left(\sum x'^2\right)^{-1}\sum(y' - x')x'$$
$$=(\sum(x+u)^2)^{-1}\sum[(\beta x + \varepsilon + v) - (u)]\,(x+u)$$
$$plim\hat{\beta}^{OLS} = (\sigma_x^2 + \sigma_u^2 + \sigma_{ux})^{-1}\,(\beta\sigma_x^2 + \sigma_{\varepsilon x} + \sigma_{vx} - \sigma_{ux} - \sigma_u^2)$$

Where $\sigma_{ux} = \sigma_{\varepsilon x} = \sigma_{vx} = 0$ by assumption, therefore:

$$plim\hat{\beta}^{OLS} = \frac{\beta\sigma_x^2 - \sigma_u^2}{\sigma_x^2 + \sigma_u^2} = \frac{\beta\sigma_x^2}{\sigma_x^2 + \sigma_u^2} - \frac{\sigma_u^2}{\sigma_x^2 + \sigma_u^2}$$

The first part of the bias is the attenuation bias, which skews the estimate towards 0. The second part causes the estimate to be biased towards –1 as the variance of the true x approaches 0.

This results in an overestimation of the catch-up effect. To overcome this problem, we employ a two-stage least squares approach.

Robustness checks

Table A1: Probit estimates of house prices and home ownership at age 30–34 years

	Probit coefficients	Marginal effects	Probit coefficients	Marginal effects
House price ($100,000)	−0.0731***	−0.029***		
	(0.0118)	(0.005)		
House Price/Average Income			−0.0253*	−0.010*
			(0.0153)	(0.006)
Nominal interest rate	0.0220	0.009	0.0487**	0.019**
	(0.0152)	(0.006)	(0.0228)	(0.010)
Financial condition index	−0.0113	−0.005	0.0118	0.005
	(0.0237)	(0.009)	(0.0337)	(0.013)
Household income ($10,000)	0.0397***	0.016***	0.0382***	0.015***
	(0.00549)	(0.002)	(0.00567)	(0.002)
Male	0.0849***	0.034***	0.0971***	0.038***
	(0.0259)	(0.010)	(0.0275)	(0.011)
Couple	0.699***	0.277***	0.692***	0.274***
	(0.0459)	(0.018)	(0.0478)	(0.019)
Dependent child in household	0.0827***	0.033***	0.0887***	0.035***
	(0.0216)	(0.009)	(0.0236)	(0.009)
State dummies	Yes	Yes	Yes	Yes
Sample size				15,698
Period				1984 to 2017

*Notes: Robust standard errors are clustered at the year. *** p<0.01; ** p<0.05; *p<0.1.*

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