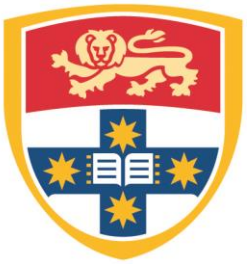

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The Bank of Mum & Dad – Intergenerational transfers and first-time homeownership in Australia

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Abstract: *Around 70 per cent of Australians reside in owner occupied housing. Recently however, ownership rates have begun to fall, especially for younger cohorts, driven in part by higher house prices. Given the important role of housing in the context of the tax and transfer system, if younger Australian are less likely to enter into homeownership over time this is likely to be of concern to policy makers. There is some anecdotal evidence that transfers from parents are an increasingly important mechanism to facilitate entry into homeownership. In this paper we consider the relationship between transfers in the form of bequests and inter vivos gifts from parents, and, entry into first-time homeownership. The empirical analysis indicates that bequests and inter vivos transfers hasten entry into homeownership, potentially alleviating some important liquidity constraints faced by households. There is also some evidence that transfers are used to reduce the amount borrowed by first-time buyers and increase the value of housing purchased.*

Keywords: *intergenerational transfers; bequests; first-time homeownership.*

JEL codes: J14, D64

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1. Introduction

Like a number of other countries, homeownership is the dominant form of housing tenure in Australia. While the period since the Second World War had been generally characterised by increasing home ownership rates, the experience of the past two decades suggests that this trend has stagnated, particularly among younger Australians. Moreover, recent data suggest that the proportion of first-time buyers is at historical low levels (Australian Bureau of Statistics (ABS) 2016). There are a variety of demographic and socio-economic reasons for changes in rates of homeownership across cohorts. Younger Australians are attaining increasingly higher levels of education and delaying partnering and fertility decisions. In turn, the formation of independent households is occurring later in the life-cycle as children spend longer periods residing in the parental home (Cobb-Clark and Gorgens 2014). Another potentially important consideration is the relatively high cost of housing in Australia. The period since the mid-1980s has been characterised by cycles featuring steep increases in house prices that then plateau at successively higher real levels. The recent increase in housing prices in larger cities such as Sydney and Melbourne in particular have focused attention on the affordability of housing for younger Australians and its impact on home ownership rates.

The decline of home ownership rates potentially have a number of important policy implications. Tax and transfer policy settings in Australia provide explicit and implicit subsidies that favour ownership as a form of tenure. For example, while transfer policies including the age pension are means-tested and targeted to those in need, owner-occupied housing is exempt from the asset test that is applied to such transfers. Similarly, unlike other asset classes owner-occupied housing does not attract capital gains tax and imputed rental income does not form part of assessable income. More generally, owner occupied housing has been viewed as an important part of wealth creation and retirement planning over time, supported by steady and at times rapid increases in house prices across the major population centres in Australia. Indeed, during the Global Financial Crisis house prices dipped mildly in Australia compared to other countries.

The central role played by home ownership in the tax and transfer system serves to highlight some important implications if younger Australians are excluded from the housing market. Over time there may be important consequences for the accumulation of wealth and, in turn, this could impact on the sustainability of tax and transfer programs (Yates & Bradbury 2010). More generally, inequalities in the generation and distribution of wealth may arise if some groups are systemically excluded from housing markets.

One development that has gained increasing attention in light of the decline in the proportion of first home buyers is the potential for parental transfers to facilitate entry into the housing market. Parental or intergenerational assistance may take a number of forms including direct transfers in

the form of *inter vivos* gifts or bequests. Alternatively, parents may assume the role of guarantor for loans taken out by children. While there is some evidence that parental transfers have become more important vehicles to facilitate entry into home ownership, the evidence remains limited. In general there is little evidence available about the frequency and size of intergenerational transfers or their impact, especially in the context of housing careers. To the extent that there is empirical evidence, it is largely anecdotal, somewhat dated and relies on data that arguably cannot be generalised to the Australian population (Anonymous 2014; Drury 2014; O'Dwyer 2001; King and McDonald 1999; Yeates 2015).

The key contribution of this paper is to consider how intergenerational transfers in the form of bequests and *inter vivos* gifts from parents impact on transitions into first homeownership. While transfers may changes the timing of entry into homeownership, it may have other impacts around the size of the down payment required to be accumulated through saving, the value of housing purchased or the size of any loan used to finance a housing purchase. The analysis in this paper also sheds light on these mechanisms. If intergenerational transfers are important for housing careers, this has important implications across a range of economic, social and policy dimensions. For example, intergenerational transfers may be confined to households that are relatively wealthy and transfers will then have the potential to exacerbate existing inequalities over time. Recipients will then have the opportunity to enter home ownership earlier in their housing careers, and are thereby able to accumulate more wealth through a tax advantaged asset than younger cohorts in less wealthy households that are unable to make transfers. As noted above, over time such developments may have important implications for the sustainability of tax and transfer arrangements.

The empirical analysis evidence suggests that the receipt and value of bequests hasten the transition into first-time homeownership. In contrast, *inter vivos* transfers from parents appear to be used more strategically to facilitate homeownership. Moreover, there is evidence that recipients of transfers borrow less than non-recipients for the purchase of their first home, and, purchase higher priced homes than non-recipients.

The remainder of the paper is set out as follows. In the next section, we present a literature survey that describes the evidence around transfers for housing related purchases. Following this, in section 3 we describe the data used in the analysis, namely the Household Income and Labour Dynamics in Australia (HILDA) dataset. Following this we set out the methodological framework used in the empirical analysis. Results from the empirical analysis are presented in section 5. A discussion of the policy implications and potential avenues for future research are described in section 6.

2. Literature Survey

Following a relatively rapid expansion in the 1950s, owner occupation has represented the dominant form of tenure in Australia. Since that time, approximately 70 percent of households have resided in owner-occupied housing while around one quarter of households rent in the private market (Kryger 2009). The remaining households reside in social or public housing with this form of tenure been increasingly been occupied by those reliant on government transfers. While the overall rates of homeownership have remained relatively stable over past few decades, this masks some underlying changes across cohorts. Yates (2000, 2002) and Flood and Baker (2010) describe the falls in the rate of home ownership among households in the 25–44-year-old age groups of around 15 per cent over the period 1986–2006. Burke *et al.* (2014) also documents evidence of a substantial decline in the ownership rates among younger households over time. For example, among 25–34-year olds, the proportion of households in home ownership has declined by one fifth, from over 60 per cent to less than 50 per cent over the three decades beginning 1981. Also of note is that although home ownership rates have remained relatively stable for older age groups (45–54 and 55–64 years of age), outright ownership rates have fallen for these groups.

Given the relatively long tradition of homeownership the mortgage market is Australia is well developed and has been characterized by a process of financial innovation following a period of deregulation in the 1980s. The 1990s and 2000s were characterized by the entry of new lenders into the market with borrowers presented with a greater range of mortgage products to finance home purchases. Changes included the availability of interest-only and shared-equity loans facilitating some households, especially first-time home buyers, to access mortgage markets (RBA speech 2010).

Mortgages in Australia are typically 25 or 30 years long and the majority of borrowers take loans have with flexible or variable rates. Unlike some countries, fixed interest rates loans account for only around 10 to 20 percent of all loans and such loans generally have a relatively short maturity date of less than five years (Reserve Bank of Australia 2008). Traditionally, financial institutions have adopted a relatively conservative approach to lending and required borrowers to contribute a substantial deposit, provide documentation of income and demonstrate a capacity to repay the loan. Typically, housing loans have a maximum loan-to-valuation of around 95 per cent and are fully documented. Immediately prior to the GFC, ‘low-doc loans, for which borrowers self-certify their income in the application process, accounted for only around about 10 per cent of new housing loans. (Debelle 2010). In Australia mortgages in Australia are ‘full recourse’ and this allows lenders to require borrowers to repay the full value of the loan when in default, even in the event of negative equity (Murphy 2011).

The other key feature of housing in Australia that has attracted increasing attention is the level of house prices. Kohler and van der Merwe (2015) report that in real terms, housing price inflation during the 1980s was relatively low at 1.4 per cent per annum. In comparison, house prices accelerated at a relatively rapid rate of 4.5 per cent in real terms during the period from 1990 to the mid-2000s, and 2.5 per cent over the past decade. The OECD notes that house prices in Australia are overvalued relative to their long terms trend measured against income or the level of rents (OECD 2016). Since the GFC the impact of increased house prices have been offset to some extent by decreases in mortgage rates that have reduced the cost of servicing loans. Given the nature of mortgages in Australia, this has meant that the repayments on a typical new housing loan relative to household income has fallen from their levels preceding the GFC (Fox and Finlay 2012). Nonetheless, Fox and Finlay (2012) argue that while the dwelling price-to-income ratio in Australia is similar to a range of other advanced economies with the exception of the United States and Japan, they have risen significantly in the period since financial deregulation in the 1980s.

Intergenerational transfers and home ownership - theory

The purchase of owner-occupied housing generally represents the largest single transaction entered into by the household over the course of the life-cycle. Plaut (1987) argues that the transition into owner-occupation reflects the role of housing as both a consumption good and an important financial asset in the household's portfolio. At the time of purchase, households typically hold a highly non-diversified asset portfolio with the majority of wealth held in the form of housing equity. An important consideration in this context is that households face imperfect credit markets and have few assets that may be leveraged or act as collateral when purchasing housing. From a life-cycle perspective the purchase of housing is likely to depend on a range of considerations including preferences for owner occupation over rental tenure, permanent income and the relative price of alternate forms of renting versus ownership. In the absence of assets that can be used as collateral, one important consideration is the requirement that intending purchasers accumulate sufficient savings in the form of a down payment to secure a mortgage to fund the purchase of desired housing (Artle and Variya 1978; Brueckner 1986). In a life-cycle context such credit constraints generally require that a purchaser's lifetime consumption pattern deviates from its optimal profile, as consumption must be deferred in the early stages of one's life so as to accumulate funds for the down payment. It is in this environment that transfers may have important implications for a range of housing related decisions.

Cox (1990) argues that intergenerational transfers provide an important means by which liquidity constraints facing intending purchasers may be circumvented, at least for some borrowers. At the same time, intergenerational transfers such as those considered in this paper that impact on housing related behaviours may not be motivated solely by concerns around

credit market constraints. Transfers may be driven by other motivations including altruism, exchange considerations, demonstration effects and insurance motives (Cox 1987). For example, Yututake et al. (2011) develop a theoretical model describing the interdependence of parental gifts and children's housing investments. The interdependence arises due the strategic nature of transfers. Parents make transfers to assist children's housing prospects with a return in old age, when parents expect to be cared for and/or housed by their children. More generally, there is an extensive literature that examines how the motivations behind intergenerational transfers may be identified (Laferrère & Wolff 2006).

From a housing perspective, such transfers can have a number of potential impacts including changing the timing of entry into homeownership, or, altering the size of the downpayment, loan or quantity of housing purchased (Guiso & Jappelli 2002; Mayer & Engelhardt 1996). The timing of transition into homeownership may be affected because households that were previously credit constrained can bring forward their purchase of housing relative to what they would do in the absence of transfers. Alternatively, the transfer may be used to supplement the recipients own savings and thereby increase the value of the housing services consumed by purchasing a larger house or better quality house. Alternatively, the transfer may be simply used to increase the level of deposit or down payment that a household puts down, thereby reducing the mortgage repayments they face.

It is important to emphasize that the potential responses on the part of recipients are not mutually exclusive and observed behaviours are likely to depend, at least in part, on the nature of the transfer. Moreover, such transfers may have consequences on a range of other behaviours such as investment in education. In this context, whether or not a transfer is anticipated, along with the size and timing of the transfer are all likely to be important determinants of the effect of the transfer. For example, anticipated transfers are likely to have different implications than unanticipated transfers. In the case of bequests for example, it may be the case that they are anticipated though the exact timing and amount is unknown. Similarly, children may (correctly) expect that parents will make *inter vivos* transfers at some point, though the size and timing remains unknown.

Intergenerational transfers and home ownership – empirical evidence

There is now general recognition that intra-family transfers in the form of *inter vivos* gifts and bequests are large in magnitude and occur extensively across the income and wealth distribution (Schoeni 1997) Nonetheless, there is limited empirical analysis of how intergenerational transfers are related to housing related behaviours and outcomes. In an early study for the United States, Mayer and Engelhardt (1996) argue that the transfers that do occur reflect credit market constraints faced by first-time homebuyers. The analysis in that paper focused on a set of 'constrained' first-time home buyers defined as those who have accumulated a down payment of

less than 20 per cent and have an obligation ratio of greater than 28 per cent of gross income.[1] The analysis finds that constrained households are more likely to receive gifts or transfers, and the gifts represent a larger share of the down payment compared to unconstrained households. In a subsequent study, Engelhardt and Mayer (1998) find that recipients of transfers generally spend a shorter period saving for down payments or deposits. Concomitant with this, there is a reduction in their own savings in the order of $0.35 for every dollar in transfers received, highlighting the important substitution effect associated with transfers. Further, there is evidence that the down payment is higher among transfer recipients, and the value of the house purchased is higher, though the entire amount of the transfer is not capitalised into the value of the home purchased.

More recent evidence about the effect of gifts or transfers in the United States is provided by Luea (2008) using the PSID to identify the impact of inheritances, parental gifts and similar payments on the probability of homeownership. The analysis concludes that those receiving such monetary transfers are 1.2 times more likely to purchase a home compared to those households that do not receive a transfer. The impact is substantially larger for those who receive transfers in excess of $5000. For those who receive financial help and gifts, the analysis indicates that when a household receives a financial gift, housing demand increases by approximately 10 per cent so that for an average household, the value of the occupied home increases by approximately $19,000. This suggests that rather than increasing the down payment or reducing the size of repayments, such transfers lead to higher housing consumption. There is evidence that intergenerational transfers have important consequences for the accumulation of wealth over the life-cycle. Boehm and Schlottmann (2001) use the PSID to examine wealth accumulated by young American households and the role played by transfers in this process. Consistent with a range of other studies, they find that children of homeowners are more likely to enter into homeownership. Moreover, higher levels of education of children lead to greater levels of housing and non-housing wealth accumulation for the children of home owners.

Analysis of the role of intergenerational transfers and their impact on housing outcomes for Europe is more nuanced, reflecting the variety of institutional regimes and social norms across countries. Guiso and Jappelli (2002) examine the role of intergenerational transfers in the form of bequests and *inter vivos* gifts on the time spent saving for a down payment in Italy. Around 16 per cent of individuals report receiving a gift or financial support earmarked for real estate purchase. One distinctive feature of homeownership in Italy is that it generally occurs much later than in other countries, with homeownership rates peaking just prior to retirement. While the analysis finds that the receipt of transfers has a marked effect on the hazard or probability of transition into first-time homeownership, the effects of transfers appears to be relatively small in

[1] The obligation ratio is defined so that mortgage repayments, property taxes and insurance premiums not exceed 28 per cent of gross income.

terms of the time spent saving prior to entering homeownership. There is also evidence that the amount of housing purchased is larger following the receipt of an intergenerational transfer. Using a sample of Irish first homebuyers, Duffy and Roche (2007) find that between 2000–2004, around one-third of households receive an *inter vivos* transfer and the transfer represented 21 per cent of the down payment. For France, Spilerman and Wolff (2012) find that parental transfers impact on the likelihood that individuals are homeowners and the amount of housing consumed. This increase in the value of housing consumption comes about in part because of the increase in the value of the down payment, and also because of an impact through higher purchase prices.

Somewhat different patterns emerge among the Nordic countries. Using a large administrative database for Denmark, Kolodziejczyk and Leth-Petersen (2013) find little evidence that intergenerational transfers are used to support homeownership. For the Netherlands, around 9 per cent of individuals report receiving financial support for homeownership from parents (Mulder & Smits 2013). While there is little evidence that financial support is based on need, parental support to facilitate homeownership was positively correlated with parental resources and more likely among individuals who reported that their parents were homeowners. While parental homeownership does have a large impact on monetary support including that for homeownership, there is no evidence that homeowners are particularly focused on providing support for ownership *per se*.

For Australia, evidence on the extent of and impact of transfers is relatively limited. A study by O'Dwyer (2001) used data on deceased estates to examine the frequency with which individuals receive bequests, especially those related to property. O'Dwyer (2001) notes that only one per cent or so of all households receive bequests on an annual basis. Moreover, individuals in occupations that may be considered more prestigious, such as managers, tend to receive higher bequests than those who are less skilled. Those inheritances are themselves positively correlated with the housing wealth of beneficiaries. Such patterns are consistent with existing inequalities being exacerbated over time.

Using a cross-sectional survey, King and McDonald (1999) examine the receipt of bequests, and, gifts or loans associated with the purchase of property. Help with home or land purchase peaks at ages 30–35 years for recipients and around 5.5 per cent of respondents report receiving this type of transfer in the previous ten years. Conversely, inheritances are reported to be received by around three per cent of the population in the previous ten years, peaking at the age of 50–60 years as parents pass away. It is also the case that although inheritances were received by substantially fewer households than other types of monetary transfers, the value of bequests was significantly higher.

3. Data

The analysis in this paper uses the Household Income and Labour in Australia (HILDA) dataset.[2] The HILDA is a large panel dataset that has followed Australian households and their occupants annually since 2001. An initial sample of approximately 7,500 households representing approximately 13,000 responding individuals. The sample was supplemented in 2011 with a top-up sample of approximately 2,000 households. 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. To date, 15 waves of data are available and the analysis in this study uses waves 1 to 14.

Importantly the HILDA dataset contains a rich array of information about the socio-economic characteristics of households and their occupants, along with detailed information on their labour market and related behaviours over time. On an annual basis individuals are asked about the various sources and values of income over the preceding year. In particular, individuals are asked:

> *' …(D)uring the last financial year did you receive payments from any of these sources? Include both lump sums and more regular payments, but do not include any payments we have already recorded elsewhere.*

The options available to respondents include '*bequest/ inheritances'* or transfers from '*Parents'*. Hence it is possible to identify the receipt and value of transfers in the form of *inter vivos* gifts from parents and bequests on an annual basis.

In addition to the set of questions that are asked on an annual basis, the HILDA data contains a series of special modules are conducted on a regular basis. The wealth module has been conducted in 2002, 2006, 2010 and 2014. In each wealth module individuals are asked if they currently or have ever owned a home. In turn, those who have ever owned or currently a property are asked at what age they first acquired such a property. Respondents are also asked the price of the home when first purchased and the value of the loan if one was used to fund the purchase of the property. This information facilitates analysis of decisions around entry into first-time homeownership including the age of entry and how the purchase was funded. Significantly, information on the receipt of *inter vivos* transfers from parents and bequests makes it possible to consider how such behaviours and outcomes are related to inter-generational transfers.

[2] The Household, Income and Labour Dynamics in Australia (HILDA) Survey was initiated and is funded by the Australian Government Department of Social Services (DSS) and is managed by the Melbourne Institute of Applied Economic and Social Research (Melbourne Institute). The findings and views reported in this report, however, are those of the authors and should not be attributed to either DSS or the Melbourne Institute.

The key relationship of interest in this study is the age at which an individual first enters into homeownership and how that transition is related to the receipt and value of transfers, either in the form of a bequest or an *inter vivos* transfer from parents. In addition, we consider how the value of the house that is purchased and the size of any loan used to purchase the property varies with the receipt of transfers. For the analysis of entry into homeownership, the sample used for the empirical analysis consists of individuals aged between 18 and 65 years of age who report purchasing a home for the first time in the period 2002 to 2014, along with those who report never purchasing a property prior to 2014. During the period covered by the analysis males became eligible for the age pension at 65 years of age and in most cases the initial entry into home-ownership would have occurred by this stage in the life-cycle.[3]

The HILDA data is longitudinal in nature and the transition or duration analysis requires a balanced sample of respondents containing information for each wave prior to entry into homeownership. Three samples are considered in the empirical analysis. The first consists of a balanced sample of all individuals in the HILDA data. The second focuses on those individuals who remain single throughout the period of analysis. The final sample consists of couples, defined as two individuals (married or in a common law relationship) who identify as a couple during the period of analysis. For the analysis of value of the house purchased and the size of the housing loan used to finance the purchase, a sample of respondents who report acquiring their first home between 2002 and 2014 is used.

In Table 1 summary statistics of the samples used in the analysis of entry into homeownership are presented. In Table 1, each observation represents a 'person year'. A number of patterns are apparent in the data. First, the proportion of males and females is approximately equal[4], and the relatively high proportion of young individuals in the sample reflects the tendency of individuals to move into homeownership as they age. Once homeownership is transitioned into for the first time, respondents effectively leave the sample. The geographic dispersion across the States and Territories of Australia is similar to that in the population.

The key variables of interest relate to the receipt and value of transfers. In terms of bequests, the proportion of individuals who report receiving a bequest in any given year is relatively small, representing approximately one percent of individuals. In contrast, in around 10 percent of 'person year observations' the respondent indicates they receive a transfer from parents. Moreover, while the average vale of bequests and parental transfers is similar indicating that among those who actually receive a transfer, the value of bequests are substantially larger than *inter vivos* transfers. Additional insight into this pattern is presented in Table 2

[3] Over the period of analysis the age pension eligibility age for women was progressively increased to age 65.
[4] Note that for the couples sample, the 'household characteristics' such as age and education are assumed to be those of the male reflecting the generally greater attachment of males to the labour force.

TABLE 1: Summary Statistics

	All individuals	Singles	Couples
Female	0.52	0.49	-
Age 18-25	0.47	0.62	0.27
Age 26-35	0.27	0.17	0.42
Age 36-45	0.14	0.10	0.18
Age 46-55	0.08	0.07	0.08
Age 56-65	0.04	0.04	0.05
Education			
Less than HS	0.39	0.35	0.47
Completed HS	0.30	0.40	0.17
Post HS qual.	0.13	0.11	0.16
Undergraduate	0.13	0.11	0.14
Post-graduate	0.05	0.03	0.06
Location			
New South Wales	0.31	0.32	0.30
Victoria	0.24	0.26	0.21
Queensland	0.22	0.19	0.27
South Australia	0.09	0.09	0.09
West Australia	0.08	0.08	0.07
Tasmania/ ACT/ Northern Terr.	0.06	0.06	0.06
Disposable inc. ($0,000)	2.68	2.31	3.74
Married	0.41		
No. dependent children	-	-	0.99
Received bequest	0.01	0.01	0.02
Bequest amount ($000)	0.40	0.30	0.58
Received *inter vivos* trans	0.10	0.15	0.09
Amount *inter vivos* transfer ($000)	0.43	0.49	0.57
Sample size	45,267	23,268	5,271

Source: Authors own calculations, HILDA waves 1-14.

4. Empirical Methodology

The empirical strategy in this paper is most closely related to that in Guiso and Japelli (2002). In that paper, the time or duration until entry into home ownership was analysed for a set of Italian households. In a similar fashion, the analysis in this paper focuses on economic agents that have not previously entered into home ownership and considers the time until a transition into first home ownership occurs.[5] It is the length of this spell in 'non-homeownership' that is of interest

[5] The analysis is undertaken for all individuals aged between 25 and 65. As noted in section 3, separate analyses are presented for those individuals who remain single or 'unpartnered' during the period of analysis along with couples. Couple households are defined as two individuals (married or in a common law relationship) who identify as a couple during the period of analysis. The latter specifications reflect the likelihood that home ownership decisions are often made jointly by individuals within a household setting.

and how the transition into first home ownership is affected by the receipt and or value of an intergenerational transfer such as a bequest or parental gift.

The transition from one tenure such as rental tenure into another tenure such as owner-occupation is modelled using a hazard rate framework. The hazard rate methodology can be conceptualised by considering a group of individuals that have not yet entered into home ownership. Each of these individuals can be considered 'at risk' of transitioning into another state, namely home ownership. The hazard rate is a conditional probability—that is, it is the proportion of households (or individuals) which transition into first-time ownership *conditional* on being eligible to experience first-time home ownership. When a set of households or individuals is observed for an extended duration, it is possible to identify how the hazard rate changes over time. Again, consider a set of economic agents (households or individuals) at risk of entering into first home ownership. In some cases, observations will not be observed to enter into first home ownership. This may be because the data collection period ends prior to transition into the state of interest (first home ownership) or because the observation attrites out of the sample prior to the end of the data collection period. In either case, the observation is treated as a censored observation.

An important advantage of the HILDA data used in this paper is its panel nature. This provides a number of advantages over the analysis in earlier studies such as Guiso and Japelli (2002) that relied on cross-sectional data in which respondents recalled the timing of transfers and entry into homeownership. In waves 6, 10 and 14 of the HILDA data it is possible to identify households that have not previously purchased a home or report purchasing their first home since the HILDA was initially collected in 2001. For each period preceding the purchase of a home it is possible to identify whether the individual receives a transfer and if so, the value of that transfer. Moreover, the panel nature of the data allows various characteristics of the individual such as disposable income and location to be followed over time. Unlike the analysis in Guiso and Japelli (2002), this facilitates the incorporation of time varying covariates in the empirical specification.

The sample used in the duration analysis is a stock sample of individuals who have not yet entered into homeownership for the first time. Hence, the sample consists of individuals aged 18 years or older in 2001 (wave 1 of HILDA) who had not previously entered home ownership, along with those join the original set of HILDA households in subsequent waves and had not previously purchased a home.[6] In some contexts such a sample leads to the problem of length biased sample as some observations are left censored. Individuals who have been in a particular state, in this case non-homeownership, for an extended period of time will be more likely to appear in the sample. Moreover, such individuals might because of otherwise unobserveable

[6] 'Entrants' include household members those who turn 18 in the period 2002 to 2014.

characteristics, be more likely to remain in the non-ownership state so that including such individuals in any analysis will likely lead to biased estimates from duration estimates. The problem of length biased sampling is avoided in HILDA by focussing on individuals who are transitioning into home ownership for the first time. The direct questions regarding the first-time homeownership was entered facilitates the identification of such individuals and the timing of such a transition.

There are a variety of ways in which hazard rates can be modelled from a statistical or econometric perspective. Some approaches impose specific functional forms on the hazard rate so that it is always increasing or decreasing. The approach adopted in this paper is one that provides maximum flexibility in the shape of the hazard function. In particular, a proportional hazard model similar to that described in Meyer (1990) and discussed in Lancaster (1990, pp.172–208) is estimated to describe the time until the household enters home ownership for the first-time. The form of this hazard function is as follows:

$$h_n(\tau) = h_0(\tau)\exp\{z_n(\tau)'\beta\}$$

where $h_n(\tau)$ is the hazard rate for individual (or household) n, $h_0(\tau)$ is the 'baseline' hazard common to all individuals (households), $z_n(\tau)$ is a vector of observable characteristics that may vary with time, and β is a vector of parameters to be estimated.

Importantly, duration models such as this allow for the incorporation of non-time varying and time-varying covariates which may shift the hazard rate. An example of a non-time varying covariate is gender of the head of the household. Time-varying covariates include the receipt (or value) of an *inter vivos* parental transfer, the receipt of a bequest, income and location. In Table 2 we present the summary statistics for the set of spells analysed for individuals, singles and couples. As expected, the proportion of spells that are censored is lower for the couple sample which suggests that couples are more likely to move into first-time homeownership than singles. Such a pattern likely reflects in part the higher resources available within a couple household. The summary statistics in Table 2 indicate that the likelihood of receiving a transfer from parents during a spells prior to entering homeownership is substantially higher than receiving a bequest. Nonetheless, as noted in Section 3, when received the value of gifts are substantially smaller than the value of bequests.

TABLE 2: Characteristics of Spells

	Individuals	Singles	Couples
No spells	9,323	5,707	1,452
Proportion censored spells	0.709	0.893	0.678
Proportion females	0.518	0.501	-
% Spells in which bequest received	0.040	0.315	0.058
Value bequest if received ($)	46,819	39,018	34,796
% Spells in which transfer received	0.256	0.313	0.191
% Spells in which parental transfer >$5000 received	0.053	0.056	0.060
Total value transfers if received ($)	8,105	6,330	10,807

Source: Authors own calculations, HILDA waves 1-14.

Regression models

The duration analysis discussed above focuses on the timing of entry into home ownership. Intuitively, intergenerational transfers may also affect other aspects of the home ownership decision. For example, recipients of transfers may increase the size of the down payment or deposit available for the purchase of a home, and in doing so increase the total purchase price or decrease the size of the mortgage (Engelhardt and Mayer 1998). The second component of the analysis considers these two additional aspects of the behaviour of first-time home buyers. Initially, we consider how the price of housing purchased varies according to the receipt and value of intergenerational transfers. Following this we examine how the value of the housing loan taken out by first-time buyers is related to the receipt and value of transfers. For both of these analyses, a series of OLS regressions models are estimated using a similar set of covariates as those used in the duration models.

This regression analysis is reduced form and they should simply be interpreted as identifying the conditional means of the variables of interest. That is, the value of the loan taken out and the price of the property purchased. It is important to emphasise that the outcomes being analysed reflect decisions around savings and housing expenditures that are complex and require the needs of the household or individual to be considered in a life-cycle context. For example, it is likely to be important whether the transfer (either the bequest or *inter vivos* gift) is expected as behavioural responses may differ for anticipated and unanticipated transfers. Anticipated transfers may have important life-cycle implications for decisions around saving and investment in human capital that are beyond the scope of the analysis in this paper.

5. Results

Preliminary analysis of the spells prior to entering into homeownership is presented in the form of the survivor functions depicted in Figures 1 to 3. Recall the survivor functions represent the probability that a non-homeowner will 'survive' or remain in non-homeownership past year *j* of a spell. As additional households transition into homeownership for the first time, the survivor function approaches zero. For each analysis sample, survivor functions are presented based on the receipt of a bequest, the receipt of an *inter vivos* transfer from parents, and, the receipt of a large *inter vivos* transfer from parents. In each case, survivor functions are presented for those who do and do not receive a transfer or bequest at any time during the spell. For example, in Figure 1 we present the survivor function for all individuals separately for those who receive a parental transfer and those who do not receive a parental transfer.

The survivor functions suggest that in general, the receipt of a transfer in the form of a bequest or an *inter vivos* transfer increases the likelihood that the individual (or couple) transitions into homeownership. In general, the survivor function for those who report receiving a bequest (bequest=1) or a large *inter vivos* parental transfer (lptrans=1 or h_lptrans=1) lies below that for non-recipients. That is, recipients are less likely to remain in the 'non ownership' state. It is important to stress, however, that the difference in the survivor functions do not always appear to be statistically significant. In addition, there is less evidence that recipients of an *inter vivos* parental transfer (ptrans=1 or h_ptrans=1) are more likely to transition into homeownership, with the survivor functions for individuals, singles and couples crossing at various points. Additional insight into relationship between intergenerational transfers and the transition into first-time homeownership is provided by estimates from the duration models.

FIGURE 1: Survivor Function - All individuals

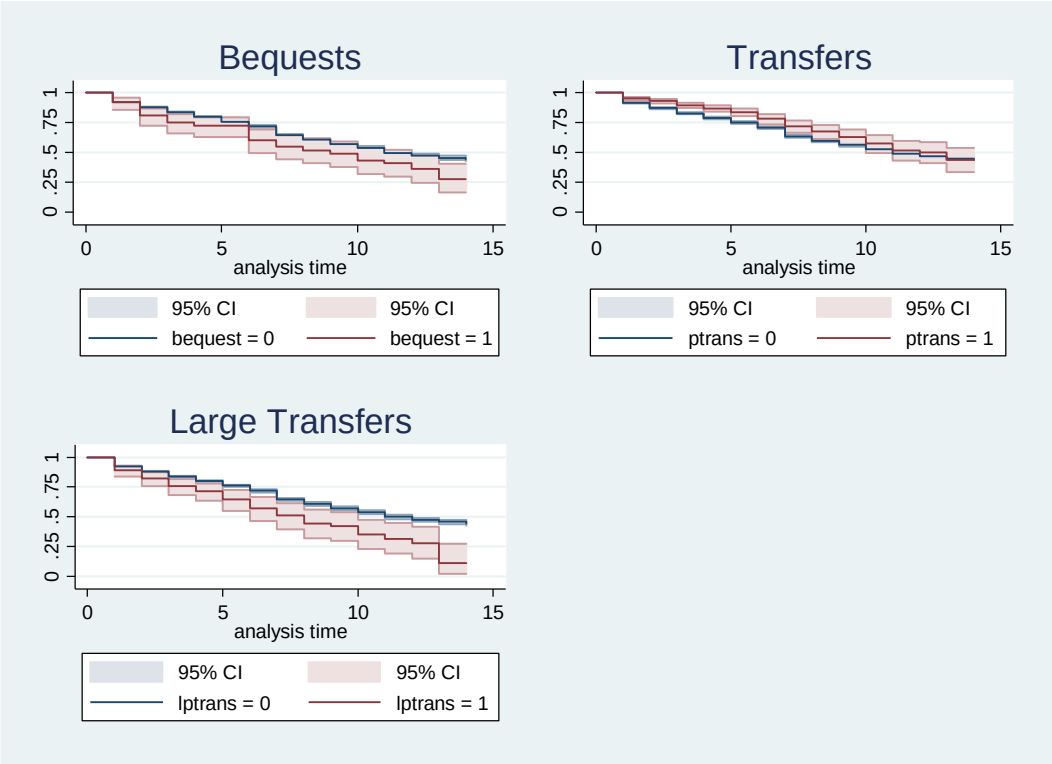


FIGURE 2: Survivor Function - Singles

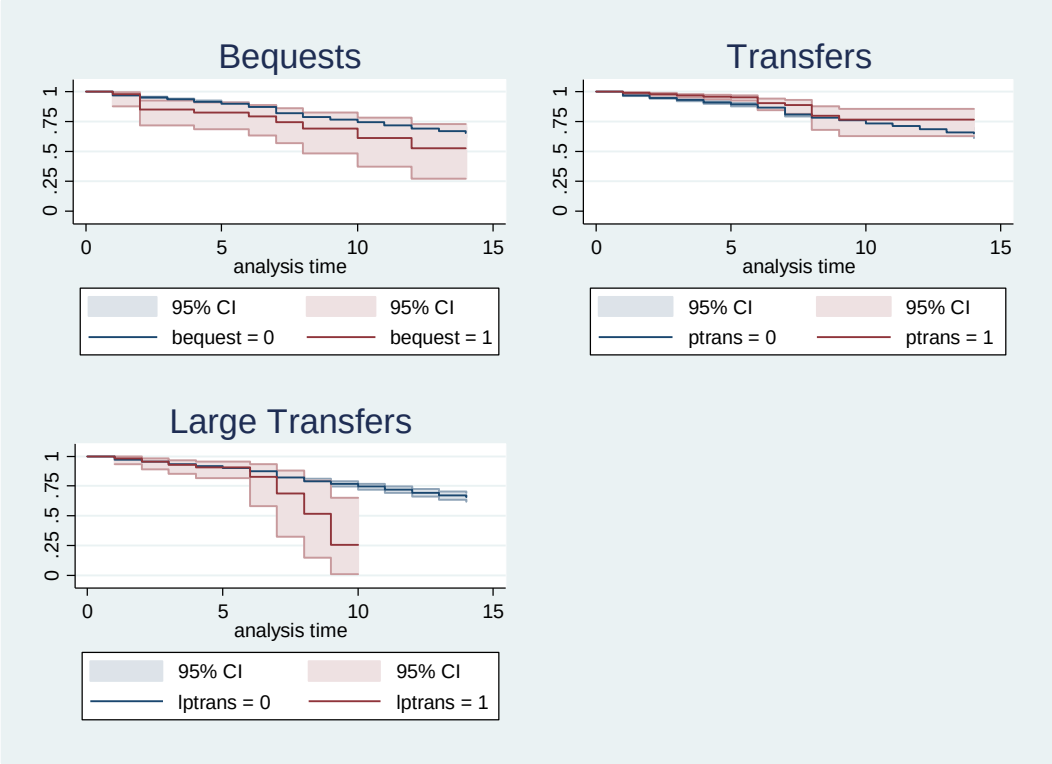
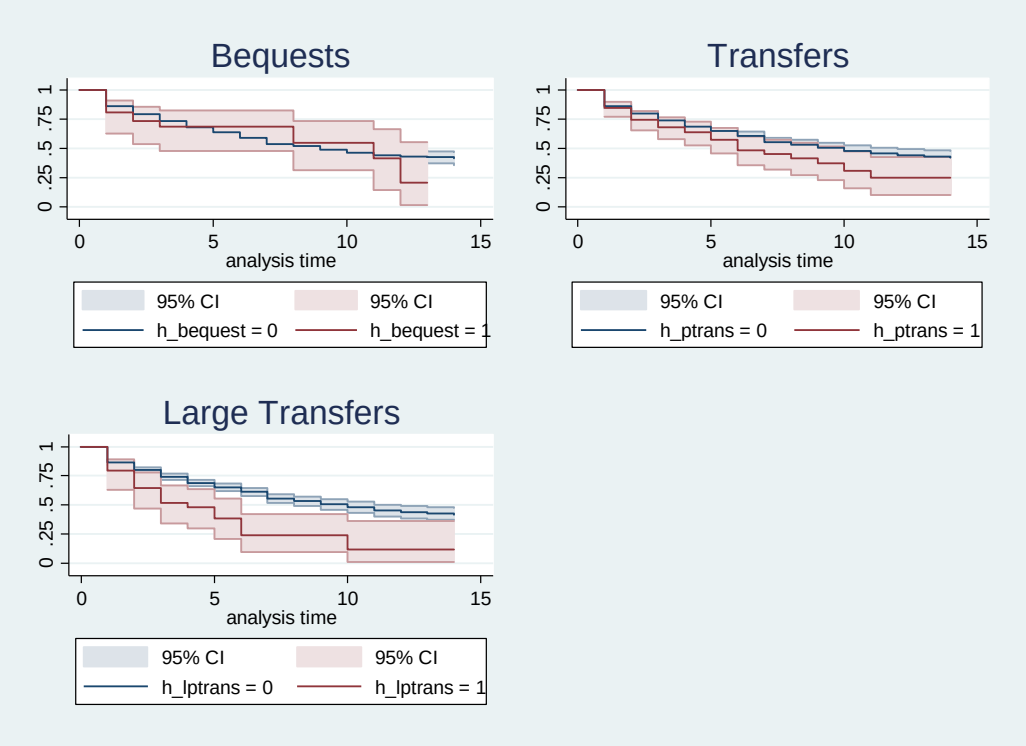


FIGURE 3: Survivor Function - Couples



Duration Model Estimates.

The duration estimates are reported in Tables 3 (bequests) and Table 4 (*inter vivos* transfers) for all individuals (panel A), singles (panel B) and couples (panel C). Only a subset of results associated with the transfer variables are presented in Tables 3 and 4. The results for other covariates included in the specification are generally consistent with *a priori* expectations. For example, individuals aged between 26 and 45, the traditional time that home ownership is attained in Australia, exhibit a significantly higher hazard rate into this form of tenure *ceteris paribus*. Similarly, higher levels of education, disposable income and being married or partnered (for all individuals) are associated with a higher probability of transition into homeownership.[7]

In the duration models information around transfers is included in the specification in a variety of ways to capture the receipt of a transfer or the value of the transfer received. The receipt of a bequest is captured either through the contemporaneous receipt of the bequest, or the receipt of a bequest lagged one period. Given the substantial fixed costs associated with the purchase of a house, the receipt of a transfer may have a delayed impact on the transition into homeownership, and the receipt of a bequest in the previous period is designed to capture this.

[7] Full results are available on request and in the working paper version of this paper (Whelan (2017)).

In Table 3 we report the coefficients on specifications that incorporate measures associated with the receipt or value of bequests received. Amongst all individuals (panel A), the receipt of a bequest is associated with an increase in the hazard of approximately 95 percent (column 1) *ceteris paribus*.[8] That is, the bequest effectively doubles the conditional probability that an individual is observed to transition into first-time homeownership in the year in which the bequest is received. The receipt of a bequest in the previous year (column 2) also has a significant albeit somewhat smaller impact on the transition rate into first-time homeownership. There is also evidence that the value of the bequest received has an impact on the transition into first-time homeownership among all individuals (column 3). Recall that the average value of a bequest among those who receive them is approximately $47,000 (Table 2). The coefficient on the amount of the bequest received (beqamt) is 0.004, implying that an average bequest will increase the hazard by around 20 percent. This suggests that the effect of a bequest is nonlinear and this is borne out by the specification that includes a measure if the individual reports receiving a large bequest (column 4). There the effect of the receipt of a large bequest is large and highly significant.

Results for those respondents who remain single throughout the period of analysis and couples are reported in panels B and Panel C of Table 3 respectively. For singles, the results are similar to those reported for all individuals, with the receipt of a bequest and the amount of the bequest positively related to the hazard into first-time homeownership in a significant manner. For single individuals, the receipt of a large bequest has a more pronounced impact on the transition than among all individuals, effectively tripling the hazard into first-time homeownership.

For couples, the effect of a bequest by one member of the couple has a positive but smaller impact on the transition into first-time homeownership. There are a number of reasons why this might be the case. For example, couple households may have a number of sources of income so that transfers, especially bequests that may occur later in the lifecycle, are less crucial for facilitating transition into homeownership. As was the case with individuals and singles, the receipt of a large bequest and the amount of the bequest are important determinants of the transition into first-time homeownership for couples. Overall, the key result from the analysis of the relationship between bequests and the transition into first-time homeownership is the important role they appear to play for facilitating this transition.

[8] The effect on the hazard is calculated as $exp^{0.676} \approx 1.96$.

TABLE 3: Duration model estimates (bequests)

Panel A – All individuals	(1)	(2)	(3)	(4)	(5)
Received bequest (*t)*	0.676*** (0.134)	-	-	-	-
Received bequest (*t-1)*	-	0.350* (0.188)	-	-	-
Amount bequest ($0,000)	-	-	0.004*** (0.001)	-	-
Received large bequest (*t)*	-	-	-	0.984*** (0.151)	-
Received large bequest (*t-1)*	-	-	-	-	0.497** (0.238)
Panel B – Singles	(1)	(2)	(3)	(4)	(5)
Received bequest (*t)*	0.754*** (0.283)	-	-	-	-
Received bequest (*t-1)*	-	0.571 (0.360)	-	-	-
Amount bequest ($0,000)	-	-	0.012*** (0.002)	-	-
Received large bequest (*t)*	-	-	-	1.106*** (0.322)	-
Received large bequest (*t-1)*	-	-	-	-	0.584 (0.505)
Panel C – Couples	(1)	(2)	(3)	(4)	(5)
Received bequest (*t)*	0.498* (0.285)	-	-	-	-
Received bequest (*t-1)*	-	0.201 (0.385)	-	-	-
Amount bequest ($0,000)	-	-	0.005** (0.002)	-	-
Received large bequest (*t)*	-	-	-	0.735** (0.358)	-
Received large bequest (*t-1)*	-	-	-	-	0.664 (0.503)

Notes: Specifications includes a set of controls for age, education, location (State or Territory), disposable income and gender (for all individuals and singles). For couples, the receipt or amount of a bequest captures bequests received by either member of the couple.

Standard errors are in parenthesis; *** denotes significance at 1%, ** denotes significance at 5%,* denotes significance at 10%,

In Table 4 we report the coefficients on specifications that incorporate measures of *inter vivos* gifts from parents. Amongst all individuals (panel A), the receipt of a transfer is associated with a decrease in the hazard of approximately 23 percent (column 1) *ceteris paribus*.[9] That is, the transfer is associated with a *lower* probability that the respondent transitions into first-time homeownership. In contrast, the value of the transfer received is associated with a positive impact on the transition into first-time homeownership among all individuals (column 2), as is the amount of the *inter vivos* transfer received in the previous period (column 3).

This pattern of coefficients is most likely explained by the alternate types of *inter vivos* transfers from parents. Recall that the number of respondents who report receiving an *inter vivos* transfer from parents is substantially greater than those who receive a bequest, though the average amount received is significantly smaller. An examination of the coefficient on a measure that captures if a large parental transfer (greater than $5000) has been received (column 4) indicates a large and positive coefficient. In this case, the receipt of such a transfer increases the hazard into first-time homeownership by approximately 68 per cent, *ceteris paribus*. It is likely, however, that most transfers from parents are relatively small and are not intended to facilitate transition into homeownership. As such, *inter vivos* transfers from parents do not in general impact on the hazard into first-time homeownership. Rather, one possible explanation is that the results are consistent with a more strategic role for *inter vivos* transfers, with larger housing related transfers being targeted for this purpose.

The results reported for singles (Panel B) and couples (Panel C) in Table 4 are similar to those for all respondents. That is, the receipt of any transfer is associated with a lower probability (singles) or insignificant (couples) of transition into homeownership, while the value of the transfer and the receipt of a large transfer are generally associated with positive impacts on the transition into first-time homeownership. Overall, such patterns suggest a more nuanced of strategic use of parental transfers to facilitate housing related transitions.

[9] The effect on the hazard is calculated as $exp^{-0.25} \approx 0.77$.

TABLE 4: Duration model estimates (*inter vivos* transfers)

Panel A – All individuals	(1)	(2)	(3)	(4)	(5)
Received transfer (*t*)	-0.255*** (0.085)	-	-	-	-
Amount transfer ($0,000)	-	0.009*** (0.002)	-	-	-
Amount transfer ($0,000) (*t-1*)	-	-	0.008** (0.003)	-	-
Received large transfer (*t*)	-	-	-	0.456*** (0.124)	-
Received large transfer (*t-1*)	-	-	-	-	0.269* (0.163)
Panel B – Singles	(1)	(2)	(3)	(4)	(5)
Received transfer (*t*)	-0.606*** (0.190)	-	-	-	-
Amount transfer ($0,000)	-	0.008* (0.005)	-	-	-
Amount transfer ($0,000) (*t-1*)	-	-	0.012*** (0.004)	-	-
Received large transfer (*t*)	-	-	-	0.241 (0.294)	-
Received large transfer (*t-1*)	-	-	-	-	0.514* (0.309)
Panel C – Couples	(1)	(2)	(3)	(4)	(5)
Received transfer (*t*)	0.023 (0.154)	-	-	-	-
Amount transfer ($0,000)	-	0.021*** (0.007)	-	-	-
Amount transfer ($0,000) (*t-1*)	-	-	-0.008 (0.018)	-	-
Received large transfer (*t*)	-	-	-	0.751** (0.210)	-
Received large transfer (*t-1*)	-	-	-	-	-0.159 (0.360)

Notes: Specifications includes a set of controls for age, education, location (State or Territory), disposable income and gender (for all individuals and singles). For couples, the receipt or amount of a bequest captures bequests received by either member of the couple.

Standard errors are in parenthesis; *** denotes significance at 1%, ** denotes significance at 5%,* denotes significance at 10%,

Robustness Check.

The estimates reported in Tables 3 and 4 above are potentially affected by endogeneity in that the transferor's behavior may depend, at least in part, on the behaviour of the recipient. As noted by Guiso and Japelli (2002), the direction of this bias is ambiguous *a priori*. It may be the case for example that individuals with a strong preference for homeownership ask for and behave in way that induces additional transfers from parents. In that case, there would be a negative correlation between the time before transitioning into first-time homeownership and the receipt of transfers. Conversely, individuals (or households) with limited resources or who face a relatively long period prior to transitioning into homeownership because of credit market constraints, may attract a greater level of transfers from parents. In this case there would be a positive correlation between the transfer and the time until transition occurs. Accounting for the potential endogeneity of the transfers requires some additional information on the recipient and transferor.

The approach taken in this paper to overcome the potential endogeneity is similar to that adopted in Guiso and Japelli (2002). In particular, a two-stage procedure is used in which in the first stage the amount of the transfer received (either in the form of a bequest or *inter vivos* gift) is regressed against the set of covariates included in the duration models using a tobit specification. The tobit specification is used to account for the censoring of transfer amounts with the majority of transfers equal to zero. In addition to the covariates included in the duration model, information on the recipient's number of siblings and a proxy for the lifetime income of the respondent's father are included in the tobit specification. Lifetime resources of parents are proxied by a measure of the father's occupation, measured on a scale between 0 and 100, when the respondent was aged 14 years of age (McMillan, Beavis and Jones 2009).[10] The number of siblings is designed to capture the likelihood and amount of any transfer received. In general, the higher the occupational status scale the larger is the expected transfer, while a higher number of siblings is likely to reduce the

Full results from the tobit models and hazard models using the predicted values of transfers are reported in the Appendix. The first stage results indicate that the coefficients on the occupational status scale and the number of siblings are, as expected, positive and negative respectively. In general, the coefficients on the covariates in the model that controls for endogeneity are similar to those reported for the models discussed above. In terms of the predicted values of transfers, the coefficient on the bequest variable 0.007 is similar to that reported for the model that ignores potential endogeneity.[11] That is, there is a positive and significant relationship between the amount of the bequest received and the hazard into first-time homeownership. For the *inter vivos*

[10] The occupational status scale reflects the occupation of the respondent's father when the respondent was aged 14. In the scale, labourers are given a score of approximately 19 and professionals a score of approximately 82.
[11] The standard error is 0.001.

transfer, there is a positive and significant relationship with the transition into homeownership though in this case the estimated coefficient in the model that takes into account the potential endogeneity (0.042) is somewhat larger than that for the models discussed above.[12] Nonetheless, in both cases there is strong evidence that the amount of intergenerational transfers received are strongly related to the transition into first-time homeownership.

Regression Estimates.

The final empirical specification identifies how the receipt of transfers in the form of bequests and *inter vivos* gifts from parents are related to the value of the house purchased for first time buyers, and, the level of the home loan take out. Because information on the value of the home when first purchased is only reported in the wealth modules available in 2002, 2006, 2010 and 2014, the sample used in the analysis consists of all individuals who report purchasing their first home in the period 2002 to 2014. The specifications reported in Tables 5 and 6 use an OLS specification in which the dependent variable is the value of the home loan or mortgage (Table 5) or the value of the house purchased (Table 6). For the transfer measures, the receipt of a transfer and the value of the transfer captures the period two years prior to the purchase of the home. Hence, the values of the *inter vivos* parental transfers is the cumulative amount received in the two years prior to the purchase of the first home.

In the results are reported in Table 5 for the set of individuals who entered into first-time homeownership during the period 2002 to 2014. The results indicate that the receipt of a bequest was associated with a decrease in the loan used to purchase a house in the order of $40,000 *(*column 1). In terms of the value the bequest, a $10,000 bequest is associated with a decrease in the loan size of $2900, *ceteris paribus (*column 2). The receipt of an *inter vivos* transfer from parents was associated with an increase in the home loan used by first time buyers, albeit in an insignificant manner (column 3). More pertinently, a transfer of $10,000 from parents was associated with a decrease in the value of the housing loan in the order of $2100. Again, however, the result was statistically insignificant. These results suggest that transfers in the form of a bequest are used partially to offset the level of mortgage debt taken on for first-time homebuyers.

[12] The standard error is 0.005.

TABLE 5: Regression results – *home loan*.

	(1)	(2)	(3)	(4)
Female	0.911	0.643	0.864	0.622
	(0.683)	(0.850)	(0.684)	(0.852)
Married	5.057***	4.048***	5.077***	4.108***
	(0.784)	(0.943)	(0.785)	(0.945)
Aged 26-35	1.706**	1.703*	1.770**	1.619*
	(0.785)	(0.971)	(0.788)	(0.973)
Aged 36-45	-1.759*	-2.191*	-1.753*	-2.253*
	(1.055)	(1.278)	(1.058)	(1.282)
Aged 46-55	-5.926***	-5.168***	-5.853***	-5.307***
	(1.598)	(1.901)	(1.604)	(1.905)
Aged 56-65	-13.95***	-15.63***	-14.02***	-15.85***
	(2.302)	(2.556)	(2.305)	(2.561)
New South Wales	3.196**	2.453	3.272**	2.523
	(1.341)	(1.620)	(1.343)	(1.623)
Victoria	1.326	0.420	1.255	0.480
	(1.372)	(1.654)	(1.373)	(1.658)
Queensland	0.0163	0.881	0.0751	0.984
	(1.389)	(1.674)	(1.390)	(1.677)
South Australia	-2.005	-2.096	-2.051	-1.971
	(1.619)	(1.994)	(1.621)	(1.998)
West Australia	2.666	1.866	2.714*	1.955
	(1.646)	(1.984)	(1.648)	(1.988)
Completed HS	3.441***	4.539***	3.324***	4.452***
	(1.023)	(1.262)	(1.025)	(1.265)
Post HS qual.	3.269***	2.640**	3.206***	2.655**
	(0.987)	(1.233)	(0.989)	(1.236)
Undergraduate	7.260***	7.964***	7.171***	7.912***
	(0.956)	(1.162)	(0.959)	(1.165)
Postgraduate	10.36***	11.21***	10.15***	11.15***
	(1.254)	(1.511)	(1.259)	(1.518)
Disp. income ($0,000s)	1.026***	0.542***	1.005***	0.534***
	(0.112)	(0.145)	(0.112)	(0.145)
Receive bequest	-4.009**	-	-	-
	(1.815)			
Amt. bequest ($0,000s)	-	-0.289**	-	-
		(0.116)		
Receive transfer	-	-	1.345	-
			(1.003)	
Amt. transfer ($0,000s)	-	-	-	-0.215
				(0.263)
Constant	6.308***	8.559***	6.129***	8.565***
	(1.930)	(2.332)	(1.936)	(2.338)
Observations	1,674	1,184	1,674	1,184
R^2	0.288	0.262	0.287	0.259

Notes: Specification also includes a full set of time fixed effects; Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1.

TABLE 6: Regression results – *house price*.

	(1)	(2)	(3)	(4)
Female	1.539*	0.810	1.492	0.850
	(0.919)	(1.162)	(0.918)	(1.169)
Married	2.227**	1.448	2.137**	1.316
	(1.055)	(1.290)	(1.054)	(1.298)
Aged 26-35	3.382***	3.229**	3.588***	3.409**
	(1.056)	(1.328)	(1.058)	(1.335)
Aged 36-45	1.470	1.451	1.708	1.593
	(1.420)	(1.748)	(1.420)	(1.760)
Aged 46-55	3.251	3.104	3.635*	3.398
	(2.151)	(2.600)	(2.153)	(2.614)
Aged 56-65	-6.034*	-8.124**	-5.584*	-7.659**
	(3.097)	(3.495)	(3.094)	(3.515)
New South Wales	8.901***	8.754***	8.985***	8.604***
	(1.805)	(2.215)	(1.803)	(2.228)
Victoria	3.155*	2.940	3.120*	2.809
	(1.846)	(2.262)	(1.843)	(2.275)
Queensland	2.593	3.325	2.665	3.104
	(1.869)	(2.289)	(1.867)	(2.302)
South Australia	0.781	0.810	0.685	0.542
	(2.178)	(2.727)	(2.176)	(2.742)
West Australia	6.416***	6.778**	6.538***	6.585**
	(2.215)	(2.713)	(2.213)	(2.729)
Completed HS	5.406***	5.754***	5.291***	5.947***
	(1.376)	(1.727)	(1.375)	(1.736)
Post HS qual.	4.315***	3.351**	4.178***	3.316*
	(1.328)	(1.687)	(1.328)	(1.697)
Undergraduate	10.81***	11.62***	10.63***	11.73***
	(1.287)	(1.589)	(1.288)	(1.598)
Postgraduate	13.36***	13.70***	13.09***	13.81***
	(1.687)	(2.067)	(1.690)	(2.083)
Disp. income ($0,000s)	1.219***	0.497**	1.228***	0.515***
	(0.151)	(0.198)	(0.150)	(0.199)
Receive bequest	1.218	-	-	-
	(2.442)			
Amt. bequest ($0,000s)	-	0.631***	-	-
		(0.159)		
Receive transfer	-	-	2.889**	-
			(1.347)	
Amt. transfer ($0,000s)	-	-	-	0.509
				(0.361)
Constant	8.599***	11.02***	8.242***	11.01***
	(2.597)	(3.190)	(2.599)	(3.209)
Observations	1,674	1,184	1,674	1,184
R^2	0.228	0.205	0.230	0.196

Notes: Specification also includes a full set of time fixed effects; Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1.

The results for the specification that examines the price paid indicates that transfers are used to increase the level of housing purchased or consumed (Table 6). Bequests are associated with an increase in the value of housing purchased, with a $10,000 bequests associated with an increase the amount of housing purchased in the order of $6300 (column 2). Similarly, the receipt of transfers is associated with an increase in the value of housing purchased, though it is no longer the case that the value of transfers is positively related to the value of the housing purchased.

These results suggest that intergenerational transfers in the form of bequests or *inter vivos* parental gifts have important implications for those wishing to purchase housing. The duration models indicate that transfers hasten the transition into owner occupation, potentially alleviating some important credit constraints faced by intending purchasers. For those who do purchase, there is some evidence that the transfers are used to reduce the amount that is borrowed while increasing the value of housing purchased.

6. Conclusion

In this paper, we have considered how intergenerational transfer impact on the outcomes and behavior of first time home buyers in Australia. Although bequests are received by relatively few individuals on an annual basis, there is evidence that they are important for facilitating entry into home ownership. Similarly, *inter vivos* transfers from parents appear to be used strategically to facilitate entry into a preferred tenure. While far more individuals report the receipt of transfers, it is larger transfers that are associated with earlier transitions into home ownership. Moreover, the results identified remain when the potential endogeneity of transfers is addressed using an instrumental variable approach. The empirical analysis also provides evidence that those who receive intergenerational transfers use such transfers partly to reduce the value of the mortgage used to fund their housing purchase, while simultaneously increasing the amount of housing purchased.

The findings in this paper have important policy implications. Like many other countries, home ownership is the dominant form of tenure in Australia that is supported by implicit and explicit subsidies via the tax and transfer system. Significantly, the accumulation of housing wealth has been seen as a critical part of planning for retirement in Australia. In light of the decline in the home ownership rate among younger cohorts of Australians, there is a potential for existing wealth inequalities to be accentuated over time and for additional burdens to be placed on the transfer system as the population ages. While intergenerational transfers can alleviate the potential credit constraints faced by buyers, they also have the potential to exacerbate existing inequality if those who have accumulated large asset portfolios are more likely to provide assistance to younger cohorts.

From a policy perspective, the analysis in this paper has implications for tax and transfer policy. As an asset housing is taxed favorably in Australia, with owner occupied housing being exempt from capital gains tax and the imputed rent not forming part of assessable income. Such measures may need to be reviewed if ownership rates change significantly over time placing greater demands on the system of income support. More generally, in the absence of a broad based wealth tax such as an inheritance tax, intergenerational transfers have the potential to exacerbate existing inequalities over time.

There are a number of ways that the present analysis could be extended. One avenue that parents provide transfers to children is through in-kind provision of housing in the form of co-residency. Identifying this and placing a value on it would provide additional insight into how intergenerational transfers facilitate home ownership. Similarly, it would be useful to try and identify how transfers impact on other behaviours such as investment in education and saving. Both of these have potentially important, albeit indirect, implications for housing outcomes. The availability of an increasingly longer panel in the HILDA may permit such analysis in the future.

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Appendix.

TABLE A1 - IV estimates.

	Bequest		*Inter vivos* transfers	
	Tobit	Duration model	Tobit	Duration model
Female	11.97* (6.13)	0.079* (0.04)	0.66** (0.30)	0.14*** (0.04)
Married	12.07* (6.49)	1.14*** (0.045)	-0.98*** (0.35)	1.27*** (0.05)
Aged 26-35	23.58*** (8.11)	0.30*** (0.06)	-5.65*** (0.43)	0.71*** (0.07)
Aged 36-45	17.25 (10.58)	0.06 (0.07)	-7.582*** (0.62)	0.52*** (0.09)
Aged 46-55	46.30*** (11.58)	-0.20** (0.10)	-12.54*** (0.99)	0.65*** (0.13)
Aged 56-65	86.53*** (13.23)	-0.54*** (0.16)	-23.10*** (2.82)	1.00*** (0.20)
New South Wales	-19.24 (11.82)	-0.115 (0.09)	-1.09* (0.63)	-0.20** (0.09)
Victoria	-25.91** (12.23)	-0.08 (0.09)	1.10* (0.63)	-0.30*** (0.0896)
Queensland	-33.26*** (12.68)	0.02 (0.10)	-1.55** (0.66)	-0.14 (0.09)
South Australia	-9.79 (13.95)	-0.14 (0.105)	0.18 (0.74)	-0.21** (0.11)
West Australia	-55.58*** (16.95)	0.42*** (0.12)	-2.39*** (0.78)	0.14 (0.103)
Completed HS	17.02** (8.42)	-0.28*** (0.07)	4.62*** (0.41)	-0.37*** (0.07)
Post HS qual.	9.68 (9.90)	0.25*** (0.065)	2.40*** (0.51)	0.21*** (0.07)
Undergraduate	15.00 (9.73)	0.20*** (0.07)	3.72*** (0.53)	0.126* (0.073)
Postgraduate	11.70 (12.97)	0.28*** (0.0834)	4.20*** (0.78)	0.17* (0.09)
Disp. income ($0,000s)	3.59** (1.41)	0.12*** (0.01)	-0.84*** (0.10)	0.18*** (0.08)
No. dependent children	-7.11* (3.79)	-	-1.76*** (0.25)	-
Number siblings	-6.67*** (1.88)	-	-1.07*** (0.11)	-
Father occupational status scale	0.60*** (0.13)	-	0.10*** (0.01)	-
Predicted bequest	-	0.007*** (0.001)	-	-
Predicted transfer	-	-	-	0.042*** (0.01)
Constant	-391.50*** (22.64)	-	-19.88*** (0.82)	-
Observations	38,507		38,507	

Notes: Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1.