

# **Home ownership among young people in Australia: in decline or just delayed?**

**Jennifer Baxter\* and Peter McDonald\***

\*Demography and Sociology Program, Research School of Social Sciences, Australian National University

Paper prepared for the NLC Workshop. University of Queensland, 29-30 June 2004

## **Abstract**

Based on census data, a fall in rates of home ownership has been observed among Australians aged less than 35 years. There is debate as to whether this fall is due to changing affordability (Yates 1999, 2002) or to delays in family formation among young Australians (Mudd et al. 2001). The first explanation implies that more Australians will not achieve home ownership across their lifetime; the second that home ownership is merely delayed. Using recent data collections, the proportion that had purchased a house by each age for successive cohorts is examined while simultaneously controlling for family formation and other characteristics. Year of birth is taken as the indicator of changing affordability across time. We find that once other characteristics are controlled, there is no indication of falls in home ownership across birth cohorts. If anything, more recent birth cohorts are more likely to be homeowners than earlier cohorts. Formal marriage is the key variable associated with entry to home ownership.

## **Trends in homeownership among young people in Australia: in decline or just delayed?**

A number of recent studies have examined aspects of changing housing tenure in Australia (Hughes 1996, Yates 1998, Landt 1998, Percival 1998, Yates 1999, Winter and Stone 1998, Winter and Stone 1999, Mudd, Tesfaghiorghis and Bray 2001, and Yates 2002). The central theme of these studies is investigation of falls in home ownership rates between the mid 1970s and the mid 1990s. Yates (1999) indicates that falls in home ownership between 1975 and 1994 were associated with low income and being a couple with children. In more general terms, rates of home ownership have fallen at younger ages (under age 35 years). At a regional level, Yates (2002) shows that home ownership rates at younger ages fell more sharply between 1986 and 1996 in the larger cities. This trend, she suggests, was associated with large increases in median house prices in the larger cities. Her central conclusion is that housing has become less affordable for young people and this is the main reason that home ownership rates have fallen. Furthermore, she concludes that this lack of affordability is not temporary but will extend across people's lifetimes unless policy intervenes in some way.

Using census data for the years 1981 to 1996, Mudd et al. (2001: viii) draw a somewhat different conclusion. They conclude that 'the aggregate trends of declining rates of home ownership reflect a deferral of home ownership, rather than a reduction in the lifetime achievement of home ownership'. Counter to Yates, these authors conclude after an assessment of affordability changes in Australia that tenure in Australia is 'largely a

product of historical outcomes and future expectations, rather than short-term prevailing market conditions' (Mudd et al. 2001: 26).

The issues then are:

- To what extent have rates of home ownership fallen in Australia?
- Do falls in home ownership represent deferral or reduction in the lifetime achievement of this tenure?
- Respectively, what are the reasons for deferral or lifetime non-achievement?

### **Problems in the use of census data to measure home ownership rates**

Both Yates and Mudd et al. use census data for their analysis of rates of home ownership. To be precise, what they measure is the extent to which persons designated in the census as 'the household reference person' live in dwellings reported in the census as being owned or purchased. There are three problems with this approach.

First, housing tenure questions used at the last four Australian censuses have not identified which individual in the household owns or is purchasing the dwelling. The tenure questions used at the 1986, 1991, 1996 and 2001 Censuses of Population and Housing are shown in McDonald (2003: 3-4). At the 1986 and 1991 Censuses, the tenure question asked whether the dwelling was rented or whether it was owned or being purchased by 'you or any usual member of this household'. With this wording, it is

evident that the person holding the tenure can be any person in the household.

Conventional analysis of the type conducted by Yates (2002) and Mudd et al. (2001) then allocates the tenure of the dwelling to the person that ABS designates as the household reference person. The ABS allocates the status, household reference person, mainly on the basis of family characteristics, not according to who owns the dwelling – and, indeed, the owner of the dwelling cannot be identified from among those present in the household. Even more obviously, where the person holding the tenure is temporarily absent from the household on census night, this person cannot be the household reference person. Nevertheless, from the 1986 and 1991 Censuses, we at least know that the person holding the tenure is a usual resident of the dwelling. Even this is not necessarily the case at subsequent censuses.

The housing tenure question in Australian censuses was changed very significantly between the 1991 and 1996 Censuses. With the 1996 wording, used also in 2001, the question no longer specifies that the owner or renter of the dwelling must be a usual resident of the household. The question asks simply: Mark the box which best describes this dwelling. And the responses are: fully owned, being purchased, etc. It is possible that the vagueness of this question could lead to confusion on the part of the respondent. For example, if a 27 year-old man is living rent-free in a dwelling that is being purchased by his parents, how is he likely to answer this question? There is at least a fair chance that he would answer that the dwelling is being purchased rather than the ‘correct’ response, being occupied rent-free. He would then be recorded in the analysis as a home purchaser.

When it is not specified that the person holding the tenure is a usual resident of the dwelling, there are a range of other possible errors of interpretation of the question.

The second problem with census data is that rates of home ownership are rates for household reference persons rather than rates for all persons. Suppose there was a strong trend towards young people staying at home longer with their parents because independent living had become increasingly unaffordable. In general, these young people would not be recorded as household reference persons and so this highly significant trend would go unobserved. It may even be the case that as 'headship' rates fell, headship might become selective of those who could afford to buy. If so, analysis of the type conducted by Yates and Mudd et al. would show an increased tendency towards home ownership, the wrong result. While the vast majority of 15-24 year olds in Australia are not household reference persons (McDonald 2003: 5), we are presented with analysis of home ownership trends for people of this age group but only for those who are household reference persons, not for all persons of that age.

There is a further problem: the use of the household reference person approach precludes analysis by sex because only one person in a couple relationship can be the household reference person, and men are considerably more likely to be that person than women.

The third problem with census home ownership data is that the census does not record whether a person owns or is purchasing a property elsewhere but is renting in his or her present place of residence. There are many types of people who could fit this description.

First, there are people who have been transferred or taken jobs at some distance from where they live. They may rent out the dwelling that they own while they rent themselves in their new location. People may have had a recent separation and may be renting pending a property settlement. Young people may live at home with parents but own a house elsewhere. They may either plan to live in this house at a later point or they may use the house as an investment. More generally, 'rational renters' may rent their present dwelling while investing in residential accommodation elsewhere. Mudd et al. (2001) in acknowledging this problem referred to a study by King and Baekgaard (1996) in which it was estimated that 8 per cent of Australian households that were private renters in 1993-94 had an interest in investment property compared with just 3 per cent in 1981-82. Mudd et al. (2001: 28), using the 1999 Australian Housing Survey, placed this estimate in 1999 at 10.2 per cent. The change of 7 percentage points between 1981-82 and 1999 in the percentage of renters who were owners elsewhere is significant compared to the observed falls in home ownership in the same period based on the census data.

It is evident from the above discussion that a thorough analysis of rates of home ownership in Australia requires individual level data rather than vague household data as obtained at the census. Each person needs to be asked whether or not he or she is currently a home owner, whether he or she has ever been a homeowner and when he or she first became an owner. This study provides an analysis of Australian data sources that have obtained individual-level data on home ownership.

## **A life course approach to analysis is superior to a comparative statics approach**

The use of individual level data enables the researcher to examine how home ownership fits into the individual's life course. Examining rates of home ownership at successive censuses is known as a comparative statics approach: a static situation at the time of each census is compared across time. This does not allow us to examine how home purchase relates to other important life cycle events such as leaving the parental home, obtaining a job, entering a relationship, getting married and having children. Studies have shown that home purchase is related to these other life course transitions (Winter and Stone 1999, Merlo and McDonald 2002), although the sequence of each event may have become less predictable. It is also well known that family transitions (marriages and births) have been significantly delayed in the life course of Australian individuals and that this has been associated with longer durations of education and later entry to the first main job. It is possible that the delays of employment, marriage and childbearing to older ages may have produced a delay in home purchase to older ages. If this is the case, a comparative statics analysis would show only that home ownership rates had fallen at younger ages. It would not associate this fall with delay of other life cycle events. For example, in the comparative statics approach, a couple aged 30-34 with children in 1976 is compared with a couple with the same characteristics in 1996 although their histories of education, work, relationships and childbearing are very different on average. The important point here is that a fall in home ownership at young ages may indicate deferral of home purchase rather than permanent exclusion from home ownership. This is a crucial

distinction and should be investigated in any analysis of changing rates of home ownership at young ages.

The issue of deferral as opposed to lifetime achievement is a common problem in demography. The methodology that demographers apply to the problem is the life table. Because events such as commencement of first main job, marriage, first birth and first home purchase tend to be concentrated in relatively short age ranges, demographers conventionally examine transitions by single-year of age units, very much in contrast to the very wide age ranges often used in comparative static studies. Applying the demographic approach, the focus of the paper is upon whether or not individuals have ever purchased a dwelling and at what age they first purchased the dwelling. This includes the purchase of a dwelling in which the individual may never have lived and the acquisition of a dwelling by means other than purchase (inheritance, marriage). While the time at which a person acquired a dwelling may appear to be a straightforward matter, response problems can arise for various reasons. For example, there may be confusion where the respondent's partner owned the house and, over time, the respondent has taken on rights of ownership. The same can apply when the house was purchased by parents but at some point was passed to the respondent.

The standard life course methodology is to follow the experience of people across their lifetimes by grouping them into birth cohorts. A birth cohort is a group of people who share the same birth year(s). People born in the same year are followed through their lifetime and the age at which they purchased a dwelling for the first time is recorded.

Experience for the birth cohort is then accumulated up to their age at the time of the survey. For persons who are aged 50 at the time of the survey, we can measure the proportion that had entered home ownership at each earlier age up to age 50. If they were aged 30 at the time of the survey, we can do this only to age 30. Because the timing of life cycle events tends to differ for men and women, this should be done separately for each sex.

### **Entry to first home ownership: the 1999 Australian Housing Survey (AHS)**

The 1999 AHS contained a question relating to year of first home ownership, but the question was not asked of all respondents. Effectively, the survey identified for all respondents whether or not they had ever owned a residential property but the time of purchase of the first home was only obtained for current homeowners. Specifically, those who had owned residential property in the past but did not own at the time of the survey were not asked the year that they had purchased their first house. However, they were asked other questions that enabled the time of first purchase to be estimated with a greater degree of accuracy. In order to get estimates of age of first home ownership for all individuals, it was possible to derive estimates for those persons who were not asked the question. These people constituted 10.2 per cent of all AHS respondents. The methods used are detailed in Baxter and McDonald (2004: Attachment 1).

In addition, the current age variable in the AHS was available in five-year ranges only, making it impossible to obtain estimates of age of first home ownership by single years

of age as would be preferable. Exact year of home ownership could be calculated (and replacement values for missing values derived) separately for each sex-age cohort group. The AHS age groups used were from 20-24 to 70-74 years. Given the current age group and actual year of first home ownership, it is a relatively straightforward matter to calculate age group at first home ownership. Persons who had not bought a house by the time of the survey were treated as censored cases, that is, their experience is taken into account up to their age at the time of the survey after which they are dropped from the analysis. A few records were excluded because they had missing responses to the home ownership questions.

Figure 1 shows two charts, one for males and one for females, of the timing of first home ownership by age cohort based on the 1999 AHS results. For males, the age at first home ownership is remarkably similar for all age cohorts aged 30-49 in 1999 (those born between 1950 and 1970). However, it does appear that in the two most recent age cohorts, those aged under 30 in 1999, there has been some decline in home ownership at the younger ages. For females, the pattern is similar but there is evidence of declining home ownership amongst those aged under 35 in 1999, although the 30 to 34 age cohort appears to be catching up while in their early 30s. Thus, there is evidence of a fall-off in entry to first home ownership for those aged less than 30 in 1999. However, there is also evidence based on those aged 30-34 in 1999 that, at least for this cohort, the drop in ownership while they were in their twenties was largely made up when they were in their early thirties. This is suggestive of delay of homeownership rather than a fall in lifetime achievement.

FIGURE 1 ABOUT HERE

The AHS has limitations for the purposes of this paper because it does not provide ownership estimates by single years of age and because it does not obtain information that enables an analysis of the associations between first entry to home ownership and other significant life cycle events such as leaving the parental home, partnering, marrying and having children. The central purpose of including results from the AHS in this paper is to compare the results from this nation-wide ABS survey with the results of the Negotiating the Life Course Survey (NLC) because this latter survey will be the basis of more intensive analysis. The NLC Survey is a national random panel survey of Australians who were aged 18-54 years in 1997. The sample is re-interviewed once every three years. The second round interviews were completed in 2000 and third round interviews were conducted late in 2003 and early in 2004. The year of first home purchase is asked of all individuals in the survey at each round. Details of the survey can be found at: <http://lifecourse.anu.edu.au>. Comparison of the results from NLC with those from AHS provide an evaluation of the reliability of both data sets but especially of NLC which will be used much more intensively in further analysis.

### **Entry to first home ownership: the Negotiating the Life Course Survey (NLC)**

The home ownership questions asked of the respondents in NLC include questions about current home ownership and ones about any previous home ownership. The latter is covered by the questions “have you ever owned a place of your own” and if yes (or if

current home owner) “in what year did you first buy a place of your own?” The questions about current home ownership ask about the respondent and partner, if applicable. It is therefore possible that the current home is owned, but was bought by the partner, in which case the respondent may answer “never owned a place of my own” when asked timing of home purchase or, if they feel they are now a co-owner of the house, they may answer in some other way. Similar questions were asked in both the 1997 and 2000 waves. Thus, first purchases that were made by respondents in the years between the two surveys are able to be included. For those that had bought a house before the first wave of the survey, a comparison of the year of home ownership responses shows that on the whole respondents gave the same, or very close to the same response in both waves, as would be expected.

For analysis purposes, a combination of the 1997 and 2000 responses is used according to the selection rules shown in Baxter and McDonald (2004: Attachment 2). The 1997 data are used if the respondent had owned a home before the first wave of the survey; if they had not bought by Wave 1 but had by Wave 2, then the response from the second wave was used. Non-respondents at Wave 2 who had not bought by Wave 1 were censored at the age they were in Wave 1, as were those with responses in Wave 2 that differed from those provided in Wave 1. Those that had not bought by Wave 2 were censored at their age in Wave 2. To analyse the data by cohort, respondents were grouped according to their age in 1997.

The data from the two surveys were compared to validate the accuracy of the NLC data. As mentioned earlier, to make the charts comparable, first the mid-point of each age group was used in the AHS, and this was compared to the equivalent age in the NLC. For example, home ownership at age 25 to 29 was assumed to represent the level of home ownership at the mid-point of this range, age 27. This was compared to the home ownership rate at age 27 from the NLC. Note however differences still exist in the age cohorts, with the AHS using age at 1999 and the NLC using age at 1997.

The charts in Figure 2 contain comparisons for females and the charts in Figure 3 contain comparisons for males. The main conclusion to be drawn is that the two surveys provide very similar results for both sexes. This is particularly the case with the older cohorts aged 35-49 years. This provides a general confidence in the reliability of the data from both sources. The main exception to this conclusion is that, for males, the NLC data show no fall in home ownership levels at younger ages while some fall is evident from the AHS data. In NLC, successive cohorts of Australian men show almost precisely the same history of home ownership, age by age.

FIGURES 2 AND 3 ABOUT HERE

### **A discrete time event history analysis of home ownership in Australia**

The NLC survey data were used to compile a relationship and birth history for each respondent, month-by-month from when the respondent turned 18. These data were

related to the year of first home purchase along with other information on highest level of education, work history, country of birth, birth cohort and sex. A detailed description of how these data were compiled is given in Baxter and McDonald (2004: Attachment 3) along with information on the sample size.

To use discrete-time event history analysis with these data, the observations were converted to person-period format, that is, one record for each person and period under observation. For each person, there was one record for each year between when they turned 18 to the age they bought their first house, or if they have not yet bought one, to their age at the survey (using 2000 data if they responded to the second wave, otherwise using 1996-97 data). The home purchase variable indicated whether the respondent had bought a house, so remained at zero – one indicating they had bought this year – over the time periods preceding the year they bought a house. If they had not bought a house by the survey date, all values of home ownership were set at zero.

Figure 4 shows how the transition event of having bought a house (on the right-hand axis) varies over age in this dataset, with the bars on the left-hand axis showing how many person-year observations there were for each exact age. As this figure shows, the number of observations becomes smaller as age increases. This is expected as, over time, the sample becomes more selective as it becomes restricted to those who have not yet bought a house. It is not surprising, then, that the probability of buying a first home becomes more erratic in the older ages. Analysis of those at older ages is likely to be

problematic, given the small sample size and the more unstable dependent variable. This analysis is therefore limited to persons aged 35 years and under.

FIGURE 4 ABOUT HERE

Persons in the youngest birth cohort, those born between 1975 and 1979, were aged no more than 25 in the final data and to avoid the risk they would bias the estimates in some way, given there were no data points for ages 26 through to 35, they were excluded from the analysis. The next birth cohort, those born 1970 to 1974 were retained, given they were able to contribute points for the majority of the age distribution. Observations that contained missing information were excluded from the analysis.

The home ownership data were first examined overall and against the different covariates to identify possible relationships. In order to see more clearly how home ownership varied over age and across different variables, the transition probabilities were converted using life table techniques to a cumulative proportion having purchased a home. The data were then examined using multivariate techniques. Event history analysis is the appropriate methodology, as it enables analysis of the effect of covariates on both the likelihood of the event (home ownership) occurring and the timing of that event. Because the data were available in fairly broad time periods (years, rather than months or weeks) it was preferable to use discrete-time event history analysis (Allison 1984). This involved using the data, as described above, in person-year form, and then applying logistic regression to analyse the effects of the covariates and time (in this case, age) on the

likelihood of the transition occurring. To take into account the repeated events per person, robust estimates of variance were calculated by incorporating the person level identifier as a clustering variable. Models for males and females were fitted separately in order to investigate how the covariates differed by sex in their relationship with home ownership. The final models were used to calculate the predicted transition probability under different scenarios, and these were converted to cumulative home ownership functions, which are used to demonstrate relationships in the results section.

Figure 5 shows how home purchase patterns have changed over time for males and females. These are based on the raw data, without standardising across any of the covariates – this is done in the next section after an initial examination of the overall trends. The charts show only very slight changes over time. Amongst males, there is little discernable change across all the periods analysed. For females, there is some evidence that home purchase is lower in more recent years, especially at the younger ages. This, as would be expected, is consistent with the findings earlier in the paper.

FIGURE 5 ABOUT HERE

Because these data examine the period changes over time, they do not represent the actual lifetime experiences of people – for example, those aged 20 in 1970-79 are not the same people as those aged 30 in 1970-79. To look at lifetime experiences, it is best to look at birth cohort effects instead of period effects, as is done in Figure 6. This chart also shows only slight differences across the birth cohorts and no consistent trend across time.

FIGURE 6 ABOUT HERE

Changes across time in home purchase rates, however, are perhaps being confounded with other changes across time. The composition of the population has changed such that, at younger ages, males and females are more likely to be single, less likely to have children and more likely to have a higher education compared to earlier cohorts. A multivariate analysis of these data allows an examination of changes across time, holding various composition effects constant. To do this, the home ownership transition was modelled using logistic regression.

The results of the logistic regressions are summarised in Table 1. Age has been entered in these models as a categorical variable, to capture any changes in the likelihood of home purchase over the age range. It could also have been entered as a continuous variable, with a squared-age term included to capture the non-linearities in the data. A continuous-age model was fitted, and was very similar to the categorical-age model in all respects. However, given that this method of event history analysis was chosen because of the discrete nature of the time variable, the categorical-age model was preferred. The results of the continuous-age model are compared to the categorical-age models in Baxter and McDonald (2004: Attachment 4).

All the variables have been entered into the model as main effects only. Various interaction terms were investigated but none were considered necessary. Importantly, this

means that there were no significant interactions between the birth cohorts (the indicator of affordability across time) and the population composition characteristics. The summary statistics at the bottom of Table 1 show that the models fit reasonably well. Further analyses using the Hosmer-Lemeshow test and the ROC Curve show no reason to reject this model.

TABLE 1 ABOUT HERE

Looking at the birth cohort variable, it is clear from the model coefficients that there has been some tendency to higher odds of home purchase among more recent birth cohorts, especially for males. While this largely reflects the much lower home purchase rate for males in the oldest birth cohort, the rates of home purchase have continued to increase amongst males in all birth cohorts except for the 1960-64 birth cohort (Figure 7). Other than age, relationship status is the most important determinant of home purchase, with married persons being almost five times more likely to purchase their first home than persons who are single and still living with their parents. As the following chart shows, this results in a far higher cumulative (predicted) proportion of married persons having bought a house at all ages. The difference between cohabiting persons and single persons living away from home is only slight for females, but for males, the cohabiting persons are more likely to have purchased (Figure 8).

FIGURES 7 AND 8 ABOUT HERE

The number of children ever born is also a strong predictor of home purchase, particularly for females. Controlling for other characteristics, men and women with no children are the most likely to have purchased a house. As seen in Figure 9, the likelihood of home purchase falls as the number of children increases, with a much steeper fall experienced by women. In most cases, however, the presence of children appears to delay home purchase rather than putting off home purchase for a lifetime. For men, while family size makes a difference at younger ages, by age 35 there is very little difference by family size. The same is true for women except for women with three or more children. For women with larger families (3 or more children), the cumulative proportion having bought a house is lower at age 35 than it is for other women. This may reflect the difficult financial circumstances of women with three or more children who are sole parents.

FIGURE 9 ABOUT HERE

Other variables entered as control variables were also significant determinants of home purchase. Again controlling for other characteristics, Australian-born men and women had higher odds of purchasing a house than those born outside Australia. As expected, persons who had worked in a full-time job also had higher odds of purchasing a house. Education made some difference, with vocational qualifications being associated with higher odds of home purchase relative to those with no post-secondary qualifications. For males, having other post-secondary qualifications also increased the odds of home purchase.

Overall, however, the most significant determinant of first home ownership is marriage, meaning formal marriage, and, as there is no significant interaction with birth cohort, this conclusion applies across the full time period of the study.

### **Conclusion and future research**

The strong conclusion to be drawn from the analysis is that, when viewed from the perspective of age at first entry to home ownership of individual Australians, there has been remarkably little change across time. There appears to have been a fall off in home ownership levels at young ages in the past decade, but the evidence in the paper suggests that this is due more to delay than to lifetime non-achievement of home ownership. Thus, this analysis suggests that it is premature to see relatively small falls in home ownership among people in their twenties as a 'crisis' in home ownership among young people. Of course, the data take us forward only to about July 2000, the timing of Wave 2 of NLC. They do not take into account the recent sharp shift in housing affordability. At the same time, the years that are not covered, 2000-2003, were years in which the government's first home owners scheme was utilised to a very high level, thus it is possible that first home ownership rates could have risen in this period rather than fallen. Some indication will be obtained when the Wave 3 data from NLC become available. Unfortunately, the new large, national longitudinal survey, HILDA, in its first three rounds has not asked a question on the date of first entry to home ownership. However, at the authors' suggestion, the question is to be included in the fourth HILDA survey to be run in 2004. Inclusion of this question in HILDA will enable this analysis to be repeated on a larger

sample and in association with variables not collected in NLC, such as the wealth variables obtained in HILDA Wave 2.

Since the mid 1970s, young Australians have been deferring other life cycle events that have long been associated with home purchase. The conventional framework is that first home purchase is associated with the achievement of a secure income stream and with the markers of family formation, marriage and first birth. While Winter and Stone (1999) have demonstrated that a classic sequencing of life cycle events (marriage to first child to home ownership) has been replaced by variation in the sequencing of these events, Mudd et al. (2001) conclude that ‘the housing ladder or cycle – where a person would typically leave the parental home and move to a form of rental, alone or with others, then to purchase and finally outright ownership later in life as the mortgage was paid off-remains the dominant pattern’. Likewise, in examining the fulfilment or otherwise of expressed home ownership aspirations between 1997 and 2000, Merlo and McDonald (2002) found that achievement of home ownership was highly associated with a shift to a dual-earner household (mainly by partnering), income, and with the birth of a child during the three-year period.

Using discrete time event history analysis, in this paper we have been able to examine the simultaneous effects of both time (birth cohort) and population composition characteristics on first home purchase. Birth cohort (equivalent to current age in a comparative statics analysis) was found to have little impact on the odds of acquiring a first home. If anything, younger cohorts were more likely to own than older cohorts,

especially among men. To the extent that birth cohort can be taken as a measure of changing affordability across time (as has been done in previous comparative statics studies), these results suggest that, at least to the year 2000, changing affordability was not an issue in home purchase among young Australians.

Instead, the analysis shows that there have been falls in home ownership rates at young ages but the implication of the study is that these falls have been associated with delays of relationship formation, especially the delay of marriage. To the extent that delay of marriage leads in the future to people never marrying during their lifetime, home ownership rates may fall, but there is little indication that this is a significant factor to the year 2000. Of more concern, perhaps, is the finding of the study that, all else being equal, having children delays home purchase, and the more children you have, the longer is the delay.

## **Acknowledgement**

This material was originally produced for AHURI Ltd with funding from the Commonwealth of Australia and the Australian States and Territories.

## **References**

Allison, P. (1984) 'Event history analysis : regression for longitudinal event data', Beverly Hills CA : Sage. (Quantitative applications in the social sciences).

Hughes, J. (1996) 'Economic shifts and the changing home ownership trajectory', *Housing Policy Debate*, 7 (2), 293-325.

King, A. and Baekgaard, H. (1996) 'The dynamics of housing wealth', Paper presented to the 8th National Conference of the Australian Population Association, Adelaide, December.

Landt, J. (1998) 'Housing affordability of low-income households in Australia, 1981-1982 to 1994-1995', Paper presented to the 27th Conference of Economists, Sydney, September.

McDonald, P. (2003) 'Changing home ownership rates in Australia: issues of measurement and interpretation', AHURI Positioning Paper, Melbourne, AHURI.

McDonald, P. & Baxter, J. (2004) Trends in Home Ownership Rates in Australia: the Relative Importance of Affordability Trends and Changes in Population Composition, AHURI Report, Melbourne, AHURI.

Merlo, R. and McDonald, P. (2002) Outcomes of Home Ownership Aspirations and Their Determinants, AHURI Report, Melbourne, AHURI.

Mudd, W., Tesfaghiorghis, H. and Bray, J. (2001) Some Issues in Home Ownership. Policy Research Paper No. 17, Canberra, Department of Family and Community Services.

Percival, R. (1998) Changing housing expenditure, tenure trends and household incomes in Australia, 1975-1976 to 1997, Discussion Paper No. 28, NATSEM, Canberra, University of Canberra.

Winter, I. & Stone, W. (1998) Social Polarisation and Housing Careers: Exploring the Interrelationship of Labour and Housing Markets in Australia, Working Paper No. 13, Melbourne, Australian Institute of Family Studies.

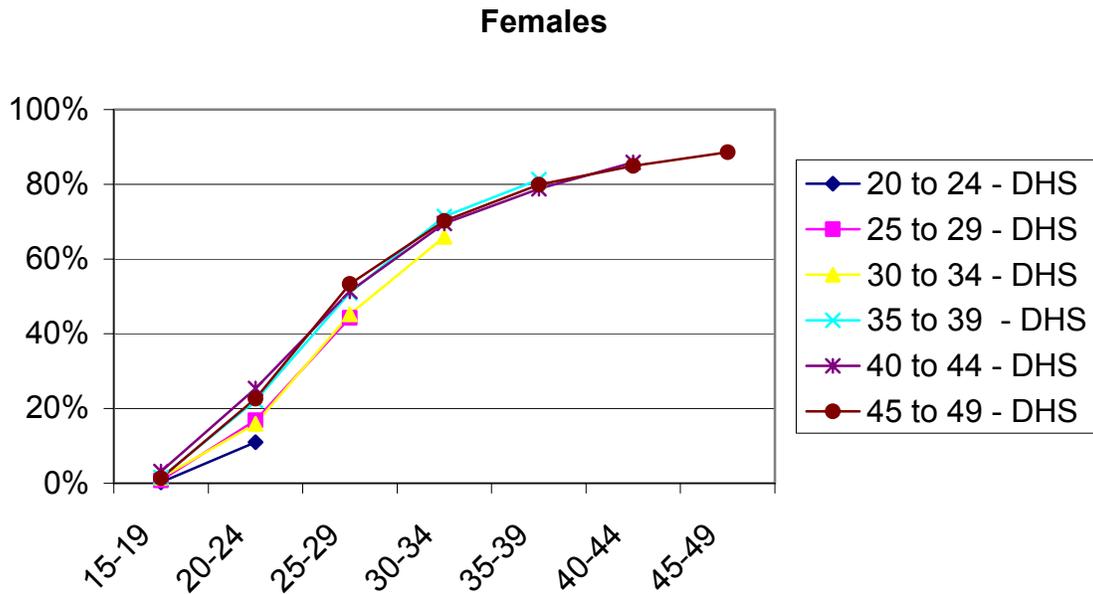
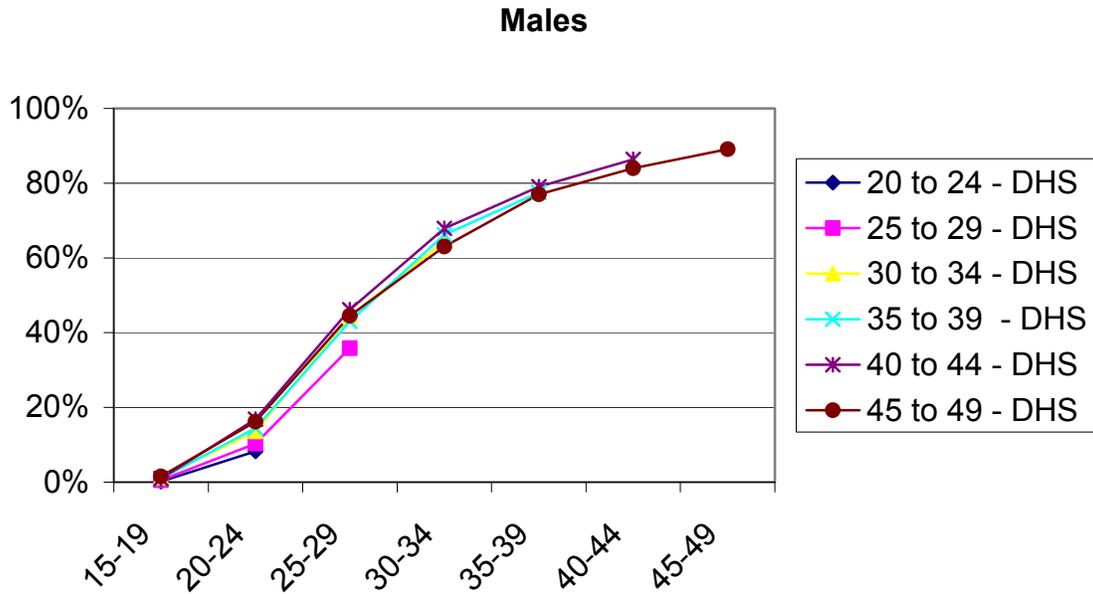
Winter, I. & Stone, W. (1999) 'Home ownership: Off course?' In J. Yates and M. Wulff, (eds.), *Australia's Housing Choices*, Brisbane, University of Queensland Press, 43-52.

Yates, J. (1998) *Trends in Home Ownership*, Sydney, New South Wales Department of Urban Affairs and Planning.

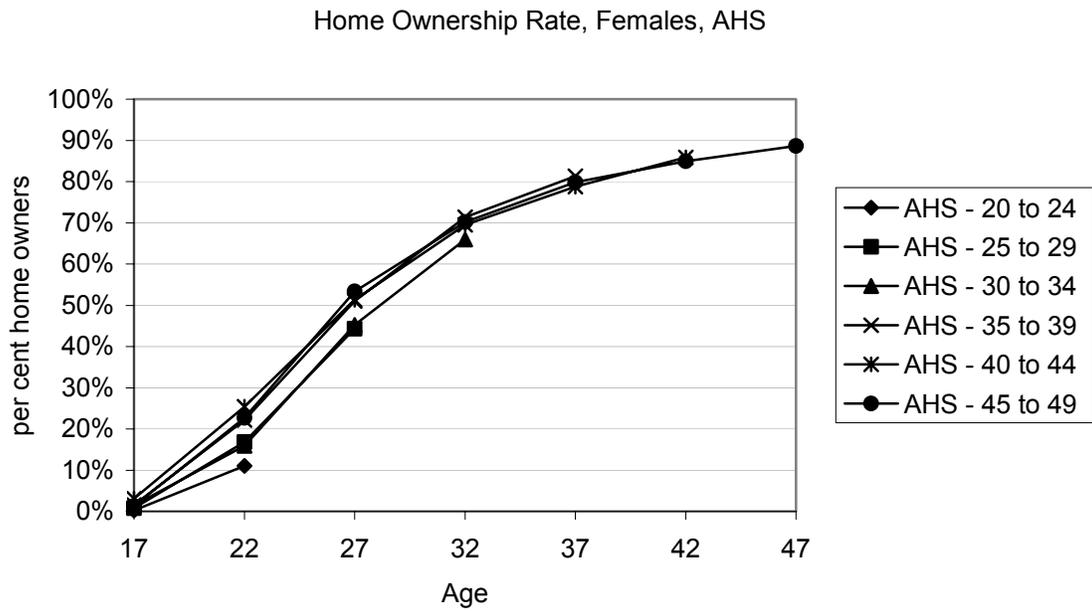
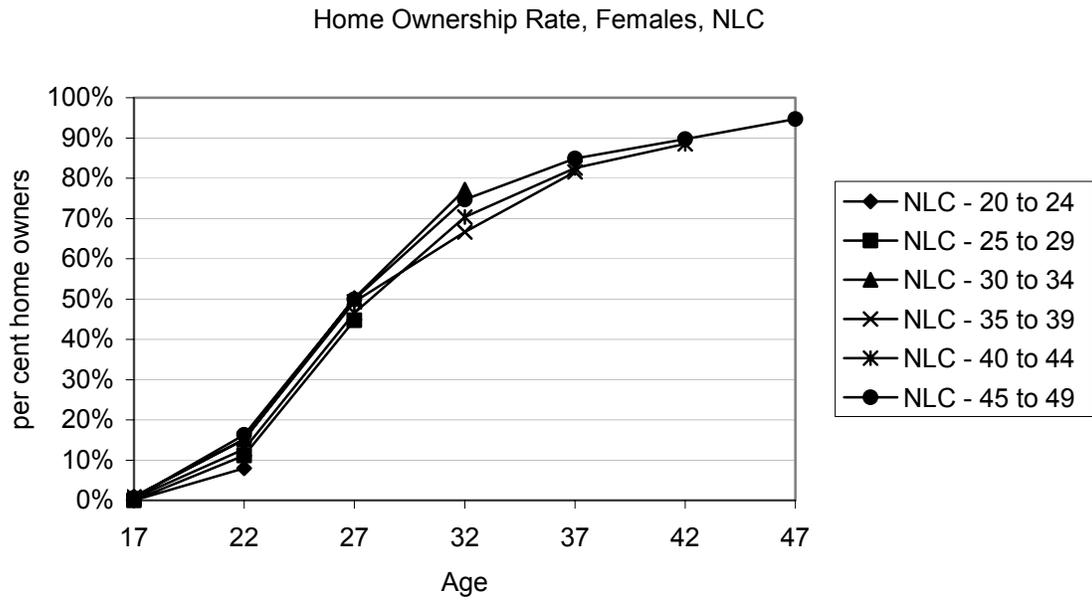
Yates, J. (1999) 'Decomposing Australia's home ownership trends, 1975-1994'. In J. Yates and M. Wulff (eds.), *Australia's Housing Choices*, Brisbane, University of Queensland Press, 27-42.

Yates, J. (2002) *Housing Implications of Social, Spatial and Structural Change*, Australian Housing and Urban Research Institute, Sydney Research Centre.

Figure 1 Home Ownership by Sex and Age Cohort, AHS Data (1999)



**Figure 2 Comparison of Home Ownership, NLC and AHS, Females**



**Figure 3. Comparison of Home Ownership, NLC and AHS, Males**

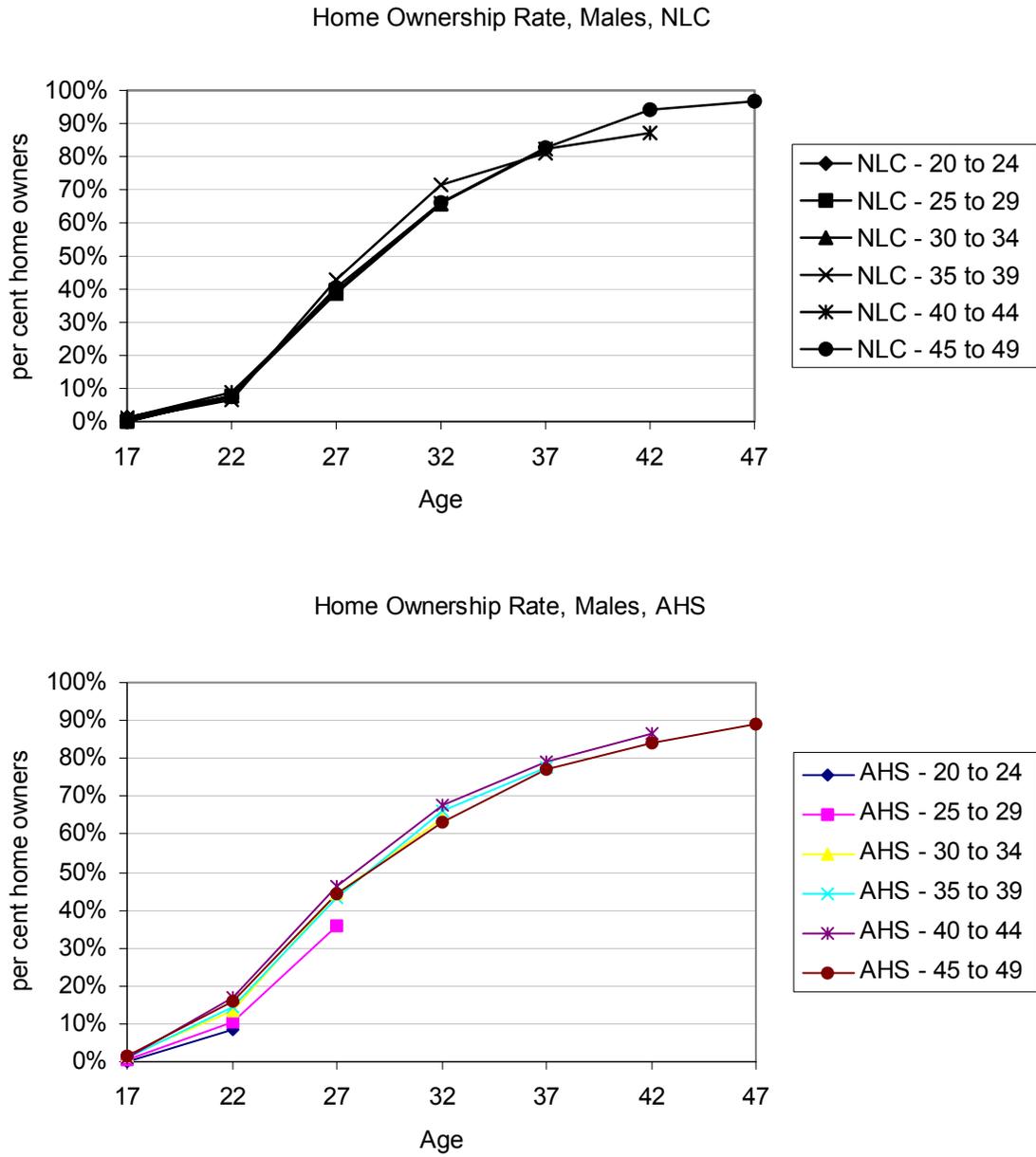


Figure 4. Transition Probabilities and Sample Counts

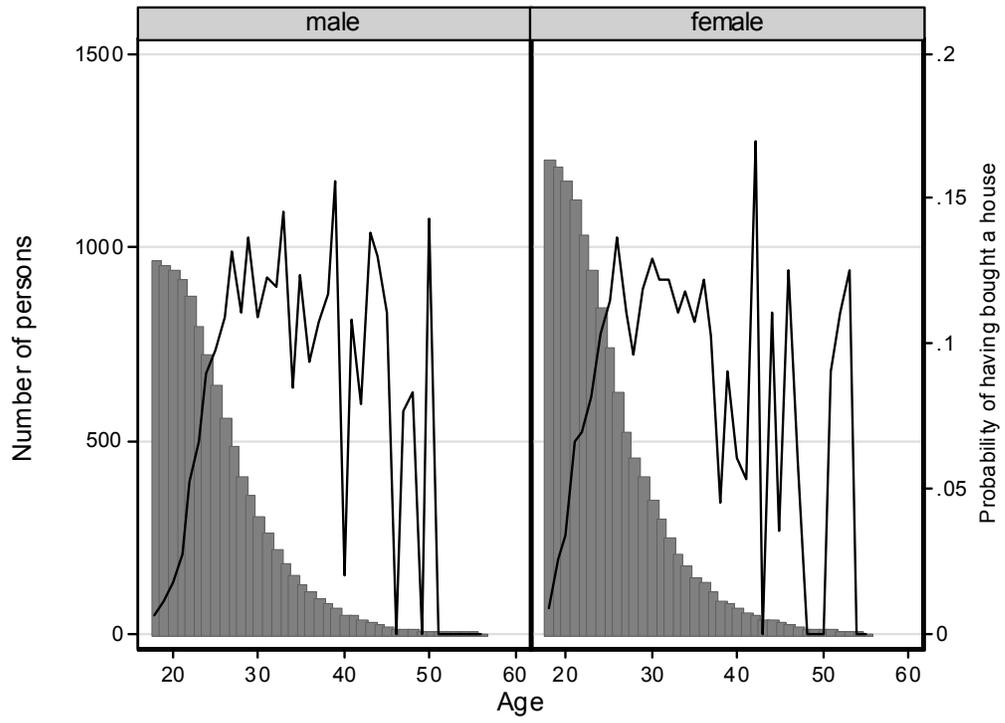
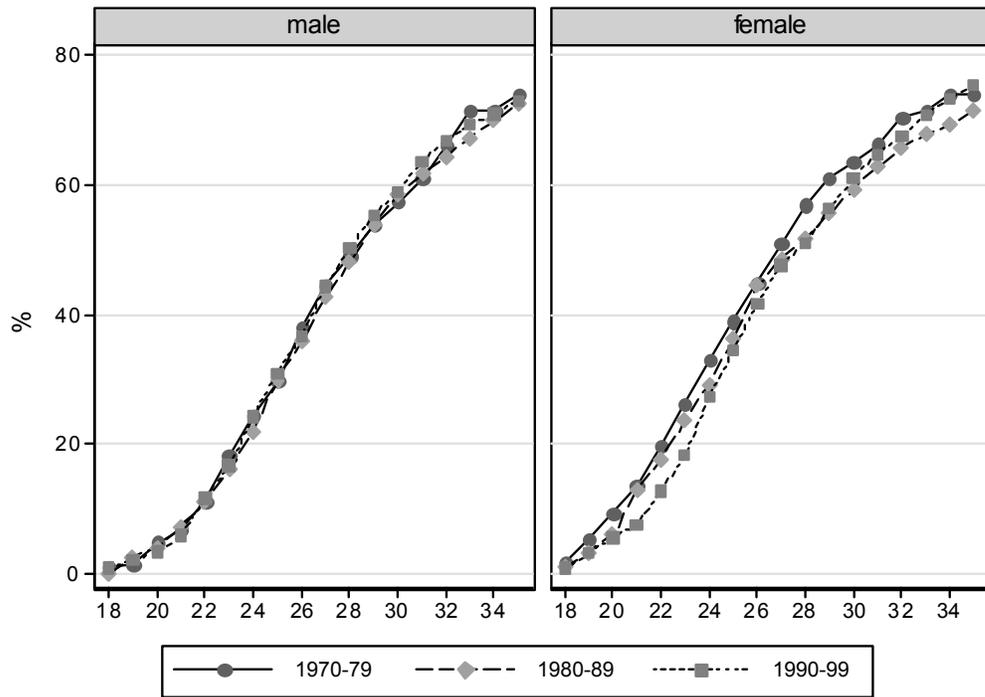


Figure 5 Cumulative Proportion of Males and Females Having Bought a House, Time Effects



**Figure 6. Cumulative Proportion of Males and Females Having Bought a House, Birth Cohort Effects**

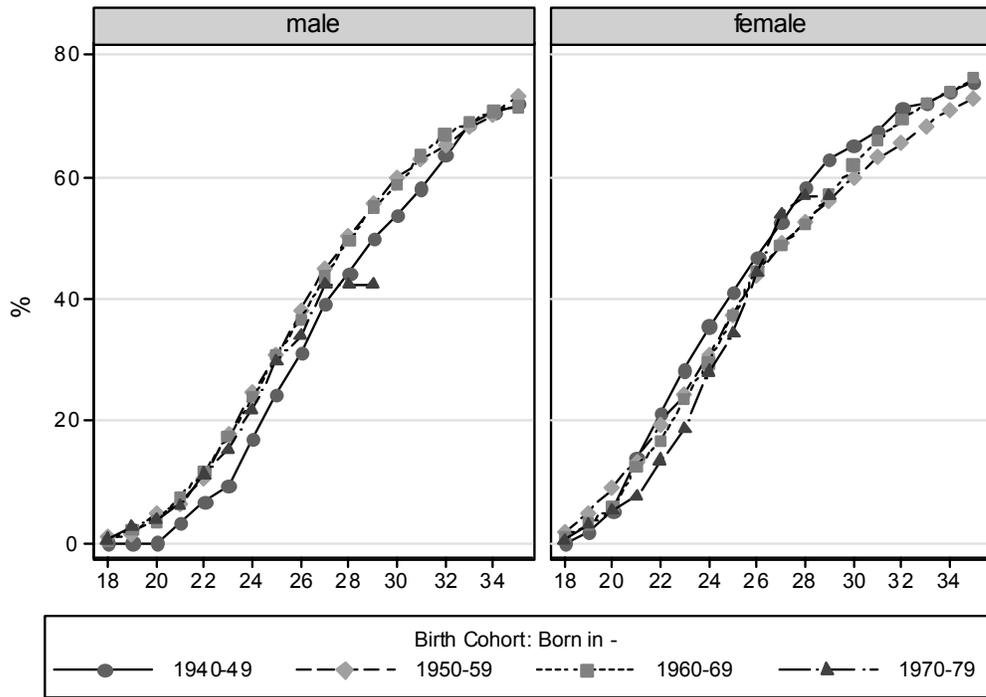
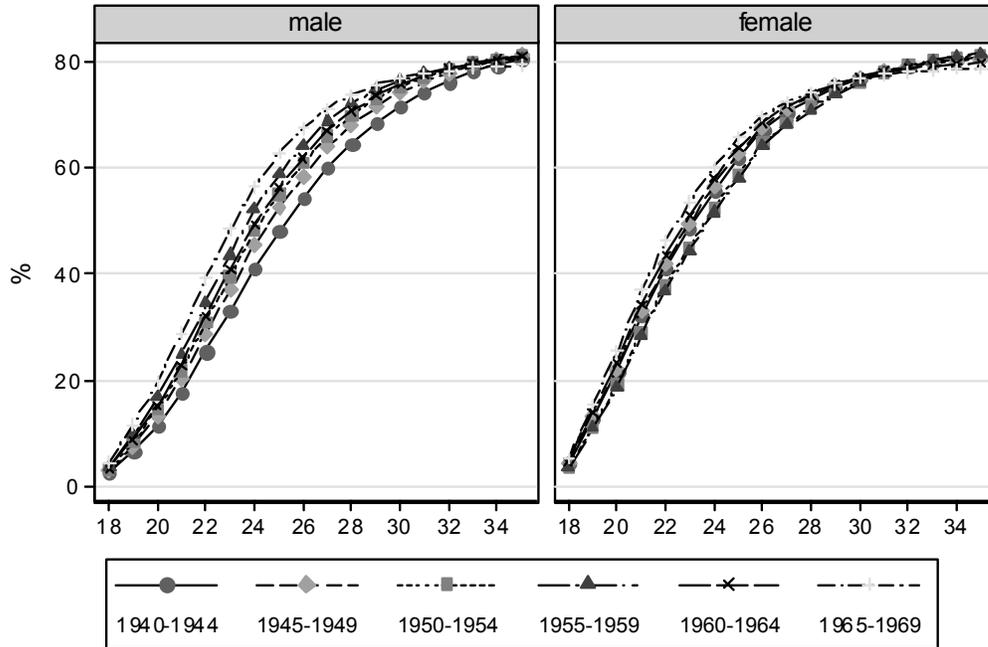


Table 1. Parameter Estimates and Odds Ratios, Male and Females, Home Purchase

Variable	Male		Female	
	coefficient	odds ratio	coefficient	odds ratio
<b>Birth cohort (born in - )</b>				
1940-44	reference			
1945-49	0.173	1.2	0.047	1.0
1950-54	0.278	1.3	-0.148	0.9
1955-59	0.452*	1.6	-0.179	0.8
1960-64	0.336	1.4	0.114	1.1
1965-69	0.656***	1.9	0.239	1.3
1970-74	0.804**	2.2	0.488*	1.6
<b>Marital status</b>				
single, not living with parents	reference			
single, living with parent/s	-0.588***	0.6	-0.726***	0.5
married	1.565***	4.8	1.436***	4.2
cohabiting	0.344*	1.4	0.134	1.1
<b>Number of children</b>				
none	reference			
1	-0.276	0.8	-0.396***	0.7
2	-0.434**	0.6	-0.655***	0.5
3 or more	-0.677**	0.5	-1.210***	0.3
<b>Country of birth</b>				
Australia	0.272*	1.3	0.306**	1.4
Other	reference			
<b>Work History</b>				
Has worked full-time	reference			
Has not worked full-time	-0.711***	0.5	-0.397**	0.7
<b>Highest qualification</b>				
no post-secondary	reference			
vocational	0.257*	1.3	0.269*	1.3
undergraduate or higher	0.334**	1.4	0.103	1.1
<b>Age dummies: refer to Appendix 2 for details</b>				
<b>Constant</b>	-5.492***	0.0	-4.793***	0.0
McFadden's R-square	0.144		0.113	
Wald chi-square	426		580	
Log-Likelihood Full Model	-1906		-2599	
N	8896		10741	
BIC	-339		-359	

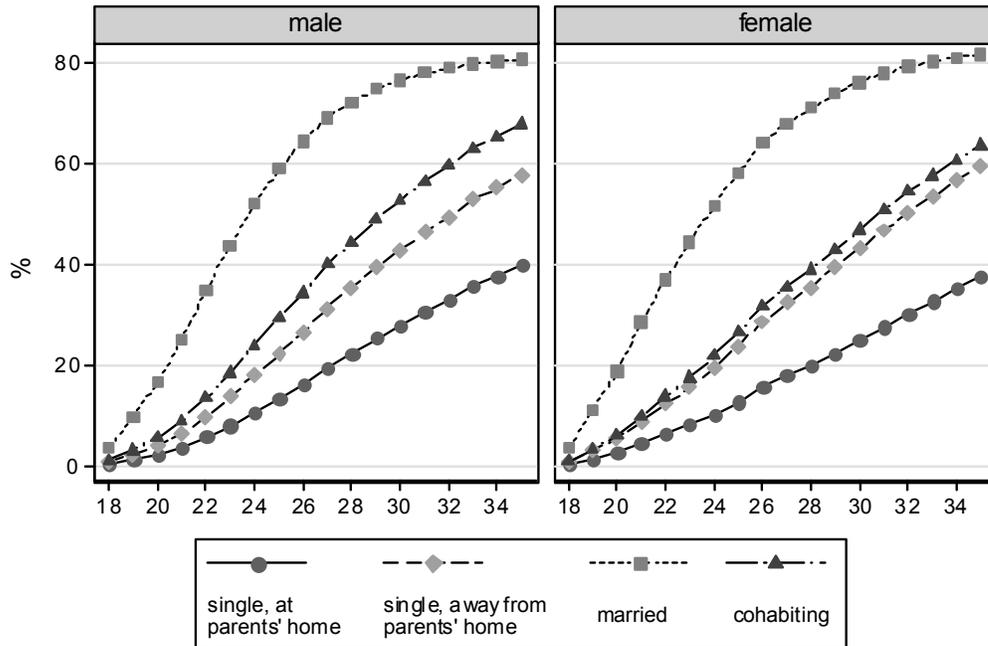
legend: \* p<0.05; \*\* p<0.01; \*\*\* p<0.001

Figure 7. Predicted Cumulative Home Purchase, Varying Birth Cohort



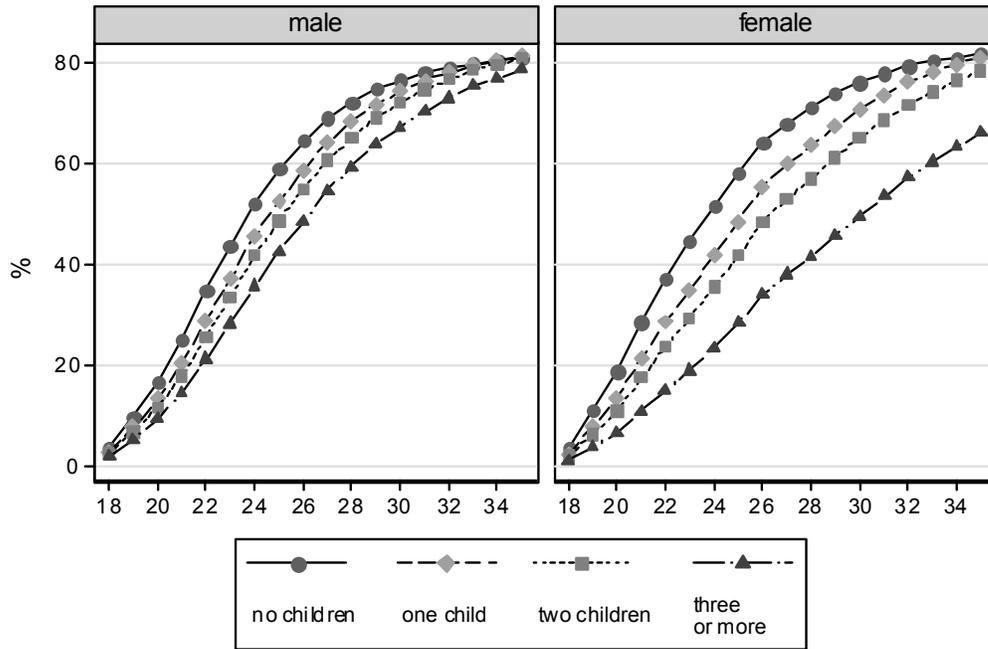
note: other variables set to married, no children, no post-secondary education, Australian-born, has worked full-time

**Figure 8. Predicted Cumulative Home Purchase, Varying Relationship Status**



note: other variables set to born in Australia in 1955-59, no children, no post-secondary education, has worked full-time

Figure 9. Predicted Cumulative Home Purchase, Varying Number of Children



note: other variables set to born in Australia in 1955-59, married, no post-secondary education, has worked full-time