

Becoming a Homeowner in Britain in the 1990s

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Non-technical Summary

Home ownership is an important asset, and is linked to ownership of other forms of wealth. First entry to home ownership is therefore an interesting indicator of likely lifetime circumstances. This paper uses data from the British Household Panel Study to examine the pattern of first entry into owner-occupation of young people in Great Britain in the 1990s. In particular we are interested in the degree to which social inequality has a bearing on the rate of entry, but also in patterns of age, sex, education, employment, family formation and spouse's characteristics.

We look at people who are observed for at least two consecutive years of the BHPS (1991–1998), who are under 24 when first observed, and who are not yet in owner occupation, and trace them forward to see if they become home owners. We find strong associations between the year-on-year rate of entry and a number of independent variables. Half of all entrants were living with their parents the year before, one third in private rental. Over half of all who marry in the year also become home owners, versus 11% of those beginning a cohabitation. The higher your education the more likely you are to enter. Employment (of the individual and of his/her spouse) raises the rate of entry, and similarly income is correlated with entry. Breaking the rate of entry down by social class (using the new Office of National Statistics Socio-Economic Classification) we see about 20% of young people in the higher professional and managerial category entering owner occupation per year, versus less than 5% of routine manual workers. In between these extremes there is a strong gradient, and on the margins of this classification the unemployed and full-time students have the lowest entry rates of under 2% per annum.

We model the joint effect of these variables by pooling all the year-on-year observations, and carrying out logistic regressions on whether owner-occupation is achieved in the second year. Under certain restrictions, this can be interpreted as modelling the hazard of first entry to owner-occupation. A model with only sex, age and social class reproduces the class gradient we see in our initial look at the data. When we add variables to this model, for instance, marital status, employment status, education, spouse characteristics, we see some 'unpacking' of the effect of social class. However, its effect is modified rather than explained away: one's chances of entering home ownership are strongly affected by socio-economic class, even when controlling for more direct effects such as family formation, education, income and employment status.

The effects of family formation are strong. If we include partnership status in the previous year and change in this status in the intervening period, we find those who marry are very likely to enter home ownership, with those beginning a cohabitation not far behind. However, having children already makes you *less*, not more likely to enter home ownership (having a first child in the intervening year has no significant effect).

There is also a strong age effect, with the rate of entry rising sharply

with age. Since our sample observes people only in the range 16–31, this is expected. If we had data on older people we might expect the rate to decline again.

We speculate that part of the strong class gradient and the negative effect of children, among other things, are explained by the competing attractions of social housing, which is also a stable and secure tenure. To investigate this we also model the rate of entry into social housing, and find that the life-cycle and family formation variables have largely the same effect as for entry to ownership, but that having children already, or having a first child in the intervening year, has a very strong positive effect. The social class pattern is also turned on its head, with the gradient in exactly the opposite direction: the unemployed have the highest rate of entry (but not students, whose low rate of entry to ownership has different causes).

We conclude that both social inequality and life-cycle considerations have very large effects on the timing of entry to home ownership, and that the effect of social inequality is patterned both by the objective advantages of better class positions, and by the institutionally mediated support for those in less advantaged positions.

Abstract

We model the hazard of first entry to owner occupation, using a subsample of the British Household Panel Study consisting of young adults not yet in owner occupation. Our interest is to assess the importance of social inequality, measured as socio-economic class using the new ONS-SEC, while taking account of the direct effects of age, household formation, education and labour market situation of the individual (and his/her spouse, where appropriate).

Socio-economic class has a very strong bivariate effect but this persists, with some modification, into the multivariate analysis. Higher professionals and managers have by far the highest rate of entry, with the unemployed and students having the lowest, even when controlling for income, education, employment status, age, gender and household formation, all of which have strong effects of their own. On a smaller sample we investigate some effects of class of origin, and of spouse's class, but with few significant effects.

Some features of this modelling lead us to speculate that access to social housing, as a competing destination, may be patterning entry to owner occupation. The class gradient may reflect as much the compensatory effects of state provision as market-related advantages. Also, the effect of children on entry to owner occupation is strongly negative. We investigate this by fitting parallel models on the rate of entry to social housing, and find that this seems to be the case: while the age and partnership effects are very similar, the class effect is reversed (except for students, whose low rate of entry to ownership is not associated with disadvantage) and the effect of children is strong and positive.

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1 Introduction

In this paper we study the first move into owner-occupation for British people making their housing decisions in the 1990s. Whether and when people become homeowners is important for a number of reasons. First, while there are movements out of owner-occupation, these are mainly transitional moves into private rental housing for short periods. For instance, among British people born in 1958, only about 3% who initially became homeowners subsequently moved into the other major tenure, social housing, by the age of 33 (Ermisch and Di Salvo, 1996). Thus, how much of their lives people will spend as homeowners is strongly associated with when they first purchase a home. Second, British homeowners have received relatively large, tax-exempt returns on their investment, thereby contributing directly to their wealth accumulation.

Third, home ownership is indicative of asset ownership more generally. Those who are owner-occupiers are much more likely to have other financial assets, particularly riskier investments, and they also have higher average levels of wealth (Banks and Tanner, 1999, Tables 5.2 and 5.5). For example, among those working age individuals who do not contribute to a private pension, 22% of those who are not homeowners own no financial assets compared with 4% of homeowners in this group. The non-homeowners in this group have mean financial wealth of £1,200 compared with £6,900 for homeowners. It appears that those who do not accumulate housing wealth do not compensate by accumulating more of other types of wealth.

Fourth, geographic mobility is affected by home ownership. While undoubtedly reflecting self-selection in part, the residential mobility rates of private tenants are 5 times those of owner-occupiers, and this may affect the ability of owner-occupiers to make labour market adjustments in response to job losses or better opportunities elsewhere. On the other hand, the mobility of homeowners beyond their local area is larger than that of social tenants.

2 Background

2.1 Housing policies and developments

Just before the First World War, only 10% of houses were occupied by their owners, and 90% were rented from private landlords. With the exception of subsidies to private sector building in the 1920s, housing policies since then have featured subsidies for new building in the public sector and rent controls in the private sector. The latter started in 1915, and their coverage and degree of restriction have varied since then. Slum clearance activity was an adjunct of subsidies for new building in the public sector, and it was particularly large in the 1930s and from 1956–75. Thus, the main thrust of explicit housing policy was to clear slums and to subsidize building of local authority housing, which could be let at rents that poorer people could afford. By 1960, 44% of houses were owner-occupied, 25% were rented from local authorities and 31% were rented from a private landlord.

At the same time that these housing policies were evolving, tax policies affected owner-occupiers' cost of housing. Tax relief on mortgage interest was not designed to encourage owner-occupation. It was a normal part of the income tax system in which all interest payments attracted tax relief. In 1969, however, personal income tax relief for interest paid was restricted to loans for certain purposes, the principal one being the purchase and improvement of property. This restriction was removed in 1972 and reinstated in 1974. This change made mortgage interest tax relief appear special. There was a gradual removal of mortgage interest tax relief during the 1990s. It disappeared completely in 2000.

There were two other fiscal policies that, while not an explicit part of housing policy, also affected owner-occupiers' cost of housing. Before 1963, owner-occupiers and landlords paid income tax on the basis of an assessed rental value (imputed rent) of their properties. In 1963, this taxation of owner-occupiers was repealed, and landlords were henceforth taxed on their rental incomes, net of allowances, rather than assessed values. Secondly, when capital gains tax was enacted in 1965, gains on a taxpayer's main residence were specifically exempted from tax. By the 1981 Census, nearly three-fifths of households owned their home, nearly 30% rented from local authorities and the remainder rented from private landlords.

During the 1980s there were important changes concerning policies toward local authority housing, taxation affecting housing and financial market policies (Ermisch, 1991). The 1980 Housing Act withdrew central government subsidy to local authority housing. While there was no compulsion to raise rents, there was a strong incentive for local authorities to do so and rents rose in real terms by 44% between 1980 and 1982. During the remainder of the 1980s, real rents rose by only another 16%, and indeed they fell relative to average earnings. Despite the rise in rents, local authority tenants still received considerable subsidy during the 1980s (Hills, 1991). In addition, the capital spending plans of local authorities became increasingly under the control of central government during the 1980s, and local authority house-building

fell dramatically, reaching the lowest levels observed in the post-war period.

Another provision of the 1980 Housing Act was the 'Right to Buy' granted to tenants of local authority housing. With various extensions during the 1980s, discounts ranged from 33% to 70% of the property's value. About 1.3 million public sector dwellings were sold under Right to Buy during the 1980s. It is generally agreed that it has been the better quality family dwellings that have been sold.

Britain has benefited from a well-developed housing finance market for a long time. Mortgages of 20–25 years have been available, and, as a consequence of policy changes affecting financial markets, mortgage rationing ended during the early 1980s. Mortgages with high loan-to-values ratios (95–100%) became common during the house price and consumption boom of the 1980s. Repossessions increased when house prices fell dramatically in the early 1990s, and many lenders were 'burnt' by these high percentage mortgages. The maximum mortgage has now fallen back to about 90% of house value.

There have been large fluctuations in the price of a house (and land prices) relative to annual disposable income per capita. The peaks have been as high as 10.5 and the troughs as low as 7.4. Expectations about future house price inflation or deflation are, therefore, an important influence on house purchase decisions, along with current income, interest rates and house prices.

By 1991, two-thirds of households were owner-occupiers, and 24% were 'social tenants'. These are primarily people who rent their dwelling from local authorities, but it also includes those who rent from housing associations (3% of persons), which are charitable organizations whose purpose is to provide cheap housing to target groups (e.g., the elderly or poor families). The remaining 9% were private tenants. Thus, the main alternative to owner-occupation is social rental housing, which is not allocated by price, but by administrative procedures, which result in limiting access and consumer choice. In terms of access, priority is usually given to families with children and the elderly. After entering social housing, households can remain in that sector even if their circumstances change.

Our analysis uses panel data from the British Household Panel Survey (BHPS) covering the period 1991–98. As is probably clear by now, owner-occupation is the ultimate destination for the vast majority of British people. For instance, if we consider persons aged 35–54 during 1991–98 (in the BHPS), 80% of them are owner-occupiers. Another 15% of these mature adults are social tenants.

While only 6% of people aged 35–54 are tenants of private landlords, it still plays an important role for younger people. Among those aged under 25 and not living with their parents (during 1991–98), 45% are private tenants¹. But even among this group, 35% are owner-occupiers. Suppose we assume that the age-specific annual movement rate between other housing tenures (treating living with parents as a

¹Di Salvo and Ermisch (1997) found that, among British people born in 1958, 42% had been a private tenant at least once before their 33rd birthday, and their median time as a private tenant was just over 2 years.

separate tenure category) and owner-occupation represents the first entry rate for people aged under 28. Then lifetable estimates suggest that the median age of becoming an owner-occupier is 25 for women and 27 for men.

2.2 Life course changes

About one-third of women born in the 1950s cohabited in their first partnership, but over 70% of first partnerships of women born since then are cohabiting unions. Over the same time, the median age at marriage increased from 22 for women (25 for men) from the 1956 birth cohort to 26 for women born in 1966 (more than 29 for men). It is the shift to cohabitation as the primary mode of first live-in partnership that is the primary contributor to this postponement of marriage, although partnership is also being postponed in young people's lives, particularly for more recent cohorts reaching adulthood (Ermisch and Francesconi, 2000). The median age at first partnership has risen to about 23 for women, and 25 for men. The increase in cohabitation is also responsible for the rise in the average age at motherhood, from 25 to 27 between the 1956 and 1966 cohorts.

Long term cohabiting unions are, however, rare. Cohabiting unions last only a short time before being converted into marriage or dissolving: their median length is about 2 years. About three in five cohabiting unions turn into marriage and 35% dissolve within 10 years. After a first cohabitation has dissolved, the median duration to the next cohabitation is 5 years (Ermisch and Francesconi, 2000).

Estimates using the BHPS indicate that just over half of women leave home by the age of 21 (Ermisch, 1999). The age at which half of men would have departed from their parents' home is about 22, and about 40% of young people move from their parental home to live with a partner. Comparison with estimates made by Ermisch and Di Salvo (1997) for the 1958 birth cohort suggests that while women's median leaving age has stayed about the same as that for the 1958 birth cohort, men's median leaving age has declined by about one year. There have also been major changes relative to the 1958 cohort in whom young people go to live with when they leave their parents. In the 1958 cohort, living with a partner was the destination for 60 per cent of the women and about 55 per cent of men, but the proportion leaving for this destination is now only about two-fifths (36% of men and 41% of women).

3 Data

Compared with retrospective data, panel data presents difficulties in analysing first entry into owner-occupation. There is an 'initial conditions' problem raised by the lack of information on housing histories and exogenous variables prior to the start of the panel (so called 'left censoring'). The data we have consists of eight waves of the BHPS, with information on household composition, tenure and a wealth of individual data at eight annual observation points between late 1991 and late 1998, approximately. In our case, the main form this problem takes is

that for any individual not in owner-occupation at any wave we do not know if he/she has been in owner-occupation before the start of the panel, and therefore whether s/he is in the risk set. We minimise this problem by restricting our working sample to individuals who are aged 24 or less the first time they appear in the data. This is not enough, as 11% of such individuals are already in owner-occupation when they are first observed, but it is a compromise between being more certain about having the proper risk set and losing too many observed entries.

While the panel data have this disadvantage, it also has advantages over retrospective data. They do not suffer from recall problems, and they include rich information on demographic, social and economic variables, which vary over time.

Housing tenure is a concept which attaches to the dwelling in which a household lives, and is therefore a household level concept. For our purposes it is not adequate to simply map this variable to individuals, as we are interested in the acquisition of the status of ownership, which is different from living in a house that is owned. In particular we do not wish to consider individuals living with their parents in their parents' house to be in owner-occupation, nor persons renting a room in an owned house (lodgers). To deal with this, we define a category of 'dependent residence': one or both of the individual's parents are in the household, or the individual's relationship to the 'reference' person is other than identity or spouse/partner. While this may be inaccurate as a general treatment (elderly parents may move in with a home-owner, or multi-generational households may exist where the younger generations are otherwise non-dependent) it is acceptable in this case where we wish to observe movement of young people into independent ownership. In our sample of individuals aged 24 or less at their first observation, 65% of them were living with their parents at first observation, and another 4.5% are otherwise dependent.

The restrictions discussed above reduce the sample considerably from the full BHPS sample of over 10,000 individuals. The further restriction that we need to observe individuals in at least two consecutive waves reduces numbers more. To summarise, individuals must be 24 or younger when first observed, his/her personal tenure must not be owner-occupation when first observed and he/she must be observed for at least two consecutive waves. This leaves us with 2376 individuals, and 8827 person-years.

Table 1A shows that the highest rates of entry to owner-occupation are among those who were in private rental housing in the previous year or who lived as part of another household other than one headed by a parent ('other dependent'). Despite the relatively low rate of entry among those living with parents, the strong representation of such persons in the risk set means that one-half of first moves into owner-occupation are directly from the parental home. This is not just a result of the yearly interval between interviews. In their analysis of first entry to either owner-occupation or social housing among the 1958 birth cohort using retrospective housing histories, Di Salvo and Ermisch (1997) found that 55% of these first entries to a major tenure coincided with a first move from the parental home. Thus, if we were to condition the

Table 1: Bivariate associations with entry to owner-occupation

Table 1A: Entries to owner-occupation by previous tenure			
Housing tenure in the previous year	Annual rate of entry %	Percentage of entries %	<i>N</i>
Social housing	4.1	8.8	1078
Private rental	11.1	33.7	1519
With parents	4.3	50.4	5922
'Other dependent'	11.7	7.2	308
All	5.7	100	8827

Table 1B: Entries to owner-occupation by partnership changes			
Partnership change during the year	Annual rate of entry %	Percentage of entries %	<i>N</i>
Marries	56.3	13.4	119
Cohabits	11.1	39.5	473
Partnership dissolves	4.6	1.4	154
Stays partnered	13.0	32.5	1254
Stays 'single'	1.1	15.5	6827
All	5.7	100	8827

Table 1C: Entries to owner-occupation by marital status in previous year			
Marital status in previous year	Annual rate of entry %	Percentage of entries %	<i>N</i>
Married	9.6	11.8	614
Cohabiting	14.0	22.1	794
Divorced	1.5	0.2	66
Separated	6.7	0.8	60
Never married	4.5	65.1	7293
All	5.7	100	8827

(continued ...)

Table 1 continued

Table 1D: Entries to owner-occupation by highest educational attainment			
Highest Educational Attainment previous year	Annual rate of entry %	Percentage of entries %	<i>N</i>
Above A-level	10.6	34.3	1561
A-level and Nursing	6.3	27.7	2129
O-level and below	3.8	38.0	4810
All	5.7	100	8500

Table 1E: Entries to owner-occupation by woman's employment, women only			
Employed in previous year	Annual rate of entry %	Percentage of entries %	<i>N</i>
No	2.5	22.2	2519
Yes	12.5	77.8	1795
All	6.7	100	4314

Table 1F: Entries to owner-occupation by employment status, partnered women			
Employed in previous year	Annual rate of entry %	Percentage of entries %	<i>N</i>
Woman not employed	4.7	23.0	487
Woman employed	21.0	77.0	366
Man not employed	2.2		269
Man employed	16.0		580
All	11.7	100	853

(continued ...)

Table 1 continued

Table 1G: Entries to owner-occupation by monthly pay of women and their partners, workers only			
Monthly pay in previous year	Enters owner-occupation in year (<i>N</i>)	Does not enter owner-occupation in year (<i>N</i>)	
Women, including those without a partner	£700 (230)	£426 (2163)	
Male partner	£991 (88)	£838 (457)	
Table 1H: Entries to owner-occupation by Social Class, partnered women			
Social class position in previous year	Annual rate of entry %	Percentage of entries %	<i>N</i>
Higher professional and managerial	19.3	12.7	327
Lower professional and managerial	12.9	14.9	572
Intermediate occupations	13.8	26.7	962
Small employers and self-employed	8.2	3.0	182
Supervisory and craft-related	8.4	10.2	604
Semi-routine manual occupations	5.4	13.9	1283
Routine manual occupations	4.8	4.4	455
Never worked and long-term unemployed	1.7	7.4	2153
Full-time students	1.6	6.8	2114
All	5.8	100.0	8652

analysis on persons who live independently of parents in the preceding year, we would miss half of the entries to home ownership.

Table 1B examines rates of entry to home ownership by changes in partnership status over the same time interval. These rates are very high for those marrying or entering a cohabiting union during the year. Despite the relatively small numbers forming partnerships during the year, they account for one-half of the first movements into home ownership. Thus, partnership formation often coincides with buying one's first home. Another third of these first home purchases are contributed by those who were already partnered (either cohabiting or married) in the previous year and remained so. If we only did the analysis for those who had a partner in the previous year, we would only account for 35% of the first entries to home ownership.

Looking at marital status in the previous year, Table 1C shows that those in cohabiting unions have the highest rate of entry to owner-occupation. While the entry rate is quite low for the never married, they contribute 65% of the observed entries because of their large representation in the population at risk. Many of these entries of course accompany movement into a partnership during the same year, as Table 1B suggested.

In Table 1D, we see that the chances of becoming an owner-occupier in any given year increase with educational level. Note, however, that some of these young people have not completed their education yet, and so this may understate the gradient with respect to final educational attainment, which is strongly related to lifetime income prospects. Tables 1E and 1F show that the rate of entry to owner-occupation is much higher if a woman or her partner have a job in the previous year, and Table 1G indicates that among those with jobs, the average monthly pay of women who become owners during the year is higher than those who do not. Among women with partners, the average monthly pay of their partners is also higher for those who become owner-occupiers.

Of particular interest in this paper is the influence of a person's social class position on the chances of becoming a homeowner. The class definition we use is the new UK Office for National Statistics Socio-Economic Classification, the NS-SEC (see, for instance, Rose and O'Reilly, 1998). This has recently been adopted for official purposes in the UK, and is strongly and explicitly influenced by the Goldthorpe class scheme. It assigns people to categories on the basis of their current or last occupation, with special treatment of the never-employed and long-term unemployed. It thus differs from a conventional class categorisation by giving special weight to certain aspects of employment status, in order to achieve an exhaustive classification, but the conceptual base is clearly class. We choose to use a nine-category version. Table 2 gives the person-year distribution in our sample.

From Table 1H it is clear that the entry rate to owner-occupation increases with social class position: one in five of the higher professional/managerial group enter owner-occupation in each year, while those effectively outside the labour market – the 'never worked', those unemployed for more than a year, and full-time students – have the lowest entry rate at less than one tenth of that. Over one-half of entries

Table 2: Class distribution (ONS-SEC) by sex, of the working sample (person-years)

Description	Men		Women		Total	
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
Higher professional and managerial	200	4.5	127	3.0	327	3.8
Lower professional and managerial	303	6.9	269	6.4	572	6.6
Intermediate occupations	305	6.9	657	15.5	962	11.1
Small employers and self-employed	144	3.3	38	0.9	182	2.1
Supervisory and craft-related	501	11.4	103	2.4	604	7.0
Semi-routine manual occupations	796	18.0	487	11.5	1283	14.8
Routine manual occupations	205	4.7	250	5.9	455	5.3
Never worked and long-term unemployed	929	21.0	1224	28.9	2153	24.9
Full-time students	1030	23.3	1084	25.6	2114	24.4
Total	4413	100.0	4239	100.0	8652	100.0

are contributed by the top three social class positions, but those from working class manual occupations still account for nearly 30% of the observed moves into owner-occupation.

4 Modelling becoming a homeowner

We model the odds of entering owner-occupation in a given year, conditional on ‘never’ having been in owner-occupation before. Because this is a household sample, it will often be the case that the spouse or partner of an individual in the sample is also in the sample. It will not *always* be the case because the spouse/partner may not be present for interview, or may be excluded from our sample on the grounds of being too old, of not being observed before, or of having been in owner-occupation before. Because of this we reduce our sample further, excluding person-years for married/cohabiting males. This is especially important when we include spouse characteristics in the model, but it makes for more difficult interpretation. We will focus on estimates based on this restricted sample, but we also report results from models fitted for the whole sample indiscriminately and for each of the sexes separately.

Time dependent covariates (such as marital status) are measured in the year previous to the observation, in order to preserve the possibility of causal interpretation. However, in some circumstances we include markers of change between $t - 1$ and t in recognition of the fact that annual observations are too infrequent to allow adequate observation of causal processes. For instance, if the event of marriage does ‘cause’ movement into owner-occupation, the period between the cause and the effect is likely to be much less than the year or so that our obser-

vational scheme demands.² If there is a causal relationship between the event of getting married and the outcome, then if we leave it out of the model (on the basis that we cannot distinguish it from a causal relationship in the opposite direction), then the estimates of the effect of marital status as a state will be biased. For example, if getting married makes you likely to move into owner-occupation 'soon', then the people we observe to be married in the risk set are likely to have missed this early move, and may have other features which make them less likely to buy; symmetrically the people who do move soon after marriage are more likely to have been observed as single.

The models estimated are discrete-time transition rate models. The resulting log-likelihood function is identical to that of a binary logit model (see Allison, 1982, pp.74–75). The transition rate to home ownership (conditional on never having been an owner-occupier at $t - 1$) for person j , p_{jt} , is assumed to take the form $\log[p_{jt}/(1 - p_{jt})] = \beta\mathbf{X}_{jt-1}$, where \mathbf{X}_{jt-1} is a vector of explanatory variables measured at $t - 1$ (or earlier), or as a change between $t - 1$ and t . It includes the person's age, which is the duration variable in this analysis, and β is a vector of parameters to be estimated. Some of the observations come from spells in progress at the beginning of the panel (1991). The contribution to the likelihood function of such observations must, therefore, condition on never having been an owner-occupier up to the time of the start of the panel. Jenkins (1995) shows that, due to 'cancelling of terms' in the conditional survivor probability, their likelihood contribution depends only on transition rates and data for years since the beginning of the panel, provided the total elapsed spell duration is an element of \mathbf{X}_{jt-1} .³ In this application, spell duration is the age of the person.

Note, however, that if there is unmeasured person-specific heterogeneity (e.g., preferences favouring owner-occupation), this convenient cancelling in the likelihood does not occur. In general, the distribution of the unobservable which shifts the transition rate differs between the persons whose spell was in progress in 1991 and those who start their spell during 1991–98. The model assumes that there is no residual heterogeneity.

The first set of models is reported in Table 3. The simplest model only contains the social class variable along with a person's age (and its square), sex and interactions between the two. The age and sex coefficients imply that the rate of entry to owner-occupation rises to a peak at age 24 for men without partners and 23 for women. At all ages below 28, women are more likely to become owners than unpartnered men. At any given age, full-time students, the two less-skilled manual worker classes and those outside the workforce are much less likely to become homeowners (e.g., the transition rate is about 85% lower for

²If the lag between cause and effect is d_l , and the timing of the causal event is uniformly randomly distributed, we will need observations with a period of $d_o < d_l$ in order to be sure of observing the cause preceding the event. More generally it is attractive to have continuous observation data, where the exact date of each transition is recorded (see Blossfeld and Rohwer, 1995).

³This convenient cancelling result does not carry over to analogous continuous-time transition models; see Lancaster (1990), Chapter 8.

Table 3: Modelling the hazard of entry to owner-occupation, waves 1–8 of the BHPS, all women and single men.

	Model 1		Model 2		Model 3		Model 4	
	β	p^a	β	p	β	p	β	p
<i>Intercept</i>	-27.92	0.000	-16.83	0.000	-17.02	0.000	11.76	0.208
<i>Sex (female)</i>	4.01	0.000	1.39	0.239	1.26	0.319		
<i>Age</i>								
– linear	1.95	0.000	1.20	0.000	1.19	0.000	-1.04	0.187
– squared	-0.04	0.000	-0.02	0.001	-0.02	0.001	0.02	0.167
– by female	-0.14	0.001	-0.04	0.405	-0.03	0.536		
<i>Social class (reference: higher professional/managerial)</i>								
– Lower prof/man	-0.28	0.205	-0.72	0.022	-0.62	0.062	-1.92	0.026
– Intermediate	-0.03	0.870	-0.55	0.044	-0.43	0.173	-0.92	0.211
– Small emplrs, own a/c	-0.56	0.126	-0.80	0.113	-0.30	0.619	-1.66	0.195
– Supervisory/craft rel	-0.27	0.238	-0.59	0.068	-0.62	0.075	-2.57	0.083
– Semi-routine	-0.79	0.000	-1.34	0.000	-1.11	0.001	-2.46	0.015
– Routine	-1.03	0.000	-1.62	0.000	-1.33	0.001	-1.53	0.116
– Never worked/LT UE	-1.98	0.000	-2.48	0.000	-1.78	0.000	-2.64	0.032
– Full-time students	-1.53	0.000	-2.02	0.000	-1.47	0.004	-2.27	0.115
<i>Change in class position (reference: 'downwards')</i>								
– static			0.95	0.000	0.78	0.001	0.30	0.635
– rising			1.09	0.000	0.79	0.007	0.73	0.376
<i>Marital status (reference: Married/cohabiting)</i>								
– single/div/wid/sep			-2.80	0.000	-2.74	0.000		
<i>Change in marital status (reference: no change)</i>								
– de-partners			-0.93	0.051	-0.80	0.098	-0.73	0.319
– marries			4.50	0.000	4.52	0.000		
– starts cohabitation			3.92	0.000	3.89	0.000		
<i>Any kids at t_{i-1}</i>			-1.20	0.000	-1.12	0.000	-0.81	0.123
<i>Acquire kids $t_{i-1} \rightarrow t_i$</i>			-0.29	0.286	-0.11	0.701	-0.22	0.767
<i>Educational level (reference: high)</i>								
– medium					0.33	0.058	0.68	0.156
– low					0.03	0.860	-0.39	0.411
<i>Employment status (reference: employed)</i>								
– Unemployed					-0.82	0.063	-0.52	0.682
– Other					-0.28	0.286	-0.11	0.866
<i>Own pay (£000/mth)</i>					0.47	0.136	0.14	0.844
<i>Spouse pay (£000/mth)</i>							0.50	0.208
<i>Spouse's class (reference: higher prof/man)</i>								
– Lower prof/man							0.09	0.899
– Intermediate							-1.42	0.042
– Small emplrs, own a/c							-2.02	0.025
– Supervisory/craft-rel							-0.50	0.527
– Semi-routine							-0.48	0.535
– Routine							-2.36	0.048
– Never worked/LT UE							-1.48	0.133
– Full-time students							0.59	0.548
<i>Father's class (reference: professional/managerial)</i>								
– intermediate							-1.00	0.081
– self-employed							0.54	0.279
– supervisors/craft							-0.27	0.641
– manual working class							-0.02	0.971
<i>N</i>	8111		8111		7840		528	
<i>df used</i>	12		20		25		33	
<i>Log-likelihood</i>	-1405.289		-938.626		-892.858		-137.867	

Note: (a) significance based on robust Huber/White sandwich standard errors.

the long-term unemployed and those who have never worked, the most extreme category). By way of illustration, according to this model, the median age at becoming a homeowner among women who were students until they were 22 and then went into higher professional and managerial occupations is about 24, and 81% become owners before their 29th birthday. In contrast, for women in routine manual occupations at all ages 16–28, the model predicts that only 56% become homeowners before their 29th birthday.

In light of the fact that women enter partnerships earlier than men and the strong association between partnership formation and first house purchase indicated in Table 1B, the sex differences in the age pattern of house purchase could mainly reflect the sex difference in partnership formation. Furthermore, people from working class occupations also tend to form partnerships earlier.

The second model is somewhat richer, bringing in marital status and whether children are present. It also allows for change between $t - 1$ and t in class position, marital status and the presence of children, on the grounds that the inter-panel period is too long to be confident that the state at $t - 1$ is necessarily the causally relevant one. The effect of being in a partnership at $t - 1$ is nonetheless clearly positive. When we consider change in marital status we find that partnership breakup has a strong negative effect, but that partnership formation (into either marriage or cohabitation) has a dramatic effect on raising the rate of transition into owner-occupation: people who form a partnership between $t - 1$ and t are far more likely to buy than those already married at $t - 1$. The rate for those marrying is higher than that for those beginning cohabitation, but both groups have very strong effects: partnership formation and house purchase are very closely associated.

We might have speculated that the effect of children would be positive, but this is not the case. Respondents with children at $t - 1$ have a 70% less chance of moving into owner-occupation. Were we to argue that this might be because the effect of children is largely an effect of the *arrival* of children we would also be mistaken: the arrival of a first child in the inter-panel period has no significant effect. *Post hoc* reasoning leads us to suggest that the association may work in the other direction: where home ownership is a desired condition for having a family the purchase tends to be made before the children are born, and therefore those who already have children while not in owner-occupation have characteristics which make them less likely to buy. A more direct effect may be that people with children have a higher chance of being allocated social housing, the main competitor to owner-occupation as a largely absorbing destination.

The logic of allowing for change in the class position is that an occupational change large enough to cross a class boundary is likely to have significant consequences for one's income stream, either negative in the short term (so people will postpone large decisions like house purchase) or positive. Given the age-range of our sample, positive moves are likely to involve either entry to the labour market, or the beginning of a 'career' job. If we allow for such changes (by the admittedly crude means of treating the class categories as a hierarchy and partitioning

the transitions into up, no-change and down) we find clear evidence of the former effect: dropping down the hierarchy reduces the rate of purchase by about 60%. However, there is little difference between those who remain stable and those who 'rise'.

The addition of this set of variables strongly moderates the effect of sex – we can speculate that this is related to the effect of marriage and the younger ages at which women marry. The effect of age is also reduced, but not dramatically. On the whole, the effect of class at $t - 1$ is increased, and now nearly all categories are significantly less likely to buy than higher professionals/managers.

The third model introduces variables which might be thought to relate to individuals' ability to make this sort of investment: education, employment status and current gross pay. Education shows a very weak effect: those with A-level type qualifications are more likely to buy than graduates are, and the parameter for those with lower levels is insignificant. This weak effect must be seen in the context of the age range of our sample (16 to 31, mean a little above 21); those with higher qualifications will have had relatively little time yet to convert them into labour market advantage. It can also be proposed that the extent to which education is a proxy for economic status will be overwhelmed by the effect of occupation inherent in the class variable.

Unemployment also has a weakly significant negative effect, relative to employment. This may be due to overlap with the long-term unemployed component of the class variable, and collinearity with own income, the effect of which is positive but insignificant.

On the grounds that the class variable must have its effect through factors like these, it is interesting to see to what extent class weakens in this model: it doesn't change very dramatically. Parameter estimates fall, noticeably so for the never-worked/long-term unemployed and students, but the overall pattern is little affected. The manual working classes and the groups outside the workforce are clearly less likely to buy, even taking these other factors into account.

The final model in Table 3 brings in information on spouse and class of origin (following the practice in the earlier models, men in partnerships – that is, all men – are excluded). Because spouse information requires the respondent be married or cohabiting, and that her partner is in the sample, and because information on class of origin is collected only in 1991 and 1998, we lose a very high proportion of our cases. As a result significance falls. However, having a spouse in an intermediate occupation, self-employment or routine manual work significantly reduces the rate of house purchase. Spouses' pay is not significant. Class of origin (based on a simplified version of the ONS SEC that uses occupation only) has one marginally significant effect: people of intermediate origins are less likely to buy than those from professional/managerial.

Table 4 re-fits this model for the whole partnered sample, and men and women separately, dropping the class of origin variable. In the whole-sample model we relatively few significant effects: however, partnership breakup, and having children at $t - 1$ have negative effects, and being employed has a positive effect. Pay also has positive parameters, for both own pay and spouse's. Perhaps surprisingly, respondent's own

class has no significant effect but spouse's class does, with negative effects for the self-employed, the routine manual working classes and the never-worked/long-term unemployed group.

We can expect that for partnered people there is an asymmetry in the effect of class and economic characteristics, to the extent that men have on average a better position. If this is true we would expect to see weaker spouse effects in the male sample (this may be complicated by the fact that we have fewer partnered males in the sample). In this model we have few significant effects: puzzlingly, being a student has a positive and rising in class position has a significant negative effect. Among the spouse effects, being partnered with someone who is self-employed has a negative effect, and spouse's pay has a positive effect, along with own pay. The former negative effect can be taken in the context that in this age-range self-employment is less likely to be associated with significant commercial assets, and more with precarity.

For partnered women we see a negative linear effect for age (overall the effect is still positive), and some significant negative effects for own class: lower professional/managerial, semi-routine, and never-worked/unemployed. Having children has a marginally significant negative effect, and spouse's class has negative effects for intermediate, and never-worked. Partner's pay has a positive effect.

Despite the fact that partnered people have a higher rate of house-purchase, these models are hampered by the fact that they represent a small subsample (aggravated by the loss of individuals whose spouse is not in the sample), and that the really strong effect of partnering is temporally local to the time of formation, and has thus decayed for most persons in this subsample.

4.1 Social housing as an alternative destination

Class effects on housing behaviour may be thought of in terms of differing economic advantage across class categories, and as mentioned above, house purchase seems to be strongly associated with other forms of asset accumulation. However, the institutional context must also be taken into account. The main competitor for owner-occupation as a long-term tenure is social housing, and here the factors affecting inflow are both administrative and in many respects the reverse of those affecting inflow to owner-occupation. Low income, poor occupational position, unemployment and the presence of children should all have positive effects here, and to some extent their negative effect on house purchase may be better understood as a positive effect on this competing destination.

To explore this we reconstructed the sample with social housing as the destination instead of owner-occupation, and re-fitted models 1 and 2 as in Table 3. The results are in Table 5. The sex and age effects are broadly similar to those for owner-occupation, but the class effects are, as expected, reversed. Practically all groups are significantly more likely than higher professionals and managers to move into social housing, with the never-worked/long-term unemployed and the less skilled manual classes way in the lead. Students have the lowest rate, after the reference category. The fuller specification of model 2 reduces the

Table 4: The effects of spouse characteristics

	All with partners		Men		Women	
	β	p^a	β	p	β	p
<i>Intercept</i>	3.39	0.583	-13.60	0.300	10.43	0.104
<i>Sex (female)</i>	1.30	0.471				
<i>Age</i>						
- linear	-0.40	0.420	0.95	0.375	-0.91	0.097
- squared	0.01	0.415	-0.02	0.376	0.02	0.115
- by female	-0.05	0.505				
<i>Social class (reference: higher professional/managerial)</i>						
- Lower prof/man	-0.55	0.246	0.15	0.814	-1.67	0.014
- Intermediate	0.11	0.797	0.38	0.587	-0.67	0.273
- Small emplrs. own a/c	-0.20	0.792	0.16	0.868	-0.55	0.662
- Supervisory/craft-rel	0.02	0.971	0.95	0.210	-1.28	0.220
- Semi-routine	-0.41	0.431	0.54	0.442	-1.54	0.050
- Routine	0.19	0.738	1.02	0.263	-0.87	0.261
- Never worked/LT UE	-0.11	0.875	1.57	0.156	-1.65	0.089
- Full-time students	0.21	0.799	2.21	0.075	-1.82	0.143
<i>Change in class position (reference: 'downwards')</i>						
- static	0.06	0.853	-0.45	0.388	0.54	0.248
- rising	-0.29	0.473	-1.43	0.042	0.52	0.364
<i>Change in marital status (reference: no change)</i>						
- de-partners	-1.33	0.011	-0.69	0.206		
<i>Any kids at t_{i-1}</i>	-0.51	0.062	-0.54	0.220	-0.62	0.110
<i>Acquire kids $t_{i-1} \rightarrow t_i$</i>	-0.37	0.401	-0.58	0.464	-0.28	0.618
<i>Educational level (reference: high)</i>						
- medium	0.30	0.280	-0.28	0.525	0.53	0.167
- low	-0.12	0.682	-0.02	0.961	-0.27	0.498
<i>Employment status (reference: employed)</i>						
- Unemployed	-1.33	0.050	-2.85	0.007	-0.11	0.894
- Other	-0.78	0.075	-1.89	0.119	-0.27	0.616
<i>Spouse's social class (reference: higher prof/man)</i>						
- Lower prof/man	-0.26	0.555	-0.14	0.831	-0.28	0.660
- Intermediate	-0.57	0.162	-0.33	0.584	-1.03	0.101
- Small emplrs. own a/c	-1.28	0.026	-1.36	0.064		
- Supervisory/craft-rel	-0.79	0.116	-0.66	0.572	-0.70	0.286
- Semi-routine	-0.73	0.111	-0.71	0.292	-0.73	0.267
- Routine	-1.19	0.054	-1.01	0.292	-1.36	0.113
- Never worked/LT UE	-1.53	0.017	-1.49	0.274	-1.49	0.075
- Full-time students	-0.22	0.746	0.14	0.906	-0.01	0.988
<i>Own pay (£000/mth)</i>	1.10	0.003	1.21	0.012	0.72	0.269
<i>Spouse's pay (£000/mth)</i>	0.68	0.016	1.31	0.065	0.61	0.065
<i>N</i>	1127		322		768	
<i>df used</i>	31		27		29	
<i>Log-likelihood</i>	-345.53		-121.63		-210.37	

Note: (a) significance based on robust Huber/White sandwich standard errors.

class effect but we still see the never-worked/long-term unemployed and the less skilled manual classes with strong positive effects. However, change in class position has no effect, unlike in the model for owner-occupation. Marital status has a similar effect: being in a partnership, and forming a partnership have large positive effects. In this respect social housing is like owner-occupation, in that it represents a stable long-term tenure. It is diametrically unlike owner occupation in the effect of children: having children at $t - 1$ or acquiring them by t increases transition into social housing very substantially. This is so large an effect that we can assume that much of the negative effect in the owner-occupation models is due to the positive effect for this competing destination.

Finally, though we see no effect for education we see a positive effect of unemployment. Thus unemployment is associated not only with the lack of financial resources to buy a house, but with improved access to social housing.

5 Conclusion

The 'market' for housing tenure has a number of elements, the most important of which are owner-occupation and social housing, as stable and attractive long-term tenures. The accessibility of these attractive tenures depends on economic resources, positively in the case of owner-occupation where assets and the prospect of a good income stream are important, and negatively for social housing where some objective disadvantages are administrative criteria for eligibility.

However, it is not simply a matter of a market for attractive tenure situations: individual and family life-cycle have a very important influence on the extent to which these stable tenures are important. Single persons, students and persons without children have different requirements and the flexibility of the shorter-term arrangements involved in private renting, or dependent residence, are more likely to outweigh the longer term advantages of stable tenures. Acquiring a partner, or in the case of social housing, a child, changes the requirements, and these factors are very strongly associated with increased rates of entry to the more stable tenures, and these effects are very strong close to the time of the life-course transition. With the data we have used we have some problems in drawing causal inferences, in that we are using information that is collected simultaneously with the observation of the outcome, but it is not clear that in the case of processes such as partnership formation and tenure transitions that continuous observation data would help substantially when the observed events (the completion of purchase, the wedding, for instance) are culminations of processes that have been operating over a longer period – a couple may buy a house because they are going to get married, or because they intend to have children.

References

- Allison, P. D. (1982) Discrete-time methods for the analysis of event histories, *Sociological Methodology*, 61–98.

Table 5: Modelling the hazard of entering social housing

	Model 1		Model 2	
	β	p^a	β	p
<i>Intercept</i>	-19.88	0.000	-11.82	0.000
<i>Sex (female)</i>	2.38	0.121	3.81	0.011
<i>Age</i>				
- linear	0.95	0.000	0.43	0.127
- squared	-0.01	0.892	-0.00	0.500
- by female	-0.01	0.004	-0.15	0.033
<i>Social Class (reference: higher professional/managerial)</i>				
- Lower prof/man	1.11	0.020	0.79	0.094
- Intermediate	1.15	0.023	0.84	0.097
- Small employers, own a/c	1.33	0.096	-0.26	0.771
- Supervisory/craft-related	1.76	0.001	0.65	0.214
- Semi-routine	2.32	0.000	1.33	0.005
- Routine	2.83	0.000	1.27	0.013
- Never worked/LT unemployed	3.53	0.000	1.60	0.001
- Full-time students	0.95	0.061	0.73	0.179
<i>Change in class position (reference: 'downwards')</i>				
- static			0.01	0.966
- rising			-0.19	0.452
<i>Marital status (reference: Married/cohabiting)</i>				
- single/div/wid/sep			-0.95	0.000
<i>Change in marital status (reference: no change)</i>				
- de-partners			-0.39	0.224
- marries			0.95	0.006
- starts cohabitation			1.16	0.000
<i>Any kids at t_{i-1}</i>			3.19	0.000
<i>Acquire kids $t_{i-1} \rightarrow t_i$</i>			2.01	0.000
<i>Educational level (reference: high)</i>				
- medium			-0.49	0.115
- low			0.31	0.222
<i>Employment status (reference: employed)</i>				
- Unemployed			0.92	0.000
- Other			0.16	0.483
<i>N</i>	8111		8111	
<i>df used</i>	12		20	
<i>Log-likelihood</i>	-1786.22		-1341.99	

Note: (a) significance based on robust Huber/White sandwich standard errors.

- Banks, J. and Tanner, S. (1999) Household saving in the UK, *Working paper*, The Institute for Fiscal Studies, London.
- Blossfeld, H.-P. and Rohwer, G. (1995) *Techniques of Event History Modelling*. Mahwah, New Jersey, Lawrence Erlbaum Associates.
- Di Salvo, P. and Ermisch, J. (1997) Analysis of the dynamics of housing tenure choice in Britain, *Journal of Urban Economics*, **42**, 1–17.
- Ermisch, J. (1991) Housing policy and resource allocation, *Oxford Review of Economic Policy*, **7**, 41–49.
- Ermisch, J. (1999) Prices, parents and young people's household formation, *Journal of Urban Economics*, **45**, 47–71.
- Ermisch, J. and Di Salvo, P. (1996) Surprises and housing tenure decisions in Great Britain, *Journal of Housing Economics*, **5**, 247–273.
- Ermisch, J. and Di Salvo, P. (1997) The economic determinants of young people's household formation, *Economica*, **64**, 627–644.
- Ermisch, J. and Francesconi, M. (2000) Cohabitation in Great Britain: Not for long, but here to stay, *Journal of the Royal Statistical Society, Series A*.
- Hills, J. (1991) *Unravelling Housing Finance: Subsidies, Benefits and Taxation*. Oxford, Oxford University Press.
- Jenkins, S. P. (1995) Easy estimation methods for discrete time duration models, *Oxford Bulletin of Economics and Statistics*, **57**, 129–138.
- Lancaster, T. (1990) *The Econometric Analysis of Transition Data*. Cambridge, Cambridge University Press.
- Rose, D. and O'Reilly, K. (1998) *The ESRC Review of Government Social Classifications*. London/Swindon, Economic and Social Research Council/UK Office for National Statistics.