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The life course and residential mobility in British housing markets

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Abstract. There is a substantial research literature on residential mobility in general, and the role of housing space in triggering moves in particular. The authors extend that research to mobility in British housing markets, using data from the British Household Panel Survey. They confirm the applicability of the general residential mobility model and also confirm the value both of pooled cross-sectional and of true longitudinal models of residential change. Age, tenure, and room stress (housing-space requirements) are found to be significant predictors of moving. In addition, the life course 'triggers' of marital-status change and, in some situations, birth of a child play important roles in moving within housing markets in the United Kingdom. The same model, with somewhat lower levels of fit, is also significant for the London region. Variables that measure the desire to move and neighborhood satisfaction also play a role in predicting local moves: those who like their neighborhood are generally less likely to move. The results offer support for the view that residential mobility is a demographically driven process which also reflects the connection with neighborhood contexts.

Introduction

By now a large and well-established body of research has documented the process of residential mobility, and the place that the search for more housing space plays in that process. We know how the search for more housing space is intertwined with life-course 'triggers', which in turn create the need for greater housing consumption. Specific triggers, such as a change in marital status or the birth of a child, are important life-course events, which are in turn translated into the acquisition of larger and often more expensive dwellings.

Residential moves are in general short-distance moves which do not disrupt general patterns of living, and are, with few exceptions, within a specific labor and housing market. Unlike interregional moves which are often prompted by a change in job, most residential moves are prompted by housing considerations, though there is evidence that jobs may change along with changes in residential location, even within relatively restricted labor and housing markets.

Previous studies of residential mobility have examined the process in the United States, Europe, and New Zealand and Australia. Because British housing markets have a higher proportion of public housing, are more similar to the Dutch context than that in the United States, and because the UK housing market underwent a major restructuring with the privatization of council housing, it is an interesting context within which to examine the applicability of the standard residential-mobility model. In addition, the data from the British Household Panel Survey make it possible to carry out a further test of the comparative value of pooled cross-sectional and longitudinal models of residential choice.

Background and context

An extensive literature has documented the relationship between household size and the space that the household 'consumes'. As households increase in size they require more space, and residential mobility is the process whereby households adjust household size to the housing stock. Research in the United States and Holland (Clark and Dieleman, 1996; Clark et al, 2000), Germany (Clark and Drever, 2001; Frick, 1996) and, to a lesser extent, in Britain (Boheim and Taylor, 1999), has shown that there is a direct link between the need for more space and household-relocation decisions.

Previous research can be broadly divided into studies which focus on the decision to move (Brown and Moore, 1970; Clark et al, 1984; 2000; Hanushek and Quigley, 1978; Murie, 1997), those which specifically examine tenure choice (Clark and Dieleman, 1996; Dynarski, 1985), and those which examine the interlinked nature of moving and tenure choice (Clark and Onaka, 1985; Henderson and Ioannides, 1987; 1989). The behavioral underpinnings of the models are the household's desire to come to a better matching between the household's space requirements and the space they occupy. The papers cited above and others along similar lines (Green et al, 1997) have established that younger households move more frequently than do older households, that the wealthier and better educated households are more mobile, and that the amount of housing consumed increases with age and household income. Specific analyses of the connection between moving and room stress—the rooms needed by a household to be in equilibrium housing consumption—show that moving is more likely if the household is in disequilibrium, and that mobility is also 'triggered' by marital-status change and the addition of children (Clark and Dieleman, 1996).

Research from the US Panel Study of Income Dynamics and the German Socio-Economic Panel has shown that, overall, housing quality has been increasing over time and that most households are enjoying more space and better quality housing than was true a decade ago (Clark and Drever, 2001; Clark et al, 2000). Interestingly, even though the gains are greater for the white population, there is evidence of significant gains for minority households in the USA and for foreign-born households in Germany as well. As expected, the studies of homeowners versus renters show that the gains for homeowners are significantly greater than the gains for renters in the United States, and that mobile households do much better than stayers.

The most recent research on residential mobility has been set within the context of the life course. The life-course paradigm emphasizes that changes in one dimension of the household-aging process are necessarily linked to changes in other dimensions (Clark and Dieleman, 1996). Thus, changes in household composition are closely linked to changes in occupational careers, and these in turn are translated into changes in housing tenure and housing consumption, so forming the 'housing career' (Champion and Fielding, 1992; Fielding, 1992). An important methodology for examining changes in the life course focuses on the events themselves, and measures the intervals between events. Event-history analysis uses event-history data (data on the change from one state to another—being an owner or being a renter, moving or staying), from which it is possible to construct or examine life courses (Allison, 1984).

Within research on the life course there has been a debate about the relative value of cross-sectional and longitudinal models to estimate the coefficients for the effect of room stress on mobility. Davies and Pickles (1985), using simulated data, argued that cross-sectional estimation procedures yielded biased coefficients for the size and direction of room stress. However, an empirical analysis which compared the coefficients from pooled cross-sectional and longitudinal models confirmed the usefulness of both modeling strategies (Clark, 1992). In this paper we provide another test of the usefulness of both estimation procedures.

British housing markets

The British housing market has a much larger proportion of its housing stock in social, or what is called 'public' housing in the United States, and in this sense is somewhere between the Scandinavian countries, where very large sections of the housing market are under the control of housing authorities, and the United States where there is very little public housing. Even though social housing is subsidized housing, it does not necessarily have the same connotation as public housing does in the United States.

Decisions by the Conservative British governments in the 1980s had important impacts on the housing market and its functioning. The proportion of the housing stock in private rental increased from 9.5% in 1989 to 10.3% in 1996 but, even more important, a substantial proportion of the council housing stock was made available for purchase by sitting tenants (Murie, 1997; Wilcox, 1997). The result was a reduction in the size of the social housing sector. The combination of the increasing tendency of better-off tenants to move out of council housing and the sale to sitting tenants of the council's more desirable properties in the Right to Buy program has created an increasing stigmatization of the council sector (Burrows, 1999; Forrest and Murie, 1988; Pawson and Bramley, 2000). Specific studies of residential moves in British housing markets which have paid particular attention to social (council) housing have suggested that selective mobility is turning council housing into a residualized section of the housing market (Pawson and Bramley, 2000). Jones and Murie (1999) suggested that there has been a hollowing out of council housing, with only the very young and older less affluent households left in the social housing stock.

The recent changes in the British housing market must be set within the implicit preference for homeownership documented by Clapham (1996) and Saunders (1990). The sale of council housing was an explicit policy favoring ownership, and recent governments have not moved to change the policy of encouraging ownership although Britain, unlike the United States, no longer has a policy of mortgage deduction from ordinary income in income tax assessment.[1]

Household formation and composition have also been changing in Britain in the decades leading up to the end of the 21st century. Green et al (1997) have documented the increase in the number of single-person households, and the fact that cohabitation and marriage are taking place at later ages than was true formerly.[2] Overall there is an increase in single-person households. These changes are in turn linked with changes in housing tenure, including a general shift away from renting property to owning, although for younger cohorts private renting is still the main tenure choice.

The increased emphasis on a strong private rental sector is a recognition of the importance of market forces in creating housing opportunities. Kemp and Keoghan (2001) point out that government housing policy now sees private rental housing as a source of flexible, mainly short-term, accommodation. In this sense, the private rental housing market is a transitional form of housing—a stepping stone to owner-occupation and social housing. In this sense too, it is more like the US housing market. Newly formed households will spend some time in the private rental sector while they accumulate capital and down-payment money to move up to the ownership sector, or become eligible for social housing. This function of the private rental sector fits with our notions of a housing career, or housing ladder, in which there is a 'hierarchy of tenures', a hierarchy through which households move as they transit through the life course (Kemp and Keoghan, 2001). The notion of the housing career, in which new households move into the private rental sector before they access the owner housing market, and

[1] The mortgage income deduction was removed in 1990 (Hamnett, 1999).

[2] The study by Green et al (1997) also includes detailed tables on residential mobility, tenure choice, and graphs of household formation and dissolution.

then in due course move up to larger and more expensive owner-occupation, is well accepted, though it is certainly not a simple or linear progression.

Indeed, Hamnett (1999) has emphasized the complexity of the housing market and that the sequences of change are more complicated than the simple notion of a ladder of success. Households which experience composition changes, especially divorce, often move back down the ladder, and many households with lower incomes cannot ever make the move from renting to owning. Nevertheless, the housing career is a useful working concept and, in association with the life course, provides a way of examining the changes in the housing market. Approaching moves in the housing market as consumption driven is quite different from the perspective that changes are created by an investment strategy of buying and selling to create housing wealth. This last perspective, suggested in the United States by Sternlieb and Hughes (1980) and in Britain by Saunders (1990) argues that many housing moves are created by the investment climate rather than by demographic changes. Hamnett (1999) provides some evidence from survey data which argues in favor of the demographic explanation for residential change. To the extent that a model of mobility incorporating demographic variables is a good fit to the British mobility data it is an argument in favor of the classic age and space-consumption explanations of mobility. At the same time, we can acknowledge that investment decisions may be playing a role *within* the basic demographic processes.[3]

Recent research on residential mobility in the private rental sector has also shown that the processes of mobility and tenure change are much more fluid than is suggested by the simple notion of a housing-career ladder. Many low-income households find themselves permanently 'stuck' in the private rental sector, often in low-quality housing. There is also a significant reverse flow of households who move from owner-occupation to the private rental sector, and a flow from social housing back to the private rental sector (Kemp and Keoghan, 2001). From the perspective of the present study, the research suggests that the British market seems to be in a transitional phase—a phase which will likely continue the process of making the housing market, and moves within it, more like that in the United States, Canada, and Australia. It is in this context of a more complex housing stock with social housing, private rental housing, and private ownership housing, increasingly subject to market forces, that it is important to know the extent to which models of mobility which emphasize household decisionmaking are relevant.

The British research literature has paid much more attention to the role of neighborhoods in general, including the interconnection with residential choice and household decisionmaking. In a review of the significance of neighborhood, Kearns and Parkinson (2001) argue that the type of neighborhood can be a source both of opportunity and of constraint (page 2106). It can foster belonging and attachment and, of course, by extension play a role in potential mobility. Neighborhoods can also be 'traps' which make upward mobility very difficult. The research by Brower (1996), Butler and Robson (2001), and Forrest and Kearns (2001) was designed to investigate the way in which neighborhoods shape life chances. Thus British research has directly confronted the context within which mobility occurs, and the research in this paper attempts to address the context as well as the individual decisionmaking processes.[4]

[3] It is not possible to construct a formal test of the housing consumption versus investment-driven decisionmaking.

[4] The Economic and Social Research Council has funded a Center for Neighborhood research: www.neighbourhoodcentre.org.uk

Questions and data

The focus in this research is on the level of space consumption and we use a standard model developed for the Panel Study of Income Dynamics (PSID) in the United States. For each household it is possible to calculate the required number of rooms—based on family size and composition—and compare that number with the number of rooms actually occupied. The difference can be identified as a measure of 'room stress' or space deficit. This measure can be traced over time, and by income, to reveal the extent to which the housing system is in balance with housing consumption. Where are the imbalances and which households are most affected?

In previous models of space consumption it has been found that age and family size are negatively related to mobility and gains in housing quality, whereas income and tenure change are positively related to increases in space. These will be the basic independent variables in the model for residential mobility in the British housing market. Tenure change is a critical part of the process of making housing gains, and has been the subject of substantial research by economists and demographers. In the context of the present study, tenure change will be used as an independent variable to assess the link between shifting from tenant to ownership status and the consequent gains in housing consumption.

Longitudinal research has made significant use of the data from the PSID. This rich data set has year-to-year data on a wide variety of housing and household measures, including data on income and family-change variables. The PSID has collected data since 1968 and there is now a thirty-year panel data set. The British Household Panel Sample (BHPS) was initiated in 1991 and is similar in structure and content to the PSID. There are substantial data on households, housing, and a variety of variables that measure aspects of consumer expenditures. The BHPS now comprises ten waves and it is possible to replicate the housing-consumption studies that have been prepared with the PSID. In addition, the BHPS has important geographic detail on local housing markets. In our analysis of residential mobility we use data on moves within 57 defined labor markets. To create these labor markets we aggregated the 279 local authority districts into 57, larger, labor-and-housing markets. Thus the London region is made up of 32 smaller local districts. The actual aggregation is listed in the appendix.

In our analysis we use measures of age, tenure, housing consumption, and variables which capture the composition of the household and changes in household structure and composition—changes in marital status, and births (table 1, over). Age is an essential predictor in models of residential mobility: younger households move more frequently than do older households, and as aging occurs the probability of moving declines. Tenure is a second critical differentiator in models of residential mobility: owners, with more locational capital, move less frequently than do renters. The cost of moving for homeowners is an additional constraint on moving.

The mismatch between a family's housing needs and the actual space they have available is also a mobility predictor. Part of the life course is household-composition change, and as additional family members are added the amount of space required increases. The room-stress variable, a measure of the space needed by the household, was created in a manner similar to that used in the PSID and used for the German Socio-Economic Panel (GSOEP) (Clark and Drever, 2001). The room-stress variable measures the difference between actual and required rooms. The required number of room is a measure of the minimum number of rooms a family should have in order to

Table 1. Definition of variables.

Variable	Definition
Age	Age of household head
Age^2	Square term of age
Tenure	Housing tenure: open vs. rent
Room stress	Mismatch between actual housing space and required housing space [(actual rooms/required rooms)−1]
Room stress^2	Square term of room stress
Birth	Birth of a child
Married	Marital status of household head: married versus otherwise
Family income	Family income in that year
Ethnicity	Ethnicity of household head: white versus other
Marital change	Change of marital status of household head: change versus no change
Neighborhood	Like neighborhood: yes or no
Prefer to move	Yes or no

avoid space stress.[5] The variable ranges from negative (underconsumption) to positive (overconsumption of space). The variable is created by dividing the actual number of rooms by the required number of rooms, and 1 is subtracted from the total. Following previous work, we also include measures of age squared and room-stress squared, as the interaction of age and mobility and housing consumption and mobility are hypothesized to be curvilinear. Thus, either too little or too much space can generate residential moves.

An extended model of mobility includes measures of marital status, as married households have lower probabilities of moving. Two 'trigger' variables, the birth of a child and marital-status change, are also included. Because higher income is likely to facilitate moving, family income is included; and ethnicity is included as a control variable. To investigate the significance of neighborhood, two variables—"like the neighborhood" and "prefer to move"—are included. The first of these was expected to be negatively related to mobility whereas a preference to move was expected to be positively related to mobility. This last variable is not truly a measure of neighborhood context alone as a variety of factors influence the preference for a move; yet it does reflect levels of satisfaction with current location and housing.

In our research we asked four questions: (1) are gains in housing space generated by residential shifts; (2) does the basic residential model produce similar results when estimated for moves in British housing markets; (3) are neighborhood measures significant predictors in the mobility process; and (4) can we conclude that the residential-mobility model process is driven by housing-consumption decisions rather than by investment strategy?

The model

The discrete time logit model is a standard approach to measuring the connection between moves and the values for age, room stress, and measures of income, marital

[5] Two rooms are allocated for each head of household with or without a spouse. Then, one room is added for each additional married couple or single person aged 18 or over; one room is added for every two boys under 18, and one room for every two girls under 18. If there is an odd number of children then the numbers are rounded up. If there is an odd number of girls and an odd number of boys, then those under 10 years of age are paired regardless of sex (see Clark, 1992, page 1297). We recognize that there are cultural differences in the way in which households apportion space/bedrooms to children but the general structure used in the PSID (and in GSOEP) appears to reflect actual practice, and we believe is appropriate for British households.

status, the changes in marital status, and the birth of children. The logit, or log odds, is the ratio of two probabilities for any two mutually exclusive states. For a given probability of an event, P, the odds are defined as $P/(1-P)$. The logit is derived by using the natural base of the logs: thus $\ln[P/(1-P)]$. In the discrete time logit model the assumption is that, for any person in the population the odds of the event occurring (the hazard) at each discrete time $t_i (i = 1, 2, ...)$ is proportional to the odds of the event occurring for some specific individuals who represent a set of baseline states of covariates, such that:

$$\frac{\lambda(t_i; \boldsymbol{X})}{1-\lambda(t_i; \boldsymbol{X})} = \frac{\lambda_0(t_i)}{1-\lambda_0(t_i)} \exp\left(\sum_k b_k X_k\right), \tag{1}$$

where $\lambda(t_i; \boldsymbol{X})$ is the conditional probability of having an event at time t_i for a given covariate vector $\boldsymbol{X} = (X_1, ..., X_k)$, and the b_k $(k = 1, ..., K)$ are parameters. The baseline hazard function $\lambda_0(t_i)$ is characterized by conditional probabilities for cases in which the covariant vector $\boldsymbol{X} = \boldsymbol{0}$. The implication of this is that the odds of an event occurring at each discrete point in time are higher by the exponential power of $\sum_k b_k \boldsymbol{X}_k$ for the subjects which are characterized by covariates $\boldsymbol{X}$ in comparison with subjects in the baseline group. With increasingly fine measurements of time, the ratio of the two odds approaches the ratio of the two rates $[\lambda(t_i; \boldsymbol{X})/\lambda_0(t_i)]$ and the result is a continuous-time proportional-hazards model. In the situation where the conditional probabilities are sufficiently small, the logit model provides an approximation to the continuous-time hazards model. As a logistic regression, the relationship in equation (1) becomes

$$\ln\frac{\lambda(t_i; \boldsymbol{X})}{1-\lambda(t_i; \boldsymbol{X})} = a_i + \left(\sum_k b_k X_k\right), \qquad a_i = \ln\frac{\lambda_0(t_i)}{1-\lambda_0(t_i)}, \tag{2}$$

where a_i is the log odds for the baseline group, and the parameters can be estimated with a logistic regression.

Mobility rates and housing consumption in British housing markets

Mobility rates in Britain, as in Europe in general, are significantly lower than those in the United States. Intraurban migration rates are currently about 10% a year, an increase from about 7% or 8% per year a decade ago (figure 1). Interregional rates have not changed very much, and are about 2.7% a year for the past decade.

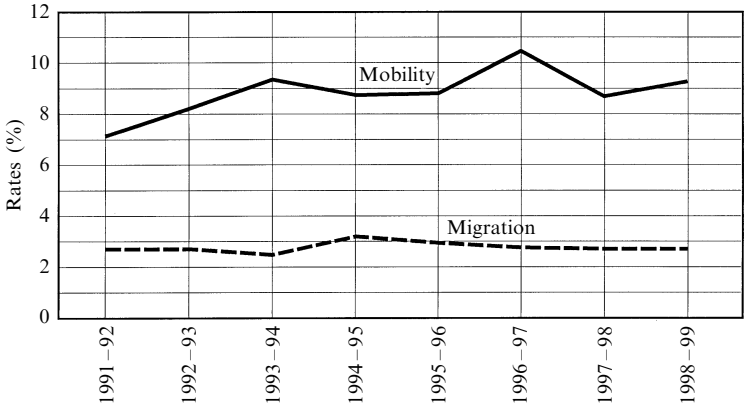

Figure 1. Mobility and interregional migration rates 1991–92 to 1998–99.

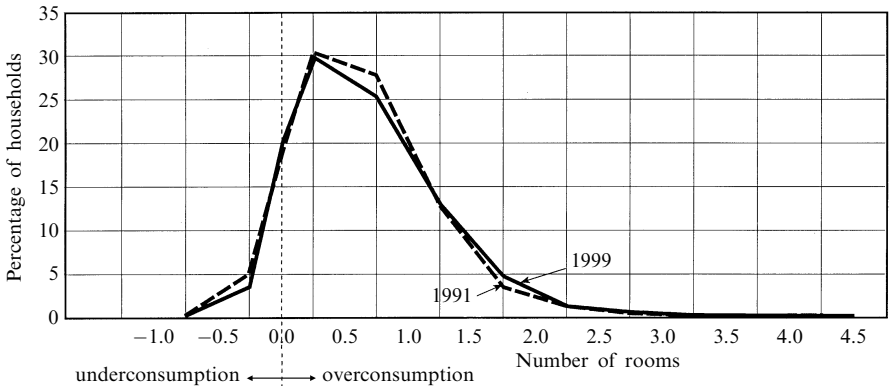

Figure 2. Distribution of overconsumption and underconsumption of housing space (actual – required rooms) in British housing markets in 1991 and 1999.

Most households in Britain are in equilibrium or are consuming more housing than they require according to the measure of room stress (figure 2). However, less than 20% of all households consume more than one additional room more than they need.[6] The distribution of consumption has not changed over the past decade.

The changes in levels of consumption are consistent with our theoretical expectations—increases in space with mobility. On average, the rooms per person measure increases with mobility from 1.7 to 1.9. If we think of three age groups of households—head of household aged 19 – 29, household forming; head aged 30 – 49, household expanding; and head age 50+, household contracting—we would expect space gains with mobility in the first two, and decreases in the last group, which is what we do in fact find (figure 3). The average number of rooms per person increases for the first two age groups for all housing markets and also for London specifically [figure 3(a)]. The older group, who may have made space gains from a household member leaving, decrease their space when they move.

Greater details on the effects of mobility are given in figure 3(b). Here we see that single-person households tend to lose space when they move, but of course they are consuming much more space per person than do larger households, and the small losses are probably not consequential. Two-person and three-person households show space gains across the age groups up to age 50. Three-person households over aged 50 also gain space, though here the average gains are negligible.

Further detail on the nature of housing change and mobility is reflected in an analysis of housing-space changes with tenure change (table 2). We can conceptualize the process of the housing career as first involving rent-to-rent changes, at a second stage rent-to-own shifts, followed by further changes in ownership (own-to-own), and finally own-to-rent, or down-market shifts. Initial changes within rental do not yield gains in housing space, although moves from rental to ownership and moves within ownership do increase the room space. Interestingly, the own-to-rent shifts do not yield space losses per person. Although it is not obvious why the rooms per person should increase with this transition, at least some of these moves are likely to involve household-composition change.

Overall, the results are consistent with our expectations that local moves by households are driven by gains in consumption in the housing market. The categorization by age provides additional information on the nature of consumption and the extent of the gains.

[6] Overconsumption is about the same as in Germany, but is much less than the levels of overconsumption by households in the United States (Clark et al, 2000).

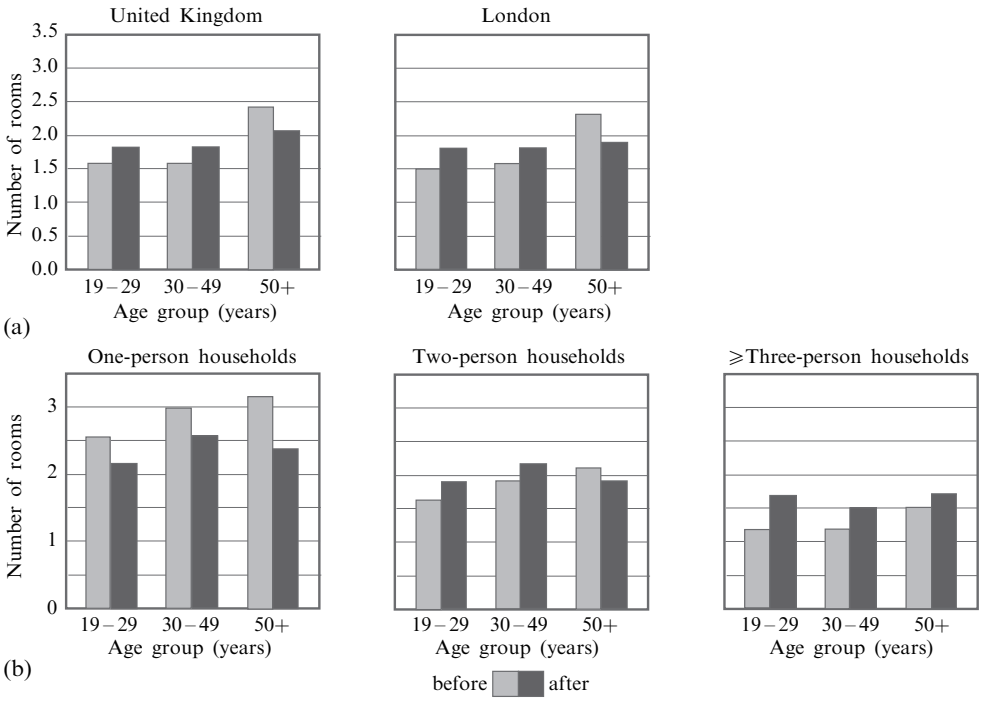

Figure 3. Housing consumption (rooms per person) by age of household head before and after a move (a) for the whole of the United Kingdom, and for Greater London, and (b) for different household sizes.

Table 2. Change in housing consumption (mean rooms per person) by change in tenure.

Tenure change	United Kingdom		London	
	before move	after move	before move	after move
Rent to rent	1.6	1.6	1.4	1.5
Rent to own	1.7	1.9	1.6	1.9
Own to own	1.9	2.1	1.8	2.2
Own to rent	1.7	1.9	1.7	1.9

Analysis and outcomes

Following the arguments outlined in the introduction and in the section on modeling residential mobility, the model was fitted both to pooled cross-sectional and to longitudinal data. The creation of both pooled cross-sectional and longitudinal estimates establishes the generalizability of the results and provides additional nuances on residential mobility. We also, following earlier work, analyzed households with the same head as well as all households in total.

The estimates from the pooled cross-sectional (table 3, over) and longitudinal (table 4, over) models are consistent with previous models of mobility and are consistent with our hypotheses of decreases in mobility with age and ownership, and with positive room stress. The variables are significant and the model overall has a respectable rescaled R^2. The results are presented for all households and for same-head households, but our discussion will focus primarily on all households as the results are not fundamentally different. The correctly predicted case numbers are 77.9% for

Table 3. Estimates from a pooled cross-sectional model of residential mobility for all households and for households with the same head.

	All households		Same-head households	
Intercept	2.442***	2.753***	1.311***	1.393***
Age	−0.164***	−0.185***	−0.139***	−0.149***
Age^2	0.001***	0.001***	0.001***	0.001***
Room stress	−0.323***	−0.244***	−0.226***	−0.190**
Room stress^2	0.052**	0.039**	0.042**	0.043**
Tenure (own = 1)	−0.342***	−0.343***	−0.507***	−0.497***
Birth		−0.012		0.030
Married		−0.266***		−0.092**
Family income		1.6×10^{-5}		9.8×10^{-6}
Ethnicity (white = 1)		0.181***		0.178**
Marital change		0.589***		0.326***
Prefer to move		0.450***		0.486***
Like the neighborhood		−0.116***		−0.087**
Rescaled R^2	0.204	0.282	0.144	0.188
Percentage concordant	77.9	82.5	73.8	78.7
γ	0.572	0.661	0.502	0.591

*** significant at 0.0001; ** significant at 0.05.

Table 4. Estimates from a longitudinal discrete time logit model for all households and for households with the same head.

	All households		Same-head households	
Intercept	0.618***	1.501***	1.985***	1.864***
Age	−0.094***	−0.143***	−0.160***	−0.164***
Age^2	0.001***	0.001***	0.001***	0.001***
Room stress	−0.409***	−0.248**	−0.440***	−0.338**
Room stress^2	0.097**	0.078**	0.099**	0.095**
Tenure (own = 1)	−0.309***	−0.300***	−0.335***	−0.335***
Birth		0.158**		0.151**
Married		−0.189***		−0.093**
Family income		1.3×10^{-5}		1.4×10^{-5}***
Ethnicity (white = 1)		0.161**		0.124
Marital change		0.194**		0.261**
Prefer to move		0.497***		0.577***
Like the neighborhood		−0.060		−0.169**
Rescaled R^2	0.125	0.186	0.092	0.142
Percentage concordant	73.5	78.5	69.6	76.1
γ	0.488	0.582	0.420	0.542

*** significant at 0.0001; ** significant at 0.05.

the basic pooled model and 82.5% for the full model including family-composition change, ethnicity, and neighborhood measures. In the longitudinal model the results are nearly the same, though room stress is a more powerful predictor in the longitudinal model and tenure is less strong here. In addition, although it has the correct sign, the neighborhood variable is not significant for all households.

It is important that the pooled cross-sectional and longitudinal basic models are not structurally very different and this provides additional support for the work that has shown the consistency between the results from cross-sectional and longitudinal analyses. Age and room stress are significant, as are the quadratic terms. Room

stress and room-stress squared have larger coefficients in the time-dependent models, suggesting that their role is more accurately captured in the time-dependent structures. However, the overall fit of the model is lower for the longitudinal formation. That 'birth' is significant in the longitudinal models and not in the pooled cross-sectional models hints at the greater complexity captured by the longitudinal models, and at the fact that trigger effects may not always be captured in a pooled cross-sectional model.

The full models with additional variables are also significant. In each case the overall predictions from the model are increased by about 5%. Although the increase in explanation is small, it is important to note that the trigger variables—change in marital status, and, in the longitudinal model, birth of a child—are significant. Income is significant both in the pooled cross-sectional and in the longitudinal models. It is in the measures of change that the longitudinal model may be more able to capture the nuances of time-dependent changes and their impacts on residential relocation. Ethnicity is significant: white households are more likely to move. The neighborhood variable is of the right sign and significant in the pooled cross-sectional model.

Additional information on the role of neighborhood is contained in a table showing reasons for preferring to move (table 5). Although housing is important, as expected, the proportion of the respondents who cite 'neighborhood' as a possible reason for moving is a powerful reminder of the context of mobility. Clearly age and space needs are deciding reasons, but at the margins households are acutely aware of their local contexts.

Table 5. Possible reasons why households prefer to move: all households and households with the same head.

	United Kingdom		London	
	all households	same-head households	all households	same-head households
Housing (%)	38.00	37.55	32.41	32.07
Neighborhood (%)	44.87	45.35	51.89	52.87
Personal (%)	9.71	9.70	9.27	9.05
Employment (%)	1.86	1.77	1.12	0.95
Other (%)	5.55	5.63	5.31	5.06
Total *N*	14175	12402	1694	1481

The same models were estimated for moves within the London region. The London housing market is known for its significantly higher prices and large numbers of single and foreign-born residents. The fit of the model and the relative contribution of the independent variables are of interest for their ability to predict change in this specialized market (tables 6 and 7, over).

There are some notable differences in the London results, although the basic pooled cross-sectional model for all households is similar to that for the United Kingdom as a whole. Although room stress is significant for all households, room-stress squared is not: households with excess space do not adjust to equilibrium. For same-head households in London, the room-stress measures are not significant, but the tenure effect is much more powerful. One plausible interpretation is that ownership is a surrogate for space, and space-consumption effects are captured by the shift to ownership.

The longitudinal model for London is very similar to the pooled cross-sectional model, again confirming the validity of both methods. Room stress is significant for

Table 6. Estimates from a pooled cross-sectional model of residential mobility, for all households and for households with the same head, in London.

	All households		Same-head households	
Intercept	2.506***	2.838***	1.960***	2.065***
Age	−0.167***	−0.197***	−0.166***	−0.183***
Age^2	0.001**	0.002***	0.001***	0.001***
Room stress	−0.394**	−0.423**	−0.198	−0.304
Room stress^2	0.020	0.031	0.002	0.026
Tenure (own = 1)	−0.250***	−0.266***	−0.429***	−0.456***
Birth		0.098		0.117
Married		−0.213**		−0.038
Family income		1.4×10^{-5}		1.1×10^{-5}
Ethnicity (white = 1)		0.184*		0.235*
Marital change		0.521***		0.326**
Prefer to move		0.468***		0.472***
Like the neighborhood		0.063		0.009
Rescaled R^2	0.220	0.292	0.178	0.231
Percentage concordant	79.9	83.5	77.6	81.5
γ	0.611	0.679	0.573	0.643

*** significant at 0.0001; ** significant at 0.05; * significant at 0.1.

Table 7. Estimates from a longitudinal discrete time logit model, for all households and for households with the same head, in London.

	All households		Same-head households	
Intercept	1.541**	2.042**	3.651**	3.380**
Age	−0.125***	−0.164***	−0.216***	−0.227***
Age^2	0.001**	0.001***	0.002***	0.002***
Room stress	−0.647**	−0.585*	−0.708	−0.599
Room stress^2	0.012	0.037	0.080	0.078
Tenure (own = 1)	−0.372***	−0.409***	−0.317**	−0.357**
Birth		0.270*		0.192
Married		−0.246**		−0.066
Family income		1.2×10^{-5}		9.3×10^{-6}
Ethnicity (white = 1)		0.375**		0.254
Marital change		0.346**		−0.097
Prefer to move		0.492***		0.402**
Like the neighborhood		0.240*		−0.026
Rescaled R^2	0.200	0.262	0.191	0.229
Percentage concordant	79.7	82.1	78.7	88.1
γ	0.607	0.652	0.593	0.638

*** significant at 0.0001; ** significant at 0.05; * significant at 0.1.

all households but not for same-head households, whereas room-stress squared is not significant in either model. Surprisingly, birth of a child does not serve as a trigger for a move as it does in the national longitudinal model, and marital-status change is significant only for the all-households model, but not for same-head households. In an expensive and tight housing market such as that in London, the desire to move, as indicated by room stress and changes in household composition, may be difficult to fulfill. In contrast, socioeconomic indicators such as family income and age of household head, indicative of the ability to move, are significant in all models.

Summary and observations

There is now a large body of literature on mobility in general and on the need for space and the way in which changes in life cycle trigger moves in particular. In this paper we have extended the research to the United Kingdom, utilizing data from the British Household Panel Survey (1991 – 99), and we find results similar to those for the United States and Germany. Whereas the average housing consumption has not changed much during the 1990s, households do in general gain space after a residential move, except for older households (with heads aged $\geqslant 50$ years) and single-person households. To evaluate the relative roles of different factors on mobility and the implications of different modeling strategies, we estimated both a pooled cross-sectional and a longitudinal discrete time logistic regression for all households and for same-head households, and for the nation as a whole and for the London area.

For the nation as a whole, room stress is a significant predictor of moving. Households with underconsumption of housing are more likely to move, and those with excess housing are also more likely to move—probably to reduce housing consumption. As expected, homeownership discourages mobility. Second, life cycle and changes in household composition are important determinants of mobility. Older, better-off, and married people, and households with a birth or martial-status change are more likely to move. Interestingly, the triggering effect of birth is captured only in the longitudinal model but not in the pooled cross-sectional model. Although both methods provide similar results, the longitudinal method thus seems better able to capture complicated housing decisions.

The models for London share similarities and also reveal differences between the London housing market and the rest of the country. On the one hand, age, family income, and housing tenure have similar effects on mobility as in the national models. On the other hand, room stress is significant only for all households, not for same-head households; and room-stress squared is not significant in either model. Given the high prices and tight housing market in London, fewer households are likely to consume excess housing and, if they do, they are probably unlikely to move to reduce their housing consumption. In addition, a birth does not trigger a move. Although the dynamics underlying preference to move are more or less the same across housing markets, local contextual effects are thus important in determining the observed mobility.

The results of this research lend credibility to the general argument that demographic changes underlie much of the logic of residential mobility. Although it is not a direct test of the investment hypothesis, the powerful role of tenure change and space needs provide a basis for continuing to believe that households are sensitive to the basic housing process of adjusting their housing consumption to remove the disequilibrium that arises from changing family needs. These forces are working in the more complex British housing markets as they do in other housing markets.

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APPENDIX

Table A1. The aggregation of 279 local authority districts into 58 labour-and-housing markets.

Greater London
1. City of Westminster
2. Camden
3. Hackney
4. Hammersmith and Fulham
5. Haringey
6. Islington
7. Kensington and Chelsea
8. Lambeth
9. Lewisham
10. Newham
11. Southwark
12. Tower Hamlet
13. Wandsworth
14. Barking and Dagenham
15. Barnet
16. Bexley
17. Brent
18. Bromley
19. Croydon
20. Ealing
21. Enfield
22. Greenwich
23. Harrow
24. Havering
25. Hillingdon
26. Hounslow
27. Kingston upon Thames
28. Merton
29. Redbridge
30. Richmond upon Thames
31. Sutton
32. Waltham Forest

Greater Manchester
33. Bolton
34. Bury
35. Manchester
36. Oldham
37. Rochdale
38. Salford
39. Stockport
40. Tameside
41. Trafford
42. Wigan
92. Macclesfield

Liverpool
43. Knowsley
44. Liverpool
45. St. Helens
46. Sefton
47. Wirral
89. Chester; Ellesmere Port and Neston
91. Halton
93. Warrington

South Yorkshire
48. Barnsley
49. Doncaster
50. Rotherham
51. Sheffield
104. Bolsover; Chesterfield

Tyne and Wear
52. Gateshead
53. Newcastle upon Tyne
54. North Tyneside
55. South Tyneside
56. Sunderland
118. Chester le Street; Durham
197. Blyth Valley; Wansbeck

Birmingham
57. Birmingham
58. Coventry
59. Dudley
60. Sandwell
61. Solihull
62. Walsall
63. Wolverhampton
146. Bromsgrove; Wyre Forest
148. Malvern Hills; Worcester
149. Redditch; Wychavon
217. Lichfield; Tamworth
215. Cannock Chase; South Staffordshire
229. North Warwick; Nuneaton and Bedworth; Rugby
230. Stratford upon Avon; Warwick

West Yorkshire
64. Bradford
65. Calderdale
66. Kirklees
67. Leeds
68. Wakefield
200. Harrogate
201. Selby; York

Bristol
69. Bath; Kingswood; Wansdyke
70. Bristol
71. Northavon
72. Woodspring

Bedfordshire
73. Luton
74. Mid Bedfordshire; South Bedfordshire
75. North Bedfordshire
83. Milton Keynes

West of London
76. Bracknell Forest; Slough
77. Newbury
78. Reading
79. Windsor and Maidenhead
80. Wokingham
138. Basingstoke and Deane
141. Hart; Rushmoor
227. Runnymede; Spelthorne
228. Surrey Heath; Woking

Cambridgeshire
85. Cambridge; South Cambridgeshire
86. East Cambridgeshire; Fenland
87. Huntingdonshire
88. Peterborough

Table A1 (continued).

Tees
94. Hartlepool; Stockton
95. Langbaurgh-on-Tees
96. Middlesbrough
119. Darlington; Teesdale
120. Derwentside; Wear Valley
121. Easington; Sedgefield

Devon
97. Caradon; North Cornwall
98. Carrick; Restormel
108. East Devon; Mid Devon
109. Exeter; Teignbridge
110. North Devon; Torridge
111. Plymouth
112. South Hams; West Devon
113. Torbay

South West Cornwall
99. Kerrier; Penwith; Isles of Scilly

Carlisle
100. Allerdale; Carlisle

Lakeland
101. Barrow in Furness; Copeland
102. Eden; South Lakeland

Derby/Nottingham
103. Amber Valley; North East Derbyshire
105. Derby
106. Erewash; South Derbyshire
107. High Peak; Derbyshire Dales
202. Ashfield; Mansfield
203. Bassetlaw; Newark and Sherwood
204. Brostowe; Gedling; Rushcliffe
205. Nottingham

Southampton and Portsmouth
114. Bournemouth
115. Christchurch; East Dorset; North Dorset
116. Poole
117. Purbeck; West Dorset; Weymouth and Portland
142. New Forest
143. Portsmouth
144. Southampton
145. Test Valley; Winchester
139. East Hampshire; Havant
140. Eastleigh; Fareham; Gosport
161. Medina; South Wight

South Coast
122. Brighton
123. Eastbourne; Hove; Lewes
232. Arun
125. Wealdon
231. Adur; Worthing
233. Chichester; Horsham

South East Coast
124. Hastings; Rother

Essex
126. Basildon
127. Braintree; Uttlesford

Essex (continued)
128. Brentwood; Epping Forest; Harlow
129. Castle Point; Maldon; Rochford
130. Chelmsford
131. Colchester
132. Southend on Sea
134. Thurrock

Ipswich
133. Tendring
220. Babergh; Ipswich
221. Forest Heath; Mid Suffolk; St. Edmundsbury
222. Suffolk Coastal; Waveney

Cheltenham and Gloucester
135. Cheltenham; Cotswold
136. Forest of Dean; Stroud
137. Gloucester; Tewkesbury

Hertfordshire
150. Broxbourne; East Hertfordshire
151. Dacorum
152. Hertmere; Welwyn Hatfield
153. North Hertfordshire; Stevenage
154. St Albans
155. Three Rivers; Watford

East Yorkshire
156. Beverley; Boothferry
157. Cleethorpes; Great Grimsby
158. East Yorkshire; Holderness
159. Glanford; Scunthorpe
160. Kingston upon Hull

East Kent
162. Ashford; Tunbridge Wells
163. Canterbury
165. Dover; Shepway

West Kent
166. Gillingham; Swale
167. Maidstone
168. Rochester upon Medway
169. Sevenoaks; Tonbridge and Malling
164. Dartford; Gravesham
170. Thanet

West Lancashire
171. Blackburn
172. Blackpool
173. Burnley; Pendle
174. Chorley; West Lancashire
175. Fylde; Wyre
176. Hyndburn; Rossendale
177. Lancaster
178. Preston
179. Ribble Valley; South Ribble

Leicestershire
180. Blaby; Oadby and Wigston
181. Charnwood
182. Harborough; Melton; Rutland
183. Hinkley and Bosworth; North West Leicestershire
184. Leicester

Table A1 (continued).

Lincolnshire
185. Boston; South Holland
186. East Lindsey; Lincoln; West Lindsey
187. North Kesteven; South Kesteven

Norfolk
188. Breckland; South Norfolk
189. Broadland; Norwich
190. Great Yarmouth
191. Kings Lynn and West Norfolk

Northampton
192. Corby; Kettering
193. Daventry; South Northamptonshire
194. East Northamptonshire; Wellingborough
195. Northampton

Banbury
206. Cherwell

Northumberland Coast
196. Alnwick; Berwick; Morpeth; Tynedale

Pennines
198. Craven; Hambleton; Richmondshire

North Yorkshire Coast
199. Ryedale; Scarborough

Herefordshire
147. Hereford; Leominster; South Herefordshire

Oxford
81. Aylesbury Vale
82. Chiltern; South Bucks
84. Wycombe
207. Oxford; Vale White Horse; West Oxford
208. South Oxfordshire

Shropshire
209. Bridgnorth; Shrewsbury; Atcham
210. North Shropshire; Oswestry; South Shropshire
211. The Wrekin
249. Brecknock; Montgomeryshire; Radnorshire

Somerset
213. South Somerset
214. Taunton Deane; West Somerset
212. Mendip; Sedgemoor

Staffordshire
216. East Staffordshire; Staffordshire Moorlands
218. Newcastle under Lyme; Stafford
219. Stock on Trent
90. Congleton; Crewe and Nantwich; Vale Royal

Surrey
223. Elmbridge; Epsom and Ewell
224. Guildford
225. Mole Valley; Waverley
226. Reigate and Banstead; Tandridge
234. Crawley; Mid Sussex

Wiltshire
235. Kennet; Salisbury
236. North Wiltshire; West Wiltshire
237. Thamesdown

Colwyn
238. Alyn and Deeside; Delyn; Wrexham Maelor
239. Colwyn; Glyndwr; Rhuddlan

Gwynedd
245. Gwynedd

Pembrokeshire
241. Ceredigi; Preseli; Pembroke; South Pembrokeshire

Cardiff
242. Blaenau Gwent; Islywn
243. Monmouth; Torfaen
244. Newport
246. Cynon Valley; Rhondda
247. Merthyr Tydfil; Rhymney Valley; Taff-Ely
248. Ogwr
250. Cardiff
251. Vale of Glamorgan

Swansea
252. Lliw Valley; Neath; Port Talbot
253. Swansea
240. Carmarthen; Dinefwr; Llanelli

Edinburgh
254. East and Mid Lothian, Stirling
255. Edinburgh City
256. West Lothian
260. Dunfermline
261. Kirkcaldy; North East Fife

South West Scotland
259. Annadale; Nithsdale; Stewarth; Wigtown

Aberdeen
262. Aberdeen City

North East Scotland
263. Banff and Buchan; Moray

Borders
264. Gordon; Kincardine and Deeside

North West Highlands
265. North West Highlands; Western Isles

East Highlands
266. South and East Highlands; Orkney; Shetlands

Greater Glasgow
257. Clackmannan; Stirling
258. Falkirk
267. Argyll and Bute; Dumbarton; Inverclyde
268. Bearsden; Clydebank; Strathkelvin
269. Cumbernauld and Kilsyth; Monklands
270. Clydesdale; Cumnock Doon; Kyle Carrick
271. Cunninghame
272. East Kilbride; Hamilton
273. Eastwood; Kilmarnock and Loudon
274. Glasgow City
275. Motherwell
276. Renfrew

Dundee
277. Angus; Perth and Kinross
278. Dundee City