

The Effects of Housing Push Factors and Rent Expectations on Household Formation of Young Adults

Authors Zhu X. Di and Xiaodong Liu

Abstract

Following a group of young adults aged 25–34 living with their parents in the American Housing Survey (AHS) data from 1985 through 1995, this paper investigates the effect of overcrowding and neighborhood satisfaction on household formation after controlling for local rental levels and their changes over time. Most of these except for local rent levels have not been tested before in models and hence this study enriches the knowledge on household formation and its consequent potential demand for rental and ownership housing units.

Household formations depend on both the cost of living independently and the capacity of individuals to cover this cost. Personal income of young adults and parental income have been previously identified as important factors (Boyd and Pryor, 1989; Shehan and Dwyer, 1989; DaVanzo and Goldscheider, 1990; Ermisch, 1999; and Di, Yang and Liu, 2002). Both local housing price and rent have been studied as determinants and both appear to exert an influence on young adults in their twenties or those between the ages of 16 and 30 still living with their parents (Haurin, Hendershott and Kim, 1993; and Ermisch, 1999). Only local rent levels, however, not rent changes over time, have been studied. Yet consumers often make decisions based on expectations of price and rent change rather than merely their current levels.

Although not studied, one might also expect that housing and neighborhood conditions might exert an influence on individual behavior in young adult household formation. Undesirable conditions in parental homes could “push” adult children to leave; overcrowding in particular could motivate departures. It is also possible that neighborhood satisfaction might as well, although its influence is more ambiguous because the departure of a child does not alter the neighborhood conditions of the parents.

This paper investigates the effect of local rental levels, as well as their change over time, and of “push” factors on household formation. The study of household formation is important for the real estate industry, because such demographic changes and patterns determine the level of demand for residential real estate. The

household forming behavior of young adults particularly affects the demand for multifamily and rental housing since young adults exhibit a sharply higher propensity than older household heads to demand these forms of housing. About 30% of multifamily rental housing defined as 5+ units in the structure are occupied by households headed by someone 25 to 34 years old. In addition, the household forming behavior of young adults likely also influences the remodeling behavior of parents. When children remain at home it may increase the demand for alterations that afford parents more privacy. Thus, through both its impact on household formations and remodeling, the household forming behavior of young adults impacts residential fixed investment.

The importance of household projections to planning in the residential industry is well established (JCHS, 2003, 2004, 2005). Yet, such household projections (*e.g.*, Masnick and Di, 2000; and Masnick, Belsky and Di, 2004) do not directly link local rent conditions with young adult household formation. Instead, they only indirectly relate the two through current and past headship rates among large populations of young adults. This study directly investigates this relationship.

Although many previous studies have looked at household formation patterns of young adults, this is the first paper to test the influence of some “push” factors at parental homes. The American Housing Survey contains information on neighborhood and crowding, and so is used as the data to model the probability that young adults will leave their parents’ homes. While crowding may push only young adults out, neighborhood dissatisfaction may cause the whole family to move (for more detailed discussion on such a push factor on the whole family, see Briggs, 1997), but only its effect on young adults leaving is tested here.

Historical data reveals that the majority of household formations in the United States occur among the young adult age group of 25- to 34-year-olds (Luallen, 1996). However, significant shares of these young adults (12.5% of males and 7.9% of females in 2001) still lived in their parents’ home (Di et al., 2002). There is a rich body of literature on the living arrangements of young adults (under age 35), for example, Heer, Hodge and Felson (1985), Goldscheider and DaVanzo (1985, 1989), Borsch-Supan (1986), Dicks (1988), Haurin et al. (1993), Skaburskis (1994), Masnick (1996), Goldscheider (1997), Ermisch and Di Salvo (1997) and Ermisch (1999). This literature often includes young adults between 18 and 24 years of age. Because people of that age often leave parental homes to attend college, local rent markets where their parents live have little influence on their decisions to stay with or leave their parents. Thus, this research focuses on the remaining young adults: the age 25–34 group.

In terms of data and methodology, some of the previous studies make inferences about the effect of housing cost on household formation based on aggregate data (Dicks, 1988), and some are based on cross-sectional variation in living arrangements (Borsch-Supan, 1986; Haurin et al., 1993; and Skaburskis, 1994), and yet others use panel data to construct hazard models (Ermisch and Di Salvo, 1997; and Ermisch, 1999). Hazard models are not only appropriate but perhaps

best for the goal. In this study, discrete-time hazard models are constructed based on Singer and Willett (2003).¹

Although a longitudinal data set is constructed by following young adults in the American Housing Survey (AHS), data from 1985 to 1995, the AHS itself is not a panel dataset. As a result, two data limits exist. First, only non-movers in the AHS surveys are selected in the sample. Certain bias may be associated with such data selection. For example, the propensity of staying with parents might be higher in the sample than among those whose parents moved during the study period, as young adults might be more likely to make the break from their parents at the time their parents move. Second, this study has no historical information on the young adults (*e.g.*, whether or not they had been living outside their parents' houses before age 25). Therefore, whether or not these adults are "boomerang kids" who left and returned to parental homes, a phenomenon that currently attracts a lot of attention in media coverage and research, cannot be investigated. What can be observed is whether the young adults left parents' houses after age 25, either again or for the first time.

Previous studies have expounded in great detail on theoretical models about the household formation process (*e.g.*, Ermisch, 1999, particularly on the economic side, and Goldscheider and DaVanzo, 1985, 1989, as well as Goldscheider, 1997, especially on the cultural and social sides). This paper focuses on empirical evidence but draws on theory for selection of the variables influencing the behavior of young adults living with their parents. As for housing and neighborhood conditions at parents' houses, crowding (indexed by the number of persons per bedroom) significantly helps "push" young adults to leave, while an unsatisfying neighborhood is only marginally significant. To extend previous studies that looked only at rent levels, this study examines changes in rents as well. Contrary to findings reported by Haurin et al. (1993), rent level is not found to be a significant influence on young adults leaving parental homes. Instead, rent change is found to be significant. This suggests that for offspring that have not moved by age 25, it is expectations about rent changes rather than rent levels themselves that are more important determinants of their household forming behavior. This has implications for overall levels of demand for residential real estate and the timing of that demand, suggesting that during periods of rising rents, fewer household formations will occur regardless of how affordable a metropolitan area's rent may remain. In addition, places where overcrowding is common may have higher formations than might otherwise be expected.

Data and Methods

Conventional housing demand analysis is performed at the household level. An earlier study, however, split households into their true underlying "decision units," arguing that it is "the nuclear family or even the adult individual within a composite household [that] decides housing consumption," (Borsch-Supan, 1986: 146). The current study follows individuals and observes their behavioral changes

in living arrangements through data collected biennially from the AHS, conducted by the Census and HUD. The AHS tracks a consistent sample of about 55,000 housing units (actual physical housing structures as opposed to occupying households) and reports on characteristics of the unit, neighborhood and occupants.

Due to data errors in 1997 in the variable (*SAMEHH*) that identifies if the same physical housing units were still occupied by the same households, this study uses longitudinal data from 1985 to 1995. Following Singer and Willett (2003), a multi-period longitudinal dataset was created that follows young adults aged 25–34 living in their parents’ homes in 1985 to see if and when they move out. These 1,941 young adults comprise of the initial “risk set;” these are the subset of households with adult children aged 25–34 in 1985 with parents that did not move between 1985 and 1995. Nearly a quarter of them (441) are no longer in the 1987 AHS data, due to sampling procedure changes (retiring samples) or non-response. Meanwhile, by 1987, 70 of the initial 1,941 young adults could no longer be traced because the occupying households of the physical housing units were no longer the same as those who occupied the units in 1985. In addition, 29 young adults reported a different relationship to the adult head of households than “child” in 1987. All these records were “censored” from the survival analysis.

As a result, 1,431 observations remain in the dataset in 1987. Of these, 513 left their parents’ houses but their parents did not move. Still, a substantial fraction (918) of the young adults remained with their parents in 1987 and their parents did not move. In the survival analysis they are called “survivors,” and these 918 survivors in 1987 become the “risk set” in the next period (1987–1989) of the dataset, in which they are followed to observe whether they still lived in their parental homes in 1989. Among these 918 cases, 87 were censored. As for the remaining 831, 605 continued to live with their parents and 226 had left by 1989. Two years later, another 36 cases were censored, 436 stayed and 133 left parental homes. By 1993, another 30 cases were censored, 353 stayed and 53 left. By 1995, only 279 stayed after 54 left and 20 were censored.

In each of the two-year periods, there is information about all the survivors at the beginning of the period, and thus this information can be used as predictors for the outcome two years later; that is, whether the young adults had left their parental homes. The dependent variable is whether the young adults have left their parental homes. In addition to the other variables in the model, local fair market rent (FMR), which is calculated by the Department of Housing and Urban Development (HUD), and its change over time are two key independent variables. Although other researchers have examined local rent conditions at the county level before [e.g., Haurin et al. (1993)], they did not include rent change in their regression models as does the model in this research. The model not only has local area FMR, but can also calculate the FMR change in the same area over a two-year period for all the young adults, including those who had left their parental homes by the end of the two-year period, because AHS data follow the same housing units, not the occupants. This allows the use of both local rent level and its change over time as predictors.²

Information is also available on the level of formal education of the young adults (a proxy for permanent earning capability), their personal current earnings and their parents' current earnings. Earning capacity is arguably a better measurement than current salary, as a current job may not fully represent the person's income potential, and housing consumption decisions are likely made with expected earnings in mind (Haurin et al., 1993), which is why formal education is often used as a proxy for permanent income. Parental income helps to evaluate the impact of generational poverty on household formation. An adjustment is made for inflation using the CPI on both rent and income variables: thus, all are in constant 1995 dollars.

In addition to information on young adults' age, gender and marital status,³ a variable is constructed on the number of persons per bedroom in the housing unit to index the level of crowding in parental homes, and also include the index variable of self-reported satisfaction on neighborhood conditions by household heads. On a scale of 1 to 10, 1 means the least satisfied or bad while 10 represents the most satisfied or excellent. These two variables help to test if undesirable housing and neighborhood conditions help "push" young adults to leave parental homes. Geographic information at the census region level is also available.

The dataset for each individual adult was converted into a person-period dataset following the guidance for survival analysis provided by Singer and Willett (2003). As a result, those surviving cases yield multiple observations for each period they survived. There are 3,570 observations in the final person-period dataset. Exhibit 1 provides some descriptive statistics of the sample.

In addition, five linked datasets for the 1985–1987, 1987–1989, 1989–1991, 1991–1993 and 1993–1995 periods were constructed. These two-year datasets are used to compare the conditions under which a fixed age group (25–34) of young adults is able to leave parental homes, so that more can be learned about the changing patterns over time for these people instead of following them up as they age and eventually become 35–44-year-olds. Observing five two-year periods of data also helps to see what variables are consistently influential over time.

In both the survival analysis and the analysis from the five two-year-period datasets, logistic regression was used to model the probability of leaving the parental house on the selected variables. The general equation for the model can be written as:

$$P = 1/(1 + \exp(-(\beta_1 * V_1 + \beta_2 * V_2 + \beta_3 * V_3 + \dots))), \quad (1)$$

in which P is the probability of leaving the parental household by time t , V_1 , V_2 , $V_3 \dots$ are the predictors, variables such as education level and age of young adults and fair market rent at time $t-2$, that is, two years before, β_1 , β_2 , β_3 are the estimated coefficients for each of the corresponding variables. For each time

Exhibit 1 | Descriptions of the Variables Used in the Survival Analysis

Variable	Description	Means or Proportions	Std. Dev.	Q1 and Q3
Period 1	Refers to 1985–1987	40.08%		
Period 2	Refers to 1987–1989	23.28%		
Period 3	Refers to 1989–1991	15.94%		
Period 4	Refers to 1991–1993	11.37%		
Period 5	Refers to 1993–1995	9.33%		
Age	Age of young adult	30.7	3.96	27 and 33
Gender	0 = male, 1 = female	40.5% female		
Marital status	1 = married with spouse present, else 0	5.83% married		
Northeast	Northeast region	31.26%		
South	South region	29.10%		
West	West region	15.21%		
Midwest	Mid-west region	24.43%		
Neighborhood Satisfaction Index	Self-reported by household head on a scale of 10; 1 means bad and 10 means excellent.	8.4	2.06	8 and 10
Crowding Index	Number of persons per bedroom in housing unit	1.24	0.55	0.5 and 1.5
Fair Market Rent (FMR)	Local FMR at beginning of each period (in \$100, in 1995 dollars)	7.58	2.03	5.79 and 8.72
FMR change	FMR change rate (= FMR at the end of a period minus FMR at the beginning of the period)/FMR at the beginning of the period)	−0.12%	4.13%	−0.1% and .17%

Exhibit 1 | (continued)

Descriptions of the Variables Used in the Survival Analysis

Variable	Description	Means or Proportions	Std. Dev.	Q1 and Q3
Less high school	Less than high school education	12.99%		
High school	High school education	47.20%		
Some college	At least some college	21.32%		
College	College or above	18.49%		
Earnings of young adult	In 1995 dollars (in \$1,000)	13.9	13.8	0.99 and 22.48
Earnings of parents	In 1995 dollars (in \$1,000)	22.14	28.82	-6.23 and 29.7

Note: N = 3570.

period of every two years, there is a dummy variable to indicate the period and a variable on fair market rent change during the two-year period. If the model shows that β_1 is significantly different from zero, then V_1 has an effect on predicting the likelihood of leaving the parental household controlling for the other variables in the model. The anti-Log of β_1 (i.e., \exp^{β_1}) is the odds ratio for variable V_1 , which tells the ratio of the odds of leaving the parents' house versus continuing to stay for each unit difference in V_1 , with all other variables being held constant.

Based on the survival analysis dataset, Exhibit 2 displays the actual trend between 1985 and 1995 in the likelihood of leaving the parents' households among young adults aged 25–34 in 1985. It shows that in the first time period (by 1987), about 36% of the young adults who lived with their parents in 1985 left their parental home. As time went by and the young people became older, the conditional probability of leaving their parents' homes generally decreased.

Exhibit 3 presents the sample survivor function for the 1,941 young adults. Initially (in 1985), everyone in the sample lived with his/her parents, so the survival probability was 100%. As time passed and young adults left parental houses, the survival probability dropped to about 26% (by 1995). Furthermore, Exhibit 3 shows that an average young adult would leave their parents' house sometime between 1987 and 1989, given that s/he lived with his/her parents in 1985. That is, half of the young adults would leave their parental houses around 1988.

Findings from the Survival Analysis

Exhibit 4 shows the parameter estimates, standard errors, significance level of coefficients and goodness-of-fit statistics from the model in which the conditional probability that a young adult leaves the parental house, given s/he had lived with the parents since 1985, is predicted by local fair market rent and its changes over time, after controlling for all the other variables shown in the table. The result indicates that it is the change of local fair market rent over time in one place instead of the difference in fair market rent among different places that significantly determines whether a young adult will stay with or leave their parents' homes.

Impact of Housing Cost

Housing cost is an important factor that affects young adults' achieving housing independence. Local area rent change over the two-year period from the beginning to the end of the period is a significant predictor in determining whether the young adults would have left parents' houses by the end of the period, while the local rent level at the beginning of the two-year period is not a significant predictor. Holding all other variables in the model constant, in an area where the FMR increases during the two-year period, young adults are less likely to leave their

Exhibit 2 | Percentage of Young Adults (age 25–34 in 1985) Leaving Parental House

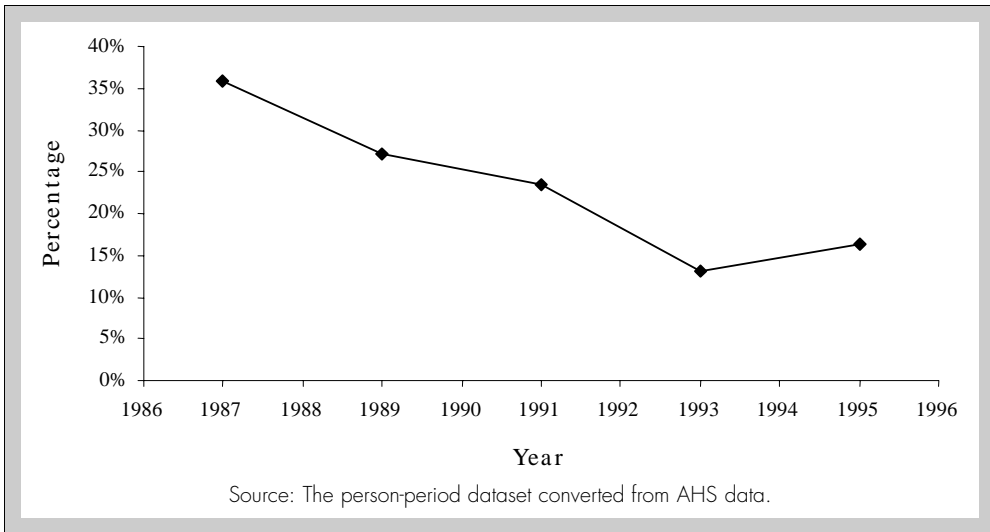


Exhibit 3 | Survival Probability of Young Adults (age 25–34 in 1985) Who Have Continued Living With Parents Since 1985

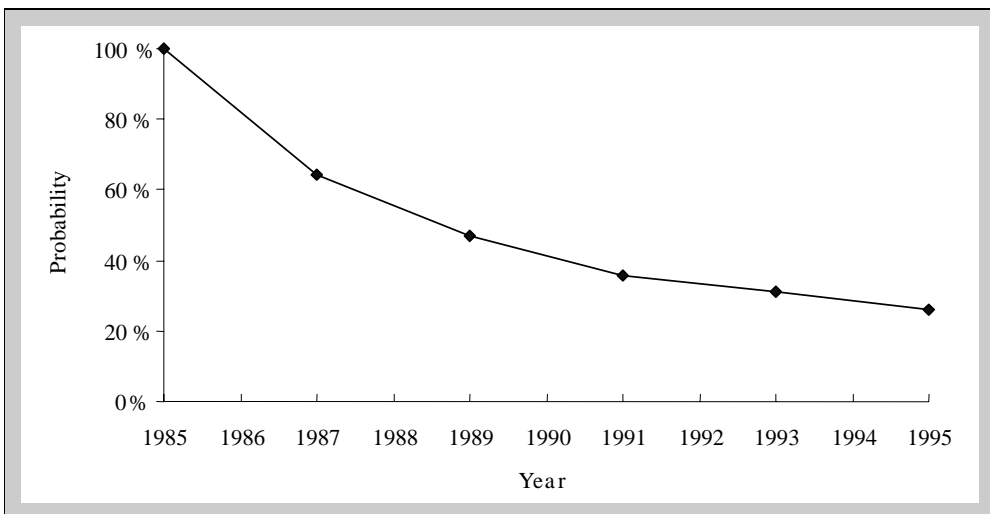


Exhibit 4 | Estimates of Likelihood to Leave Parental Homes from the Survival Analysis

Variable Name	Coefficients	Standard Errors
Model 1: 1985–1987	.683	.5761 ns
Model 2: 1987–1989	.499	.6033 ns
Model 3: 1989–1991	.3435	.6325 ns
Model 4: 1991–1993	−.0965	.6634 ns
Model 5: 1993–1995	.2308	.6881 ns
Age	−.0689	.0154***
Gender	.1561	.1206 ns
Marital status	.9761	.2347***
Gender*marital status	−.7219	.3191*
South	.2626	.1215*
West	.1225	.1262 ns
Midwest	.0965	.1299 ns
Neighborhood Satisfaction Index	−.0347	.0195~
Crowding Index	.2772	.0744***
High school education	.1118	.1378 ns
Some college	.4629	.1528**
College	.7340	.1579***
Fair market rent (FMR)	−.0194	.0264 ns
FMR change over time	−.0303	.0103**
Earnings of young adult	.0072	.0038~
Gender*earnings of young adult	−.0122	.0061*
Earnings of parents	.0048	.0014***

Note: $-2LL = 3,728.814$; $AIC = 3,772.814$; $Adj. R^2 = .3507$; $R^2 = .263$; and $DF = 22$.

~ $p < .10$
* $p < .05$
** $p < .01$
*** $p < .001$
ns = Non-significant at the .10 level

parental home, compared to an area where FMR decreases. For example, for each additional 1% increase in real rent over time during a two-year period, the fitted odds of young adults leaving parents versus staying with parents are multiplied by 0.97 times in Exhibit 4.

As shown in Exhibit 4, although rent level difference across different metropolitan areas shows a negative coefficient, it is not statistically significant. This finding is surprising given past findings. Haurin et al. (1993) found that real rents matter,

but the current investigation suggests that real rent change has a significant influence but rent level does not.⁴ The model could be interpreted as showing that young adults make choices to leave, assuming they have not already done so by the time they reach age 25, not based on rent levels but on the direction of rent change. Though the literature is thin, some unpublished studies suggest that households form expectations about future house price based on recent changes. If young adults form expectations about direction of future rents based on recent rent changes they will be less inclined to move if rents have been going up because they fear rents will continue to go up. This would make it difficult for them to afford rents moving forward. If rents become too expensive for them, then they will have to move back in with their parents, incurring moving costs twice just to end up back with their parents.⁵

Impact of Housing and Neighborhood Conditions

The model indicates that crowding conditions indexed by the number of persons per bedroom in the housing unit have a significant direct effect on young adults leaving parental homes. The more crowded the housing unit, the more likely that the young adult will leave the parents' house before two years were over. For each additional person per bedroom in the housing unit, the fitted odds of young adults leaving versus staying with parents are multiplied by 1.319 (see Exhibit 4).

The neighborhood satisfaction index has a negative coefficient in the model, indicating that controlling for fair market rent and its change, and the other variables in the model, young adults are less likely to leave their parents' house in a more satisfactory neighborhood. However, this coefficient is only marginally significant, meaning that such a "push" factor is not that strong in influencing young adults' decisions regarding leaving parents' homes.

Impact of Earning Capacity of Young Adults, Current Earnings of Young Adults, and that of Their Parents

Earning Capacity of Young Adults. In line with the literature, this study also found that young people's earning capacities (represented by their educational attainment) exert a significant effect on their achieving independent living. As shown in Exhibit 4, compared to less than a high school education, some college or higher education makes a difference. However, there is no difference between people with a high school education and those with less than a high school education. The estimated odds that a person who received some college education would leave their parental home versus continuing to stay with parents are 1.151 times the odds of a person who did not finish high school, given that all the other characteristics are the same for the two persons. Similarly, the estimated odds that a person who received a college or higher education would leave their parental home versus continuing to stay with parents are 1.685 times that of a person who

did not finish high school, given that all the other characteristics are the same for the two persons. In other words, controlling for all other variables in the model, among young adults (25–34) living with parents in 1985, those who had some college or higher education were much more likely to leave their parental homes in the ten years of study than those who had only less than a high school education.

Current Earnings of Young Adults. Current earnings of the young adult are a significant predictor for the outcome of leaving or staying with parents two years later. This is consistent with the literature (see Haurin et al., 1993; Ermisch, 1999; and Di et al., 2002). However, this relationship differs by gender. Males with higher earnings are more likely to leave parental houses, while females living in their parents' houses are more likely to earn more than those living elsewhere. The different pattern among females may be explained partly by women leaving due to marriage and starting a family, whereby they do not work or only work part-time.

Current Earnings of Parents. In this study, higher levels of current earnings by parents are associated with a higher probability of young adults leaving parental homes. For each additional \$1,000 in the current earnings of parents, the fitted odds for young adults to leave versus staying with parents are multiplied by 1.005 times (see Exhibit 4). The lower likelihood of leaving parents' houses among lower-income households may also reflect certain degree of generational poverty and overcrowding in society. This finding enriches the literature where findings are inconclusive. For example, Ermisch (1999) found that higher parental income makes it less likely that young adults will leave, but concluded that it would be more appropriate to have a measure of parents' permanent income rather than current income. Yet, Haurin et al. (1993) found that only white and Hispanic youths with highly educated parents tend to live apart from their parents home and concluded that such a proxy for parents' permanent income is a poor measure in predicting youths' living arrangements. More conclusive findings are needed.

Impact of Young Adult Age and the Time Periods Studied

One of the advantages of survival analysis is that it allows simultaneous estimation of the effect of age and time as factors in the process of leaving parents' houses, given that both may have an impact on the outcome. As the model shows, while age helps predict whether or not a person would leave their parental homes within two years, different time periods do not seem to matter.

Holding all other variables in the model constant, the older the young adults were, the less likely they were to leave their parental household within the next two years. More specifically, the fitted odds that person A will leave parents versus staying with parents are 0.933 times the fitted odds for person B if person A is one year older than person B, given that both person A and B share the same

characteristics in all other variables in the model (see Exhibit 4). The effect of age indicates that as those who were capable of leaving have left, the remaining ones are even less likely to leave their parental homes.

Findings from the Analysis of Five Two-Year Periods of Datasets

In addition to survival analysis, a logistic regression analysis was performed to examine how key variables are related to the likelihood of leaving their parents' homes by looking at each of the two-year period datasets between 1985 and 1995. The major difference between these models and that of survival analysis is that these two-year models focus on a sample of 25- to 34-year-old young adults instead of following them as they became age 35 to 44 by 1995. Although the findings from these models cannot be directly compared to the findings from the survival analysis due to sample size differences, such a contrast in methodology allows examination of whether there are any differences in the patterns over time and which variables have a more consistent influence over time. Exhibit 5 assembles all of the results from the logistic models based on each two-year period between 1985 and 1995.

The model results on FMR change over time in Exhibit 5 are significant at the .05 confidence level for 3 out of 5 times as compared to only 1 time for FMR. So, it appears more relevant but not significant in all time periods. On the other hand, as shown in the models in Exhibit 5, all of the models indicate that college education is consistently statistically significant in predicting young adults leaving parental homes, similar to the results in the survival analysis. This reinforces the conclusion of the survival analysis: only those who can make a living can afford to live independently. Earnings of parents are also consistently significant predictors, reinforcing the conclusions from the survival analysis that generational poverty may exist and young adults of poor parents are less likely to live independently. Finally, the five two-year periods of data from 1985 to 1995 on young adults aged 25–34 show consistent evidence that the longer young adults stayed at parental homes, the less likely they were to leave, as all of the models from the two-year periods data show that age is negatively associated with leaving parental homes. Only three variables (college education, earnings of parents and the age of young adults) are consistently significant in all of the five models for different time periods, stressing the importance of these three factors while suggesting the findings on the effects of other factors including that of rent change over time and overcrowding are still not so conclusive and further research is needed. Marital status seems to have a reduced influence over time in young adults leaving parental homes, perhaps indicating a change in social trend with greater acceptance for married children to live at home, while economic cycle does not seem to have a discernable pattern in its influence.

Exhibit 5 | Estimates of Likelihood to Leave Parental Homes from the Two-Year Logistic Models

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
	1985–1987	1987–1989	1989–1991	1991–1993	1993–1995
Age	-.0347 (.0128**)	-.0676 (.0130***)	-.0496 (.012***)	-.0440 (.0118***)	-.0533 (.0121***)
Gender	.2636 (.1722 ns)	.1003 (.1613 ns)	.2428 (.1615 ns)	-.1955 (.1569 ns)	.1163 (.1514 ns)
Marital status	.8454 (.3180**)	.9117 (.3261**)	.6744 (.3257*)	.4775 (.3400 ns)	.7210 (.3834 ⁻)
Gender*marital status	-.6409 (.4374 ns)	-.6193 (.4426 ns)	-.6392 (.453 ns)	.5194 (.4498 ns)	-.3401 (.4983 ns)
South	.4478 (.1659**)	.1425 (.1611 ns)	.3278 (.1502*)	.1314 (.1520 ns)	.2377 (.1552 ns)
West	.1310 (.1876 ns)	.3115 (.1612 ⁻)	.3035 (.1573 ⁻)	.2473 (.1583 ns)	.3090 (.1673 ⁻)
Midwest	.1365 (.1772 ns)	.2187 (.1673 ns)	-.0458 (.1645 ns)	.2416 (.1618 ns)	.3080 (.1663 ⁻)
Neighborhood Satisfaction Index	-.0613 (.0262*)	.0234 (.0258 ns)	.0210 (.0253 ns)	-.0472 (.0241 ⁻)	.0475 (.0261 ⁻)
Crowding Index	.2805 (.0921**)	.3206 (.1049**)	.1717 (.0922 ⁻)	.2711 (.0883**)	.0920 (.1064 ns)
High school	.3173 (.191 ⁻)	.1463 (.185 ns)	.1948 (.1755 ns)	.4785 (.1832**)	.0899 (.1856 ns)
Some college	.4659 (.2153*)	.5950 (.2021**)	.4542 (.1947*)	.4712 (.2026*)	.1404 (.2023 ns)

Exhibit 5 | (continued)

Estimates of Likelihood to Leave Parental Homes from the Two-Year Logistic Models

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
	1985–1987	1987–1989	1989–1991	1991–1993	1993–1995
College	.8302 (.2249***)	.9459 (.2115***)	.6314 (.1971**)	.6853 (.2035***)	.5217 (.2014**)
Fair market rent (FMR)	-.0545 (.034 ns)	-.0084 (.0325 ns)	-.0655 (.0306 *)	-.0265 (.0308 ns)	-.0344 (.032 ns)
FMR change over time	-.0401 (.0157*)	-.0343 (.0149*)	-.0211 (.0127~)	-.0356 (.0144*)	-.0160 (.0101 ns)
Earnings of young adult	.0047 (.0053 ns)	.0070 (.0048 ns)	.0194 (.0053***)	-.0012 (.0056 ns)	.0142 (.0060*)
Gender*earnings of young adult	-.0210 (.0095*)	-.0066 (.0080 ns)	-.0139 (.0085 ns)	.0131 (.0079~)	-.0109 (.0087 ns)
Earnings of parents	.0057 (.0020**)	.0048 (.0017**)	.0050 (.0017**)	.0078 (.0018***)	.0062 (.0019**)
-2LL	1729.731	1964.373	2129.784	2106.334	1957.915
AIC	1763.731	1998.373	2163.784	2140.334	1991.915
Adj. R ²	.1866	.1572	.1509	.1655	.1477
R ²	.14	.1179	.1131	.1241	.1108
DF	17	17	17	17	17

Note: The numbers in parentheses are standard errors.

~p < .10

*p < .05

**p < .01

***p < .001

ns = Non-significant at the .10 level

Conclusion

This study, using a constructed longitudinal dataset from the biennially collected American Housing Survey data from 1985 to 1995, provides a look into the long process of young adults leaving parental homes, which is a pre-condition for natural household formation of young adults, generating new housing demand for both owner and rental housing units. A group of young adults aged 25–34 in 1985 who were living in parental homes was followed to see if they left their parental homes during the following ten years when they became 35–44 years old. Regression models are used in both a survival analysis for the ten-year period and analyses of five two-year periods to identify factors that help predict whether the young adults would leave parent homes within two years.

Like other studies, this study finds that earning capacities of young adults and housing costs are important variables in explaining the probability of leaving parental homes. An increase in the fair market rent is detrimental to young adults' effort in achieving independent living, while a decrease in the FMR is helpful for young adults who wish to leave their parents' houses. Unlike previous studies, the findings indicate that cross-sectional differences in FMR levels are statistically insignificant. It is plausible to interpret the model results as suggesting that young adults that have not moved by the time reach age 25 may make their decisions on leaving or staying with parents according to their expectations of future rents based on ongoing trends in rent change rather than rent levels in the past.

The data also show that while the adults were still young, they were more able to achieve independent living when local rent conditions changed in their favor. As they become older, however, those who could not manage to leave parental homes earlier were unable to achieve housing independence even when local rents went down.

Because the data source (AHS) has rich information on housing conditions, the study was able to assess some hypotheses that previous studies on household formation could not. For example, overcrowding was found to be a significant “push” factor on young adults' decisions to leave parental homes.

Both the survival analysis of the ten years of longitudinal data and the analysis of the five two-year periods of data show that young adults from families of poor parents are less likely to leave parental houses to achieve independent living, suggesting some kind of generational poverty. This finding is slightly different from that previously reported, thus has enriched the literature. More research needs to be conducted in this area to have more conclusive results.

Endnotes

¹ This study uses discrete-time hazard models (Singer and Willett, 2003) instead of the widely used Cox (1984) (continuous-time) hazard models or Cox regression models

because (1) the data were collected at discrete times; (2) even if we treat the time as continuous, there are many “tied event times,” and when this happens, it is recommended to use the discrete-time methods (Singer and Willett, 2003).

- ² While local FMR level used in our model is FMR at the beginning of the two-year period, FMR change is calculated as FMR at the end of period minus that at the beginning of period and then divided by that at the beginning of period, all in constant dollars.
- ³ Race variables are not included in the presented model work because (1) the sample size is too small to truly evaluate each minority group and (2) the literature indicates that each minority group may have quite different patterns relative to whites (Haurin, 1993). Grouping all minorities as one would hide such differences, e.g. if due to cultural difference Asians and Hispanics were more likely and blacks were less likely to live with parents relative to whites. Ermisch (1999) did report that young adults from non-white families are less likely to leave home but added with caution that it is difficult to interpret because “non-white” includes a diverse group. In addition, a previous study (Di et al., 2002) reported that race is not a significant factor regarding young adults living with parents when using large sample size data such as Current Population Survey (CPS). We did run the model with white samples alone, and the results are similar to that using the whole sample regarding which variables are significant predictors. The exception is that the census region of South becomes insignificant ($p > .08$) in the whites-only sample.
- ⁴ The differences between the presented model results and that of Haurin et al. (1993) could be caused by data sources and/or methodologies (ours is a survival analysis and theirs is cross-sectional). In our test model where we add interactions between FMR change and time period, it turns out that the FMR level is significant only in the first period but not significant in all the other 4 periods. Since the study by Haurin et al. (1993) is cross-sectional, that may reconcile ours with theirs to some extent.
- ⁵ It is possible that young adults might have left parents because of lower rent at the end of a period, and the model only proves that rent at the beginning of each period does not matter. On the other hand, young adults could have moved during the period without waiting for the final low rent at the end of the period as long as the trend is going down. The model should have caught such moves driven by decisions based on expectations.

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