Does Housing Assistance Lead to Dependency? Evidence From HUD Administrative Data

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Abstract

The research presented in this article uses event history methods to describe and explain the dynamics of housing assistance exits. The results show that a plurality of housing assistance spells ends within 5 years and a majority ends within 10 years. Being White, younger, and not disabled, not having children, and a higher vacancy rate in the local housing market were associated with shorter spells of housing assistance receipt. The results also suggest that life-cycle factors that predict residential mobility, in general, play an important role in determining exits from housing assistance. In addition, the availability of housing alternatives for low-income minorities would appear to be an important determinant of housing assistance exits. The results imply that, to the extent policymakers wish to shorten the durations of housing assistance spells, consideration will have to be given to the lack of suitable housing alternatives in addition to the traditional human capital approaches.

Introduction

Americans have always been ambivalent about providing public assistance to the indigent. This ambivalence stems from a desire to help truly needy or "deserving" low-income people but a reluctance to help those who could help themselves and the suspicion that assistance breeds dependency and encourages sloth (Katz, 1990). In the 19th century this suspicion manifested itself in work requirements for recipients of public assistance. During the Great Depression, this suspicion appeared in the targeting of Aid to Families with Dependent Children only to households with absentee husbands who were the presumed breadwinners. More recently, this suspicion has manifested itself in welfare reform legislation, entitled the Personal Responsibility and Work Opportunity Reconciliation Act, which was designed to combat potential dependency among recipients.

Although much of the focus on dependency has been associated with welfare, policymakers have also begun to consider how housing assistance might be linked to dependency. Beginning in 1990, the U.S. Department of Housing and Urban Development (HUD)

began requiring housing authorities to develop and implement the Family Self-Sufficiency Program. This program aims to increase family income through the provision of education, social services, and training so that families will no longer need housing or any other type of public assistance. In 1998, the Quality of Housing and Work Responsibility Act mandated adult members of a public housing household to contribute 8 hours a month of community service in the community in which the adults reside or to participate in an economic self-sufficiency program for 8 hours a month. The implicit motivation behind this requirement is to preclude public housing residents getting something for nothing and to discourage dependency. Critics of housing assistance have also argued that housing assistance should be seen as a temporary handup and not a permanent handout (Husock, 2002). These criticisms and policy changes illustrate the extent to which dependency among housing assistance recipients is a concern of policymakers.

To the extent policymakers wish to transform housing assistance into temporary assistance for the truly needy, a first step is to comprehend the current housing assistance dynamics. How long are housing assistance spells? Does dependency appear to be a problem? What factors predispose someone to longer spells of housing assistance receipt? A thorough understanding of questions such as these should inform any attempts to address dependency among recipients of housing assistance.

Unlike the topic of welfare, however, in which a large body of research has documented and described the dynamics of welfare receipt, relatively little research has been done on the dynamics of housing assistance receipt. Therefore, the answers to the above questions are poorly understood. The research that has been conducted has used data that generally falls into two camps. The first camp relies on data that may be unreliable because it is based on survey respondents making self-reports that have been found to be error prone (Hungerford, 1996; Freeman, 1998; Susin, 1999). The second camp relies on administrative data for public housing residents in New York City, an atypical housing market, and consequently the findings are not generalizable to the rest of the country or to recipients of tenant-based housing assistance (Bahchieva and Hosier, 2001). Thus, our understanding of housing assistance dynamics is far from complete. This article aims to fill this void by employing event history methods to examine the dynamics of housing assistance receipt using data provided by HUD.

Prior Research on Housing Assistance Dynamics

Although nowhere as voluminous as the literature on welfare dynamics, a small body of literature has begun to emerge that examines durations of housing assistance receipt and the factors that influence these durations. Hungerford (1996), using data from the Survey of Income and Program Participation (SIPP), found that the nonelderly, men, those with more education, and those not receiving other public assistance exit housing assistance more quickly. Hungerford also addressed the key question of whether it becomes more difficult to exit housing assistance the longer one receives it, a phenomenon known as duration dependence. Hungerford found little evidence to support the notion that duration dependence is a determinant of housing assistance exits.

Freeman (1998) used data from the Panel Study of Income Dynamics (PSID) to examine the dynamics of residence in public housing. Along with the usual demographic and locational characteristics that might be expected to influence durations of public housing residence, Freeman also tested whether cultural factors—including where the public housing residents grew up, their childhood socioeconomic status, and their parents' educational attainment—affected the length of public housing spells. He discovered that growing up in a two-parent household, being non-Latino, having more than a primary school education,

having additional work experience, being divorced, living in an area with a higher vacancy rate and more affordable housing units, and residing outside a central city in the Northeast or Midwest were associated with quicker exits from public housing. Freeman also did not find evidence of duration dependence.

Susin (1999) studied what factors were associated with the termination of housing assistance spells, focusing on changes in income and household composition and using data from the SIPP. Susin's main finding was that changes in household composition were more important than income or earnings changes as predictors of housing assistance exits. He also found that having a high school degree, having higher earnings and income, welfare receipt, the local area's median rent, and the state vacancy rate were important predictors of exiting housing assistance. All three studies (Hungerford, 1996; Freeman, 1998; Susin, 1999) found exit rates to be highest in the earliest periods of a spell.

The Hungerford (1996), Freeman (1998), and Susin (1999) studies of housing assistance dynamics, moreover, all relied on data sets that determine housing assistance status by the self-reporting of respondents. Evidence suggests that such self-reporting may be unreliable, particularly when respondents are asked to identify the specific type of housing assistance they receive (Shroder, 2002). Moreover, none of these data sets have particularly large samples of assisted housing residents. The small sample sizes makes it difficult to analyze housing assistance dynamics for long spells with any degree of precision because the sample of long-term housing assistance recipients is likely to be very small. Hence, while the overall patterns observed in these earlier studies may be informative, they are also likely to be somewhat inaccurate.

Bahchieva and Hosier (2001) circumvent the problem of respondent misreporting by using administrative data from the New York City Housing Authority (NYCHA). Public housing durations in the Bahchieva and Hosier (2001) study were found to be especially long. Half of all spells lasted at least 42 years, and a quarter lasted 55 years. New York City is, of course, an especially tight housing market, and NYCHA is known for its high-quality developments. Both of these factors would contribute to long spells of public housing residence. It seems doubtful that such lengthy spells would be the norm across the country. Nevertheless, these results are striking. Unlike the studies cited above, Bahchieva and Hosier (2001) found exit rates to peak around the 10th year of a spell, as opposed to the earliest ones. Being young, very old, single, White, a non-Latino recent immigrant, and nonwelfare recipient; having a higher income; and living in a smaller apartment were associated with quicker exits from public housing in this study.

Relying on administrative data from NYCHA limits the generalization of Bahchieva and Hosier's findings to New York City. Bahchieva and Hosier's research also focused exclusively on public housing residents and, thus, sheds little light on what administrative data would say about the dynamics of other types of housing assistance. In addition, as the data are collected for administrative purposes, information of interest to social scientists, such as educational attainment rates, are not available.

The extant literature thus paints an incomplete picture of housing assistance dynamics. The earliest work relied on self-reported data that may not be reliable. Later work by Bahchieva and Hosier (2001) uses more reliable administrative data but is limited to public housing residents in the atypical housing market of New York City. Further, Bahchieva and Hosier did not examine spells for recipients of other types of housing assistance besides public housing. This article, by analyzing housing assistance dynamics using administrative data from a nationwide data set for both public housing and other types of housing assistance, will paint a more comprehensive picture of housing assistance dynamics.

Methodology

This research uses event history methods to describe the dynamics of housing assistance receipt in the United States from 1995 through 2002 and to identify the determinants of exits from housing assistance using multivariate statistical methods. The time periods will be measured in years because the data do not provide the exact date of the exit. The Multifamily Tenant Characteristics System (MTCS)/Tenant Rental Assistance Certification System (TRACS) data provide an indication of what type of transaction is generating the record (that is, new admission, annual reexamination, termination). Conversations with HUD staff who manage the MTCS/TRACS data, however, suggest that some households will have exited housing assistance without the local Public Housing Authority generating a corresponding record.

This problem can be addressed with at least two options. The first is to assume that those without a recorded exit date have not indeed exited housing assistance. This option would understate the hazard or rate at which households are exiting housing assistance. Alternatively, households that disappear from the data set without generating an exit record could be recorded as exiting housing assistance. This option would overstate the hazard for exiting housing assistance to some degree. Comparing the results of both approaches with what is known about the number of households receiving housing assistance at any point in time suggests it is preferable to treat households that disappear from the data set without generating an exit record as having exited housing assistance. This approach produces the more believable results. Thus, this approach will be the focus of this article. The results of the hazard rate analysis when households without an exit record are treated as right censored are available from the author on request.

Life-table Analysis

How long is the typical spell of housing assistance receipt? How common are relatively short spells? What is the probability of a housing assistance spell lasting 5 years? The survivor function (named by epidemiologists studying how long people survive) for housing assistance recipients answers these questions. The life-table method is one of the better known methods for estimating survivor functions and is well suited for large data sets with many unique event times (Allison, 1995). The MTCS/TRACS data that will be used for this analysis have both of these characteristics.

Although descriptive in nature, the life-table analysis paints a vivid portrait of the dynamics of housing assistance receipt. From the life-table analysis, we can get a sense of how long the typical housing assistance spell lasts, the extent to which most spells are short or long, when exits are most likely to occur from the hazard, and so on. By examining the effects of covariates, such as type of housing assistance or race/ethnicity, the picture of housing assistance dynamics painted by the life-table method can be further enhanced. For example, to test whether dynamics differ substantially between public housing residents and Section 8 (now known as Housing Choice Voucher Program) recipients, separate survivor and hazard functions were estimated for these two groups, respectively. This research will make the following life-table comparisons:

- Public housing compared to Section 8 compared to other project-based housing assistance.
- Race/ethnicity for Whites, African Americans, Latinos and Asians, and other races.
- Elderly compared to nonelderly.

Although the descriptive life-table analysis will clearly shed much light on the nature of housing assistance dynamics, it does not rule out the influence of confounding factors. For example, we may find that residents of public housing have much longer spells than Section 8 recipients. Yet this finding could be because public housing residents are more

likely to have lower incomes or live in metropolitan areas where housing is more expensive. To control for these and other possible confounding factors, multivariate methods are required.

Multivariate Models

To determine how various factors influence the hazard or the rate at which households exit housing assistance, a discrete-time logistic regression approach is used to model the probability of exiting housing assistance within each yearly interval. The discrete-time approach has the advantage of easily handling data in which many observations have the same event times. In addition, it does not require assumptions about the distribution of the hazard. Instead, it can be modeled explicitly by including covariates representing each time period. Time-varying covariates, such as age, are also easily handled using discrete-time methods (Allison, 1995). The discrete-time approach requires the data to be assembled in a household-year format. Each record represents a household at a given time *t*. The discrete-time logistic regression model can be written for individual *i* exiting housing assistance at time *t* as:

$$\log\left(\frac{P_{it}}{1-P_{it}}\right) = \alpha_t + \beta_1 x_{it1} + \beta_2 w_{it2} \ldots + \beta_k x_{ikt}$$

where P_{it} is the hazard of exiting housing assistance at time *t* for an individual with unvarying covariates X_{it} and time-varying covariates W_{it}. B_1 *and* B_2 are unknown parameters.

A rational choice perspective is used to inform the modeling of exiting housing assistance (Freeman, 1998). The rational choice perspective assumes individuals make choices about using housing assistance based on a cost-benefit calculus. Housing assistance, which is designed to provide decent housing to households that otherwise would not be able to afford it, would be used until the household can obtain better housing without the use of housing assistance. This perspective suggests that upwardly mobile households and those living in housing markets with more options for better housing should be the quickest to exit housing assistance. When thinking about upward mobility and housing assistance, it is important to note that housing is the largest item in most household budgets and has very high transaction costs. Consequently, after a household chooses a certain level of housing consumption, it is likely to be "stuck" with it for a while. Furthermore, housing assistance is not an entitlement and, in many localities, the demand far outstrips the supply. These characteristics of housing and housing assistance mean that the decision to leave housing assistance is likely to be influenced more by long-term or permanent changes in one's economic or household status, rather than by more transitory changes.

Because exiting housing assistance will often entail moving, factors that influence residential mobility might also affect exits from housing assistance. The life-cycle model of residential mobility, the dominant paradigm for explaining mobility, is therefore also controlled for in the analysis (Rossi, 1980; Speare, 1974). Outlined below is the specific operationalization of the dependent variable and the covariates to be used in the discrete-time logistic regression model.[1] Because the decision to exit housing assistance may occur simultaneously with other household decisions, such as how much to work, whether to marry, and so forth, the modeling exercise, which does not take this simultaneity into account, is best viewed as associative rather than causal in nature.

Dependent Variable. The dependent variable is exiting housing assistance in year *t*.

Relative Purchasing Power. This component is measured as the ratio of adjusted annual household income to fair market rents. Because this study uses a nationwide data set, failing to adjust for differences in purchasing power between a high-cost area such as San

Francisco and a low-cost area such as Alabama would likely understate the importance of income in determining housing exits. By comparing a household's income to housing prices in the surrounding locality, we get a sense of how much this income is worth in that particular housing market. Higher ratios should be associated with quicker exits from housing assistance.

Disability Status. All things being equal, households headed by disabled individuals should have fewer prospects for upward mobility. Disability status is thus likely to dampen the likelihood of exiting housing assistance.

Age of Household Head. The annual measure of household income will capture the earnings potential of a household, and it will also capture fluctuations in income. Moreover, decisions about exiting housing assistance are likely to be influenced by what households perceive to be their long-term income stream rather than solely what they earned last year. Because age is highly correlated with income, with older individuals earning more, age can serve as a partial proxy for permanent income. Age also serves to capture the stage of an individual's life cycle. Younger households move more often, and to the extent those mobility decisions might entail exiting housing assistance, age is likely to be an important predictor of exiting housing assistance. At the other end of the age spectrum, elderly households are less likely to move and are often on fixed incomes, meaning their chances for upward mobility are nil. Therefore, one would expect elderly households to be much less likely to exit housing assistance. Age is operationalized using the following categories: less than 25, 25–34, 35–44, 45–54, 55–62, and more than 62 years. The age 62 was used as the threshold for the oldest category because that is the age HUD uses to distinguish its elderly and nonelderly populations.

Gender. Female-headed households have been found to be especially vulnerable to persistent poverty, which would also seem to make them susceptible to long-term housing assistance receipt.

Race/Ethnicity. A large body of research has demonstrated the persistence housing discrimination for non-Whites (Turner et al., 2002). To the extent this discrimination contributes to fewer housing options, non-Whites may face more difficulty exiting housing assistance. The racial/ethnic categories controlled for in the analysis include Asian, African American, Latino, White, and other. The racial and ethnic composition of the local housing authority clientele may also influence how quickly a household leaves housing assistance. Finkel and Kennedy (1992) showed that success in obtaining an apartment using a certificate or voucher was influenced by whether the voucher or certificate holder resided in an area where their own race/ethnicity dominated the Section 8 clientele. In other words, African Americans had more success utilizing Section 8 where most other Section 8 recipients were African American, and Latinos had more success utilizing Section 8 where most other Section 8 recipients were Latinos. Finkel and Kennedy hypothesized that voucher holders had more success finding an apartment when their own racial/ethinic identity was the predominant group because Section 8 landlords form a distinct housing market and these submarkets are racially distinct. Therefore, a city such as Atlanta might have a predominantly African-American Section 8 clientele and landlords who accept Section 8 might be concentrated in African-American neighborhoods. This concentration would make it easier for African-American certificate/voucher holders to find a unit relative to Whites or Latinos, because these latter two groups would be less likely to search for units in African-American neighborhoods.

Adapted to a study of exits from housing assistance, the Finkel-Kennedy thesis suggests housing assistance recipients might be less likely to exit housing assistance when their racial/ethnic group is the predominant clientele for that particular housing authority. Housing assistance recipients might be less likely to exit housing assistance when their

racial/ethnic group is the predominant clientele for that particular housing authority or the neighborhood in the case of Section 8 vouchers or certificates, and hence have less reason to alter their housing arrangements. The Finkel-Kennedy hypothesis is operationalized as a dummy variable equal to one if a household head resided in a housing authority area where most of the clients shared their same race/ethnicity, and zero otherwise.

Household Composition. Household composition is likely to influence exits from housing assistance in several ways. Married households have potentially more income earners and a more likely stable situation. Thus, married households might be expected to leave housing assistance more quickly because their future income streams are likely to be larger. Because leaving housing assistance might quite often involve moving, however, the fact that married households are less likely to move suggests a countervailing force that renders the expected effect of marital status on exiting housing assistance ambiguous.

The presence of children in a household will likely dampen prospects for exiting housing assistance. Households with children typically prefer stability in location and, because exiting housing assistance often requires a change in location, the presence of children should be associated with fewer exits.

The larger the housing unit the more difficult it will be to find comparable or better housing. Housing unit size should therefore be inversely related to exiting housing assistance.

Amount of Subsidy. The amount of housing assistance a household receives varies to some extent, depending on the program in which they are enrolled. Perhaps more importantly, in housing markets where housing is relatively expensive, housing assistance will be worth more. The smaller the subsidy, the more likely it is that a household will leave housing assistance. After all, if the amount of the subsidy is negligible, why remain on housing assistance? The amount of subsidy each household receives is estimated as the fair market rent minus the tenant rent.

Housing Market Conditions. The vacancy rate in the housing market will serve as a measure of the local housing market. In areas where vacancy rates are lower, fewer housing options will exist, and households may be more reluctant or unable to exit housing assistance.

Welfare Receipt. Recipients of welfare will find that their benefit decreases as their income increases. Likewise, housing assistance recipients will see their rent increasing when their income increases. Thus a person receiving housing assistance and welfare who experiences an increase in income will see their rent increase and their welfare payments decline. Such a double disincentive to increase one's income may make it difficult for housing assistance recipients on welfare to become upwardly mobile and afford to exit housing assistance. Whether someone received welfare in a given year is included as an indicator variable.

Neighborhood Effects. Evidence strongly suggests that residence in a high-poverty neighborhood can have deleterious consequences on upward mobility (Gould Ellen and Turner, 1997; Goering, 2003; Wilson, 1987). For recipients of housing assistance, these neighborhood effects might manifest themselves in two ways. First, in high-poverty neighborhoods dependence on housing assistance might be viewed as acceptable. Second, high-poverty neighborhoods may not provide access to employment networks. We might therefore expect households residing in high-poverty neighborhoods to have more difficulty exiting housing assistance. Following the conventions of the neighborhood-effects literature, high poverty was defined as a neighborhood where at least 40 percent of the residents had low incomes. The other two categories used are neighborhoods with poverty rates ranging from 20 to 30 percent and neighborhoods with poverty rates below 20 percent.

Duration Dependence. According to the notion of duration dependence, the longer someone receives housing assistance the more they come to acquire a "taste" for it. (Bane and Ellwood, 1994). They may come to rely on the subsidy in making ends meet. Moreover, the notion of their rent not being dependent on how much they will earn might seem unsettling. If this is true, the longer someone has been receiving housing assistance, the less likely they should be to exit housing assistance.

Type of Housing Program. The various types of housing programs may have different hazards for exiting housing assistance. For example, because leaving project-based housing assistance necessarily entails physically moving, the exit rates for this type of housing assistance might be lower than for tenant-based programs. In addition, the participants of the various housing assistance programs might differ in unobserved ways that affect their likelihood of exiting housing assistance. Consequently, the analysis will control for the type of housing assistance the household receives, using the following three categories: (1) public housing, (2) Section 8, and (3) all other types of housing assistance programs, including the Below Market Interest Rate Program, Section 202, Section 236, Section 811, Rent Supplement, and Rental Assistance Programs. Public housing is the nation's oldest housing program and subsidizes units in developments of varying sizes. These developments are typically built and managed by a local housing authority. Section 8 provides subsidies to tenants in the form of vouchers (and formerly certificates) and, in some cases, has subsidized new construction whereby the new units are leased using certificates or vouchers. The other housing assistance programs typically began during the 1960s and 1970s in response to what was then viewed as flaws in the public housing program. For the most part, these other programs were designed to have the private market play a bigger role in the production of affordable housing by having this sector develop and/or manage subsidized housing.

Calendar Year. In early 2000, HUD warned clients of the dire consequences for underreporting of income, perhaps scaring some housing assistance recipients who were engaging in such activities to leave housing assistance altogether.[2]

Results

Exhibit 1 illustrates the descriptive statistics for variables to be used in the discrete-time logistic regression model.

When Do Households Exit Housing Assistance?

The life-table method gives the following informative statistics illustrated in exhibit 2:

- Number exiting housing assistance.
- Number censored: households that do not exit from housing assistance during the observation period.
- Survival column: the probability that a person will exit housing assistance at a time greater than or equal to time *t*. This can also be interpreted as the portion of the population that continues receiving housing assistance until time *t*.
- Hazard: the estimated rate at which households exit housing assistance for a given year *t*.

Exhibit 1

Frequencies and Means for Variables Used in Multivariate Analysis

Variable	Frequency or Mean
Exited housing assistance	10%
Public housing	25.9%
Section 8	32.8%
Other assisted housing	41.2%
White	45.2%
African American (White serves as reference category)	37.5%
Latino (White serves as reference category)	13.5%
Asian (White serves as reference category)	2.5%
Other race (White serves as reference category)	1%
Respondent's own race is majority of housing authority (Finkel-Kennedy thesis)	39.2%
Female	78.5%
Married	8.6%
Has children	44.3%
Age 24–35 (Age 18–24 serves as reference category)	20.2%
Age 36–44 (Age 18–24 serves as reference category)	18.3%
Age 45–54 (Age 18–24 serves as reference category)	11.7%
Age 55–61 (Age 18–24 serves as reference category)	7.3%
Aged 62 or over (Age 18–24 serves as reference category)	31.7%
Disabled	17%
Missing data for disabled	18.4%
Ratio of median HH income to housing value	14.5
Received welfare	19%
Amount of housing subsidy	$429
Neighborhood poverty rate 20–39% (Poverty rate less than 20% serves as reference category)	14.1%
Neighborhood poverty rate greater than 40% (Poverty rate less than 20% serves as reference category)	34.9%
Number of bedrooms in unit	1.75
N	29,021,457

Exhibit 2 illustrates the results of the life-table analysis for the full population. Columns 5 and 6 provide parameters for the survivor function and the hazard, respectively. Except for the first year, the results suggest that the likelihood of exiting housing assistance is greatest in the earliest years, as evidenced by the steepest declines in the survivor function being found in the earlier years and the hazard being highest in the earlier years. Recall that the survival function gives an indication of the likelihood of a household remaining a recipient of housing assistance to a given year. As column 5 in exhibit 2 shows, the steepest decline in the survivor function is between the second and third years. After that period, the declines in the survivor function decrease at a decreasing rate, leveling off after the 10th year or so. Likewise, the hazard is highest in the second year and declines steadily after that, leveling off after about the 10th year. The hazard does spike upward for those in the midst of extremely long housing spells—beyond 58 years. But at this point the population size is very small and, hence, this pattern is applicable only to a very small portion of all housing assistance recipients.

Exhibit 2

Life-table Analysis

Time From Entering Housing Assistance	Number Leaving Housing Assistance	Number Censored	Effective Population Size	Survival	Hazard
Year 1	419,612	534,302	7,574,473	1.0000	0.056976
Year 2	1,110,675	476,471	6,649,474.5	0.9446	0.182253
Year 3	800,834	363,102	5,119,013	0.7868	0.169719
Year 4	502,663	265,569	4,003,843.5	0.6637	0.133954
Year 5	351,206	212,015	3,262,388.5	0.5804	0.113777
Year 6	258,947	166,924	2,721,713	0.5179	0.099893
Year 7	197,231	131,646	2,313,481	0.4686	0.089049
Year 8	157,547	114,267	1,993,293.5	0.4287	0.082291
Year 9	131,308	97,129	1,730,048.5	0.3948	0.078892
Year 10	111,593	81,856	1,509,248	0.3648	0.076778
Year 11	97,711	70,963	1,321,245.5	0.3379	0.076793
Year 12	85,479	64,728	1,155,689	0.3129	0.076804
Year 13	76,432	56,644	1,009,524	0.2897	0.07869
Year 14	67,694	49,501	880,019.5	0.2678	0.08
Year 15	61,052	43,016	766,067	0.2472	0.083003
Year 16	54,920	37,280	664,867	0.2275	0.086162
Year 17	48,795	31,648	575,483	0.2087	0.088543
Year 18	43,040	28,428	496,650	0.1910	0.090586
Year 19	38,107	26,101	426,345.5	0.1745	0.093562
Year 20	33,481	24,254	363,061	0.1589	0.096676
Year 21	29,121	22,363	306,271.5	0.1442	0.099828
Year 22	24,245	19,519	256,209.5	0.1305	0.099329
Year 23	19,754	17,544	213,433	0.1182	0.097045
Year 24	16,877	13,819	177,997.5	0.1072	0.099535
Year 25	13,842	10,559	148,931.5	0.0971	0.097472
Year 26	10,503	8,574	125,523	0.0880	0.087327
Year 27	8,617	7,029	107,218.5	0.0807	0.083733
Year 28	7,509	5,008	92,583	0.0742	0.084534
Year 29	6,357	4,572	80,284	0.0682	0.082445
Year 30	5,597	2,478	70,402	0.0628	0.082792
Year 31	4,787	2,402	62,365	0.0578	0.079821
Year 32	4,228	2,314	55,220	0.0533	0.079614
Year 33	4,016	2,232	48,719	0.0493	0.085975
Year 34	3,267	1,850	42,662	0.0452	0.079628
Year 35	2,764	1,693	37,623.5	0.0417	0.076266
Year 36	2,364	1,557	33,234.5	0.0387	0.073754
Year 37	2,241	1,219	29,482.5	0.0359	0.079014
Year 38	2,002	1,178	26,043	0.0332	0.079946
Year 39	1,612	915	22,994.5	0.0306	0.07265
Year 40	1,564	756	20,547	0.0285	0.07913
Year 41	1,396	680	18,265	0.0263	0.079467
Year 42	1,421	571	16,243.5	0.0243	0.091483
Year 43	1,378	494	14,290	0.0222	0.101316
Year 44	1,355	430	12,450	0.0200	0.115099
Year 45	1,330	433	10,663.5	0.0179	0.13302
Year 46	1,133	349	8,942.5	0.0156	0.135267
Year 47	1,062	464	7,403	0.0137	0.15454
Year 48	1,005	369	5,924.5	0.0117	0.185356
Year 49	741	521	4,474.5	0.00971	0.180556
Year 50	492	354	3,296	0.00810	0.161311
Year 51	406	205	2,524.5	0.00689	0.174887
Year 52	398	94	1,969	0.00578	0.224859
Year 53	194	178	1,435	0.00462	0.144993
Year 54	185	60	1,122	0.00399	0.179699
Year 55	139	47	883.5	0.00333	0.170762
Year 56	98	24	709	0.00281	0.148485
Year 57	90	21	588.5	0.00242	0.165593
Year 58	61	17	479.5	0.00205	0.135857
Year 59	73	22	399	0.00179	0.201379

Exhibit 2

Life-table Analysis (continued)

Time From Entering Housing Assistance	Number Leaving Housing Assistance	Number Censored	Effective Population Size	Survival	Hazard
Year 60	62	19	305.5	0.00146	0.225865
Year 61	69	30	219	0.00117	0.373984
Year 62	31	49	110.5	0.000798	0.326316
Year 63	15	15	47.5	0.000574	0.375
Year 64	8	4	23	0.000393	0.421053
Year 65	8	2	12	0.000256	1
Year 66	2	1	2.5	0.000085	–

If 5 years is used as the cutoff for short-term spells and 10 years is used as the cutoff for long-term spells, admittedly arbitrary cutoffs, the survivor function shows that the probability of a household receiving housing assistance beyond 5 years is 58 percent. The probability of a household receiving housing assistance beyond 10 years is 36 percent. To the extent that policymakers are concerned about long-term housing assistance receipt, there appears to be a sizable proportion of the housing-assisted population to be concerned about.

The results presented here are consistent with some prior research that showed the greatest likelihood of housing assistance exits occurs in the earliest years. Freeman (1998), Hungerford (1996), and Susin (1999) all found the highest hazards for leaving housing assistance in the earliest years of a spell. Bahchieva and Hosier (2001) did not find exits from public housing to be greater during the early portions of a spell, but, as mentioned earlier, their focus on the New York City housing market could explain their anomalous results.

The results also suggest that some of the earlier studies that relied on self-reported data, such as Freeman's use of the Panel Study of Income Dynamics (Freeman, 1998), may have overstated the extent to which exits from housing assistance were occurring in the early years of a spell. Freeman's results showed relatively few households remaining beyond 5 years, which is clearly not the case here. The discrepancies could be due to the relatively small size in the PSID (only 1,000 observations) or the misreporting of errors as described above.

Exhibits 3, 4, and 5 illustrate the hazard rates for different subsets of the population, focusing on variations across type of housing assistance, race/ethnicity, and elderly status. The hazards fluctuate wildly in the late years of a spell, reflecting the small number of households who receive housing assistance for such long periods of time. Consequently, the focus is on the earlier stages before the 50th year of a spell.

Exhibit 3 depicts the hazards for public housing residents, Section 8 recipients, and other HUD-assisted housing, respectively. The general pattern is similar to that discussed for the full population. The hazards are highest in the earliest years, followed by a relatively steady decline. Up to about year 8, Section 8 recipients have the lowest hazards. After the 15th year, Section 8 recipients have the highest hazards. The lower hazards among Section 8 recipients in earlier years of a spell could be indicative of greater residential satisfaction among these recipients and thus less motivation to alter one's housing situation.

Exhibit 4 shows how the hazard differs for different racial/ethnic groups. Whites generally have the highest hazard, followed by African Americans and then Latinos. There are two reasons Whites might leave housing assistance more quickly. First, non-Whites might

face housing discrimination, which might limit the opportunities for non-Whites seeking nonsubsidized housing. Second, Whites may be more upwardly mobile and, hence, have an easier time leaving housing assistance.

The hazard rates for the elderly and nonelderly are depicted in exhibit 5. Because the elderly are apt to be in a settled stage of life in which dramatic life changes of the type that would precipitate exiting housing assistance, such as changes in household composition or income, are less likely, this group might be expected to have a relatively low hazard. In the early years of a spell, this is indeed the case. The hazard for the elderly portion of the housing assistance spells is lower. Around year 15, the hazards converge and fluctuate thereafter.

Exhibit 3

Hazard Rate by Program Type

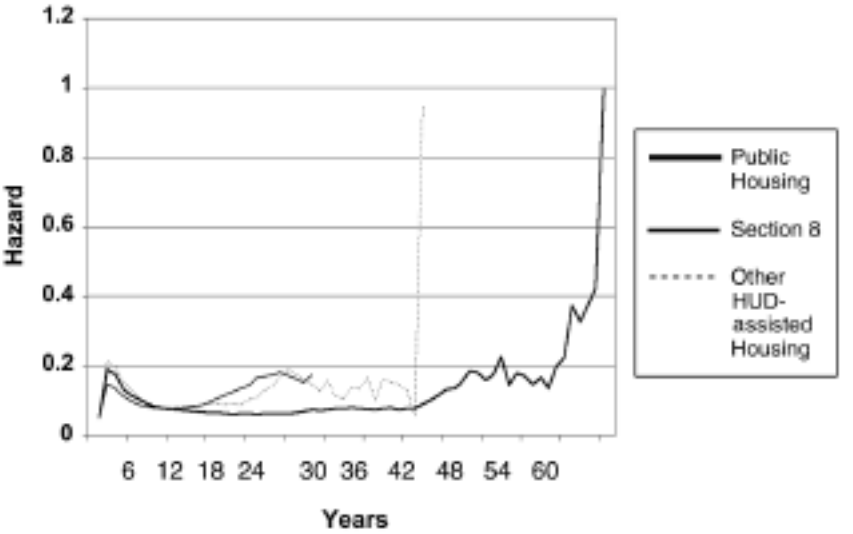


Exhibit 4

Hazard Rate by Race/Ethnicity

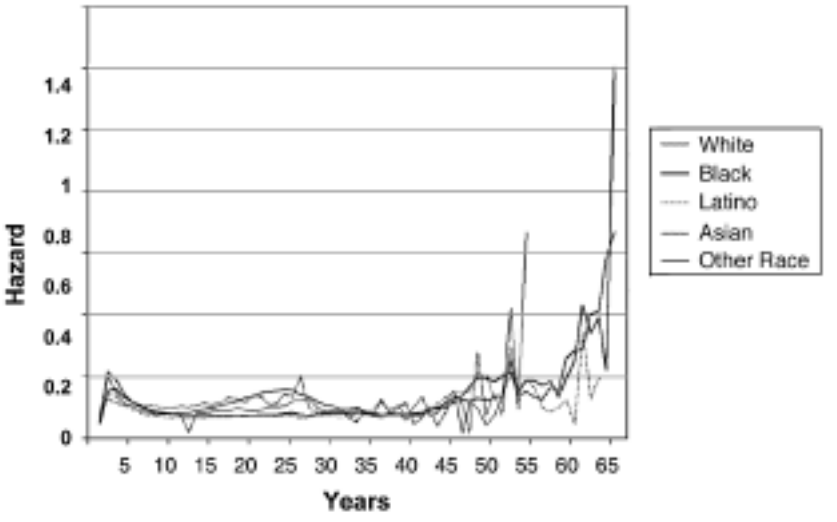
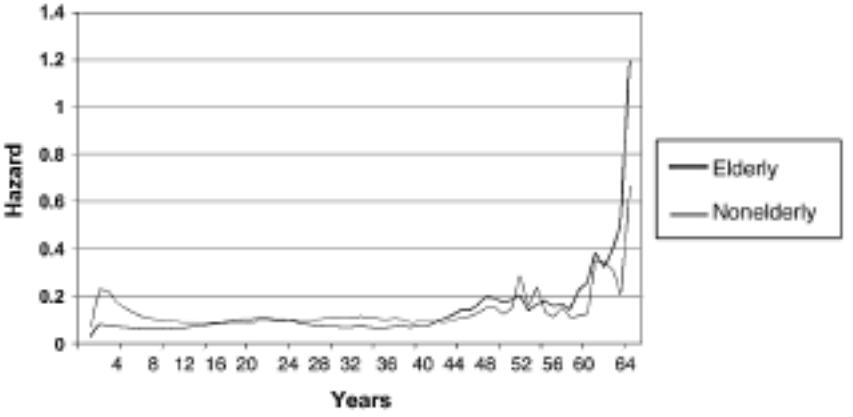


Exhibit 5

Hazard Rate by Age



The results of the life-table analysis begin to paint a picture of the dynamics of housing assistance receipt. They show that a sizable portion of housing assistance recipients ceased receiving housing assistance within the first 5 years. Certainly long-term receipt does not accurately describe the entire housing assistance population. Yet long-term receipt does accurately describe some of this population. The survivor function presented in Exhibit 2 shows recipients have about a 36 percent chance of remaining recipients for at least 10 years and about a 16 percent chance for at least 20 years. The life-table analyses also show that some Section 8 recipients, non-Whites, and the elderly typically leave housing assistance at slower rates than public and other assisted housing residents, Whites, and the nonelderly, respectively. The multivariate analyses are used to gain a more complete picture of the factors that affect housing assistance spells, taking into account housing and neighborhood conditions and considering multiple individual characteristics simultaneously.

Multivariate Analyses

Exhibit 6 illustrates the results of the multivariate analyses. The relationships of each independent variable to exiting housing assistance are presented as odds ratios. Because the data represents the entire population of housing assistance recipients, levels of statistical significance are not relevant. The odds ratios can be interpreted as the true population parameters. Conversely, an alternative school of thought would say that statistical significance is still pertinent because we only observe the population at a given point in time from an infinite universe of populations or super population and, hence, the data used in this analysis represent a sample (Deaton, 1997). For that reason, the probabilities of obtaining each odds ratio by chance is also presented. As will be seen, given the large size of the population, some 20,661,538 observations,[3] almost all of the parameters are statistically significant anyway.

Odds ratios greater than 1 indicate a positive relationship with the likelihood of exiting housing assistance, whereas odds ratios less than 1 indicate a negative relationship. The distance of the odds ratio from 1 indicates the magnitude of the relationship. Thus, an odds ratio of 3 indicates a stronger positive relationship than an odds ratio of 2. The relationships between individual level, environmental, and temporal factors and exiting housing assistance are considered in turn.

Exhibit 6

Discrete-time Logistic Regression Model

Independent Variable	Odds Ratio	P-value
African American (White serves as reference category)	.81	< .01
Latino (White serves as reference category)	.88	< .01
Asian (White serves as reference category)	.84	< .01
Other race (White serves as reference category)	1.10	< .01
Respondent's own race is majority of housing authority (Finkel-Kennedy thesis)	.96	< .01
Female	.84	< .01
Married	1.05	< .01
Has children	.84	< .01
Age 25–34 (Age 18–24 serves as reference category)	.89	< .01
Age 35–44 (Age 18–24 serves as reference category)	.76	< .01
Age 45–54 (Age 18–24 serves as reference category)	.63	< .01
Age 55–61 (Age 18–24 serves as reference category)	.54	< .01
Aged 62 or over (Age 18–24 serves as reference category)	.46	< .01
Disabled	.72	< .01
Missing data for disabled	.83	< .01
Section 8 recipient	.79	< .01
Other housing assistance	.76	< .01
Received welfare	.94	< .01
Amount of housing subsidy	.99	< .01
Number of bedrooms in unit	1.12	< .01
Vacancy rate	2.53	< .01
Ratio of median HH income to housing value	1.002	< .01
Neighborhood poverty rate 20–39% (Poverty rate less than 20% serves as reference category)	.99	< .01
Neighborhood poverty rate greater than 40% (Poverty rate less than 20% serves as reference category)	.94	< .01
Midwest (Northeast serves as reference category)	1.05	< .01
South (Northeast serves as reference category)	1.11	< .01
West (Northeast serves as reference category)	1.09	< .01
Calendar year 1996 (1995 serves as reference category)	.83	< .01
Calendar year 1997 (1995 serves as reference category)	.88	< .01
Calendar year 1998 (1995 serves as reference category)	1.51	< .01
Calendar year 1999 (1995 serves as reference category)	26.75	< .01
Calendar year 2000 (1995 serves as reference category)	.68	< .01
Calendar year 2001 (1995 serves as reference category)	.86	< .01
Calendar year 2002 (1995 serves as reference category)	.67	< .01
Year 2	1.34	< .01
Year 3	1.04	< .01
Year 4	.91	< .01
Year 5	.85	< .01
Year 6	.81	< .01
Year 7	.83	< .01
Year 8	.81	< .01
Year 9	.82	< .01
Year 10	.82	<. 01
Year 11	.82	< .01
Year 12	.83	< .01
Year 13	.86	< .01
Year 14	.87	< .01
Year 15	.89	< .01
Year 16	.91	< .01
Year 17	.92	< .01
Year 18	.94	< .01
Year 19	.94	< .01
Year 20	1.38	.78
Year 21	.69	.75
Year 22	.67	.73
Year 23	.68	.74
Year 24	.65	.72
Year 25	.63	.69
Year 26	.60	.66
Year 27	.56	.62

Exhibit 6

Discrete-time Logistic Regression Model (continued)

Independent Variable	Odds Ratio	P-value
Year 28	.58	.64
Year 29	.55	.61
Year 30	.55	.60
Year 31	.54	.60
Year 32	.54	.59
Year 33	.53	.58
Year 34	.50	.54
Year 35	.55	.60
Year 36	.51	.56
Year 37	.49	.54
Year 38	.56	.62
Year 39	.51	.56
Year 40	.54	.59
Year 41	.53	.59
Year 42	.58	.63
Year 43	.54	.59
Year 44	.48	.53
Year 45	.53	.58
Year 46	.54	.59
Year 47	.52	.57
Year 48	.51	.56
Year 49	.48	.52
Year 50	.55	.61
Year 51	.51	.57
Year 52	.59	.64
Year 53	.75	.81
Year 54	.63	.69
Year 55	.69	.75
Year 56	.75	.80
Year 57	.44	.49
Year 58	.42	.46
Year 59	1.02	.98
Year 60	.44	.49
Year 61	.44	.49
Year 62	1.81	.62
Year 63	.63	.45
Measure of Goodness of Fit		
Wald χ^2	3,661,762.97	96 d.f. P < .0001
Percent concordant		78.0%
Percent discordant		21.6%
Tied		.4%
N		24,661,649

Consider how individual level characteristics are related to the odds of exiting housing assistance. Race and age emerge as especially strong predictors of exiting housing. Asians, African Americans, and Latinos are less likely than Whites to exit housing assistance even after controlling for a host of other factors. This tendency may be because these groups have fewer housing opportunities due to the racially and ethnically segmented nature of housing markets. While all of the older age groups have a lower likelihood of exiting housing assistance than those in the 18 to 24 group, the difference is especially pronounced for those in the oldest age brackets. For example, the odds ratios for the categories representing those 45 or older are substantially smaller than the ones representing younger categories. Being disabled, a welfare recipient, a woman, or having children is also associated with a lower likelihood of exiting housing assistance. Disabled people, welfare recipients, female heads of households, and those with children might be expected to be less likely to exit housing assistance; the former three are likely to face obstacles

achieving the upward mobility necessary to exit housing assistance. The disabled face obstacles to upward mobility because they cannot work. Welfare recipients are typically more disadvantaged than nonrecipients and will find increases in earned income offset by reductions in welfare benefits. It may thus be difficult to increase one's income sufficiently to be able to afford to exit housing assistance. Because of typically earning less than men, women might also find it harder to exit housing assistance. Households with children may be reluctant to move, which is often necessary when exiting housing assistance. Therefore, this pattern of results conforms to expectations.

Among the categories of housing assistance, both Section 8 recipients and other assisted housing recipients exited housing assistance more slowly than public housing residents. This finding is consistent with the hazard rates presented in exhibit 3, which show public housing clients to generally have the highest hazards for exiting housing assistance. This result could represent the fact that these recipients of housing assistance outside of public housing are more satisfied with their housing arrangements than public housing residents are and, hence, are less likely to want to change their current housing situation, which leaving housing assistance might often require. In addition, the family self-sufficiency initiatives started in recent years have targeted public housing residents as opposed to other types of housing assistance recipients. These programs may be having some effect by hastening exits from public housing relative to the other housing assistance programs.

Given that larger apartments are generally scarcer, one would expect housing assistance recipients with the largest units to be reluctant to part with their unit and thus less likely to exit housing assistance. Contrary to this expectation, however, residing in a larger apartment is associated with slightly higher odds of exiting housing assistance. The amount of the subsidy had the expected negative relationship, meaning the larger the subsidy, the less likely the recipients are to exit housing assistance. Yet the size of the relationship was modest.

Turning to environmental factors, the local vacancy rate demands attention as a very important determinant of exiting housing assistance. More than any other factor, having housing alternatives, as indicated by a higher vacancy rate, seems to be an important determinant of exiting housing assistance. Surprisingly, the ratio of a household's income to local fair market rents was only modestly related to housing assistance exits. The level of poverty in the surrounding neighborhood was also only modestly related to exiting housing assistance. Those in neighborhoods with poverty rates greater than 40 percent are modestly less likely to leave housing assistance and those in neighborhoods with poverty rates between 20 and 40 percent are only slightly less likely to exit housing assistance. Taken together, this pattern provides modest support for the notion that neighborhood effects influence housing assistance exits.

The results presented in exhibit 6 also provide some support for the Finkel-Kennedy hypothesis. As adapted to this analysis, the Finkel-Kennedy hypothesis suggests that individuals residing in localities where their racial/ethnic group predominates should be less likely to exit housing assistance. The odds ratio does indicate these individuals are less likely to exit housing assistance.

Compared to housing assistance residents in the Northeast, those residing elsewhere are more likely to exit housing assistance in a given year. Many of the tightest and most expensive housing markets, such as Boston and New York City, are in the Northeast. Thus, this result is not so surprising.

The last set of factors discussed is temporal. The odds ratios for the calendar years 1996 through 2002 do not exhibit a consistent pattern that lends itself to any explanation. Indeed, the year 1999 appears quite anomalous; the likelihood of exiting housing assistance

appears to have increased dramatically for this year. The possibility that changes in the recording of administrative data created the resulting puzzling pattern cannot be ruled out.

The length of the housing assistance spell is clearly related to the odds of exiting housing assistance, but, as with the odds ratios representing calendar years, the pattern defies easy explanation. Compared to the likelihood of exiting housing assistance in the first year of a spell, the likelihood is greater in the second and third years of a spell, lower in the 4th through 19th years, and inconsistent after that. The standard errors (not presented here) are also relatively large in the years beyond the 19th year of a spell, reflective of the small sample sizes for longer spells. Although the data represent a population and the normal meaning of statistical significance is not applicable, the large standard errors for spells 20 years and longer do suggest a great deal of dispersion around each of the parameters representing each of these later years of a spell. This dispersion means the odds ratios might not summarize the data as well for the later years of a spell as it does for the earlier years.

The pattern for the years of housing assistance duration is certainly inconsistent with what would be expected if duration dependence were prevalent among housing assistance recipients. If duration dependence were a factor, the odds ratios for the length of spells should all be less than 1 and be gradually decreasing the longer the spell. This scenario would indicate that it was becoming more difficult to exit housing assistance the longer one was a housing assistance recipient. Most likely, unobserved heterogeneity is responsible for the pattern observed. That is, individuals enter housing assistance with different proclivities for exiting housing assistance. These different proclivities for exiting housing assistance would explain why the likelihood of exiting housing assistance is lower in the first year than in the second and third years. Most people probably enter housing assistance planning to stay at least a year. Thus, relatively few exits occur during the first year. Those planning to leave early, however, might do so in the second or third year, leaving behind those who planned to stay long term. Taken together, the results of the life-table analysis and the multivariate analysis suggest duration dependence is not widespread among housing assistance recipients.

The multivariate analyses suggest the availability of alternative housing options, race/ethnicity, disability status, and life-cycle factors—including marital status, age, and the presence of children—are among the most important predictors of exiting housing assistance.

Conclusion and Implications

Concern about dependency has been a driving force in shaping public assistance policy in recent years. The political consensus that has emerged dictates public assistance should be temporary for those willing to help themselves. Housing assistance has not been immune to this trend. To date, information on the nature and extent of dependency among housing assistance recipients has been sketchy. The research presented here begins to fill in some of the missing pieces of the picture of housing assistance dynamics.

If we take an expansive view of dependency, meaning those who remain on housing assistance for long periods of time, this research suggests dependency is widespread among housing assistance recipients. The odds are that the typical housing assistance recipient will have a spell that lasts at least 5 years. A more nuanced and perhaps more appropriate view of dependency, however, would define it as those who lose motivation due to the experience of receiving housing assistance. This more nuanced view would also see an unwillingness to take advantage of other opportunities as indicative of dependency. Under this more nuanced view, the elderly and infirm, although long-term users of housing assistance, would not be considered dependent.

The results presented here are, for the most part, inconsistent with this more nuanced notion of dependency. Little evidence exists of duration dependence and some of the strongest predictors of exiting housing assistance, including vacancy rates and the race and ethnicity of the client, suggest housing assistance serves as a substitute for decent affordable housing that is unavailable in the private market, especially for low-income minorities. The results presented here also show that life-cycle factors such as age, having children, or being married depress the likelihood of exiting housing assistance.

In particular, the elderly are a major group among the long-time users of vouchers. This large group of elderly implies that exiting housing assistance often necessitates a major change in residence, that housing assistance recipients will be governed by the same life-cycle factors that govern residential mobility in general, and that people will likely see a requirement to move as a major disruption in their lives.

The policy implications of these findings are that reforming housing assistance into a short-term program may be more complex than doing the same for welfare. As with the case for welfare recipients, housing assistance recipients are likely to need job readiness training and other human capital investments to compete successfully in the labor market and achieve a modicum of upward mobility. Yet this investment is unlikely to be enough to significantly hasten their exiting housing assistance if other housing opportunities are scarce. Moreover, to the extent that leaving housing assistance requires moving, some households may be reluctant to disrupt their current life patterns. Policymakers will have to take account of these issues if they wish to make short-term housing assistance more of the norm.

Author

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Notes

1. Participation in the Family Self-Sufficiency Program, prior homelessness status, and net family assets are three factors that likely influence exits from housing assistance. Unfortunately, the high number of missing observations for these three variables precluded their inclusion in the multivariate models.

2. Thanks to Mark Shroder of the U.S. Department of Housing and Urban Development for pointing this out to me.

3. Some observations were lost due to missing values.

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