CENTER for RETIREMENT RESEARCH at BOSTON COLLEGE

INTENDED BEQUESTS AND HOUSING EQUITY IN OLDER AGE

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Abstract

This paper examines how homeownership evolves in old age and around the time of death, using detailed data from the *Health and Retirement Study* (HRS) to assess the extent to which housing wealth held by older Americans might be used to complement Social Security in the provision of retirement income. Critical components of the analysis include the use of rich information on medical diagnoses, functional status, and bequest intentions in a competing-risks proportional hazard model of the likelihood of making a tenure transition out of homeownership, where death is the competing risk.

The paper found that:

- The age profile of homeownership falls to under 10 percent among the oldest old, which in past studies has been a sufficient statistic for life-cycle behavior.
- For a baseline sample of homeowners, roughly half transition to renting before death; the other half die as homeowners.
- Health shock and bequest intentions play important roles in explaining why the elderly fail to spend housing wealth via tenure transitions.

The policy implications of the findings are:

- Along with entitlements to Social Security and employer-provided pensions, housing is the most important asset in elderly portfolios, so that housing might supplement the retirement income of future retirees.
- The annual flow of housing bequests is about 4 percent of the aggregate housing value held by older Americans.
- About 80 percent of aggregate housing wealth of those 62 and older may be available to support consumption in retirement net of intended bequests.

Introduction

Along with entitlements to Social Security and employer-provided pensions, housing is the most important asset in elderly portfolios, and, as such, there is significant policy interest in the extent to which housing might supplement the retirement income of future retirees. However, a long-standing issue at the intersection of urban economics, public finance, and the economics of aging is the extent to which the elderly spend down their housing wealth as they age, as predicted by the simplest forms of the life-cycle hypothesis (Modigliani and Brumberg, 1954; Artle and Varaiya, 1978). Early empirical studies, beginning with Merrill (1984) and followed by Venti and Wise (1989, 1990), used data from the *Retirement History Survey* (RHS) in the 1970s and found little evidence that homeowners extracted home equity either by downsizing and remaining an owner, or by liquidating equity altogether in transitioning to renting. These findings presented an empirical puzzle, especially for lower income homeowners with large amounts of home equity—the so-called "house-rich, income-poor"—who could increase consumption by converting home equity to retirement income, for example, through reverse mortgage products (Venti and Wise, 1991; Mayer and Simons, 1994; Merrill, Finkel, and Kutty, 1994).

Subsequent studies provided some clarity, but questions remained. The RHS contained relatively young elderly (in their late fifties through early seventies), potentially too young to detect significant tenure transitions from owning to renting, if those occurred predominantly among the oldest old. New work with data from a variety of time periods and that tracked individuals to older ages, such as the *Panel Study of Income Dynamics* (Sheiner and Weil, 1992; Megbolugbe, Sa-Aadu, and Shilling; 1997), *Current Population Survey* (Sheiner and Weil, 1992), *Survey of Income and Program Participation* (Venti and Wise, 2001, 2004) and the *Health and Retirement Study* (Venti and Wise, 2001, 2004; Walker, 2004), generated a number of empirical regularities. First, there was little evidence that homeowners extracted home equity by increasing mortgage debt, or downsizing in value and remaining an owner. Second, the only measurable reductions in home equity came from tenure transitions from owning to renting. These transitions were relatively infrequent among two-person (married) households, but when they did occur, followed an adverse health shock or widowhood. Finally, with the advent of better data, the age profile of homeownership for one-person households was shown to eventually decline, especially after age 80 (Sheiner and Weil, 1992; Megbolugbe, Sa-Aadu, and

Shilling, 1997). However, Venti and Wise (2004) found that even up through age 95, the homeownership rate for one-person households was roughly 40 percent, significantly higher than would be implied by the simplest form of the life-cycle hypothesis. This opened the door to other reasons for holding housing wealth late in life, including the role of aging in place, Medicaid eligibility, taxes, bequests, and insurance motives, among others.

This report returns to this literature and examines how homeownership evolves in old age and around the time of death. We do so for a number of reasons. First, there remains significant policy interest in the extent to which housing might supplement the retirement income of future retirees. Indeed, there has been renewed work on reverse mortgages (Shan, 2011; Davidoff, 2013, 2014; Moulton et al., 2015; Haurin et al., 2016; among others). Second, there has been growing interest in macroeconomics on housing and end-of-life behavior, both in structural modeling that explains why the elderly hold a large amount of wealth so late in life (e.g., De Nardi, French, and Jones, 2010; Jones et al., 2020), as well in the calibration of life-cycle homeownership in models that incorporate housing and real estate, a very active area of macroeconomic research since the Great Recession (e.g., Davis and Van Nieuwerburgh, 2015). Finally, with the exception of work by Painter and Lee (2009) and Lee and Painter (2014), who examined data from the PSID, remarkably little has been written in this area over the last fifteen years, despite rapid population aging and the emergence of new, detailed data on housing and aging in the *Health and Retirement Study* (HRS).

The empirical analysis uses panel data from the HRS, a nationally representative survey of Americans ages 50 and older interviewed roughly every two years until they die. With data that span over 20 years for some individuals, homeownership rates can be measured to much older ages than Venti and Wise (2001, 2004) and Walker (2004), who used data from 1992-2000. In the main sample, the homeownership rate for living, non-institutionalized individuals peaks at age 72 at 69.8 percent, remains relatively flat until age 80, then decreases at an increasing rate. The homeownership rate at age 90 is 51.8 percent; at age 100 it is 22.9 percent; and at ages 103 and older, it is 12.5 percent. This pattern continues to hold when measuring the age profile of homeownership by 10-year birth cohorts.

In a methodological contribution, the age profile of homeownership is recalculated by combining person-year observations on living, non-institutionalized individuals with two other groups in the HRS. The first are living survey respondents admitted to a nursing home, hospice,

or other long-term care facility at the time of the interview. In other surveys, such as the CPS and SIPP, these individuals are considered institutionalized and are not sampled. In the Census and *American Community Survey* (ACS), these individuals are sampled, but are categorized as living in group quarters and are not asked about homeownership. In the study of life-cycle housing behavior, however, these are relevant individuals in the population, and they grow as a fraction of the elderly as age increases and, especially, as death approaches. Importantly, the HRS asks these individuals (or their proxies) about homeownership. The second are observations on decedents drawn from the HRS "exit" interviews. In other longitudinal surveys, when a respondent dies, that individual attrits from the sample, and the economic and life experiences that occurred between the last interview and the date of death are not recorded. This could result in up to two years of lost information for biennial surveys (like the PSID). In contrast, when a respondent dies in the HRS, the decedent's next of kin is administered an "exit" interview, which covers the financial, health, and other circumstances of the decedent in the period since the last interview (when alive) and at the time of death.

Data on homeownership from these two new sources are critical to the analysis, because a nontrivial share of both tenure transitions and admissions to skilled nursing facilities occur in the final two years of life. For individuals who are 75 and older, homeownership rates are on average 6 percentage points lower when those in nursing homes, hospice, and other long-term care facilities are included. When exit-interview information is used, homeownership rates are an additional two percentage points lower on average. For individuals in their early 90s, the results are starker: measured homeownership rates are 10-14 percentage points lower. Therefore, true homeownership rates are significantly overstated for older Americans using just data on living respondents, which has been the mode in all of the previous literature.

Overall, when extending the samples to individuals alive at very old ages, the age profile of homeownership declines to 7.7 percent, significantly lower than previous studies. However, there is a distinction between home ownership in old age and the end of life. In particular, the life-cycle hypothesis places restrictions on the time path of wealth as the date of death nears (or the expected date of death, if there is mortality risk). In reality, there is a distribution of dates of death, and many individuals die at ages that would not categorize them as the oldest old. To address this, the second part of the paper examines the homeownership trajectory prior to death, constructed for a baseline sample of homeowners. It declines as the date of death approaches,

using the sample of decedents and information from the exit interviews. Roughly half of elderly homeowners made own-to-rent transitions before death. This pattern of tenure transitions, and the accompanying housing wealth spend-down, is not consistent with simple versions of the life-cycle hypothesis, unless there is significant uncertainty about the date of death. Furthermore, for the other half of baseline homeowners who died as homeowners, their housing wealth was bequeathed, usually to children. A small fraction of the heirs took possession of the property; the remainder had sold the property.

A key conclusion is that bequests play an important role in the housing behavior of the elderly, a theme that emerged in discussions (e.g., Poterba, 1990; Sheiner and Weil, 1992) of the early work in this literature. Since the date of death is uncertain, a key question is whether housing bequests are intended or unintended. In particular, unintended bequests would be ones that occurred because *ex ante* the elderly desired to spend down their housing wealth, but *ex post* died earlier than anticipated. To examine this, the third part of the paper uses HRS questions in prior waves (when alive) on medical diagnoses, functional status, and bequest intentions, and presents estimates from a competing-risks proportional hazard model of tenure transitions from homeownership, where the competing risk is death. Bequest intentions are important for housing disposition. Health shocks and functional decline prior to death also play a role in the likelihood that housing wealth is extracted via an own-to-rent transition.

The analysis ends with a series of calculations of aggregate housing bequests for the population of Americans 62 and older, i.e., old enough to claim Social Security benefits. We estimate that the annual flow of housing bequests is about 4 percent of the aggregate housing value held by older Americans. Both actual bequests and bequest intentions track the housing and business cycles. Our estimates suggest that about 80 percent of aggregate housing wealth of those 62 and older may be available to support consumption in retirement net of intended bequests.

Overall, despite the fact that the age profile of homeownership goes to (almost) zero among the oldest old, which in past studies has been a sufficient statistic for life-cycle behavior, the time pattern of elderly homeownership as death approaches does not accord with the predictions of a simple life-cycle model. This opens the door to other reasons for holding housing wealth late in life, including the role of aging in place, Medicaid eligibility, taxes, bequests, and insurance motives, among others. There is no comprehensive study that evaluates

the relative importance of these in a single framework, and this analysis does not either. Instead, this paper argues bequests play an important role. Because housing can serve multiple alternative roles simultaneously with a bequest intention—insurance, safe harbor from asset testing, etc.—further research is needed to separately identify the unique contributions of each motive for holding housing.

The remainder of the paper is organized as follows. Section 1 describes the HRS sample and constructs the age profile of homeownership, and discusses related measurement issues. Section 2 describes the sample of decedents who were homeowners at baseline, and analyzes the time path of homeownership as the date of death approaches. Section 3 discusses the role of bequests in holding housing assets very late in life and presents reduced-form evidence that anticipated bequests play an important role in housing decisions. Section 4 presents the aggregate calculations. There is a brief conclusion.

Homeownership in Old Age

The data for the empirical analysis are drawn from the HRS, which began in 1992 and since 1998 has been a nationally representative survey of Americans ages 50 and older. At its inception, different birth cohorts entered the study in different years. The HRS Original Cohort, born 1931-41, entered in 1992, when they were 51-61 years old. The Asset and Health Dynamics of the Oldest Old (AHEAD) Cohort, born 1923 and earlier, entered in 1993, when they were 70 and older. The Children of Depression (CODA) and War Babies Cohorts, born 1924-30 and 1942-46, respectively, entered in 1998, at which point the HRS became fully representative of the 50 and older population. Beginning in 1998, new birth cohorts of individuals in their 50s are added every six years to refresh the bottom of the age distribution.

Once someone enters the HRS, the individual remains in the study and an interview is conducted every two years until death. Upon death, the next of kin are administered an exit interview that covers the time since the last living interview and the decedent's economic and health circumstances just before and at the time of death. Individuals who enter the HRS are non-institutionalized, but the study follows individuals into institutional settings, such as nursing homes, other long-term care facilities, and hospices, so that the sampled population includes the

institutionalized.[1] Irrespective of residential setting, interviews are conducted with the individual if possible, and, if not, with a proxy respondent (typically a spouse or other caregiver). Pooled across waves, there are 37,495 distinct persons represented in the HRS, so that it contains relatively large samples of the elderly, especially of the oldest old, which makes it a significant advancement over datasets used in previous studies.

To measure the age profile of homeownership, we begin with the broadest sample in our analysis, which is all person-year observations drawn from all waves of the HRS. We depart from the previous literature, which has focused on unmarried individuals, and include all individuals. However, as we show later, our basic message is the same if we focus just on the unmarried. For living respondents, we measure homeownership based on questions in the housing section of the survey (Section H).

Figure 1 shows the profile of homeownership for single years of age from 52-103 years old. As age cells become comparatively thin among the oldest old, the data point for 103 year olds—the oldest in the figure—represents individuals who are 103 or older. There are 60 individuals in that age range, with the oldest being 112 years old. Here, homeownership means ownership of housing assets that are simultaneously used as the primary residence. The complement of homeownership (i.e., non-ownership) is when the respondent either pays cash rent for the residence or some other relationship, which is co-residence in the vast majority of cases among the elderly. In the analysis below, when we refer to an own-to-rent tenure transition, we mean a change from ownership to non-ownership of the primary residence. The homeownership rates in the figure are weighted using the HRS respondent-level sampling weights.[2]

The solid line in the figure shows the age profile of homeownership for living, non-institutionalized individuals. The homeownership rate peaks at age 72 at 70 percent, remains relatively flat until age 80, then decreases at an increasing rate. The homeownership rate at age 90 is 52 percent; at age 100 it is 23 percent; and at ages 103 and older, it is 13 percent. Although

[1] The only group that is not sampled are individuals who are institutionalized while in their early 50s and, thus, not eligible to enter the HRS when their birth cohort enters the study.

[2] For living individuals in the figure, we use the combined respondent/nursing-home weight; for decedents, the HRS does not provide a weight (when dead), so we use the value of the combined respondent/nursing-home weight from the previous interview when alive. The main conclusions drawn from our age profiles are robust to alternative weights for decedents.

the homeownership rate does not go to zero per se among the oldest old, it has a steep, downward trajectory at advanced ages.

The short-dashed line in Figure 2 shows the percent of individuals in nursing homes, other long-term care facilities, and hospice facilities at the time of interview by single year of age for 66-103 year olds.[3] Roughly 5 percent of those in their early 80s are in such facilities, a modest share, but this rises steeply with age, with 15-20 percent of those in their early 90s in such facilities. The long-dashed line in the figure shows the homeownership rate among this subgroup, where here ownership refers to housing assets that are or were used as the primary residence. For example, someone may own a primary residence, but choose a hospice facility as a place to die (rather than in-home hospice). We count this individual as a homeowner for the purposes of calculating the homeownership rate, just as we would an individual who owned a home, but was admitted to a hospital (for acute care) at the time of the interview. For individuals with long-term stays in rehabilitation hospitals, who likely expect to return to community dwelling, homeownership refers to their primary residence. For those in nursing homes, the categorization is more complicated. While most individuals who enter a nursing home or other skilled nursing facility ex post do not ever leave, some ex ante may expect to and report a community-based primary residence or maintain ownership of what was their primary residence prior to nursing home admission.[4] We characterize these as owners for our purposes, since the failure to sell a primary residence before a significant decline in health that resulted in nursing home admission does shed light on the strength of the life-cycle hypothesis. In fact, as shown in the figure, the homeownership rate among those in a nursing home, long-term care facility, or hospice fluctuates reasonably consistently between 15-20 percent across all ages, indicating that, despite declining physical or cognitive health, some individuals in skilled nursing facilities continue to hold onto their primary residences.

Returning to Figure 1, the long-dashed line adds in all person-year observations from Figure 2—individuals admitted to a nursing home, other long-term care facility, or hospice at the time of the interview—to illustrate the impact on the age profile of homeownership across all living elderly. Not surprisingly, ownership rates are lower, especially at older ages when the

[3] Prior to age 66, the residency rate in nursing homes, other long-term care facilities, and hospices is less than one percent.

[4] For those with significant cognitive impairment, the "report" of a community-based primary residence refers, in this context, to the proxy interviewee assigned by the HRS.

share in skilled nursing facilities rises. Figure 3 shows the change in the measured homeownership rate from expanding the sample to include all living persons. The homeownership rate is significantly overstated among the oldest old from excluding those living in skilled nursing facilities.

Finally, we recalculate the age profile of homeownership in Figure 1 by combining person-year observations on all living persons with observations on decedents drawn from the HRS "exit" interview, which, among other things, asks whether the individual owned his/her primary residence at the time of death.[5] This effectively expands our sample to measure ownership at the age of death; this new series is shown as the short-dashed line in the figure. The measured decline in homeownership from its peak at age 72 is more gradual (less concave). For individuals who are 75 and older, homeownership rates are on average 2 percentage points lower when information on decedents is included, and the homeownership rate for 103 year olds falls to 7.7 percent. Figure 4 shows that the basic patterns in Figure 1 continue to hold when measuring the age profile of homeownership by 10-year birth cohorts.

Prior studies have found little evidence that housing assets decline among the elderly, except during tenure transitions. Figures 5-7 confirm this. Figure 5 shows the mean owner-occupied housing across all unmarried individuals, both homeowners and non-owners, based on the broadest sample that includes person-year observations on the institutionalized and decedents. It shows a steep decline in housing assets with age, but that is driven by the decline in homeownership rates shown in Figure 1. When the sample is limited to the subsample of person-year observations on homeowners, there is little decline in housing assets, either at the mean (Figure 6) or the median (Figure 7).

Homeownership at the End of Life

One (naïve) conclusion from Figure 1 is that if the elderly lived long enough—into their 100s—they essentially would become renters and divest all of their housing assets. Indeed, a

[5] In some cases, the settlement of estates has not occurred fully by the time of the exit interview. In these cases, the HRS administers a post-exit interview in the next round (roughly two years later) to ascertain the final disposition of the decedent's assets. We use these data, too, in the analysis, but for brevity refer to the exit and post-exit interviews as "exit" interviews in the text. Groneck (2017) uses the exit interviews to examine the relationship between bequests and long-term care; Jones et al. (2020) use the exit interviews to examine medical spending and bequests around the time of death.

steeply declining age profile, such as that in the figure, in the past would have been seen as largely consistent with the life-cycle model. A difficulty with this conclusion is that the typical older American does not live to be a centenarian. Indeed, the life-cycle hypothesis places restrictions on the time path of wealth as the date of death nears (or expected date of date, if there is mortality risk), not as age rises. In past studies, age has been used as a proxy for the date of death, but, in reality, there is a distribution of dates of death. Many individuals die at ages that would not categorize them as the oldest old.

To address this, in this section we start with the sample of all HRS respondents who ever were homeowners at some point in the panel and who eventually died, and use the exit interviews in combination with the panel of interviews when alive to construct how the homeownership rate declines as the date of death approaches. To begin, Figure 8 plots the distribution of age at death (rounded to the nearest year) for this sample. Deaths peak when individuals are in the late 80s, ages at which, in Figure 1, homeownership rates are around 50 percent.

For the same sample, the solid line in Figure 9 plots the homeownership rate for all individuals by years until death, with time 0 on the horizontal access marking the year of death from the exit interview. The figure has three key features. First, up until 7 years prior to death, homeownership rates are fairly steady. Second, individuals gradually transition out of homeownership as death approaches, with a drop in the homeownership rate of almost 10 percentage points in the last two years of life. This decline only can be measured by exit interviews and would be missed in standard cross-sectional or longitudinal surveys that focus only on the living. The dashed line shows a qualitatively similar pattern when the sample is limited to unmarried individuals and the last surviving member of married couples. Third, and importantly, at the time of death, 55 percent of all individuals and 39 percent of last-surviving individuals still owned their home. Conditional on owning a home a decade prior to death, this implies that roughly two-thirds of homeowners die in their homes. This indicates quite clearly that the elderly do not spend down their housing equity according to the simplest form of the life-cycle model with no uncertainty about the date of death and no other motives to hold housing assets.

Figure 10 repeats this calculation for a narrower sample of all HRS respondents: those who were born in 1918-1923, for whom mortality is almost complete by the most recent waves

of the HRS. The homeownership rate starts at 100 percent, and reading left to right, declines to 55 percent at the time of death, with much of the decline occurring in the last four years of life. Overall, the analysis suggests that a large fraction of elderly remain homeowners until death, and they bequeath their housing assets.

Bequest Intentions and Tenure Transitions

Two key economic questions are what drives older Americans to hold substantial amounts of wealth, in general, and through homeownership, in particular, in old age and at the time of death, and whether the substantial housing bequests just documented are unintended or intended. There are two general classes of explanations (DeNardi, French, and Jones, 2016). The first is a precautionary motive: large asset holdings are a form of self-insurance against an uncertain life span and end-of-life medical costs, especially long-term and nursing-home care. Individuals who died as homeowners may have died earlier than expected or paid lower than anticipated medical expenditures, so that consequent housing asset bequests are unintentional. Both explicit preferences to age in place (Venti and Wise, 1990; Cocco and Lopes, 2019; Nakajima and Telyukova, 2019) and Medicaid's exclusion of owner-occupied housing from asset testing (Greenhalgh-Stanley, 2012) complement the demand to hold housing, making homeownership a very attractive buffer stock for saving. One puzzle with this explanation is that markets for financial products such as annuities, long-term care insurance, and reverse mortgages, which are designed to mitigate these risks, are much smaller than would be predicted if such risk management were a dominant motive. Whether this occurs because of the elderly's preferences, supply-side imperfections in these markets, or interactions with public programs like Medicaid that crowd out private markets (Brown and Finkelstein, 2008) is an area of active research. The second focuses on bequest motives. Older Americans may desire to leave assets to heirs and hence hold assets like housing until the very end. Again, explicit preferences to age in place and Medicaid safe-harbor rules complement bequest motives, as does federal capital gains tax treatment of owner-occupied housing assets that allows stepped-up basis at death.

Unfortunately, along many dimensions both precautionary and bequest motives generate observationally equivalent predictions about asset holding, in general, and homeownership, in particular, in old age and at the time of death, making it difficult to distinguish the relative importance of the motives and whether the housing bequests documented above are unintentional

or intentional. There is no study that comprehensively evaluates these tradeoffs, and we will not either.[6] Instead what we offer in this section is a reduced-form empirical examination of the power of explicit bequest intentions to explain homeownership transitions, independent of a rich set of variables that proxy for precautionary motives and other potentially confounding factors, such as measures of mortality and nursing-home entry risk, life and long-term care insurance holdings, health, economic, and other characteristics that are measured in the HRS.

Rather than mathematically modeling and structurally estimating bequest function parameters, our approach is based on the based on the following question on explicit bequest intentions:

> "Using a number from 0 to 100, what do you think are the chances that you will leave a financial inheritance?"

It is asked in every HRS wave while the respondent is alive (including both spouses in a couple). Conditional on a strictly positive chance, the individual is asked about the chances of leaving a $10,000 inheritance.[7] A zero correlation between bequest intentions and own-to-rent housing transitions, controlling for a rich array of subjective probabilities of survival and nursing-home entry, plus insurance coverage, and other potential confounders, lends credence to the hypothesis that observed bequests are unintended and homeownership at older ages and the time of death is for precautionary reasons. Conversely, a negative correlation between bequest intentions and own-to-rent housing transitions, controlling for potential confounders, lends credence to the hypothesis that observed bequests motives are an important determinant of elderly homeownership.

In particular, own-to-rent transitions are modeled in a competing-risks proportional hazard framework:

$$\lambda_{it} = \lambda_{0t}\, \mathrm{e}^{\mathbf{z}'\boldsymbol{\beta}}, \tag{1.1}$$

where i indexes individuals, λ, the hazard, measures the probability of transitioning from home owning (to not owning) in period t conditional on not having yet transitioned, $t = 1, ..., \tau$, and λ_0

[6] Lockwood (2018) uses a structural model; Ameriks et al. (2015) use survey-based methods.
[7] Conditional on a strictly positive chance of a $10,000 inheritance, the individual is then asked about the chance of a $100,000 inheritance. In later waves of the HRS, this is expanded to a $500,000 bequest.

is the baseline hazard. There are two competing risks: an own-to-own transition and dying as a homeowner.

The parameters are estimated using the method of Fine and Gray (1999) and a sample of homeownership spells from 2,126 individuals from the CODA cohort. The CODA cohort, born 1924-1930, entered the HRS in 1998, when they were 68-74 years old. The 1998 survey was the first one for which complete information on purchase dates and prices were gathered from which to measure homeownership spells accurately.[8] Individuals are followed every wave they are a homeowner until either they transition to not owning (a completed homeownership spell with an own-to-rent transition), move to another owned residence (a completed homeownership spell with an own-to-own transition—a competing risk), reach the last wave in the sample (a censored homeownership spell), or die a homeowner (the other competing risk). There are 9,392 person-year observations on the 2,126 individuals in this sample. A total of 432 individuals made an own-to-rent transition, 302 made an own-to-own transition, 554 died as homeowners. The remainder have censored spells due to either attrition or remaining in the original residence at the end of the sample period. Table 1 provides means of the variables used in the estimation.

The vector $\mathbf{Z}$ in (1.1) is specified as:

$$\mathbf{Z}'\boldsymbol{\beta} = \theta_1 \Pr(Bequest)_{it-1} + \theta_2 \Pr(Bequest)_{st-1} + \phi_1 D_{it-1}^{Married}. \tag{1.2}$$

The variable $\Pr(Bequest)_{it-1}$ is the individual's subjective probability of leaving a bequest of at least \$10,000 as recorded in the previous wave's interview $(t-1)$ from the questions outlined above. Hence, bequest intentions measured in period $t-1$ are linked with transitions between $t-1$ and t.[9] Similarly, conditional on marital status in (1.2), $\Pr(Bequest)_{st-1}$ is the spouse's subjective probability of leaving a bequest of at least \$10,000 as recorded in the previous wave's interview. In the proportional hazard model (1.1), the baseline hazard is not estimated directly;

[8] For example, for the oldest birth cohort in the HRS, the AHEAD cohort, born 1923 and earlier, and entered in 1993, the housing section of the survey did not ask about the purchase date of the owner-occupied home. Instead, the survey asked whether the individual had lived in the home at least ten years. Therefore, for homeownership spells cannot be measured accurately for all homeowners in the AHEAD cohort. For this reason, we rely on the CODA cohort, which is the oldest cohort for which spells can be measured accurately.

[9] This measure is asked every period while alive, but not (quite obviously) for decedents; hence, bequest intentions measured in period *t* cannot be linked with transitions between *t*-1 and *t*.

instead just the parameters (β) on the explanatory variables that shift the hazard. Therefore, the central objective is to get consistent estimates of the parameters on the focal explanatory variables measuring bequest intentions, θ_1 and θ_2, conditional on marital status. The key null hypothesis is that, conditional on a rich set of controls that in sum proxy for other explanations, the individual's and spouse's bequest intentions jointly have no impact on the likelihood of an own-to-rent transition (i.e., $\theta_1 = \theta_2 = 0$), and, therefore, intended bequests do not play an important role in motives for homeownership in old age and at the time of death.

Baseline Estimation Results

The baseline estimate of θ_1 is $\hat{\theta}_1 = -0.0038$, and is shown in the first row of column 1 in Table 2. With a standard error (clustered at the household level) of 0.0012 shown in parentheses, this estimate is significantly different than zero at conventional significance levels. The marginal effect of a change in the probability of an intended bequest on the hazard of transitioning out of homeownership is shown in square brackets and is calculated as:

$$\exp(\hat{\theta} \cdot \overline{\Pr(Bequest)}) - 1 \,, \tag{1.3}$$

where $\overline{\Pr(Bequest)}$ is the sample mean subjective probability of leaving a financial inheritance. This mean is 69.5 (shown in column 1 of Table 1). Evaluated at the mean, the marginal effect of an increase in the likelihood of an intended bequest (from 0 to 69.5) is to lower the hazard of an own-to-rent transition by -0.233, or 23.3 percent. Likewise, in the second row of Table 2, the marginal effect of an increase the spouse's likelihood of an intended bequest (if married) is to lower the hazard of an own-to-rent transition by 14.2 percent. The third row of the table shows the *p*-value for the test of the null hypothesis that the individual's and spouse's bequest intentions jointly have no impact on the likelihood of an own-to-rent transition (i.e., $\theta_1 = \theta_2 = 0$). For the basic specification in column 1, this null can be rejected at the 0.1 percent level of significance.

As bequest intentions could be correlated with many other determinants of housing transitions, the remaining columns in the table present estimates for progressively richer sets of socio-economic variables. For example, prior studies have found a strong effect of widowhood

on housing transitions. The specification in column 2 adds an indicator for whether the individual became widowed between $t-1$ and t. The death of a spouse has a pronounced impact, raising the hazard of an own-to-rent transition by 8.4 percent, but has little qualitative effect on the estimated impact of bequest intentions. Columns 3-5 add own age (and spouse's if married), calendar-year dummies, sex (female), race (white), education (any college), number of children, income and wealth. The parameter estimates and marginal effects on the bequest probabilities are economically and statistically similar to those in the baseline specification, indicating that stronger bequest intentions are associated with a lower the hazard of transitioning from homeownership by about 15-20 percent.

Robustness to Mortality, Nursing-Home Entry, and Health Risk

In an attempt to identify bequest intentions separately from precautionary motives, column 1 of Table 3 presents estimates from a specification based on the richest model in Table 2 (column 5, which controls for full set of demographics, income, and wealth), but that also controls for the subjective probability the individual (and spouse, if married) survive an additional 10 years, which is measured each wave in the HRS. Column 2 in Table 3 adds measures of the subjective probability of nursing-home entry over the next five years for the individual and spouse based on the following question:

> "What is the percent chance that you will move to a nursing home in the next five years? (Nursing Homes are institutions primarily for people who need constant nursing supervision or are incapable of living independently. Nursing supervision must be provided on a continuous basis for the institution to qualify as a nursing home. Please don't include stays in adult foster care facilities or other short-term stays in a hospital.) (0---10---20---30---40---50---60---70---80---90---100) 0 means absolutely no chance; 100 means absolutely certain."

While those with higher anticipated chance of nursing home entry and lower survival are more likely to transition from own-to-rent, conditional on both, the estimated effects from intended bequests remain unchanged: stronger bequest intentions are associated with a lower the hazard of transitioning from homeownership by about 16 percent.

Beyond longevity and nursing home risk, the elderly may hold long-term care insurance (LTCI) policies to simultaneously insure against late-life chronic medical expenditure risk and protect a bequest. Therefore, column 3 of Table 3 adds controls for LTCI coverage for the individual and spouse. In addition, to make sure that bequest intentions operating through housing are not confounded by such intentions through life insurance, column 4 adds controls for life insurance coverage for the individual and spouse. The estimated effects from intended bequests on own-to-rent transitions remain unchanged.

Of course, nursing-home use is just one of a number of sources of potential long-term care expenditure. Unfortunately, the HRS does not gather data on the subjective probability of using long-term care for all forms. Therefore, as an alternative, column 5 adds three key measures of functional and health status (as of t-1) to account for the time path of health decline (toward death) not already accounted for, which will have effects on the likelihood of a tenure transition, and proxy for other sources of potential long-term care risk, independent of bequest intentions. The first is the sum of eight measures for the presence of medical conditions, broken down into broad classes: high blood pressure, diabetes, cancer, lung disease, heart disease, stroke, psychiatric problems, and arthritis. A condition is deemed present if the individual was told so by a medical professional. For example, the HRS question wording for high blood pressure is

> "Has a doctor ever told you that you have high blood pressure or hypertension?"

A doctor is defined as a

> "…medical doctor and includes specialists such as dermatologists, psychiatrists, ophthalmologists, osteopaths, cardiologists, as well as family doctors, internists and physicians' assistants. Also include diagnoses made by nurses and nurse practitioners."

The other conditions are based on similarly worded questions. These measures are summed to yield the explanatory variable entitled "the number of medical conditions." This variable is an index that ranges from 0 (none of the conditions) to 8 (all of the conditions), and is constructed for both the individual and spouse. In addition, in column 5, we add indicators for whether the individual (and spouse) had ever been diagnosed with a memory-related disease. The second is a set of indicators for whether the individual and spouse have memory disease, which can have

devastating effects on the ability of homeowners to remain in their homes. These indicators are based on the following question:

> "Has a doctor ever told you that you have dementia, senility or any other serious memory impairment?"

The third is the number of limits to the individual's Activities of Daily Living (ADLs), which may pick up a general increase in frailty that is not disease-related. The HRS collects information on five activities—bathing, eating, dressing, walking across a room, and getting in and out of bed—each designed to measure various dimensions of an individual's ability to function in his or her residential space. For each of the five tasks, the HRS records a 1 if the respondent had difficulty with that task and a zero otherwise. The scores are summed for the five tasks, so that the ADL measure we employ ranges from 0 (no difficulties with any of the tasks) to 5 (difficulties with all of the tasks). Therefore, an increase in ADLs across time means a decline in functional status. Since diagnoses are inputs into functionality, our measure of the change in ADLs in will pick up changes in functioning that are independent of these broad categories of medical conditions.

While the presence of memory disease is predictive of an own-to-rent transition, conditional on this rich set of additional controls for health and functionality, the parameter estimates on the bequest probabilities in column 5 are similar in magnitude and remain statistically significant. The estimated marginal effects of an increase in the likelihood of an intended bequest are to lower the hazard of transitioning from homeownership by about 16 percent. Overall, conditional on subjective measures of longevity and nursing-home entry risk and the time path of health, it appears that intended bequests play an important role in why at least some elderly individuals do not transition out of homeownership.

Extensions

Begley (2017) examined the impact of house price fluctuations on bequest intentions. Using HRS data, she found that house price shocks are positively correlated with bequest intentions. Greenhalgh-Stanley and Reynolds (2019) confirmed these findings. While their findings suggest that housing and bequests are linked and lend prima facie evidence consistent with the empirical findings so far, they also suggest a potential confounder in the hazard models,

since house price changes can have a separate impact on own-to-rent transitions, independent of bequest intentions. To explore this, column 1 of Table 4 shows estimates that control for real housing capital gains. Specifically, the HRS asks about the nominal purchase price for each home, the owner's estimate of the current value, and the sales price for homes that are sold. Deflating these prices into real terms using the all-items CPI, real unrealized capital gains can be calculated for each spell year observed in the HRS. The estimated effects of intended bequests on own-to-rent transitions in column 1, controlling for capital gains; the results are similar.[10] Column 2 adds the capital gains tax, and the results are similar.

Column 3 controls for whether the property is jointly owned by someone else, other than the spouse. Transitions may be less likely in the presence of joint ownership, and joint ownership itself may be correlated with bequest intentions. Some homes have modifications that make them easier to use for older or disabled persons, including ramps, railings, grab bars, etc., and, therefore, may promote aging in place and reduce the likelihood of an own-to-rent transition, ceteris paribus. Column 4 adds an indicator for the presence of these characteristics. The estimated impacts of intended bequests in both columns remain similar. Finally, columns 5 and 6 add a rough proxy for Medicaid eligibility based on the federal income and asset limits for the program. The estimated impacts of intended bequests are similar. Overall, the basic results in Table 2 are robust to a variety of extensions, indicating the importance of intended bequests in housing decisions at advanced ages.

Aggregate Housing Bequests

The analysis ends with a series of calculations of aggregate housing bequests for the population of Americans 62 and older, i.e., old enough to claim Social Security benefits. These calculations are based off of the RAND version of the HRS, including the RAND Exit files, and, where appropriate, estimates from the competing-risk proportional hazard models above.

Figure 11 shows the evolution of bequest intentions for homeowners since 2004. The solid line shows the average subjective probability of leaving any bequest (multiplied by 100). These were calculated using the RAND HRS household weights. The dashed line shows

[10] The sample in column 1 of Table 4 are smaller than those in Tables 2-3, because of missing values in the purchase price of the home. For the same reason, the samples in column 2 and 3 are smaller due to missing values in the joint ownership and

similarly the probability of leaving a bequest of at least $10,000, the focal measure used in the hazard estimation above. Around 90 percent of homeowners believe they will leave a bequest, but the proportion falls to just over three-quarters when a specific target ($10,000) is named. The time pattern of bequest intentions follows the trend in national house prices over this period, rising up through 2008, then falling with the Great Recession, similar to what Begley (2017) and Greenhalgh-Stanley and Reynolds (2019) found. Figure 12 shows a similar pattern for the likelihood of leaving $100,000 and $500,000 bequests, respectively. Finally, Figure 13 repeats these calculations, but for selected 10-year birth cohorts (as defined in Figure 4). Across cohorts, the general time-series pattern is similar.

Figure 14 moves beyond intentions to a measurement of actual housing bequests. The solid line in the figure, read off of the left-hand vertical axis, is the aggregate value of housing held by homeowners age 62 and older, expressed in real 2014 dollars. For example, in 2014, these older Americans held about $10.2T in housing assets. The dashed line, read off the right-hand vertical axis, shows the real housing wealth that was bequeathed by those who died in the next two years. So, for 2014, these are homeowners who died between 2014 and 2016, as measured in the 2016 exit interview. The dashed line represents the aggregate housing assets (in real 2014 dollars) that transferred ownership due to mortality in the 2014-16 period and includes transfers to surviving spouses. About $440B in housing assets were transferred in 2014. Again, housing bequests track the housing and business cycle closely. This represented about 4 percent of the aggregate value held that year. Figure 15 shows a similar graph broken out by 10-year birth cohorts.

Finally, Figure 16 combines the competing-risk hazard estimates of the impact of bequest intentions on ownership with the HRS panel data on respondents when living and the exit interviews to calculate the percent of current housing wealth targeted for an intentional bequest, the complement of which gives a sense of the amount of housing wealth available for potential consumption net of bequest intentions. The calculation is done by selected five-year age groups and 10-year birth cohorts. The figure shows that across all homeowners about 80 percent (i.e., 100 percent-20 percent) of housing wealth may be available net of bequest intentions, with this number rising (and intended housing bequests falling) with age. Figures 17 and 18 repeat this

for married and unmarried homeowners respectively. The married have higher intended bequests due to the transfer of housing to the surviving spouse.

Conclusion

The role of homeownership in old age is central to many economic questions. We examine how homeownership evolves in old age and around the time of death, using detailed data from the 1992-2016 waves of the Health and Retirement Study (HRS). We construct the age profile of homeownership and show that it falls to under 10 percent among the oldest old, which in past studies has been a sufficient statistic for life-cycle behavior. However, we come to a different conclusion when we analyze the time pattern of elderly homeownership as death approaches. For a baseline sample of homeowners, roughly half transition to renting before death; the other half die as homeowners, which does not accord with the predictions of a simple life-cycle model, unless there is significant uncertainty concerning the date of death. We use rich information on medical diagnoses, functional status, and bequest intentions in a competing-risks proportional hazard model of the likelihood of making a tenure transition out of homeownership, where death is the competing risk. The estimates indicate that bequest intentions play an important role in explaining why the elderly fail to spend down housing wealth via tenure transitions.

We estimate that the annual flow of housing bequests by unmarried elderly in the United States is about 4 percent of the value of housing held by older Americans, with bequest intentions and actual housing bequests closely tracking the housing and business cycles. About 80 percent of the housing wealth may be available to complement Social Security and support consumption in retirement net of bequest intentions.

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Table 1. *Means for Selected Variables in the Full Estimation Sample*

Explanatory Variable	(1) Full Sample	(2) Own-to-Rent Transition	(3) Own-to-Own Transition	(4) Die Owning	(5) Censored
Probability of a Bequest of at least $10,000	69.5	59.6	77.9	56.5	70.6
Spouse's Probability of a Bequest of at least $10,000	45.8	31.1	54.5	42.8	46.4
	[69.9]	[62.0]	[76.2]	[68.5]	[70.0]
Married	0.66	0.50	0.72	0.62	0.66
Recently Became a Widow	0.04	0.13	0.04	0.00	0.04
Female	0.60	0.64	0.54	0.46	0.61
White	0.91	0.91	0.97	0.90	0.91
Any College	0.42	0.41	0.53	0.37	0.42
Age (months)	915	932	903	936	913
Spouse's Age (months)	594	461	645	577	601
	[908]	[919]	[901]	[924]	[906]
Number of Living Children	3.29	3.36	3.23	3.19	3.30
Income ($10,000's)	0.44	0.37	0.50	0.39	0.45
Wealth ($10,000's)	5.03	3.73	5.01	4.51	5.13
Probability Live 10 Additional Years (%)	37.2	33.2	39.9	30.9	37.7
Spouse's Probability Live 10 Additional Years (%)	18.0	12.9	22.7	18.5	18.0
	[27.4]	[25.7]	[31.7]	[29.7]	[27.2]
Probability of Nursing-Home Entry in Next 5 Years (%)	12.3	15.0	13.6	10.8	12.2
Spouse's Probability of Nursing-Home Entry in Next 5 Years (%)	7.7	7.7	9.6	7.3	7.7
	[11.8]	[15.3]	[13.4]	[11.7]	[11.6]
Has Long-Term Care Insurance	0.17	0.13	0.23	0.14	0.17
Spouse Has Long-Term Care Insurance	0.12	0.08	0.18	0.11	0.12
	[0.18]	[0.16]	[0.26]	[0.17]	[0.18]
Has Life Insurance	0.64	0.56	0.66	0.64	0.64
Spouse Has Life Insurance	0.44	0.33	0.50	0.38	0.44
	[0.67]	[0.66]	[0.70]	[0.61]	[0.67]
Number of Health Conditions	2.1	2.5	2.1	2.9	2.0
Number of Spouse's Health Conditions	1.3	1.2	1.5	1.3	1.3
	[2.0]	[2.4]	[2.1]	[2.1]	[2.0]
Diagnosed with a Memory Disease	0.04	0.09	0.05	0.14	0.03
Spouse Diagnosed with a Memory Disease	0.02	0.03	0.01	0.02	0.02
	[0.03]	[0.06]	[0.01]	[0.04]	[0.03]
Limitations to Activities of Daily Living (ADLs)	0.31	0.52	0.31	1.11	0.24
Spouse's Limitations to Activities of Daily Living (ADLs)	0.19	0.26	0.19	0.25	0.18
	[0.29]	[0.51]	[0.27]	[0.40]	[0.27]
Real Capital Gain ($10,000's)	4.8	3.0	1.6	5.8	5.0
Joint Ownership with Someone Other than the Spouse	0.12	0.18	0.07	0.15	0.12
Special Features to Help Older or Disabled Persons Get Around	0.14	0.17	0.19	0.20	0.14
Number of Person-Year Observations	9,392	432	302	554	8,104

Notes: Column 1 shows sample means for the estimation sample, which consists of all individuals from the CODA cohort who were ever unmarried. There are a total of 2,126 individuals in the sample, with 9,392 person-year observations, as shown in column 1. Columns 2-4 show sample means in the year of transition for the three transitions studied: own-to-rent, own-to-own, and dying as a homeowner. Column 5 shows sample means for person-year observations in the sample for those individuals with censored homeownership spells.

Table 2. *Competing Risks Proportional Hazard Estimates for Bequest Intentions on the Risk of an Own-to-Rent Housing Tenure Transition, based on a Panel of All Homeowners from the CODA Cohort and Followed Every Two Years Until Transitioned Out of Homeownership or Died. Standard Errors in Parentheses and Marginal Effects in Square Brackets*

	(1)	(2)	(3)	(4)	(5)
Focal Explanatory Variables					
Probability of a Bequest of at least $10,000	-0.0038***	-0.0041***	-0.0033***	-0.0029**	-0.0026**
	(0.0012)	(0.0012)	(0.0012)	(0.0013)	(0.0013)
	[-0.233]	[-0.246]	[-0.203]	[-0.181]	[-0.166]
Spouse's Probability of Bequest of at least $10,000	-0.0033*	-0.0024	-0.0042**	-0.0041**	-0.0039**
	(0.0017)	(0.0017)	(0.008)	(0.0018)	(0.0018)
	[-0.142]	[-0.102]	[-0.173]	[-0.170]	[-0.164]
p-Value for Test that Bequest Probabilities Have No Impact on Own-to-Rent Transitions	0.001	0.002	0.006	0.017	0.035
Other Explanatory Variables					
Married	-0.497***	-0.681***	0.959	1.24	1.255
	(0.155)	(0.160)	(1.370)	(1.307)	(1.320)
	[-0.278]	[-0.360]	[0.874]	[1.252]	[1.275]
Recently Became a Widow		1.807***	1.621***	1.578***	1.581***
		(0.173)	(0.185)	(0.184)	(0.185)
		[0.084]	[0.075]	[0.073]	[0.073]
Female				0.253**	0.250**
				(0.105)	(0.105)
				[0.162]	[0.161]
White				0.096	0.105
				(0.200)	(0.201)
				[0.091]	[0.100]
Any College				-0.015	0.005
				(0.123)	(0.124)
				[-0.006]	[0.002]
Number of Children				0.046*	0.047*
				(0.028)	(0.028)
				[0.165]	[0.166]
Income					0.012
					(0.128)
					[0.006]
Wealth					-0.009
					(0.012)
					[-0.046]
Include Age, Spouse's Age, and Calendar-Year Dummies?	No	No	Yes	Yes	Yes
Number of Person-Year Observations	9,392	9,392	9,392	9,354	9,354
Number of Persons	2,126	2,126	2,126	2,117	2,117

Note: Each column shows parameter estimates from a different competing risks proportional hazard model. The main risk is an own-to-rent housing tenure transition; the competing risks are an own-to-own housing tenure transition and dying as a homeowner. Standard errors, clustered at the household level, are shown in parentheses. Marginal effects are shown in square brackets and are calculated by exponentiating the product of the parameter estimate and the sample mean of the respective explanatory variable (from Table 1), then subtracting one. With the exception of recently (since last interview) widowed, all explanatory variables are drawn from the previous (lagged) interview. The estimates for age, spouse's age, and the calendar dummies are not shown.

Table 3. *Competing Risks Proportional Hazard Estimates for Bequest Intentions on the Risk of an Own-to-Rent Housing Tenure Transition, Based on a Panel of All Homeowners, Controlling for Mortality Risk, Insurance, and Health. Standard Errors in Parentheses and Marginal Effects in Square Brackets*

	(1)	(2)	(3)	(4)	(5)
Focal Explanatory Variables					
Probability of a Bequest of at least $10,000	-0.0026* (0.0013) [-0.163]	-0.0030** (0.0014) [-0.187]	-0.0026* (0.0014) [-0.166]	-0.0024* (0.0013) [-0.155]	-0.0024* (0.0014) [-0.155]
Spouse's Probability of Bequest of at least $10,000	-0.0037** (0.0018) [-0.156]	-0.0039** (0.0018) [-0.163]	-0.0037** (0.0018) [-0.155]	-0.0039** (0.0019) [-0.164]	-0.0039* (0.0020) [-0.162]
p-Value for Test that the Bequest Probabilities Have No Impact on Own-to-Rent Transitions	0.045	0.024	0.045	0.051	0.066
Other Explanatory Variables					
Probability Live 10 Additional Years	-0.014* (0.008) [-0.408]	-0.014* (0.008) [-0.410]	-0.012 (0.008) [-0.370]	-0.011 (0.008) [-0.346]	-0.011 (0.008) [-0.345]
Spouse's Probability Live 10 Additional Years	-0.008 (0.005) [-0.126]	-0.007 (0.005) [-0.124]	-0.008 (0.005) [-0.126]	-0.008 (0.005) [-0.127]	-0.008 (0.005) [-0.135]
Probability Enter Nursing Home in Next 5 Years		0.006** (0.003) [0.074]	0.006** (0.003) [0.079]	0.006** (0.003) [0.078]	0.006** (0.003) [0.078]
Spouse's Probability Enter Nursing Home in Next 5 Years		0.004 (0.004) [0.031]	0.007* (0.003) [0.052]	0.006* (0.004) [0.047]	0.006* (0.004) [0.046]
Has Long-Term Care Insurance			-0.236 (0.159) [-0.039]	-0.183 (0.160) [-0.031]	-0.200 (0.160) [-0.033]
Spouse has Long-Term Care Insurance			-0.107 (0.227) [-0.013]	-0.106 (0.230) [-0.012]	-0.068 (0.231) [-0.008]
Has Life Insurance				-0.287** (0.115) [-0.168]	-0.283** (0.138) [-0.165]
Spouse Has Life Insurance				0.015 (0.176) [0.033]	0.016 (0.179) [0.007]
Number of Medical Conditions					0.039 (0.041) [0.082]

Spouse's Number of Medical Conditions					0.126** (0.057) [0.176]
Has Memory Disease					0.408* (0.241) [0.015]
Spouse Has Memory Disease					0.417 (0.324) [0.008]
Limits to Activities of Daily Living (ADLs)					-0.107** (0.054) [-0.032]
Spouse's Limits to Activities of Daily Living					-0.068 (0.073) [-0.013]
Number of Person-Year Observations	9,353	9,353	9,194	9,101	9,101
Number of Persons	2,117	2,117	2,108	2,104	2,104

Note: Each column shows parameter estimates from a different competing risks proportional hazard model. The main risk is an own-to-rent housing tenure transition; the competing risks are an own-to-own housing tenure transition and dying as a homeowner. Standard errors, clustered at the household level, are shown in parentheses. Marginal effects are shown in square brackets and are calculated by exponentiating the product of the parameter estimate and the sample mean of the respective explanatory variable (from Table 1), then subtracting one. All specifications control for age, spouse's age, calendar-year dummies, married, recently widowed, female, white, any college, number of children, income, and wealth; these estimates are not shown. With the exception of recently widowed (since the last interview), all explanatory variables are drawn from the previous (lagged) interview.

Table 4. *Competing Risks Proportional Hazard Estimates for Bequest Intentions on the Risk of an Own-to-Rent Housing Tenure Transition, Based on a Panel of All Homeowners, Controlling for Selected Housing Variables, Standard Errors in Parentheses and Marginal Effects in Square Brackets*

	(1)	(2)	(3)	(4)	(5)	(6)
Focal Explanatory Variables						
Probability of a Bequest of at least $10,000	-0.0027*	-0.0026*	-0.0022	-0.0025*	-0.0022	-0.0020
	(0.0014)	(0.0015)	(0.0013)	(0.0013)	(0.0014)	(0.0014)
	[-0.173]	[-0.164]	[-0.141]	[-0.161]	[-0.140]	[-0.130]
Spouse's Probability of Bequest of at least $10,000	-0.0048**	-0.0047*	-0.0038**	-0.0037*	-0.0040**	-0.0043**
	(0.0019)	(0.00219)	(0.0019)	(0.0019)	(0.0020)	(0.0019)
	[-0.196]	[-0.193]	[-0.159]	[-0.154]	[-0.157]	[-0.178]
p-Value for Test that Bequest Probabilities Have No Impact on Own-to-Rent Transitions	0.020	0.025	0.071	0.063	0.076	0.069
Other Explanatory Variables						
Real Capital Gain	-0.002	-0.002				-0.002
	(0.003)	(0.003)				(0.003)
	[-0.010]	[-0.009]				[-0.009]
Capital Gains Tax Rate		-0.947				-1.091
		(3.339)				(3.041)
		[-0.003]				[-0.003]
Joint Ownership with Someone Other than Spouse			0.185			0.205
			(0.174)			(0.186)
			[0.022]			[0.025]
Special Features to Help Older or Disabled Persons Get Around				-0.049		-0.034
				-0.166		(0.173)
				[-0.007]		[-0.005]
Currently Medicaid Eligible					0.533***	0.384*
					(0.203)	(0.214)
					[0.035]]	[0.025]
Number of Person-Year Observations	8,099	8,092	8,618	8,712	9,101	7,994
Number of Persons	1,891	1,890	2,037	2,042	2,104	1,880

Note: Each column shows parameter estimates from a different competing risks proportional hazard model. The main risk is an own-to-rent housing tenure transition; the competing risks are an own-to-own housing tenure transition and dying as a homeowner. Standard errors, clustered at the household level, are shown in parentheses. Marginal effects are shown in square brackets and are calculated by exponentiating the product of the parameter estimate and the sample mean of the respective explanatory variable (from Table 1), then subtracting one. All specifications control for age, spouse's age, calendar-year dummies, married, recently widowed, female, white, any college, number of children, income, wealth, as well as mortality risk, nursing home entry risk, medical conditions, memory disease, ADL, and IADL variables for the person and spouse shown in Table 3; these estimates are not shown. With the exception of recently widowed (since the last interview), all explanatory variables are drawn from the previous (lagged) interview.

Table 5. *Competing Risks Proportional Hazard Estimates for Bequest Intentions on the Risk of an Own-to-Rent Housing Tenure Transition, Selected Specifications Based on a Panel of Widowed Homeowners, Standard Errors in Parentheses and Marginal Effects in Square Brackets*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Focal Explanatory Variables									
Probability of a Bequest of at least $10,000	-0.0056***	-0.0051***	-0.0039**	-0.0046**	-0.0044**	-0.0039**	-0.0043**	-0.0038**	-0.0043**
	(0.0016)	(0.0019)	(0.0020)	(0.0021)	(0.0021)	(0.0020)	(0.0020)	(0.0019)	(0.0022)
	[-0.239]	[-0.283]	[-0.225]	[-0.258]	[-0.247]	[-0.222]	[-0.242]	[-0.219]	[-0.245]
Other Explanatory Variables									
Demographics and Calendar Year	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Income and Wealth	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Survival and Nursing-Home Entry Probabilities	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Long-Term Care and Life Insurance Coverage	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Medical Conditions, Memory Disease, and ADLs	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Capital Gains	No	No	No	Yes	Yes	No	No	No	Yes
Capital Gains Tax Rate	No	No	No	No	Yes	No	No	No	Yes
Joint Ownership	No	No	No	No	No	Yes	No	No	Yes
Special Features to Help Older/Disabled Persons	No	No	No	No	No	No	Yes	No	Yes
Currently Medicaid Eligible	No	No	No	No	No	No	No	Yes	Yes
Number of Person-Year Observations	2,759	2,758	2,700	2,352	2,345	2,568	2,595	2,700	2,307
Number of Persons	815	815	808	706	704	773	776	808	696

Note: Each column shows parameter estimates from a different competing risks proportional hazard model. The main risk is an own-to-rent housing tenure transition; the competing risks are an own-to-own housing tenure transition and dying as a homeowner. Standard errors, clustered at the individual level, are shown in parentheses. Marginal effects are shown in square brackets and are calculated by exponentiating the product of the parameter estimate and the sample mean of the respective explanatory variable for the widowed, then subtracting one. All explanatory variables are drawn from the previous (lagged) interview.

Figure 1. Age Profile of Homeownership by Sample

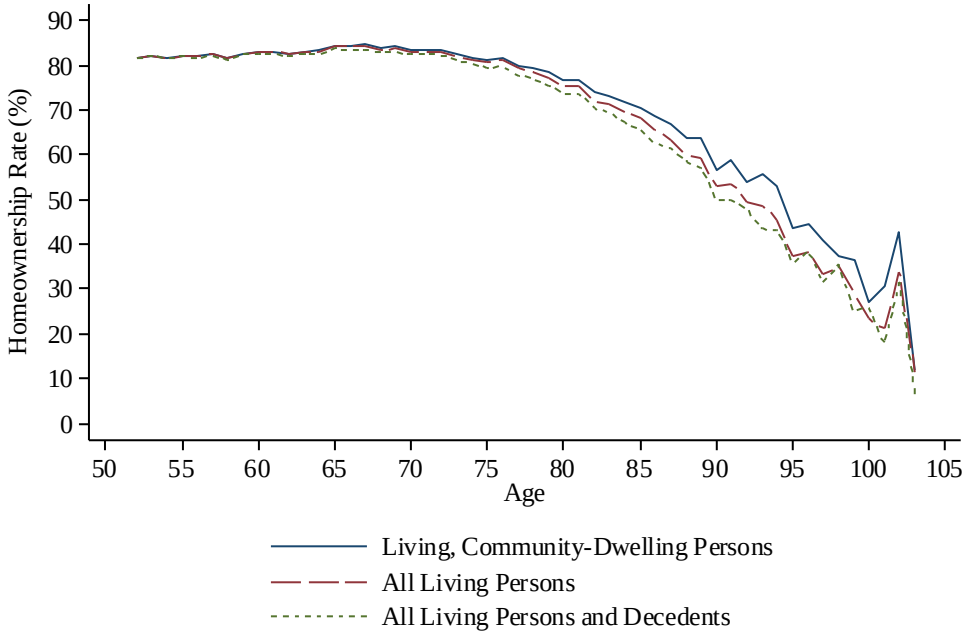


Figure 2. Age Profile of Homeownership and Residency in a Nursing Home, Long-Term Care Facility, or Hospice at the Time of Interview

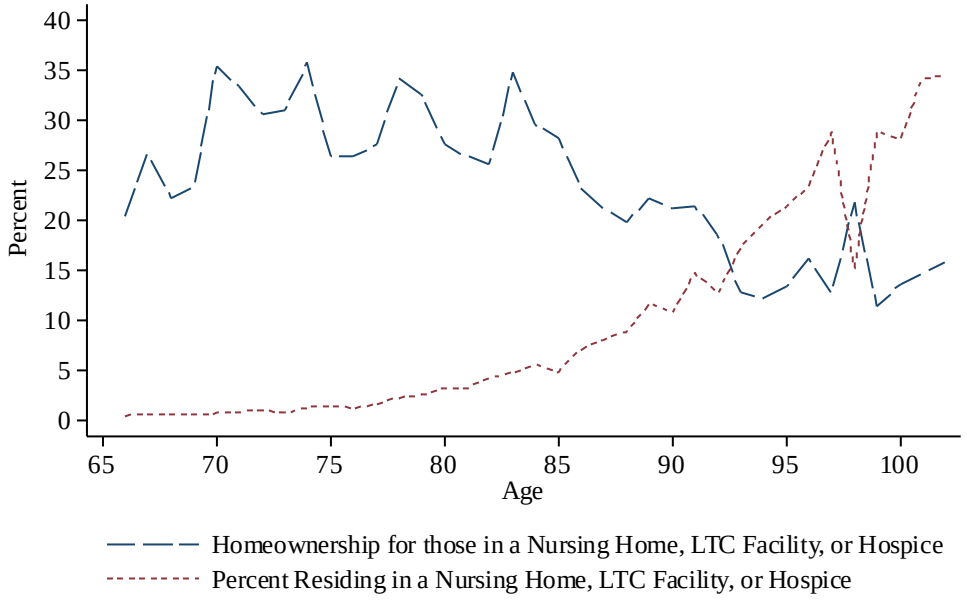


Figure 3. Difference in Homeownership Rates from Expanding the Sample to Include the Institutionalized and Decedents

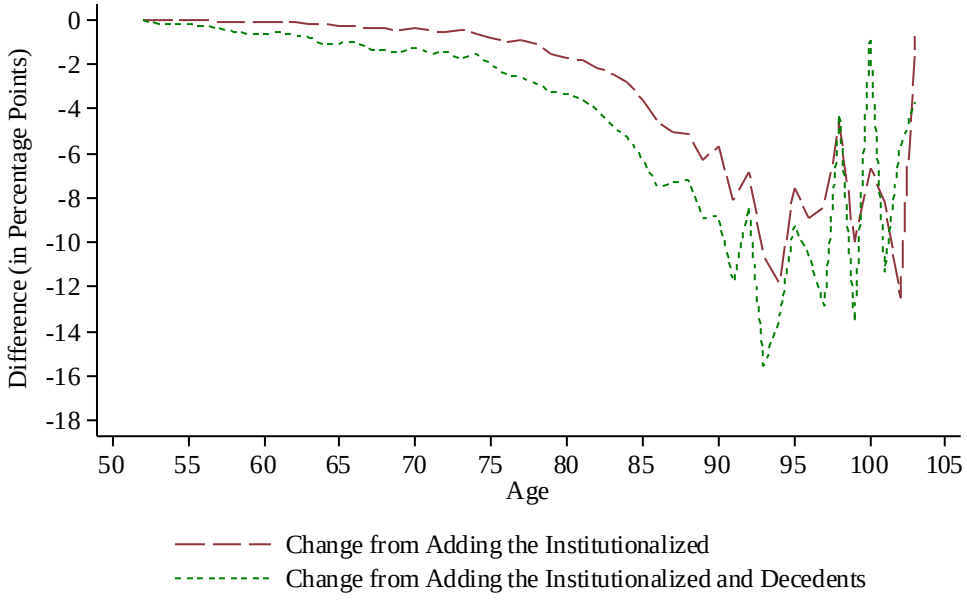


Figure 4. Age Profile of Homeownership by 10-Year Birth Cohorts

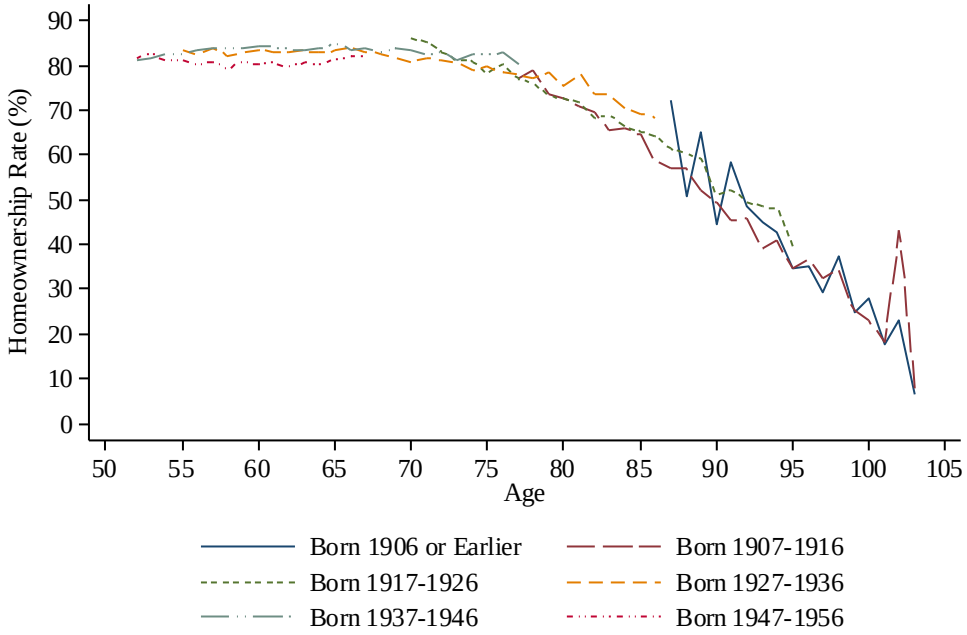


Figure 5. Age Profile of Real Mean Housing Assets and Home Equity for All Individuals Including Non-Homeowners

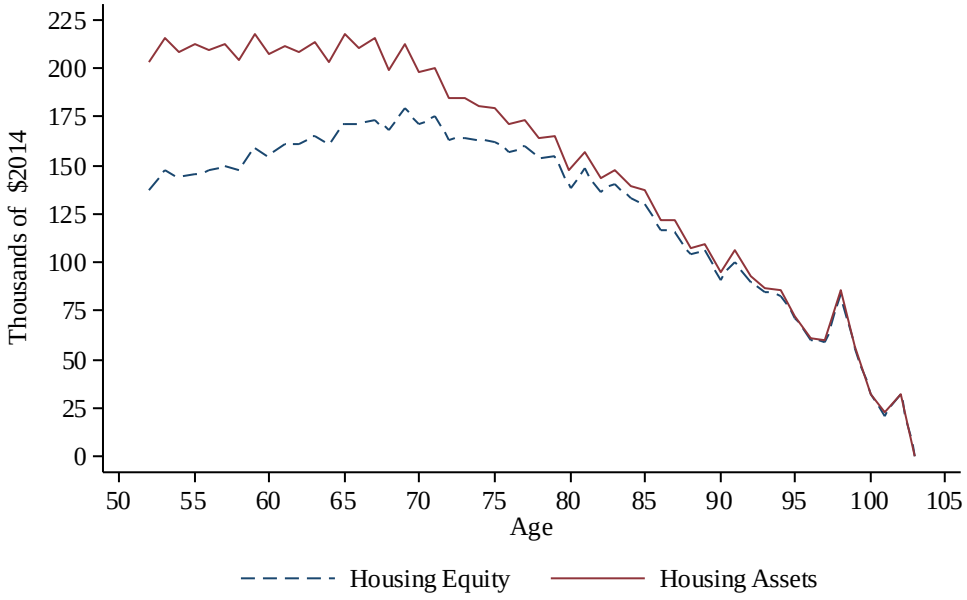


Figure 6. Age Profile of Real Mean Housing Assets and Home Equity for Homeowners

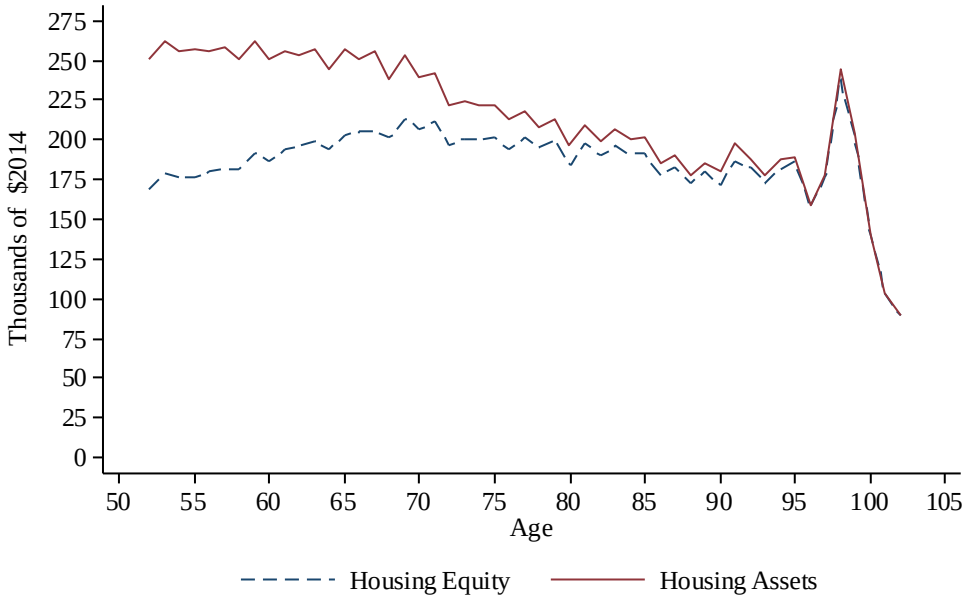


Figure 7. Age Profile of Real Median Housing Assets and Home Equity for Homeowners

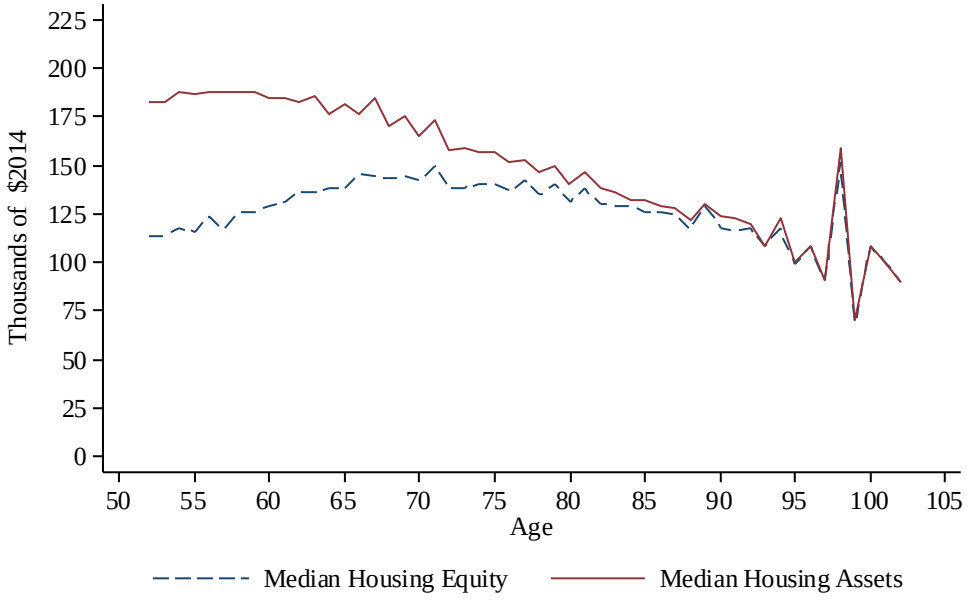


Figure 8. Distribution of Age at Death for All Individuals

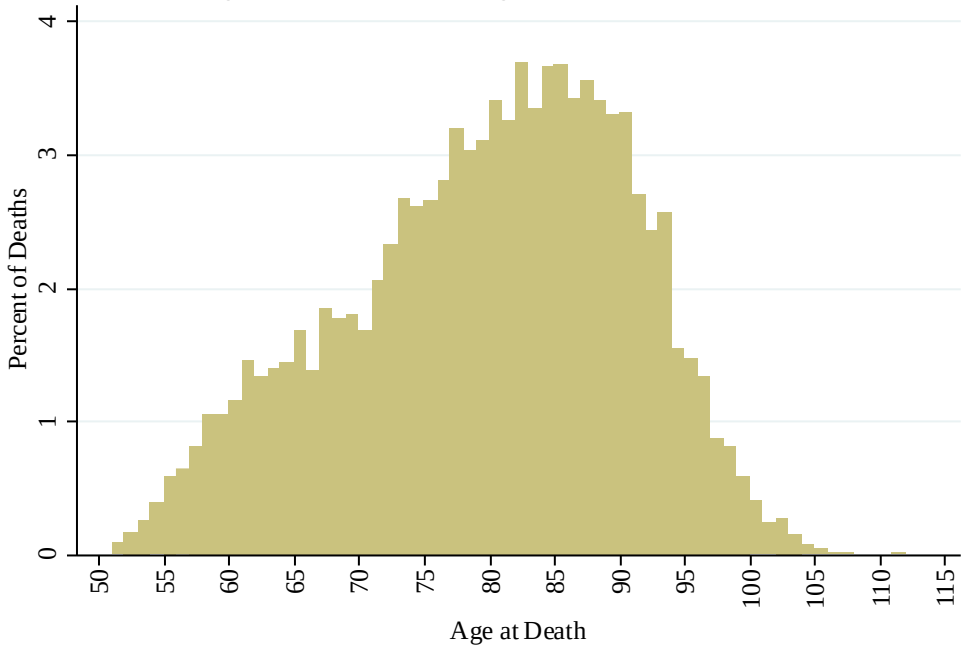


Figure 9. Homeownership Rate Prior to Death for All Individuals and Last Living Member

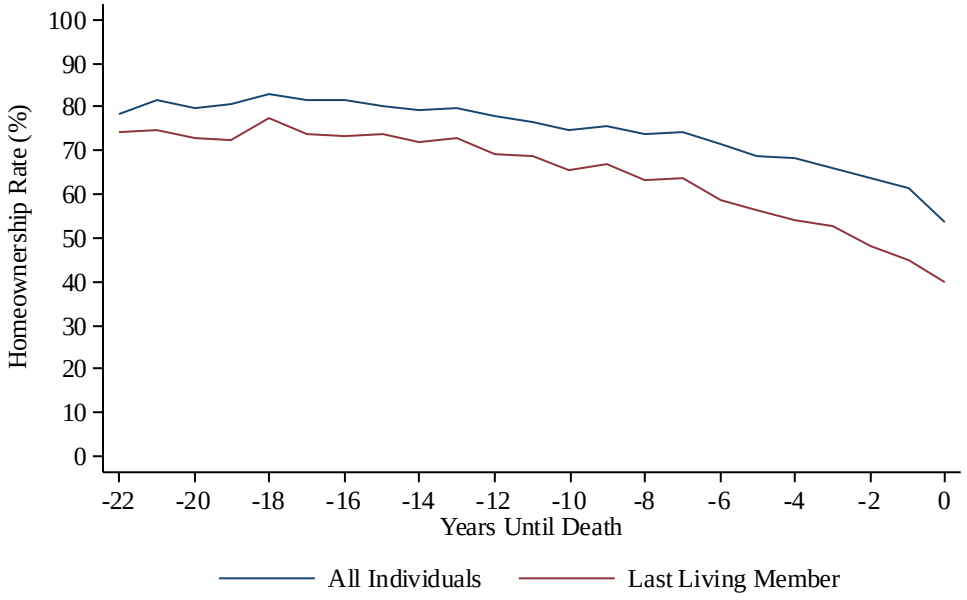


Figure 10. Homeownership Trajectory Prior to Death for Individuals Born 1918-23 Who Were Unmarried Homeowners in 1993

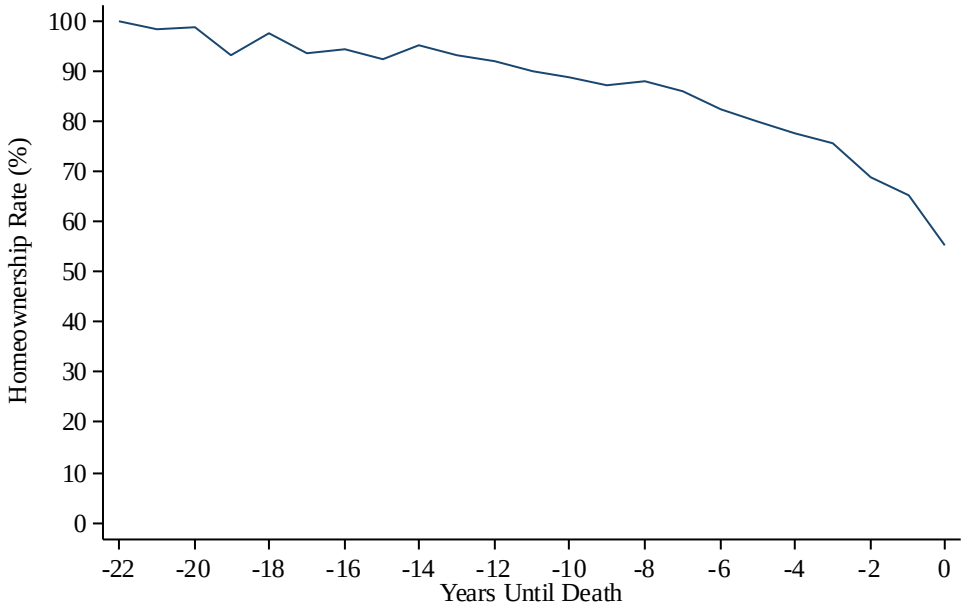


Figure 11. Average Probability of Leaving Any and $10,000 Bequest by Year for All Homeowners

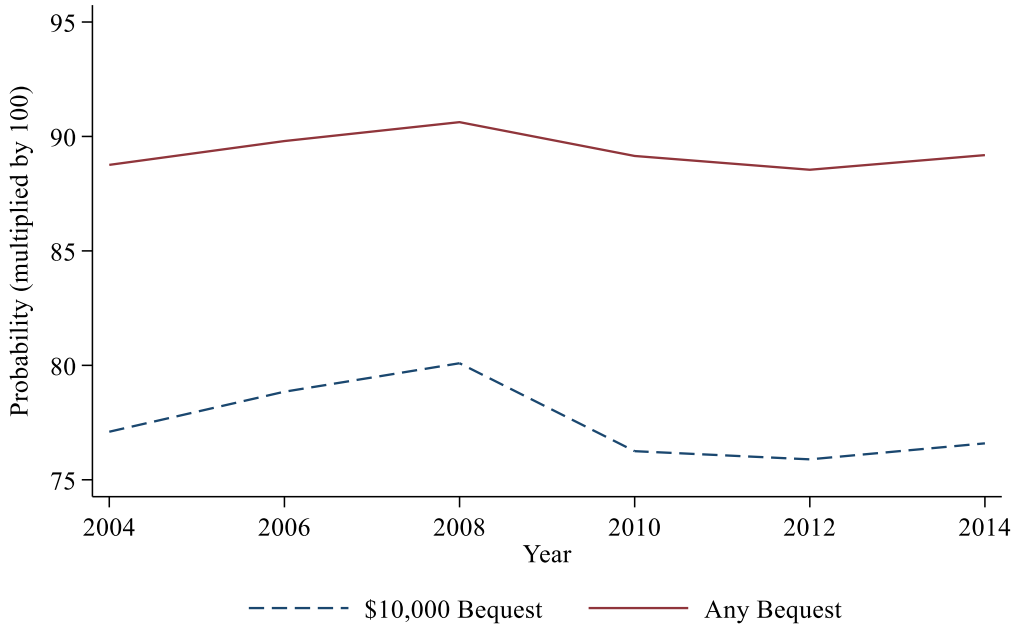


Figure 12. Average Probability of Leaving $100,000 and $500,000 Bequest by Year for All Homeowners

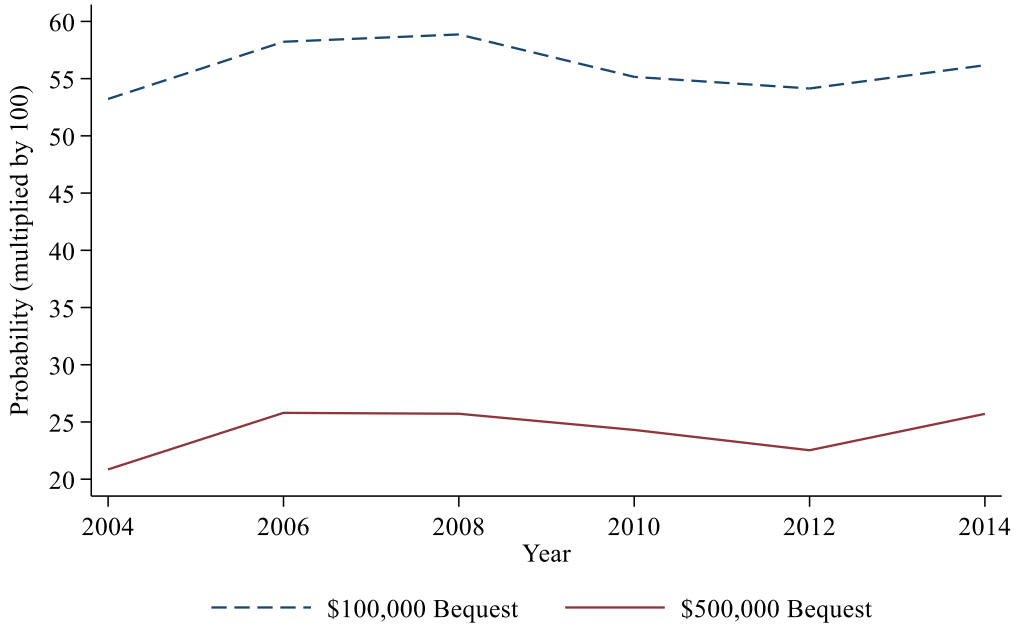


Figure 13. Average Probability of Leaving $10,000 Bequest
by 10-Year Birth Cohorts for All Homeowners

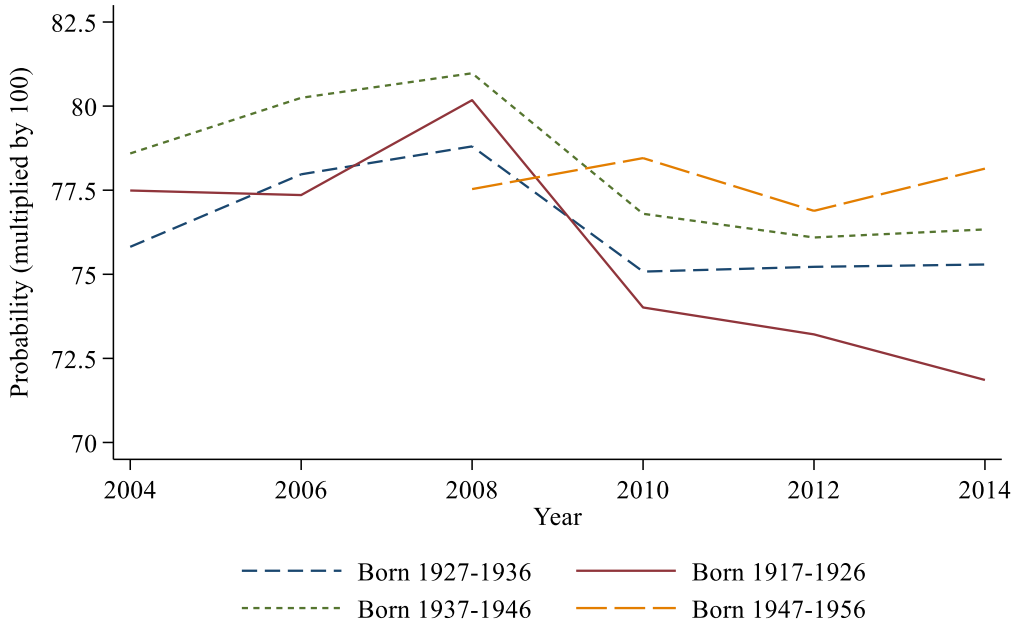


Figure 14. Aggregate Real Housing Value and Actual Housing Bequests
by Year for All Homeowners 62 and Older

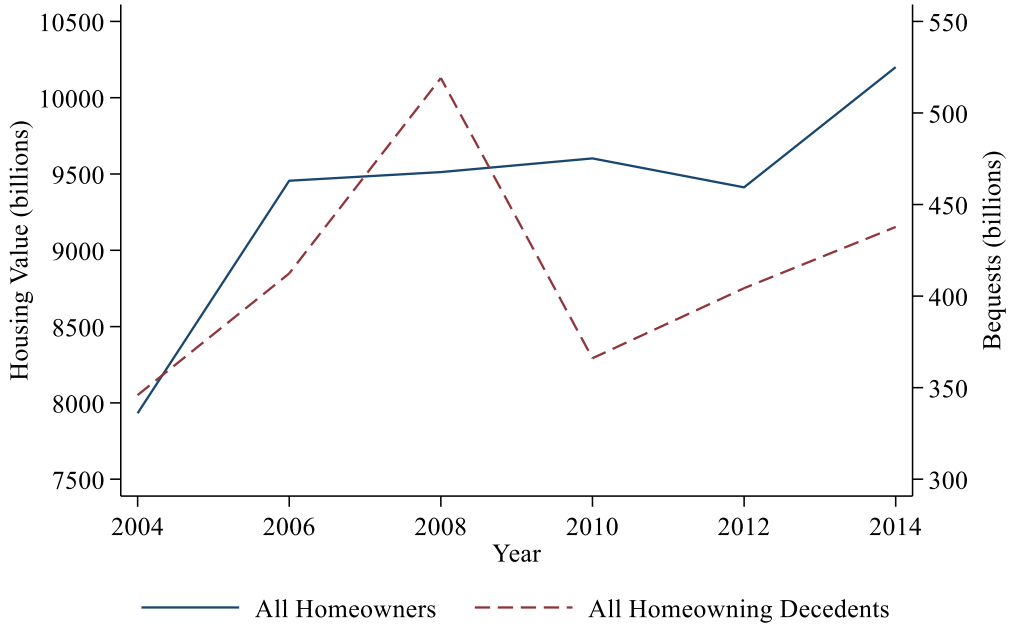


Figure 15. Actual Housing Bequests by 10-Year Birth Cohorts for All Homeowning Decedents 62 and Older

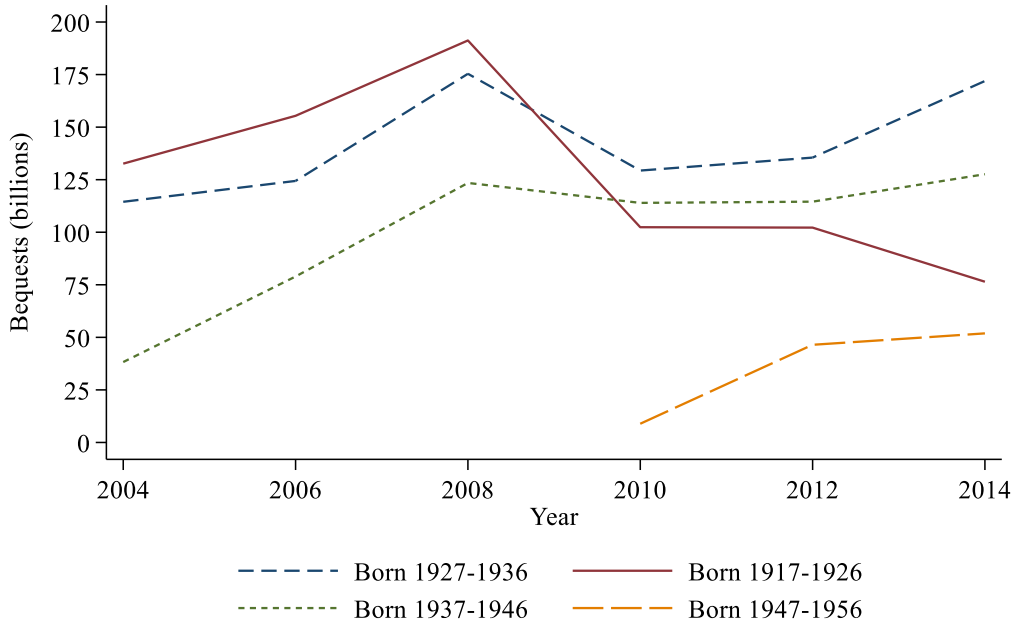
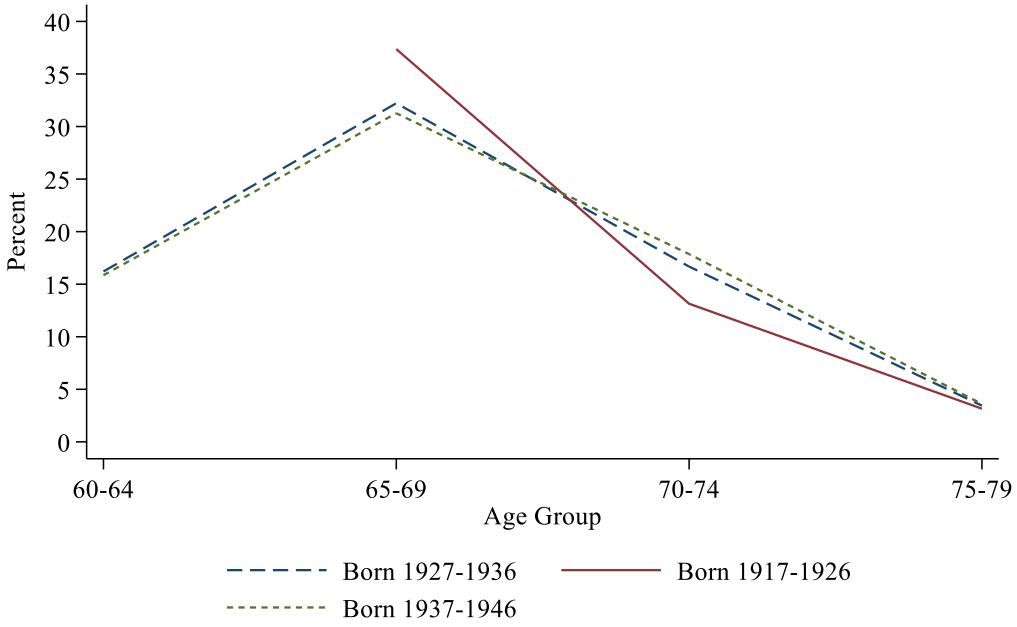


Figure 16. Percent of Current Housing Wealth to be Intentionally Bequeathed by 10-Year Birth Cohorts and Age Group for All Homeowners

Figure 17. Percent of Current Housing Wealth to be Intentionally Bequeathed by 10-Year Birth Cohorts and Age Group for Married Homeowners

Figure 18. Percent of Current Housing Wealth to be Intentionally Bequeathed by 10-Year Birth Cohorts and Age Group for Unmarried Homeowners



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