Late-life Disability, Homeownership, Wealth and Mortality

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Abstract

This paper uses data from the Health and Retirement Study to investigate when the older homeowners suffering from late-life disability exit from homeownership and how this exit influences their total wealth and mortality. Findings from estimations that control for individual fixed effects show that older households continue to be homeowners unless they need assistance with five or more activities of daily life. On the other hand, those needing help with two or more instrumental activities of daily life leave homeownership. When older adults with late-life disability exit homeownership, they do not experience any increases in financial or non-housing assets. Mortality among households needing assistance with instrumental activities of daily life is lower for those who exit homeownership relative to those who keep their homes.

Introduction

Housing equity is the most important asset in the portfolios of large fraction of older Americans (Venti & Wise, 2004). Elderly typically do not liquidate their home equity until the end of the life cycle. The life-expectancy in the U.S. rose by 7 to 9 years for both genders from 1970 to 2012, reaching to age 76.4 for males and age 81.2 for females (Arias, Heron & Xu, 2016). There has been concern about the health of the aging cohort and speculation that the elderly live longer in conditions of ill health (Chatterji et al., 2015; Parker & Thorslund, 2007). The length of time spent in poor health at the end of the life-cycle has wide-ranging effects on social, economic and health systems. Two questions have significant implications for household portfolios, intergenerational wealth transfers, and housing market: When do the elderly with deteriorating health and functional capacity exit homeownership? And how does this exit affect their total wealth and mortality?

Many elderly die with significant wealth in the form of housing equity (Dynan, Skinner & Zeldes, 2004; De Nardi, French & Jones, 2010). The standard life-cycle model predicts that older households should spend down their housing equity during retirement. Nevertheless, data show that elderly rarely downsize their houses unless a drastic event such as an illness or death of a spouse occurs (Venti & Wise, 2004). The expanded life-cycle models suggest that bequest motives, as well as health and medical risks, are the driving forces of the puzzling phenomena (Skinner, 1996). In a model where a house serves as an asset, but also provides utility (that generates attachment to one's house and neighborhood), Nakajima and Telyukova (2012) show both utility benefits and bequest motives play a significant role in homeownership. Aging in place in poor health, on the other hand, might require expensive home-based care. Obtaining care at home might cause reduced quality of care leading to increased mortality (Department of Housing and Urban Development, 2013). If the current housing lacks basic accessibility features, it would also prevent disabled older adults from living safely in their home (Joint Center for Housing Studies, 2014). Within the scope of benefit-cost framework, we propose that elderly with declining health and functional capacity should exit homeownership (i.e., move to a nursing home, to a retirement facility or move in with a relative) when the expected cost of "aging in place" outweighs the expected benefits.

Measurement of health status at older ages is complex. No single indicator fully captures all aspects of health (Martin, Schoeni, and Andreski, 2010). We focus on functional disability, which reflects restrictions in carrying out specific activities (i.e., getting in/out of bed and using the telephone). The disablement

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process is described in three stages: i) disease and impairment, ii) physical, cognitive, or sensory limitations, and finally iii) disablement (Verbrugge & Jette, 1994). For example, arthritis (a disease) may cause stiffness in the knee (an impairment), which could lead to difficulty bending (limitations in physical functioning). The final step in the process is difficulty with bathing and/or getting in and out of bed (disability) (Martin et al., 2010; Schoeni, Freedman & Martin, 2008). Activities of daily living (ADLs), including walking across the room, bathing, dressing, eating, getting in/out bed, and toileting, are essential for survival and independent life. Instrumental activities of daily life (IADLs), including using telephone, managing money, taking medication, shopping for groceries, and preparing hot meal, are more complex and are necessary for maintain a home (Verbrugge & Jette, 1994). Difficulties in performing ADLs and IADLs are used to measure functional capacity (Katz et al., 1963).[1] Around 11 million Americans report difficulty with performing one or more ADLs or IADLs, and about half of this population is over the age 65 (Kaye, Harrington, & LaPlante, 2010). Difficulties with ADLs and IADLs increase with age (Millán-Calenti et al., 2010). In addition, the loss of functional capacity leads to rise in morbidity (i.e., days spent in the hospital) and mortality (Millán-Calenti et al., 2010).

As the age structure of the U.S. is changing, understanding the interaction between functional capacity and timing of the exit from homeownership is important. Up to 80 percent of older adults between the ages 65 and 79 are homeowners, with increasing home equity over the years (Joint Center for Housing Studies, 2016; Fisher et al., 2007). The aging population holding on to their homes, instead of downsizing or exiting from homeownership, affects the supply of housing and have important consequences for the housing market (Meehan, 2014; Huang, 2016). There is also concern that higher proportion of the housing stock lacks accessibility features preventing elderly living safely in their homes (Joint Center for Housing Studies, 2014). Second, housing wealth is a significant predictor of bequest intentions. Recent studies examining the effect of financial crisis on home prices in the U.S. and U.K. found a decline in bequest intentions with reductions in housing wealth (Banks et al., 2014; Begley, 2017). Extending homeownership might increase the size of bequests passed on the next generation. Finally, it is important to understand whether “aging in place” extends the life span. Maximizing the ability of older adults to live independently in their homes has been an aim of the aging policy. However, implementation of coherent policies that aim to improve physical functioning and maintain independent living is complex (Beswick et al., 2008).

Data and Empirical Model

The empirical analysis draws upon the 2000-2014 waves of the Health and Retirement Study (HRS), which is a comprehensive data source on the health and financial well-being of older Americans, and their partners. The HRS is a large, longitudinal survey of more than 22,000 Americans over the age of 50, carried out every two years. In 2000, the sample included four cohorts: the initial HRS cohort (born 1931 to 1941), Study of Assets and Health Dynamics Among the Oldest Old cohort (born before 1924), Children of Depression cohort (born 1924 to 1930), and War Baby cohort (born 1942 to 1947).

We use eight waves of the study from the RAND contributed files (version P) which provide the cleaned measures of key variables. Whenever the required information is not available in the RAND data, the raw HRS files for that particular wave are match-merged. In our study, survey respondents are organized into households.

Our sample includes homeowners first time we observed them in 2000 or later waves (baseline). The analysis uses all available households that did not change their family composition through marriage, re-marriage, or divorce during the period analyzed. Households that experienced the death of a spouse during the analyzed period are included in the sample, and we use the information on the longest surviving spouse. The working sample consists of 9,220 unique households that were followed for an average of 6.1 survey waves. Out of 9,220 households, 5,682 were two-person households and 3,638 were one-person households at the baseline.

The HRS asks the respondents and their spouses about the difficulties with ADLs, including walking across the room, dressing, bathing, eating, getting in and out of bed, and using the toilet. Additionally, HRS asks about the difficulties with IALDs, including using a telephone, taking medication, handling

money, shopping, and preparing meals. We use the counts of difficulties with ADLs and IADLs as our measure of late-life disability. We also created indicator variables for each type of limitation and used each variables separately. For two-person households, we assumed that the household has a difficulty with an activity if one spouse reports having a difficulty. The counts of difficulties with ADLs range from 0 to 6 and difficulties with IADLs range from 0 to 5.

Findings and Conclusion

Findings from fixed effects models show that older homeowners are less likely to move unless they experience severe difficulties with ADLs, measured as difficulties with five or six ADLs. On the other hand, elderly needing help with two or more IADLs are more likely to move. When older households with diminished functional capacity move, they are less likely continue to be homeowners, and experience sharp drops in housing and total wealth. We did not find any increases in financial assets and non-housing wealth following the move and exit from homeownership. The decline in total wealth and increase in out-of-pocket health care expenditures generate lower bequest intentions for those who exit from homeownership. Upon leaving homeownership, there are some gains in mortality for those having difficulties with IADLs, but not for those having difficulties with ADLs. See Tables 1 and 2. The other Tables are not included due to page restrictions.

Our findings have significant implications for intergenerational wealth transfers, housing market and aging policy. First, housing and non-housing wealth significantly declines with late- life disabilities. Since housing is the most important source of bequests, the interaction of exit from homeownership and increase in out-of-pocket medical expenditures significantly reduces the amount transferred to the next generation. Second, households do not move until the symptoms with ADLs and IADLs emerge. The trend in health status of aging population will have important implications for the housing market. If the population develops difficulties with ADLs and IADLs later, households continue to live in their homes until the symptoms emerge. Finally, the living accommodations of households suffering from difficulties from IADLs needs special attention, and “age in place” might not be a suitable option form them. Our findings reveal that those from suffering from difficulties from IALDs might live longer if they move to other types of living arrangements other than their homes, and health care system needs to create safe and secure living arrangements for this population.

Notes

[1] We use limitations with functional capacity and disability interchangeably.

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Table 1: Marginal effects from individual fixed effects for moving decisions

	All	Single at the baseline	Couple at the baseline	Home value less than median	Home value more than median
Difficulty with one ADLs=1	-0.001	0.013	-0.006	0.003	-0.005
	(0.005)	(0.009)	(0.005)	(0.006)	(0.007)
Difficulty with two ADLs=1	0.010	0.037***	-0.001	0.012	0.008
	(0.007)	(0.014)	(0.008)	(0.010)	(0.011)
Difficulty with three ADLs=1	0.015	0.029*	0.012	0.021	0.009
	(0.010)	(0.017)	(0.012)	(0.013)	(0.015)
Difficulty with four ADLs=1	0.014	0.008	0.021	0.007	0.024
	(0.013)	(0.025)	(0.015)	(0.016)	(0.020)
Difficulty with five ADLs=1	0.058***	0.085***	0.048***	0.055***	0.061**
	(0.015)	(0.027)	(0.018)	(0.019)	(0.025)
Difficulty with six ADLs=1	0.069***	0.156***	0.035*	0.065***	0.072***
	(0.018)	(0.033)	(0.020)	(0.023)	(0.027)
Difficulty with one IADLs=1	0.005	0.010	0.004	0.004	0.005
	(0.005)	(0.010)	(0.006)	(0.007)	(0.008)
Difficulty with two IADLs=1	0.019**	0.058***	0.004	0.025**	0.010
	(0.008)	(0.015)	(0.010)	(0.011)	(0.013)
Difficulty with three IADLs=1	0.043***	0.085***	0.027**	0.037**	0.051***
	(0.012)	(0.022)	(0.014)	(0.015)	(0.019)
Difficulty with four IADLs=1	0.095***	0.186***	0.056***	0.089***	0.104***
	(0.015)	(0.029)	(0.016)	(0.019)	(0.023)
Difficulty with five IADLs=1	0.124***	0.205***	0.085***	0.146***	0.098***
	(0.016)	(0.030)	(0.018)	(0.022)	(0.023)
# of observations	56,279	18,358	37,921	26,267	30,012
# unique households	9,216	3,579	5,637	4,523	4,693
# waves	6.1	5.1	6.7	5.8	6.3
P-value for F-test (ADLs=0)	0.001	0.000	0.062	0.030	0.084
P-value for F-test (IADLs=0)	0.000	0.000	0.000	0.000	0.000

Notes: Standard errors in parentheses. All models also include third degree polynomial in age, family size, Medicare coverage and survey year indicators. Significance levels are *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 2: Marginal effects from individual fixed effects for homeownership

	All	Single at the baseline	Couple at the baseline	Home value less than median	Home value more than median
Difficulty with one ADLs=1	-0.001	-0.032***	0.012***	-0.005	0.004
	(0.004)	(0.009)	(0.004)	(0.006)	(0.005)
Difficulty with two ADLs=1	-0.006	-0.043***	0.008	0.001	-0.015
	(0.007)	(0.013)	(0.007)	(0.009)	(0.009)
Difficulty with three ADLs=1	-0.018*	-0.057***	-0.003	-0.012	-0.026*
	(0.010)	(0.018)	(0.011)	(0.013)	(0.014)
Difficulty with four ADLs=1	-0.029**	-0.075***	-0.010	-0.030*	-0.023
	(0.013)	(0.025)	(0.014)	(0.017)	(0.020)
Difficulty with five ADLs=1	-0.088***	-0.163***	-0.055***	-0.074***	-0.105***
	(0.015)	(0.028)	(0.016)	(0.019)	(0.024)
Difficulty with six ADLs=1	-0.117***	-0.243***	-0.066***	-0.104***	-0.131***
	(0.018)	(0.032)	(0.020)	(0.024)	(0.027)
Difficulty with one IADLs=1	-0.004	-0.023**	0.001	-0.010	0.003
	(0.005)	(0.010)	(0.005)	(0.007)	(0.006)
Difficulty with two IADLs=1	-0.026***	-0.081***	-0.005	-0.033***	-0.018
	(0.008)	(0.016)	(0.009)	(0.011)	(0.011)
Difficulty with three IADLs=1	-0.062***	-0.138***	-0.029**	-0.052***	-0.075***
	(0.012)	(0.022)	(0.014)	(0.015)	(0.019)
Difficulty with four IADLs=1	-0.142***	-0.291***	-0.076***	-0.144***	-0.136***
	(0.014)	(0.026)	(0.016)	(0.019)	(0.021)
Difficulty with five IADLs=1	-0.190***	-0.288***	-0.142***	-0.204***	-0.169***
	(0.016)	(0.028)	(0.018)	(0.021)	(0.023)
# of observations	56,280	18,358	37,922	26,268	30,012
# unique households	9,216	3,579	5,637	4,523	4,693
# waves	6.1	5.1	6.7	5.8	6.3
P-value for F-test (ADLs=0)	0.000	0.000	0.000	0.000	0.000
P-value for F-test (IADLs=0)	0.000	0.000	0.000	0.000	0.000

Notes: Standard errors in parentheses. All models also include third degree polynomial in age, family size, Medicare coverage and survey year indicators. Significance levels are *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$