

DO POTENTIAL FUTURE HEALTH SHOCKS KEEP OLDER AMERICANS FROM USING THEIR HOUSING EQUITY?

Tim Murray, PhD

Virginia Military Institute, Department of Economics and Business



Abstract

It is a well-established fact that many retirees do not utilize their accumulated housing equity to help smooth and increase consumption in retirement as is predicted by the Life-Cycle Hypothesis. In this paper, I explore how older Americans may retain their housing equity to help pay off medical bills in the future, treating their house as precautionary savings. Using a counterfactual experiment, I find that older households are 13-percentage points less likely to own a home in their late retirement years when they know they will not have any out-of-pocket medical expenses. Additionally, I find that if retirees had all of their medical expenses covered by insurance, some retirees would be willing to forego homeownership, allowing them to use their housing equity to smooth and increase consumption.

Introduction

Around 80% of retirees own a home which accounts for most of their wealth and savings portfolio (US Census Bureau, 2018; Moulton et al. 2016). Accumulated housing equity could be used to help smooth and increase consumption in retirement by moving from owning to renting, downsizing, or taking out a reverse mortgage. However it appears many older households do not.

- Less than 10% of older households move in a given year (Munnell et al., 2020)
- Few retired households utilize reverse mortgages (Davidoff et al., 2017)

This behavior violates the predictions of the Life-Cycle Hypothesis which suggests that people save during their working years and draw down those savings in retirement.

This paper builds on the existing literature that addresses the question of why so many Americans do not use their housing equity toward consumption in retirement, or the *housing-equity puzzle*. Using a heterogeneous overlapping generations model, this paper examines if retirees are using their house as precautionary savings where they would sell it to pay off unexpected medical bills at an older age.

Health Spending and Insurance for Retirees

Retirees also face some uncertainty regarding their medical expenses as Medicare only covers around 65% of retirees medical expenses (De Nardi et al., 2016).

- 86% of Medicare beneficiaries have supplemental insurance (Cubanski et al., 2015)
- Even with supplemental insurance, retirees still pay between \$4,000-\$8,000 per year in out-of-pocket health care expenses (Cubanski et al., 2015; De Nardi et al., 2016)
- Health care expenses more than double between age 70-90, driven by spending on long-term care (De Nardi et al., 2016; Fisher et al., 2007)
- Fewer than 20% of households have long-term care insurance

Because some households may anticipate a health shock later in life, they may use to treat their house as precautionary savings to cover the medical costs.

The Model

This paper uses a heterogeneous overlapping generations model following framework of İmrohoroğlu, Matoba, and Tüzel (2018) to study homeownership patterns of older Americans. The economy is populated with agents in three stages of life, $s_t \in 1, 2, 3$. Agents work during the first stage (age 55-64) and are retired in the last two stages (age 65-71 and 72-77 respectively). In each period t , agents advance from one stage to the next with probability π_s and spend another period in the current stage with probability $1 - \pi_s$. When an agent dies, they are replaced by a new agent in the first stage of life.

- During the first stage of life, labor income, y_t^s , is given by $\log(y_t^s) = \log(w^s) + e_t$. The term w^s represents the wage profile of the individual and e_t represents an AR(1) stochastic shock to income every period, given by $e_t = \Theta e_{t-1} + \epsilon_t$. ϵ_t is normally distributed with mean zero and variance σ_ϵ^2 and $\Theta < 1$, it captures the persistence of the stochastic component to labor income.
- During the final two stages of life, individuals are retired and face a certain retirement income. In the first stage people are endowed with a level of housing. People either own or rent their house and there are multiple sizes of housing available to own or rent.
- In each period, people observe income and health. They then make decisions on level consumption, savings, and whether to stay in their current house or move. If they move, they choose whether to own or rent and the size of their house.
- In third stage, people are subject to an exogenous health shock, which they must pay for from income, savings, or their house.

This paper simulates three models: a baseline model with health shocks, a counterfactual model where people know they won't have any health shocks, and a model with health shocks with an optional insurance policy covering all out-of-pocket medical expenses. Homeownership and moving rates are then compared between all three models.

Key Results

Table 1: Results of Economy with Health Shock vs No Health Shock

	Economy		
	(1)	(2)	(3)
Percent	Baseline	No Health Shock	With Insurance
Own	79.2	73.3	72.7
Stage 1:			
Move	11.2	12.1	12.1
Age 55-64			
Move Own to Rent	1.6	2.2	2.2
Move and Downsize	3.5	3.7	3.7
Own	81.3	77.5	76.8
Stage 2:			
Move	7.4	8.3	8.4
Age 65-71			
Move Own to Rent	1.0	1.0	1.0
Move and Downsize	2.8	3.8	3.8
Own	72.8	59.7	59.6
Stage 3:			
Move	7.2	8.4	9.1
Age 71-77			
Move Own to Rent	1.8	3.6	3.5
Move and Downsize	3.1	3.3	3.2
Overall			
Own	78.1	70.7	70.2
Move	9.1	10.1	10.3

The baseline model is calibrated to match homeownership rates found in the Health and Retirement Study. Table 1 presents the results from the simulation of the benchmark economy (column 1) and a counterfactual economy where agents are not subject to out-of-pocket medical expenses (column 2).

- If people know that they will not receive a health shock, average homeownership rates are 70.7 percent (compared to 78.1 percent when a health-shock is possible).
- In late retirement (stage 3), homeownership rates are 13-percentage points lower when there is no health shock and moving rates are 1.2-percentage points higher.

This suggests that more older households would prefer to use their housing equity to help finance consumption but fear they might need to sell it if they get sick in the future. This provides evidence that households are engaging in precautionary savings using the home.

Column 3 shows the results of the baseline model while including an optional insurance policy that people can purchase that would cover *all* out-of-pocket medical expenses. 12.8% of households would purchase insurance if it cost 4% of their income. Homeownership and moving rates of the baseline model with health insurance looks like the counterfactual model, suggesting that with more health insurance coverage, some people would be willing to forgo homeownership.

Conclusions

- Many retirees spend and anticipate spending on out-of-pocket medical expenses, despite coverage from Medicare and supplemental insurance. Due to this, some retirees may use their house as precautionary savings to help cover these expenses.
- With more comprehensive health insurance coverage for seniors, as many as 13% of households would be willing to use the equity in their house to increase and smooth consumption in retirement, which is what would be expected per the Life-Cycle Hypothesis.
- As policymakers in the United States seek health insurance and Medicare reform, this is an additional benefit of reform that should be considered.
- Retirees using their housing equity as precautionary savings is not a full solution to the housing-equity puzzle, but this paper sheds light on one way in which some retirees are using their housing equity in retirement.

References

- Davidoff, T., Gerhard, P., & Post, T. (2017). Reverse mortgages: What homeowners (don't) know and how it matters. *Journal of Economic Behavior & Organization*, 133, 151-171.
- De Nardi, M., French, E., Jones, J. B., & McCauley, J. (2016). Medical spending of the us elderly. *Fiscal Studies*, 37(3-4), 717-747.
- Fisher, J. D., Johnson, D. S., Marchand, J. T., Smeeding, T. M., & Torrey, B. B. (2007). No place like home: Older adults and their housing. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 62(2), S120-S128.
- İmrohoroğlu, A., Matoba, K., & Tüzel, S. (2018). Proposition 13: An equilibrium analysis. *American Economic Journal: Macroeconomics*, 10(2), 24-51.
- Moulton, S., Haurin, D. R., Dodini, S., & Schmeiser, M. D. (2016). How home equity extraction and reverse mortgages affect the credit outcomes of senior households. *Michigan Retirement Research Center Research Paper*, (2016-351).
- Munnell, A. H., Walters, A., Belbase, A., & Hou, W. (2020). Are homeownership patterns stable enough to tap home equity? *CRR WP*, 7.
- US Census Bureau. (2018). *Quarterly residential vacancies and homeownership, fourth quarter 2017*. <https://www.census.gov/housing/hvs/files/currenthvspress.pdf>.

Contact

Tim Murray

Email: murrayta@vmi.edu

Website: timmurrayecon.com

Twitter: [@TimMurrayPhD](https://twitter.com/TimMurrayPhD)