

Asset decumulation in retirement: Patterns, predictors, and the role of financial literacy

Abstract

We study how U.S. retirees draw down nonhousing financial assets using longitudinal data from the Health and Retirement Study (1995 to 2020). While life-cycle models predict gradual decumulation to support consumption, we find many retirees retain substantial wealth into later life. IRA balances decline steadily, consistent with required minimum distribution rules. Brokerage holdings are decumulated more quickly, especially among middle-wealth households. In contrast, checking and savings balances remain stable. Financial literacy is strongly associated with slower decumulation, higher asset levels, and reduced debt. These patterns suggest that asset type, institutional rules, and individual capabilities jointly shape financial outcomes in retirement.

Hessam Bavafa
Wisconsin School of
Business, University of
Wisconsin-Madison

Anita Mukherjee
Wisconsin School of
Business, University of
Wisconsin-Madison
TIAA Institute Fellow

Tyler Q. Welch
Wisconsin School of
Business, University of
Wisconsin-Madison

1. Introduction

The shift from wealth accumulation to decumulation in retirement represents a critical but understudied phase of the financial life cycle. Standard life-cycle consumption models predict that individuals should draw down assets gradually to smooth consumption over an uncertain horizon (Yaari, 1965). In practice, however, many retirees retain substantial financial wealth well into later life, deviating from model predictions in ways not easily explained by precautionary savings or bequest motives alone (Christensen et al., 2022; De Nardi et al., 2025; Lockwood, 2012). These persistent deviations from theoretical benchmarks have been referred to as the “retirement-consumption puzzle” (Banks et al., 1998; Hurd & Rohwedder, 2008; Olafsson & Pagel, 2018).

This paper examines patterns of asset decumulation among U.S. retirees using data from the Health and Retirement Study (HRS) spanning 1995 to 2020. We focus on nonhousing financial assets and track retirees over a 12-year period after they turn age 65. Our analysis emphasizes heterogeneity across wealth distribution, asset categories, and levels of financial literacy. While prior work has documented broad patterns in wealth retention (Brown et al., 2025; Poterba et al., 2011), we contribute by decomposing decumulation across asset types and examining how institutional incentives, particularly those embedded in tax-advantaged retirement accounts, shape spending trajectories.

Economic theory often treats wealth as fungible, but institutional features of the retirement system and revealed preferences suggest otherwise. We distinguish between three broad categories of financial assets: IRAs and Keogh accounts (the latter are tax-deferred plans for self-employed individuals), taxable brokerage investment accounts such as stocks and mutual funds, and liquid savings such as checking and money market accounts. IRAs are subject to required minimum distributions (RMDs), which induce predictable drawdowns. Brokerage holdings, although not subject to mandated withdrawals, are decumulated more rapidly, especially among middle-wealth households. This may reflect liquidity needs, tax considerations, or portfolio rebalancing. In contrast, balances in checking and savings accounts are more stable and often persist through retirement, even for individuals with limited overall wealth. These differences suggest that decumulation behavior depends not only on institutional rules but also on asset liquidity, mental accounting, and perceived risk.

Decumulation patterns also vary sharply across the wealth distribution, potentially driving wealth inequality in old age (Davies, 1999). Lower-wealth retirees tend to exhaust assets more quickly, while those in the top quartile retain a significant share of their wealth into their late 70s. A notable share of retirees increase their assets during retirement, particularly among those with higher financial literacy.

Using both descriptive and regression analyses, we show that financial literacy is associated with higher starting wealth, slower drawdown rates, a greater likelihood of asset accumulation, and reduced debt in later life.

These findings highlight the importance of institutional design, financial knowledge, and asset composition in shaping economic outcomes in retirement. Our results have implications for retirement policy, financial advising, and the development of insurance products that support financial well-being across later stages in life.

2. Data and summary statistics

We use data from the HRS, a nationally representative longitudinal survey of U.S. adults over age 50. The HRS collects detailed information on wealth, income, demographics, and retirement behavior, making it well-suited for studying asset decumulation during later life.

Our analytical sample includes individuals who reached age 65 between 1995 and 2008. To accommodate the two-year survey intervals in the HRS, we also include respondents who reached age 66 or 67 within that window. We require that individuals survive at least 12 years following this age cutoff to ensure a full post-retirement observation window. This allows us to track decumulation behavior over a consistent and meaningful horizon across cohorts.

We focus on total nonhousing financial wealth, defined as the net value of the following assets: IRAs and Keogh accounts, brokerage accounts containing stocks and mutual funds (including investment trusts), nonprimary real estate, business holdings, checking and savings accounts (including money market funds), vehicles, certificates of deposit, bonds, and other financial assets (which include assets held in defined contribution retirement accounts). We subtract any nonmortgage debt to obtain net wealth. All values are adjusted to 2020 U.S. dollars using the Consumer Price Index. While we recognize housing has a distinct relationship to health and literacy (Costa-Font, 2008), our wealth measure excludes housing wealth, which is less easily decumulated and typically serves both consumption and bequest functions. Throughout the analysis, we group individuals into wealth quartiles based on this nonhousing financial wealth measure at age 65.

Table 1 presents summary statistics for the full sample and for each wealth quartile. The variation in asset levels is substantial. At age 65, the average retiree holds \$462,000 in nonhousing financial wealth. This ranges from approximately \$3,000 in the bottom quartile to nearly \$1.4 million in the top quartile. The largest differences are observed in brokerage holdings (stocks, mutual funds, and investment trusts), which average \$300 in the bottom quartile and \$300,000 in the top quartile.

TABLE 1. SUMMARY STATISTICS AT AGE 65 BY WEALTH QUARTILE

	(1) All Individuals	(2) Wealth Quartile 1	(3) Wealth Quartile 2	(4) Wealth Quartile 3	(5) Wealth Quartile 4
Total Wealth (1000s)	461.95 (1729.79)	3.44 (22.20)	45.26 (45.75)	178.14 (120.98)	1,390.25 (3006.74)
Brokerage (1000s)	91.64 (469.81)	0.30 (2.63)	3.24 (13.16)	25.49 (56.69)	289.38 (836.80)
IRAs (1000s)	92.42 (308.76)	0.88 (5.23)	9.17 (23.36)	52.30 (81.86)	263.07 (528.10)
Checking Accounts (1000s)	34.45 (102.37)	2.12 (5.25)	11.51 (20.04)	29.06 (43.09)	81.83 (174.78)
Social Security Wealth	133,873.60 (86,902.63)	97,257.10 (54,008.93)	104,025.10 (56,473.22)	110,107.30 (62,588.05)	123,061.70 (65,690.82)
Pension and Annuity Income	12,853.70 (476,098.81)	2,695.55 (114,56.93)	5,817.15 (12,002.38)	9,260.41 (19,486.61)	10,551.33 (21,671.29)
Birth Year	1936.38 (4.07)	1937.30 (3.81)	1936.66 (3.76)	1936.60 (3.82)	1937.44 (3.79)
Male	0.50 (0.50)	0.39 (0.49)	0.51 (0.50)	0.52 (0.50)	0.62 (0.49)
White	0.86 (0.35)	0.70 (0.46)	0.82 (0.38)	0.90 (0.30)	0.95 (0.22)
Black	0.10 (0.30)	0.23 (0.42)	0.15 (0.35)	0.06 (0.24)	0.02 (0.15)
Hispanic	0.07 (0.26)	0.17 (0.37)	0.08 (0.27)	0.05 (0.22)	0.02 (0.14)
Years of Education	12.64 (3.13)	10.61 (3.54)	11.90 (2.85)	12.98 (2.54)	14.27 (2.48)
100% Financial Literacy	0.41 (0.49)	0.21 (0.41)	0.27 (0.45)	0.43 (0.50)	0.61 (0.49)
N	36,562	1,482	1,506	1,509	1,513

Notes: Values are means at age 65 (or 66–67, due to the HRS survey cycle), reported in 2020 U.S. dollars. Wealth quartiles are based on nonhousing financial wealth, which excludes primary residences and adjusts for debt. Social Security wealth is estimated assuming claiming at full retirement age. The financial literacy indicator equals one if the respondent correctly answers all three standard questions on compound interest, inflation, and risk diversification. Source: HRS, 1995–2020.

This underscores how exposure to market-based assets is concentrated at the upper end of the wealth distribution. Social Security wealth, estimated based on claiming at full retirement age (FRA), is more equal due to the program's progressive structure. However, disparities remain in other sources of retirement income. Pension and annuity income is highest in the top quartile and lowest in the bottom.

Demographic differences also emerge across the wealth distribution. The least wealthy quartile includes a higher

share of Black household heads and fewer college-educated individuals. Educational attainment also varies widely, with the wealthiest group averaging more than 14 years of education and the least wealthy averaging around 10. It is difficult to interpret gender, as only one respondent per household is in the sample—though the higher share of female household heads in the lowest quartile coincides with a greater proportion of these households being single as well. Overall, these patterns mirror broader inequalities in lifetime earnings and savings opportunities.

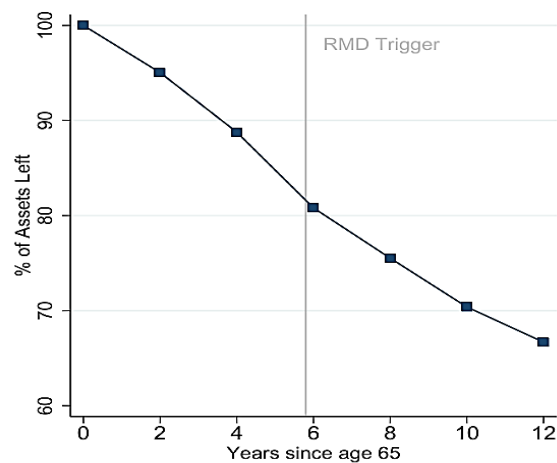
We also observe sharp differences in financial literacy, a variable we define based on the standard “Big Three” questions covering compound interest, inflation, and risk diversification (Lusardi & Mitchell, 2011). Among the top wealth quartile, 61% of individuals answered all three correctly, compared to only 21% in the bottom quartile. This correlation between financial literacy and wealth at retirement will be explored further in the following analysis.

3. Results

3.1 Asset decumulation over time by wealth quartile

We begin by examining how much nonhousing financial wealth retirees retain over time. Figure 1 shows that the median individual retains approximately 68% of their financial wealth 12 years after turning 65. People begin to decumulate even prior to the RMD trigger, which is shown at age 72 in the figure (it has since increased to age 75). Appendix Figure 1 extends the analysis to include housing assets. When housing is included, the median asset retention rate rises to nearly 85%, reflecting the relatively slow drawdown of home equity in retirement.

FIGURE 1. MEDIAN ASSET RETENTION OVER TIME



Notes: This figure depicts the percentage of assets (wealth) remaining over time relative to the baseline in the year one turns 65. Source: HRS, 1995–2020.

To understand heterogeneity in decumulation, we next examine patterns by initial wealth quartile. Figure 2 plots the evolution of logged nonhousing financial wealth over time for each quartile. These estimates are based on the following regression specification, which is run for each quartile separately:

$$Y_{it} = \text{YearsSinceAge65}_{it} + \epsilon_{it}, \quad (1)$$

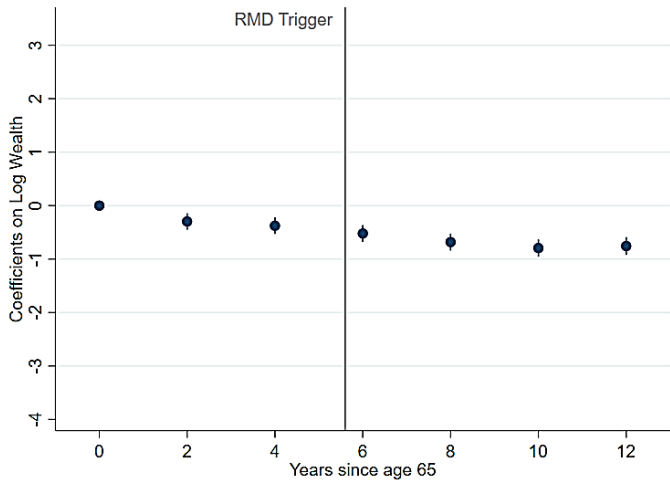
where the dependent variable is the log of total nonhousing financial wealth. We apply the inverse hyperbolic sine (IHS) transformation to this measure to account for the high degree of skewness and to accommodate observations with zero or negative values. For simplicity, we refer to this transformation as the “log” of assets throughout the paper. We interpret coefficients in line with Bellemare and Wichman (2020). $\text{YearsSinceAge65}_{it}$ represent dummy variables for 2, 4, 6, 10, and 12 years after reaching age 65. We omit the year one turns 65 so that the coefficients are in reference to the start of the retirement-age period as a baseline. To understand relative changes between wealth quartiles, all panels are graphed on the same set of axes.

The decumulation profiles in Figure 2 reveal several key patterns. First, wealth trajectories differ markedly by initial wealth quartile. In the bottom quartile (panel (d)), individuals on average begin retirement with near-zero or negative wealth and show modest gains in the early years. This reflects debt repayment or small asset accumulation from continued income or transfers. In contrast, individuals in the second through fourth quartiles show steady declines in wealth over time, consistent with asset decumulation.

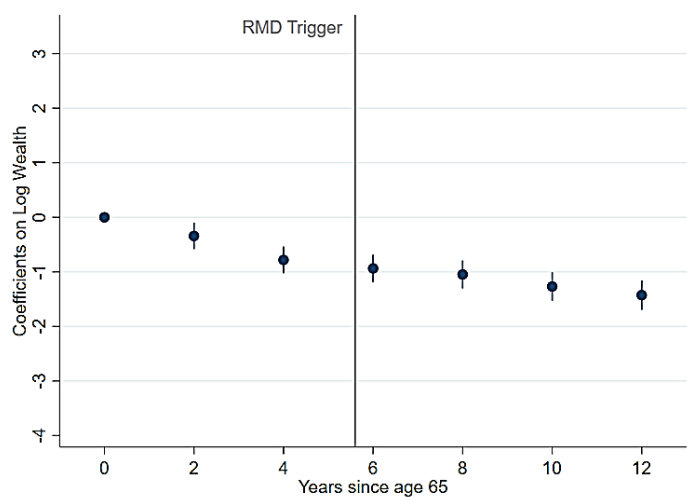
Second, the rate and extent of decumulation vary substantially across quartiles. By year 12, the mean wealth decline is 54% in the top quartile, 76% in the third, and 95% in the second. This pattern reflects both differences in starting wealth and variation in exposure to different asset types, which we explore in the next section.

FIGURE 2. MEAN LOG WEALTH OVER TIME BY INITIAL WEALTH QUARTILE

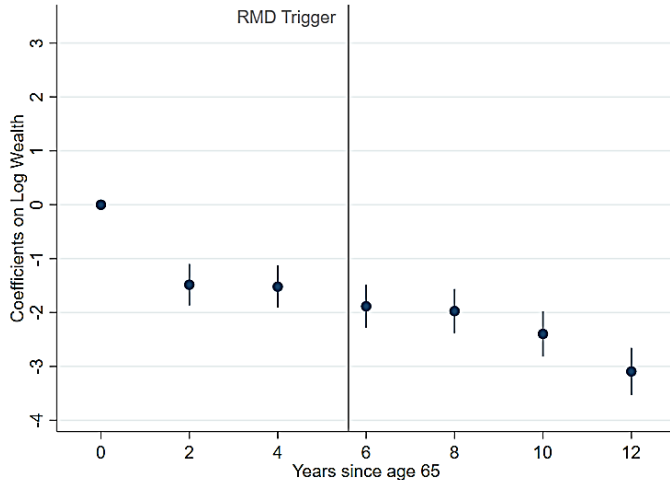
(a) Top 25%



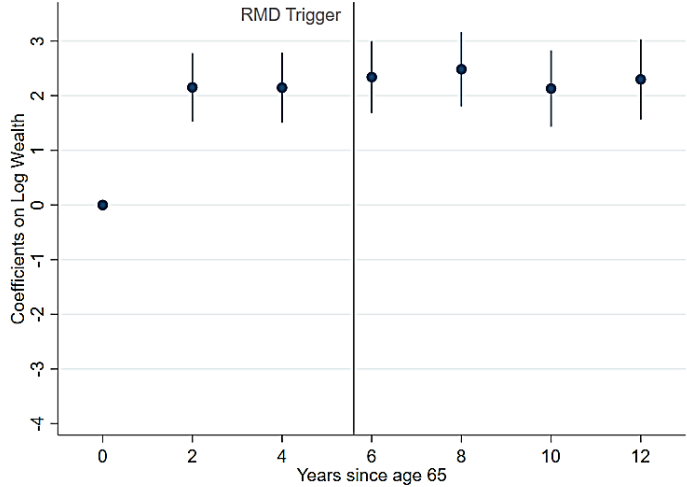
(b) Quartile 3



(c) Quartile 2



(d) Bottom 25%



Notes: Coefficients are from regressions of inverse hyperbolic sine-transformed nonhousing financial wealth on years since age 65, with age 65 as the omitted category. Panels show separate regressions by wealth quartile at baseline. Source: HRS, 1995–2020.

Figure 3 complements this analysis by showing the median percentage of assets retained over time for the second through fourth quartiles. While the top quartile shows a relatively rapid drawdown early in retirement, likely reflecting IRA withdrawals around the RMD age, this group still retains roughly 71% of their wealth after 12 years. Median retention is lower in the third and second quartiles, at 67% and 55%, respectively. These results suggest meaningful heterogeneity in retirement decumulation patterns, even beyond the extremes of the wealth distribution.

Given that the bottom quartile has limited or negative wealth at retirement, we exclude this group from most of the following analyses. This group is important for policy, however, as they arrive to older ages with little to decumulate—and in fact, sometimes with significant debt.

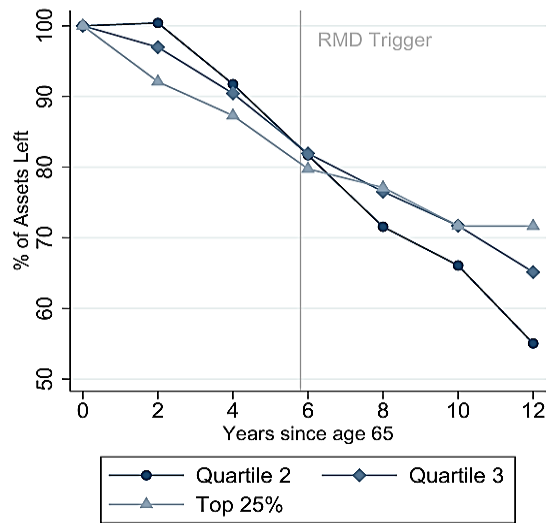
3.2 Decumulation patterns by asset type and wealth quartile

To better understand what drives differences in overall wealth decumulation, we examine how drawdown patterns vary across asset types. We focus on three broad categories of nonhousing financial wealth: (1) checking and savings accounts, (2) IRAs and Keogh accounts, and (3) stocks, mutual funds, and investment trusts. The percentage of our sample holding positive assets in each category is 88%, 43%, and 31%, respectively.

Figure 4 presents median retention rates by asset type over the 12 years following age 65. Holdings in stocks, mutual funds, and trusts are drawn down most aggressively, with nearly 85% of their value decumulated by year 12. IRA and Keogh balances decline more gradually, with roughly 50% drawn down over the same period. In contrast, checking and savings accounts show minimal decumulation. The median balance in these accounts declines by only 25%, suggesting that many retirees maintain liquidity buffers even as other assets are spent down.

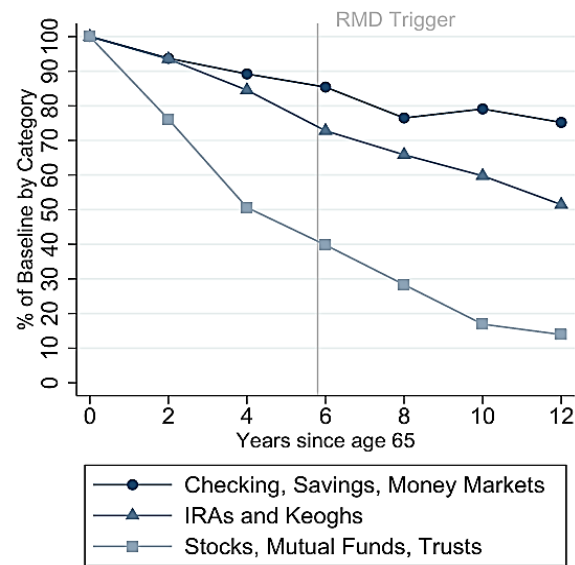
To assess how these patterns differ across the wealth distribution, Figure 5 shows asset-specific decumulation trajectories by wealth quartile (excluding the bottom quartile due to low and volatile baseline values). The sharp drawdown in stocks and mutual funds observed in aggregate is largely driven by the second and third quartiles, which tend to hold relatively small balances in these accounts and appear to use them early in retirement. The top quartile decumulates these accounts more gradually and continues to hold substantial balances throughout the 12-year window.

FIGURE 3. MEDIAN ASSET RETENTION OVER TIME BY WEALTH QUARTILE



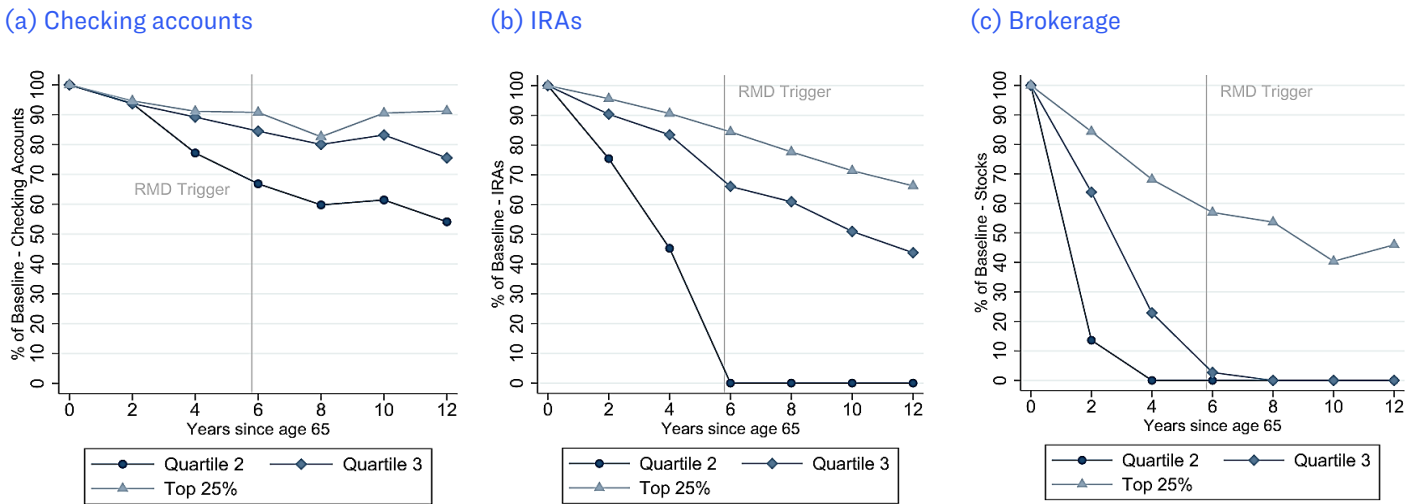
Notes: This figure depicts the percentage of nonhousing financial wealth remaining over time, relative to the baseline in the year one turns 65. Results are shown separately for the second, third, and fourth wealth quartiles. Source: HRS, 1995–2020.

FIGURE 4. MEDIAN ASSET RETENTION BY ASSET TYPE



Notes: This figure shows the median percentage of each asset type—checking accounts, IRAs, and stocks—remaining over time, relative to values at age 65. Source: HRS, 1995–2020.

FIGURE 5. ASSET DECUMULATION BY ASSET TYPE AND WEALTH QUARTILE



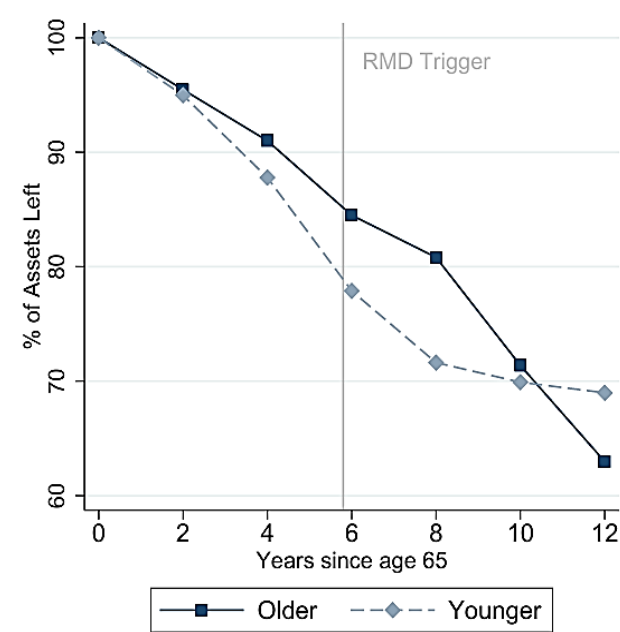
Notes: This figure shows the median retention of each asset type over time, stratified by wealth quartile at age 65. The bottom quartile is excluded due to limited and volatile asset values. Source: HRS, 1995–2020.

IRA decumulation appears smoother and more consistent across the third and fourth quartiles. The timing and pace of this drawdown align with institutional features of the tax system, particularly RMDs, which begin in the mid-70s. In contrast, checking and savings balances remain relatively stable in all quartiles. These accounts represent a larger share of wealth in lower quartiles but aren’t significantly drawn down even among higher-wealth retirees.

Figure 6 shows how these asset-specific decumulation patterns differ by cohort. We divide the sample into two groups: retirees who turned 65 between 1995 and 2000, and those who turned 65 between 2002 and 2008. The younger cohort decumulates more rapidly in the early years of retirement, while the older cohort shows a more gradual drawdown early on but converges to a similar asset level by year 12. These patterns may help identify differences in how individuals experience market timing, macroeconomic conditions, and behavioral preferences based on when they reached age 65. While the magnitude of the cohort difference is modest, it suggests that decumulation behavior may evolve across generations and in response to external factors.

Overall, these results reinforce the importance of distinguishing asset types when analyzing decumulation. They also highlight how wealth quartile and birth cohort shape retirees’ financial trajectories in ways that may inform product design, policy, and financial guidance.

FIGURE 6. DECUMULATION IN THE AGGREGATE BY COHORT



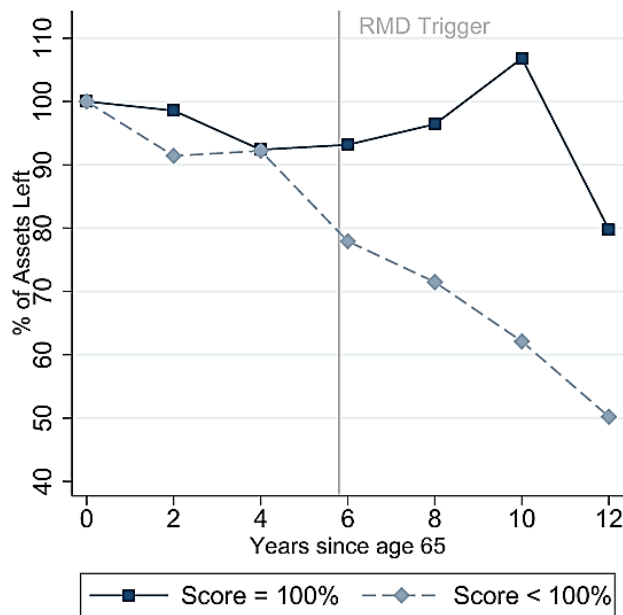
Notes: This figure compares the median percentage of total nonhousing financial wealth remaining over time for two cohorts: those turning 65 between 1995–2000 and those between 2002–2008. Source: HRS, 1995–2020.

3.3 Financial literacy, wealth accumulation, and debt reduction in retirement

We now turn to the role of financial literacy in shaping decumulation, asset accumulation, and financial resilience in retirement. Prior research shows that financial literacy is associated with higher savings, more diversified portfolios, and less borrowing prior to retirement (Lusardi & Mitchell, 2011; van Rooij et al., 2012). We examine whether similar advantages persist after retirement, particularly in terms of wealth preservation and accumulation.

Figure 7 shows that retirees with high financial literacy begin retirement with substantially more nonhousing financial wealth than their less literate counterparts and that this gap widens over time. High-literacy individuals retain more wealth throughout the 12-year period and decumulate at a slower pace. Median wealth for the high-literacy group falls by about 23%, compared to 45% for the low-literacy group. Notably, a sizable share of retirees with high financial literacy accumulate additional wealth during retirement, offsetting declines observed elsewhere in the distribution.

FIGURE 7: MEDIAN WEALTH OVER TIME BY FINANCIAL LITERACY



Notes: This figure shows the median level of nonhousing financial wealth over time, relative to baseline at age 65, for individuals with high versus low financial literacy. High literacy is defined as answering all three standard financial literacy questions correctly. Source: HRS, 1995–2020.

Next, we investigate these relationships in a regression setting. Namely, if we control for wealth quartile and years in after age 65, does financial literacy (still) relate positively to wealth? We can consider this an estimation within-quartile and controlling for time. We estimate regressions of the following form:

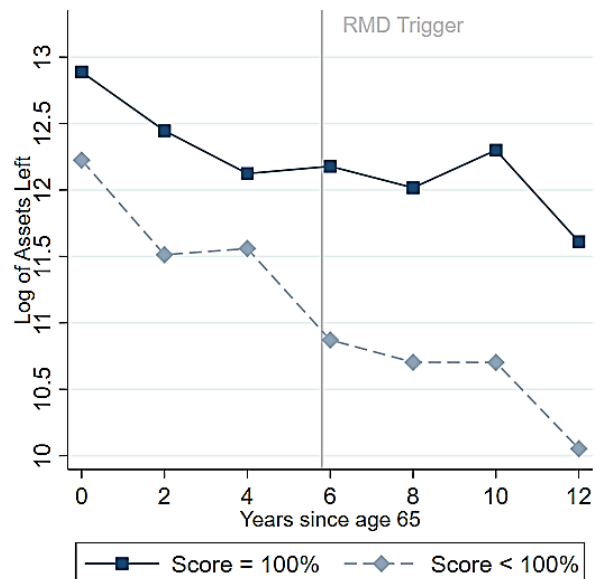
$$Y_{it} = \text{HighFL}_i + \text{Wealth}Q_i + (\text{Wealth}Q_i * \text{YearsSinceAge65}_{it}) + \epsilon_{it}, \quad (2)$$

where the dependent variable is the logged version of total nonhousing financial wealth, brokerage wealth (i.e., stocks and mutual funds), checking account wealth, IRA wealth, and other wealth. HighFL_i is a dummy variable equal to one if an individual answers all three literacy questions correctly (i.e., higher financial literacy) and zero otherwise.

Table 2 reports the regression results. Financial literacy is strongly associated with the likelihood of wealth accumulation. Individuals with high financial literacy are 12 percentage points more likely to increase their assets during retirement, conditional on observable characteristics. This result suggests that financial literacy continues to shape outcomes well beyond the point of retirement entry.

As a robustness check, Figure 8 plots wealth trajectories using an IHS transformation of nonhousing financial wealth. The divergence between high- and low-literacy groups remains evident, reinforcing the earlier findings and suggesting that the results aren't driven by extreme values or skewness in the wealth distribution.

FIGURE 8. LOG WEALTH OVER TIME BY FINANCIAL LITERACY



Notes: This figure shows the inverse hyperbolic sine transformation of nonhousing financial wealth over time, separately for individuals with high versus low financial literacy. High literacy is defined as answering all three standard financial literacy questions correctly. Source: HRS, 1995–2020.

TABLE 2. PREDICTORS OF WEALTH ACCUMULATION AFTER AGE 65

	(1) Log Wealth	(2) Log Brokerage Wealth	(3) Log Checking Wealth	(4) Log IRA Wealth	(5) Log Other Wealth
Financial Literacy 100%	0.607* (0.312)	0.668 (0.417)	0.348 (0.263)	1.134** (0.489)	0.405* (0.229)
Wealth Quartile 2 (Q2)	6.689*** (0.771)	0.694** (0.345)	3.163*** (0.487)	1.736*** (0.480)	3.236*** (0.477)
Wealth Quartile 3 (Q3)	8.642*** (0.742)	3.686*** (0.563)	5.288*** (0.437)	6.241*** (0.608)	4.429*** (0.450)
Wealth Quartile 4 (Q4)	9.900*** (0.751)	8.068*** (0.721)	5.981*** (0.466)	8.937*** (0.653)	5.206*** (0.486)
Years Since Age 65 (Time)	0.126 (0.095)	-0.025 (0.021)	-0.029 (0.049)	-0.003 (0.031)	-0.057 (0.057)
Q2*Time	-0.370*** (0.110)	0.003 (0.041)	-0.049 (0.061)	-0.075 (0.055)	-0.108 (0.067)
Q3*Time	-0.214** (0.103)	-0.094* (0.052)	-0.045 (0.058)	-0.117* (0.065)	-0.025 (0.061)
Q4*Time	-0.148 (0.097)	-0.010 (0.072)	-0.050 (0.062)	-0.030 (0.066)	-0.003 (0.064)
Observations	2,139	2,139	2,139	2,139	2,139
R ²	0.331	0.328	0.284	0.362	0.308

Notes: This table depicts results of estimating Equation (2) with dependent variables as listed in the column headings. Wealth is measured in 2020 U.S. dollars, and the inverse hyperbolic sine function is used to transform it. Standard errors are clustered at the individual level. Source: HRS, 1995–2020. Significance is given by: * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.

While we don't directly analyze household debt, the broader literature suggests that retirees with low financial literacy often face ongoing financial vulnerabilities. Lusardi et al. (2020) find that debt burdens persist into retirement and are associated with greater economic fragility. In this context, our findings suggest that financial literacy not only supports asset preservation but may also protect against other forms of financial strain later in life.

Together, these results highlight the importance of financial literacy for retirement security. Literacy is associated with slower drawdown of financial assets, a greater likelihood of net asset accumulation, and continued financial stability through retirement. These effects persist even after adjusting for education and initial wealth, underscoring the value of financial capability as a distinct resource. Policies and interventions supporting financial literacy could help narrow retirement preparedness gaps and reduce vulnerability among older adults.

3.4 Distinguishing accumulators, decumulators, and asset holders

The aggregate patterns shown earlier obscure important heterogeneity in how individuals manage their financial assets in retirement. While some households draw down their wealth steadily, others maintain stable asset levels or even accumulate wealth over time. In this section, we distinguish among these groups and examine the characteristics that predict these divergent retirement trajectories. We define three mutually exclusive categories based on changes in nonhousing financial wealth over the 12 years following age 65:

1. Accumulators, whose wealth increases by more than 5%;
2. Decumulators, whose wealth declines by more than 5%; and
3. Asset holders, whose wealth remains within $\pm 5\%$ of baseline.

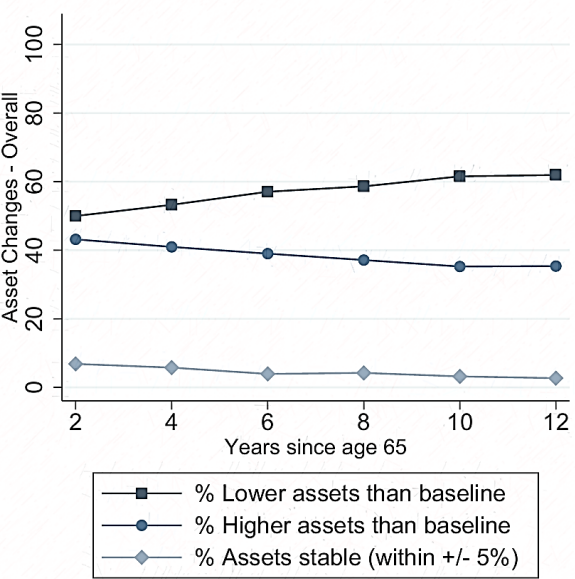
We next study the evolution of these groups over time after reaching age 65. Figure 9 suggests, in aggregate, very few individuals experience steady asset levels at older ages. Most people, experience decreasing assets over time. Nearly 40% of the retirees, however, are increasing their assets over the 12-year period following age 65.

Figure 10 presents the same breakdown by financial literacy. Retirees with high financial literacy are significantly more likely to be accumulators. These patterns are consistent with prior results showing that financial literacy supports slower drawdown and greater asset preservation. A question that emerges from these descriptives is how the literacy–decumulation relationship varies across wealth types. In Table 3, we present results from estimating Equation (2) but with a new set of dependent variables. Namely, we use dependent variables that are dummy variables equal to one if wealth in a given category is equal to, or above, the baseline from the year of turning age 65.

After controlling, again, for wealth quartile and years retired, high financial literacy relates to significant asset accumulation during retirement in terms of both total nonhousing financial wealth and other wealth (such as vehicles, businesses, certificates of deposits, and bonds). In fact, having a perfect score on the three financial literacy questions implies an 8.6% greater chance of increasing overall wealth levels in retirement than those who don’t receive a perfect score. There’s also a new finding here in column (5) that high financial literacy is related to significantly less debt over the course of retirement, relative to low financial literacy. Specifically, having a perfect literacy score implies an 11% reduction in the chance of having the same or more debt in retirement (relative to the year one turned 65). This has important implications for bequests and other financial decisions in old age.

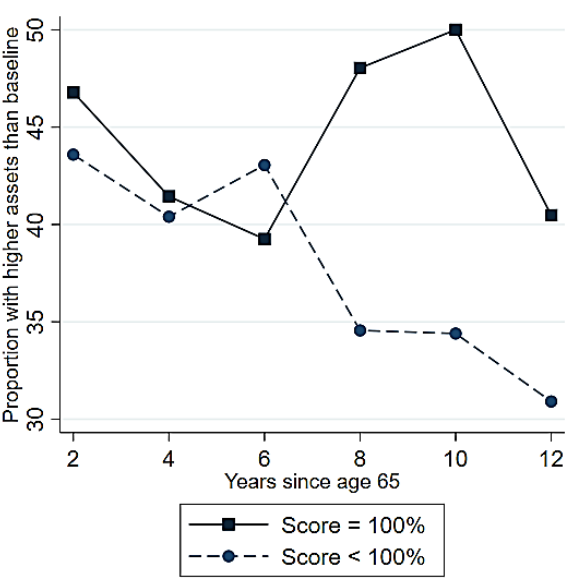
These findings challenge the assumption that decumulation is a universal or dominant pattern among retirees. Many households preserve or even grow their financial assets after retirement. These behaviors may reflect a variety of motives, including precaution, uncertainty about longevity or medical expenses, or intentional bequest planning. The consistent association between financial literacy and more stable or upward financial trajectories suggests that improving decision-making capacity could play a role in strengthening retirement security.

FIGURE 9: RETIREMENT WEALTH TRAJECTORIES



Notes: This figure shows the share of individuals classified as accumulators, decumulators, or asset holders by the baseline wealth quartile at age 65. Asset holders are defined as those whose financial wealth remains within ±5% of the baseline after 12 years. Source: HRS, 1995–2020.

FIGURE 10: RETIREMENT WEALTH TRAJECTORIES BY FINANCIAL LITERACY



Notes: This figure shows the distribution of accumulators, decumulators, and asset holders by financial literacy status. High literacy is defined as answering all three standard financial literacy questions correctly. Asset holders are those whose financial wealth remains within ±5% of the baseline after 12 years. Source: HRS, 1995–2020.

TABLE 3. PREDICTORS OF WEALTH ACCUMULATION AND STABILITY

	(1) Overall	(2) Brokerage Holdings	(3) IRAs	(4) Checking Accounts	(5) Debt	(6) Other Assets
Financial Literacy 100%	0.086** (0.034)	-0.027 (0.034)	-0.027 (0.035)	0.029 (0.035)	-0.114*** (0.036)	0.071** (0.035)
Wealth Quartile 2 (Q2)	-0.070* (0.042)	-0.025 (0.018)	-0.036 (0.023)	-0.018 (0.044)	0.096*** (0.036)	-0.132*** (0.042)
Wealth Quartile 3 (Q3)	-0.016 (0.040)	-0.078*** (0.025)	-0.153*** (0.029)	-0.004 (0.044)	0.136*** (0.034)	-0.081* (0.042)
Wealth Quartile 4 (Q4)	-0.154*** (0.044)	-0.225*** (0.033)	-0.214*** (0.038)	-0.020 (0.049)	0.151*** (0.038)	-0.161*** (0.045)
Years Since Age 65 (Time)	-0.021*** (0.006)	-0.003 (0.002)	-0.003 (0.002)	-0.028*** (0.006)	-0.037*** (0.006)	-0.037*** (0.006)
Q2*Time	-0.017** (0.008)	-0.002 (0.003)	-0.008* (0.004)	-0.005 (0.007)	0.025*** (0.006)	-0.002 (0.007)
Q3*Time	-0.018** (0.007)	-0.017*** (0.005)	-0.025*** (0.005)	-0.002 (0.008)	0.025*** (0.006)	-0.000 (0.007)
Q4*Time	-0.016** (0.008)	-0.021*** (0.006)	-0.031*** (0.005)	-0.010 (0.008)	0.033*** (0.006)	0.001 (0.008)
Observations	2,139	2,139	2,139	2,139	2,139	2,139
R ²	0.106	0.149	0.176	0.071	0.124	0.102

Notes: This table depicts results of estimating Equation (2) with dependent variables set as dummy variables equal to one if an account's (given by the column heading) value is the same or greater than the baseline value in the year one turns 65. Standard errors are clustered at the individual level. Sources: HRS, 1995–2020. Significance is given by: * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.

4. Conclusion

This paper examines patterns of financial asset decumulation in retirement using longitudinal data from the HRS. By following individuals after they reach age 65, we characterize how nonhousing financial wealth evolves over a 12-year horizon, focusing on baseline wealth, asset type, and financial literacy. These findings are important in light of recent work on how late-life wealth is predictive of many outcomes including work patterns and healthy life expectancy (Bavafa et al., 2023).

We document three main findings. First, while many households experience some asset drawdown after age 65, the pace and extent of decumulation vary widely. A substantial share of retirees maintain or even increase their financial wealth over time, particularly those in the top wealth quartile. These patterns deviate from canonical life-cycle models, which typically predict smooth and continuous decumulation during retirement. Second, decumulation differs markedly across asset types. IRA balances decline gradually, consistent with the influence of RMDs and

tax-deferred treatment. Brokerage holdings (i.e., stocks and mutual funds) fall more sharply, especially among middle-wealth households, while checking and savings balances remain relatively stable. These results suggest that retirees segment their portfolios and draw differentially based on liquidity, tax treatment, and perceived function.

Third, financial literacy is strongly associated with wealth trajectories in retirement. Not only do the most financially literate have higher asset levels across the board, but they're also slower to decumulate and much more likely to accumulate wealth (and decrease debt levels). To the extent that decumulation patterns drive inequality in old age, potentially in combination with (healthy) life expectancy, improving financial literacy may support individuals' ability to slowly draw down wealth over time and, potentially, even improve financial status later in life. Taken together, our findings underscore the heterogeneity of retirement financial behavior and the importance of examining asset composition in decumulation.

References

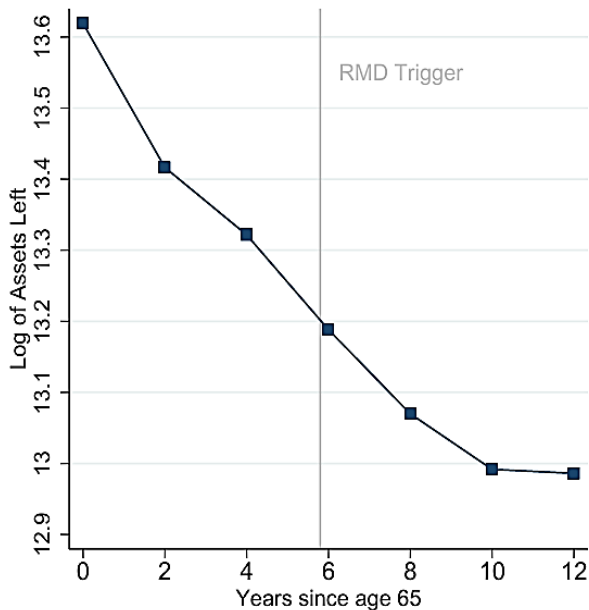
- Banks, J., Blundell, R., & Tanner, S. (1998). Is there a retirement-savings puzzle? *American Economic Review*, 88(4), 769–788. <http://www.jstor.org/stable/117005>
- Bavafa, H., Mukherjee, A., & Welch, T. Q. (2023). Inequality in the golden years: Wealth gradients in disability-free and work-free longevity in the United States. *Journal of Health Economics*, 92, 102820. <https://doi.org/10.1016/j.jhealeco.2023.102820>
- Bellemare, M. F., & Wichman, C. J. (2020). Elasticities and the inverse hyperbolic sine transformation. *Oxford Bulletin of Economics and Statistics*, 82(1), 50–61. <https://doi.org/10.1111/obes.12325>
- Brown, J. R., Poterba, J. M., & Richardson, D. P. (2025). Trends in retirement and retirement income choices by TIAA participants: 2000–2018. *Journal of Pension Economics & Finance*, 24(1), 47–68. <https://doi.org/10.1017/S1474747223000070>
- Brown, J. R. (2009). Understanding the role of annuities in retirement planning. In A. Lusardi (Ed.), *Overcoming the saving slump: How to increase the effectiveness of financial education and saving programs* (pp. 178–206). The University of Chicago Press.
- Christensen, B. J., Kallestrup-Lamb, M., & Kennan, J. (2022). *Consumption and saving after retirement*. (Working Paper 29826). National Bureau of Economic Research. <https://doi.org/10.3386/w29826>
- Costa-Font, J. (2008). Housing assets and the socio-economic determinants of health and disability in old age. *Health & Place*, 14(3), 478–491. <https://doi.org/10.1016/j.healthplace.2007.09.005>
- Davies, J.B. (1999). Age, wealth inequality, and life-cycle modelling. *The Geneva Papers on Risk and Insurance*, 24(1), 64–76. <https://doi.org/10.1111/1468-0440.00005>
- Davis, B., Leive, A., & Gellert, A. (2023). Fungibility in workplace benefits choices: Evidence from Health Savings Accounts. *Research Dialogue*, 198. TIAA Institute. https://www.tiaa.org/content/dam/tiaa/institute/pdf/research-dialogue/2023-03/fungibility_in_workplace_benefits_choices_rd198_march2023.pdf
- De Nardi, M., French, E., & Jones, J. B. (2016). Savings after retirement: A survey. *Annual Review of Economics*, 8, 177–204. <https://doi.org/10.1146/annurev-economics-080315-015127>
- De Nardi, M., French, E., Jones, J. B., & McGee, R. (2025). Why do couples and singles save during retirement? Household heterogeneity and its aggregate implications. *Journal of Political Economy*, 133(3), 750–792. <https://doi.org/10.1086/733421>
- Goda, G. S., Levy, M., Manchester, C. F., Sojourner, A., & Tasoff, J. (2019). Predicting retirement savings using survey measures of exponential-growth bias and present bias. *Economic Inquiry*, 57(3), 1636–1658. <https://doi.org/10.1111/ecin.12792>
- Goodman, L., Mukherjee, A., & Ramnath, S. (2023). Set it and forget it? Financing retirement in an age of defaults. *Journal of Financial Economics*, 148(1), 47–68. <https://doi.org/10.1016/j.jfineco.2023.02.002>
- Hurd, M. D., & Rohwedder, S. (2008). *The Retirement Consumption Puzzle: Actual Spending Change in Panel Data*. (Working Paper 13929). National Bureau of Economic Research. <https://doi.org/10.3386/w13929>
- Kieren, P., & Weber, M. (2022). When saving is not enough—wealth decumulation in retirement. *Journal of Pension Economics & Finance*, 21(3), 446–473. <https://doi.org/10.1017/S1474747221000196>
- Lockwood, L. M. (2012). Bequest motives and the annuity puzzle. *Review of Economic Dynamics*, 15(2), 226–243. <https://doi.org/10.1016/j.red.2011.03.001>
- Lusardi, A., & Mitchell, O.S. (2011). Financial literacy around the world: An overview. *Journal of Pension Economics & Finance*, 10(4), 497–508. <https://doi.org/10.1017/S1474747211000448>
- Lusardi, A., Mitchell, O. S., & Oggero, N. (2020). Debt and financial vulnerability on the verge of retirement. *Journal of Money, Credit and Banking*, 52(5), 1005–1034. <https://doi.org/10.1111/jmcb.12671>
- Olafsson, A., & Pagel, M. (2024). Retirement puzzles: New evidence from personal finances. *Journal of Public Economics*, 234, 105013. <https://doi.org/10.1016/j.jpubeco.2024.105013>
- Perun, P., & Yakoboski, P. J. (2014). Aging and America: Demographic change and its consequences for work and retirement. TIAA-CREF Institute. <https://www.tiaa.org/content/dam/tiaa/institute/pdf/full-report/2017-02/ti-agingandamerica0514c.pdf>
- Poterba, J., Venti, S., & Wise, D. (2011). The composition and drawdown of wealth in retirement. *Journal of Economic Perspectives*, 25(4), 95–118. <https://doi.org/10.1257/jep.25.4.95>

-
- Yaari, M. E. (1965). Uncertain lifetime, life insurance, and the theory of the consumer. *The Review of Economic Studies*, 32(2), 137–150. <https://doi.org/10.2307/2296058>
- Yakoboski, P., Lusardi, A., & Hasler, A. (2023). Financial literacy, longevity literacy, and retirement readiness. TIAA Institute. https://www.tiaa.org/content/dam/tiaa/institute/pdf/insights-report/2023-01/longevity_literacy_financial_literacy_and_retirement_readiness.pdf

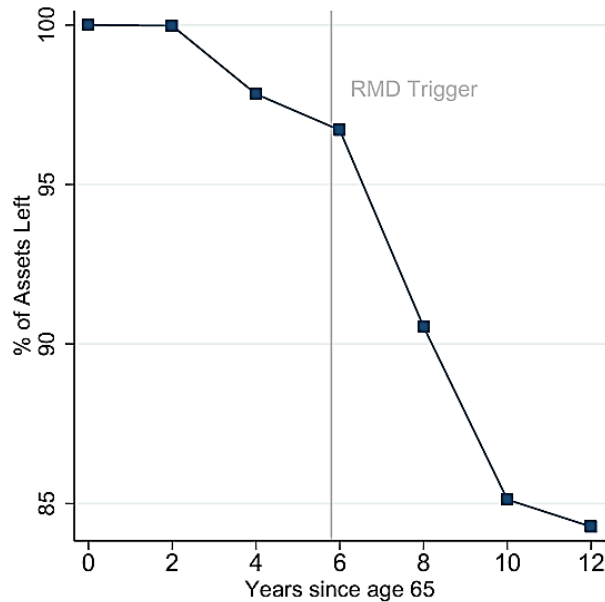
Appendix

APPENDIX FIGURE 1. DECUMULATION OF TOTAL WEALTH (INCLUDING HOUSING)

(a) Log of wealth



(b) Percentage of wealth left



Notes: The left figure depicts the log of mean total assets (wealth), including housing, remaining by years since age 65. This value is measured in 2020 U.S. dollars. The right figure does the same but for the median percentage of assets (wealth), including housing, remaining relative to the baseline in the year one turned 65. Source: HRS, 1995–2020.

About the authors

Hessam Bavafa is the Bascom Professor and Associate Professor of Operations and Information Management at the Wisconsin School of Business and an affiliate faculty member in the Department of Family Medicine and Community Health at the University of Wisconsin School of Medicine and Public Health. He uses econometric analysis and stochastic models to study the business of healthcare. His work has been published in leading journals, including *Management Science*, *Operations Research*, *Manufacturing & Service Operations Management*, *Production & Operations Management*, *Journal of Operations Management*, *Journal of Health Economics*, and *Annals of Family Medicine*. He has collaborated with healthcare organizations such as the University of Pennsylvania Health System, the Veterans Health Administration, the University of Wisconsin Hospital and Clinics, and the Provincial Health Services Authority of British Columbia.

Anita Mukherjee is an Associate Professor of Risk and Insurance at UW-Madison's Wisconsin School of Business. A keystream of her research is on household finance, retirement, and financial literacy, and she is currently an editor at *The Journal of Pension Economics and Finance*. She is a fellow of the TIAA Institute, a consultant at the Federal Reserve Bank of Chicago (Insurance Initiative), and a member of the G53 Financial Literacy and Personal Finance Research Network. She is also an affiliated faculty at the University of Wisconsin Law School, and a member of the Risk Theory Society. Professor Mukherjee earned her PhD in Applied Economics at The Wharton School, University of Pennsylvania and holds an MS in Management Science and Engineering, a BS in Mathematics, and a BA in Economics, all from Stanford University.

Tyler Q. Welch is a PhD Candidate in the Risk and Insurance department at the University of Wisconsin-Madison's Wisconsin School of Business. His research focuses on how individuals and insurance markets interact, specifically with individual decision-making, social insurance systems, public policy, aging, and health. He is a Graduate Research Fellow at the Institute for Research on Poverty and an Associate Member at the National Academy of Social Insurance. He holds a BBA in Risk Management and Insurance from Temple University's Fox School of Business and is a Certified Employee Benefits Specialist.

About the TIAA Institute

The TIAA Institute helps advance the ways individuals and institutions plan for financial security and organizational effectiveness. The Institute conducts in-depth research, provides access to a network of thought leaders, and enables those it serves to anticipate trends, plan future strategies, and maximize opportunities for success.

To learn more, visit tiaainstitute.org.

This research was supported by a grant from the TIAA Institute. E-mails of authors, in order: bavafa@wisc.edu, anita.mukherjee@wisc.edu, tqwelch@wisc.edu. Mailing address for Anita Mukherjee, corresponding author: 5279 Grainger Hall, 975 University Ave, Madison, WI 53706. The views expressed in this paper are those of the authors and don't necessarily reflect those of the institute. We're grateful to Brent J. Davis for helpful comments and to Hoyoung Yoo for research assistance.

TIAA Institute is a division of Teachers Insurance and Annuity Association of America (TIAA), New York, NY.
©2025 Teachers Insurance and Annuity Association of America-College Retirement Equities Fund, New York, NY

4918456