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Longitudinal determinants of end-of-life wealth inequality

James Poterba [a,*], Steven Venti [b], David A. Wise [c]

[a] MIT and NBER, United States
[b] Dartmouth and NBER, United States
[c] Harvard and NBER, United States

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ABSTRACT

Inequality in wealth among elderly households, and in particular the prevalence of very low wealth holdings, can be an important consideration in the design of social insurance programs. This paper examines the incidence and determinants of low levels of financial and total wealth using repeated cross-sections of the Health and Retirement Study (HRS) and a small longitudinal sample of HRS respondents observed both at age 65 and shortly before death. Most of those who report very low wealth holdings at the end of their life had little wealth at the traditional retirement age of 65. There is strong persistence over time in reports of very low wealth, and more generally relatively little evidence that wealth is drawn down in the first 15 years of retirement. The age-specific probability of reporting low wealth increases slowly after age 65. Low lifetime earnings are strongly predictive of low wealth at retirement and at the end of life. The post-retirement onset of a major medical condition, and, for married women, the loss of their spouse, are both associated with small increases in the probability of reporting very low wealth, but they account for a small fraction of low-wealth outcomes. Low levels of wealth accumulation before age 65, rather than gaps in the safety net after 65 or rapid spend-down of accumulated assets, appear to be the primary determinant of low levels of wealth just before death.

Atkinson (1971) explores how lifecycle considerations and intergenerational transfers interact to determine the observed wealth distribution at different ages. Dispersion in the first few decades of adult life reflects earnings variation as well as differences in the receipt of bequests and *inter vivos* transfers. Later in life, the rate of return on investments, the length of an individual's work life and, more generally, the cumulative level of lifetime earnings and random shocks such as out-of-pocket medical expenses contribute to the dispersion of wealth.

The distribution of wealth is an important input in the design of social insurance programs. The fraction of individuals with low wealth holdings late in life is particularly relevant for the analysis of Social Security and public health insurance programs, because such individuals may have limited access to capital markets and therefore be heavily dependent upon the state for both retirement income and protection against health and other outlay shocks. Several previous studies, including Gustman et al. (2014) and Poterba et al. (hereafter PVW) (2011), have compiled data on the wealth distribution at traditional retirement age and at older ages. A substantial fraction of elderly households reports low wealth. Among households headed by someone 65–69 in 2008, Poterba et al. (2011) find that 30% had net non-annuitized wealth of less than $72,000, and the same fraction had net financial assets of less than $2000. Absent other resources from family or government, such individuals would struggle to respond to financial shocks such as those associated with out-of-pocket medical spending.

The observation that a significant number of individuals have very low wealth levels late in life raises the question of how they reached this position. There are two broad explanations. One is that these individuals reached retirement with substantial saving, but drew down their resources rapidly, perhaps in response to unexpectedly large expenditure shocks. There is a large literature, summarized for example by DeNardi et al. (2016), on the rate at which retirees draw down their wealth. If some spend at a high rate, they could become low-wealth elderly in late life. This could either be due to high levels of consumption, or to gaps in the social safety net that leave the elderly exposed to expenditure shocks such as out-of-pocket spending for some types of medical care. Another factor that we will not explore is that some live to a very old age and deplete their assets without rapid spend down but as a result of many years of modest spending.

The second broad explanation of low wealth in late life is that individuals never accumulated very much wealth, and therefore reach late life with little wealth because they had low wealth at, and after, retirement. Understanding the relative importance of these alternative explanations for the lower tail of the wealth distribution is central for analyzing the impact of social safety net programs targeted to the elderly, and more generally for assessing the effect of changes in

* Corresponding author.
E-mail address: poterba@mit.edu (J. Poterba).

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programs such as Social Security, Medicare, and Supplemental Security Income (SSI).

A number of previous studies have addressed the determinants of low wealth in late life. The most closely related study is PVW (2017a), which examines the relationship between household wealth when an individual is first surveyed in the Health and Retirement Study (HRS), typically while in their 50s, and household wealth just prior to death. That study finds that low saving is the primary driver of low late-life wealth. It focuses on an initial wealth observation that could be as much as a decade prior to retirement, so it may not accurately reflect wealth at retirement for households that saved aggressively in their last years of work.

This paper compares net worth and financial assets of HRS respondents at age 65, a common age of retirement, with these assets just before death. It relies primarily on longitudinal data, and yields results on wealth persistence and the importance of pre-retirement accumulation that are broadly consistent with earlier results using repeated cross-sections as well as longitudinal data. It also provides new evidence on the role of educational attainment, lifetime earnings, adverse health shocks after retirement, and the death of a spouse[1] on the likelihood of reporting low wealth in late life. While substantial prior literatures have examined the effects of each of these factors on retirement wealth, this paper considers their roles in pushing individuals into the lower tail of the wealth distribution. These factors might be less important in the left tail of the distribution than at higher wealth levels.

A number of studies have documented negative cross-sectional associations between poor heath and wealth, and negative correlations in panel data between changes in health and changes in financial status.[2] For example, Smith (2005) finds, in the first five waves of the HRS, that households headed by individuals between the ages of 51 to 61 in 1992 exhibit a drop of roughly $40,000 ($2000) in wealth following a major health event. Lee and Kim (2008) study the older AHEAD cohort (age 70 and older in 1993) and find that new health conditions are associated with substantial asset depletion, particularly among older individuals. PVW (2017b) find that HRS respondents in better health in 1994 accumulated substantially more wealth by 2010 than did those with similar wealth, but poorer health, in 1994. Kelley et al. (2015) estimate the costs associated with different health conditions in the last five years of life. They report mean out-of-pocket spending of $61,522 ($2010) for those diagnosed with dementia, $35,294 for heart disease, and $28,818 for cancer. They do not explore how these outlays translate into changes in wealth, or ask how often they push those experience health care costs to very low wealth levels.

None of these studies explores the links between health shocks and the probability of reporting very low wealth holdings; that our focus. By using a longer span of HRS data than most previous studies, we are able to track a substantial set of HRS respondents from age 65 until death. We observe the complete post-65 wealth trajectory for these individuals. We also explore the links between education, lifetime earnings, and wealth at both retirement and the end of life, and provide new evidence on the determinants of late-life wealth levels.

Our analysis consists of four sections. Section 1 summarizes total wealth and financial asset holdings at age 65 and at the end of life. Section 2 compares wealth at retirement and at death using both repeated cross sections and longitudinal data and presents new evidence on the slope of the age-wealth profile for HRS respondents. Section 3 considers the impact of health shocks and spousal death on the post-retirement wealth trajectory. There is a brief conclusion.

[1] Studies that find that spousal death is associated with lower wealth include Sevak et al. (2003), Johnson et al. (2005), and Coile and Milligan (2009). De Nardi et al. (2015) find that spousal deaths are associated with a $30–60,000 reduction in wealth ($2005) in the AHEAD cohort, the oldest members of the HRS sample.

[2] Studies that find that health declines are correlated with wealth declines include Smith (1999, 2004), Levy (2002), Wu (2003), Coile and Milligan (2009), Cook et al. (2010), and Wallace et al. (2014).

1. The distribution of end of life wealth

Alvaredo et al. (2016) review the primary sources of information on wealth holdings for all the but very richest households. These are administrative (tax) data on estates at death, which can be used to estimate the wealth of the living by applying (the inverse of) mortality multipliers differentiated by age, sex and wealth class; administrative data such as tax data on investment income, which can be "grossed up" to estimate the associated wealth distribution; and household surveys, like the HRS. Tax evasion and avoidance can make the first two sources problematic, while low response rates and under-reporting of wealth at the top of the distribution can make surveys unrepresentative. The HRS response rate, between 81 and 91%, is unusually high for a household survey. As with most large cross-section surveys, the assets of the very wealthy tend to be underreported.[3] This is not a major concern for the analysis of low wealth holdings among the poorest elderly.

The HRS data have many strengths but they also suffer from several limitations. First, the HRS samples each respondent at two-year intervals. With respect to end-of-life wealth measures, if a respondent dies just after completing an interview, the last recorded wealth value is a timely estimate of wealth in the last weeks of life. For those who die many months after their last survey, however, wealth balances "at the end of life" are measured with error. Because expenditures associated with declining health are often substantial in the last few months of life, the reported balances in the last interview before death are likely to overestimate wealth at the time of death.[4] Second, there are data outliers. Some may be accurate, but others may be the result of misreporting. To minimize their impact, we exclude records for 153 persons reporting more than $10,000,000 or less than −$1,000,000 of total wealth. We also focus much of our analysis on the probability that respondents report wealth below a threshold value. Measurement errors that do not move respondents across this threshold will not affect our findings.

The HRS is a longitudinal survey that currently includes five cohorts defined by the year in which respondents are first surveyed. The original HRS cohort surveyed respondents between the ages of 51 and 61 in 1992 and the Asset and Health Dynamics of the Older Old (AHEAD) cohort surveyed respondents aged 70 and older in 1993. Subsequent cohorts include the War Babies (WB) cohort, first surveyed in 1998 when respondents were between the ages of 51 and 56, the Children of Depression (CODA) cohort first surveyed in 1998 when respondents were between the ages of 68 and 74, and the Early Baby Boomers (EBB) cohort that includes respondents aged 51 to 56 in 2004. All cohorts were surveyed every second year through 2012.[5]

Our primary sample includes HRS respondents from all cohorts who are known to have died and who were at least 65 years old in the last survey wave prior to their death. Of the 33,316 individuals who were alive in the HRS at some point between 1996 and 2012, 9215 died during this sample period. Of them, 7848 were age 65 or older at death. For some purposes, we also analyze a much smaller set of 1073 married respondents who were observed at age 65, the date we consider traditional retirement, and who also died during our 16-year sample period. We refer to this as our "longitudinal sample" because it allows us to track the full evolution of wealth and financial assets from age 65 to death.

[3] See HRS (2017) for response rates. Estimates of wealth from the HRS compare quite favorably to measures obtained from the Survey of Consumer Finances (SCF) that is widely believed to be the survey containing the highest quality wealth data. Estimates of wealth from the two surveys are very similar for the bottom 95% of the wealth distribution, but differ quite dramatically for the top 5%. See Bosworth and Smart (2009).

[4] The HRS conducts "exit interviews" with surviving relatives of deceased participants. These interviews contain some information on medical expenditure and asset drawdown in the interval between the last survey interview and death. We do not use the exit interview data because they are incomplete and would limit the sample size.

[5] We do not use data from the first two waves of the original HRS cohort (1992 and 1994) and the first wave of the AHEAD cohort (1993) because data on key health variables are incomplete.

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