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Trigger Events and Financial Outcomes Among Older Households

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Abstract

Follow a sample of social security beneficiaries drawn from the Health and Retirement Study from their first year of retirement up to 15 years into retirement, we estimate rates at which retirees are subject to family structure change, cognitive decline, health decline, and other events. Then we assess the vulnerability of wealth and wealth-based adequacy measures to adverse events, drawing conclusions about the effect of events on a wealth-based measure and a wealth-based inadequacy measure. Our findings highlight the importance of cognitive and health decline as events with the potential to shape the evolution of wealth post-retirement.

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Trigger Events and Financial Outcomes Among Older Households

For several reasons, it is important to understand the capacity of individuals both to accumulate adequate retirement resources and to manage these resources while responding to adverse shocks during retirement years. The level of resources at the time of retirement is subject to erosion from adverse shocks, including widowhood, divorce, a decline in health status, or a decline in cognition. Hence, the trajectory of wealth and retiree living standards during retirement years depends heavily on the success of strategies undertaken to cope with such shocks.

In this study, we select a sample of new retirees constructed from the Health and Retirement Study (HRS) data to pursue several objectives. The first objective is to identify the nature of shocks or events for which individuals are at risk during retirement and to estimate both the absolute and relative risk of these events. Broadly speaking, these events fall into the areas of changes in family structure, cognitive decline, health decline, and insurance/medical expenses. The second objective of this study is to estimate the impact of these events—cognitive decline, health decline, the loss of insurance, and high out-of-pocket medical expenses—on wealth-based measures of retirement adequacy.

The next section of this paper briefly describes related literature and where this particular study fits in this literature. The third section describes the data and measures used. These descriptions include the basic sample selection criteria as well as details of the criteria for being selected into any of the event-specific samples. In the fourth section, evidence on event rates is presented along with estimates of the impact of the occurrence of these events on annuitized net wealth (ANW) and an ANW-based retirement savings adequacy indicator. The fifth section

highlights populations that are particularly vulnerable to cognitive and health decline and section six concludes.

Previous Literature

The current literature examining the question of whether Americans save enough has not provided a definitive look at the evolution of wealth and wealth-based retirement adequacy during retirement. Because of the uncertainty of shocks that affect family structure, cognition, health, and exposure to large medical expenses, there may be a significant deterioration of the adequacy of resources both at the time of retirement and into the retirement years. Resources that may have been more than adequate early in retirement may be strained after confronting health problems, a divorce, or widowhood. For this reason, it is important to examine the evolution of wealth during retirement and in particular, to assess the vulnerability of wealth and wealth-based adequacy measures to adverse events.

Several studies provide evidence related to the evolution of wealth and its components during retirement. From these studies, there is substantial evidence of the preservation of various components of wealth as a form of self-insurance. For instance, IRA and 401(k) pension withdrawals before the age of 70 are uncommon (Holden and Schrass 2009; Poterba et al. 2008). Additionally, there is also evidence of the preservation of housing wealth until around age 70, as well as evidence that home equity decreases in response to health and family status shocks (Coile and Milligan 2009; Megbolugbe et al. 1997, 1999; Venti and Wise 2002, 2004). Additionally, Coile and Milligan (2009) provide evidence that the drawdown in home equity increases with the time from the occurrence of adverse shocks and that at least some of the drawdown in housing

assets is offset by increases in more liquid assets. No studies have examined the effects of shocks on the overall wealth trajectory during the years of retirement.

We know even less about the total impact of family and health shocks on comprehensive measures of the adequacy of wealth and retirement resources and which choices and other factors are likely to make the effects of health and family shocks larger or smaller. Poterba and colleagues (2010) examine how a measure of wealth exclusive of its pension component is affected by family status and health changes and report on the evolution of nonpension assets into retirement. They find strong evidence that the response of couples to adverse shocks to both individual and household health status leads to temporal decreases in the stock of available wealth. Additionally, they find that individuals facing adverse family structure and health shocks have lower asset trajectories in the years following the shock than similar individuals who did not face such shocks.

Haveman et al. (2007a) examine changes in adequacy over the retirement years for a cohort entering retirement in the early 1980s. They find initial inadequacy rates of annuitized wealth measured relative to the poverty line of 4 percent, inadequacy rates measured relative to two times the poverty line of over 20 percent, and an increase in average inadequacy rates over the first 10 years of retirement. Additionally they find that the decrease in ANW, defined as the lifetime annual annuity payment based on a respondent's total wealth, over the first 10 years of retirement was larger for nonwhites, those with lower levels of human capital, and those with a high number of health events or a spouse in poor health. Comparing the group that retired in the early 1980s with a cohort that retired in the 1990s, they find similar levels of adequacy between the two cohorts of retirees (Haveman et al. 2007b).

While our research is in the spirit of Coile and Milligan (2009), Poterba et al. (2010), and Haveman et al. (2007a, 2007b), we are able to make several advances in answering the question of how retirees fare during retirement. First, we use a more comprehensive wealth measure, leaving out only what we label 'unsmooth' pensions, never-dispersed pensions, and the value of nonprimary residences from our measure.[1] Second, we look at a broader array of shocks or events, including changes in family structure (marriage, divorce, widowhood), indicators of cognitive decline, indicators of health decline, and problems with insurance coverage or medical expenses.

Data and Measures

The data used in this study were drawn from the initial cohort of the HRS, which consists of individuals born between 1931 and 1941 and their spouses. Initial HRS cohort households were first interviewed in 1992, when they were between 51 and 61 years old, and subsequently re-interviewed every two years.[2] At each two-year wave interview, respondents are asked about their living arrangements (family structure), health status, health insurance, healthcare utilization, and cognition (including a brief assessment). Additionally, at each wave interview one of the two (potential) individuals in a HRS household is selected to be the financial respondent and answer questions about the household's income and wealth. The information reported by HRS financial respondents at every interview wave includes the value of the primary residence, the outstanding value of mortgages on the primary residence, the net value of other real estate and businesses, the value of checking and savings deposits, stocks, bonds, money market accounts, and IRAs, as well as flows of income from social security benefits, pensions, annuities, and veteran's benefits.

To construct our analysis sample we utilized the RAND HRS Data, Version J (2010) and data from the cognition and assets and income sections of the HRS core data, which are publically available for every two-year wave between 1992 and 2008.[3] Individual respondents in the RAND HRS Data are tracked from the wave in which they are first observed as 'retired' (defined by receiving social security benefits or social security disability insurance (SSDI) benefits at age 62 or older),[4] until they die, attrite from the sample, or the information available from the panel expires, the last available year being 2008.[5] The panel created by this procedure is both unbalanced and broken in the sense that there is the potential for missing panel observations and variable panel lengths. For example, someone may have 'retired' in wave three, been observed as retired in wave four, not responded or responded with missing wealth and background information in wave five, and be back in the sample in wave six.

Figure 1 shows the distribution of the age of retirement, as indicated by the age at which we first observe social security benefit receipt, but no younger than at age 62.[6] Not surprisingly, a large fraction of our sample consists of early retirees, with nearly 80 percent retiring before the age of 66. The skewed nature of this distribution is in part due to the fact that the full set of retirement ages are not observable in the HRS. For example, a respondent born in 1941 will not be 62, and eligible for social security retirement benefits, until 2003. The latest these younger members of the HRS could be observed receiving social security benefits is in the 2008 wave, when they are only 67.[7]

Figure 1 here

Means of sample characteristics by couple household and sex are shown in Table 1. Sample sizes are large for all couple households and all sex groupings except for single men. Mean retirement age is similar across groups, but the means mask significant differences in the distribution. Married men are considerably more likely to retire at ages 65–67 or later, relative to other groups. Additionally, married women are much more likely to retire at earlier ages. Received SSDI first (=1) is a binary variable that indicates whether we code a respondent as retired because they were observed receiving SSDI after the age of 61, versus receiving social security retirement or survivor benefits after the age of 61. The sample is predominately non-Hispanic white. Whites make up about 80 percent of the sample of couple respondents and around 64 percent of the sample of single respondents. Overall, both respondents and their spouses report good health, with only 7.4 percent of respondents and 5.9 percent of spouses reporting poor health.

Table 1 here

Wealth Measures. For each wave in which any respondent in the main analysis sample is observed, we compute their total wealth; annuitized net wealth, defined as the amount of income that is received annually over a person's expected remaining years of (retired) life, would equal total wealth in present value. Total wealth is divided into five components: nonhousing wealth, the net value of the primary residence, social security wealth, smooth pension wealth, smooth annuity wealth, and smooth veteran's benefit wealth. Below is an explanation of how each of these wealth components are defined and valued.

Financial/Property Wealth. Information on the value of financial/property wealth is available in the RAND HRS Data. This measure includes the net value of real estate excluding the primary residence, vehicles, businesses, IRAs, stocks, bonds, checking and savings deposits, CDs, and other savings, less debt not related to the primary residence. It does not include the value of residences other than the primary residence.

Net Value of Primary Residence. Information on the net value of the primary residence is available as a coded variable in the RAND HRS Data. The net value of the primary residence equals the total value of the primary residence less the remaining value of the mortgage and any home equity or other loans made against the value of the home.[8]

Social Security Wealth. Social security wealth is calculated as the discounted present value of social security benefits paid to a respondent or spouse over their expected retirement years using 2.5 percent as the rate of time preference. To determine the level of social security benefits, we take the amount of social security income received in the prior month (as reported by the financial respondent in the assets and income section of the HRS core data) and annualize it by multiplying by 12. For each person in our sample we then compute the median nonzero annual real social security benefit over the time they are observed as 'retired' and use this value for the social security wealth calculation. The net result of this approach is that within-person variation in social security wealth is due to changes in family structure or age, but not in reported benefit amounts.

Smooth Pension Wealth. Information about the wealth associated with pensions in the HRS is difficult to determine.[9] For this reason, we have elected to use a present-value approach to valuing the wealth associated with various 'smooth' pensions based on information reported by

the financial respondent in the household income and assets section of the HRS, as well as the pattern of withdrawals from various unsmooth pensions.

In the assets section of the HRS financial, respondents are asked about the income received in the prior month from the largest and second-largest pensions and the aggregate of any other pensions received by the financial respondent and spouse. We reordered these pensions, replacing the largest pension income amount with the second-largest pension income amount in the case where the natural log (ln) difference between the second-largest pension income and its lag and lead is greater than 0.35 and when the difference between the second largest pension income and the lag and lead of the largest pension value are both smaller than 0.35, where 0.35 reflects an annual effective nominal annual increase in pension income of 16.2 percent over the two years between waves.

Once the pensions are reordered, a series of fixes to various potential reporting errors are applied. For example, sometimes it is clear that the monthly report is consistent with two monthly checks rather than one. This might be the case if the check is paid on the last business day of the month or the first day of the month, whichever comes sooner. In this case the pension amount in that wave should be roughly double the amount in prior waves and the value of the pension is replaced by half the original amount. In other instances it is clear that the income associated with a pension was based on an annual (rather than monthly) or monthly (rather than annual) report of income. In these instances, the income associated with the pension is divided by 12 or multiplied by 12, as appropriate.

Once these reporting errors are fixed, each pension is checked with respect to whether it is ‘smooth.’ In the context of this study a ‘smooth’ pension is a pension that is received continuously once it is first dispersed and exhibits a wave-to-wave change in log income

amounts of less than 0.35 over all the years it is dispersed.[10] We then estimate the wealth value of each smooth pension in each wave as the present value of the current real annual income associated with the pension over the respondent's expected lifetime and the balance of any expected survivor benefits, assuming the annual real rate of pension growth is -0.75 percent and a rate of time preference of 2.75 percent, for an overall discount rate of 3.5 percent.[11]

Smooth Veteran's Benefits Wealth. In each wave, the financial respondent is asked about the value of any veteran's benefits received by the respondent or spouse. We use the procedure described above for pensions to determine whether these veteran's benefits are smooth, and the procedure described for social security wealth to determine the wealth value of these benefits.

Smooth Annuity Wealth. The information regarding pension and annuity income in the assets and income section of the HRS core data is exactly the same, so we utilize the same algorithm for valuing annuity wealth that is described for pensions above.

Annuitized Net Wealth. In order to gauge the adequacy of retirement savings, as measured by total wealth, we calculated annuitized net wealth (ANW). ANW is defined as the amount of income that, if received as an annuity over a respondent's expected lifetime, has a present value equal to the respondent's current wealth. Annuitized wealth may be computed for a particular wealth component (e.g., value of primary residence or social security) or for total wealth in aggregate. The ANW computed on the basis of total wealth (ANW total) is equivalent to the sum of the ANW of the various components of wealth.

For a single person, the computation of ANW total or the ANW associated with a particular wealth component is straightforward. For example, the ANW associated with a smooth pension may be determined by:

$$Wealth_{pen} = \sum_{t=0}^{T} \frac{1}{(1+r)^T} ANW_{pen} = \frac{1}{r}\left[1 - \frac{1}{(1+r)^T}\right] ANW_{pen}$$

where $r = 0.035$ and T represents the difference between the respondent's life expectancy and his or her current age.

For respondents in couple households, the determination of ANW is more complicated because income received by couples should be valued differently than income received by singles. To make the ANW of respondents in couple households comparable to that of singles, we adopt an equivalency scale that presumes couples need 1.66 times the income of singles while both are alive. With this equivalency scale the ANW_{pen} of a respondent in a couple household may be determined by:

$$\begin{aligned} Wealth_{pen} &= \sum_{t=0}^{T_{\min}} \frac{1}{(1+r)^t}\left(1.66 \cdot ANW_{pen}\right) + \sum_{t=T_{\min}+1}^{T_{\max}} \frac{1}{(1+r)^{t-T_{\min}}} \cdot ANW_{pen} \\ &= \frac{1}{r}\left[1 - \frac{1}{(1+r)^{T_{\min}}}\right]\left(1.66 \cdot ANW_{pen}\right) + \frac{1}{(1+r)^{T_{\min}}}\left[\frac{1}{r} \cdot \left(1 - \frac{1}{(1+r)^{T_{\max}-T_{\min}}}\right)\right] ANW_{pen} \end{aligned}$$

where $Wealth_{pen}$ is the sum of the respondent's pension wealth and the spouse's pension wealth, $T_{\max}$ is the expected remaining years of the spouse expected to live the longest, and $T_{\min}$ is the expected remaining years of the spouse expected die first. In the above expressions, the first part of the sum represents the present value of the annuity when the respondent is in a couple, and the second part represents the present value of the annuity after one member of the couple household is deceased.

Mean values of wealth, ANW, and their components in the first wave of retirement are shown in Table 2. All dollar denominated figures are price adjusted to 2008 using the CPI-U. Also shown are the share of wealth and share of ANW for the entire sample that are attributed to

specific wealth components. From these figures, the most important components of wealth and ANW are housing and social security, which together account for 75 percent of wealth and ANW. There are large differences in wealth and ANW by race, retirement age group, and education level. There are also large differences in wealth across couple-household and gender categories, but differences in ANW, which are adjusted via an equivalency scale to single-person equivalents, are much smaller. Some of the most striking figures in Table 2 are very high poverty rates, calculated by comparing ANW to 1.5 times the official poverty threshold, for nonwhites, singles, and persons without a high school degree.

Table 2 here

A histogram showing the distribution of ANW relative to 1.5 times the official federal poverty threshold during the first wave post-retirement is shown in Figure 2. As would be expected from the rather high poverty rates shown in Table 2, there is a significant mass of sample clustered below and just above this adequacy threshold. Indeed, during the first wave post-retirement nearly 45 percent of the sample had a ratio of ANW to 1.5 times the poverty threshold between 0.6 and 1.4. This represents the largest mass of the sample in any contiguous interval of length 0.8. One potential implication of having such a high proportion of individuals clustered around this adequacy standard is that changes in family structure, declines in cognition, declines in health, or other events adversely affecting wealth may have large impacts on the probability of having inadequate retirement resources.

Figure 2 here

Trigger Events. The primary goal of this analysis is to provide information on the propensity of retired individuals to experience trigger events—changes in living arrangements, cognition, or health that have potential to cause changes in the portfolio allocation of wealth, the level of wealth, or the adequacy of retirement savings—and then to estimate the impact of these changes on ANW and retirement adequacy. Toward this end, we have defined 15 trigger events across the domains of family structure changes, declines in cognition, declines in health, and medical expenses and health insurance. The details on how these events were coded are provided below.

In defining trigger events in this analysis, we have adopted the concept of a flow sample of the type used in event-history analysis; hence, we track respondents as they flow into a particular state, in this case being retired, and thereafter track both their risk for and exposure to various events. We continue to follow respondents who are eligible for a particular event until they are no longer eligible to experience the event, they have experienced the event, or information concerning their eligibility or exposure to the event is no longer available.[12] Thus, the baseline for the analysis of the timing of events is always the first wave of retirement, and the samples used to estimate the rate of events will include only respondents who are eligible for such events in the first wave in which they were observed retired.

Table 3 provides a listing of events, the initial samples relevant for each event, and a description of how each event variable was coded. The event variables take on a value of one if the respondent was eligible to experience the event in the prior wave and experienced the event since the prior wave and a value of zero if the respondent was eligible to experience the event in the prior wave but did not experience the event since the prior wave. In instances where a

respondent is not at risk for a particular event or was not at risk for a particular event during the first wave in which they were retired, the event variable will be undefined.

Table 3 here

In the domain of family structure changes, we are interested in the first instances of marriage, divorce, and widowhood during retirement among respondents who were eligible to be married, divorced, or widowed respectively in the first wave in which they were retired.

There are several indicators of cognitive performance in the HRS that can be used to code cognitive decline. In this analysis we make use of three such measures. The first of these is the Telephone Interview for Cognitive Status (TICS) score. The 10-question TICS can be administered over the phone to measure cognitive decline. Questions include the serial sevens task (count backward by 7s to 65), backward counting from 20, the current date, object naming (e.g., what do you usually use to cut paper?), and naming the president and vice president of the United States. We code individuals as having experienced a cognitive decline if their TICS scores drop below eight. The second measure we use to code cognitive decline in the HRS is the score on a 10-noun recall test. In this test, 10 nouns are read to the respondent, who is then asked to recall as many as possible. The score is indicated by the number of correct responses. We code HRS respondents as having experienced a word-score decline if his or her score drops below 4. Finally, we code two cognitive decline variables based on self-reported rating of memory on a five-point scale (excellent, very good, good, fair, and poor). Respondents are coded as having declines in memory if self-reported ratings drop to poor or fair or poor, depending on the measure.

A wide range of health measures is available in the HRS from which to code health declines. In addition to self-reports of health on a five-point scale, extensive information is gathered about whether respondents have difficulty with tasks that require gross motor skills, such as getting out of bed, bathing, or crossing a room, and about the utilization of nursing home care. We code health events based on these health indicators. These events include a self-reported decline in health to poor or fair or poor, reporting trouble with three or more gross motor skills, reporting trouble with three or more activities of daily living (ADL), having a nursing home stay since the previous wave, and being in a nursing home currently. The remaining set of events include losing all private and public health insurance and accumulating out-of-pocket medical expenses in excess of $20,000 in the approximately two years since the previous wave interview.

Results

In this section, we present evidence on the rates of family structure change and events signaling cognitive decline and health decline, as well as the rate of loss of insurance and large out-of-pocket medical expenses. We also explore which events are most likely to occur in the early retirement years in aggregate.

In addition to presenting evidence on event rates, this section also provides estimates of the effects of these events on the evolution of resources post-retirement. This is done via fixed effect regression of ln(ANW) on an event indicator and other time-varying variables, as well as through some analysis that uses these estimates to provide evidence on the effect of a selection of events on the probability of ANW falling below an adequacy standard defined by 1.5 times the federal poverty threshold. Upon completion of this analysis, we briefly discuss its implications

for assessing which groups are particularly vulnerability to having their ANW eroded below or further below 1.5 times the federal poverty threshold by adverse events.

Event Rates. Average two-year trigger event rates over the early retirement years are shown in Figure 3. The rates shown in Figure 3 are only applicable to respondents who are at risk for the event in question. For example, the two-year marriage rate of approximately 0.02 implies that every two years an average of 2 percent of the people who were not married two years earlier will marry. Widowhood is the only family structure change that occurs at a high rate. Many of the memory and health events happen with a relatively high frequency, particularly self-reported decreases in memory and health to fair or poor. Transitions to nursing home care appear to be fairly uncommon, perhaps in part because respondents who have nursing home stays are frequently dropped from the sample due to attrition or death.

Figure 3 here

The results shown in Figure 3 provide evidence of the average two-year event rates during the early retirement years. While average rates are important indicators of the relative frequency of a particular event, they do not tell us whether individuals with certain background characteristics are at increased risk for some events. In order to gain some insight into how the likelihood of experiencing family status changes, cognitive decline, health decline, and other events varies across individuals, we estimated logistics models for the probability that an individual will experience an event by sex as a function of whether individuals were in a couple household, their race/ethnicity, their education level, whether they retired at 65 or later, and whether they were coded as retiring receiving SSDI.

Estimates of determinates of the probability of family structure changes are shown in Table 4. The baseline probability reported in Table 4 corresponds to the probability of the associated event for a white individual who retired between the ages of 62 and 64 with less than a high school education and who did not retire receiving SSDI. The numbers shown in the table are the marginal contribution to the baseline probability. For example, the baseline probability of 0.019 and change in probability of -0.013 associated with Hispanic in column one indicates that the estimate of the two-year marriage rate early in retirement for a man with baseline characteristics is 0.019, and that this rate is 1.3 percentage points lower for a Hispanic man who otherwise has those same characteristics.

Table 4 here

Examining Table 4, there is some variability in marriage, with more-educated men and women being substantially and, in some cases statistically significantly, more likely to marry. Divorce rates early in marriage are uniformly low. With respect to widowhood there is a strong relationship between education level and the two-year likelihood of being widowed with more-educated men and women facing a reduced risk of widowhood relative to their counterparts with less than a high school degree. These results are statistically significant.

Estimates of the link between background characteristics and the likelihood of events signaling cognitive decline are shown in Table 5. The characteristics associated with the baseline probabilities are the same as those in Table 4, with the addition of single status. Men have higher rates of cognitive decline than women. Couples face a lower likelihood of some events signaling cognitive decline. There is also a strong relationship between the likelihood of cognitive decline

and race, with black and Hispanic men and women substantially more likely to experience cognitive decline, according to our measures.

Table 5 here

One other pattern that holds across the estimates is that education substantially reduces the likelihood of events signaling cognitive decline. Lastly, individuals whom we code as retired at age 62 or beyond because they were observed receiving SSDI are at an increased likelihood of some events signaling cognitive decline. The implication of the whole of the results presented in Table 5 is that there is substantial individual heterogeneity in the likelihood of cognitive decline with some individuals (educated whites) being at fairly low risk and others (blacks, those without a high school degree, and those who retired receiving SSDI) facing a substantially higher risk.

The impact of the background characteristics on the remaining event variables are shown in Tables 6 and 7. The results for the health events shown in Table 6 mirror those for the events signaling cognitive decline shown in Table 5; with singles, nonwhites, those with less than a high school education, and those we code as retiring receiving SSDI being at a substantially, and in most cases statistically significant, increased risk of self-reported health declines, trouble with three or more gross motor skills, and trouble with three or more ADL. In contrast to the results for rates of cognitive decline, there do not appear to be large differences in the rates of health decline between men and women.

Table 6 here

The results detailed in Table 7, which pertains to the events that may reflect health difficulties (e.g., a hip problem), explicit choices (i.e., whether to have the hip replaced or not), and resources (i.e., such a procedure is not within the reach of everyone), show a different pattern than do Tables 5 and 6. In particular, there is some evidence that nonwhites face a reduced risk of nursing home utilization and large out-of-pocket medical expenses. This is interesting, because these events reflect a combination of health difficulties, choices about treatment, and resources. That there are differences between whites and nonwhites, despite the fact that nonwhites experience health decline at a greater rate, suggests differences in treatment choices or resources between whites and nonwhites.

Table 7 here

The impact of the Medicare program is clearly evident in Table 7. Individuals whom we code as retired because they are receiving SSDI at age 62 or older and who are thus eligible for early Medicare (after a waiting period) are at a substantially lower risk of losing all health insurance coverage. Additionally, as expected due to Medicare coverage at age 65, there is a large and statistically significant effect of retiring at age 65 or older on the likelihood of losing insurance.

The remainder of the results, which pertain to the impact of the events described above on the evolution of ANW after retirement, are presented in two forms. First we present results from a regression of ln(ANW) on indicators of family structure change, cognitive decline, health decline, and insurance/medical expenses. Next, we use estimates of the coefficients and error distributions from the ln(ANW) regressions to estimate the impact of a selection of events on the

probability of falling below an adequacy standard (1.5 times the federal poverty threshold for an adult less than 65) at various places in the pre-shock ANW.

The Impact of Family Structure Change, Health Decline, Cognitive Decline, and Insurance and Medical Expenses on ANW. To examine the impact of trigger events on ANW, we estimate the following specification for three family status events (marriage, divorce, widowhood) and for all combinations of couple household and gender for the events indicating cognitive decline, health decline, or issues with insurance or medical expenses.

$$\ln(ANW_{i,t}) = \alpha \cdot Event_{i,t} + \gamma \cdot Z_{i,t} + \theta_i + \delta_t + \eta_y + \varepsilon_{i,t,y}$$

where $ANW_{i,t}$ is annuitized net wealth for individual i in the post-retirement period t, $Event_{i,t}$ is a 0,1 event indicator; $Z_{i,t}$ is a vector of individual-level time-varying covariates, θ_i is an individual-level error component to be estimated as a fixed effect, δ_t are retirement-period effects, η_y are calendar-year effects, and $\varepsilon_{i,t}$ is an independently and identically distributed error term. For most of the specifications, the variables included in $Z_{i,t}$ are self-reported health and (if relevant) spouse's self-reported health and spouse's education level.

There are three important things to note about the above specification. First, the dependent variable is in natural logs, meaning that the impact of an event is measured in fractional terms. For example, an event coefficient of -0.05 would imply an approximately 5 percent reduction in ANW as a result of the event. Second, because the specification contains individual fixed effects, the effect of each trigger event is identified by within-individual, rather than between-individual, variation in the event status. Making use of the within-individual variation in event status is important because there are many reasons to believe that individuals who are exposed to events differ in some unobserved way from individuals who are not. For

example, persons who eventually experience health declines might have lower levels of ANW (by virtue of lower values of θ_i) independent of whether they have already realized a health decline. Such would be the case if both ANW and health are related to lifetime earnings. A basic regression model would dramatically inflate the size impact of the trigger event. Indeed, the basic regression equivalent estimates to the above model yielded very large and significant negative effects for most trigger events.

While estimating the ln(ANW) models using fixed effects is necessary, it does imply some limitations. In particular it means that we are not going to be able to identify the contribution of any variables that do not vary over time on ln(ANW). For some of the variables included, in particular spouse's self-reported health and education, there is not a lot of within-person variation and the resulting coefficients on these variables are, as a result, not interesting. Because the most meaningful coefficients that are produced as a result of the ln(ANW) specifications pertain to the events, and because of the large number of results (54 total estimations), they are the only coefficients shown in the tables below.

Lastly, it is important to understand the sample periods over which this specification is estimated. The initial sample restrictions for each trigger event are as described in Table 3. Respondent's meeting the initial sample criteria for an event continue to contribute post-retirement wave observations for the sample specific to the event if their wealth variables are defined, and if they have not left the sample or experienced the event. Once individuals are observed as having experienced an event, say a health decline, they no longer contribute observations. For any respondent, the maximum number of person-waves after an event is one, and thus the estimates generated by the specification described above should be thought of as short-run estimates of the impact of trigger events.[13]

Estimates of the effect of family structure changes on ln(ANW) are shown in Table 8.[14] Marriage is estimated to have a very large negative and statistically significant effect on ln(ANW) for men. For women the effect is much smaller and not statistically different from zero. Strangely, divorce and widowhood are both estimate to have a positive effect on ANW among men. For women divorce is estimated to have a large negative effect on ANW whereas there is no effect of widowhood. It is very hard to make sense of the family status change events. We suspect that at least part of the problem is that retirees who marry and divorce are a fairly select group, making it hard to draw broad inferences.

Table 8 here

Estimates of the effect of indicators of cognitive decline on ln(ANW) are shown in Table 9. Nearly all event coefficients are negative, indicating that cognitive decline is associated with a decrease in ANW. A few of the coefficients are statistically significant. In particular, having a drop in the 10-noun recall score to below 4 has an effect on ANW that is statistically different from zero for men in couple households, single men, and single women. Additionally, for men in couples, a TICS score that drops below eight is associated with an estimated 8 percent decline in ANW that is statistically different from zero at the 5 percent level.

Table 9 here

In contrast to the coefficients shown in Tables 8 and 9, a majority of the impacts of indicators of health decline on ln(ANW) shown in Table 10 are statistically significant.

Additionally, nearly all of the coefficients in Table 10 are of the anticipated sign. One of the more interesting findings shown in Table 10 concerns the relative vulnerability of women in couple households to health decline. The impact of each health decline indicator is nearly twice as large for women in couple households as for men, with estimates ranging from (negative) 4 percent of ANW (health decline to fair or poor) to 20 percent of ANW (for a nursing home stay). Additionally, all of the health status decline indictors are statistically significant among women whether single or in in couple households. All of the indicators of health status decline have a statistically significant and negative effect on ANW among single women, but only trouble with three or more ADL is statistically significant among single men. The absence of statistically significant effects for single men may be a result of the very limited number of single men in our sample (see Table 2 and Appendix B).

Table 10 here

Estimates of the impact of losing health insurance and having out-of-pocket medical expenses in excess of $20,000 are shown in Table 11. Although all of the coefficients have the anticipated sign, most imply very modest effects and none are statistically significant. At least in the case of out-of-pocket medical expenses, the $20,000 level may be covered by an undocumented component of wealth, not paid, or only partially paid. If unvalued wealth components are drawn on when individuals experience high out-of-pocket medical expenses, the drop in wealth and associated ANW would not be observable.

Table 11 here

The Impact of Family Structure Change, Health Decline, Cognitive Decline, and Insurance/Medical Expense Problems on ANW-based Retirement Adequacy. The measure of the inadequacy of retirement resources employed in this analysis is a simple indicator as to whether ANW is below 1.5 times the federal poverty threshold for a single person under age 65. There is no analog to the fixed-effect model in the case where the outcome is a binary variable. Estimating a fixed-effect version of a model where the outcome variable is binary results in any observations in which the individual identifier perfectly predicts the outcome being dropped. Practically speaking, this means that any individuals who were never observed to have experienced a particular event post-retirement would be dropped from the estimation pertaining to this event.

Rather than present results from a traditional estimation, which would be flawed for reasons discussed above, we take a different approach. Assuming that we knew the actual data-generating process (i.e., we know α, γ, θ_i ($for\ all\ i$), δ_t ($for\ all\ t$), η_y ($for\ all\ y$)), an individual would fall below an adequacy standard of 1.5 times the poverty threshold in any period if and only if

$$\varepsilon_{i,t} < \ln(1.5 \cdot threshold) - \left[\alpha \cdot Event_{i,t} + \gamma \cdot Z_{i,t} + \theta_i + \delta_t + \eta_y\right],$$

or in other words if the 'random' component of his or her ln(ANW) was sufficiently small in the post-retirement period *t* relative to the expected ln(ANW). Without knowledge of the actual data-generating process, we can still generate an estimate of the probability of falling below 1.5 times the poverty threshold as

$$\Phi\left(\ln(1.5 \cdot threshold) - \left[\alpha \cdot Event_{i,t} + \gamma \cdot Z_{i,t} + \theta_i + \delta_t + \eta_y\right]\right)$$

where the carets indicate OLS parameter estimates and $\Phi(\ )$ is the cumulative distribution function (cdf) of the distribution of errors $\varepsilon_{i,t}$. Implementing such an approach requires an estimate of or an assumption about the distribution of $\varepsilon_{i,t}$. For the purpose of the analysis below, we utilize kernel density estimates of the numerical cdf of the error distribution obtained from the residuals from the regressions on which the results in the previous subsection were based. The drawback of this approach is that it is not practical to obtain standard error estimates for our predicted probabilities of being poor or for the impacts that follow from these probabilities.

In the analysis below, we compute the probability of being poor conditioning on having the event variable 'on' and 'off' at various places in the distribution of the ratio ln(ANW) to 1.5 times the federal povery threshold. At any point in the distribution, the effect of an event on the probability of falling below the adequacy standard is the difference between the probability of being poor conditional on an event and the probability of being poor conditional on no event. An important implication of this approach is that the impact of an event on the probability of falling below the adequacy standard is likely to be higher close to the adequacy standard, for events with large impacts on ln(ANW), or for groups a lot of variation in $\varepsilon_{i,t}$.

Because the only events that have the potential to affect the probability of being poor are those that have a large impact on ANW, we restrict our analysis of events on the probability of being poor to these events. The analysis in the previous section highlighted the importance of events indicating cognitive and health decline on the evolution of ANW post-retirement; therefore, the analysis below is restricted to these health related events.

The impact of events indicating cognitive decline on falling below 1.5 times the poverty threshold are shown in Table 12. Equivalent estimates of events indicating health decline are shown in Table 13. The most striking result from these tables is the large impact of events

indicating cognitive decline and health decline on the likelihood of falling below an adequacy standard, but these impacts are large only for individuals who would, absent the event, have ANW levels very near 1.5 times the poverty threshold. Even the nursing home utilization events, which are estimated to have a very large effect on ln(ANW), only have a large impact on the probability of falling below 1.5 times the poverty threshold for individuals with pre-event ANW within 20 to 30 percent of that level.

Table 12 here

Table 13 here

This observation concerning the impact of events on adequacy at various points in the distribution of the ratio of ANW to the adequacy standard suggests that the overall vulnerability to events indicating cognitive and health decline in a population of social security beneficiaries depends on the extent to which the population is clustered around the adequacy standard. If few in the population are clustered around the standard, adverse events would still result in a loss of ANW, but while this might be tragic on its own, the average impact of such a loss on ANW-based adequacy would be not be large. Similarly if a large proportion of the retired population had ANW levels within 10 percent of the adequacy standard, events that result in a loss of ANW would be expected to have a large average effect on adequacy in the population.

Vulnerable Populations

Within the population we study, there are subgroups with a high average vulnerability to cognitive and/or health decline resulting in a decrease of their ANW below, or further reducing

their ANW below, the adequacy standard. These groups can be thought of as vulnerable with respect to a set of events because they fit three specific criteria. First, they have characteristics that are associated with an increased likelihood for the set of events for which they are vulnerable. Second, the event that the group is deemed to be vulnerable to has a modest to large effect on their ANW, where modest and large are effects in the range of 5 and 10 percentage points, respectively, and there is some evidence of statistical significance. Last, a sizable fraction of the group has inadequate or near-inadequate levels of ANW. For our purposes, inadequate or near-inadequate ANW is defined as no more than 20 percent more than the adequacy standard.

In Table 14 a box is placed around group-event category combinations that meet three criteria. We consider a group to be at risk for multiple events if they meet the above criteria for both events indicating cognitive decline and those indicating health decline. These groups are indicated in the table with boldface type. In all, we identify 14 overlapping groups that are vulnerable to having their ANW fall below or further below the adequacy standard due to either cognitive decline or health decline, and three groups that are vulnerable to both types of risk. Because the groups are overlapping, it is possible for individuals to face more than one elevated risk category. For example, nonwhite males with less than a high school degree are more vulnerable to cognitive and health decline than nonwhite males with a college degree.

Table 14 here

The groups that we identify as being vulnerable to adverse events post-retirement are groups that are traditionally viewed as disadvantaged: males in couple households with

disadvantaged characteristics, females in couple households with disadvantaged characteristics, and singles with disadvantaged characteristics.

Conclusions

In this report, we use a sample of recent retirees from the HRS original cohort to examine the role of events that occur after the retirement on the evolution of wealth. Toward this end, we provide evidence on both the rate exposure and the impact on ANW and ANW-based adequacy of 15 events related to changes in family structure, cognitive decline, health decline, the loss of health insurance, and large out-of-pocket medical expenses across a range of groups differentiated by sex, marital status, and preshock ratio of expected ANW to our adequacy standard of 1.5 times the federal poverty threshold.

The results of the analysis of event rates indicate that widowhood and events indicating cognitive decline and health decline happen frequently relative to marriage and divorce. For instance, the two-year rate of self-reported memory declining to ‘fair’ or ‘poor’ during early retirement is 0.11 on average, but the two-year marriage rate, which applies only to singles, is merely 0.02 and the two-year divorce rate, which applies only to married people, is less than 0.002.

The analysis of event rates also revealed large differences in the risk of exposure to events on the basis of background characteristics, with nonwhites, those we code as retiring with SSDI, and those with less education being more likely to experience events indicating cognitive and health decline. In some cases these differences in the risk of exposure to an event between individuals with traditionally advantaged versus disadvantaged background attributes implies a very small risk rate for the advantaged and a large risk for the disadvantaged.

We found evidence of some differences in the risk of cognitive decline between men and women, with men being at greater risk of such event, but otherwise event risk rates are similar across sex. Some health events that are defined by the confluence of the onset of health difficulties, the need to make decisions about treatment, and the availability of resources to pursue various treatment options do not demonstrate the same pattern as other health-related events with respect to race. For these events, nursing home utilization and large out-of-pocket medical expenses, there is some evidence that rates are actually lower for nonwhites.

The analysis of the impact of events on ANW and ANW-based adequacy indicates that cognitive and health decline events have small to large effects ranging from a 2 to 20 percent loss in ANW depending on the event and subgroup. In general, events indicating cognitive decline had smaller effects than events indicating health decline, with contemporaneous nursing home utilization having the largest effect. Additionally, there is some evidence that the effects of events indicating health decline on ANW are larger for women whether single or in couples.

In examining the impact of events indicating cognitive and health decline on the likelihood of having ANW fall below 1.5 times the federal poverty threshold, we find that the effects are potentially very large only for individuals who, in the absence of the event, would be expected to have ANW levels close to the adequacy standard. Thus, the average impact of these events on the probability of adequacy in a population depends in large part on what fraction of the population has ANW levels near the threshold. A population clustered below and around the adequacy standard may be very vulnerable to having its savings eroded by events to a level below the adequacy standard.

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Appendix A

Sample Exclusions (Starting sample: Initial HRS Cohort, N=13,843)

Exclusion Criteria	Number of Respondents
Never reported receiving Social Security Benefits	4,404
Other Exclusions	
Median reported social security benefit amount exceeds $50k	2
Spouse's median reported social security benefit amount exceeds $50k	1
In a couple household and could not be matched to spouse or spouse has missing age or race	401
Missing sex, age, or race	202
Missing education level	21
Missing component of wealth in first wave of retirement	73
Missing information on marital status	645
Retired at age 71 or older	349
Contributed negative wealth observations	36
Cases with a wave to wave change in ln(ANW-total) of more than 0.35	389
Total Other Exclusions	**1,670**

Appendix B

Trigger Event Sample Sizes

	Couple-Men		Couple-Women		Single Men		Single Women	
	N	$N \cdot T$	N	$N \cdot T$	N	$N \cdot T$	N	$N \cdot T$
TICS score decline	693	2,570	576	2,128	163	449	453	1,573
Noun-recall score decline	1,787	5,828	2,039	6,578	449	1,164	1,364	4,263
Memory decline to poor	2,171	7,888	2,236	7,605	531	1,484	1,505	4,926
Memory decline to fair or poor	1,507	4,624	1,738	5,150	361	865	1,031	2,926
Health decline to poor	2,889	11,342	2,401	8,378	642	1,845	1,605	5,400
Health decline to fair or poor	2,411	8,404	2,047	6,634	458	1,203	1,180	3,616
Trouble with 3+ GMS	2,850	11,421	2,404	8,484	642	1,935	1,593	5,395
Trouble with 3+ ADL	2,913	11,809	2,452	8,745	653	1,993	1,668	5,753
Nursing home in past 2 years	3,024	12,363	2,512	8,994	694	2,087	1,752	6,143
Nursing home currently	2,305	8,452	2,257	7,776	579	1,703	1,556	5,324
Loss of health insurance coverage	2,766	10,767	2,198	7,397	608	1,725	1,453	4,744
Out-of-pocket medical expenses >$20,000	3,025	12,135	2,503	8,814	698	2,103	1,743	6,111

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Notes

1. Please see the next section for a definition of smooth and unsmooth pensions.

2. The initial HRS was constructed by selecting households in which there lived at least one person born between 1931 and 1941 and then collecting information from these persons and their spouses. Thus, the HRS includes spouses, many of whom were younger or older than the respondents themselves. The retirement of many of these spouses is not observable, because they either retired prior to the first HRS interview or had yet to retire when they were last interviewed.

3. The RAND HRS data file is an easy to use longitudinal data set based on the HRS data. It was developed at RAND with funding from the National Institute on Aging and the Social Security Administration.

4. We use the RAND HRS Data (2010) coding of SSDI receipt amounts.

5. A complete list of sample exclusion criteria is provided in Appendix A.

6. The age criterion eliminates individuals who were disability insurance recipients earlier in life and were automatically converted to retired-worker status per program rules.

7. While we do not observe late retirees in this cohort, social security program data indicate that most individuals retire prior to age 66. Of all retired workers who were first awarded in 2008, only 5 percent were 66 or older (Social Security Administration 2009). Single-year data may underestimate the share of later retirees for any single cohort, but does suggest that our observed retirements are broadly representative of the retirement experience.

8. Information on the value of property exclusive of the primary residence is not consistently available for every wave. Thus, in the interest of having a consistent measure, we have opted not to value secondary residences.

9. In the employment and employment history sections of the first wave of the HRS (1992), each respondent was asked about the value of employer-sponsored pension plans associated with his or her current job (currently employed), last job (not currently employed), and up to three other prior employers, but responses are sporadic and incorrect, requiring extensive use of imputations. Following 1992, these numbers were updated when respondents left their current employers or changed jobs (employed in wave 1) or started new jobs (not employed in wave 1), or when there was a change in the rules governing current-job pension. Thus, it is not possible to construct reliable measures of pension wealth for all waves using the information in the employment and employment history sections of the HRS.

10. To check the smoothness of pensions, we create pseudo pension variables by interpolating over one wave gaps in actual pension amounts. Thus, a pension can be smooth if it was

received continuously save for one or more one-wave gaps that occurred because of nonresponse, or because a financial respondent did not report relevant pension income.

11. Financial respondents were asked whether pensions received by themselves or their spouses provided benefits past death. If they indicated that the pension did provide benefits past death, they were asked whether benefits continued unchanged or at a reduced level. Because the modal answer to this question for all pensions (first or second) in all waves was 'continue unchanged' and because we do not know the rate of benefit reduction upon the death of a spouse, our calculations assume that all pensions that provide survivor benefits do so at an unchanged level.

12. As will be seen, most of the event rates are fairly low. Because there were some gaps in response to some questions related to events, we have elected to interpolate over one-wave gaps in underlying variables used to code the events when preceding and proceeding wave values of these variables were similar. In some instances, this interpolation results in event variables being coded for waves in which respondents did not respond and for which no wealth measures are available. These observations will only be used in estimating event rates. Excluding them would have resulted in lower event counts, as many more cases would have been censored.

13. When sufficient observations are available, we plan to include several periods subsequent to each event in an attempt to estimate a longer-term effect.

14. A complete set of estimates is available upon request. Sample sizes for all of the events are provided in Appendix B.

Table 1
Sample Means by Couple Household and Sex

	Couple-Men	Couple-Women	Single Men	Single Women
Sample Size	2,979	2,462	511	1,384
Retirement Age	64.4	63.7	64.0	63.8
Retirement age group				
62–64	0.575	0.745	0.673	0.688
65–67	0.350	0.223	0.272	0.270
68–70	0.075	0.032	0.055	0.042
Received SSDI first (=1)	0.077	0.058	0.125	0.105
Race				
White	0.804	0.809	0.689	0.626
Black	0.103	0.090	0.204	0.271
Hispanic	0.075	0.086	0.090	0.085
Other	0.018	0.015	0.018	0.019
Education Level				
Less than HS	0.251	0.218	0.288	0.324
HS	0.355	0.446	0.358	0.365
Some College	0.183	0.210	0.182	0.184
4+ College	0.210	0.126	0.172	0.126
Respondent's self reported health				
Very Good or Excellent	0.418	0.451	0.376	0.339
Good	0.319	0.320	0.295	0.294
Fair	0.190	0.158	0.217	0.252
Poor	0.074	0.071	0.112	0.115
Spouse's education level (married respondents)				
Less than HS	0.246	0.211	__	__
HS	0.332	0.392	__	__
Some College	0.156	0.144	__	__
4+ College	0.267	0.252	__	__
Spouse's self reported health				
Very Good or Excellent	0.488	0.405	__	__
Good	0.289	0.316	__	__
Fair	0.143	0.193	__	__
Poor	0.059	0.070	__	__
Missing	0.021	0.015	__	__

Source: Authors' calculations from the 1992–2008 HRS

Table 2
Wealth and ANW by Sample Characteristics (first wave of retirement)

			By race		By retirement age group			By couple household and sex			
	Percent of Total	Entire Sample	Nonwhite	White	62–64	65–67	68–70	Couple-male	Couple-female	Single-male	Single-female
Sample Size		7,336	1,730	5,606	4,844	2,104	388	2,979	2,462	511	1,384
Wealth (in thousands of $2008)											
Total		772.625	402.209	886.934	719.109	878.728	865.378	905.399	877.597	503.839	399.339
Financial/Property	16.68	293.673	77.044	360.524	257.227	361.400	381.421	345.947	349.060	198.584	117.735
Housing	38.01	128.873	75.747	145.267	114.846	158.238	144.756	142.645	153.744	73.532	75.418
Social security	37.12	286.819	217.209	308.301	281.317	299.042	289.230	325.647	331.081	173.288	166.425
Smooth pension	7.07	54.658	28.928	62.598	56.749	52.178	42.008	78.070	37.602	51.648	35.719
Smooth veteran's benefit	1.03	7.943	3.072	9.446	8.255	7.276	7.658	12.482	5.477	6.228	3.192
Smooth annuity	0.09	0.659	0.209	0.798	0.716	0.594	0.306	0.609	0.633	0.559	0.851
Annuitized Net Wealth (ANW) (in thousands of $2008)											
Total		33.832	19.100	38.378	30.785	39.386	41.746	34.928	36.389	36.884	25.796
Financial/Property	16.81	12.768	3.439	15.646	10.874	16.047	18.622	13.447	14.464	14.591	7.614
Housing	37.74	5.686	3.561	6.342	4.935	7.160	7.066	5.525	6.386	5.405	4.890
Social security	37.24	12.601	10.441	13.267	12.128	13.509	13.568	12.518	13.734	12.659	10.739
Smooth pension	7.13	2.411	1.490	2.696	2.469	2.326	2.151	2.947	1.554	3.729	2.297
Smooth veteran's benefit	0.99	0.335	0.159	0.389	0.343	0.317	0.327	0.467	0.224	0.461	0.201
Smooth annuity	0.09	0.032	0.010	0.039	0.035	0.027	0.012	0.024	0.027	0.039	0.055
ANW/(poverty threshold)		3.031	1.711	3.439	2.758	3.529	3.740	3.129	3.260	3.305	2.311
Percent poor relative to 1.5 times official threshold		30.02	57.80	21.44	30.03	23.67	26.80	25.98	22.01	39.92	49.28

(table continues)

Table 2 (continued)

	By Education Level			
	less than HS	HS	Some College	4+ College
Sample Size	1,882	2,843	1,411	1,200
Wealth (in thousands of $\$_{2008}$)				
Total	414.098	713.753	896.165	1329.128
Non-housing	85.713	249.140	375.227	629.437
Housing	71.441	119.855	143.081	223.601
Social security	233.996	293.478	303.977	333.713
Smooth pension	20.889	45.064	59.476	124.684
Smooth veteran's benefit	1.876	5.547	13.478	16.624
Smooth annuity	0.182	0.670	0.927	1.069
Annuitized Net Wealth (ANW) (in thousands of $\$_{2008}$)				
Total	18.437	30.836	39.619	58.270
Non-housing	3.706	10.576	16.550	27.723
Housing	3.188	5.253	6.352	9.846
Social security	10.516	12.796	13.368	14.502
Smooth pension	0.914	1.934	2.763	5.477
Smooth veteran's benefit	0.105	0.241	0.542	0.674
Smooth annuity	0.008	0.035	0.044	0.047
ANW/(poverty threshold)	1.652	2.763	3.550	5.221
Percent poor relative to 1.5 times official threshold	0.581	0.264	0.186	0.080

Table 3
Trigger Events and Sample Definitions

Trigger Event	Initial Sample	Event=1	Event=0
Family Structure Change			
Marriage	Sample respondents single in the wave preceding retirement	Single in the preceding wave and married in the current wave	Single in the preceding wave and single in the current wave
Divorce	Sample respondents married in the wave preceding retirement	Married in the preceding wave and divorced in the current wave	Married in the preceding wave and married in the current wave
Widowhood	Sample respondents married in the wave preceding retirement	Married in the preceding wave and widowed in the current wave	Married in the preceding wave and married in the current wave
Cognitive Decline			
TICS score decline	Sample respondents with TICS score of 8 or above in the wave preceding retirement	TICS score above 8 in preceding wave and below 8 in current wave	TICS score 8 or above in preceding wave and current wave
Noun-recall score decline	Sample respondents with a ten-noun recall score of 4 or higher in the wave preceding retirement	Ten-noun recall 4 or higher in preceding wave and below 4 in current wave	Ten-noun recall 4 or higher in preceding wave and current wave
Memory decline to poor	Sample respondents who reported better than fair memory in the wave preceding retirement	Self-reported memory above poor in preceding wave and poor in current wave	Self-reported memory above poor in preceding and current wave
Memory decline to fair or poor	Sample respondents who reported better than fair memory in the wave preceding retirement	Self-reported memory above fair in preceding wave and fair or poor in current wave	Self-reported memory above fair in preceding and current wave

(table continues)

Table 3 (continued)

Trigger Event	Initial Sample	Event=1	Event=0
Health Decline			
Health decline to poor	Sample respondents who report better than poor health in the wave preceding retirement	Self-reported health better than poor in preceding wave and poor in current wave	Self-reported health better than poor in the preceding and current waves
Health decline to fair or poor	Sample respondents who report better than fair health in the wave preceding retirement	Self-reported health better than fair in preceding wave and fair or poor in current wave	Self-reported health better than fair in preceding and current waves
Trouble with 3+ Gross Motor Skills (GMS)	Sample respondents who report difficulty with < 3 GMS	Reported trouble with < 3 GMS in preceding wave and 3 or more GMS in current wave	Reported trouble with < 3 GMS in preceding and current waves
Trouble with 3+ ADL	Sample respondents who report difficulty with < 3 ADL	Reported trouble with < 3 ADL in preceding wave and 3 or more ADL in current wave	Reported trouble with < 3 ADL in preceding and current waves
Nursing home past 2 years	Sample respondents who were not in a nursing home during the wave preceding retirement	Did not report a nursing home stay in the 2 years before preceding wave and reported a nursing home stay in the 2 years preceding current wave	Did not report a nursing home stay in the 2 years before preceding and current waves
Nursing home current	Sample respondents who were not in a nursing home during the wave preceding retirement	Did not report being in a nursing home in the preceding wave and reported being in a nursing home during the current wave	Did not report being in a nursing home in the preceding or current waves

(table continues)

Table 3 (continued)

Trigger Event	Initial Sample	Event=1	Event=0
Insurance and Medical Expenses			
Loss of health insurance	Sample respondents who were covered by health insurance during the wave preceding retirement	Reported being covered by health insurance in preceding wave and not being covered in current wave	Reported being covered by health insurance in the preceding and current waves
Out-of-pocket medical expenses > $20,000	Sample respondents who reported out-of-pocket medical expenses < $20,000 in the period preceding retirement	Reported out-of-pocket medical expenses < $20,000 in the 2 years preceding previous wave and > $20,000 in the 2 years preceding current wave	Reported out-of-pocket medical expenses < $20,000 in the 2 years preceding previous and current waves

Table 4
The Impact of Individual Background Variables on the Risk of Family Structure Changes (change in probability shown below, robust standard errors in parentheses)

	Marriage		Divorce		Widowhood	
	Men	Women	Men	Women	Men	Women
Baseline Probability[a]	0.019**	0.002*	0.003**	0.004*	0.020**	0.060**
	(0.008)	(0.001)	(0.001)	(0.002)	(0.003)	(0.006)
Race (relative to white)						
Black	-0.009	-0.001	0.000	-0.002	0.006	0.014
	(0.007)	(0.001)	(0.002)	(0.003)	(0.005)	(0.010)
Hispanic	-0.013	0.001	0.000	-0.002	-0.011**	0.000
	(0.010)	(0.002)	(0.002)	(0.003)	(0.004)	(0.010)
Other race	0.011	-0.002	-0.003**	-0.004*	0.013	-0.014
	(0.032)	(0.001)	(0.001)	(0.002)	(0.014)	(0.020)
Education Level (relative to less than HS)						
HS	0.005	0.010**	-0.001	-0.003	-0.006*	-0.011*
	(0.011)	(0.004)	(0.001)	(0.002)	(0.003)	(0.006)
Some college	0.005	0.015**	0.000	-0.002	-0.008**	-0.022**
	(0.012)	(0.006)	(0.002)	(0.003)	(0.003)	(0.007)
4+ years college	0.013	0.011*	-0.001	-0.001	-0.011**	-0.029**
	(0.014)	(0.006)	(0.001)	(0.003)	(0.003)	(0.008)
Retired with SSDI (=1)	-0.009	0.000	0.003	0.000	0.001	0.009
	(0.008)	(0.001)	(0.003)	(0.005)	(0.005)	(0.012)
Retired at age 65+ (=1)	0.005	-0.001	0.000	-0.001	0.004	0.009
	(0.009)	(0.001)	(0.001)	(0.002)	(0.003)	(0.007)
$N \cdot T$	1,616	4,907	12,413	9,086	12,545	9,449

a – Probability is for a white respondent with less than a high school degree who retired between the ages of 62 and 65 with social security retirement or survivor benefits.
** – Statistically significant at the 5 percent level
* – Statistically significant at the 10 percent level

Table 5
The Impact on Individual Background Variables on the Probability of Cognitive Decline (marginal probabilities shown below, robust standard errors in parentheses)

	TICS Score Decline		Noun-Recall Score Decline		Memory Decline to Poor		Memory Decline to Fair or Poor	
	Men	Women	Men	Women	Men	Women	Men	Women
Baseline Probability[a]	0.021**	0.016**	0.138**	0.053**	0.058**	0.040**	0.211**	0.147**
	(0.010)	(0.006)	(0.017)	(0.006)	(0.010)	(0.005)	(0.024)	(0.014)
Couple (=1)	0.014	-0.001	-0.032**	-0.010**	-0.015*	-0.014**	-0.017	-0.014
	(0.012)	(0.004)	(0.013)	(0.005)	(0.008)	(0.004)	(0.019)	(0.010)
Race (relative to white)								
Black	0.035**	0.058**	0.018	0.046**	0.028**	0.013*	0.025	0.078**
	(0.019)	(0.017)	(0.019)	(0.010)	(0.013)	(0.007)	(0.024)	(0.019)
Hispanic	0.019	0.061**	0.044*	0.089**	0.018	0.019*	0.170**	0.130**
	(0.018)	(0.022)	(0.025)	(0.015)	(0.015)	(0.010)	(0.039)	(0.029)
Other Race	0.035	0.074	0.052	0.036	-0.009	0.055*	0.039	0.034
	(0.040)	(0.055)	(0.052)	(0.028)	(0.028)	(0.030)	(0.063)	(0.045)
Education Level (relative to less than HS)								
HS	-0.009	-0.006	-0.050**	-0.018**	-0.024**	-0.020**	-0.083**	-0.047**
	(0.006)	(0.004)	(0.013)	(0.005)	(0.007)	(0.005)	(0.019)	(0.012)
Some college	-0.013*	-0.009**	-0.078**	-0.029**	-0.033**	-0.024**	-0.087**	-0.072**
	(0.008)	(0.005)	(0.015)	(0.006)	(0.009)	(0.005)	(0.021)	(0.013)
4+ years college	-0.015*	-0.010**	-0.096**	-0.036**	-0.044**	-0.027**	-0.133**	-0.099**
	(0.008)	(0.005)	(0.015)	(0.006)	(0.009)	(0.006)	(0.021)	(0.013)
Retired with SSDI (=1)	0.011	-0.002	0.046**	0.024**	0.039**	0.048**	0.053	0.047*
	(0.016)	(0.008)	(0.022)	(0.011)	(0.016)	(0.013)	(0.033)	(0.024)
Retired at age 65+ (=1)	-0.007	0.007	-0.003	0.015**	-0.009	0.005	-0.038**	0.021*
	(0.006)	(0.005)	(0.012)	(0.007)	(0.007)	(0.006)	(0.015)	(0.012
$N \cdot T$	3,060	3,721	7,072	10,882	9,471	12,585	5,543	8,105

a – Probability is for a single white respondent with less than a high school degree who retired between the ages of 62 and 65 with social security retirement or survivor benefits.
** – Statistically significant at the 5 percent level
* – Statistically significant at the 10 percent level

Table 6
The Impact on Individual Background Variables on Self-Reported Health Decline, Trouble with Gross Motor Skills, and Activities of Daily Living
(marginal probabilities shown below, robust standard errors in parentheses)

	Health Decline to Poor		Health Decline to Fair or Poor		Trouble with 3+ GMS		Trouble with 3+ ADL	
	Men	Women	Men	Women	Men	Women	Men	Women
Baseline Probability[a]	0.070**	0.067	0.145**	0.147**	0.035**	0.053**	0.018**	0.029**
	(0.009)	(0.007)	(0.014)	(0.012)	(0.006)	(0.006)	(0.004)	(0.004)
Couple (=1)	-0.021**	-0.022	-0.019	-0.029**	-0.012**	-0.018**	-0.004	-0.010**
	(0.007)	(0.006)	(0.012)	(0.009)	(0.005)	(0.005)	(0.003)	(0.003)
Race (relative to white)								
Black	0.011	0.007	0.059**	0.048**	0.013*	0.005	0.009*	0.015**
	(0.010)	(0.009	(0.017)	(0.016)	(0.007)	(0.007)	(0.005)	(0.006)
Hispanic	0.017	0.018	0.110**	0.116**	0.010	-0.001	0.010*	0.017**
	(0.012)	(0.012	(0.024)	(0.027)	(0.008)	(0.009)	(0.006)	(0.008)
Other Race	0.018	-0.021	0.054	0.050	-0.013	-0.008	0.003	-0.002
	(0.028)	(0.020	(0.044)	(0.049)	(0.013)	(0.019)	(0.011)	(0.014)
Education Level (relative to less than HS)								
HS	-0.034**	-0.033**	-0.050**	-0.067**	-0.015**	-0.025**	-0.008**	-0.015**
	(0.007)	(0.006)	(0.011)	(0.011)	(0.005)	(0.005)	(0.003)	(0.004)
Some college	-0.031	-0.043**	-0.051**	-0.083**	-0.014**	-0.029**	-0.006*	-0.019**
	(0.007)	(0.007)	(0.012)	(0.011)	(0.005)	(0.006)	(0.003)	(0.004)
4+ years college	-0.044	-0.054**	-0.081**	-0.097**	-0.019**	-0.039**	-0.008**	-0.019**
	(0.007)	(0.007)	(0.012)	(0.012)	(0.005)	(0.006)	(0.003)	(0.004)
Retired with SSDI (=1)	0.121	0.125**	0.182**	0.276**	0.079**	0.098**	0.054**	0.067**
	(0.022)	(0.022)	(0.037)	(0.041)	(0.016)	(0.018)	(0.012)	(0.014)
Retired at age 65+ (=1)	0.014	0.005	0.018	0.006	0.005	0.007	0.005	0.011**
	(0.007)	(0.008)	(0.010)	(0.011)	(0.005)	(0.007)	(0.003)	(0.005)
$N \cdot T$	13,339	13,834	9,723	10,289	13,505	13,935	13,959	14,557

a – Probability is for a single white respondent with less than a high school degree who retired between the ages of 62 and 65 with social security retirement or survivor benefits.
** – Statistically significant at the 5 percent level
* – Statistically significant at the 10 percent level

Table 7
The Impact on of Individual Background Characteristics on Nursing Home Utilization, the Loss of Health Insurance, and Large Out-of-Pocket Medical Expenses
(marginal probabilities shown below, robust standard errors in parentheses)

	Nursing Home Past 2 Years		Nursing Home		Lost Health Insurance		Out-of-Pocket Medical>$20,000	
	Men	Women	Men	Women	Men	Women	Men	Women
Baseline Probability[a]	0.028**	0.031**	0.019**	0.008**	0.044**	0.037**	0.020**	0.020**
	(0.006)	(0.004)	(0.007)	(0.003)	(0.009)	(0.006)	(0.004)	(0.003)
Couple (=1)	-0.018**	-0.015**	-0.015**	-0.004	-0.011	-0.004	-0.001	-0.001
	(0.005)	(0.004)	(0.006)	(0.002)	(0.008)	(0.005)	(0.004)	(0.003)
Race (relative to white)								
Black	0.001	-0.008*	0.000	0.002	0.019	0.021**	0.000	-0.003
	(0.006)	(0.005)	(0.008)	(0.003)	(0.013)	(0.009)	(0.004)	(0.003)
Hispanic	-0.014**	-0.016**	-0.003	-0.004	0.028	0.031**	-0.006	-0.009**
	(0.006)	(0.006)	(0.009)	(0.003)	(0.017)	(0.013)	(0.005)	(0.004)
Other Race	-0.020**	-0.018*	0.007	-0.008**	-0.009	0.030	0.001	-0.002
	(0.009)	(0.009)	(0.026)	(0.003)	(0.025)	(0.028	(0.010)	(0.009)
Education Level (relative to less than HS)								
HS	-0.006	-0.010**	-0.009	-0.004**	-0.019**	-0.012**	-0.004	-0.004
	(0.005)	(0.004)	(0.006)	(0.002)	(0.007)	(0.005)	(0.003)	(0.003)
Some college	-0.004	-0.010**	-0.010	-0.005**	-0.020**	-0.019**	-0.002	-0.005
	(0.006)	(0.005)	(0.007)	(0.002)	(0.008)	(0.006)	(0.004)	(0.003)
4+ years college	-0.005	-0.010*	-0.007	-0.005*	-0.029**	-0.024**	-0.006	0.003
	(0.005)	(0.005)	(0.007)	(0.003)	(0.008)	(0.006)	(0.004)	(0.004)
Retired with SSDI (=1)	0.040**	0.034**	0.004	0.015**	-0.024**	-0.019**	0.008	0.019**
	(0.012)	(0.010)	(0.010)	(0.007)	(0.008)	(0.006)	(0.006)	(0.007)
Retired at age 65+ (=1)	0.010*	0.008	0.007	0.003	-0.037**	-0.031**	-0.002	0.000
	(0.005)	(0.005)	(0.007)	(0.003)	(0.008)	(0.005)	(0.003)	(0.003)
$N \cdot T$	14,618	15,197	10,267	13,149	12,646	12,201	14,399	14,987

a – Probability is for a single white respondent with less than a high school degree who retired between the ages of 62 and 65 with social security retirement or survivor benefits.
** – Statistically significant at the 5 percent level
* – Statistically significant at the 10 percent level

Table 8
The Impact of Family Structure Change on ln(ANW) by Household Couple and Sex (robust standard errors in parentheses)

	Marriage		Divorce		Widowhood	
	Men	Women	Men	Women	Men	Women
Trigger Event	-0.470**	-0.083	0.195*	-0.590**	0.221**	0.006
	(0.117)	(0.222)	(0.117)	(0.289)	(0.053)	(0.036)
Controls for respondent's health	Included	Included	Included	Included	Included	Included
N	492	1,269	2,996	2,510	3,035	2,629
$N \cdot T$	1,598	4,881	12,277	9,059	12,406	9,422

** – Statistically significant at the 5 percent level
* – Statistically significant at the 10 percent level

Table 9
The Impact of Cognitive Decline on ln(ANW) by Household Couple and Sex (robust standard errors in parentheses)

	Couple-Men	Couple-Women	Single Men	Single Women
Trigger Event				
TICS score drop	-0.079**	-0.018	-0.001	0.061
	(0.032)	(0.040)	(0.091)	(0.065)
Noun-recall score drop	0.028*	-0.024	-0.075*	-0.050**
	(0.017)	(0.020)	(0.042)	(0.022)
Memory decline to poor	-0.037	-0.018	-0.035	-0.019
	(0.023)	(0.027)	(0.073)	(0.021)
Memory decline to fair or poor	-0.021	-0.015	-0.013	-0.021
	(0.016)	(0.017)	(0.042)	(0.021)
Controls for respondent's health	Included	Included	Included	Included
Controls for spouse's health	Included	Included	___	___
Controls for spouse's education level	Included	Included	___	___
Period effects	Included	Included	Included	Included
Year effects	Included	Included	Included	Included
Individual fixed effects	Included	Included	Included	Included

** – Statistically significant at the 5 percent level
* – Statistically significant at the 10 percent level

Table 10
The Impact of Health Decline on ln(ANW) by Household Couple and Sex
(robust standard errors in parentheses)

	Couple-Men	Couple-Women	Single Men	Single Women
Trigger Event				
Health decline to poor	-0.020	-0.067**	0.003	-0.031*
	(0.015)	(0.023)	(0.039)	(0.018)
Health decline to fair or poor	0.001	-0.042**	-0.017	-0.038**
	(0.011)	(0.015)	(0.031)	(0.017)
Trouble with 3+ GMS	-0.049**	-0.045**	-0.057	-0.049**
	(0.021)	(0.022)	(0.038)	(0.017)
Trouble with 3+ ADL	-0.027	-0.061**	-0.089**	-0.065**
	(0.024)	(0.031)	(0.042)	(0.023)
Nursing home in past 2 years	-0.034	-0.060*	-0.076	-0.057**
	(0.027)	(0.031)	(0.049)	(0.022)
Nursing home currently	-0.012	-0.203**	-0.115	-0.127**
	(0.054)	(0.101)	(0.096)	(0.048)
Controls for respondent's health	Included	Included	Included	Included
Controls for spouse's health	Included	Included	___	___
Controls for spouse's education level	Included	Included	___	___
Period effects	Included	Included	Included	Included
Year effects	Included	Included	Included	Included
Individual fixed effects	Included	Included	Included	Included

** – Statistically significant at the 5 percent level
* – Statistically significant at the 10 percent level

Table 11
The Impact of Loss of Health Insurance and Out of Pocket Medical Expenses on ln(ANW) (robust standard errors in parentheses)

	Couple-Men	Couple-Women	Single Men	Single Women
Trigger Event				
Lost health insurance coverage	-0.006	0.003	-0.076	-0.006
Out of pocked medical expenses > $20k	-0.016	-0.010	-0.144	-0.033
	(0.023)	(0.033)	(0.094)	(0.027)
Controls for respondent's health	Included	Included	Included	Included
Controls for spouse's health	Included	Included	___	___
Controls for spouse's education level	Included	Included	___	___
Period effects	Included	Included	Included	Included
Year effects	Included	Included	Included	Included
Individual fixed effects	Included	Included	Included	Included

Table 12
*The Impact of Cognitive Decline on the Probability that ANW < 1.5*FLP by ratio of ANW to 1.5*FPL*
(significance levels in parentheses correspond to Table 9 specifications)

Panel A: TICS Score Decline and Noun-Recall Score Decline

	TICS Score Decline				Noun Recall Score Decline			
ANW/1.5*FPL	Married Men ( )	Married Women ( )	Single Men ( )	Single Women ( )	Married Men (*)	Married Women ( )	Single Men (*)	Single Women (**)
0.7	-0.030	-0.006	0.000	0.013	0.005	-0.006	-0.017	-0.013
0.8	-0.068	-0.012	0.000	0.026	0.014	-0.015	-0.049	-0.029
0.9	-0.190	-0.033	-0.001	0.073	0.038	-0.042	-0.167	-0.091
1.0	-0.223	-0.057	-0.003	0.212	0.110	-0.097	-0.281	-0.220
1.1	-0.115	-0.033	-0.001	0.150	0.061	-0.039	-0.095	-0.066
1.2	-0.057	-0.016	0.000	0.067	0.029	-0.017	-0.033	-0.030
1.3	-0.031	-0.009	0.000	0.035	0.014	-0.010	-0.024	-0.018

Panel B: Self-Reported Memory Decline

	Memory Decline to Poor				Memory Decline to Fair or Poor			
ANW/1.5*FPL	Married Men ( )	Married Women ( )	Single Men ( )	Single Women ( )	Married Men ( )	Married Women ( )	Single Men ( )	Single Women ( )
0.7	-0.010	-0.005	-0.008	-0.004	-0.005	-0.004	-0.001	-0.005
0.8	-0.026	-0.011	-0.018	-0.008	-0.012	-0.009	-0.006	-0.010
0.9	-0.075	-0.031	-0.057	-0.029	-0.038	-0.026	-0.020	-0.034
1.0	-0.135	-0.074	-0.168	-0.105	-0.091	-0.070	-0.070	-0.113
1.1	-0.064	-0.033	-0.051	-0.029	-0.037	-0.026	-0.021	-0.031
1.2	-0.029	-0.014	-0.017	-0.013	-0.015	-0.011	-0.008	-0.015
1.3	-0.015	-0.008	-0.017	-0.007	-0.008	-0.007	-0.006	-0.007

** – Corresponding Table 9 event variable is significant at the 5 percent level.
* – Corresponding Table 9 event variable is significant at the 10 percent level.

Table 13
*The Impact of Health Decline on the Probability that ANW < 1.5*FLP*
*by ratio of ANW to 1.5*FPL*
(significance levels in parentheses correspond to Table 10 specifications)

Panel A: Self-Reported Health Decline

	Health Declines to Poor				Health Declines to Fair or Poor			
ANW/1.5*FPL	Couple Men ( )	Couple Women (**)	Single Men ( )	Single Women (*)	Couple Men ( )	Couple Women (**)	Single Men ( )	Single Women (**)
0.7	-0.005	-0.018	0.001	-0.007	0.000	-0.011	-0.003	-0.009
0.8	-0.013	-0.051	0.001	-0.017	0.001	-0.030	-0.009	-0.021
0.9	-0.037	-0.145	0.004	-0.051	0.002	-0.079	-0.027	-0.068
1.0	-0.074	-0.216	0.015	-0.153	0.005	-0.161	-0.085	-0.171
1.1	-0.037	-0.095	0.005	-0.046	0.002	-0.066	-0.032	-0.056
1.2	-0.017	-0.045	0.002	-0.022	0.001	-0.031	-0.012	-0.028
1.3	-0.008	-0.024	0.001	-0.013	0.000	-0.017	-0.006	-0.016

Panel B: Trouble with Gross Motor Skills and Daily Living Activities

	Trouble with 3+ GMS				Trouble with 3+ ADL			
ANW/1.5*FPL	Couple Men (**)	Couple Women (**)	Single Men ( )	Single Women (**)	Couple Men ( )	Couple Women (**)	Single Men (**)	Single Women (**)
0.7	-0.015	-0.012	-0.012	-0.012	-0.007	-0.017	-0.022	-0.017
0.8	-0.035	-0.032	-0.035	-0.029	-0.018	-0.046	-0.063	-0.042
0.9	-0.103	-0.086	-0.110	-0.088	-0.052	-0.130	-0.226	-0.130
1.0	-0.164	-0.158	-0.229	-0.213	-0.098	-0.199	-0.306	-0.251
1.1	-0.080	-0.070	-0.079	-0.066	-0.049	-0.089	-0.100	-0.084
1.2	-0.036	-0.033	-0.027	-0.032	-0.022	-0.043	-0.042	-0.040
1.3	-0.018	-0.017	-0.022	-0.018	-0.011	-0.022	-0.030	-0.023

Panel C: Nursing Home Utilization

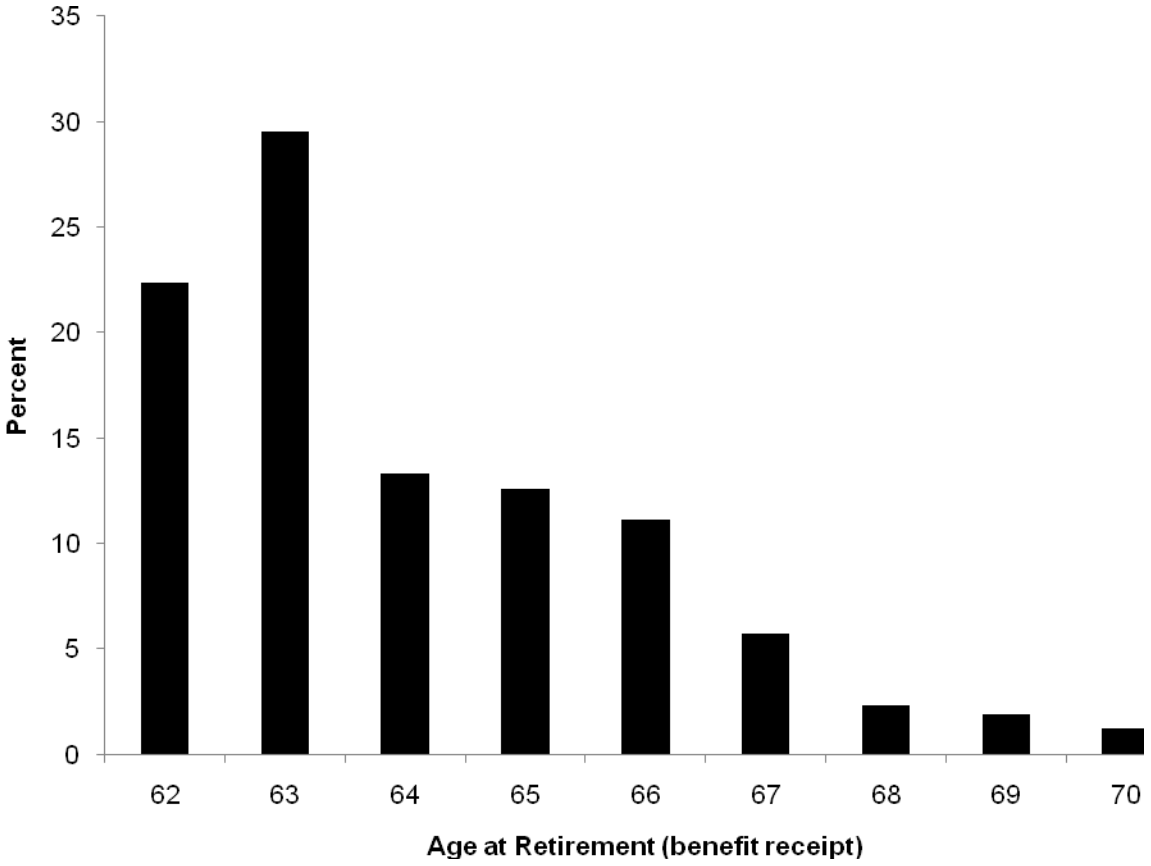
	Nursing Home in Past 2 Years				Nursing Home Current			
ANW/1.5*FPL	Couple Men ( )	Couple Women (*)	Single Men ( )	Single Women (**)	Couple Men ( )	Couple Women (**)	Single Men ( )	Single Women (**)
0.7	-0.009	-0.017	-0.017	-0.013	-0.003	-0.103	-0.032	-0.039
0.8	-0.023	-0.046	-0.052	-0.035	-0.008	-0.331	-0.094	-0.112
0.9	-0.067	-0.128	-0.172	-0.106	-0.021	-0.575	-0.361	-0.430
1.0	-0.118	-0.198	-0.281	-0.236	-0.045	-0.407	-0.353	-0.359
1.1	-0.058	-0.088	-0.090	-0.074	-0.022	-0.177	-0.114	-0.127
1.2	-0.027	-0.042	-0.039	-0.035	-0.010	-0.088	-0.054	-0.061
1.3	-0.014	-0.022	-0.027	-0.019	-0.005	-0.050	-0.040	-0.034

** – Corresponding Table 10 event variable is significant at the 5 percent level.
* – Corresponding Table 10 event variable is significant at the 10 percent level.

Table 14
Assessing Vulnerable Groups

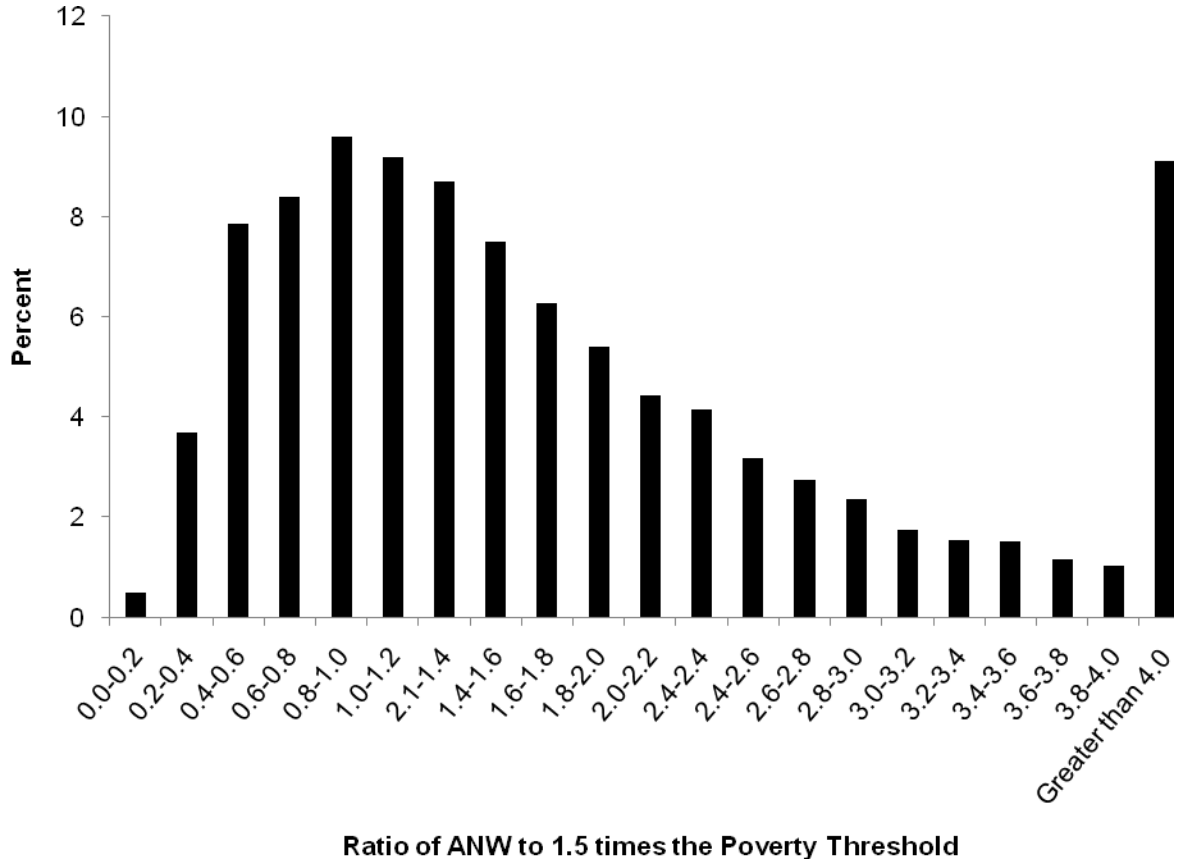
		Cognitive Decline				Health Decline			
		Couple-male	Couple - Female	Single-male	Single-female	Couple-male	Couple - Female	Single-male	Single-female
Individual Attribute	Effect of event	modest	small	modest	small	small	modest-high	modest-high	modest -high
Single	% of sample	na	na	**6.97**	18.87	na	na	**6.97**	18.87
	Relative risk	low	low	**high**	high	low	low	**high**	high
	% near poor	26.0	22.0	**39.9**	49.3	26.0	22.0	**39.9**	49.3
Nonwhite	% of sample	7.9	6.4	**2.2**	7.1	7.9	6.4	**2.2**	7.1
	Relative risk	high	high	**high**	high	high	high	**high**	high
	% near poor	54.4	49.8	**62.2**	67.6	54.4	49.8	**62.2**	67.6
Low Education	% of sample	10.2	7.3	**2.0**	6.1	10.2	7.3	**2.0**	6.1
	Relative risk	high	high	**high**	high	high	high	**high**	high
	% near poor	52.9	48.6	**60.5**	77.2	52.9	48.6	**60.5**	77.2
Retired with SSDI	% of sample	3.1	2.0	**0.1**	2.0	3.1	2.0**	**0.1**	2.0
	Relative risk	high	high	**high**	high	high	high**	**high**	high
	% near poor	49.6	43.8	**64.1**	73.9	49.6	43.8**	**64.1**	73.9
Retired at age 62–65	% of sample	17.2	8.6	2.3	5.9	17.2	8.6	2.3	5.9
	Relative risk	no effect	no effect	no effect	no effect	no effect	no effect	no effect	no effect
	% near poor	30.7	22.7	43.0	53.5	30.7	22.7	43.0	53.5

Figure 1. *Distribution of Retirement Ages Based on Social Security Benefit Receipt After Age 62*



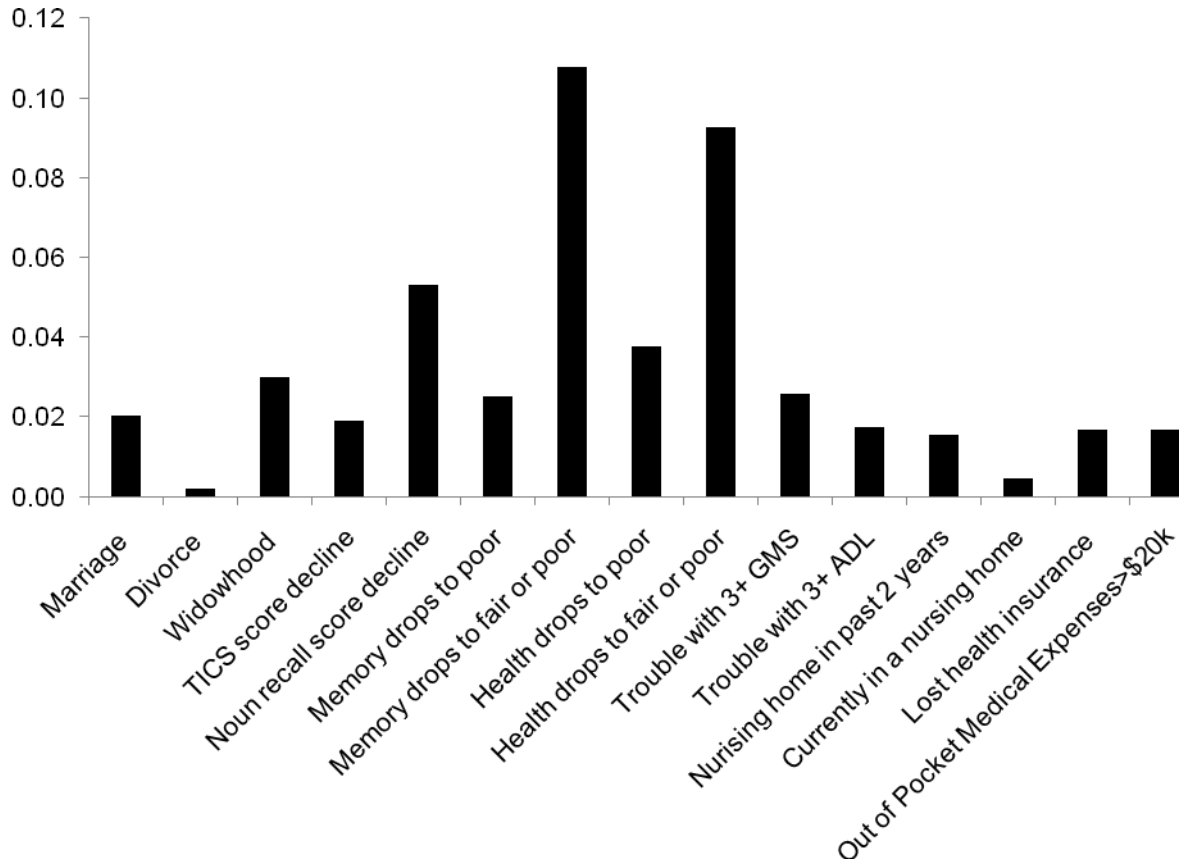
Source: Authors' calculations from the 1992–2008 HRS

Figure 2. *The Distribution of ANW/1.5*(Poverty Threshold) in the First Period of Retirement*



Source: Authors' calculations from the 1992–2008 HRS

Figure 3. *Average 2-Year Risk for Trigger Events in Early Retirement*



Source: Authors calculations from the 1992–2008 HRS

The Financial Literacy Research Consortium

The Financial Literacy Research Consortium (FLRC) consists of three multidisciplinary research centers nationally supported by the Social Security Administration. The goal of this research is to develop innovative programs to help Americans plan for a secure retirement. The Center for Financial Security is one of three FLRC centers and focused on saving and credit management strategies at all stages of the life cycle, especially helping low and moderate income populations successfully plan and save for retirement and other life events, including the use of Social Security's programs.

The Center for Financial Security

The Center for Financial Security at the University of Wisconsin-Madison conducts applied research, develops programs and evaluates strategies that help policymakers and practitioners to engage vulnerable populations in efforts which build financial capacity. The CFS engages researchers and graduate students through inter-disciplinary partnerships with the goal of identifying the role of products, policies, advice and information on overcoming personal financial challenges.

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