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HOW DO SUBJECTIVE LONGEVITY EXPECTATIONS INFLUENCE RETIREMENT PLANS?

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Abstract

Increasing life expectancy has made working longer both more necessary and more possible, but the relationship between an individual's survival expectations and his planned retirement age is unclear in the existing literature. This study uses the *Health and Retirement Study* and an instrumental variables (IV) approach to examine how subjective life expectancy influences planned retirement ages and expectations of working at older ages, and how individuals update those expectations when they receive new information. The estimates in this paper suggest a large and statistically significant relationship between subjective life expectancy and retirement expectations: an individual who is one standard deviation more optimistic about living to age 75 has a greater probability of planning to work fulltime at 62 and 65 by 10 percent to 21 percent, respectively. Respondents who are more optimistic about their survival to age 75 or 85 also expect to work five months longer on average. We also find that *increases* over time in subjective life expectancy for a given individual are associated with increases in his planned retirement ages and expectations of working at older ages. Finally, actual retirement behavior also increases with subjective life expectancy, but the relationship is somewhat weaker. The results further our understanding of how survival and retirement expectations are "anchored" to the previous generation's experience and suggest how targeted efforts at increasing knowledge about rising life expectancy may increase the proportion of younger cohorts who decide to work longer.

Introduction

The rapid increase in life expectancy over the past several decades – remaining life expectancy for the 65-year-old male cohort has increased from 14.7 years in 1980 to 18.7 years in 2012 (U.S. Social Security Administration, 2012) – has changed the calculus behind Americans' retirement decisions. A longer retirement increases the funds needed to support one's lifestyle, but assuming healthy life expectancy has also increased, workers should be better able to continue working (Munnell and Sass 2008; Munnell, Soto, and Golub-Sass 2008).

An extensive literature has documented the ways in which financial incentives and health shocks have affected retirement expectations and the ability of older workers to continue working. But less attention has been paid to how information about the dramatic increase in longevity has been transmitted to individuals approaching retirement, altering their perceptions about their ability, willingness, and need to work at older ages. Using the *Health and Retirement Study* (HRS) and an Instrumental Variables (IV) approach, this study examines how subjective life expectancy influences planned retirement age and expectations of working at older ages, and how individuals update those expectations with new information.

Individuals who expect to live longer are expected to retire later, for at least two reasons. First, a longer life requires greater wealth to finance consumption (Chang 1991, Kalemli-Ozcan and Weil 2010). Second, greater longevity is likely associated with better health during one's working years, making continued work more feasible. But the literature examining the relationship between subjective longevity and retirement is not yet settled. Hamermesh (1984) finds no consistent evidence that longevity expectations explain the work effort at ages 55-70. Hurd, Smith, and Zissimopoulos (2004) find that only those who hold the lowest self-assessed probability of living to 85 are likely to retire early. O'Donnell, Teppa, and van Doorslaer (2008) show the opposite: those who are most pessimistic about their longevity are least likely to retire between waves using the English Longitudinal Study of Ageing. Bloom et al. (2006) find that subjective life expectancy (SLE) has little effect on the probability of working at any given time.[1]

Our study builds on this literature in two ways. First, we examine how the *change* in subjective life expectancy alters retirement plans, which the literature has not previously

[1] Delavande, Perry, and Willis (2006), focusing on Social Security claiming rather than labor supply, find that subjective life expectancy is associated with a significant decrease in the probability of claiming at age 62.

explored. The study emphasizes how receiving new information about one's own mortality induces an individual to reconsider his retirement plan. Second, we compare the relationship between SLE and both *actual* and *expected* retirement behavior. Actual retirement behavior can deviate from plans for retirement when shocks arise: a new diagnosis or an acute medical episode, a job loss, the unexpected death of a spouse, or the need to care for a loved one. Retirement expectations – as expressed in survey questions about the age at which one expects to retire, or the probability one works to a milestone age – better reflect desired labor supply because they are set before these shocks occur. The only prior study to examine expected retirement age is van Solinge and Henkens (2009), for a smaller sample of Dutch workers.

Concerns remain, however, that the correlation between SLE and retirement plans may be driven by a third factor, such as optimism about life in general (and not just longevity). Moreover, the previous literature points out that SLE responses are bunched at focal points, leading to measurement error. We use an IV approach to address these issues, using lessons from the burgeoning literature on decision heuristics. Coming to grips with one's own mortality is unpleasant, and centering those expectations may be difficult given the secular trend in mortality. Behavioral economics suggests that in the face of a difficult decision, individuals start with a readily available answer and then "anchor" to that initial answer; that is, their subsequent answers depend on their initial answer (Tversky and Kahneman 1974). Hurd and McGarry (1995) suggest one's parents' experience serves as this anchor: the longer that parents lived (or are still living), the higher the individual's subjective life expectancy. For this reason, we use parents' current age or age at death instruments for SLE; this approach is also suggested by Bloom et al. (2006). In our dynamic analysis, parents' current ages or death ages serve the role of new information: when a parent survives to another benchmark age, the child likely increases his perceived chances of survival to that same age, and vice versa if the parent dies earlier; indeed, Hurd and McGarry (2002) report that subjective life expectancy decreases upon a parent's death. We use the variation in parents' survival or death between HRS interviews to explore whether the change in a middle-aged child's life expectancy is correlated with a change in retirement expectations.

The estimates in this paper suggest a large and statistically significant relationship between subjective life expectancy and retirement expectations. Respondents who are one standard deviation more optimistic about their survival to age 75 or 85 are 4 to 7 percentage points – or about 10 percent to 24 percent – more likely to be planning to work full time into their 60s, and they expect to work five months longer on average. To put these estimates in perspective, individuals of the highest tercile of the difference between SLE and OLE expect to work 4 months more than a median person, and 10 months longer than someone in the lowest tercile. These results are fairly consistent across specifications but are somewhat stronger for women. We also find that increases in SLE over time for a given individual are associated with increases in his planned retirement ages and planning to work at ages 62 and 65. Actual retirement behavior also increases with SLE, but the relationship is somewhat weaker, similar to previous studies.

These results further our understanding of the role of information and expectation formation on retirement decision-making. They suggest that further gains in the average retirement age will require not just continued gradual increases in longevity, but increases in longevity expectations. This emphasizes the role of information in communicating the risks of living "too long" relative to one's retirement savings.

Data and Methodology

Data and Sample. This project uses the 1992-2010 waves of the HRS to examine the relationship between retirement plans and subjective life expectancy. The HRS is a longitudinal data collection effort begun in 1992 with a cohort of about 10,000 individuals between ages 51 and 61 (i.e., born between 1931 and 1941). Additional cohorts have been enrolled over time so that the survey includes 30,500 individuals in 2010 and can be weighted to be nationally representative of the population over the age of 50. Respondents are interviewed every two years.

For our primary analysis on expectations about retirement and working at older ages, the sample is restricted to individuals age 50 through 61, who are in the labor force and have non-missing values for both retirement and longevity expectations.[2] Figure 1 summarizes the sample construction. Other than the age criterion, the exclusion of people from the labor force is the most restrictive criterion, eliminating 21 percent of the age-eligible sample. Retirement plans of those who are temporarily out of the labor force may still be of interest, but their expectations are

[2] Proxy interviewees and Social Security Disability Insurance (SSDI) recipients are excluded from our analysis. We exclude individuals who receive SSDI because they have very limited labor market attachment and are converted to retirement benefits at their FRA automatically, and thus the retirement expectation question is irrelevant.

not collected. Their exclusion may bias our sample toward those with later expected retirement ages, but when we compare the demographic and socioeconomic characteristics of HRS respondents in our sample to those who are excluded, we find mostly statistically insignificant differences, and even the few significant differences are of low magnitude.[3] These comparisons suggest that those who are missing retirement expectations are a random sample of relevant older individuals, at least with respect to observable characteristics.

We also examine the relationship between the SLE and actual retirement behavior, to test the hypothesis that subjectivity life expectancy is more highly correlated with retirement expectations because shocks may interfere with actual retirement. In these analyses, the sample is restricted to those respondents observed both before and after age 62.[4]

Empirical Strategy. When investigating retirement expectations, the study focuses on three outcome variables. The first outcome is based on answers to an HRS question about when the respondent plans to retire; the most common responses are ages 62 and 65, though other ages are also common.[5] We measure the expected retirement age using the respondent's age on the birth month of the year in which he plans to retire.[6] HRS also asks for the respondent to estimate his probability of working full-time at or after 62 (the Early Entitlement Age) and 65; these variables are our second and third outcome measures.

The key independent variable is a measure of longevity expectation. HRS asks each respondent their probability of living to ages 75 and 85.[7] The RAND version of the HRS standardizes these probabilities using the actuarial projections of longevity reported in the Vital Statistics life tables, by birth cohort and sex. The resulting measure is the difference between

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[3] Sample selection results are available from the authors upon request.

[4] The sample is further refined for each outcome variable. For the expected and actual retirement age regressions, the individual must have an observed retirement date. For the probability of working at age 62 or 65, the individual must be sampled at or after that age.

[5] Approximately 4.5 percent refuse to answer or do not have a plan, while 6.8 percent report that they will never retire. We exclude those who do not plan to retire from the analysis, but include them in the robustness checks by recoding their expected retirement age as age 70. The robustness tests show that this decision does not materially affect our results. We also top-code about 7.7 percent of individuals with retirement ages beyond 70 as retiring at 70; in robustness checks, the results are largely consistent using the non-top-coded expected retirement age.

[6] We also estimate regressions that assume that the individual plans to retire in December of the expected retirement year reported; see robustness checks.

[7] In HRS waves 5-7 the SLE question asks respondents under 62 about their probability of living to age 80 rather than 85. Normalizing the SLE using the OLE from the life table should capture most of the difference between waves asking about age 80 and waves asking about age 85, but we drop these waves from the analysis. The sensitivity analysis, however, shows that our results are robust even if we include these 3 waves in the sample.

subjective and objective life expectancy (OLE): a value greater than zero indicates the individual has a higher probability than his average peer of living to the given age; a value less than zero indicates a more pessimistic expectation. This standardization accounts for both the differing expectations by age – a 62-year-old is likely to have a more accurate view of his probability of reaching age 75 than a 51-year-old – and the secular trend toward longer lives. Our preferred specification uses the standardized version of each variable (separately), but we also report results that use the SLE by itself.

The concern with both subjective life expectancy and its standardized version is classical measurement error which leads to attenuation bias in the estimation: respondents sometimes report a higher probability of living to 80 than 75, and focal points like 0, 0.5, and 1 dominate the probability values (Hurd and McGarry 1995; Hurd, McFadden, and Gan 1998; Bassett and Lumsdaine 2001; Bloom et al. 2006). We adopt the instrumental variables (IV) model suggested by Bloom et al. (2006), in which parents' current ages or ages at death as instruments for SLE. Hurd and McGarry (1995) show that SLE is highly correlated with parents' death ages, so the instrument is likely to be strong. In a follow-up study, Hurd and McGarry (2002) also find that the death of a parent of the same sex has a larger impact on SLE than the death of a parent of the opposite sex; our model allows for this difference by controlling for ages of the same-sex and opposite-sex parents separately.[8]

Further, the IV approach helps address endogeneity concerns. If some unobserved factors are correlated with both the SLE measure and with retirement expectations, then endogeneity may arise. For instance, a generally optimistic person may overestimate his life expectancy as well as his working horizon. In such cases, ordinary least squares (OLS) would be biased towards a positive value. The validity of using parents' current ages or ages at death as instruments relies on the fact that each parent's longevity should impact middle-aged childrens' retirement expectations only through the channel of the offsprings' SLE.

[8] There is little consensus in the literature on the effects of parents' longevity on their children's mortality. Vandenbroucke et al. (1984) and Van Doorn and Kasl (1998) find no correlation between the number of parents which a middle-aged person still has alive and that person's longevity. On the other hand, Goldberg et al. (1996) find that parental survival to age 75 increases the probability that 50 year olds survive to age 75. A recent paper of Portner and Wong (2013) also finds strong evidence that individuals with longer-lived parents exhibit lower mortality risk using the HRS data, even after controlling for health and behavioral variables of the offspring.

The first set of econometric models examine retirement expectations in a static framework: what is the relationship between retirement expectations and SLE? The functional form of the reduced form regression is:

$$RetExp_{it} = \alpha_0 + \alpha_1(SLE_{it} - OLE_{it}) + \gamma X_{it} + \varepsilon_{it} \quad (1)$$

where $RetExp$ is the retirement expectation measure and (SLE-OLE) is the difference between subjective life expectancy and objective life expectancy for person *i* in HRS wave *t*. For all outcome variables, the model is linear: OLS for the expected retirement age and the probability of working full-time at or after 62 and 65.[9]

In one model, we estimate the extent to which the evolution of subjective life expectancy over time, particularly upon receiving new information about one's own mortality, induces an individual to reconsider his retirement plan. This "updating" model, which exploits the longitudinal nature of the data set, includes individual fixed effects (FE) in order to capture time-invariant unobservable characteristics that might be correlated with the participation decision. The specification takes the following form:

$$RetExp_{it} = \beta_0 + \beta_1(SLE_{it} - OLE_{it}) + \gamma X_{it} + \psi_i + \varepsilon_{it} \quad (2)$$

where ψ_i is the unobserved time-invariant individual fixed effect.

To examine the causal relationship between retirement expectations and SLE, we estimate a Two Stage Least Squares (TSLS) model with parents' longevity as instruments. While the individual fixed effect model takes into account time-invariant individual unobservable heterogeneity**,** the IV model has the advantages of accounting for time-varying unobservables and measurement error in SLE.

The first stage estimates the effect of parents' longevity on SLE:

[9] Given that the mean of the probability of working is 0.39 and thus not close to zero or one, the linear probability model likely does not differ substantially from a probit or logit specification. The expected retirement age is fractional: someone who expects to retire at age 64 and is born in March would be assigned the value of 64.75, as they would be 64 and 9 months in December of that year. The standard errors are clustered at the individual level.

$$
\begin{aligned}
(SLE_{it} - OLE_{it}) \\
&= \delta_0 + \theta_s Alive_{st} + \theta_o Alive_{ot} \\
&+ \sum_{j=1}^{3} \big[\lambda_{sj} Alive_{st} AgeCat_{jst} \\
&+ \ \eta_{sj}(1 - Alive_{st}) AgeCat_{jst} \\
&+ \lambda_{oj} Alive_{ot} AgeCat_{jot} \\
&+ \ \eta_{sj}(1 - Alive_{ot}) AgeCat_{jot} \big] + \xi X_{it} + \nu_{it}
\end{aligned} \tag{3}
$$

and the second stage substitutes $(\widehat{SLE_{it} - OLE_{it}})$ for $(SLE_{it} - OLE_{it})$ in equation (1).[10] The first stage uses a set of instruments that includes indicators for whether the same-sex ($Alive_{st}$) and opposite-sex ($Alive_{ot}$) parents are still alive, and separate categorical variables for their ages conditional on either being alive or dead by wave *t*, as well as the vector of exogenous variables X. Whether the IV estimate is bigger or smaller than the OLS estimate is an empirical question. On the one hand, correcting for the positive bias of the OLS due to endogeneity concerns leads to smaller IV estimates. On the other hand, the IV estimates may be larger than the OLS estimates due to the presence of classical measurement error (e.g., Hyslop and Imbens 2001).

The vector X includes a full set of personal and family characteristics that previous studies have found to affect the retirement decision (e.g., Haider and Loughran 2010). These include basic demographics, such as marital status, sex, race and Hispanic origin, educational attainment, and region of residence, household income and wealth quintiles, and an indicator for the number of children throughout one's fertility history (three or fewer versus four or more). We include indicators for working in a blue-collar industry and being self-employed, having defined benefit or defined contribution pension plans, and the national unemployment rate in the survey year, to capture current working conditions. X also includes an indicator for whether the individual has a financial planning horizon of greater than "the next few years." As risk preference may affect retirement expectations, we include categorical variables for risk tolerance, omitting the most risk averse category. Finally, all models include age dummies and dummies for cohorts grouped together by FRA. The FRA cohort dummies will capture the framing effect

[10] The fixed effects in an IV model soak up much of the variation and lead to insignificant results, which are not reported here.

of focal retirement ages provided by Social Security program parameters (Behaghel and Blau 2013).

Because retirement is often related to health insurance coverage (Gruber and Madrian 1995), we include variables that summarize one's current health coverage: indicators for the source of health insurance (own employer, government, spouse's employer, and other private) and an indicator for the availability of retiree health insurance. X also includes a comprehensive list of health status and health behavior variables: an indicator for reporting fair or poor health, an indicator for reporting any limitations in the Activities of Daily Living module, separate indicators for whether the individual has high blood pressure, diabetes, cancer, lung disease, heart disease, stroke, arthritis, and psychological problems, and variables that capture smoking history and drinking habits.

As couples generally prefer to synchronize their retirements (e.g. Coile 2004), we include controls for spouse's age, work status, and pre- and post-retirement health insurance coverage. Given the instrument is the presence of living parents and their age, conditional on their mortality status, we also control for ways in which one's parents might directly influence retirement behavior. Over the long run, parents may affect adult children's retirement decisions through their own socioeconomic status and financial knowledge; to proxy for these factors, we control for each parents' educational attainment. In the more immediate run, assisting a parent with lifestyle and health needs decreases the net benefits of working, making early retirement more likely (van Houtven, Coe, and Skira 2013); we therefore include an indicator for any time spent caring for a parent or parent-in-law, and an indicator for having siblings, to reflect the potential to share the caregiving role.

Retirement expectations and their relationships with SLE may differ by gender, because of differing attachment to the labor force. As in Haider and Loughran (2010), we estimate each equation separately for men and women.

Results

Summary Statistics. Table 1 reports the summary statistics (means and standard deviations) for the full sample, using the values from each person's first wave in the sample. The expected retirement age is 63.1. The average probabilities that the respondent gives for working full time are 48 percent at age 62 and 28 percent at age 65. On average, 68 percent expect to live to at least age 75, and 47 percent expect to live until at least age 85. The former expectation is close to the objective life tables, as shown by a mean difference between SLE and OLE of just below zero, -2.25 percentage points. The latter expectation, however, differs from the OLE by slightly more, but in this case is optimistic: the average respondent is 5.22 percentage points more optimistic than his actuarial projection.

Table 1 also summarizes the within-individual variation for the outcome variables and subjective life expectancy measures, which is useful for evaluating the magnitude of the fixed effects estimates. We observe an evolution of expectations within individual over time, with a within-individual standard deviation of expected retirement age of 1.6 years, and within-individual standard deviations of 33.71 and 19.21 for the probabilities for working full time at age 62 and 65, respectively. Over time, individuals also update their SLE, as the within-individual variation in the SLE measures is sizeable.

Table 1 displays the mean for each instrumental variable, based on the respondents' parents' mortalities. In the full sample, 37 percent of respondents have a living parent of the same sex, and 35 percent of parents of the opposite sex are still living; in each case, the plurality of respondents' parents is between ages 75 and 85. The death ages for parents who have passed away are evenly distributed between ages 66-75 and older than 75.

The other three columns in Table 1 report summary statistics for three terciles of the difference between SLE and OLE for age 75, to examine the unconditional relationship between retirement expectations and subjective life expectancy. Longevity expectations vary greatly across these terciles. Only 37 percent of individuals in the least-optimistic tercile expect to live to 75, half of their OLE of about 71 percent (36.68 plus 34.27). In the most optimistic tercile, individuals are about 26 percentage points more optimistic than their OLE of 94.5 percent. The means of the outcome variables by tercile indicate a correlation between SLE and retirement expectations: the expected retirement age and the probability of working full time at or after 62 and 65 all monotonically increase with longevity expectations, though the correlation between expected retirement age and SLE seems fairly small.

Main Results. The first stage results for predicting SLE from parents' age in life and death are reported in Table 2. The set of instruments (including exogenous regressors) has an F-test of 15.9 for the age-75 expectation regression (left columns) and 14.0 for the age-85 expectation regression (right columns), rejecting the null of weak instruments. Furthermore, the Hansen J test statistic indicates that the instruments are uncorrelated with the error term in the regression of interest and are therefore appropriately excluded from the second stage.

As expected, the strongest predictors of subjective life expectancy are the indicator of the same-sex parent being currently alive and the indicators for the age at death for the parent of the same sex, while the age of living parents of either gender are mostly insignificant. The first stage indicates that subjective life expectancy is lowest among people whose same-sex parent died between 51 and 65, which almost entirely coincides with our sampling window, suggesting that the parents' experience at the respondents' current age is most relevant to their behavior in the near term. Interestingly, a parent dying at a younger age (50 or less) is associated with a greater probability of living to 75 or 85; respondents may write off these deaths as "flukes" or accidental.

Table 3 reports the results from regressions where the expected retirement age is the outcome variable. Two sets of regressions are displayed: the first set of three columns controlling for longevity expectations (SLE – OLE) at age 75, and the second set of three columns controlling at age 85. In each set, the first column reports the results from an OLS model (estimating equation 1); the second column is from an individual fixed effects model (estimating equation 2); and the third column is from an IV model without individual fixed effects (estimating equation 3).

The key variable (top line) in the second stage is the difference between subjective and objective life expectancy to either age 75 or age 85. In both cases, the OLS estimate is positive and highly statistically significant. The FE model is also statistically significant, though the magnitude is roughly 30 to 40 percent of the OLS estimate. The IV model's estimates are of larger magnitude than either the OLS or FE and are also statistically significant. This finding of a larger IV estimate fits the pattern of classical measurement error.

Though standardizing the subjective life expectancy measure with the actuarial expectation reduces concerns about longevity differences by age and secular trends in longevity, the coefficient on this difference can be difficult to interpret. From Table 1, the standard deviation of the standardized age-75 expectancy is 27.75, while the age-85 expectancy is nearly 31.75. Therefore, a one-standard-deviation increase in the subjective life expectancy to age 75, relative to the individual's objective longevity, is associated with an increase in the expected retirement age of 0.19 years, or about 2.3 months, according to the OLS estimate, and 0.39 years, or 4.7months, according to the IV estimate. The magnitudes are similar for standardized subjective expectancy of living to 85: a one-standard-deviation increase is associated with retiring between 2.6 and 4.6 months later. According to the FE model, as SLE evolves, individuals update their planned retirement ages: a one-standard-deviation increase in the within-individual subjective life expectancy to age 75, relative to OLE, is associated with an increase in the expected retirement age of 0.03 years, or about 0.4 months.

The summary statistics by tercile also aid in evaluating the magnitude of the estimates. Individuals in the highest tercile of the difference between SLE and OLE are about 25.1 percentage points more optimistic about living to age 75, relative to their actuarial projection, than someone in the middle tercile, and 60.6 percentage points more optimistic than someone in the least-optimistic tercile. Our IV estimates suggest that these highly-optimistic individuals expect to work 4 months more than a person around the median, and 10 months more than those of the most pessimistic tercile.

The relationship between other variables and expected retirement age are largely in line with other studies (Appendix Table 1). Women, Hispanics, blue-collar workers, those with higher incomes and wealth, those with retiree health insurance and DB pensions, and those in worse health expect to retire earlier. A retired spouse, especially if he or she has employer-sponsored health retiree insurance before and after retirement, is also associated with earlier retirement. Whites, the divorced, the higher educated, the uninsured, the self-employed, those with moderate risk tolerance, and those with a spouse who is unemployed or in poor health expect to retire later. These estimated correlations are almost identical in magnitude and significance across specifications.

Table 3 reports the estimated coefficients only for the subjective life expectancy variable for all three outcomes: the expected retirement age (repeated from Table 2) and the expected probabilities of working full time at or after ages 62 and 65.[11] As with expected retirement age, the estimates for working full time at older ages are positive: a greater perceived probability of living to 75 or 85 is associated with a higher expected probability of working full time at 62 and 65. As in Table 2, each FE coefficient is smaller than the OLS coefficients while each IV coefficient is slightly larger than the OLS coefficient, though we cannot reject the null that they

[11] Other coefficients are similar in sign and significance to the results in Table 2.

are equal, and all eight IV estimates are statistically significant. The IV model estimates imply that, a one-standard-deviation larger difference between subjective and objective life expectancy at age 75 is associated with an increase in the probability of working full time at or after age 62 by 5 percentage points, or about 10 percent of the mean probability of working full time at 62 (48 percent). That same subjective life expectancy is associated with a 6 percentage point, or 21 percent increase over the mean expected probability of working full time at 65 (28 percent). For a specific individual, as his own SLE increases relative to the OLE at age 75 by one-standard-deviation, his expected probability of working full time at or after age 62 increases by 1.6 percentage points, and for working at age 65 by 1.4 percentage points. Overall, a higher SLE leads to a higher expectation of working at older ages.

Sensitivity Checks. Because men and women have different attachments to the labor force, and different (though converging) life expectancies, Table 4 presents estimates of the relationship between these two variables by gender. OLS, FE and IV estimates are statistically significant for the probability of working full time at 65 for both men and women and are significant for the probability of working full time at 62 for women as well. For each measure, the relationship between the SLE and OLE difference and retirement expectations is stronger for women, though the differences between each estimate are not statistically significant.

One concern with using SLE standardized by the OLE is that this specification might miss differences in SLE alone. For example, a 61-year-old woman and a 50-year-old man might both have SLEs that exactly match their OLEs, so that (SLE – OLE) is zero in both cases. But the 61-year-old woman has a higher probability of living to age 75 than the 50-year-old man, and the expected result is that she will retire later and be more likely to work at ages 62 and 65. The standardized SLE treats these two individuals as equals, missing a potential level of variation. To address this concern, Table 5 presents the coefficients for the subjective life expectancy variable without standardization: that is, the probability of living to age 75 or 85, without subtracting objective life expectancy. Each estimate is once again positive, and the statistical significance of each matches the results reported in Table 3. The magnitude of the estimates is also similar: a one-standard-deviation greater subjective life expectancy at age 75 is associated with an expected retirement age that is 2.6-4.6 months later, with a 4-5 percentage point higher probability of working full time at 62, and with a -6 percentage point higher probability of working at 65.

Table 6 adds two additional robustness checks. First, the above analysis recodes the retirement age to age 70 for any individuals who report a retirement age above 70. Across the board, the results are largely similar to those with top-coding, which indicates that estimations are insensitive to the top-coding strategy (Panel A). Panel B of Table 7 adds previously-excluded observations from waves 5 through 7, when the HRS (2000-2004) asked the respondent about their probability of living to age 80 rather than 85. The results for the larger sample are very similar to those reported in Table 3.

Actual versus Expected Retirement. The above results consider the relationship between subjective life expectancy and retirement expectations, but previous literature examines the relationship with actual retirement behavior. Table 7 presents the results for both actual retirement behavior and expected retirement plans using the specifications and the specialized sample described in the methodology section. When examining the relationship between the SLE and actual retirement behavior, the outcome measures are the actual retirement age and indicators for whether the individual reports working full time at ages 62 or 65. Because each actual retirement measure is unique to each person, when comparing the expectation to actual behavior, we also re-estimate the expected retirement behavior regressions for this limited sample using just one observation per person to be consistent: their last observation before reaching age 62. In the regressions for both actual and expected retirement ages, the explanatory variables are taken from the last pre-62 wave.

We find that the relationships with subjective longevity (SLE – OLE) are mostly positive for both actual and expected retirement, though the standard errors for the estimates in the actual retirement age and actual working full time at or after 62 regressions are large, and thus not statistically significantly.[12] These results fit with our hypothesis that actual retirement behavior is complicated by shocks, whereas retirement expectations better reflect the desire to retire by a certain age.

[12] Although the coefficients for actual retirement behavior are not statistically significantly different from zero, we cannot reject the null that the estimates in the actual retirement regressions are statistically significantly different from those from the expected retirement regressions. The failure to reject the null of equivalence between the expected and actual estimates means that our finding is consistent with Benitez-Silva and Dwyer (2005), which finds that retirement expectations and actual retirement behavior are closely linked.

The only IV estimates that are statistically significant are in the regressions with working full time at age 65 as the outcome variable. Though the subjective longevity coefficient in these regressions is not statistically significantly different from the same coefficient in the working-at-62 regression, this result (taken at face value) suggests an interesting possibility. A plurality of individuals retires at age 62 because Social Security is available starting at that age. These individuals are unlikely to change their behavior in response to either their life expectancy at any given point in time or the evolution of their understanding about that longevity; no matter what they think about their longevity, they will retire at 62 – and would probably want to retire earlier if it was financially feasible.

The people who are more likely to change their retirement expectations, instead, may be those who have a substantial probability of working at 65. These individuals would be sensitive to the possibility that their longer worklives could result in a retirement that was too short. New information that leads them to think they will live a long time will make working at 65 more palatable. In that case, an increase in longevity leaves the probability of working at age 62 unchanged, but the probability of working at age 65 increases.

To test for heterogeneity in the response to life expectancy, we examined estimates for those with and without college experience, under the assumption that individuals who had attended college would be more likely to work at older ages and therefore more sensitive to longevity expectations, but the results were not substantially nor statistically significantly different. Given that the working-at-65 and working-at-62 results are not statistically significantly different from each other, further tests for heterogeneity are left for future research.

Conclusions

The increase in life expectancy is expected to result in older Americans working longer, whether because the associated gains in healthy life expectancy make continued work more feasible or because further resources are needed to afford additional years of consumption. The results of this paper suggest a statistically significant relationship between an individual's subjective life expectancy and his expectations of when he'll retire. As individuals become more optimistic about living to ages 75 or 85 (relative to their actuarial probability of living to those ages), they push out their planned retirement dates and increase their expectations about working to the milestone ages of 62 and 65. Our IV estimates show that these relationships are fairly substantial: an individual who is one-standard-deviation more optimistic than another about their survival to age 75 is 10 percent more likely to expect to work full-time at 62, and to 21 percent more likely to expect to work full-time at 65. Respondents who are more optimistic about their survival to age 75 or 85 also expect to work five months longer on average. As individuals learn more about their longevity, they are also likely to update their expectations: an increase in the SLE is associated with increases in the expected retirement age and planning to work at ages 62 and 65. Furthermore, we examine the relationship between SLE and actual retirement behaviors and find that SLE also impacts the actual retirement behavior, though to a lesser degree than it impacts retirement expectations. .

These results emphasize the importance of longevity expectations in retirement planning and, ultimately, making the decision to actually retire. In addition, these findings have important implications for modeling future labor force participation. With further health improvements, objective life expectancy continues to increase, but to extend one's working life, subjective life expectancy needs to increase as well. Our results suggest that policy reforms aimed at encouraging longer work lives must effectively target communication on the gains in life expectancy, in particular toward those individuals whose SLE continues to lag OLE, perhaps because this group places heavy weight on the smaller gains in longevity experienced by their parents' generation.

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Figure 1. *Sample Selection Criteria*

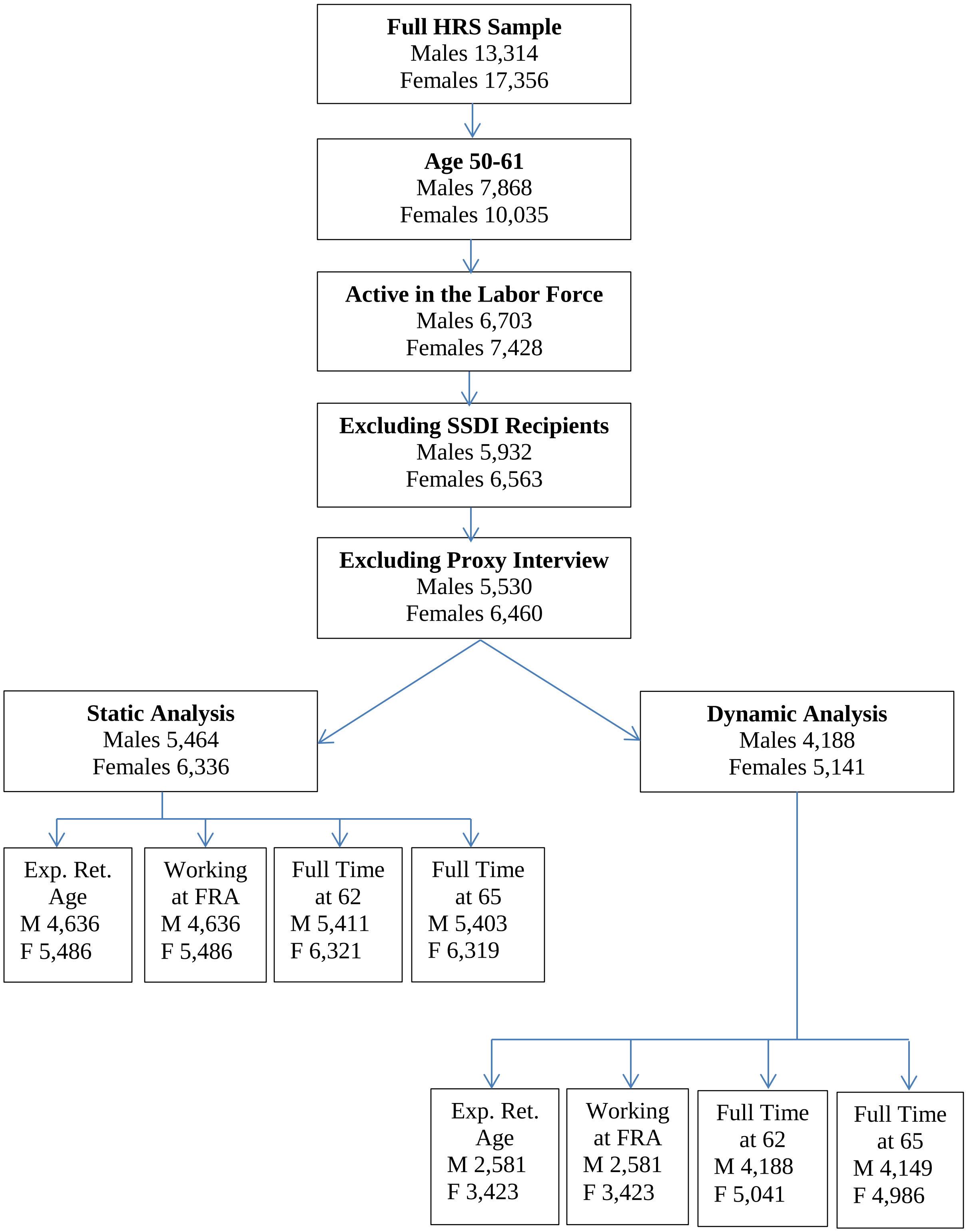

Table 1. *Select Summary Statistics for Static Model Sample*

	All	Within Std	Tercile of SLE-OLE at 75: Low	Medium	High
Age (years)	54.1		54.3	53.8	54.2
	(3.17)		(3.32)	(2.97)	(3.20)
Expected Retirement Age (years)	63.1		62.9	63.0	63.4
	(3.67)	(1.60)	(3.37)	(3.71)	(3.92)
Expected Pr(Working Full Time at or After 62) (%)	47.80		42.69	48.02	52.84
	(38.44)	(21.99)	(36.83)	(37.04)	(40.60)
Expected Pr(Working Full Time at or After 65) (%)	27.92		23.60	28.31	32.05
	(33.64)	(19.20)	(30.68)	(32.44)	(36.93)
SLE at 75 (%)	67.55		36.68	71.53	94.45
	(27.39)	(15.07)	(18.83)	(11.83)	(8.05)
SLE at 85 (%)	46.99		21.21	49.33	70.47
	(31.18)	(16.68)	(19.81)	(23.78)	(27.19)
SLE-OLE at 75 (%)	-2.25		-34.27	1.23	26.31
	(27.75)	(15.22)	(18.23)	(8.23)	(7.64)
SLE-OLE at 85 (%)	5.22		-22.50	6.64	31.55
	(31.73)	(17.06)	(20.30)	(20.86)	(26.69)
Same-Sex Parent					
Currently Alive	0.37		0.31	0.43	0.39
	(0.48)		(0.46)	(0.49)	(0.49)
Alive and <75	0.09		0.09	0.10	0.08
	(0.29)		(0.28)	(0.30)	(0.27)
Alive and 75-85	0.23		0.19	0.27	0.25
	(0.42)		(0.39)	(0.44)	(0.43)
Alive and 85+	0.05		0.03	0.05	0.06
	(0.21)		(0.18)	(0.22)	(0.23)
Died <50	0.06		0.07	0.05	0.06
	(0.24)		(0.26)	(0.22)	(0.23)
Died 66-75	0.18		0.21	0.16	0.16
	(0.38)		(0.41)	(0.37)	(0.37)
Died 75+	0.21		0.18	0.21	0.24
	(0.40)		(0.38)	(0.41)	(0.43)
Not Known if Alive	0.02		0.02	0.02	0.02
	(0.15)		(0.15)	(0.14)	(0.15)

Table 1. *Select Summary Statistics for Static Model Sample* (cont'd)

	All	Tercile of SLE-OLE at 75		
		Low	Medium	High
Opposite-Sex Parent				
Currently Alive	0.35	0.29	0.36	0.39
	(0.48)	(0.45)	(0.48)	(0.49)
Alive and <75	0.07	0.06	0.07	0.07
	(0.25)	(0.24)	(0.25)	(0.26)
Alive and 75-85	0.23	0.19	0.25	0.25
	(0.42)	(0.39)	(0.43)	(0.44)
Alive and 85+	0.05	0.04	0.04	0.06
	(0.21)	(0.19)	(0.20)	(0.23)
Died <50	0.06	0.07	0.06	0.06
	(0.24)	(0.25)	(0.25)	(0.24)
Died 66-75	0.19	0.22	0.19	0.17
	(0.39)	(0.41)	(0.39)	(0.38)
Died 75+	0.21	0.21	0.20	0.22
	(0.41)	(0.41)	(0.40)	(0.41)
Not Known if Alive	0.02	0.02	0.02	0.02
	(0.15)	(0.14)	(0.14)	(0.15)
Sample Size	7,105	2,284	2,358	2,315

Note: Standard deviations in parentheses.
Source: Authors' calculations from the *Health and Retirement Study* (1992-2010).

Table 2. *First Stage Regression Results of Living and Deceased Parents' Ages on SLE-OLE*	SLE-OLE at 75	SLE-OLE at 85
Same-Sex Parent		
Currently Alive	12.737**	15.142**
	(5.384)	(6.444)
Alive and <75	-3.828	-6.89
	(5.444)	(6.535)
Alive and 75-85	-2.215	-5.34
	(5.366)	(6.427)
Alive and 85+	-1.275	0.985
	(5.413)	(6.493)
Died <50	5.309***	5.585***
	(1.289)	(1.525)
Died 66-75	3.012***	-0.195
	(0.902)	(1.029)
Died 75+	8.742***	6.170***
	(0.836)	(0.976)
N/A	0.018	
	(0.032)	
Opposite-Sex Parent		
Currently Alive	2.808	3.557
	(8.799)	(7.406)
Alive and <75	0.219	-0.821
	(8.865)	(7.521)
Alive and 75-85	0.706	0.317
	(8.802)	(7.397)
Alive and 85+	2.985	4.71
	(8.828)	(7.452)
Died <50	0.873	1.265
	(1.165)	(1.433)
Died 66-75	0.769	-1.247
	(0.835)	(0.996)
Died 75+	3.551***	3.458***
	(0.775)	(0.962)
N	17,775	13,134
Overidentification test p-value	0.210	0.100
F-stat	15.9	14.0

Notes: * indicates significance at 10 percent confidence level. ** indicates significance at 5 percent level. *** indicates significance at 1 percent level.
Source: Authors' estimates using *Health and Retirement Study* (1992-2010).

Table 3. *Results of Regressions of Retirement Expectations on Subjective Life Expectancy*

	SLE-OLE at 75			SLE-OLE at 85		
	OLS	FE	IV	OLS	FE	IV
Expected Retirement Age	0.007***	0.002*	0.014**	0.007***	0.003**	0.012**
	(0.001)	(0.001)	(0.007)	(0.001)	(0.002)	(0.006)
N		17775			13134	
Working Full Time at or After 62	0.151***	0.106***	0.168**	0.123***	0.078***	0.167***
	(0.010)	(0.011)	(0.068)	(0.010)	(0.012)	(0.059)
N		34245			24971	
Working Full Time at or After 65	0.142***	0.082***	0.209***	0.157***	0.097***	0.204***
	(0.009)	(0.009)	(0.060)	(0.009)	(0.011)	(0.050)
N		34169			24921	

Notes: Each row is a separate regression. Each cell contains coefficient and standard error for subjective life expectancy variable (standardized by objective longevity). * indicates significance at 10 percent confidence level. ** indicates significance at 5 percent level. *** indicates significance at 1 percent level.
Source: Authors' estimates using *Health and Retirement Study* (1992-2010).

Table 4. *Results of Regressions of Retirement Expectations on Subjective Life Expectancy, by Gender*

	SLE-OLE at 75			SLE-OLE at 85		
	OLS	FE	IV	OLS	FE	IV
Panel A: Men						
Expected Retirement Age	0.008***	0.005**	0.017	0.007***	0.006**	0.007
	(0.002)	(0.002)	(0.011)	(0.047)	(0.002)	(0.009)
N		7515			5778	
Working Full Time at or After 62	0.150***	0.119***	0.082	0.119***	0.075***	0.058
	(0.015)	(0.015)	(0.102)	(0.015)	(0.018)	(0.095)
N		15323			11434	
Working Full Time at or After 65	0.149***	0.101***	0.185**	0.169***	0.121***	0.162*
	(0.013)	(0.013)	(0.091)	(0.013)	(0.016)	(0.083)
N		15291			11415	
Panel B: Women						
Expected Retirement Age	0.006***	0.000	0.007	0.007***	0.001	0.015*
	(0.001)	(0.002)	(0.009)	(0.001)	(0.002)	(0.008)
N		10227			7323	
Working Full Time at or After 62	0.146***	0.092***	0.231***	0.127***	0.078***	0.247***
	(0.013)	(0.014)	(0.087)	(0.013)	(0.017)	(0.073)
N		18861			13476	
Working Full Time at or After 65	0.132***	0.065***	0.223***	0.148***	0.078***	0.226***
	(0.011)	(0.012)	(0.076)	(0.011)	(0.014)	(0.061)
N		18817			13445	

Note: Each row is a separate regression. Each cell contains coefficient and standard error for subjective life expectancy variable (standardized by objective longevity). ** indicates significance at 5 percent level. *** indicates significance at 1 percent level.
Source: Authors' estimates using *Health and Retirement Study* (1992-2010).

Table 5. *Results of Regressions of Retirement Expectations on Subjective Life Expectancy Without Standardization*

	SLE at 75			SLE at 85		
	OLS	FE	IV	OLS	FE	IV
Expected Retirement Age	0.008***	0.002*	0.014**	0.007***	0.003**	0.012**
	(0.001)	(0.001)	(0.007)	(0.001)	(0.002)	(0.006)
N		17775			13134	
Working Full Time at or After 62	0.154***	0.105***	0.169**	0.125***	0.078***	0.168***
	(0.010)	(0.011)	(0.068)	(0.010)	(0.012)	(0.059)
N		34245			24971	
Working Full Time at or After 65	0.144***	0.082***	0.210***	0.159***	0.097***	0.205***
	(0.009)	(0.009)	(0.060)	(0.009)	(0.011)	(0.050)
N		34169			24921	

Note: Each row is a separate regression. Each cell contains coefficient and standard error for subjective life expectancy variable (without standardization by objective longevity). * indicates significance at 10 percent confidence level. ** indicates significance at 5 percent level. *** indicates significance at 1 percent level.
Source: Authors' estimates using *Health and Retirement Study* (1992-2010).

Table 6. *Results of Regressions of Retirement Expectations on Subjective Life Expectancy: Robustness Checks*

	SLE-OLE at 75			SLE-OLE at 85		
	OLS	FE	IV	OLS	FE	IV
Panel A: Without max 70 restriction						
Expected Retirement Age	0.010***	0.002	0.019**	0.011***	0.004**	0.017**
	(0.001)	(0.001)	(0.008)	(0.001)	(0.002)	(0.007)
N		17775			13134	
Panel B: Without Dropping Waves 5-7						
Expected Retirement Age				0.007***	0.001	0.012**
				(0.001)	(0.001)	(0.006)
N					17654	
Working Full Time at or After 62				0.121***	0.078***	0.151***
				(0.009)	(0.010)	(0.054)
N					33969	
Working Full Time at or After 65				0.151***	0.096***	0.188***
				(0.008)	(0.008)	(0.047)
N					33905	

Note: Each row is a separate regression. Each cell contains coefficient and standard error for subjective life expectancy variable (standardized by objective longevity). * indicates significance at 10 percent confidence level. *** indicates significance at 1 percent level.
Source: Authors' estimates using *Health and Retirement Study* (1992-2010).

Table 7. *Regression Results for Expected vs. Actual Retirement Decisions on Subjective Life Expectancy*

	SLE-OLE at 75				SLE-OLE at 85			
	Expected		Actual		Expected		Actual	
	OLS	IV	OLS	IV	OLS	IV	OLS	IV
Retirement Age	0.004**	0.031**	0.001	0.005	0.002	0.015*	0.003	0.002
	(0.002)	(0.013)	(0.003)	(0.014)	(0.002)	(0.009)	(0.002)	(0.010)
N	2590				2571			
Working Full Time at or After 62	0.158***	0.227*	0.018	0.069	0.125***	0.221**	0.045**	0.120
	(0.019)	(0.116)	(0.023)	(0.142)	(0.017)	(0.094)	(0.020)	(0.114)
N	6290				6232			
Working Full Time at or After 65	0.163***	0.270**	0.075***	0.249*	0.162***	0.271***	0.076***	0.219*
	(0.017)	(0.106)	(0.022)	(0.136)	(0.016)	(0.089)	(0.020)	(0.112)
N	5152				5110			

Note: Each cell contains coefficient and standard error for subjective life expectancy variable (standardized by objective longevity). * indicates significance at 10 percent confidence level. ** indicates significance at 5 percent level. *** indicates significance at 1 percent level.
Source: Authors' estimates using *Health and Retirement Study* (1992-2010).

Appendix Table 1: *Results of Regressions of Expected Retirement Age on Subjective Life Expectancy*

	OLS	FE	IV	OLS	FE	IV
SLE-OLE at 75	0.007***	0.002*	0.014**			
	(0.001)	(0.001)	(0.007)			
SLE-OLE at 85				0.007***	0.003**	0.012**
				(0.001)	(0.002)	(0.006)
Low risk tolerant	0.069		0.075	0.075		0.08
	(0.093)		(0.093)	(0.096)		(0.095)
Moderate risk tolerant	0.332***		0.338***	0.292**		0.297***
	(0.106)		(0.106)	(0.113)		(0.113)
High risk tolerant	0.073		0.071	0.032		0.025
	(0.104)		(0.104)	(0.110)		(0.110)
Married	-0.157	-0.259	-0.155	-0.01	-0.033	-0.005
	(0.169)	(0.290)	(0.167)	(0.182)	(0.373)	(0.181)
Divorced	0.323*	-0.118	0.301	0.29	-0.09	0.281
	(0.185)	(0.310)	(0.185)	(0.191)	(0.357)	(0.191)
Widowed	-0.033	-0.307	-0.043	-0.157	0.237	-0.158
	(0.207)	(0.374)	(0.206)	(0.213)	(0.437)	(0.213)
Female	-0.348***		-0.306***	-0.300***		-0.264***
	(0.081)		(0.091)	(0.085)		(0.095)
White	0.512***		0.529***	0.506***		0.551***
	(0.088)		(0.090)	(0.094)		(0.109)
Hispanic	-0.239*		-0.196	-0.258**		-0.233*
	(0.132)		(0.137)	(0.130)		(0.133)
<4 Children	0.098	0.116	0.098	0.217	0.455	0.21
	(0.135)	(0.287)	(0.134)	(0.139)	(0.305)	(0.139)
4+ Children	0.04	-0.125	0.036	0.2	0.222	0.196
	(0.140)	(0.304)	(0.140)	(0.146)	(0.347)	(0.146)
Has Siblings	-0.133	0.022	-0.139	-0.11	0.064	-0.113
	(0.100)	(0.279)	(0.100)	(0.101)	(0.327)	(0.101)
Northeast	-0.001	-1.400*	0.005	0.145	-1.715**	0.149
	(0.091)	(0.736)	(0.091)	(0.096)	(0.763)	(0.096)
Midwest	-0.066	-0.902**	-0.062	-0.025	-0.681	-0.023
	(0.079)	(0.449)	(0.079)	(0.083)	(0.452)	(0.083)
West	0.138	-1.468**	0.121	0.180*	-1.580*	0.169
	(0.099)	(0.586)	(0.100)	(0.104)	(0.891)	(0.104)
Less than HS	-0.113		-0.113	-0.117		-0.117
	(0.100)		(0.100)	(0.104)		(0.103)
Some College	0.347***		0.333***	0.286***		0.270***
	(0.083)		(0.084)	(0.089)		(0.090)
College or More	0.663***		0.651***	0.674***		0.659***
	(0.095)		(0.096)	(0.100)		(0.101)
Employer HI	-0.042	-0.055	-0.046	-0.007	-0.028	-0.007
	(0.093)	(0.112)	(0.092)	(0.103)	(0.142)	(0.102)
Government HI	-0.285**	0.149	-0.300**	-0.176	0.229	-0.193
	(0.137)	(0.206)	(0.137)	(0.149)	(0.259)	(0.149)
Other HI	-0.094	-0.041	-0.092	-0.1	-0.054	-0.094
	(0.102)	(0.112)	(0.102)	(0.112)	(0.133)	(0.112)

Appendix Table 1 (cont'd)

	OLS	FE	IV	OLS	FE	IV
Spouse on respondent's ESI	0.167*	0.039	0.170*	0.131	-0.001	0.136
	(0.091)	(0.101)	(0.091)	(0.100)	(0.129)	(0.100)
Retiree HI	-0.687***	-0.111	-0.695***	-0.523***	-0.029	-0.530***
	(0.081)	(0.091)	(0.081)	(0.088)	(0.115)	(0.089)
Blue Collar	-0.308***	0.25	-0.294***	-0.272***	0.625**	-0.267***
	(0.077)	(0.218)	(0.079)	(0.082)	(0.298)	(0.082)
Self Employed	1.106***	0.957***	1.091***	1.049***	1.012***	1.032***
	(0.115)	(0.274)	(0.115)	(0.125)	(0.370)	(0.126)
Ever Have DB	-0.963***	-0.245***	-0.964***	-0.880***	-0.330***	-0.878***
	(0.062)	(0.071)	(0.062)	(0.068)	(0.091)	(0.068)
Ever Have DC	0.103*	-0.177***	0.091	0.078	-0.161*	0.071
	(0.058)	(0.065)	(0.059)	(0.065)	(0.083)	(0.065)
U Rate	0.120***	0.075***	0.121***	0.125***	0.090***	0.123***
	(0.018)	(0.017)	(0.018)	(0.019)	(0.019)	(0.019)
Long Financial Planning	0.247***	0.039	0.234***	0.250**	0.169	0.242**
	(0.084)	(0.092)	(0.085)	(0.101)	(0.131)	(0.101)
Lowest HH Income	-0.001	0.331**	0.01	0.07	0.423**	0.076
	(0.116)	(0.140)	(0.116)	(0.128)	(0.178)	(0.128)
2nd HH Inc Quintile	0.196**	0.204**	0.197**	0.223**	0.210*	0.224**
	(0.083)	(0.093)	(0.083)	(0.092)	(0.127)	(0.092)
4th HH Inc Quintile	-0.317***	-0.258***	-0.320***	-0.315***	-0.313***	-0.317***
	(0.075)	(0.081)	(0.075)	(0.084)	(0.098)	(0.084)
Highest HH Income	-0.640***	-0.414***	-0.654***	-0.562***	-0.348***	-0.570***
	(0.092)	(0.104)	(0.092)	(0.101)	(0.126)	(0.101)
Lowest Wealth	0.870***	0.267**	0.856***	0.845***	0.207	0.828***
	(0.103)	(0.131)	(0.104)	(0.113)	(0.166)	(0.115)
2nd Wealth Quintile	0.455***	0.152*	0.451***	0.370***	0.099	0.370***
	(0.081)	(0.091)	(0.081)	(0.091)	(0.119)	(0.090)
4th Wealth Quintile	-0.276***	-0.063	-0.282***	-0.283***	-0.099	-0.283***
	(0.076)	(0.084)	(0.076)	(0.085)	(0.108)	(0.085)
Highest Wealth	-0.626***	-0.144	-0.635***	-0.613***	-0.206	-0.615***
	(0.095)	(0.118)	(0.095)	(0.103)	(0.148)	(0.102)
Fair or Poor Health	-0.332***	-0.299***	-0.245*	-0.395***	-0.407***	-0.332***
	(0.088)	(0.102)	(0.125)	(0.099)	(0.131)	(0.124)
Any ADLs	-0.208***	-0.016	-0.190***	-0.206***	0.021	-0.188***
	(0.059)	(0.064)	(0.061)	(0.065)	(0.079)	(0.067)
Never Smoked	-0.027	-0.72	-0.017	0.047	1.208***	0.051
	(0.073)	(1.594)	(0.074)	(0.076)	(0.408)	(0.076)
Smoke Now	-0.141*	-0.255*	-0.098	-0.126	-0.19	-0.091
	(0.083)	(0.145)	(0.095)	(0.088)	(0.180)	(0.099)

Appendix Table 1 (cont'd)

	OLS	FE	IV	OLS	FE	IV
Doesn't Drink	0.047	-0.01	0.057	0.022	-0.016	0.028
	(0.065)	(0.085)	(0.065)	(0.071)	(0.116)	(0.071)
Drink Heavily	-0.095	0.062	-0.093	-0.072	0.042	-0.067
	(0.089)	(0.110)	(0.089)	(0.094)	(0.129)	(0.094)
High Blood Pressure	0.039	0.143	0.056	0.036	0.113	0.051
	(0.063)	(0.089)	(0.064)	(0.067)	(0.099)	(0.069)
Diabetes	0.039	0.073	0.052	0.03	0.103	0.049
	(0.102)	(0.157)	(0.102)	(0.110)	(0.188)	(0.112)
Cancer	0.038	0.144	0.068	0.081	0.092	0.103
	(0.141)	(0.198)	(0.144)	(0.150)	(0.251)	(0.152)
Lung Condition	0.262*	0.14	0.289**	0.339**	0.203	0.359**
	(0.145)	(0.202)	(0.146)	(0.147)	(0.226)	(0.148)
Heart Condition	-0.053	0.043	-0.028	-0.059	-0.098	-0.033
	(0.105)	(0.153)	(0.108)	(0.110)	(0.184)	(0.114)
Stroke	0.039	-0.362	0.05	-0.084	-0.174	-0.075
	(0.263)	(0.279)	(0.265)	(0.277)	(0.384)	(0.276)
Psychiatric Condition	0.178*	-0.176	0.181*	0.189*	-0.107	0.193*
	(0.104)	(0.165)	(0.104)	(0.115)	(0.214)	(0.114)
Arthritis	-0.110*	-0.01	-0.109*	-0.112*	0.023	-0.110*
	(0.063)	(0.080)	(0.063)	(0.067)	(0.091)	(0.067)
Spouse <50	0.581***	0.251*	0.571***	0.510***	0.085	0.499***
	(0.109)	(0.141)	(0.109)	(0.116)	(0.171)	(0.116)
Spouse 62+	0.345***	0.137	0.346***	0.323***	0.182	0.320***
	(0.091)	(0.118)	(0.091)	(0.106)	(0.159)	(0.105)
Spouse Fair/Poor Health	0.168*	0.126	0.180**	0.175*	0.073	0.179*
	(0.090)	(0.102)	(0.091)	(0.098)	(0.134)	(0.098)
Spouse Working	0.341***	0.131	0.343***	0.284***	0.148	0.284***
	(0.091)	(0.115)	(0.091)	(0.098)	(0.145)	(0.098)
Spouse Unemployed	0.649***	0.337	0.662***	0.634**	0.359	0.652***
	(0.224)	(0.240)	(0.224)	(0.249)	(0.286)	(0.249)
Spous Disabled	0.228	0.173	0.21	0.102	0.321	0.1
	(0.222)	(0.215)	(0.223)	(0.249)	(0.276)	(0.248)
Spouse Retired	-0.447***	0.162	-0.445***	-0.435***	0.307**	-0.431***
	(0.097)	(0.117)	(0.097)	(0.109)	(0.153)	(0.109)
Respondent on Spouse's ESI	-0.332***	-0.143	-0.340***	-0.262**	-0.213	-0.262**
	(0.103)	(0.120)	(0.104)	(0.116)	(0.156)	(0.116)
Spouse has ESI	0.068	0.051	0.085	0.046	-0.09	0.056
	(0.095)	(0.112)	(0.097)	(0.106)	(0.149)	(0.106)
Spouse has RHI	-0.182**	0.092	-0.185**	-0.295***	0.085	-0.298***
	(0.089)	(0.096)	(0.089)	(0.097)	(0.123)	(0.097)

Appendix Table 1 (cont'd)

	OLS	FE	IV	OLS	FE	IV
Spouse RHI N/A			0.05	0.033		0.03
			(0.120)	(0.120)		(0.120)
Mom's Schooling 8 and Up	0.191*		0.191*	0.262**		0.272***
	(0.101)		(0.100)	(0.103)		(0.103)
Mom's Schooling N/A	0.15		0.152	0.356**		0.367**
	(0.161)		(0.161)	(0.164)		(0.165)
Dad's Schooling 8 and Up	0.142		0.142	0.049		0.048
	(0.094)		(0.094)	(0.098)		(0.098)
Dad's Schooling N/A	0.054		0.051	-0.067		-0.071
	(0.137)		(0.137)	(0.142)		(0.142)
Caregiving	-0.142*	0.106	-0.152*	-0.106	0.124	-0.109
	(0.078)	(0.077)	(0.078)	(0.087)	(0.098)	(0.087)
N	17,775	17,775	17,775	13,134	13,134	13,134
adj. R-sq	0.185			0.190		
Overidentification test p-value			0.210			0.100
F-stat			15.9			14.0