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Abstract

Compared to unmarried individuals married individuals report greater average wealth. A restricted focus on current marital status risks misrepresenting the effects of marriage on wealth, as an increasing proportion of older adults have been divorced and remarried, having lived through the dramatic upheavals in family structure from the 1960s through the 1980s. To shed light on the associations between a lifetime of marriage events and wealth near retirement, we used panel data from the Health and Retirement Study and developed categories of marital experiences that acknowledged current status, type, number and date of past marital disruptions and total duration of time spent married across the lifespan. We found that the route individuals took to get to their current marital status were important predictors of wealth levels near retirement and were different for males and females. Observable differences in lifetime earnings, mortality risk, risk aversion, other characteristics such as education and number of children, explained much of the wealth difference between married and remarried individuals however neither observable characteristics nor sources of other wealth from pensions and Social Security were enough to explain the large differences in wealth accumulation between single and married women and individuals experiencing more than one marital disruption. Given the higher divorce rate, prevalence of multiple divorces and earlier age of divorce of the Baby Boomer cohort compared to earlier cohorts, an understanding of how marriage disruptions over the lifecycle impact savings is increasingly important for understanding the economic security of retirees.

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1. Introduction

Compared to unmarried individuals (i.e., never married, divorced, or widowed), married individuals report greater average wealth (e.g., Smith 1988). There are several explanations for this empirical result. First, economies of scale may lead to more consumption with lower expenditures for married couples compared to singles. Second, the disruptions that stem from divorce or widowhood may result in unexpected expenses and lost income. Third, the health benefits of being married may lead to lower mortality risk, and a consequently greater motive to accumulate wealth. Although each of these explanations is distinct, they all make a common prediction about the effects of marital experiences on wealth in later life. Through the accumulated consequences of a lifetime of marital states, individuals who have been continuously married should approach retirement with greater wealth than those who have never married or those who have experienced a marital disruption, i.e., a transition out of marriage through divorce, separation, or widowhood.

Despite the plausibility of this prediction, the association between one's lifetime history of marital events and wealth at retirement remains poorly understood, because most studies of consumption and savings of middle-aged and older individuals consider only *current* marital status (Gustman and Juster 1996). This restricted focus risks misrepresenting the effects of marriage on wealth, as an increasing proportion of older adults have been divorced and remarried, having lived through the dramatic upheavals in family structure that took place from the late 1960s through the 1980s. Understanding the economic security of individuals and families in and near retirement requires analyses that address not only current marital status, but also the collective impact of a lifetime of experiences with marriage, remarriage, divorce, and widowhood. Clarity about these associations has important implications for retirement savings incentives, public income support programs, and national savings rates.

To shed light on the associations between a lifetime of marriage events and wealth near retirement, the current paper describes the following analyses. First, using the Health and Retirement Study's detailed information on multiple birth cohorts' marital histories and dates of events, we develop categories of marital experience for respondents that acknowledge current status (divorce, widowhood, remarriage after widowing,

remarriage after divorce, continuous marriage, never married), as well marital histories, including number of marital shocks (e.g. 1 or 2 divorces), timing (e.g. age at first divorce), and total duration of time spent married across the lifespan. We describe the diversity of marriage experiences of individuals age 51 to 56 and how this varies across birth cohorts.

Second, we describe the relationship between marital history and wealth for the HRS, War Babies, and Early Baby Boomer birth cohorts using bivariate and multivariate methods. The study of marriage types based on current status, previous marital shocks, the timing of those shocks, and duration in marriage has the potential to increase our understanding of the mechanisms through which marital experiences affect wealth. For example, duration in a particular marital state would be important to the extent that there are returns to scale that produce higher levels of consumption for married couples. In this way, sharing home ownership, which allows two people to live as cheaply as one, may reduce expenditures and increase savings while married.

We model log wealth as a function of our marital history categories controlling for many permanent and transitory attributes of the individual and household that a lifecycle model of savings predicts affect wealth and that may vary by marriage state. For example, changes in marital status will alter permanent income, but it is also the case that low-income families are more likely to divorce or experience widowhood than high-income families. We address this type of selection by controlling for the lifetime earnings of individuals as well as current income and then interpret the effect of marital histories on wealth as independent of the effect of earnings and associated selection effects. The empirical model includes demographic characteristics and many other rich controls for likely sources of heterogeneity correlated with marriage, such as mortality risk, risk aversion, and time rate of preference. In addition to our main model of total financial and housing wealth, we estimate separate models for financial and housing wealth and include controls for other sources of wealth in retirement from Social Security and pensions.

We find that marital histories, that is, the route individuals take to get to their current status such as past marital disruptions and length spent married are important predictors of wealth levels near retirement and are different for males and females.

Consistent with a hypothesis of economies of scale, we find each year spent married increases wealth by 4 percent. Women who experience a marital disruption between their mid 30's and 40's have 36 percent lower wealth than women who never experience a disruption or experience it at younger or older ages. While, observable differences in lifetime earnings, mortality risk, risk aversion and time rate of preference, and other characteristics such as education and number of children explain much of the wealth difference between married individuals and those remarried after a widowing or divorce, neither these characteristics nor pension and Social Security wealth are enough to explain the large differences in wealth accumulation between continuously married individuals and individuals remarried after two or more marriage disruptions and single and married women. Divorced women's low level of financial literacy of divorced women may in part explain this groups' low wealth levels. The paper proceeds with a background section followed by methods, results, and a final conclusion.

2. Background.

The standard model for analyzing saving decisions is the life-cycle model (LCM) of consumption (Modigliani and Brumberg, 1954). According to this model, individuals and households choose a consumption path that will maximize lifetime utility. An important prediction is that households will accumulate savings during their working life, and spend some of the savings to finance consumption following retirement. Although the exact level of asset accumulation will depend on utility function parameters and the interest rate, it is illustrative to consider the case is when the parameters are such that the consumption path is flat as a function of age. Then, in the absence of social programs such as Social Security and other forms of saving such as pensions, and holding the retirement age constant, an individual will save a fixed fraction of lifetime earnings. In contrast to this prediction, however, the empirical literature finds that the savings of households with similar income levels can be very different. For example, in the Health and Retirement Study, median non-housing wealth among those with household income of $25-$50 thousand was $34 thousand, yet the 25th percentile was just $9.5 thousand and the 10th percentile just $1.2 thousand (Gustman and Juster, 1996). Common explanations for the variation in wealth even among seemingly similar households

include other forms of retirement income such as pension and Social Security (Hubbard, Skinner, Zeldes 1996), differences in rate of time preference (Dynan 1993), and unexpected outcomes in earnings and expenses (Browning and Lusardi 1996). To date, the potential influence of marital experiences has been largely overlooked.

Studies that have considered the role of marriage offer several hypotheses to explain why experiences with marriage should affect wealth accumulation. The first, based economic models of savings with no uncertainty and perfect capital markets, predicts consumption is determined by permanent income, thus an unexpected decrease in permanent income (e.g. from a widowing) would result in lower consumption and no change in savings. Allowing for imperfect capital markets and imperfect foresight, however, implies an independent role for current income thus, a divorce or widowing accompanied by income loss may lead to dissaving rather than a reduction in consumption, particularly if it is seen as temporary. A second hypothesis is that married couples may consume many goods and services jointly (e.g. entertainment, housing) for the same cost as a single person, translating into additional wealth (or additional consumption). Third, a marriage disruption may involve unexpected expenses such as legal expenses related to a divorce or health care expenditures related to the death of a spouse. Fourth, being married is associated with better health throughout the lifespan (Coombs, 1991; Pienta, Hayward, & Jenkins, 2000) and significantly greater longevity (Gove, 1973; House, Landis, & Umberson, 1988; Lillard and Waite, 1995); thus married couples may save more to protect against outliving their resources. In contrast to these hypotheses predicting married individuals will accumulate more wealth than singles, a fifth hypothesis predicts that marriage may lead to lower savings by reducing the risk associated with fluctuations in income (job loss, health shock), to the extent that insurance against future shocks is a motivation for savings (Mincer 1978).

In addition to these frequently hypothesized associations, we add an additional hypothesis that we explore in the empirical work. Financial literacy may vary by marital status. For example, if one spouse (e.g husband) specializes in acquiring financial knowledge then upon divorce, the spouse who did not specialize (e.g. wife) will enter the unmarried state without this knowledge. More generally, Lusardi and Mitchell (2007) find women, controlling for education have lower financial literacy than men. While

consistent with this hypothesis, they do not specifically examine specialization within marriage in terms of financial decision-making.

On the other hand, the association between marital experiences and wealth may not be entirely causal. It may be the case that individuals that marry (or remarry) are different than individuals who never marry (or remarry) in terms of their time rate of preferences and risk aversion. For example, risk averse individuals and those with a low discount rate on future consumption may be more likely to marry and remarry and save more. Another sources of heterogeneity across marriage groups may be differences in number of children. Married couples with children, compared to never married individuals without children, may choose to accumulate wealth in order to leave a bequest to children. Alternatively they may give to adult children while they are alive to ease liquidity constraints (for example, for the purchase of a house or education), thereby lowering the wealth available for consumption during retirement. More generally, expenditure on child-related commodities will increase with the number of children and the allocation of time to the labor market may decrease. An often cited difference between married and unmarried individuals is earnings. A substantial literature offers various ways that marriage may impact male earnings. Marriage could motivate men to work harder (Becker, 1981), marriage might allow men to specialize in market work (Korenman and Neumark. 1991), or employers could favor married men over unmarried men (Hill, 1979). Alternatively, it could be that men with strong labor market potential make more desirable marriage partners than men with weak labor market potential. In an effort to rule out this selection hypothesis, researchers have employed fixed-effect models and generally find a positive effect of marriage or no effect of marriage on male wages (Korenman and Neumark, 1991; Lundberg and Rose, 2002; Loughran and Zissimopoulos, 2007). Considerably less attention has been paid to the effect of marriage on women's earnings because of the strong correlation of marriage and childbearing. One exception is Loughran and Zissimopoulos (2007) and they find that marriage has a negative effect on the earnings of women independent of the effect of children. While income is a critical measure of well being, wealth (housing, financial assets, pension and Social Security wealth) is an important complementary measure and arguably the most important measure for older individuals because it represents resources available for

consumption in retirement. Far less is empirically understood about the effect of marriage on wealth although theory suggests it is likely to be important.

Two studies that use the HRS to move beyond comparisons between currently married and unmarried individuals and also address the relationship between wealth and marriage are Wilmoth and Koso (2002) and Lupton and Smith (2000). Both studies confirm earlier findings that married adults have higher wealth than unmarried adults (Gustman & Juster, 1996; Smith, 1988; Seigel, 1993), although neither study controlled for permanent income and other measures likely to be correlated with marital status and wealth, such as risk aversion and mortality risk. Wilmoth and Koso (2002) expanded the range of marital statuses being studied and classified remarriages separately from first marriages. They found that remarriage partially offset the detrimental effects of a marital disruption but that continuously married couple still had more wealth in comparison. Lupton and Smith (2000) did not consider remarriage separate from continuous marriage but did examine length of marriage using the HRS and Panel Study of Income Dynamics and found a positive relationship between time spent married and wealth.

In sum, there are many pathways through which marriage events over the lifecycle may affect wealth. There are, however few empirical findings on marital history, timing of marriage events and duration in marriage to aid in establishing empirical facts and differentiating between possible explanations. The strength of the relationship between marriage and wealth suggests its importance as an area for further study. The contributions of this study are one, establishing empirical facts on the wealth differences by marital histories, duration of time spent married and age of marital disruption; two determining what types of wealth vary by these dimensions in marriage over the lifecycle (e.g. housing, financial, pension or Social Security) and three, analyzing which hypotheses about the association of marriage and wealth are consistent with the differences we see.

3. Methods

Our data are from the Health and Retirement Study (HRS). The HRS is a biennial panel that emphasizes retirement behavior and how it is affected by health status, economic status, and work incentives. The HRS has a complete inventory of assets and

income, and these data appear to be of very high quality due to innovative survey techniques. At baseline in 1992 the HRS had 12,652 respondents and was nationally representative of individuals born in 1931-1941 and their spouses, except for over-samples of blacks, Hispanics, and Floridians. This project uses data from survey wave 1992 for the HRS birth cohort (1931-1941), 1998 for the War Babies birth cohort (1942 – 1947) and 2004 for the Early Baby Boom birth cohort (1948-1953). These cohorts are especially relevant to understanding the effects of marital history on health as they have experienced substantially higher divorce rates than previous cohorts and they are more likely to be entering older adulthood with a diverse history of marital experiences (Cherlin, 1992). We exclude two birth cohorts, Children of the Depression Era birth cohort (1924 – 1930) and the AHEAD sample (born 1923 and earlier) because the ages at which they enter the sample are past normal retirement ages. In addition, we use restricted data on Social Security earnings to compute a measure of lifetime earnings for all cohorts and for the HRS cohort, a measure of the present discounted value of Social Security wealth at age 62. For the HRS cohort only, we also use restricted, that is, not public use, data from respondents' employers on pensions to construct a measure of present discounted pension wealth at age 62. We use this measure and Social Security wealth as control variables in multivariate models of financial and housing wealth to test sensitivity of our marriage estimates to the inclusion of other wealth measures. Marital history variables were derived based on the raw HRS files; most other variables used in the study are from the RAND HRS Data file, a longitudinal data set based on the HRS data and developed at RAND with funding from the National Institute on Aging and the Social Security Administration. We discuss our measurement of the key variables of interest in this analysis and describe our estimation methods in the remaining paragraphs of this section.

Marital History. One goal of this study is to examine whether detailed assessments of individuals' marital histories better illuminate the associations between marriage and wealth levels near retirement. We create marital status categories based on current marital status, reports of type of past marriage dissolution (widow, divorce) and remarriages, and the number of these marital events to form ten mutually exclusive categories comprised of five married categories and five single categories. The five

married categories are: continuously married (currently married and no past marital shocks), remarried after one divorce, remarried after one widowing, remarried after more than one shock (divorce or widowing), remarried after one unknown type of marriage shock (a separation occurred but the respondent did not respond if it was a divorce or widowing). The five single categories are: never married, divorced once, widowed once, divorce and/or widowed more than one time, one shock but of an unknown type (respondent did not respond if it was a divorce or widowing). We group partners, not married but cohabitating couples, in with singles (1,144 respondents) and separated in with married respondents (822 respondents) and include categories for missing information on past marital shock type or date (217 respondents) and unknown current marital status (250 respondents).

To evaluate the different features of an individual's marital history, we also calculate the total duration spent married across the lifespan and the timing of the first marital disruptions or shocks. We classify age at first shock into the following categories: age less than or equal to 25, ages 26 to 35, ages 36-45 and ages 46 and over. We split 20 years of prime earnings (and savings) years into those capturing years before savings has likely been initiated (before age 36) and years in which most households are accumulating wealth (Zissimopoulos and Hurd, 2003).

Lifetime earnings. Survey data are linked with Social Security earnings records. The earnings data for the HRS cohort are based on historical earnings from 1951-1991 reported to the Social Security Administration and are available for 9,539 HRS respondents.[1] Earnings data for the War Babies cohort are available for 1,330 respondents from years 1951-1997 and for the Early Baby Boomers cohort are available for 1,620 respondents from years 1951-2003. The administrative records are accurate and less subject to measurement error than self-reported earnings from household surveys and cover a long history of earnings, however they are also limited in two ways. First, the level of earnings is reported only up to the Social Security maximum. This maximum changed over time as did the number of individuals whose earning were above the

[1] See Haider and Solon (2000) for a discussion of characteristics of individuals with and without matched Social Security records.

maximum. Second, individuals employed in a sector not covered by Social Security have no earnings records for the years he or she is employed in the uncovered sector.[2]

We use Social Security earnings to measure lifetime labor income. Lifetime earnings are calculated as the present discounted value (3 percent real interest rate) of real Social Security earnings adjusted to 2004 dollars using the CPI-U-RS, and we adjust for the upper truncation of Social Security earnings. We examine the relationship of Social Security earnings and wealth controlling for education to assess its relationship to wealth with the understanding that it may be a noisy measure of actual lifetime earnings. We include in multivariate models of wealth this measure for each individual in the household in a log functional form.

Mortality Risk, Risk Aversion, Time Rate of Preference. Mortality risk is the respondent's subjective survival assessment of living to age 75 on a zero to 100 scale and we include it in empirical models as a categorical variable: zero, 1 to 49, 50 (reference group) 51 to 99 and 100. The measure of risk aversion is an indicator for being rated at the least and second-least risk averse levels in a four-point scale of risk aversion. In other words, this is the group that is more tolerable of risk. The basis for categorizing the level of risk aversion is a series of questions that ask the respondent to choose between pairs of jobs where one job guarantees current family income and the other offers the chance to increase income and carries the risk of loss of income. We measure respondents' time rate of preference by their responses to the length of time they use for financial planning. The answers are categorical from a few months to over ten or more years and included in the model as less than five years (reference groups), five to ten years and ten or more years.

Wealth. Our main outcome measure is wealth at year of entry into the survey for our three birth cohorts: 1992 for the HRS birth cohort (1931-1941), 1998 for the War Babies birth cohort (1942 – 1947), and 2004 for the Early Baby Boom birth cohort (1948-1953). Thus wealth is measures at ages 51-56 for all cohorts and through age 61 for the HRS cohort. Total wealth is computed as the sum of wealth from real estate, businesses, IRAs, stocks, bonds, checking accounts, CDs, and housing, less the value of the mortgage, home loans, and other debt. Missing data on wealth are imputed and the

[2] In 1996, 92% of non-self-employed wage and salary workers were covered by Social Security.

methods are described in RAND HRS Version G. The main models include as a covariate an indicator for pension ownership and type (defined benefit, defined contribution, both, or none – the reference group). In subsequent analyses of the HRS cohort, the present, discounted value of Social Security wealth and pension wealth at age 62 are included in models as covariates to control for substitution between financial and housing wealth and other wealth. Social Security wealth is computed as combined wealth for married couples and individual wealth for single individuals. It is based on Social Security earnings data for respondents where the information is available and based on self-reported data otherwise. Pension wealth is derived from the HRS Wave 1 Pension Plan Detail Data set for respondents who provided the names and addresses of their employers and HRS obtained the most recent Summary Plan Description. Pension wealth estimation is based on the assumptions of a 6.3 percent interest rate, 5 percent wage growth rate and 4 percent inflation rate which corresponds to the Social Securities 'medium' projection (in contrast to high or low projections). For all other respondents, pension wealth is imputed based on the self-reported data.

Multivariate Model. We use linear regression methods to model log wealth. For couples, household wealth is a per capita measure (divided by two) and as such, assumes no economies of scale in comparing the estimated effects of being singles and being married or remarried. The main covariates of interest are ten marriage categories (defined above), with continuously married as the reference group and included as gender specific variables. Also included is a continuous variable for total years married, and five categories of age at first separation (ages 26-35 excluded). Log lifetime earnings are included for males and females separately. Other individual level variables included as gender specific variables are mortality risk, risk aversion, race as an indicator for black, indicators for the highest educational degree achieved include: none; high school or GED (reference group); some college; bachelor's, master's and Ph.D., J.D., M.D. degrees. Household variables include number of children categorized as none, one to three (reference group), four or more; pension ownership and type. We estimate the model pooled over all birth cohorts, and by birth cohort, for total wealth and financial and housing wealth separately.We check the sensitivity of the main results to the exclusion of Social Security and pension wealth by estimating the main model and including the

expected, discounted value of pension wealth at age 62 and Social Security wealth at age 62.

4. Results

We first describe the distribution of marital status types taking into account current marital status, type of past marital disruption (divorce or widowing) and number of disruptions, the length of years spent married, and the age of the first marital disruption (if any). We analyze wealth by these measures of marriage and examine lifetime and current income differences across marriage groups. Next we estimate multivariate models of wealth levels near retirement as function of our marriage variables of interest and a rich set of control variables. Finally, we explore financial literacy as an explanation for the large wealth difference we see for women across marital groups and the sensitivity of our estimation results to the inclusion of Social Security and pension wealth.

Current Marital Status and Marital History. Table 1 shows the distribution of current marital status, number of previous divorces (and average number), age of first marital disruption (and average age) and years married (and average number of years) for the three birth cohorts separately and together holding age constant at ages 51-56. Only about half of marriages are first marriages and more so for the HRS cohort (55.5 percent) than for the War Babies (52.9 percent) and EBB cohort (45.2 percent). Remarriage rates are high at 21.7 percent and about equal for all cohorts. The large difference in continuously married rates between HRS and EBB cohorts is primarily due to the difference in divorce rates (11.4 percent for HRS and 17.5 percent for EBB) and to a smaller extent, percent never married. The EBB cohort is also more likely to have two or more divorces (11.8 percent) than WB (8.9 percent) or HRS (7.3 percent) cohorts. Among respondents age 51 to 56 that experienced a marriage separation (divorce or widowing), about 35 percent experience the first shock at ages 26 to 35 and the average age is 34. There is an interesting cohort difference with the EBB cohort more likely to experience the shock at younger ages compared to the WB and HRS cohorts. For example, among those that experience a shock, 26.8 percent of EBB cohort experienced the shock age 25 or younger while this percentage is 19.6 for the HRS and 22.6 for the

WB cohorts. In addition to the greater likelihood of experiencing a shock at a young age, the Early Boomers, by ages 51 to 56, have been married on average 24.8 years compared to 28.5 years for the HRS cohort at the same ages. Moreover, 16.9 percent of the EBB cohort had marriages lasting less than 10 years while this percentage is only 7.4 for the HRS cohort and 11.8 for the WB cohort.

Table 2 combines current marital status with past marital events for all cohorts ages 51 to 61 to yield ten mutually exclusive categories and two categories of missing marriage shock type. These are the categories that enter our model for wealth (by gender). Like Table 1, Table 2 shows the diversity of marriage experiences of older adults. Among respondents age 51 to 56, 16.3 percent are remarried after divorce while another 9 percent never remarried after divorce. About equal percentages of respondents remarry after multiple shocks as stay single (5.6 versus 5.3 percent respectively). Few in this age range are widowed. About 2 percent are remarried widows and about 3 percent are single widows. The most striking difference between men and women (results not shown in Tables) is that men are more likely to be continuously married than women (56.8 vs. 49.6 percent respectively) and remarried after one divorce (19.0 vs. 13.6 percent respectively). In sum, the results shown in Tables 1 and 2 reveal that the marriage experiences of individuals age 51-56 are very diverse with less than half of all individuals experiencing one continuous marriage. Moreover, in successive birth cohorts, divorces tend to occur at younger ages and are less likely to be followed by remarriage.

Wealth and Marital Status, Duration and Timing of Disruptions. The top panel of Table 3 shows median wealth for three cohorts ages 51-56 by the 10 marriage categories. Given that the measure of wealth is *household* wealth, and a couple will need finance the consumption of at least two people in retirement, it is not surprising that married couples have more wealth than singles, but the magnitude of the difference is nevertheless striking. Married couples have almost 4 times the wealth as singles, and close to 5 times the wealth among the EBB cohort. Examining mean wealth (bottom panel in Table 3) we see that couples have about 2.5 times more wealth than singles and closer to 3 times more wealth among the EBB cohort. All else being equal, it is difficult to assess what an equivalent amount of wealth for a single person should be relative to a married person. While we have widely used measures of household income based on equivalence scales,

no single accepted measure for wealth exists. Because of economies of scale, we would expect couples to have less than two times more wealth than singles.

Among the singles, median wealth amounts vary by which cohort we examine. Among the HRS, for example, never married (no past shock), divorced (one time) and widowed (one time) have about the same level of wealth at the median (e.g. approximately $40,000) and individuals experiencing more than one marital disruption have less wealth at the median (approximately $29,000). Among the War Babies and Early Baby Boomer singles, it is both the never married and multiple event singles that hold less wealth than the divorced and widowed. Among the EBB, however there is much less difference in wealth levels among the categories of singles than among the War Babies singles. Among married couples, continuously married couples hold more wealth than remarried couples. For example, HRS couples remarried after divorce have about 75 percent the wealth that continuously married couples have and EBB couples remarried after divorce have about 60 percent the wealth that continuously married couples have. The lower wealth levels are consistent with marriage disruptions involving unexpected expenses large enough that increased savings does not compensate for them. It is also the case that remarried couples have fewer years of total marriage and thus less time to benefit from economies of scale. In sum, generally we see that continuously married couples hold the greatest amount of wealth, even more than remarried couples, and singles experiencing more than one marital disruption have the lowest amount.

If marriage leads to higher wealth due to economies of scale, then more years spent married should be associated with higher levels of wealth (all else being equal). Table 4 shows median wealth by age of first marital disruption and by duration of marriage. The top panel is for a sample of currently married individuals and the bottom panel if for currently single individuals. Among remarried couples, there is little difference by age at which the disruption occurred. In contrast, among singles, age of disruption is positively associated with median wealth levels. That is, the later the age of disruption, the higher the wealth level at the median. Both married and singles with 10 years of marriage or more have about two times the amount of median wealth as those with less than 10 years of marriage.

Lifetime Earnings and Marriage Events. One central explanation for the large differences in wealth levels near retirement by marital status and marital history may be differences in permanent earnings, whether it be the case that marriage causes higher earnings or that higher ability people are more likely to marry (and remarry) and less likely to divorce. Table 5 shows mean lifetime earnings and current earnings for males and females by current marital status and marriage history. Among married males, there only a small difference in lifetime earnings for those continuously married and those who remarry after a single divorce or widowing. For example, men who remarried after a divorce have about $980,000 in lifetime earnings, while continuously married men have just over one million dollars in lifetime earnings. The mere $24,000 difference in lifetime earnings does not explain all of the $60,000 difference in mean wealth between remarried and continuously married men. Remarried males with two or more past disruptions have about $140,000 less lifetime earnings than continuously married males, which could explain much of the wealth differences between this group and the continuously married group. On average, single men have lower lifetime earnings than married men. Among single men, the most outstanding difference in lifetime earnings is for never married men, who have only $600,000 in lifetime earnings compared to over $840,000 in lifetime earnings for divorced men. Lifetime earnings among singles women compared to married women are much different then men. Single women have higher lifetime earnings than married women, never married women having the highest earnings (approximately $560,000) and remarried women have higher lifetime earnings than continuously married women. These patterns are consistent with lower labor force participation of married women relative to single women. The pattern for current earnings is similar. Continuously married men (women) have similar earnings as men (women) remarried after a divorce. Earnings for widows are lower likely reflecting older ages. Single men have lower earnings than married men, and single women have higher earnings than married women, consistent with prior research on this topic. In sum, while lifetime earnings and current earnings are likely important factors in wealth differences between married and unmarried individuals, they are unlikely to explain more than a small part of the wealth differences between continuously married and remarried men and women.

Multivariate Model Results. Frequency distributions of the categorical covariates included in the multivariate linear regression models of log wealth are provided in the Appendix Table by marriage categories and for all. The first column of Table 6 shows estimation results for total non-pension and Social Security wealth, the second column shows results for non-housing wealth, and the third column shows results for housing wealth. For couples, wealth is a per capita measure (assuming a household of two persons). Thus, the measure assumes no economies of scale and likely any remaining difference in wealth between married and single individuals (after controlling for other differences) is likely understated. Our covariates of interest are the 10 marriage categories (based on current status and past events), with continuously married as the reference group, the number of total years spent in the married state, and the five age at first separation categories (ages 26-35 excluded). All these variables are included separately for males and females. Also included for males and females separately are log lifetime earnings, current earnings, mortality risk, risk aversion, race and education. Household variables include number of children, pension ownership and type and entry birth cohort. We check the sensitivity of the results to the exclusion of pension wealth and Social Security wealth by estimating the main model for the HRS cohort and including as a covariate the expected, discounted value of pension wealth and Social Security wealth at age 62 (results from this model are not presented in the table but are discussed below).

Current Marital Status and Past Marital Events

The model estimates presented in Table 6 indicate that, for both men and women, the wealth differences between continuously married and remarried men and women disappear once we include our control variables. An exception is that remarried men with two or more disruptions have 45 percent less wealth than continuously married couples and this is primarily due to much less housing wealth (column 3). As the Appendix table shows, there are some differences between remarried men (women) and continuously married men (women) that in part explain the wealth differences we saw in Table 3. Remarried men and women are less likely to have a college education or higher. In the models, higher education is associated with greater wealth, and one mechanism through which this may be operating (holding permanent and transitory income constant)

is financial literacy (Lusardi and Mitchell, 2007). They are also more likely to have 4 or more children, which in the models is associated with lower wealth. While the effect of children on assets is complicated, in terms of consumption, expenditure on child-related commodities will increase with the number of children and may also alter the allocation of time to the labor market. Other covariates such as mortality risk, risk aversion, and financial planning horizon (our proxy for time rate of preference) are generally the same across continuously married and remarried groups with the exception that remarried men after a widowing report a lower probability of living to 75 and shorter financial planning horizon than other married men (consistent with holding less wealth) and remarried women after a widowing are the least risk averse and report a shorter financial planning horizon (consistent with holding less wealth).

Using a per capita wealth measure as the outcome (assuming no economies of scale), we find that single men, with the exception of those experiencing two or more marital disruptions, have the same wealth levels as married men once we control for many other observable differences that vary by marital group such as lifetime earnings, mortality risk, risk aversion, financial planning horizon and other characteristics. Still, this may translate to lower consumption in retirement than that of married men given we expect some economies of scale for married couples. Single men with two or more marriage disruptions, however, have 70 percent less wealth than continuously married couples, primarily less housing wealth. All single women, have substantially lower wealth than married women. For example, divorced women have 90 percent less wealth and widowed women have 68 percent less wealth. One explanation for the gender differences we see (given we are controlling for lifetime earnings, current earnings, mortality risk and many other differences) is children most often reside with the mother when a marriage dissolves and the higher consumption needs of a household with children may not be fully compensated by alimony or child support payments. To maintain consumption, the household may reduce savings. Another explanation for the gender differences between single males and females we find may be differences by gender in financial literacy and we return to examining this explanation later. Comparing the results in this table to the mean wealth results in Table 3 we see that difference in wealth levels between married and single individuals declines substantially. Recall that

mean results revealed 2.5 times more wealth for married couples than singles. However, even with income controls (measured with lifetime earnings and current earnings), controls for mortality risk, risk aversion and time rate or preference (measured by financial planning horizon), the effect of marriage (particularly for women) is large.

Years Married and Age of Marital Disruption

Each additional year spent married is associated with a 4 percent increase in total wealth for both men and women. This is a substantial effect when you consider that the average number of years spent married for a continuously married couple is 30 years (26 years for remarried couples) and only 16 years for a divorced individual. The effect is slightly higher on housing wealth (5.7 and 5.3 percent for men and women respectively) than non-housing wealth (3.2 and 3.7 percent for men and women respectively), which is consistent with the hypothesis that marriage brings economies of scale in consumption. Age at which the first marriage disruption occurred has no effect on the total wealth of men but for men with a disruption at ages 46 and older, housing wealth is 100 percent lower compared to men that experienced a disruption between ages 26 and 35. Among women total wealth is 37 percent lower if the marital disruption occurred between ages 36 and 45 compared to a disruption between ages 26 and 35 and the lower wealth is primarily due to lower housing wealth.

Other Predictors of Wealth

Income, mortality risk, risk aversion and financial planning horizon (our proxy for time rate of preference) all have a significant effect on wealth levels near retirement in the expected direction. A one percent increase in the lifetime earnings of men increases wealth by 0.40 percent and a one percent increase in the lifetime earnings of women increases wealth by 0.11 percent. The effect of a one percent increase in current earnings is substantial smaller than for lifetime earnings and is 0.03 percent for men and 0.04 percent for women. A high mortality risk (a zero subjective survival of living to 75) is associated with substantially lower wealth levels (81.8 and 93.6 percent less wealth for men and women respectively) and a high tolerance for risk is associated with 29 percent less wealth for men relative to being the most risk averse. We interpret the financial planning horizon as a proxy for time rate of preference and find that as the horizon

increases, so does wealth. Finally, as noted earlier, high education (college or more) is associated with more wealth and children with less wealth.

Pension and Social Security Wealth

Our measure of wealth (housing and non-housing) is somewhat narrow in that it does not include future claims on pension and Social Security wealth that may vary by current marital status and past marital events. For example, previously married single individuals are entitled to spousal Social Security benefits if their prior marriage lasted more than 10 years. Table 7 shows mean values of the present, discounted value of Social Security wealth and pension wealth as of age 62 and mean value of housing and financial wealth for the HRS cohort (all in $2004). Mean Social Security wealth is about 2 times higher for married males than single males and about 2.5 times higher for married women than single women. Social Security wealth is lowest for widowed females. Compared to housing and non-housing wealth, Social Security wealth is more important for singles than married individuals. For example, continuously married males have mean housing and non-housing wealth that is almost 2 times their Social Security wealth; while for divorced males, mean housing and non-housing wealth is about 1.5 times more than their mean Social Security wealth. Adding in pension wealth we find that for continuously married men housing and financial wealth is about 0.8 pension plus Social Security wealth; while for divorced men, Social Security and pension wealth is almost 2 times the mean amount of housing and financial wealth. For divorced women, Social Security and pension wealth is just over 2 times the mean housing and financial wealth. In sum, once we consider Social Security and pension wealth, the mean wealth differences between married and single respondents decrease. We check the sensitivity of our estimates of our marriage covariates of interest in Table 6 to the inclusion of controls for Social Security wealth and pension wealth. Among women in the HRS birth cohort, we find the negative effect on wealth of being single (all types of singles) compared to being married declines but is still substantial. For example, the coefficient on never married declines from an estimated coefficient of -1.6 to -0.91. The average decline in the difference in wealth between continuously married females and all categories of singles once we control for Social Security and pension wealth is 24 percent. No other

estimates of marriage categories change substantially with the inclusion of these measures (results not shown).

Financial Literacy

One explanation for the large wealth differences of single women compared to married women even with rich controls for observable differences is differences in financial literacy. This may be particularly important for previously married women (compared to never married women) who may not have invested in understanding complex financial decisions while married if the husband, and not the wife, specialized in financial decision-making. While financial literacy has been shown to vary substantial with education (Lusardi and Mitchell, 2007), which is included as a control variable in our models, if it is the case that spouses specialize, then controlling for education, we would expect a difference in financial literacy by marriage category. Fortunately in the 2004 wave of the HRS, the Early Baby Boomer cohort was asked three questions geared toward assessing their financial literacy. We examine the third question that was designed to elicit ability to make complex financial decisions. Table 8 shows the financial literacy question that was asked and the percent of correct responses among college graduates (on average, less than 10 percent of non-college graduates answered the question correctly). We find that the percent of respondents who answered the question correctly is much lower for divorced men and women with only 14 percent of divorced women answering the question correctly. In contrast, 23 percent of never married women answered the question correctly. Data collection efforts that focus on financial decision making within the household and financial literacy over the lifecycle may shed light on some of the marriage differences we see.

5. Conclusion

This study expands our understanding of how marriage and wealth are related by analyzing a lifetime of marriage events, the timing of marriage events and duration of years spent married, and by examining a rich set of covariates that a lifecycle model of savings predicts will affect wealth and that may vary by marriage including lifetime earnings and current earnings, education, mortality risk, risk aversion, time rate of preference, children and other demographics. We find that the lifetime marriage experiences of individuals nearing retirement are very diverse: less than half of all

individuals experience one continuous marriage throughout their lives. Moreover, successive birth cohorts are at greater risk of experiencing on or more divorces, experience them at younger ages, and are less likely to subsequently remarry. On average, continuously married couples have the greatest amount of wealth, more than remarried couples, and singles. Singles experiencing more than one marital disruption have the lowest amount of wealth. Lifetime earnings and current earnings are important factors in wealth differences between married and unmarried individuals, but they explain only part of the wealth differences between continuously married and remarried men and women.

Estimation results from models of log wealth with rich controls reveal no wealth differences between continuously married couples and individuals remarried after one disruption thus our controls, particularly controls for the lower education and higher number of children of remarried individuals compared to continuously married individuals and controls for other observable differences in lifetime earnings, mortality risk and time rate of preference explain the mean and median differences we see. However remarried individuals with two or more disruptions have lower wealth than continuously married couples, and although this group of individuals is not large (9 percent of our sample of 51-56 year olds), it has been increasing over time.

Single women have wealth levels that are substantially lower than continuously married women unexplained by the many observable differences between these groups. One explanation (given we are controlling for lifetime earnings, current earnings, mortality risk and many other differences) may be that children most often reside with the mother when a marriage dissolves and the higher consumption needs of a household with children may not be fully compensated by alimony or child support payments thus to maintain consumption, the household may reduce savings. This hypothesis however, cannot be explicitly tested using these data. We explored another potential explanation for the large wealth differences of single women compared to married women: differences in financial literacy and find that even among college educated individuals, financial literacy is the lowest for divorced individuals. Never married women were more likely to answer a financial literacy question correctly than divorced women which is consistent with a hypothesis that previously married women may not have invested in

understanding complex financial decisions while married. Finally, we find evidence consistent with the hypothesis that married couples enjoy economies of scale in consumption and this leads to higher wealth compared to remarried and single individuals. Independent of the effect of length of marriage, we also find that for women a marital disruption between the ages of 36 and 45 reduced wealth, primarily housing wealth at older ages substantially.

Our primary measure of wealth (housing and financial) does not include future claims on pension and Social Security wealth that may vary by current marital status and past events. Once we include Social Security and pension wealth in our measure of total wealth, the mean (and median) wealth differences between married and single individuals decrease, particularly for never married singles but inclusion of these measures in our model does not change our main substantive findings.

Our model explains 26 percent of the variance in wealth across households (29 percent for the HRS cohort in models with pension and Social Security wealth included). Thus, much variance remains to be explained. If the remaining heterogeneity is correlated with marriage, our results may still be biased. Future work will take advantage of the long HRS panel to examine changes in wealth and savings as a result of marriage status changes at older ages and utilize panel econometric techniques to control for unobserved heterogeneity.

Finally, we find interesting cohort differences (model based results not shown) that merit future study. For example, in model-based estimation, we find that for the Early Baby Boomer cohort remarried men have less wealth (69 percent) than continuously married men. Divorced men and women from this birth cohort have between 50 and 100 percent less wealth than continuously married men and women. Given the higher divorce rate, higher prevalence of multiple divorces, and earlier age of divorce among the Early Baby Boomer cohort compared to earlier cohorts, an understanding of how marriage disruptions over the lifecycle impact savings may become increasingly important for understanding the economic security of these soon to be retired individuals and families.

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Table 1—Distribution of Current Marital Status, Number of Divorces, Age of First Disruption and Year Married by Cohort For Ages 51-56
(percent distribution)

	HRS	WB	EBB	All
Marital Status				
Missing	0.16	0.93	1.23	0.58
Married continuously*	55.53	52.93	45.15	52.41
Remarried*	21.84	20.91	21.80	21.66
Partnered	2.83	3.12	4.22	3.24
Divorced	11.42	14.34	17.54	13.52
Widowed	4.65	3.17	3.30	4.03
Never Married	3.57	4.60	6.76	4.57
Number of Divorces (mean)	0.42	0.48	0.57	0.47
Missing	0.14	1.15	1.91	0.78
0 divorces	66.70	62.23	56.60	63.31
1 divorce	25.89	27.70	29.67	27.19
2+ divorces	7.26	8.92	11.81	8.73
Age at First Disruption (mean)	34.65	32.90	32.14	33.69
No marital disruption	60.02	57.58	51.03	57.28
Missing	1.06	1.97	2.38	1.57
<=25	7.82	9.58	13.13	9.49
26-35	13.68	15.60	17.26	14.94
36-45	11.42	11.66	11.18	11.40
46+	6.00	3.61	5.01	5.31
Years Married (mean)	28.49	26.13	24.77	27.11
Missing	5.05	4.11	3.98	4.60
<10	7.35	11.77	16.87	10.59
10+	87.60	84.13	79.16	84.81
N	5550	1827	2514	8251

SOURCE: Authors' calculations based on the 1992 (HRS cohort), 1998 (War Babies, WB cohort) and 2004 (Early Baby Boomers, EBB cohort) HRS.

NOTE: Sample is respondents from each cohort ages 51 to 56. Columns may not add to totals due to rounding. '*' indicates that this category includes separated individuals.

Table 2— Distribution of Marriage Disruption by Current Marital Status For Ages 51-56
(percent distribution)

	Current Married	Current Single
Missing	0.61	0.47
No past shock (continuously/never married)	53.18	4.57
1 divorce	16.31	8.97
2+ (divorce or widow)	5.62	5.30
1 widowing	1.66	2.87
1 unknown disruption	0.44	0.01
Total	77.82	22.18

SOURCE: Authors' calculations based on the 1992-2004 HRS.

NOTE: Sample is 8251 respondents ages 51 to 56. Cell percentages total 100.

Table 3— Mean and Median Wealth by Marriage Categories and Cohort For Ages 51-56
($2004)

	HRS		WBB		EBB		All	
	Median Wealth ($)							
	Married	Single	Married	Single	Married	Single	Married	Single
No past shock	153,671	41,419	170,120	19,963	214,000	33,052	167,522	35,745
1 divorce	119,368	39,836	114,629	73,661	127,500	44,700	119,200	47,091
2+ shocks	84,420	29,020	112,488	18,516	107,850	35,000	96,952	31,275
1 widowing	108,295	39,407	209,873	67,238	96,050	41,250	111,451	46,233
Total	141,140	38,253	152,761	45,597	180,500	37,300	151,693	39,275
	Mean Wealth ($)							
	Married	Single	Married	Single	Married	Single	Married	Single
No past shock	337,950	202,953	380,121	104,681	447,794	137,503	370,013	160,074
1 divorce	278,877	130,393	310,180	202,923	425,296	157,449	324,134	153,450
2+ shocks	213,412	96,524	368,230	85,170	323,913	127,979	273,731	105,444
1 widowing	262,738	102,029	367,699	143,953	143,438	244,340	253,890	133,284
Total	315,726	130,487	364,822	149,825	425,776	150,936	350,476	140,403

SOURCE: Authors' calculations based on the 1992-2004 HRS.
NOTE: Sample is 8158 respondents ages 51 to 56. Excludes 93 respondents with unknown type of marriage disruption.

Table 4—Median Wealth by Age of Marital Change, Year Married, Cohort: Ages 51-56
($2004)

	HRS	WB	EBB	ALL
Age of First Shock	Currently Married			
<=25	101,568	94,897	106,846	102,157
26-35	112,517	139,684	112,100	117,332
36-45	127,785	109,363	133,009	125,438
46+	98,101	183,718	32,400	93,307
Years Married				
<10	71,201	122,845	83,000	85,798
10+	148,395	162,019	194,500	161,546
Age of First Shock	Currently Single			
<=25	13,586	13,598	32,400	21,089
26-35	26,579	39,548	32,500	31,286
36-45	43,641	76,265	43,000	49,525
46+	60,188	111,099	77,375	70,565
Years Married				
<10	14,774	31,304	30,750	25,335
10+	46,167	72,301	46,500	50,787

SOURCE: Authors' calculations based on the 1992-2004 HRS.
NOTE: Sample is 8251 respondents ages 51 to 56.

Table 5—Mean Lifetime Earnings and Current Earnings by Marital Categories ($2004)

	Males		Females	
	Mean Lifetime Earnings ($)			
	Married	Single	Married	Single
No past shock	1,000,943	603,643	303,586	560,647
1 divorce	977,325	843,083	387,604	462,205
2+ shocks	861,106	827,071	392,952	444,474
1 widowing	934,577	706,314	273,472	329,973
	Current Earnings ($)			
	Married	Single	Married	Single
No past shock	45,523	24,178	18,181	24,029
1 divorce	41,979	28,037	20,738	26,699
2+ shocks	34,977	32,325	20,514	21,618
1 widowing	35,796	22,157	15,651	15,617

SOURCE: Authors' calculations using SS earnings and1992-2004 HRS.
NOTE: Sample is all respondents for current earnings and with matched Social Security earnings records for lifetime earnings.

Table 6—Models of (Ln) Per Capita Total Wealth, Non-housing Wealth and Housing Wealth

	(1) (Ln) Wealth	(2) (Ln)Non-House	(3) (Ln)Housing
Marriage Categories			
Continuously married (reference)			
Male currently married - 1 div, 0 wid	-0.101	0.003	-0.142
	(0.118)	(0.128)	(0.153)
Male currently married - 0 div, 1 wid	0.130	0.401	0.463
	(0.299)	(0.323)	(0.388)
Male currently married - 2 past events	-0.449	-0.147	-1.161
	(0.170)**	(0.183)	(0.220)**
Male currently single - 0 div, 0 wid (never married)	-0.112	-0.268	-0.977
	(0.247)	(0.266)	(0.320)**
Male currently single - 1 div, 0 wid	-0.383	-0.183	-1.568
	(0.206)	(0.223)	(0.267)**
Male currently single - 0 div, 1 wid	-0.018	-0.416	-0.108
	(0.381)	(0.411)	(0.494)
Male currently single - 2 past events	-0.703	-0.481	-2.169
	(0.224)**	(0.242)*	(0.290)**
Female currently married - 1 div, 0 wid	-0.132	-0.049	-0.283
	(0.112)	(0.121)	(0.145)
Female currently married - 0 div, 1 wid	-0.235	-0.206	-0.543
	(0.231)	(0.249)	(0.299)
Female currently married - 2 past events	-0.171	-0.056	-0.503
	(0.168)	(0.181)	(0.217)*
Female currently single - 0 div, 0 wid (never married)	-1.350	-1.416	-2.085
	(0.230)**	(0.248)**	(0.298)**
Female currently single - 1 div, 0 wid	-0.901	-1.383	-1.445
	(0.168)**	(0.181)**	(0.217)**
Female currently single - 0 div, 1 wid	-0.682	-1.342	-0.748
	(0.205)**	(0.221)**	(0.265)**
Female currently single - 2 past events	-1.120	-1.442	-1.883
	(0.168)**	(0.181)**	(0.217)**
Marriage Years and Age of First Disruption			
Male total years spent in married state	0.040	0.032	0.057
	(0.005)**	(0.006)**	(0.007)**
Female total years spent in married state	0.043	0.037	0.053
	(0.005)**	(0.005)**	(0.006)**
Male age at first separation <26	-0.020	-0.196	0.267
	(0.166)	(0.179)	(0.214)
Male age at first separation 36-45	-0.064	0.057	-0.161
	(0.144)	(0.155)	(0.187)
Male age at first separation >45	-0.319	-0.269	-1.023
	(0.195)	(0.210)	(0.252)**
Female age at first separation <26	-0.181	0.054	-0.190
	(0.127)	(0.137)	(0.164)
Female age at first separation 36-45	-0.365	-0.225	-0.366
	(0.133)**	(0.143)	(0.172)*
Female age at first separation >45	-0.041	-0.057	-0.122
	(0.183)	(0.197)	(0.236)

Table 6 cont.—Models of (Ln) Per Capita Total Wealth, Non-housing Wealth and Housing Wealth

	(Ln) Wealth	(Ln)Non-House	(Ln)Housing
Demographic and Household Characteristics			
Male age	-0.368	-0.385	-0.339
	(0.063)**	(0.068)**	(0.081)**
Male age squared	0.004	0.004	0.004
	(0.001)**	(0.001)**	(0.001)**
Female age	-0.198	-0.220	-0.090
	(0.063)**	(0.068)**	(0.082)
Female age squared	0.002	0.003	0.001
	(0.001)**	(0.001)**	(0.001)
Male education less than high school	-0.976	-1.291	-0.912
	(0.101)**	(0.109)**	(0.131)**
Male education high school graduate (ref.)			
Male education some college	0.302	0.360	0.207
	(0.098)**	(0.105)**	(0.127)
Male education college plus	1.091	1.313	0.884
	(0.099)**	(0.107)**	(0.128)**
Female education less than high school	-1.412	-1.479	-1.416
	(0.088)**	(0.095)**	(0.114)**
Female education high school graduate (ref.)			
Female education some college	0.501	0.673	0.392
	(0.084)**	(0.090)**	(0.108)**
Female education college plus	1.064	1.444	0.962
	(0.094)**	(0.102)**	(0.122)**
Race is black	-1.809	-1.958	-1.634
	(0.067)**	(0.072)**	(0.086)**
Race is other	-0.872	-1.094	-1.153
	(0.104)**	(0.112)**	(0.135)**
Has no children	0.126	0.165	-0.181
	(0.102)	(0.110)	(0.132)
Has 1-3 children (ref.)			
Has 4+ children	-0.265	-0.513	-0.246
	(0.054)**	(0.058)**	(0.070)**
Mortality Risk			
Male 0% probability of living to age 75	-0.818	-1.135	-0.360
	(0.152)**	(0.164)**	(0.197)
Male 1-49% probability of living to age 75	-0.331	-0.279	-0.084
	(0.119)**	(0.128)*	(0.154)
Male 50% probability of living to age 75	-0.072	-0.224	-0.032
	(0.101)	(0.109)*	(0.131)
Male 51-99% probability of living to age 75 (ref.)			
Male 100% probability of living to age 75	-0.059	-0.105	-0.200
	(0.108)	(0.116)	(0.140)
Female 0% probability of living to age 75	-0.936	-1.415	-0.685
	(0.145)**	(0.157)**	(0.188)**
Female 1-49% probability of living to age 75	-0.397	-0.612	-0.201
	(0.108)**	(0.116)**	(0.140)
Female 50% probability of living to age 75	-0.098	-0.026	-0.055
	(0.086)	(0.093)	(0.112)
Female 51-99% probability of living to age 75 (ref.)			
Female 100% probability of living to age 75	0.090	0.062	0.075
	(0.086)	(0.093)	(0.111)

Table 6 cont.—Models of (Ln) Per Capita Total Wealth, Non-housing Wealth and Housing Wealth

	(Ln) Wealth	(Ln)Non-House	(Ln)Housing
Risk Aversion			
Male least risk averse	-0.294	-0.193	-0.565
	(0.109)**	(0.117)	(0.141)**
Male 3rd most risk averse	-0.072	-0.145	-0.248
	(0.124)	(0.134)	(0.161)
Male 2nd most risk averse	-0.016	-0.091	-0.020
	(0.113)	(0.122)	(0.146)
Male most risk averse (reference)			
Female least risk averse	0.147	0.121	0.045
	(0.102)	(0.110)	(0.132)
Female 3rd most risk averse	0.082	-0.013	0.142
	(0.108)	(0.117)	(0.140)
Female 2nd most risk averse	0.146	0.267	0.149
	(0.096)	(0.104)*	(0.124)
Female most risk averse (reference)			
Financial Planning Horizon			
Male <5yr financial planning horizon (reference)			
Male 5-10yr financial planning horizon	0.478	0.534	0.576
	(0.084)**	(0.090)**	(0.108)**
Male >10yr financial planning horizon	0.356	0.410	0.448
	(0.121)**	(0.131)**	(0.157)**
Female <5yr financial planning horizon (reference)			
Female 5-10yr financial planning horizon	0.312	0.439	0.408
	(0.074)**	(0.079)**	(0.095)**
Female >10yr financial planning horizon	0.453	0.542	0.414
	(0.106)**	(0.114)**	(0.137)**
Earnings			
Male (ln) lifetime earnings	0.404	0.393	0.526
	(0.040)**	(0.043)**	(0.052)**
Female (ln) lifetime earnings	0.112	0.115	0.100
	(0.017)**	(0.019)**	(0.023)**
Male log of current earn - 2004$	0.034	0.050	0.010
	(0.009)**	(0.010)**	(0.012)
Female log of current earn - 2004$	0.041	0.041	0.023
	(0.008)**	(0.008)**	(0.010)*
Pension			
Defined benefit only household pensions	0.648	0.504	0.958
	(0.070)**	(0.075)**	(0.090)**
Defined contribution only household pensions	0.598	0.622	0.843
	(0.071)**	(0.076)**	(0.092)**
Both types of household pensions	0.748	0.783	1.333
	(0.070)**	(0.076)**	(0.091)**
No pension (reference)			
Constant	11.850	11.286	6.927
	(1.575)**	(1.698)**	(2.039)**
Observations	17198	17198	17198
R-squared	0.26	0.28	0.22

SOURCE: Authors' calculations based on the 1992-2004 HRS.

NOTE: Sample is all respondents. Standard errors given in parentheses. '*' indicates significant at 5%, '**' indicates significant at 1%. Includes missing indicators for marriage categories when type of shock is unknown, other missing data indicators, cohort indicators. Per capita total wealth is based on assumption of two people for couples and one person for singles.

Table 7—Mean Social Security, Pension, Financial and Housing Wealth by Marriage Histories For Males and Females – HRS Cohort ($2004)

	Males		Females	
	Mean Social Security Wealth at Age 62 ($)			
	Married	Single	Married	Single
No past shock	205,902	96,773	207,429	85,182
1 divorce	206,790	112,649	205,862	81,537
2+ shocks	197,520	112,461	203,704	78,045
1 widowing	199,312	97,438	198,772	67,289
	Mean Pension Wealth at Age 62 ($)			
	Married	Single	Married	Single
No past shock	257,047	161,410	92,378	159,830
1 divorce	243,908	200,915	141,437	127,998
2+ shocks	231,485	247,169	115,164	96,860
1 widowing	273,915	166,181	85,819	83,236
	Mean Housing and Financial Wealth ($)			
	Married	Single	Married	Single
No past shock	350,628	267,090	341,279	84,913
1 divorce	273,115	167,190	284,112	101,631
2+ shocks	198,630	163,978	212,754	102,543
1 widowing	337,453	153,407	229,183	133,907

SOURCE: Authors' calculations based on 1992 restricted Social Security earnings data, restricted pension data and the 1992 public release HRS.
NOTE: Sample is HRS birth cohort with non-missing data.

Table 8—Financial Literacy by Current Marital Status and Gender for College Graduates (percent)

	Males		Females	
	% Correct	N	% Correct	N
Married continuously	37.6	237	21.6	231
Remarried	34.1	85	15.8	76
Divorced	22.6	31	14.1	78
Never Married	22.6	31	22.7	22

SOURCE: Authors' calculations based on wave 2004 HRS.
NOTE: Sample is all EBB respondents that responded correctly to at least one of the earlier two financial literacy questions. Percent correct is in response to question "Let's say you have 200 dollars in a savings account. The account earns 10% interest per year. How much would you have in the account at the end of two years?" Results for widows and partners not show due to small sample sizes.

Appendix Table—Frequency of Model Covariates by Marital Categories-Males
(percent distribution)

	Married				Single				All
	0 shocks	1 div	2+shock	1 wid	0 shock	1 div	2+shock	1 wid	ALL
MALES	%	%	%	%	%	%	%	%	%
EDUCATION									
Less than HS	21.07	20.06	21.34	22.88	24.05	19.21	20.25	26.58	20.97
HS/GED	32.51	33.03	34.05	40.68	26.46	35.22	36.29	35.44	32.90
Some College	19.92	25.54	28.45	16.10	20.62	23.89	29.11	30.38	22.15
College+	26.49	21.37	16.16	20.34	28.87	21.67	14.35	7.59	23.98
LIVE 75									
.D.M.R.S	13.33	10.90	8.62	11.86	7.56	3.20	3.38	5.06	11.34
0	5.95	6.80	7.54	8.47	8.93	9.11	13.50	13.92	6.88
1-49	11.90	12.21	12.50	17.80	13.75	14.29	16.03	18.99	12.51
50	20.22	18.53	19.61	14.41	26.46	25.62	22.36	17.72	20.34
51-99	32.97	33.66	31.90	24.58	28.87	31.53	24.05	30.38	32.35
100	15.63	17.90	19.83	22.88	14.43	16.26	20.68	13.92	16.59
RISK AVERSE									
.D.M.R.S	13.17	10.96	7.97	12.71	5.50	3.94	3.38	3.80	11.18
1.Lowest	12.54	13.32	13.15	8.47	15.12	20.94	18.99	15.19	13.47
2	8.88	10.55	11.21	11.86	12.03	7.14	10.55	10.13	9.49
3	12.17	11.52	12.50	9.32	14.43	12.56	14.35	6.33	12.14
4.Highest	53.24	53.64	55.17	57.63	52.92	55.42	52.74	64.56	53.72
PLANNING									
.D.M.R.S	13.42	10.83	8.84	14.41	8.25	2.71	5.06	6.33	11.50
1. Next few mo.	11.64	13.12	14.87	13.56	21.99	22.17	23.63	24.05	13.67
2. Next year	7.68	8.19	7.97	5.93	12.37	10.59	10.97	17.72	8.33
3. Next few yrs.	25.85	23.53	23.92	26.27	24.74	23.89	24.47	25.32	25.08
4. 5-10 years	30.83	33.24	32.97	28.81	21.65	30.30	27.85	20.25	30.80
5. 10+ years	10.58	11.10	11.42	11.02	11.00	10.34	8.02	6.33	10.62
RACE									
1.White	80.84	79.53	82.76	79.66	71.82	73.65	80.17	56.96	79.66
2.Black	12.96	15.48	12.50	14.41	24.05	22.66	14.77	39.24	14.76
3.Other	6.20	5.00	4.74	5.93	4.12	3.69	5.06	3.80	5.59
CHILDREN (#)									
M	0.30	0.83	1.29	0.85	1.37	1.23	3.38	0.00	0.66
0	6.29	5.14	4.96	8.47	84.19	14.04	7.59	13.92	9.64
1-3	66.98	46.08	35.78	33.90	12.37	65.02	66.67	60.76	58.06
4+	26.42	47.95	57.97	56.78	2.06	19.70	22.36	25.32	31.63
PENSION									
.D.M.R.S	0.39	0.42	0.22	0.00	1.03	0.74	2.53	0.00	0.49
No Pension	38.30	36.85	47.41	36.44	63.92	62.56	63.71	74.68	42.11
DB only	19.32	17.83	15.95	22.88	13.75	13.30	11.39	12.66	18.00
DC only	18.17	20.61	16.16	15.25	11.34	12.07	12.24	5.06	17.54
DB + DC	23.82	24.29	20.26	25.42	9.97	11.33	10.13	7.59	21.86
No. Obs.	4337	1441	464	118	291	406	237	79	7373

Appendix Table Cont.—Frequency of Model Covariates by Marital Categories-Females (percent distribution)

	Married				Single				All
	0 shocks	1 div	2+shock	1 wid	0 shock	1 div	2+shock	1 wid	
FEMALE									
EDUCATION									
Less than HS	20.50	17.85	24.04	31.22	26.01	18.11	27.60	38.29	21.80
HS/GED	39.21	39.24	35.96	41.46	32.08	35.48	35.73	32.59	38.00
Some College	21.44	27.34	26.60	20.00	19.36	24.19	23.63	16.70	22.59
College+	18.85	15.57	13.40	7.32	22.54	22.21	13.04	12.42	17.61
LIVE 75									
.D.M.R.S	6.09	5.26	2.77	4.88	8.67	5.09	3.78	4.28	5.56
0	4.84	4.64	7.66	6.34	5.78	6.82	9.07	5.70	5.46
1-49	10.51	11.28	11.70	10.73	10.40	10.67	11.34	13.24	10.89
50	20.21	19.45	22.55	20.49	19.08	19.35	19.47	22.00	20.15
51-99	39.48	36.12	37.87	36.10	36.42	34.74	32.51	34.62	37.68
100	18.87	23.25	17.45	21.46	19.65	23.33	23.82	20.16	20.26
RISK AVERSE									
.D.M.R.S	6.67	5.12	3.83	4.88	6.94	4.34	5.10	5.50	5.93
1. Lowest	9.93	11.21	14.26	9.27	12.14	12.53	12.67	12.42	10.90
2	9.93	9.20	5.32	5.85	9.25	12.16	8.32	9.16	9.54
3	12.57	14.39	16.60	10.24	10.40	12.28	11.53	8.55	12.63
4. Highest	60.90	60.07	60.00	69.76	61.27	58.68	62.38	64.36	61.01
PLANNING									
.D.M.R.S	6.35	5.26	3.83	5.85	7.23	4.34	3.78	5.91	5.75
1. Next few mo.	15.13	18.62	18.09	23.41	23.99	24.94	23.44	24.03	18.04
2. Next year	9.89	8.44	10.21	10.73	10.12	6.95	10.78	11.81	9.61
3. Next few yrs.	29.27	27.82	27.45	27.32	24.86	25.43	27.41	27.70	28.25
4. 5-10 years	28.91	29.27	29.15	23.41	22.83	26.80	25.33	21.59	27.89
5. 10+ years	10.46	10.59	11.28	9.27	10.98	11.54	9.26	8.96	10.46
RACE									
1.White	80.39	80.55	86.81	77.56	49.71	64.64	69.57	59.06	76.55
2.Black	13.52	15.50	8.72	18.54	42.20	29.78	24.01	35.23	17.79
3.Other	6.09	3.94	4.47	3.90	8.09	5.58	6.43	5.70	5.67
CHILDREN (#)									
M	0.28	0.55	0.43	1.46	0.58	0.50	1.13	0.61	0.45
0	3.74	2.91	3.40	2.44	56.65	10.17	6.43	5.91	6.28
1-3	65.82	45.26	34.04	40.98	33.24	64.76	60.49	56.62	58.60
4+	30.16	51.28	62.13	55.12	9.54	24.57	31.95	36.86	34.67
PENSION									
.D.M.R.S	0.34	0.48	0.21	0.49	2.31	1.61	1.70	1.63	0.68
No Pension	42.18	43.94	51.49	55.12	58.96	55.46	61.25	68.64	47.31
DB only	18.36	18.27	14.89	12.68	15.61	17.37	12.29	11.61	17.19
DC only	17.13	16.75	14.47	17.07	10.40	15.63	18.53	12.02	16.39
DB + DC	21.99	20.55	18.94	14.63	12.72	9.93	6.24	6.11	18.43
No. Obs.	5289	1445	470	205	346	806	529	491	9581