

Marriage and Economic Well-Being

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JEL: D91, J12, J16

Abstract

This paper provides new evidence on the wealth advantage of marriage. We analyze effects on wealth levels near retirement age of a lifetime of marital status changes. We consider type of change whether from divorce, widowhood, remarriage, and number and timing of changes while controlling for selection into marriage by permanent earnings and other differences.

Consideration of financial, housing, and pension wealth reveal that wealth differences between married, remarried and not married individuals are large, and permanent earnings as well as future claims on public and private pensions explain most of the wealth differences for men but not women.

*Zissimopoulos: RAND; Karney: University of California Los Angeles; Rauer: Auburn University. The research reported herein was pursuant to a grant from the U.S. Social Security Administration (SSA) funded as part of the Retirement Research Consortium (RRC). The findings and conclusions expressed are solely those of the authors and do not represent the views of SSA, any agency of the Federal Government or the RRC. We thank Joanna Carroll for her excellent programming assistance.

I. Introduction

Comparisons of married and unmarried men and women show the former have higher average wealth as they approach retirement age (e.g., Smith 1988). Attempts to explain this marriage advantage point to several explanations for a direct, protective effect of marriage on wealth: 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. Alternatively, higher savings may reflect the fact that individuals with greater labor market abilities thus earnings and savings are more likely to get married and stay married.

While it is often suggested that selection on ability may account for some of the marriage advantage in wealth, measures of permanent earnings are largely absent from empirical models of the association between marriage and wealth. Moreover, most empirical studies of consumption and savings of middle-aged and older individuals consider only *current* marital status, however, 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. Consideration of the *lifetime of marriage* events may offer additional insights into the mechanisms underlying the association between marriage and wealth.

This research begins to fill this gap. We use data from a nationally representative study of individuals over age 50 and their spouses, the Health and Retirement Study, that contain detailed information on each marital event over a respondent's lifetime and all types of wealth including financial, housing, pension and Social Security wealth. We analyze the heterogeneity of a lifetime of marriage events. We describe the relationship between wealth and: one, marital

categories that reflect current status, type of *past* marital events (e.g. divorce, widowhood, remarriage) and number of marital disruptions (e.g. 1 or 2 divorces); two, the timing of the marriage event (e.g. age at first divorce); and three, total duration of time spent married across the lifespan. This detailed study of marriage events over more than 30 years of life has the potential to increase our understanding of the mechanisms through which marital experiences affect wealth. For example, duration in marriage would be important to the extent that there are returns to scale that produce higher levels of consumption for married couples.

We estimate models of wealth as a function of marital categories that reflect current status, number and type of past event and a set of rich covariates of permanent and transitory attributes of the individual and household that a lifecycle model of savings predicts affect wealth and that may vary by marital experiences. 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 permanent earnings of individuals as well as current income and then interpret the effect of our marital categories on wealth as independent of the effect of earnings and associated selection effects. Our empirical models include rich controls for likely sources of heterogeneity correlated with marital experiences, 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 models including future claims on wealth from Social Security and pensions. We have several findings. First, we document that that lifetime marriage experiences of individuals nearing retirement are very diverse: less than half of all individuals experience one continuous marriage throughout their lives. Second, individuals that do have one continuous marriage have higher mean and median levels of wealth near retirement than remarried and all types of not married

individuals (e.g. divorced, widowed, never married). Third, the permanent earnings of married men are higher than unmarried men and they and other observable differences explain most of the wealth differences between married, remarried and most unmarried men. In contrast, the permanent earnings of married women are lower than permanent earnings of not married women and they, along with other observable differences do not explain the wealth differences between married, remarried and not married women. Consideration of future claims on pension wealth and Social Security wealth reduce wealth differences between married and unmarried women by about one-half but do not reduce the wealth differences between married and remarried women. An explanation for why wealth difference remain for women but not men is 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. Another explanation we explored was difference in financial literacy between married and unmarried women. We found that financial literacy was the lowest for divorced women, even among college educated women, which may lead to low savings.

II. How Does Marriage Affect Wealth?

According to the lifecycle model (LCM) of consumption (Modigliani and Brumberg, 1954), individuals and households choose a consumption path that will maximize lifetime utility. This standard model for analyzing savings decisions predicts that households will accumulate savings during their working life, and spend some of the savings to finance consumption following retirement. The exact level of asset accumulation will depend on utility function parameters and the interest rate, however it is illustrative to consider the case when the

parameters are such that the consumption path is flat as a function of age. Under these assumptions and in the absence of social programs such as Social Security, savings through 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, an early study using the Health and Retirement Study found 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 as an explanation for wealth differences at older ages has been to the most part unexplored.

Several hypotheses offer explanations of why experiences with marriage should affect wealth accumulation. The first, based on 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 widow) 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 widow 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. For many individuals, a primary reason to get married is to have children. Married couples with children may choose to accumulate wealth in order to leave a bequest to children. Alternatively parents may give to adult children while they are alive to ease liquidity constraints (for example, for the purchase of a house or education) and 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 thereby lowering the wealth available for consumption during retirement. Although most hypotheses posit a positive association between marriage and wealth, 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 contrast to direct effects of marriage on wealth, it may be the case that unobserved sources of heterogeneity drive part of the association between wealth and marriage. 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. One central explanation for the large differences in wealth levels near retirement by marital status 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.¹ Empirical work on the relationship between earnings and marriage has attempted to rule out this selection hypothesis by employing 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, 2009) and a negative effect on the earnings of women independent of the effect of children (Loughran and Zissimopoulos, 2009).

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 of wealth of currently married and unmarried individuals 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, other measures likely to be correlated with marital status and wealth, such as risk aversion and mortality risk or considered other sources of wealth such as Social Security and pension wealth. Wilmoth and Koso (2002) expanded the range of marital statuses being studied and found that remarried couples had higher wealth than singles but lower than continuously married couples. Lupton and

¹ 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).

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 studies on wealth and marriage useful for 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, establish empirical facts on the heterogeneity of marriage experiences by middle and older age, two, analyze wealth differences by marital experiences over a long expanse of years, duration of time spent married and age of marital disruption; three, assess the role of permanent earnings and other sources of heterogeneity in the differences in wealth across marital categories, and four, determine what types of wealth vary by these dimensions in marriage over the lifecycle (e.g. housing and financial, pension or Social Security).

III. Empirical Strategy

Our data are from the Health and Retirement Study (HRS). The HRS is a biennial panel of individuals over age 50 and their spouses that collects data on labor supply, health status, economic status, and work incentives. This project uses data from survey wave 1992 for the birth cohort 1931-1941, 1998 for the birth cohort 1942 – 1947 and 2004 for the birth cohort 1948-1953. Thus we study respondents at ages 51-56 (up to 61 for the 1931-1941 cohort) and study cohorts especially relevant to understanding the effects of marital experiences on wealth 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 the birth cohorts 1930 and earlier because the ages at which they enter the study are past normal retirement ages.

The HRS has a complete inventory of assets and income, and these data are of very high quality due to innovative survey techniques. In addition, we use restricted data on Social Security earnings to compute a measure of permanent earnings for all cohorts. For the 1931 to 1941 birth cohort we use these data to construct a measure of the present discounted value of Social Security wealth at age 62, and we 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. 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 experiences over a long period of time better illuminate the associations between marriage and wealth levels near retirement than current marital status. We create marital categories based on current marital status, reports of type of past marital change (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 disruption), remarried after one divorce, remarried after one widowhood, remarried after more than one disruption (divorce or widowhood), remarried after one unknown type of marriage disruption (unknown if it was a divorce or widowhood). The five single categories are: never married,

divorced once, widowed once, divorce and/or widowed more than one time, one disruption but of an unknown type. We group partners, not married but cohabitating couples, in with singles (629 respondents) and separated in with married respondents (472 respondents) and include categories for missing information on past marital disruption type or date (92 respondents) and unknown current marital status (151 respondents).²

To evaluate the different features of an individual's marital history, we also calculate the total duration spent married from date of marriage to survey date and the timing of the first marital disruption. We classify age at first disruption into the following categories: age less than or equal to 25, ages 26 to 35, ages 36 to 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 1931 to 1941 birth cohorts are based on historical earnings from 1951-1991 reported to the Social Security Administration and are available for 9,539 HRS respondents.³ Earnings data for the 1942 to 1947 birth cohorts are available for 1,330 respondents from years 1951-1997 and for the 1948 to 1953 birth cohorts are available for 1,620 respondents from years

² The study focuses on marriage events in the present and past and thus we treat separated as married as this is not a recorded event in marriage history, legally separated individuals are considered married and the wealth reported is household wealth and assets would not yet be legally divided.

³ See Haider and Solon (2000) for a discussion of characteristics of individuals with and without matched Social Security records.

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 earnings were above the 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.⁴

We use Social Security records to compute a measure of permanent earnings following methods described in Zissimopoulos and Hurd (2003). Permanent 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 permanent earnings. We include in multivariate models of wealth this measure of permanent earnings for each individual in the household.

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

⁴ In 1996, 92% of non-self-employed wage and salary workers were covered by Social Security.

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. Thus wealth is measured at ages 51-56 for all cohorts. 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 methods are described in RAND HRS Version I Data Documentation (St.Clair et al., 2009). 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 we include as model covariates the present, discounted value of Social Security wealth and pension wealth at age 62. 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 wealth (total housing and financial wealth). The main covariates of interest are ten marriage categories (defined above in ‘Marital History’), 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 marital disruption (ages 26-35 reference group). Lifetime earnings are included for males and females separately. Other individual level variables included as gender specific variables are mortality risk, risk aversion, an indicator for race is non-white, and indicators for highest education level. Educational categories are: no educational degree, high school or GED degree (reference group), some college, and bachelor’s, master’s and Ph.D., J.D., M.D. degrees. Household variables are number of children categorized as none, one to three (reference group), four or more, and pension ownership and type. We estimate the wealth model pooled over all birth cohorts. We check the sensitivity of the main results to the exclusion of Social Security and pension wealth by estimating the model and including the expected, discounted value of pension wealth at age 62 and Social Security wealth at age 62.

IV. Empirical Results

Current Marital Status and Marital History. Table 1 shows the distribution of marital statuses combining current marital status with past marital events for all cohorts ages 51 to 56 to yield ten mutually exclusive categories and two categories of missing marriage disruption type. These are the same categories that enter our multivariate model for wealth (by gender). Table 1 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 disruptions 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 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). The youngest birth cohort (1948-1953) is 6 percentage points more likely to be divorced than the oldest (1931-1941) birth cohort (17.5 vs. 11.4 percent respectively), and to have experienced more than one divorce (11.8 vs. 7.3 percent respectively). The results by gender and birth cohort are not shown in the Tables but are available upon request.

Table 2 shows the distribution of number of previous divorces (and average number), age of first marital disruption (and average age) and years married (and average number of years) for ages 51-56. Like Table 1, the results shown in Table 2 reveal that the marriage experiences are very diverse with 27 percent of individuals ages 51-56 experiencing one divorce and another 9 percent experiencing 2 or more. Among respondents age 51 to 56 that experienced a marriage change (divorce or widowhood), the average age it occurred is age 34. Disruptions (widow or divorce) occur at all ages although are the most common between the ages of 26 and 45. Total years spent married is high, 27 years although 11 percent of respondents have been married 9 years or less. There are interesting cohort differences not shown in Table 2: in successive birth cohorts, divorces tend to occur at younger ages, there are more of them and the total years spent married is shorter.

Wealth and Marriage. Table 3 shows mean and median wealth (\$2004) at ages 51-56 by the 10 marriage categories separately for men and women. Given that the measure of wealth is *household* wealth, and couples will need to finance consumption of two people in retirement, it is not surprising that married couples have more wealth than singles. The average wealth of a married individual (e.g. \$353,637 for married male) is more than the wealth of a single male

(\$184,392) and single female (\$117,850) combined (\$302,142). 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. The wealth of continuously married couples is higher than any other group and is substantial higher than the wealth of remarried individuals. For example, mean wealth of continuously married males compared to remarried males is about \$373,000 compared to \$320,000. The lower wealth level of remarried individuals compared to continuously married individuals is consistent with marriage disruptions involving unexpected expenses large enough that increased savings over time does not fully compensate for the loss. It is also the case that remarried couples have fewer years of total marriage and thus less time to benefit from economies of scale. Not married men and women that experienced two or more marital disruptions have the lowest mean wealth levels (\$123,347 and \$96,233 for men and women respectively). 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.

Table 4 shows median wealth by number of divorces, by age of first marital disruption and by total years married. The first column shows the results for the sample of currently married individuals and the second column for currently single individuals. Median wealth is lowest for those who experience more than one divorce. Over time, remarried couples may recover wealth. That is, current wealth is higher if the divorce or widowhood occurred at a young age than if it was a more recent occurrence. Individuals experiencing a marital disruption at a young age that do not remarry by age 50 have lower median wealth than more recent singles. 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). The results on Table 4 are generally consistent with this hypothesis: median wealth increases with 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 is a small difference in lifetime earnings for those continuously married and those who remarry after a single divorce or widowhood. For example, men who remarried after a divorce have about \$977,000 in lifetime earnings, while continuously married men have just over one million dollars in lifetime earnings. Remarried males with two or more past disruptions have about \$140,000 less lifetime earnings than continuously married males, which likely explains some of the wealth differences between this group and the continuously married group. On average, unmarried men have lower lifetime earnings than married men. Among unmarried 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. This finding is consistent with the hypothesis that higher ability men are more likely to marry.

Unlike men, unmarried 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 unmarried women. The

patterns for current earnings are similar. Continuously married men (women) have similar earnings as men (women) remarried after a divorce. Unmarried men have lower earnings than married men, and unmarried 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.

V. Regression Results

We show the estimation results of linear, multivariate models of wealth in Table 6. The top panel shows the results for the marriage categories defined by current marital status and past marital events and by gender. The bottom panel shows the estimated effects of the other marital history variables (year married, age of first marital disruption) and permanent and current earnings. Estimates of all other covariates including mortality risk, risk aversion, race and education, household variables such as number of children, pension ownership and type and birth cohort are reported in Appendix Table A. The first column of Table 6 shows estimation results for wealth (non-pension and non-Social Security wealth) including only demographic controls along with the marital status categories. The second column shows results of a model that adds marital history variables (e.g. years married, age at first disruption), permanent and current earnings and all other covariates (e.g. education, number of children, mortality risk, risk aversion, financial planning horizon). Frequency distributions of the categorical covariates included in the multivariate linear regression models of wealth are provided in the Appendix Table B by marriage categories and for all. 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 covariates the expected, discounted value of pension wealth and Social Security wealth at age 62 (results from this model are in Table 8 and are discussed below).

Effects of current and past marital status changes on wealth. The model estimates of marriage reveal four main results. First, the estimates of marital categories are generally negative indicating lower wealth for all groups relative to continuously married. Second, observable differences explain all of the difference between continuously married men and remarried men but not so for women. For example, men remarried after a divorce have \$49,000 less wealth than continuously married men (Model 1) and this difference reduces by over 50 percent once we control for observable differences and is no longer statistically different (Model 2). The wealth difference between continuously married men and men remarried after 2 disruptions reduces by more than one-half with controls but remains statistically different. In contrast to the results for men, controlling for observable differences does not substantially reduce the wealth differences between married and remarried women after one divorce or two marital status changes and the wealth differences remain statistically different. Observable differences do account for the wealth differences between continuously married women and those remarried after a widowhood.

As Appendix B Table shows, there are some observable differences between remarried men (women) and continuously married men (women) that in part explain the mean wealth differences and that we control for in our models. 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. 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).

A third result is, observable differences explain a substantial portion of the wealth difference between married and unmarried men but not so for women. For unmarried men, observable differences explain about 50 percent of the wealth difference between them and continuously married men (35 percent for men unmarried after two marital events). That is, the estimate of the wealth difference in Model 1 reduces by 50 percent in Model 2. In contrast, observable differences explain only 9 percent of the wealth difference between continuously married women and women unmarried after divorce. One explanation for the wealth differences between unmarried women and men 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.

A fourth result is each additional year spent married is associated with an increase of about \$1,900 of wealth for men and \$1,300 for women. The amount is not inconsequential when

you consider that the average number of years spent married for a continuously married couple is 30 years and only 16 years for a divorced individual. Age at which the first marriage disruption occurred has no impact on the wealth of men but lowers wealth for women if it occurred between the ages of 26 and 35 compared to at ages younger than 26.

Lifetime earnings and current earnings have independent and positive effects on wealth levels near retirement. Other covariates a lifecycle model of wealth would predict impact wealth have the expected effects and estimates are provided in Appendix Table A. A high mortality risk (a zero subjective survival of living to 75) is associated with lower wealth levels. Individuals with long financial planning horizons (a potential proxy for time rate of preference) have more wealth than those with short planning horizons. Our model explains about one-fifth of the variance in total wealth across households leaving substantial variance in wealth across households unexplained. Although our model includes a far richer array of variables to capture heterogeneity than prior studies of marriage and wealth, there may still be omitted determinants of wealth that are correlated with marital experiences that would affect interpretation of our results.

VI. Further Analysis

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, we saw that never married women have higher lifetime earnings than other groups of women in large part due to their participation in the labor force. Thus we expect this group to also have future claims on Social Security benefits. Table 7 shows mean values of the present, discounted value of

household Social Security wealth and individual pension wealth as of age 62 and mean value of housing and financial wealth for the HRS cohort (all in \$2004).

On average, Social Security wealth and pension wealth of not married men and women is lower than that of married men and women and lowest for not married women compared to not married men. Social Security and pension wealth is a larger component of total wealth for unmarried individuals than for married. For example, among continuously married men, about 60 percent of total wealth, including Social Security, pension and housing and non-housing wealth, comes from future claims on Social Security and pension wealth. For unmarried males (after one divorce) this percentage is 65 and is 67 for unmarried (after one divorce) females. Social Security and pension wealth is 74 percent of total wealth for never married women. Considering only financial and housing wealth, continuously married women have 3.5 times as much wealth as a divorced woman and over 4 times as much wealth as a never married woman. Considering financial, housing, Social Security and pension wealth, the differences are smaller: continuously married women have 2.8 times as much wealth as a divorced woman and 2.7 times as much wealth as a never married woman. Thus, once we consider Social Security and pension wealth, the mean wealth differences between married and unmarried (particularly never married women) 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 and the results are reported in Table 8. Among women in birth cohorts 1931-1941, we find that the negative effect on wealth of being single (all types of singles) compared to being married declines substantially- by about 50 percent for never married women and divorced women with the inclusion of controls for future claims on pension and Social Security wealth. The inclusion of Social Security and

pension wealth measures has the biggest impact on the estimate for widows leaving no remaining wealth difference. The estimated effects of Social Security wealth and pension wealth on financial and housing wealth is positive and is likely due to an unobserved taste for saving. A limitation to these results is that expected Social Security and pension wealth may be underestimated for some categories of not married individuals, particularly not married women with a past divorce, who may be entitled to spousal benefits that could be larger than the amount she is entitled to based on her own labor earnings. For example, previously married, single individuals are entitled to the larger of own or spousal Social Security benefits at age 62 if their prior marriage lasted more than 10 years.⁵

Financial Literacy. Observable differences explain the wealth differences between married and unmarried men but not so for women. We discussed the role of expenses related to children that may explain the gender difference. Additionally, difference in the financial literacy of men and women may also explain some of the remaining difference. For example, previously married women (compared to never married women) 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

⁵ We examined mean Social Security income of women age 62 and over and found married women had only 10 percent more Social Security income than not married women compared to 62 percent more expected Social Security wealth. Thus it is likely the case that the expected Social Security wealth of not married women (divorced or widowed) is higher than we estimate due to uncounted spousal benefits.

in financial literacy by marriage category. We can directly assess if this is the case. 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 9 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 financial literacy question correctly is much lower for divorced women than men with only 14 percent of divorced women answering the question correctly compared to 23 percent of divorced men. Moreover, 23 percent of never married women answered the question correctly. Continuously married women are equally likely to answer the question correctly as never married women suggesting a more complex explanation whereby specialization within marriage may interact with length of time married and timing of marital disruption. Data collection efforts that focus on financial decision making within the household and financial literacy over the lifecycle may shed further light on gender differences in wealth.

VII. Conclusion

This study expands our understanding of how marriage and wealth are related by: one, analyzing the impact of a lifetime of marital events, the timing of past marital events and duration of years spent married on wealth levels near retirement; two, by studying a previously unexplored explanation for wealth differences across these marital group, permanent earnings; three by incorporating into the examination of wealth, future claims on Social Security and pension wealth.

We found 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 were at greater risk of experiencing one or more divorces, experienced them at younger ages, and were less likely to subsequently remarry. On average, continuously married couples had the greatest amount of wealth, more than remarried couples, and not married individuals. Not married individuals who had experienced more than one marital disruption had the lowest amount of wealth. Large differences in the average permanent earnings and current earnings between married and unmarried individuals were factors in wealth differences between these groups, but the small difference in permanent earnings between continuously married and remarried men and women suggested this was not an important explanation for the average (and median) wealth differences between these groups.

Estimation results from models of total wealth produced several main results. First, the estimates revealed generally lower wealth for all marital groups relative to continuously married. In terms of statistical differences, the wealth differences between men by marital category disappeared once we included controls for permanent earnings, future claims on Social Security and pension wealth and multiple other sources of differences. The exception to this result was for men not married after two or more marital disruption. While the group of individuals with more than one past marital disruption is not large (9 percent of our sample of 51-56 year olds), it has been increasing over time.

In contrast to the results for men, we found that the lower wealth of not married women compared to married women was not explained by permanent earnings and other observable differences in education, number of children, mortality risk, risk aversion or financial planning horizon. However, the difference in wealth between these two groups of women declined substantially- by about 50 percent for never married women and divorced women- when adjusted for future claims on Social Security and pension benefits. We pointed to an explanation for

remaining gender differences in wealth by marital status category: 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: differences in financial literacy. We found that even among college educated individuals, financial literacy is the lowest for divorced women. We also found the numbers of year married, all else equal, increased wealth, evidence consistent with the hypothesis that married couples enjoy economies of scale in consumption.

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 is becoming increasingly important. Our findings on the heterogeneity of marriage experiences by individuals in their mid-50's and the relationship of these experiences to financial and housing, pension and Social Security wealth may be of interest to policy makers and economists seeking to understand the economic security of soon to be retired individuals and families.

References

- Becker, Gary S. *A Treatise on the Family*. Cambridge: Harvard University Press (1981).
- Browning, Martin and Annamaria Lusardi, "Household Saving: Micro Theories and Micro Facts," *Journal of Economic Literature*, XXXIV (1996), 1797-1855.
- Cherlin, A. *Marriage, Divorce and Remarriage*. Cambridge, MA: Harvard University Press (1992).
- Coombs, R.H. "Marital status and personal well-being: A literature review." *Family Relations*, 40 (1991), 97-102.
- Dynan, Karen, "How Prudent are Consumers?" *Journal of Political Economy* 101(6) (1993), 1104-1113.
- Gove, W.R., "Sex, marital status, and mortality," *American Journal of Sociology*, 79 (1973), 45-67.
- Gustman, Alan and F. Thomas Juster, "Income and Wealth of Older American Households," in Eric Hanushek and Nancy Maritato, *Assessing Knowledge of Retirement Behavior*, Washington D.C.: National Academy Press (1996).
- Haider, Steven and Gary Solon, "Non-Response Bias in the HRS Social Security Files," RAND DRU-2254-NIA (2000).
- Hill, Martha. "The Wage Effects of Marital Status and Children," *Journal of Human Resources* 14(4) (1979), 579-94.
- House, J.S., Landis, K.R., & Umberson, D. "Social relationships and health," *Science*, 241 (1988), 540-545.
- Hubbard, R. Glenn, Jonathan Skinner and Stephen D. Zeldes, "Precautionary Saving and Social Insurance," *Journal of Political Economy*, 103(2) (1995), 360-399.

- Korenman, Sanders and David Neumark. "Does Marriage Really Make Men More Productive?" *The Journal of Human Resources* 26(2) (1991), 282-307.
- Lillard, Lee and Linda Waite. "Till Death Do Us Part: Marital Disruption and Mortality," *American Journal of Sociology*, 100 (1995), 1131-1156.
- Loughran, David and Julie Zissimopoulos "Why Wait? The Effect of Marriage and Childbearing on the Wages of Men and Women," *Journal of Human Resources*. 44(2) (2009), 326-349.
- Lundberg, Shelly and Elaina Rose. "The Effects of Sons and Daughters on Men's Labor Supply and Wages," *Review of Economics and Statistics* 84(2) (2002), 251-68.
- Lupton, Joseph and James Smith. "Marriage Assets and Savings," Shoshana Grossbard-Shechtman (ed.) *Marriage and the Economy: Theory and Evidence from Advanced Industrial Societies*. New York and Cambridge: Cambridge University Press (2000).
- Lusardi, Annamaria and Olivia Mitchell. "Baby Boomer retirement security: The roles of planning, financial literacy and housing wealth." *Journal of Monetary Economics* 54 (2007), 205-224.
- Mincer, Jacob, "Family Migration Decisions," *Journal of Political Economy* 86(5) (1978), 749-773.
- Modigliani, Franco and Brumberg, Richard, "Utility Analysis and the Consumption Function: An Interpretation of Cross-Section Data," in K. Kurihara, ed., *Post-Keynesian Economics*, New Brunswick: Rutgers University Press (1954).
- Pienta, A., Hayward, M. D., & Jenkins, K. R. "Health consequences of marriage for the retirement years." *Journal of Family Issues*, 21 (2000), 559-586.

- Siegel, J.S. A generation of change: A profile of America's older population. New York: Russell Sage Foundation (1993).
- Smith, James P. Poverty and the Family, in *Divided Opportunities*: Gary Sandefur and Marta Tienda editors, Plenum Publishing Corporation (1988).
- St.Clair, Patricia, D. Blake, D. Bugliari, S. Chien, O. Hayden, M. Hurd, S. Ilchuk, F. Kung, A. Miu, C. Panis, P. Pantoja, A. Rastegar, S. Rohwedder, E. Roth, J. Carroll, J. Zissimopoulos, RAND HRS Data Documentation Version I. (2009).
- Wilmoth, Janet and Gregor Koso. "Does Marital History Matter? Marital Status and Wealth Outcomes Among Preretirement Adults, *Journal of Marriage and Family* 64 (2002), 254-268.
- Zissimopoulos, Julie and Michael Hurd, "Saving for Retirement: Wage Growth and Unexpected Events," Manuscript (2003).

Table 1—Distribution of Lifetime Marriage Disruptions by Current Marital Status Ages 51-56
(percent distribution)

Type of Past Marital Event	Current Marital Status	
	Married	Not Married
No past event (continuously mrd/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
Missing	0.61	0.47
Total	77.82	22.18

SOURCE: Authors' calculations based on the 1992, 1998 and 2004 waves of the HRS and birth cohorts 1931-1941, 1942-1946, 1947-1953.

NOTE: Sample is 8251 respondents ages 51 to 56. Cell percentages total 100. Separated individuals are considered married.

Table 2—Distribution and Mean of Number of Divorces, Age of First Disruption and Year Married For Ages 51-56

Marital History	(%)	Mean
Number of Divorces		0.47
0 divorces	63.31	
1 divorce	27.19	
2+ divorces	8.73	
Missing	0.78	
Age at First Disruption		33.69
No marital disruption	57.28	
<=25	9.49	
26-35	14.94	
36-45	11.40	
46+	5.31	
Missing	1.57	
Years Married (mean)		27.11
0	5.27	
1-9	5.32	
10-19	11.10	
20-29	30.31	
30+	43.40	
Missing	4.60	

SOURCE: Authors' calculations based on the 1992, 1998 and 2004 waves of the HRS and birth cohorts 1931-1941, 1942-1946, 1947-1953.

NOTE: Sample is 8251 respondents ages 51 to 56. Columns may not add to totals due to rounding.

Table 3— Mean and Median Wealth by Lifetime Marriage Disruptions and Current Marital Status: Ages 51-56

Type of Past Marital Event	Mean Wealth (\$2004)			
	Males		Females	
	Married	Not Married	Married	Not Married
No past event (cont.mrd/nvr mrd)	372,708	227,772	366,997	102,876
1 divorce	319,555	196,382	330,370	131,175
2+ disruptions	279,778	123,347	266,112	96,233
1 widowing	368,020	143,932	184,516	131,589
Total	353,637	184,392	347,519	117,850
	Median Wealth (\$2004)			
	Males		Females	
	Married	Not Married	Married	Not Married
No past event (cont.mrd/nvr mrd)	163,082	40,000	172,006	32,404
1 divorce	128,458	55,434	114,571	43,515
2+ disruptions	93,500	37,016	101,766	20,751
1 widowing	184,538	35,351	74,329	46,299
Total	150,050	47,289	154,034	35,615

SOURCE: Authors' calculations based on the 1992, 1998 and 2004 waves of the HRS and birth cohorts 1931-1941, 1942-1946, 1947-1953 respectively.

NOTE: Sample is 8158 respondents ages 51 to 56. Excludes 93 respondents with unknown type of marriage disruption.

Table 4—Median Wealth by Number of Divorces, Age of Change, Years Married: Ages 51-56

	Median Wealth (\$2004)	
	Currently Married	Currently Not Married
Number of Divorces		
0	167,719	36,035
1	119,833	48,528
2+	99,958	25,416
Age at First Event		
<=35	111,382	27,392
36-45	125,438	49,525
46+	93,307	70,565
Years Married		
0	20,511	29,883
1-9	85,798	25,335
10-19	104,047	44,264
20-29	178,930	48,117
30+	160,807	67,459

SOURCE: Authors' calculations based on the 1992, 1998 and 2004 waves of the HRS and birth cohorts 1931-1941, 1942-1946, 1947-1953 respectively.

NOTE: Sample is 8251 respondents ages 51 to 56.

Table 5—Mean Lifetime Earnings and Current Earnings by Marital Categories

	Males		Females	
	Mean Lifetime Earnings (\$2004)			
	Married	Not Married	Married	Not Married
No past event	1,000,943	603,643	303,586	560,647
1 divorce	977,325	843,083	387,604	462,205
2+ (div. or wid.)	861,106	827,071	392,952	444,474
1 widow	934,577	706,314	273,472	329,973
	Current Earnings (\$2004)			
	Married	Not Married	Married	Not Married
No past event	45,523	24,178	18,181	24,029
1 divorce	41,979	28,037	20,738	26,699
2+ (div. or wid.)	34,977	32,325	20,514	21,618
1 widow	35,796	22,157	15,651	15,617

SOURCE: Authors' calculations using SS earnings and 1992-2004 HRS.

NOTE: Sample is all respondents for current earnings and with matched Social Security earnings records for lifetime earnings.

Table 6—OLS Models of Total Wealth (Financial and Housing)

	(1) Wealth (base)	(2) Wealth (full)
CURRENT MARITAL STATUS + PAST EVENTS		
[Continuously married - reference]		
MALE Married (current status – past event(s)):		
Currently married – 1 divorce, 0 widow	-49,108.3**	-21,417.6
Currently married – 0 divorce, 1 widow	4,117.0	40,520.3
Currently married – 2 past events	-88,857.5**	-38,287.1*
MALE Single (current status – past event(s)):		
Currently not married – 0 (never married)	-134,887.8**	-70,629.8**
Currently not married – 1 divorce, 0 widow	-103,438.5**	-52,529.3**
Currently not married – 0 divorce, 1 widow	-116,394.8**	-61,424.7
Currently not married – 2 past events	-161,857.7**	-104,417.7**
FEMALE Married (current status – past event(s)):		
Currently married – 1 divorce, 0 widow	-40,772.9**	-36,969.8**
Currently married – 0 divorce, 1 widow	-63,875.2**	-27,452.4
Currently married – 2 past events	-75,894.3**	-64,402.0**
FEMALE Single (current status – past event(s)):		
Currently not married – 0 (never married)	-162,664.5**	-148,530.7**
Currently not married – 1 divorce, 0 widow	-151,098.6**	-156,113.2**
Currently not married – 0 divorce, 1 widow	-120,237.1**	-105,087.7**
Currently not married – 2 past events	-170,721.9**	-164,851.3**
MARITAL HISTORY		
Marriage Years		
Male total years spent in married state		1,871.1**
Female total years spent in married state		1,307.8**
Male Age At First Separation:		
Male age at first separation <26		2,545.2
Male age at first separation 36-45		-10,645.1
Male age at first separation >45		-13,296.1
Female Age at First Separation:		
Female age at first separation <26		27,038.3*
Female age at first separation 36-45		-22,968.8
Female age at first separation >45		5,754.4
EARNINGS		
Lifetime Earnings		
Male lifetime earnings		0.085**
Female lifetime earnings		0.026**
Current Earnings		
Male current earnings		1.203**
Female current earnings		1.028**
Age, race, cohort	Yes	Yes
Lifetime earnings, current earnings other controls	No	Yes
Observations	16,512	16,512
R-squared	0.08	0.20

NOTES: Birth cohorts 1931-1953. ‘*’ significant at 5%, ‘**’ significant at 1%. Other model covariate estimates given in Appendix Table A. Other controls in Model (2) include (separately for males and females) education, number of children, mortality risk as subjective probability of survival to age 75, risk aversion, financial planning horizon.

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

	Males		Females	
	Mean Household Social Security Wealth at Age 62 (\$)			
	Current Marital Status			
	Married	Not Married	Married	Not Married
No past event	205,902	96,773	207,429	85,182
1 divorce	206,790	112,649	205,862	81,537
2+ (div. or wid.)	197,520	112,461	203,704	78,045
1 widowing	199,312	97,438	198,772	67,289
	Mean Household Pension Wealth at Age 62 (\$)			
	Current Marital Status			
	Married	Not Married	Married	Not Married
No past event	343,482	161,410	331,193	159,830
1 divorce	379,548	200,915	359,657	127,998
2+ (div. or wid.)	352,220	247,169	330,747	96,860
1 widowing	406,095	166,181	297,316	83,236
	Mean Household Housing and Financial Wealth (\$)			
	Current Marital Status			
	Married	Not Married	Married	Not Married
No past event	350,628	267,090	341,279	84,913
1 divorce	273,115	167,190	284,112	101,631
2+ (div. or wid.)	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—OLS Models of Wealth With Pension and Social Security Wealth

	Base Model	Full Model	Full w/ Pension + SS
CURRENT MARITAL STATUS + PAST			
[Continuously married – reference]			
Male Married (current status – past event(s)):			
Currently married – 1 divorce, 0 widow	-29,508.8**	-1,467.4	-4,910.3
Currently married – 0 divorce, 1 widow	6,829.4	51,379.3	49,797.4
Currently married – 2 past events	-73,538.6**	-22,347.5	-25,965.7
Male Single (current status – past event(s)):			
Currently not married – 0 (never married)	-109,199.5**	-30,305.6	4,321.9
Currently not married – 1 divorce, 0 widow	-101,891.1**	-50,752.6*	-17,559.5
Currently not married – 0 divorce, 1 widow	-119,880.6**	-49,961.9	-17,945.9
Currently not married – 2 past events	-140,446.6**	-98,753.4**	-66,961.9*
Female Married (current status – past event(s)):			
Currently married – 1 divorce, 0 widow	-26,494.8*	-27,637.0*	-31,193.7*
Currently married – 0 divorce, 1 widow	-51,713.4*	-24,793.5	-28,675.4
Currently married – 2 past events	-79,757.4**	-67,621.9**	-67,395.8**
Female Single (current status – past event(s)):			
Currently not married – 0 (never married)	-148,396.8**	-139,932.6**	-66,069.1*
Currently not married – 1 divorce, 0 widow	-141,315.1**	-157,044.8**	-77,220.0**
Currently not married – 0 divorce, 1 widow	-111,421.9**	-108,919.5**	-32,547.7
Currently not married – 2 past events	-157,185.4**	-150,206.3**	-70,568.5**
MARITAL HISTORY			
Marriage Years			
Male total years spent in married state		2,384.6**	2,464.2**
Female total years spent in married state		1,116.0	982.9
Male Age At First Separation			
Male age at first separation <26		-14,234.5	-10,800.9
Male age at first separation 36-45		-10,562.0	-9,381.1
Male age at first separation >45		-33,141.9	-33,213.8
Female Age at First Separation			
Female age at first separation <26		30,786.8*	36,331.7*
Female age at first separation 36-45		-19,716.1	-14,942.0
Female age at first separation >45		21,009.2	27,592.1
EARNINGS AND PENSIONS			
Lifetime Earnings			
Male lifetime earnings		0.076**	0.034*
Female lifetime earnings		0.020	-0.040*
Current Earnings			
Male current earnings		1.484**	1.349**
Female current earnings		0.734**	.0637**
Pension and Social Security Wealth			
Male pension wealth at age 62 – 2004\$			0.040**
Female pension wealth at age 62 – 2004\$			0.417**
Male Social Security Wealth at age 62 –2004\$			0.081**
Female Social Security Wealth at age 62 -2004\$			0.643**
All Other Controls			
	No	Yes	Yes
Observations	10,910	10,910	10,910
R-squared	0.07	0.20	0.22

NOTES: Birth cohorts 1931-1941. ‘*’ ‘**’ significant at 5%, 1%.

Table 9—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 A—Models of Total Wealth

	Base	Full
Male	670,846.508 (360,378.936)	1146700.753 (340,337.907)**
MARITAL STATUS, MALE – PAST EVENTS		
currently married - 1 div, 0 wid	-49,108.247 (9,583.196)**	-21,417.637 (11,528.918)
currently married - 0 div, 1 wid	4,117.017 (29,590.390)	40,520.313 (29,165.956)
currently married - 2 past events - div or wid	-88,857.480 (15,490.003)**	-38,287.111 (16,584.083)*
currently single - 0 div, 0 wid	-134,887.779 (19,047.160)**	-70,629.786 (24,705.827)**
currently single - 1 div, 0 wid	-103,438.474 (16,329.362)**	-52,529.322 (19,991.676)**
currently single - 0 div, 1 wid	-116,394.793 (35,728.453)**	-61,424.651 (36,823.047)
currently single - 2 past events - div or wid	-161,857.652 (21,089.412)**	-104,417.663 (21,835.566)**
currently single - 0 div, 0 wid	-283,627.868 (307,306.826)	-333,650.086 (289,382.733)
currently married - 0 div, 0 wid	-37,414.805 (46,148.015)	23,718.420 (44,470.428)
category missing	-91,729.140 (36,390.887)*	-55,876.966 (43,309.202)
MARITAL STATUS, FEMALE – PAST EVENTS		
currently married - 1 div, 0 wid	-40,772.930 (9,415.684)**	-36,969.769 (10,931.753)**
currently married - 0 div, 1 wid	-63,875.234 (22,157.885)**	-27,452.410 (22,071.733)
currently married - 2 past events - div or wid	-75,894.348 (15,131.932)**	-64,402.033 (16,252.104)**
currently single - 0 div, 0 wid	-162,664.512 (17,537.077)**	-148,530.714 (22,596.723)**
currently single - 1 div, 0 wid	-151,098.647 (11,996.428)**	-156,113.231 (16,203.149)**
currently single - 0 div, 1 wid	-120,237.057 (14,936.158)**	-105,087.720 (19,653.007)**
currently single - 2 past events - div or wid	-170,721.910 (14,427.111)**	-164,851.308 (16,213.659)**
currently married - 0 div, 0 wid	-42,499.224 (46,614.131)	-22,188.245 (44,477.288)
category missing	-163,044.697 (36,215.002)**	-85,001.052 (40,888.359)*
AGE		
male age end of interview	-17,092.032 (11,666.316)	-47,318.946 (11,023.012)**
male age squared	227.270 (110.750)*	514.281 (104.491)**
female age end of interview	11,610.982 (7,478.859)	3,026.099 (7,136.719)
female age squared	-68.801	21.437

	(74.289)	(70.490)
RACE		
male race is black	-153,295.086 (10,318.527)**	-82,270.704 (10,111.629)**
male race is other	-105,805.142 (16,130.925)**	-54,632.036 (15,361.978)**
female race is black	-146,744.013 (8,530.736)**	-111,939.395 (8,309.974)**
female race is other	-98,633.599 (14,039.189)**	-60,236.918 (13,341.556)**
BIRTH COHORT		
male cohort 1942-47	41,800.084 (10,634.394)**	2,108.240 (10,247.614)
female cohort 1942-47	27,940.550 (9,717.054)**	-16,388.519 (9,402.996)
male cohort 1948-53	81,399.346 (9,962.544)**	32,935.292 (9,823.746)**
female cohort 1948-53	60,941.926 (8,881.113)**	-1,880.125 (8,878.950)
MARITAL HISTORY		
male total years spent in married state		1,871.079 (516.834)**
male total years spent in married state missing		14,006.718 (24,826.941)
female total years spent in married state		1,307.775 (474.611)**
female total years spent in married state missing		-4,842.348 (21,612.905)
male age at first separation<26		2,545.232 (16,058.642)
male age at first separation 36-45		-10,645.125 (13,987.939)
male age at first separation>44		-13,296.098 (18,804.991)
female age at first separation-missing		42,319.998 (37,929.358)
female age at first separation<26		27,038.296 (12,231.762)*
female age at first separation 36-45		-22,968.798 (12,764.463)
female age at first separation>44		5,754.374 (17,611.987)
female age at first separation-missing		-2,750.484 (33,825.117)
EDUCATION		
male less than hs		-46,144.368 (9,857.287)**
male some college		48,494.328 (9,442.115)**
male college plus		150,217.022 (9,865.803)**
female less than hs		-71,282.752 (8,407.221)**
female some college		63,656.390

	(8,088.620)**
female college plus	157,599.428
	(9,483.793)**
NUMBER OF CHILDREN	
male has no children	20,054.868
	(13,927.120)
male has 4+ children	-35,013.658
	(7,969.593)**
female has no children	766.345
	(13,987.227)
female has 4+ children	-25,189.439
	(6,824.696)**
MORTALITY RISK	
male 0% prob of living to age 75	-46,907.980
	(14,628.968)**
male 1-49% prob of living to age 75	-31,881.102
	(11,503.966)**
male 50% prob of living to age 75	-17,936.395
	(9,755.243)
male 100% prob of living to age 75	-7,081.702
	(10,470.197)
male missing prob of living to age 75	18,969.736
	(21,894.978)
female 0% prob of living to age 75	-74,011.380
	(13,998.767)**
female 1-49% prob of living to age 75	-40,296.002
	(10,384.121)**
female 50% prob of living to age 75	-21,980.400
	(8,307.385)**
female 100% prob of living to age 75	19,339.124
	(8,304.180)*
female missing prob of living to age 75	-23,363.379
	(18,300.521)
RISK AVERSION	
male least risk averse	13,156.059
	(10,605.693)
male 3rd most risk averse	-25,351.272
	(11,917.751)*
male 2nd most risk averse	-10,847.509
	(10,871.487)
male income risk aversion missing	17,056.705
	(23,371.511)
female least risk averse	30,446.659
	(9,864.487)**
female 3rd most risk averse	8,181.146
	(10,373.863)
female 2nd most risk averse	17,560.595
	(9,269.801)
female income risk aversion missing	-2,299.825
	(18,091.345)
FINANCIAL PLANNING HORIZON	
male 5-10yr financial planning horizon	31,040.928
	(8,091.444)**
male >10yr financial planning horizon	47,373.392

		(11,874.674)**
male missing financial planning horizon		16,624.131
		(23,295.603)
female 5-10yr financial planning horizon		41,705.178
		(7,110.747)**
female >10yr financial planning horizon		72,067.847
		(10,311.555)**
female missing financial planning horizon		31,216.954
		(17,953.501)
EARNINGS		
male present discounted value of SS lifetime earnings		0.085
		(0.010)**
male missing lifetime earnings		106,686.987
		(11,293.955)**
female present discounted value of SS lifetime earnings		0.026
		(0.013)
female missing lifetime earnings		35,175.227
		(8,179.111)**
male current earnings		1.203
		(0.078)**
female current earnings		1.028
		(0.147)**
PENSIONS		
male household pension missing		-92,444.159
		(50,544.104)
male defined benefit only household pensions		-75,675.120
		(9,933.315)**
male defined contribution only household pensions		-43,455.338
		(10,179.148)**
male both types of household pensions		-59,586.208
		(9,967.990)**
female household pension missing		-2,173.581
		(35,998.348)
female defined benefit only household pensions		-69,968.988
		(8,819.322)**
female defined contribution only household pensions		-25,871.557
		(9,044.359)**
female both types of household pensions		-37,485.782
		(9,121.259)**
Constant	-126,955.620	-2,781.035
	(187,430.391)	(178,022.636)
Observations	16512	16512
R-squared	0.08	0.20

SOURCE: Authors' calculations based on the 1992-2004 HRS birth cohorts 1931-1953.

NOTE: '*' significant at 5%, '**' significant at 1%.

Appendix Table B—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
Prob. Live 75									
Missing	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									
Missing	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									
Missing	13.42	10.83	8.84	14.41	8.25	2.71	5.06	6.33	11.50
1. Few mo.	11.64	13.12	14.87	13.56	21.99	22.17	23.63	24.05	13.67
2. Year	7.68	8.19	7.97	5.93	12.37	10.59	10.97	17.72	8.33
3. 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 (#)									
Missing	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									
Missing	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.	4,337	1,441	464	118	291	406	237	79	7,373

Appendix Table B 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
Prob. Live 75									
Missing	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									
Missing	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									
Missing	6.35	5.26	3.83	5.85	7.23	4.34	3.78	5.91	5.75
1. Few mo.	15.13	18.62	18.09	23.41	23.99	24.94	23.44	24.03	18.04
2. Year	9.89	8.44	10.21	10.73	10.12	6.95	10.78	11.81	9.61
3. 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 (#)									
Missing	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
Pensions									
Missing	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.	5,289	1,445	470	205	346	806	529	491	9,581