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PATTERNS OF DISSAVING IN RETIREMENT

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The Public Policy Institute, formed in 1985, is part of the Research Group of AARP. One of the missions of the Institute is to foster research and analysis on public policy issues of importance to older Americans. This paper represents part of that effort.

The views expressed herein are for information, debate, and discussion, and do not necessarily represent formal policies of AARP.

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Foreword

One of AARP's strategic goals is to ensure that its "members have information and services to help them accumulate, manage, and preserve assets to meet current and future financial needs and lifestyle preferences." This means providing people with tools to make wise decisions about saving and investing during their working years; however, early retirement, coupled with increases in life expectancy, points to the need to worry about managing and preserving assets during retirement as well.

The life-cycle hypothesis (LCH) of consumption predicts asset decumulation or "dissaving" in old age. In the theoretical ideal world, individuals and households would save sufficiently during their working years, consume during their retirement years, and die at the point that their assets are exhausted.

Unfortunately, the real world is not so obliging. In the real world, people generally do not know how long they are going to live, whether they will face catastrophic medical expenses, if they will need nursing home care, if their children will be able to provide for them, or, indeed, if it will be the children who require financial assistance. Dying broke might be the goal, but living broke is not. Judicious consumption must concern all but the wealthiest retirees.

Of course, few people need fear exhausting all resources in retirement, since virtually every retiree receives Social Security benefits, which continue for a lifetime, and many of us can count on lifelong income from annuities. Still, other forms of wealth can be used up. This wealth—often referred to as bequeathable wealth, since whatever is left over can be willed to heirs—helps retirees maintain a certain standard of living, assist children and grandchildren, cover unexpected expenses, insure against contingencies, and/or just have fun.

AARP sought a better understanding of how, why, at what rate, and when retired individuals and/or households consume resources and spend wealth in retirement. To what extent do retirees actually "dissave" and under what conditions are they likely to do so? What are the determinants of dissaving? How, for example, does dissaving vary by initial asset accumulation, type of asset, annuity income, marital status, family economic resources, health status, or desire to leave a bequest? Research conducted by RAND for AARP was designed to shed light on who might be at risk of prematurely exhausting their financial assets, thus assisting AARP in its efforts to help people maintain resources over an increasing number of retirement years.

RAND's research led to this report, *Patterns of Dissaving in Retirement*, by Steven Haider, Michael Hurd, Elaine Reardon, and Stephanie Williamson. The analyses here rely on two data sets: (1) the Social Security Administration's 1982 New Beneficiary Data System (NBDS) and its 1991 follow-up, to examine dissaving among people in their sixties during the 1980s; and (2) the Asset and Health Dynamics Among the Oldest Old (AHEAD, sponsored by the National Institute on Aging, to study dissaving among those

in their seventies and above in the early 1990s.

As the following pages indicate, RAND's investigators observed little change in wealth over the nine years of the NBDS, in which the respondents were still relatively young. Somewhat unexpectedly, however, dissaving did not characterize the older respondents in AHEAD. It may be, as the report suggests, that retirees are spending down as planned, but that high returns to investments have added to income more rapidly than retirees can spend the money. Nonetheless, *Patterns of Dissaving in Retirement* highlights the fact that there is far more going on in retirement than just spending down, and that financial planning and management may thus be as important to retirees as they are to workers and their families.

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Introduction

Older persons primarily rely on pensions, both private and public, and on assets to support themselves after retirement. Pensions are generally paid out as a stream of income that is guaranteed until the person dies, but assets are spent down and can run out well before then. Liquidating assets properly over a number of years requires careful planning, and the rate at which households "dissave," or spend down those assets, will depend on a number of factors. Households in their seventies, for example, should dissave more slowly than those in their eighties because they have more years of future consumption to finance. Health status, marital status, and initial wealth holdings can also influence dissaving.

Purpose

In this report, we address two main questions. First, what is the overall rate of dissaving for households with at least one older person? Second, to what extent are there differences in dissaving for these households, and what are the household characteristics associated with these differences? To answer these questions, we review previous theoretical and empirical research on dissaving patterns and provide new results from two data sets for the 1980s and 1990s.

Methodology

After an introduction, Section 2 reviews the previous theoretical and empirical literature on dissaving. We first consider the theoretical model that will motivate our empirical work, the life-cycle hypothesis (LCH) of consumption. The most basic version of the model predicts that individuals choose a level of consumption that will exhaust their resources at the time of death. We then briefly consider extensions that allow for a bequest motive and for uncertainty. Finally, we review the previous empirical research on dissaving.

Section 3 describes the data we use to provide new results for the 1980s and 1990s. We analyze two data sets, the Social Security Administration's New Beneficiary Data System (NBDS) and the Asset and Health Dynamics Among the Oldest Old (AHEAD), sponsored by the National Institute on Aging. Both data sets collect information about wealth, income, health, living arrangements, and demographic characteristics for older persons. The NBDS contains information for older persons who received Social Security retired worker, spousal, or survivors' benefits for the first time in 1980-81. They were interviewed in 1982 and again in 1991. The AHEAD contains information on older households in the 1990s regardless of their Social Security history. We use data from the 1993 and 1995 waves of the AHEAD. The NBDS contains a sample of individuals who are in their sixties in the first year of its panel, and the AHEAD contains a sample of individuals who are over the age of 70 in the first year of its panel. For both surveys, we analyze household data for all age-eligible individuals (i.e., those

born before 1924 in the AHEAD and between 1914 and 1920 in the NBDS) and use weights to adjust our samples.

In Section 4, we examine the basic patterns of dissaving, focusing on the entire wealth distribution. We discuss the pitfalls of measurement error in this section, which is always a concern when using survey data to study wealth and savings. We argue in this section that a reasonable strategy for minimizing the effect of measurement error is to aggregate the data, and we present results on wealth and savings using this strategy.

In Section 5, we provide a multivariate analysis of dissaving. This approach is useful because it facilitates studying a number of possible influences simultaneously, such as health status, education, portfolio composition, and the like. Thus, while the results in Section 4 provide more robust evidence on levels and trends in wealth holdings, the results in Section 5 suggest the relative importance of various factors in explaining variations in savings behavior.

In Section 6, we summarize our conclusions. Further analytic details and empirical results are provided in the appendices.

Principal Findings

The results from the NBDS for the 1980s show changes in wealth to be fairly flat. Mean wealth grew by just under 1 percent per year for the nine years of the sample period, while median wealth declined by about a quarter of a percentage point per year. In short, for this relatively young sample, wealth remained relatively constant overall. This is in contrast to results from the Retirement History Survey (RHS) for the 1970s but consistent with the Survey of Income and Program Participation (SIPP) for the 1980s. The NBDS results are not inconsistent with the life-cycle model, which would predict dissaving after the age of 70 under a reasonable set of parameters.

The results from the AHEAD data for the 1990s suggest that most sample members enjoyed wealth increases. Given that these individuals are aged 70 and above, these results are anomalous in light of the life-cycle hypothesis of consumption and other empirical research for previous time periods. One possible explanation for the anomalous results is that the wealth growth was due to the dramatic rise in stock prices over the two years of the AHEAD sample period. Older households might have formed their expectations about how quickly they should spend down their wealth before the market returns grew so high. Thus, households simply may not be dissaving because two years may be too short a period for households to make large adjustments to their spending behavior.

Both the NBDS and AHEAD indicate that older persons shift their wealth across types of assets. We find evidence that older persons hold less housing wealth and more non-housing wealth. In particular, we find that older households increased their equity holdings, as was true for the rest of the population.

We find that there is considerable heterogeneity in savings patterns across households in both data sets. Less well-off households, whether measured by wealth, income, education, or health, dissaved more rapidly than better-off households. Generally, there is increasing wealth inequality: households with few assets are more likely to dissave and households that own considerable wealth are more likely to save. Less educated households had lower wealth holdings and were more likely to dissave, as were households that did not own stocks or bonds, lower-income households, and widowed households. Not everyone enjoyed the apparent wealth gains during the 1990s.

We also find that households where health declined between the waves studied were more likely to dissave, but we did not find much evidence that unanticipated expenditures, for health expenses in particular, led to large-scale dissaving. While this may happen to a given household, the phenomenon is not widespread. For example, we found that out-of-pocket nursing home costs were high if the household had to pay for nursing home care. However, as most households do not pay anything for such care, nursing home costs are not an adequate explanation for the dissaving we find among widows, nor among other groups in the data. Similarly, though we find that households in poor or declining health dissaved, the magnitude of the change in wealth is not large, so that averaged over the population, the change in wealth is negligible.

Finally, we do not see strong evidence of a bequest motive, the explanation some researchers have given for slow dissaving among older households. We examine this by comparing savings patterns across households with and without children, as children are often the recipients of bequests. We find that the savings patterns of the two types of households are quite similar. One explanation might be that parents give resources to their children before they die, rather than waiting to bestow a bequest. This does not seem to be the case: wealthier households are likely to give their children money even before they die, but they are accumulating wealth at the same time. We conclude that our data do not provide strong evidence of a bequest motive. We also found resource flows in the other direction, with poorer households receiving money from their children.

Conclusions

We highlight four main findings from our analysis. First, the results from the NBDS data for the 1980s, representing households with people in their sixties, show changes in wealth to be fairly flat. This is in contrast to some of the previous empirical evidence for the 1970s but not for the 1980s, and the flat rate is not inconsistent with the life-cycle hypothesis. Second, the results from the AHEAD data for the 1990s, representing households with people above age 70, show overall wealth increases. These results are contrary to previous research and can be explained in part by the dramatic rise in stock prices during the AHEAD sample period. Third, there is considerable heterogeneity in saving patterns across households in both data sets, suggesting significant and increasing wealth inequality. Finally, far from being mechanically and somewhat passively spent down, the wealth of older persons appears to be actively managed after

retirement; overall, the wealth of older persons is shifting out of housing and toward other assets, equities in particular.

Overall, we find that many of the important economic trends noted for the general population over the last decade have similarly affected older persons. The spectacular returns in the equity market, the shift to equity holdings, and the increase in inequality that have received much attention in the popular press and in the academic literature also have had important effects on the saving behavior of older persons. Widespread changes in the economy do not diminish in relevance simply because households have retired from the labor force.

1. Introduction

There is considerable public concern about whether older persons have sufficient resources to finance adequate consumption. Most older persons do not have substantial income from work after age 70, so they must plan how to finance their consumption in their later years from the wealth accumulated in their working years. Broadly speaking, older persons have two forms of economic resources: (1) annuities such as Social Security and pension income and (2) assets such as housing or stock holdings.[1] A key distinction between these is that the former cannot be spent down. For example, Social Security is a steady stream of income that will be paid until the individual dies. Stock holdings, however, can be spent down and can run out long before the owner dies. We refer to this liquidation of stock holdings or other assets as dissaving. This report documents what kinds of assets older persons hold and the extent to which they spend down these assets, or dissave.

We address two main questions. First, what is the overall rate of dissaving for households with at least one older person? Second, to what extent are there differences in dissaving for these households, and what are the household characteristics associated with these differences? To answer these questions, we review previous theoretical and empirical research on dissaving and provide new results from two data sets for the 1980s and 1990s.

The simplest economic model of dissaving predicts that a household would spend down its wealth in a steady fashion until death, when its wealth would equal exactly zero. This provides one benchmark for analyzing dissaving patterns. There are, however, many reasons why a household might have assets after all members die. The members may intend to leave bequests to children. Alternatively, older persons may anticipate expenses for emergency or long-term medical care and therefore conserve some household savings as a precautionary measure.[2] Other uncertainties that affect how quickly older persons choose to spend down their wealth include the number of remaining years of life, whether older persons can rely on family for support, and how the economy, particularly the stock market, will perform. Using the life-cycle hypothesis (LCH) as a guide, we also examine some of these other considerations.

To address questions of dissaving by older persons, we review previous empirical literature and provide analyses of new data. We base our new analyses on two data sets, the Social Security Administration's New Beneficiary Data System (NBDS) and the Asset and Health Dynamics Among the Oldest Old (AHEAD), sponsored by the National Institute on Aging. Both data sets collect information about wealth, income, health, education, living arrangements, and demographic characteristics of older persons. The

[1] Strictly speaking, not all pensions are annuities. For example, individuals can often choose at retirement to receive their pension as a lump-sum payment or as an annuity. In addition, it is possible to purchase private annuities. These issues are discussed below.

[2] These savings may be bank savings, other investments, or the purchase of various forms of insurance, such as life insurance.

NBDS includes information for the 1980s, and the AHEAD has information for the early 1990s. Together, these data sets provide important information on dissaving by older persons in the last 20 years.

We highlight four main findings. First, the results from the NBDS data for the 1980s, representing households with people in their sixties, show changes in wealth to be fairly flat. This is in contrast to some of the previous empirical evidence for the 1970s, but not for the 1980s. It is also not inconsistent with the LCH under some reasonable parameter assumptions which suggest dissaving should begin after about age 70. Second, the results from the AHEAD data for the 1990s, representing households with people above age 70, show an overall increase in wealth. This result is contrary to previous research and to the LCH and is partly explained by the dramatic rise in stock prices during the AHEAD sample period. Our third broad finding is that there is considerable heterogeneity in saving patterns across households in both data sets, with significant and increasing wealth inequality. Fourth, far from being mechanically and somewhat passively spent down, the wealth of older persons appears to be actively managed after retirement; overall, the wealth of older persons is shifting out of housing and toward other assets, equities in particular.

In addition to these broad conclusions, we note a few other findings of interest. First, we did not find much evidence that unanticipated expenditures led to large-scale dissaving. For example, we find that out-of-pocket nursing home costs were high if the household had to pay for nursing home care, but most households do not pay anything for such care, so these costs do not affect overall dissavings rates. In addition, we find that households with people in poor or declining health dissave some, but the magnitude of the change in wealth is not large; we suspect that older households are largely aware of their vulnerability to sudden increased expenses and plan accordingly. Second, we do not see strong direct evidence of a bequest motive, where the strength of that motive is operationalized by comparing households with and without children. In particular, individuals with children dissave at about the same rate as do households without children.

We organize this report as follows. In Section 2, we review the previous theoretical and empirical literature on dissaving. We describe in detail the data sets used for our analysis in Section 3, as well as the characteristics of our samples. In Section 4, we discuss methodological issues in measuring dissaving, describe its general patterns, and examine how it varies with observable characteristics; we focus on univariate analyses of aggregated data in this section. In Section 5, we provide a multivariate analysis of dissaving at the individual level. Section 6 summarizes and discusses our results. The appendices provide additional technical information and supplementary tables.

2. What Do We Know About Dissaving? A Selective Literature Review

As a first step in our analysis, we summarize the economic theory that underlies much of the research on how elderly households spend down their wealth; this theory guides our analysis. In Section 2.2, we discuss four methodological issues that arise in measuring dissaving. Previous empirical research is covered in Section 2.3.

2.1. *Theoretical Underpinnings: The Life-Cycle Hypothesis of Consumption*

A large body of theoretical literature in economics concerns dissaving behavior. The central model of this literature is the life-cycle hypothesis of consumption, or LCH (Modigliani and Brumberg, 1954).

The fundamental ideas underlying the LCH are straightforward. Older persons accumulate wealth over their lifetimes to finance consumption after retirement. Upon retiring, they determine how much wealth is available to them to finance household consumption over the remainder of their lives. Two broad categories of resources are available to finance this consumption, annuity income and bequeathable wealth. Common types of annuity income are Social Security payments and many pension plans that pay a steady stream of income until death. Bequeathable wealth, on the other hand, is wealth that can be passed on to heirs, such as housing, savings accounts, and stock holdings. The simple LCH model assumes that the date of death is known (so that households know how many years they must finance consumption) and predicts that households choose a path of consumption that will exhaust their bequeathable wealth by the time the last household member dies.

Consider, for example, a 72-year-old widow with annuity income of $10,000 and bequeathable wealth of $60,000. Assume for the sake of simplicity that she has no heirs, and that she knows she will live for exactly ten more years. If she chooses to consume all her wealth at a steady rate over those 10 years (and ignoring interest on her remaining bequeathable wealth), she would have $6,000 a year to spend in addition to her $10,000 income. At death, her wealth would be zero. Of course, rather than consuming her wealth at a steady pace, it is more likely that her dissaving rate will depend on the real rate of interest, her preferences for present or future consumption, her interest in leaving a bequest, and her actual life expectancy. Still, we would expect her wealth to decline with increasing age.

More technically, the simplest form of the LCH specifies that households derive utility only from consumption, and that lifetime utility is based on time-separable utility from consumption, i.e., that utility from consumption today is independent of utility in a past or future period (Yaari, 1965). A condition of lifetime utility maximization is that wealth will decline to zero by the date of death, assuming the date of death is known. If that date is uncertain, but the maximum age to which anyone can live is both fixed and known, wealth must decline to zero by that maximum age. The model also assumes that bequeathable wealth cannot become negative and borrowing against future annuities is not

allowed. With these assumptions, the LCH yields equations that, along with initial wealth holdings, predict the path of consumption as a function of initial wealth, annuity income, age and survivorship, and personal preference.

There are two important considerations absent from this basic LCH model: unanticipated shocks to the household and the interest of the household in leaving a bequest. The predictions of the life-cycle model are based upon the anticipated rates of return on investments and normal patterns of expenditures. Actual changes in household wealth, however, may differ from intended changes because of unanticipated expenditures. Such expenditures include those associated with severe health problems or widowhood. Older persons may, as a precaution, keep some savings in anticipation of such events, although very little is known about how these events actually affect dissaving patterns. To empirically address the importance of possible unanticipated expenditures, we examine the effects of health, medical, and funeral expenditures on dissaving, as well as the characteristics suggested by the basic LCH model (such as marital status and age).

Another potentially important unanticipated shock is that actual changes in wealth could differ from intended changes in wealth due to unexpected gains or losses on assets. Older persons holding ten-year Treasury notes issued in 1982, for example, realized a substantial gain in real interest paid on these bonds as inflation rates declined throughout the 1980s. Likewise, households holding securities during the 1980s would have realized a substantial gain in capital accumulation, as the S&P 500 had an 8.9 percent annual real rate of return after 1982. To the extent that older persons in the early 1980s did not anticipate such large rates of return, they would have under-consumed, dissaving at a slower rate than they otherwise would have. This suggests that portfolio composition may be an important correlate of wealth change over time and thus we include it in our analysis.

The second consideration that the basic LCH does not take into account is preferences for leaving assets to survivors, either to an heir or to an institution (e.g., charitable organization). Planned bequests will reduce dissaving so that wealth can be passed on to survivors. Depending on the form and condition of the bequest, wealth could in fact increase with age (Hurd, 1989). Many researchers have argued that even though the elderly may dissave, the rate of dissaving is so low that a bequest motive must be important (Bernheim, 1987; Modigliani, 1986, 1988; Kotlikoff, 1988; Kotlikoff and Summers, 1988). We examine bequest motives empirically. In particular, we suppose that parents have a stronger bequest motive than non-parents do and, therefore, that they will dissave more slowly.

2.2. *Methodological Issues in Measuring Dissaving*

Before turning to the results of previous research on dissaving, we note four methodological issues that arise when empirically analyzing dissaving behavior. First, empirical studies usually focus on the dissaving of bequeathable wealth and assume that annuity income is exogenous (or given). Strictly speaking, this assumption is not correct.

For example, individuals can often choose whether they will receive their pension as a lump-sum payment or as an annuity when they retire. In addition, annuity income (largely pension and Social Security payments) is determined by labor market decisions, and some forms can also be privately purchased. However, these decisions are generally made well before the average age of the individuals we study, and once made, the subsequent stream of income is not affected by decisions about consumption. Thus, in keeping with much of the previous empirical research on this topic, we assume that annuity income is exogenous and focus instead on the dissaving of bequeathable wealth, which is affected by the decisions made in the years we observe them.

Second, early work on dissaving used cross-sectional data to study the dissaving of older households because these were the only data available. Results from cross-sectional data, however, can be misleading, as is well known in the literature. Younger cohorts are typically wealthier than older ones because they were working in calendar years characterized by higher productivity in the economy. An additional problem with cross-sectional data is that wealthier persons tend to live longer. Over time, as those in poorer households die, only wealthier households are left in the data. If richer and poorer households had the same dissaving patterns, this would not be a problem, but in fact they do not. Jianakoplos, Menchik, and Irvine (1989) create cross-sectional estimates from panel data and demonstrate that it is not possible to correct the cross-sectional estimates for these kinds of bias.

Although they are superior to cross-sectional data sets for measuring dissaving, panel sets also present some problems. In exchange for collecting more information about the same households over time, panel studies usually collect information on fewer households, making small sample sizes a concern. Over the last 20 years, more high-quality panel data sets, with larger numbers of older households, have become available. Nevertheless, interpreting changes across waves of a panel data set that are only a few years apart can confound true behavioral changes with changes induced by macroeconomic shocks. For example, changes in saving across waves could be affected by a recession or by an economic boom. Households might intend to dissave, but their non-housing wealth could increase unexpectedly, perhaps because of large returns from the stock market. As discussed later, we suspect this occurred in the early 1990s in the AHEAD sample.

A third methodological concern is that measurement error is expected to be much greater for wealth than for other household characteristics, such as income. Household members often do not know exactly how much wealth they hold. It is easier, for example, for people to remember how much they earned from their last paycheck than it is to report housing equity, which requires up-to-date knowledge of sales of similar homes in the local housing market. Moreover, unlike measures of employment and earnings, measures of wealth and the techniques for gathering them are still evolving. The problem is most severe for variable-priced forms of wealth, such as businesses and stock holdings whose value may change frequently.

A fourth methodological issue is non-response for questions measuring wealth. Total wealth is usually measured as the sum of many underlying components, each of which is the subject of separate questions, because this technique aids people in remembering all of their wealth. If a household respondent fails to answer any one of these questions, however, household total wealth cannot be calculated. From a statistical perspective, this problem cannot be ignored because it is likely that it arises non-randomly. In particular, households that are unable or unwilling to provide an exact value for an asset also own that asset, which in and of itself makes them distinct from the general population. Simply ignoring these households or assigning them zero dollars for that asset creates a bias in measuring the general population's wealth. There is also evidence in the survey literature that even if they acknowledge ownership of an asset, wealthier households are less likely to answer survey questions regarding asset value. We handle these issues by imputing missing answers to wealth component questions.

2.3. *Previous Empirical Research*

There is a large body of literature relevant to the topics we address here, much of which is summarized elsewhere. Hurd (1990) summarizes the literature on broader economic issues facing older persons. Browning and Lusardi (1996) provide a general survey of household saving behavior. Gustman and Juster (1996) discuss extensively what we do and what we don't know about the financial status of older American households.

From these studies, a few general issues emerge. The first is whether the elderly actually dissave. Table 2.1 summarizes results from seven previous studies of dissaving. The five panel data sets used in these analyses cover different time periods and different populations, providing information on the distribution of wealth and dissaving over time. All of the studies that used data from the 1960s through the mid-1980s found negative annual rates of wealth change, or dissaving, ranging from 1.2 percent to 5 percent. While there are varying estimates of dissaving, possibly stemming from the exact time period or population studied, all the studies of data from the mid-1980s or earlier find dissaving for older individuals.

Several of these studies separately analyzed single and married older persons. All of these studies indicate that households headed by a single person have higher dissaving rates than do married households. The most common explanation for this is that the life expectancy for a household with two individuals is longer than that for a household with one individual, because the life expectancy of a two-person household is the length of time until both household members die. All else equal, this is likely to exceed the life expectancy of households with only one person.

In contrast to these previous studies, Hurst, Louh, and Stafford (1998) find that wealth changes were positive for individuals over the age of 65 for the years 1989 to 1994. However, they are unable to examine the relationship between dissaving and age in any further detail because the data set they use, the Panel Study of Income Dynamics (PSID), does not contain a large enough sample of older people. Few data sets have a

large enough sample size or broad enough age range to address this issue. Hurd (1991) presents some evidence from the Survey of Income and Program Participation (SIPP), shown in Table 2.2, suggesting that older persons generally do not dissave until reaching age 70. Most previous studies find evidence of dissaving, but the point at which households begin to dissave is an open issue. The NBDS and AHEAD represent individuals of different ages, and the age at which households begin dissaving is an important consideration in comparing results across the two data sets.

A second related topic that has generated significant research is the role of a bequest motive for dissaving. Much of the early literature assumed that the bequest motive must be strong, given the relatively small amount of dissaving among older persons. Earlier literature thus concentrated mainly on the motivation for bequests. One set of models posited that the bequest motive was altruistic in nature (e.g., Becker, 1991), and another set posited that the bequest motive was strategic (e.g., Bernheim, Schleifer, and Summers, 1985). Subsequent literature has questioned whether there is any direct evidence of a bequest motive (Hurd, 1990). Our analysis applies Hurd's strategy for examining bequest motives to new data, comparing how dissaving varies between households with and without children.

Two other issues about the savings behavior of older Americans are related to our analysis. The first is the relationship between health and wealth.[3] Numerous studies show that health and wealth are correlated, but the direction of this relationship, and its underlying mechanism, is much debated. For example, are healthier people able to accumulate more wealth because they can work more, or can wealthier people afford to take better care of their health? We explore how dissaving varies by health status, but we do not examine the underlying causal mechanism.

The second issue concerns the adequacy of retirement resources. In particular, do individuals save enough to finance consumption during retirement years?[4] Research on this topic addresses not only the availability of all resources to the family but also what is an "adequate" level of consumption. In contrast, the focus of this report is on the pattern of dissaving of bequeathable wealth and not on measuring adequate consumption.

Even so, older individuals rely on income, not just on assets, to finance consumption. To place the importance of wealth in its appropriate context, we present results from Gustman and Juster (1996) on the average annual income by source in 1993 in Figure 1 (with the underlying data in Table 2.3). Older persons have lower total income levels and higher percentages of that income from Social Security and other pension income. Social Security income represents less than half the mean household income for households whose heads are between the ages of 70 and 74, but more than 60 percent of income for households whose heads are 85 years of age or older. Older households in all age categories receive most of their income from Social Security or other pensions, and the percentage of household income from pensions increases with age. This study

[3] Smith (1999) offers a very useful and concise review of these topics.
[4] See Gustman and Steinmeier (1999) for an empirical study that addresses the adequacy of savings.

suggests that capital income, in contrast to Social Security and other pension income, represents only 9 to 15 percent of total household income.

These statistics do not, however, give a complete picture of the importance of wealth to the economic well-being of older persons because not all wealth generates income. Housing wealth, for example, does not appear in the graph because it does not generate income. Yet a household that owns its home does not have to pay rent and so has more of its income available for consumption of other goods. Likewise, housing wealth can be spent down to further finance consumption.

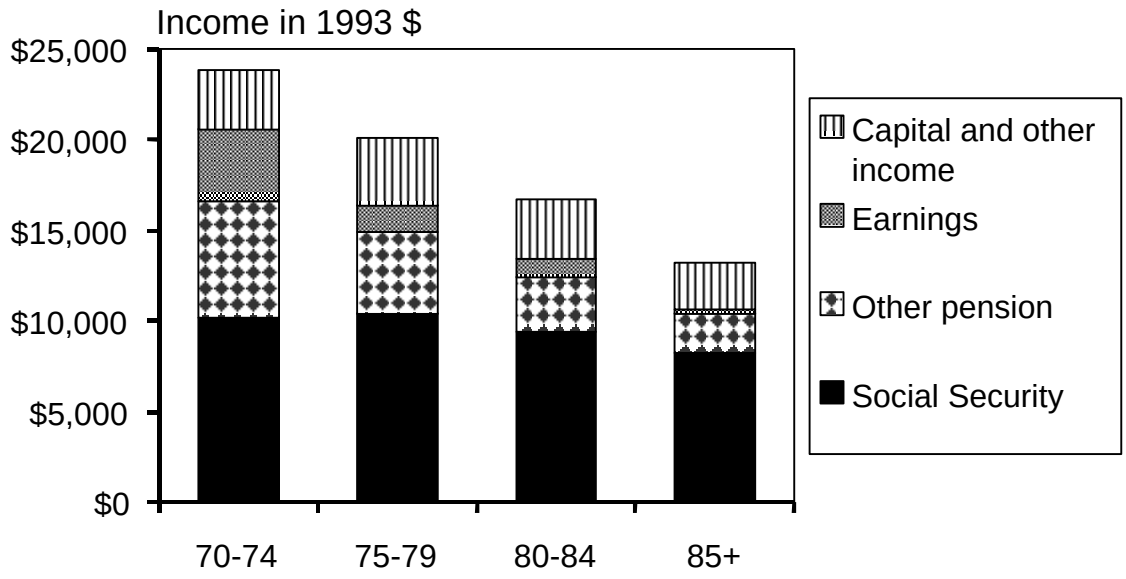

Figure 1—Mean Income by Type of Income and Age of Household Head in 1993

(Calculations from AHEAD by Gustman and Juster, 1996)

One method researchers have used to compare the importance of all sources of wealth is to calculate the expected present value of annuity income sources and then compare these calculations directly to the actual value of bequeathable wealth. For example, the expected present value of Social Security income for a household headed by a 72-year-old woman in 1993 is approximately $102,000. (We calculate this by assuming a 3 percent real interest rate and a life expectancy of 12 additional years, as determined by Social Security life tables.) Hurd and Shoven (1985) use the Retirement History Survey (RHS) to compare household wealth from annuitized and bequeathable sources in 1975 and 1979, shown here in Table 2.4. The average age of the RHS sample in 1975 is approximately 66 years old. These data show housing, business and property, and financial wealth to be the primary sources of bequeathable wealth; taken as a whole, they comprise about 40 percent of household wealth.

3. Data

The data sets we use collect detailed information on the health, wealth, and living arrangements of older individuals. The first data set, the New Beneficiary Data System (NBDS), spans the 1980s and the second data set, the Asset and Health Dynamics Study (AHEAD), spans the early 1990s. We stress from the outset that the data sets include individuals from different age groups, and this should be kept in mind when interpreting results across the two samples.

3.1. *New Beneficiary Data System (NBDS)*

The sample of respondents in the NBDS was drawn from the Social Security Administration list of persons who had filed for Social Security for the first time between June 1980 and May 1981. The sample includes newly retired workers, new beneficiaries receiving Social Security as a wife or widow, persons newly receiving benefits for a disability, and a Medicare-only sample. In our analysis, we use only retired workers and wife or widow beneficiaries, who were receiving benefits based on their own or their spouses' work history.

Respondents were interviewed in 1982, with follow-up interviews in 1991 of the respondents or their surviving spouses. In both waves of the survey, detailed questions were asked about health, work, living arrangements, expenditures, income, and asset holdings. These data were linked to administrative records on Social Security income, Supplemental Security Income (SSI), and Medicare benefits for the purpose of analyzing earnings, cash benefits, participation in SSI, and health expenses. Among the advantages of the NBDS are its sample size, its detailed measures of health, income, and assets, and its lengthy observation period of nine years. No other data adequately cover this time period.[5]

The NBDS has an exhaustive enumeration of asset types and holdings, including the face value of life insurance and housing value. It also has extensive information on income, including pension and Social Security benefit income, transfers from others, inheritances, bequests, and interfamily transfers (typically to children). Questions are also asked about family structure, including the age and number of children who live elsewhere. The survey includes questions on self-assessed health status, disease conditions, and the ability to perform various activities (e.g., ability to climb stairs). In our exploration of dissaving, we also study respondents' answers to questions on large out-of-pocket

[5] The NBDS covers this population for the 1980s. Much of the previous research on older persons has covered the 1970s (RHS) and the 1990s (HRS and AHEAD). Other large panel data sets from the 1980s have important limitations. The 1984 SIPP had two wealth modules just one year apart. Although the changes in wealth it finds appear to be realistic, changes over a short time period are more likely to be affected by macroeconomic shocks. The 1991 SIPP did not query housing value in the second wealth module. Because housing wealth is such an important component of wealth, the inability to make a complete wealth accounting limits the use of the 1991 SIPP. The PSID lacks sufficient sample size in the older population for many kinds of analyses.

expenses (i.e., more than $1,000) for medical care, long-term nursing care, and funeral or other expenses. The data contain information about the events surrounding widowhood, including health care and funeral costs, income change, bequests, and pension survivorship benefits (ex ante and ex post).

The weakness of the NBDS is that it is not representative of the U.S. population of older persons. It is representative of the population receiving initial Social Security benefits between June 1980 and May 1981. It is a sample only of the persons who chose to receive Social Security benefits during this time, most of whom are ages 62 to 65. To capture a subsample that is reasonably representative of older persons, we restricted our analysis of NBDS data to retired workers and widows born between 1914 and 1920.

We recognize that the characteristics of those who chose Social Security benefits at a particular age may not be the same as for those who did not choose benefits. There are some differences between the NBDS sample of older persons and more generally representative samples, such as AHEAD and the SIPP.[6] Persons in the NBDS, for example, have a net worth about 15 percent lower than that of people in the SIPP or AHEAD. This seems to be because first-time Social Security recipients (as in the NBDS) have a lower net worth than that of persons not choosing to initiate Social Security coverage. In fact, the differences in net wealth between NBDS respondents and SIPP respondents decrease when analysis of the latter is limited to households receiving Social Security income. Because most persons in the age group of our NBDS sample do receive Social Security benefits, we think these data provide useful information on dissaving among the broader population of older persons.

As alluded to previously, missing data are problematic whenever one uses survey data to examine wealth changes, and the NBDS is no exception. For the NBDS, as well as the AHEAD, we handle the missing data problem by imputing missing values for wealth components with a predictive mean matching procedure. This procedure essentially finds, for each missing value, a respondent in the data who looks similar to the respondent whose value is missing; a particular "donor" is chosen by matching individuals who are similar in age, household structure, and so on. The dollar value of the income or asset is then assigned to the observation with the missing value. For the NBDS, we utilize information from both waves of the survey. For example, if an individual provided a housing value in one of the waves, this information was used to impute a missing housing value in the other wave. We undertake our own imputations to ensure consistency between the waves within each data set and across the two data sets. Further information regarding our imputation procedures, as well as detailed results about the imputations, is available in Appendix A.

[6] The full NBDS collects data on disabled recipients; we exclude them from our analysis because these individuals are drawn from a much wider age range.

3.2. *Asset and Health Dynamics Among the Oldest Old (AHEAD)*

The AHEAD is a biennial panel survey, sponsored by the National Institute on Aging, of persons born before 1924 and their spouses. The first wave of the AHEAD interviewed 8,223 respondents in 1993; for our analyses, we consider only those 6,117 persons who completed full interviews in both the first wave in 1993 and the second wave in 1995. Thus, the AHEAD cohort is comparable to the NBDS cohort;[7] however, because the AHEAD was administered in the 1990s and the NBDS in the 1980s, respondents in the AHEAD sample are older.

The AHEAD contains extensive information on topics also in the NBDS, including assets, income, health status, marital status, and education. The AHEAD is a nationally representative sample (when weighted), so it does not have the same concerns of generality that the NBDS has. Another significant benefit of the AHEAD is that it contains unfolding bracket questions about most wealth components. These questions were asked of anyone who initially refused to provide the exact value of an underlying wealth component. For example, the AHEAD would ask a respondent who refused to provide the exact housing value, "Is the value greater than $100,000?" Follow-up bracket questions were then used to elicit further information about the exact value. It turns out that individuals are much more likely to answer these unfolding bracket questions than they are to provide an exact value. For further information on unfolding bracket questions, see Juster and Smith (1997).

We use the same predictive mean matching method to impute missing values for the AHEAD data set as is used for the NBDS. Such procedures are necessary in the AHEAD because, although imputations are provided for Wave 1, they are not provided for Wave 2. We impute missing values for both waves to ensure consistency between waves; if we did not, any differences found between the waves could have been due to differential imputation techniques. Where possible, we use the unfolding bracket questions. Details of our imputation procedures and results are presented in Appendix A.

3.3. *Sample Characteristics*

The unit of analysis for this report is the household wealth of an individual because both data sets are samples of individuals and not of households. In other words, we calculate wealth at the household level and then assign this wealth to each individual in the household. We analyze household wealth because most data on wealth are collected at the household level and because wealth is generally shared at this level. This, then, does not require us to make arbitrary decisions about how wealth is shared within the household.[8] Thus, when we report mean household wealth by age group, these

[7]Members of the NBDS sample were born between 1914 and 1920.

[8] One complication of trying to calculate wealth at the individual level is that it is likely that there are economies of scale to living in a household. For example, it costs little more to have two people in a home or apartment than it does for one person. In effect, this means that a two-person household does not need twice as much wealth to be as well off as a one-person household. Exactly how much more they do need

calculations should be interpreted as the mean household wealth for individuals who are in a certain age group. For both surveys, we analyze household data for all age-eligible individuals (i.e., those born before 1924 in the AHEAD and between 1914 and 1920 in the NBDS) and use weights to adjust our samples.[9]

Demographic and Health Characteristics. Table 3.1 presents basic demographic characteristics for both samples. NBDS individuals were born between 1914 and 1920, with a mean birth year of 1917. The AHEAD sample has a much larger range of birth years and a slightly older mean birth year (1916). The AHEAD has a higher percentage of women than the NBDS does, which likely stems from the older population in the AHEAD sample and the differences in mortality between men and women. Whites comprise about 87 percent of both samples. NBDS respondents are more likely to be married than are those for the AHEAD, a difference also most likely explained by the difference in age distribution of the two samples. There is a larger change in the percentage married between the two waves of the NBDS than in the AHEAD; this is not surprising, given the nine years between waves of the NBDS versus the two of the AHEAD. The samples are similar regarding the number of children respondents have had, as well as on the educational characteristics of respondents.

Table 3.2 displays basic health characteristics for both samples, including self-assessed general health, disease prevalence, and difficulty with functional activities. Self-assessed general health provides a comprehensive picture of an individual's health.[10] The prevalence of disease could provide an indication of significant health care costs and long-term survival probabilities. Not surprisingly for samples of older persons, both data sets indicate increased prevalence of disease, and the AHEAD indicates a small decline in self-reported health status. To measure functional status, we count the number of times the respondent reports difficulty with each of four activities. The four activities, chosen because they are consistent across both the NBDS and AHEAD, are climbing stairs, walking a quarter-mile, grasping small objects, and lifting ten pounds.[11] The NBDS, which follows a somewhat younger population over a longer period of time, shows a higher initial level of performance of routine activities and a larger decline in ability to perform such activities. We examine below whether individuals who are less healthy and those who have a change in health status are more likely to dissave.

Wealth and Income Characteristics. As noted, we focus on the dissaving of bequeathable wealth because decisions about how to spend down bequeathable wealth are

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is an active area of research and not one we address. By choosing our unit of analysis as we do, we avoid untangling such issues.

[9] The weights in the AHEAD make the sample nationally representative. The weights in the NBDS are sampling, post-stratification, and non-response weights designed to make the sample represent the population of individuals receiving Social Security in 1980-81.

[10] This question was not asked in Wave 1 of the NBDS.

[11] Two other sets of activities to describe the functional status of older people are much more common: the activities of daily living (ADLs) and the instrumental activities of daily living (IADLs). Although all three sets of questions are in the AHEAD, the NBDS contains only questions that are comparable to the four that we focus on.

in the control of the household over the period we observe. For both data sets, we calculate total bequeathable wealth as the sum of various underlying wealth components. Details concerning these wealth components, as well as our imputation procedures, are provided in Appendix A. We aggregate these components into five categories for most of our analysis: cash (money markets, certificates of deposit [CDs], checking accounts, and savings accounts); stocks, bonds, and IRAs; other real property excluding the home (vehicles, businesses, vacation or other property, etc.); debt; and housing wealth.[12] We group the first four of these categories into "non-housing wealth." We distinguish between housing wealth and non-housing wealth because housing is both a current consumption good and an asset to be spent down. It is possible that older persons could spend down housing wealth by moving to less expensive housing or by taking out a mortgage on their present housing stock.

Because the samples represent different parts of the life cycle and because of the numerous differences in how the data were collected, we caution making direct comparisons between the two samples. However, the similarities along many dimensions are readily apparent. As shown in Table 3.3, nearly all households of older persons in both data sets report at least some wealth. About nine in ten households of older persons in both samples hold some form of non-housing wealth, and most own homes. These data also show some shift in types of wealth ownership over time. Both samples show a decline in home ownership and an increase in non-housing wealth. Both data sets show increases in the percentage of older households holding cash, stocks, and bonds.[13] At least one in three older households in both data sets in both waves hold stocks, bonds, or IRAs.

The slight increases in percentages of older individuals holding different sources of wealth have been accompanied by larger increases in the value of these holdings. Table 3.4 presents the means, standard deviations, and medians for each source of real wealth for older persons in both waves of both samples, converted to 1998 dollars using the CPI.[14] Although we discuss these trends at length in the rest of the report, we present the

[12] The successive wealth question in the AHEAD instructed the respondent with, "Besides wealth you have already told me about…." The idea was that such instructions kept the respondents from double-counting wealth that might fall into multiple categories. The "other" category is determined from the question, "Do you have any other savings or assets, such as jewelry, money owed to you by others, a collection for investment purposes, or annuity that you haven't already told me about?" Strictly speaking, we would like to exclude annuity wealth from this category. However, given that mean "other" category comprises less than 2 percent of mean total bequeathable wealth in both surveys, we ignore this for the rest of the report.

[13] We do not know why the percentage of older households having cash wealth, including checking, savings, and money market accounts, is smaller, and grows faster, over the two waves of the AHEAD.

[14] Means are calculated by adding up wealth holdings and dividing by the number of households in the sample—i.e., they are simple averages. Standard deviations are measures of how dispersed the data are around the mean. The median value of wealth is the amount of wealth held by the household in the 50th percentile of the distribution. In other words, half of the households will have more value of a particular source of wealth, and half less. The mean and median are useful measures of "central tendency" in the distribution, but they measure the central tendency in different ways. Means tell us about the middle of the distribution of wealth dollars. Medians tell us about wealth owned by the middle of the distribution of

mean value of a few of the wealth components in Figure 2. Households in the 1982 NBDS on average have $33,400 in cash, $18,900 in stocks and bonds, and housing wealth equal to $73,700. This averages across all households, not just those that own a home or stocks or have bank accounts. Stock values rise across the waves of the NBDS, from 1982 to 1991, and also in the AHEAD, from 1993 to 1995. Cash holdings and levels of housing wealth are more similar across waves of each data set and across data sets (comparing the NBDS and AHEAD).

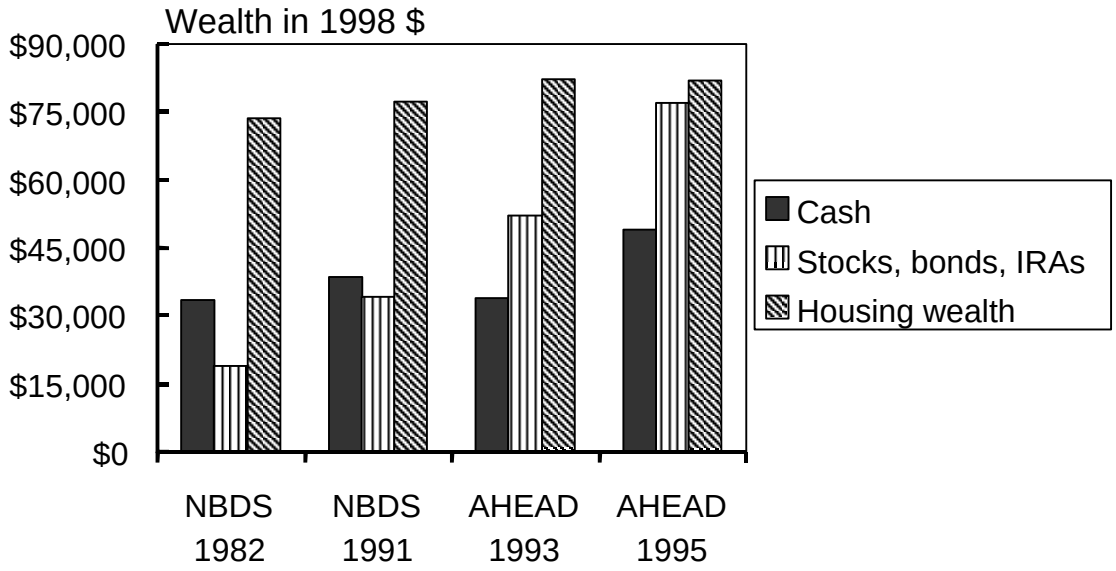

Figure 2—Mean Values of Household Real Wealth by Source

Finally, we present descriptive statistics on household income in Table 3.5. This table presents statistics on persons' income by source—first Social Security, then adding other retirement income and government transfers, then earnings and transfers from relatives—and finally, total income.[15] Social Security benefits comprise about half of the average income for older persons in these surveys, with pensions and government transfers accounting for another 25 percent. Although such income is important for individual consumption, it does not, like bequeathable wealth, constitute wealth that can be spent down. In our analysis of dissaving, we compare wealth changes of older persons at different income levels to examine whether low-income individuals are more likely to dissave.

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households. The mean and median of a distribution could differ widely for a distribution whenever the distribution is highly skewed, which wealth generally is.

[15] The standard deviation on total income in the NBDS is so large because of a single observation that reports over $1 million in income.

4. The Distribution of Dissaving

To analyze the general trends in dissaving, we undertake three tasks. First, we define how we measure dissaving. Second, we focus on the entire distribution of wealth, as well as its components, to examine dissaving. Third, we examine differences in dissaving by various groups.

4.1. *Measuring Dissaving*

The most obvious method of measuring the rate of dissaving in panel data sets is to calculate changes in wealth for each household and then analyze these changes directly. Such changes can be disconcertingly large. In the AHEAD, for example, more than 30 percent of Wave 1 respondents who have at least some wealth report changes in that wealth of greater than 100 percent by Wave 2. Part of the reason why households have large reported wealth changes is because some households have very little initial wealth: a household that increases its wealth holdings from $1,000 to $2,000 has had a 100 percent increase in wealth. However, it is also likely that many of the large changes are caused by measurement error. There are three possible sources of this measurement error.

First, respondents may provide rounded rather than exact estimates of their wealth. For example, a person might report $2 million in stock holdings in Wave 1 and $1 million in Wave 2, whereas the actual wealth might have been $1.64 million and $1.40 million. Rounding thus can cause large observed changes in wealth, and there is evidence of such rounding in both data sets.[16] In the AHEAD, more than 60 percent of respondents who hold more than $1,000 worth of stock report their holdings to only one non-zero digit (e.g., $40 thousand, $300 thousand, $2 million). This type of measurement error will be more problematic in the AHEAD than in the NBDS because observed changes are averaged over two years in the AHEAD and over nine years in the NBDS.

A second type of measurement error is that households might misreport wealth to varying degrees over time. This leads to reported changes in wealth that are larger than actual changes because the data reflect not only real changes in wealth but also changes in reporting error. An implication of this type of measurement error is that it would induce regression-to-the-mean in the wealth changes. Regression-to-the-mean is the phenomenon whereby individuals who mistakenly report lower wealth in Wave 1 tend to report higher wealth in Wave 2. Similarly, individuals who mistakenly report high wealth in Wave 1 will tend to report lower wealth in Wave 2. The net result of this measurement error is that we could observe saving for individuals in the lowest part of the distribution and dissaving for individuals in the highest part of the distribution that are solely due to measurement error. Both the AHEAD and the NBDS wealth data exhibit considerable regression-to-the-mean. Again, this is not a problem specific to these two data sets but rather to panel data generally.

[16] This problem is hardly unique to these data sets, however. The problem is ubiquitous in survey data on income and wealth.

Finally, questions about wealth are difficult to ask in a survey of any population. Surveying older individuals might be even more problematic because some may have increased cognitive difficulties that could induce more measurement error or even require a proxy interviewer who might be less knowledgeable about household finances. Despite the state-of-the-art wealth modules in each data set and the innovative bracketing questions in the AHEAD, it is likely that some measurement error will result from cognitive difficulties. A priori, however, it is unclear that this source of measurement error would cause implausibly large mean changes in household wealth.

To address these measurement error problems, we use two strategies. The first is to compare the wealth for groups rather than for individuals. For example, we will calculate the change in mean wealth for college graduates. If measurement error is uncorrelated with the way a group is defined, we can obtain consistent estimates of the real change in wealth. By taking the mean across a group, we are "averaging out" the measurement error. Using household panel data to estimate dissaving with this method assures us that observed changes are not due to different samples across waves because a panel survey interviews the same households in both waves.

Our second strategy is to examine a variety of aspects of the distribution, rather than just the mean and standard deviation. Both the mean and standard deviation are sensitive to extreme outliers, so we also analyze other characteristics such as percentiles (e.g., the median and quartiles) that are not as sensitive to outliers.

4.2. *Dissaving: The Big Picture*

We first examine dissaving in the population by comparing the entire distribution of real wealth across waves. Table 4.1 presents percentiles for total wealth, housing wealth, and non-housing wealth for persons in the NBDS and AHEAD, all measured in 1998 dollars. Examining total wealth for the NBDS, the median total wealth declined slightly, from $99,700 to $97,500, between 1982 and 1991 for households. This change implies an annual rate of dissaving (at the median) of -0.2 percent which, for all practical purposes, is a zero dissaving rate. Furthermore, there is substantial dissaving at the percentiles below the median and saving at the percentiles above the median. For the AHEAD, there is actual saving at the median, with an annual savings rate of approximately 4.5 percent. However, the same pattern of dissaving below the median and saving above the median is apparent in the AHEAD. This initial finding that the less wealthy are dissaving and the relatively more wealthy are saving will be echoed in many other results presented in this report.

In Figure 3, we present the 25^{th}, 50^{th}, and 75^{th} percentiles for housing wealth and non-housing wealth for the NBDS sample. Housing wealth decreased up through the 75^{th} percentile between 1982 and 1991. Non-housing wealth, on the other hand, increased for the population at and above the 50^{th} percentile. It is possible that individuals converting housing wealth to non-housing wealth over the time period could explain part of this increase in non-housing wealth.

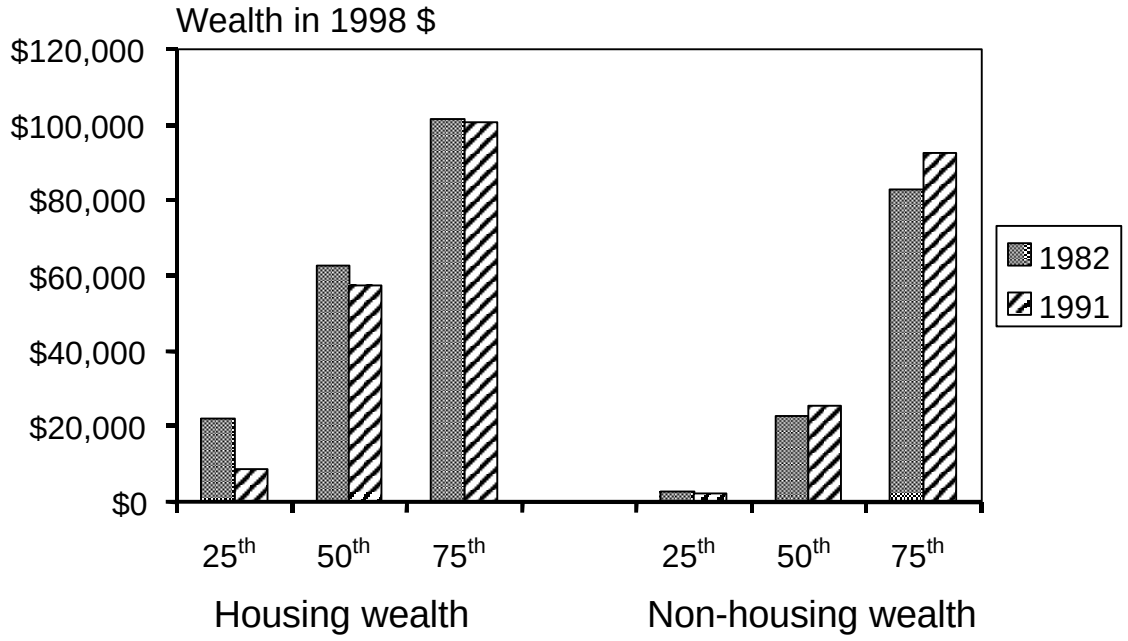

Figure 3—NBDS Wealth Percentiles by Source and Year

We present the 25th, 50th, and 75th percentiles for housing wealth and non-housing wealth for the AHEAD in Figure 4 (the 25th percentile of housing wealth is zero in both years). The median person in the AHEAD also saw a decline in housing wealth and an increase in non-housing wealth, similar to the pattern for the NBDS. However, there is generally saving in the AHEAD. For example, the median person enjoyed an almost 50 percent increase in non-housing wealth between 1993 and 1995; this increase is compared to a 11 percent increase in the NBDS for the median person over the ten-year period between 1982 and 1991.

For both samples, much of the increase in total wealth appears to be associated with increases in non-housing wealth. To better understand changes in the distribution of such wealth, we disaggregate the non-housing wealth component into cash (including checking, savings, and certificate-of-deposit holdings), stocks and bonds, and real property (real estate excluding housing, vehicles, businesses, and miscellaneous income). Table 4.2 reports the distribution of these sources of non-housing wealth. We present selected percentiles for the NBDS in Figure 5 and for the AHEAD in Figure 6. For both data sets, most of the lower percentiles are zero; thus, we show only the upper percentiles in the figures.

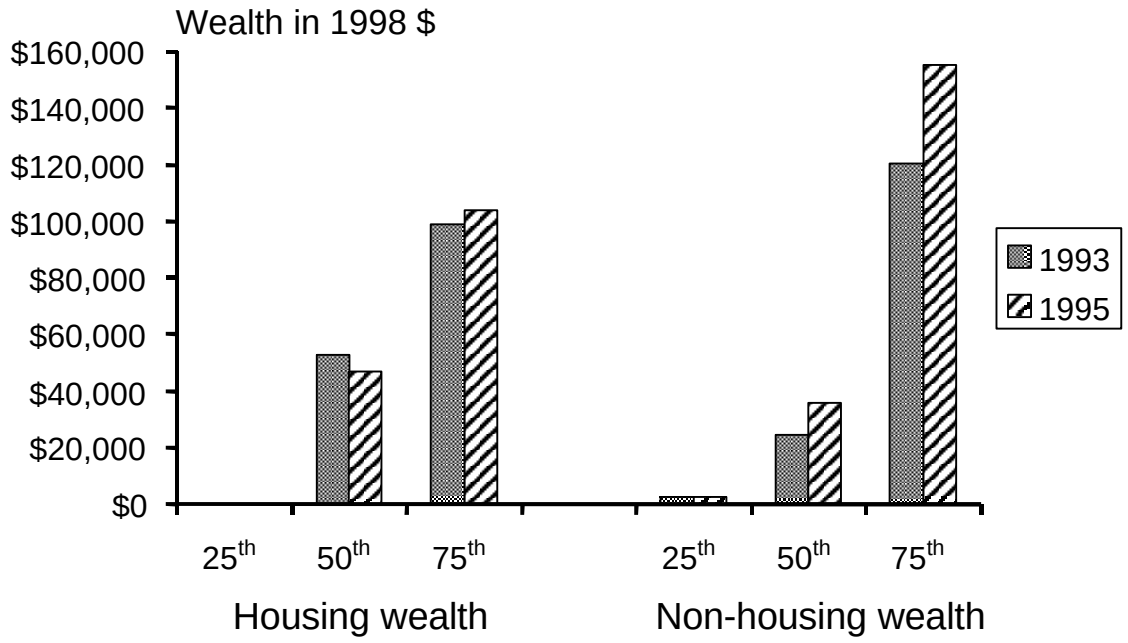

Figure 4—AHEAD Wealth Percentiles by Source and Year

For the NBDS, significant changes in the three main sources of non-housing wealth—cash, stocks and bonds, and other real property—occurred at the higher percentiles. Cash holdings at the 25th percentile and the median declined slightly between 1982 and 1991 (not shown in the graph), while the level of such holdings at the higher percentiles grew. Most of the large increases in wealth holdings occurred in stocks and bonds. One explanation for these changes is in the large returns during this period in the stock market (the S&P 500 increased by 118 percent). However, some of the increase in stock wealth is explained by individuals selling their houses or businesses and then investing the resulting proceeds in the stock market. The fraction of households owning stocks, bonds, IRAs, and Keogh retirement accounts increased from 33 percent in 1982 to almost 38 percent in 1991. Finally, the figure indicates that there were substantial reductions in the amount of wealth stored in other (non-housing) real property, largely from declines in business ownership.

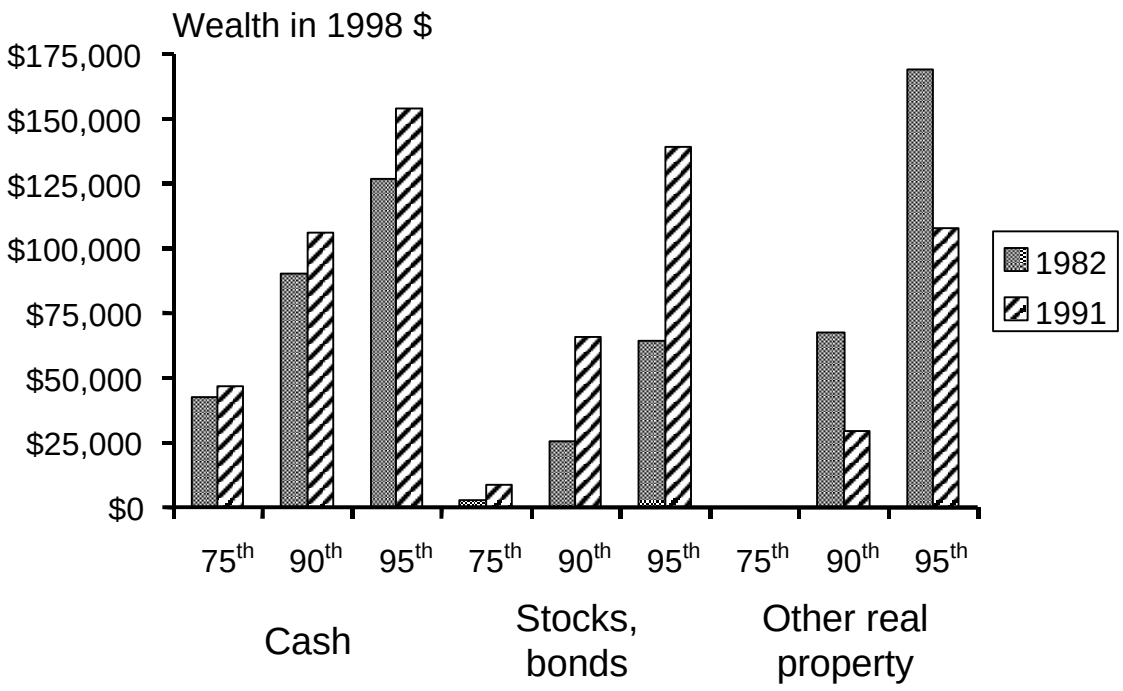

Figure 5—NBDS Non-Housing Wealth Percentiles by Source and Year

Figure 6 summarizes changes in the value of non-housing wealth for the AHEAD households. As among NBDS households in the 1980s, growth in stock and bond wealth was the most significant change in non-housing wealth for AHEAD households in the 1990s, and these changes occurred in the highest percentiles. There were generally increases in cash wealth in the AHEAD, with even some of the lower percentiles enjoying increasing cash wealth, unlike similar households in the NBDS. For example, there was a significant increase in household cash wealth for the median person in the AHEAD ($5,500 to $10,400). Similar to the NBDS, there were reductions in the amount of real property held at all reported percentiles. Some of the increase came from growth in the stock market and some from an increase in the fraction of households owning stocks and bonds.

The value of a particular wealth component in the population can change either because the prevalence of holding that asset changes or because the amounts held by the owners change. We examine these patterns for the NBDS and the AHEAD and report our findings in Table 4.3.

Ownership of real property declined from 1982 to 1991, while ownership of financial wealth (cash, stocks, bonds, IRAs, and Keogh accounts) increased. The proportion of NBDS individuals with housing wealth decreased from 83 percent in 1982 to 77 percent in 1991. This implies an annual rate of change in individual home ownership rates of -0.7 percent. At the same time, the value of the housing stock for housing owners

increased from $88,000 to almost $100,000. Ownership of businesses, farms, and professional practices declined even faster than did housing. There were a third fewer individuals owning such wealth in 1991 than in 1982, implying an average annual business divestment rate of -3.6 percent. The average value of businesses (conditional on owning one) declined as well, suggesting that the more profitable businesses were the ones that tended to be sold. Financial asset ownership grew, especially in stocks, bonds, IRAs, and Keogh accounts. The average value of those holdings also grew dramatically, by an average of 4.5 percent annually for stocks and bonds and 5.2 percent annually for IRA and Keogh accounts.

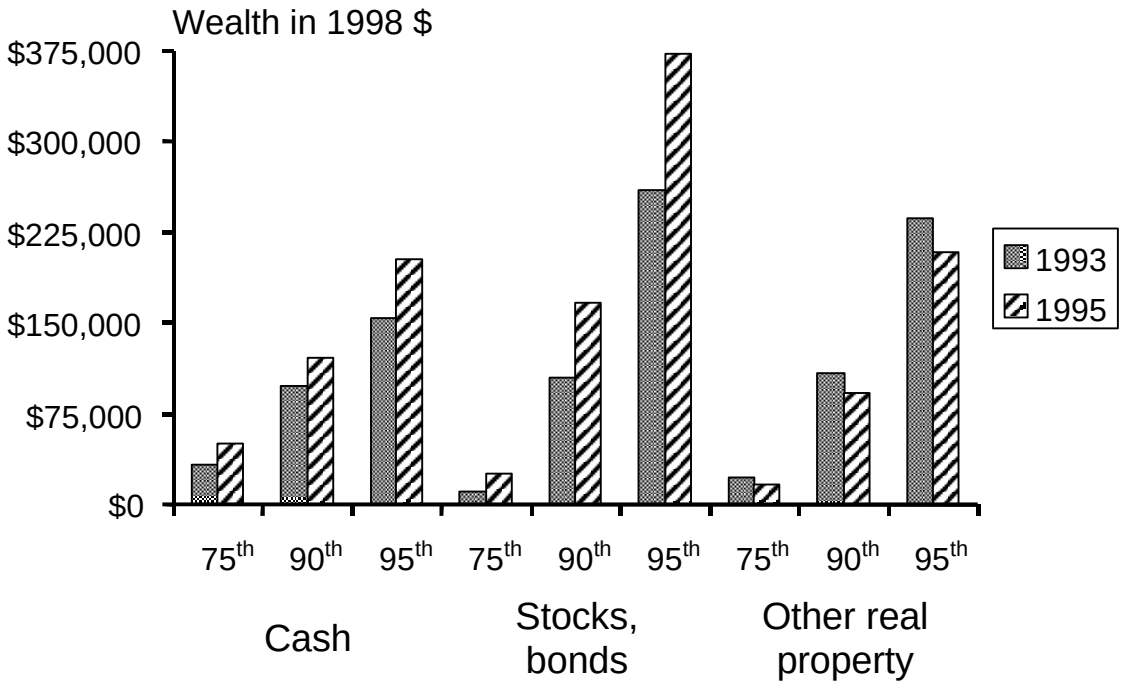

Figure 6—AHEAD Non-Housing Wealth Percentiles by Source and Year

Turning to the AHEAD results in Table 4.3, we again find much larger changes than for the NBDS. Nevertheless, many of the patterns observed in wealth ownership in the NBDS are also evident in the AHEAD. Rates of ownership by older individuals for property such as vehicles, housing, and other real estate declined between Wave 1 of the AHEAD in 1993 and Wave 2 in 1995, while rates of ownership in CDs, stocks, and bonds increased most rapidly. The mean value of business ownership holdings for those who held them decreased sharply in the AHEAD, while the mean value conditional upon ownership of CDs, stocks, and bank accounts increased substantially. In other words, not only were there large increases in the ownership rates of assets such as CDs, stocks, and bonds, but, conditional on owning these assets, individuals held much more. In both the NBDS and AHEAD, the considerable between-wave shifting of assets among categories

suggests that older households are not passive investors spending down their assets but rather are actively managing their wealth.

4.3. *Dissaving by Household Characteristics*

The previous section documented overall changes in the distribution of wealth. We find a shift away from housing wealth to non-housing wealth, particularly into stocks and bonds at the wealthiest percentiles. In this section, we calculate wealth changes by various household characteristics. In Tables 4.4 through 4.6, we present changes in median wealth for persons with selected characteristics. In Appendix Tables B.1 through B.6, we present changes in mean and median wealth for a longer list of characteristics.

We first divide the samples by marital status and present the results in Table 4.4; in particular, we divide the sample into those who are married in both waves (M-M), married in the first wave but single in the second (M-S), and single in both waves (S-S).[17] Previous research consistently finds more dissaving among single-headed households than among married households (see Table 2.3). This finding can be explained by the observation that a single head of household has to consider only his or her own mortality in dissaving decisions and not the future needs of a surviving spouse; thus, a single household can afford to spend down its wealth more quickly. Our results on this point are consistent with the previous literature. During the 1980s, median wealth for NBDS married-married households increased from $120,800 in 1982 to $127,100 in 1991. During the same time period, median wealth for the single-single households declined from $51,900 to $42,100. Similarly, median wealth for AHEAD married-married households grew from $156,300 in 1993 to $181,900 in 1995, whereas single-single median household wealth declined from $54,600 to $52,000.

Although the annual changes in the AHEAD are likely more volatile than those for the NBDS for reasons discussed earlier, the same general pattern by marital status appears in both surveys. In contrast, the NBDS shows dissaving at the median by widowed households (who make up the bulk of M-S households), whereas the AHEAD shows the reverse. Previous literature suggests that widowed households are particularly likely to experience large declines in wealth (see Hurd, 1990). Our results suggest otherwise: in the NBDS we see that their wealth change is similar to that of S-S households, and in the AHEAD we see wealth growth. On the other hand, both data sets show dissaving below the median and saving above the median for all three marital types. This increase in inequality is disguised by growth in the mean and highlights the importance of looking at changes across the entire distribution.

In particular, the wealth changes for married-single households in both surveys do not look much different from the declines for single-single households. We will return to this finding in the multivariate analysis presented in the next section.

[17] The number of households that go from being single to married is inconsequential, so we fold these households into the married-single group.

We next look at differences in dissaving by level of retirement income, consisting of Social Security, public and private pensions, and government transfers. We divide both samples according to the quartile of the individual's annuity income in order to compare changes in household wealth between higher- and lower-income households. Again, previous research has found that individuals with higher annuity wealth tend to dissave less. The results for the NBDS sample are presented in the top panel of Table 4.5; the results for the AHEAD sample are in the bottom panel. Mean wealth for individuals in the lowest income quartile in the NBDS sample is $110,800 and $91,300 in Wave 1 and Wave 2, respectively, and this dissaving occurred in both housing and non-housing forms of wealth. For higher-income individuals, household wealth grew in both forms. In the AHEAD, wealth grew at all quartiles and for all forms of wealth (except for housing wealth in the second and fourth quartiles, which decreased slightly.) However, it is generally the case that individuals in the lower-income quartiles accumulated less wealth than did individuals in higher-income quartiles. This finding is consistent with individuals in the lower-wealth quartile spending at least some of the returns from their bequeathable wealth to finance current consumption. As the middle column shows, much of the increase in total wealth is associated with increases in non-housing wealth, particularly for the upper-income quartiles.

We next examine how dissaving rates vary by other household characteristics, among them age, education, children, and portfolio composition. In Table 4.6, we calculate the percent change in median wealth across the two waves.

For the NBDS, the amount of dissaving is approximately zero for both age groups. This result is roughly consistent with the findings from the SIPP by age (see Table 2.2), though not with the RHS results for a similarly aged cohort a decade earlier (Table 2.1). Dissaving does appear to have changed over time. For the AHEAD, households save overall, contrary to the findings of previous research for this age group. One explanation for this finding is that the high stock market returns in the early 1990s were unexpected by the AHEAD cohorts, and there was not sufficient time between waves for the respondents to adjust their consumption patterns. However, there is some decline in the actual amount of savings by age. This relative pattern is one of the primary predictions of the LCH. Nonetheless, this finding that the AHEAD cohorts saved remains the primary anomaly of this report.

Trends in dissaving by education are similar to what we would expect from our analysis by the annuity income quartiles because income tends to increase with education. We find that the median wealth of individuals with less than a high school degree declines in both samples (-1.0 percent annually in the NBDS and -5.7 percent annually in the AHEAD). The largest increases in median wealth occurred among college graduates in both samples (1.4 percent annually in the NBDS and 12.2 percent annually in the AHEAD). These results, along with those by annuity income, indicate that less well-off households dissave more, and that there is substantial and increasing inequality over time in wealth holdings among older households.

We also examine differences in wealth change by whether individuals have children. If households have a bequest motive, they should spend down their wealth more slowly. We do not have data on their intentions, but we do have information about whether they have children, and most bequests go to children. Thus, we compare savings patterns across households with and without children. We find in both data sets that individuals without children tend to save somewhat more than those who have children, similar to Hurd's findings (1991). This result is contrary to the prediction of the LCH augmented with a bequest motive. However, it is also possible that other unobserved differences are causing this result (e.g., households with children tend to be older), and it is also true that the difference in the NBDS is negligible; thus, we will return to this issue in our multivariate analysis.

The next two categories divide the sample by whether the individual owns a house or stocks and bonds. The overall dissaving rate is flat in the NBDS: most households own homes, and their small wealth change outweighs the dramatic change among households that do not. Note also the extremely low wealth levels of these households, which turns small dollar-amount increases into large percentage changes. In short, we do not weight this result particularly heavily. We also do not observe much difference between households that do and do not own stocks and bonds in the first wave of either data set.

We also examine some questions unique to either the NBDS or the AHEAD to examine other dimensions along which household savings rates might differ. First, with the NBDS data, we have data on resource flows between parents and children that could shed further light on why we see so little difference between households with and without children. We find that households that gave money to their children were wealthier on average and were more likely to increase their wealth between waves. We also find that individuals who receive cash from children are more likely to have less wealth and higher rates of dissaving. Wealth is shared prior to death, but resource flows go both ways, not just from parents to children.

We were also interested in how significant health events change savings rates. With the AHEAD data, we find dramatic wealth declines for households that have an individual enter a nursing home, compared to households that did not. This is not surprising, considering Medicaid asset rules for nursing home payments, but the result could also be health driven. In other words, entry into a nursing home could signify poor overall health, rather than a dramatic decline from good to bad health between waves. In the next section, then, we examine nursing home entry in combination with health status measures in order to consider their impact on saving behavior simultaneously.

To briefly conclude this section, we find flat overall wealth trends in the NBDS, a relatively young group of households in their sixties. This is in line with findings from SIPP for a similarly aged cohort in the same decade, in contrast to the findings for the RHS cohort in the 1970s, which was also of a similar age. We then find wealth growth in the AHEAD, a cohort in their seventies in the early 1990s. Dissaving behavior among older households does appear to change over time. We also find considerable evidence of

increasing wealth inequality over time as less well-off households (which tend to be lower income, less educated, or widowed) dissave and wealthier households accumulate more wealth. Finally, we find that there has been a considerable shift in the wealth of older persons away from housing and toward other forms of wealth, particularly stocks.

5. A Multivariate Analysis of Dissaving

Although the results in the previous section demonstrate some differences by group, it is possible that many of them are very much related. For example, we see substantially greater savings for individuals who have higher education and for those with higher annuity income. Of course, more educated households tend to have higher annuity income, so it is possible that the results by education and income are identifying the same phenomenon. To examine variation in dissaving by various characteristics at the same time, we move to a regression framework so that we can hold other factors constant.

We define our dependent variable as the proportionate change in wealth for a household between the two waves (the change in wealth between the waves divided by wealth in the first wave). We exclude individuals with non-positive wealth holdings in the first period for all of the analysis. For most of the analysis, we focus on ordinary least squares (OLS) regressions to examine the mean differences between groups. For example, the coefficients will capture the mean difference in wealth changes between whites and blacks, holding fixed the rest of the variables included in the model.

Throughout our discussion of results, however, we remain attentive to the problems caused by measurement error in household-level data. Although this error is naturally captured as part of the error term in these regressions, severe measurement error can cause certain observations to be overly influential. To mitigate these concerns, we delete the top and bottom 1 percent of the data from the analysis (i.e., the highest and lowest changes in household wealth). To check the robustness of our results, we also present a second type of regression called "median regressions." Median regressions, rather than measuring the difference in means between groups, measure the difference in medians, holding everything else in the model fixed. Extreme outliers do not affect medians. However, we stress that median regressions are not simply regressions that are robust to outliers. Rather, median regressions measure something quite different from mean regressions, and the comparison of magnitudes (and even signs) should be made with caution.[18] It turns out that the results from the two estimation techniques are qualitatively similar, so we generally present the trimmed OLS coefficients because they are more commonly reported in the literature. Taken together, these regression results provide more information about the underlying heterogeneity in dissaving that is related to observable characteristics.

[18] More specifically, the median and mean of a distribution are different values whenever the distribution is not symmetric. Medians look at the middle of the distribution of households; means look at the middle of the distribution of dollars. Because the conditional distribution of wealth changes is highly asymmetric, the mean and median regressions could identify different magnitudes even if no measurement error or extreme outliers existed.

For each data set, we estimate a basic specification that includes the primary variables suggested by the LCH: age, education, net worth, and income. Income includes pension income, Social Security, and other government transfers but not income from assets.[19] We also include gender, an indicator variable for whether the respondent has any children, and indicator variables for race and ethnicity (Latino, black, and other, with white being the excluded group). Because the LCH and previous empirical research lead us to expect significant differences by marital status, we run the regressions separately by the marital status of the household. We estimate the basic specification with both trimmed OLS and median regression techniques to show that the results are fairly similar. We then present a series of regressions examining the role of health, portfolio choice, and between-wave events such as hospitalization.

5.1. *Results from the NBDS*

We present regression results from the NBDS in Tables 5.1 through 5.3. Each table presents the regression results by marital status. Table 5.1 contains results for respondents who were not married in either wave of the survey; most were widowed but some had never married. Table 5.2 contains results for those respondents who were married in both waves of the survey. We present results for households that changed marital status between the first and second waves in Table 5.3, 96 percent of whom were widowed between waves. Certain results are consistent regardless of marital status: the net worth of more educated households grew over the 1980s, older respondents as well as less healthy ones tended not to accumulate wealth as quickly, and we find no evidence of a bequest motive. We also find that net worth enters all of the regressions negatively and is highly significant. As we explain below, we interpret this result not as the more wealthy actually dissaving more, but rather as evidence of significant regression-to-the-mean caused by measurement error. Other results—the effects of race, portfolio composition, and expenditures—differ across the various samples in ways such that no consistent patterns can be drawn out. In our discussion, we focus on results that are at least sometimes statistically significant at the 90 or 95 percent level—that is, they can be said with some confidence to be not equal to zero.

Table 5.1 displays the results for unmarried respondents. The first column shows the results for the basic specification.[20] Recall that the dependent variable is the proportionate change in total wealth (Wave 2 wealth minus Wave 1 wealth, divided by Wave 1 wealth); on average for unmarried households this equals 0.905, for a 90.5

[19] In the NBDS, a younger sample, we also include whether in Wave 1 the respondent expects to receive a pension in the future. This pension would not be included in current income measures and yet should affect savings behavior as potential income.

[20] Age is measured in months, and the average age for each marital type has been subtracted. Female, children, race, and future pension expectation are measured as zero-one variables, in which, for example, a female is coded one and a male zero. Education is measured in years. Wealth and quarterly income are measured in logs, so that the coefficient can be interpreted as a percent change in wealth or income that is associated with a percentage point change in the dependent variable.

percent average increase in total household wealth over the period.[21] Most of the coefficients are not statistically significant, by which we mean that there is some chance that the coefficient is actually zero and that the factor had no effect on savings over the 1980s. These include children, race, and income (including expected future income from a pension). Age is significant only at the 90 percent confidence level, and the squared term is not statistically significant.[22] In other words, the relationship between age and savings is weak in this age group (ages 61 to 69); SIPP findings have suggested that in the 1980s, dissaving occurs at older ages, largely after the age of 70. We also find that unmarried women have saving rates only about half as high as those of unmarried men, according to these findings: the average increase in wealth for women was 47 percentage points lower than it was for men. More educated respondents had higher wealth growth—each additional year of education is associated with a 6 percentage point increase in the savings rate.

We find that less wealthy respondents have a higher savings rate in percentage terms, compared to wealthier households: 10 percent higher Wave 1 wealth is associated with approximately an 8 percentage point lower savings rate. We should note that a negative coefficient does not imply dissaving, considering the high rate of wealth accumulation (90.5 percent). For example, a household with $100,000 in total wealth in Wave 1 is predicted to increase its wealth by 95 percent by Wave 2; a household holding $110,000 in Wave 1 wealth increases its predicted wealth by 87 percent.

The finding that the wealthy save less is enough at odds with the results of Section 4 that it deserves further comment. In particular, we believe this coefficient represents regression-to-the-mean caused by measurement error, rather than a real phenomenon concerning differential dissaving patterns. We discussed this phenomenon in Section 2 (as well as in Appendix A) as one of the main reasons we prefer looking at the aggregated data in Section 4 to the household-level changes in the regressions. In Section 4, we saw that everything associated with wealth (age, education, etc.) suggested higher growth in wealth among wealthier households and in fact, apart from the wealth variable itself, the regression results confirm this.[23] Because all of the methods that are more robust to measurement error suggest that the more affluent save more, we attribute the opposite result suggested by the regression coefficient to arise from measurement error.

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[21] The difference in estimated savings rates using aggregate data, versus the considerably noisier individual-level changes, is readily apparent. Comparing the mean wealth estimated over all unmarried households in Wave 1 to estimated total mean wealth in Wave 2, we observe an 11 percent increase. At an individual level, we see that the mean wealth change for an unmarried household is over 90 percent. This is a case where a relatively small change in the method of calculation leads to a large change in results: the change in mean wealth is 11 percent, whereas the mean change in wealth is 90 percent.

[22] The squared term allows age to have a nonlinear effect, such that savings could rise with age to a certain point, after which dissaving would begin.

[23] The effect comes most strongly through wealth because that is the variable most closely related to the dependent variable, and it is actually used to calculate the dependent variable: the difference between Wave 2 and Wave 1 wealth divided by Wave 1 wealth.

Another concern with the data—skewed distributions of wealth, in which a few households own most of the wealth—led us to estimate median regressions as a robustness check. The next column (model 2) reports results for the same specification as model 1 but using median regression techniques. Qualitatively the results are similar: female-headed and wealthier households have lower savings rates, and the net worth of more educated households increased faster. In the median regression, black households have significantly lower savings rates—about 70 percent as high as that of white households—compared to the OLS results, in which the coefficient on black households was also negative and roughly the same magnitude but not statistically significant. Because the median regression results are similar for the various marital statuses, and mean (OLS) regressions are more standard, we will present only OLS results for the rest of the specifications.

In model 3, we add health status variables for waves 1 and 2 to measure the respondents' ability to perform everyday activities such as walking a quarter-mile, grasping something small, going up stairs, and lifting a ten-pound weight.[24] Wave 1 health of unmarried respondents does not affect their savings rates, but the NBDS sample is relatively young. Wave 2 health status does affect saving: the worse they perform on these measures in Wave 2, holding Wave 1 health constant, the lower the increase in net worth over the 1980s. In other words, a decline in health between waves is associated with a decrease in the savings rate: difficulty with one more activity in Wave 2 than in Wave 1 is associated with a 21 percentage point decrease in the savings rate.

Model 4 explores the effect of portfolio composition by including variables that measure the fraction of household wealth in housing, other property (businesses, farms, vacation property, etc.) and in stocks and bonds; the excluded category is the percentage of the respondent's wealth held in cash. We interpret the coefficients as representing the impact of potential excess returns available when one holds assets in forms other than cash. The average unmarried household holds half its wealth in housing, and the regression predicts that its total wealth increased about 98 percent from Wave 1 to Wave 2. Households owning three-fourths of their wealth in housing are predicted to have total wealth in Wave 2 that is 105 percent higher than their wealth in Wave 1.[25]

All of the portfolio composition coefficients are positive, indicating that the more wealth held in investments other than cash, the higher the savings rate. The average household held 5 percent of its wealth in other property (largely in businesses, professional practices, and farms). A household with 10 percent of its wealth stored there is predicted to have a 5 percent higher savings rate than the average household has (a 103 percent increase in total wealth across waves, versus 98 percent for the average household). The

[24] We also add indicators for observations missing health information. In Wave 1, less than 2 percent of observations are missing health information. In Wave 2, under 0.1 percent of unmarried and married households are missing data, but 37 percent of widowed households are missing data because of the death of the respondent.

[25] This assumes that the difference comes out of cash holdings, which is the excluded portfolio category (cash, housing, other property, and stocks and bonds add to 100 percent of total wealth).

increase is almost as large the more wealth the household has invested in stocks and bonds. We note, however, that only the coefficient on other property is statistically significant.

In model 5, we examine the correlation of large, uninsured expenditures (the questions were of the form, "did you spend $1,000 or more out of your own pocket on. . .") with trends in household wealth. Expenditures were never statistically significant predictors of changes in wealth for unmarried households.

Table 5.2 displays the results for the same specifications estimated for NBDS households headed by a married couple. Here, age, sex, education, and health refer to the household respondent, which in these data is more likely to be the man and therefore the older of the two spouses. The average of the dependent variable is 0.538: on average, household wealth in married couple households increased almost 54 percent between 1982 and 1991. Part of the difference can be explained by the lower initial wealth holdings of single households.[26]

In model 1, the simplest model, only education and income are statistically significant. An additional year of education is associated with an 8 percentage point increase in the household savings rate; an additional 10 percent of income correlated with a savings rate that is 7 percentage points lower than average. The results in model 2, the median regression, are somewhat different: age is significantly associated with household wealth accumulation, blacks have significantly lower savings rates, and households expecting pension income in the future also exhibit higher savings rates. The only qualitative difference is for blacks, for whom the coefficient changes sign across specifications. For age and pension income, the size of the coefficients is about the same across specifications.

As in Table 5.1, models 3 to 5 display the results including health, portfolio composition, and expenditures. In model 3, we add the self-reported health measures. The worse the health of the survey respondent in Wave 2, the lower the increase in net worth: holding Wave 1 health constant, difficulty in an additional activity in Wave 2 for the respondent is associated with a 7 percentage point lower savings rate. The effect is somewhat smaller here than for the unmarried couple. Other results in the literature show that married-couple households take the health of both spouses into account, which may explain the lower sensitivity to changes in one spouse's health of this sample (relative to an unmarried household).

The portfolio composition results shown in model 4 are also different from those of the unmarried sample, as the more wealth couples had in stocks and bonds and the less in housing or other property, the more likely they were to have above-average growth in net worth. The housing effect is statistically significant at the 95 percent confidence level

[26] Large percentage changes are overly dramatic when the base level is small. Moving from $10 to $20 is a 100 percent change but is only a $10 increase; moving from $2 million to $4 million is also a 100 percent increase, but one involving an enormous amount of money.

and the stock/bond market effect at the 90 percent level. In the last column, the only statistically significant expenditure results are for other losses, and the pattern is the same as for unmarried households. Expenditures do not appear to explain much about the saving behavior we observe.

Table 5.3 displays the results for households whose marital status changed from Wave 1 to Wave 2, a sample mostly composed of widows. The average of the dependent variable is 0.578, indicating that the average widow's total wealth increased by 57.8 percent from 1982 to 1991, an increase similar to that of married couples. When we aggregate the data before taking the mean, as we did in Table 4.4, we see that average wealth among widows increased 2.5 percent from 1982 to 1991, thus remaining essentially unchanged. Because most research for previous periods finds that widows' wealth tends to decrease sharply after the death of a spouse, we interpret the 57.8 percent increase cautiously. Individual-level changes are extremely noisy measures of wealth accumulation and decumulation. Instead, we believe these individual-level analyses are primarily useful for assessing the relative effect of various factors at the same time, for example, that more educated respondents tend to have higher savings rates, holding age, wealth and other variables constant.

The results for widows in general are more like those for married couples than they are for households that were unmarried in both waves (60 percent of whom were widowed at a young age, with the remainder divorced or never married). Education, Wave 1 wealth, and health are similar to those for married households, though the education effects are stronger (each additional year of the initial respondent's education, often the husband who has died in the interim, is associated with a 13 percentage point higher savings rate). The portfolio composition results are a little different in that the coefficient on other property is positive, but for neither sample can we say with confidence that the coefficient is not zero. We also find that the effect of stock market wealth is quite large, although the average widow has only 4 percent of her wealth in stocks and bonds. A widow with 10 percent more of her wealth in stocks and bonds on average (in other words, who has 4.4 percent of her wealth in these assets) has a savings rate that is 1.1 percent higher than the average widow.

The pattern for expenditures is also similar to that for married households in that only the coefficient on other losses is statistically significant. We also add funeral expenses to the regression, to examine how they are related to saving or dissaving among widows; these are also not significantly related to savings rates. Then again, for the most part, the NBDS does not show the same degree of dissaving among widows as do other data sets: even in Table 4.4, mean wealth increases only 2.5 percent over nine years (about 0.28 percent annually), and median wealth declines by 1.5 percent annually. Nonetheless, we further explore whether expenses associated with a spouse's death were strongly related to dissaving among widows, using some additional questions asked only of widows in the NBDS. These questions (asked only of widows) concerned health care and funeral expenses associated with the death of a spouse and any wills in place.

Some 768 widows agreed to answer the questions. A sizable minority reported having to pay out-of-pocket hospital or medical bills of $1,000 or more (18 percent), with an average payment of approximately $3,900. Relatively few (3 percent) paid for nursing home care, but if they did, the bill was large—$15,000 on average. Most (89 percent) had funeral expenses, which averaged $3,700, as well as other, unspecified out-of-pocket death expenses of about $6,700. Two-thirds of spouses had wills when they died, and 70 percent of the widows report receiving something from the estate. Overall, however, taking all death expenses into account, total out-of-pocket expenses totaled $5,449 on average (ranging from $0 to $118,500). While this is a relatively large sum of money, it is not enough to account for the 15 percent decline in widows' median wealth shown in Table 4.4.

5.2. *Results from the AHEAD*

We present results from the AHEAD for Wave 1 singles in Table 5.4 and for Wave 1 married couples in Table 5.5. We do not separate out individuals who were married in the first wave but not the second as we do for the NBDS because, with only two years between the waves in the AHEAD, there are very few of these cases. We have examined (with regressions not reported here) whether widowed singles had different dissaving patterns than non-widowed singles, but we found little evidence of this. In addition, we did not find evidence that female and male widowed singles behaved differently enough to justify separate regressions.

The results for singles are presented in Table 5.4. The average household increased its wealth by 78.8 percent over the two years we observe them in the data. As was true in the younger sample of the NBDS, we find that savings rates increase with age, though for the AHEAD sample, this levels off at about age 79 and declines thereafter. Households headed by individuals over age 79 have lower savings rates than do younger households. As in the NBDS, more educated households had higher savings rates and wealthier households had lower rates. The coefficients imply that an individual saves 11 percentage points more for each additional year of education, and 10 percentage points higher than average wealth leads to a 4 percentage point lower savings rate. Although income and race/ethnicity tend to be significant only at the 90 percent level, the signs indicate that blacks and Latinos save less and that individuals with higher income save more. These results appear to be fairly robust. The median regression (column 2) gives results similar to those in model 1 in terms of both size and significance. As with the NBDS, our basic conclusions are fairly robust to different measures of central tendency (i.e., mean regressions versus median regressions).

In models 3 to 5 in Table 5.4, we examine other covariates of dissaving. In model 3, we include the number of functional items with which the respondent had difficulty (lifting a ten-pound weight, going up stairs, grasping a small object, and walking a mile).[27] We find, as expected, that less healthy people (those with greater functional limitations)

[27] These were chosen for consistency across the NBDS and AHEAD data sets.

dissave more. In particular, each additional functional limitation in Wave 1 is associated with a 10 percentage point increase in dissaving. This coefficient is only marginally statistically significant. We explored this basic health finding with further regressions (not shown) and concluded that the marginal statistical significance of these results is a function of the two health measures being closely correlated, given the short time elapsing between waves of the survey.

The correlation makes it difficult to isolate the effect of each variable, and it is therefore difficult to measure precisely; either measure on its own had a large, significant impact. In addition, these conclusions were robust to measuring health by substituting other performance items and subjective health responses available in the AHEAD data. Thus, we conclude that as in the NBDS, respondents in poorer health have lower savings rates. Many studies question in which direction the causality flows (whether poor health leads to dissaving or reduced wealth leads to less investment in good health); our results cannot address this issue.

In model 4, we include the measures of the portfolio composition in Wave 1; the excluded category is the amount of the portfolio held in cash and savings accounts. All of the coefficients imply that households storing their wealth in forms other than cash—housing, other property, and stocks and bonds—had much higher savings rates. The coefficient on stock/bond wealth share is particularly large, implying that individuals with 10 percentage points more of their wealth in stock holdings than the average household accumulated 8 percentage points more wealth. All of these coefficients are practically quite large and, unlike in the younger sample of the NBDS, they are consistently statistically significant. These coefficients are presumably capturing real excess returns in the various markets.

In the NBDS, we had limited data on expenditures. In the AHEAD, we use a variable for whether or not the individual had an overnight hospital stay, and another variable indicating entering a nursing home, to examine whether significant expenditures, especially related to health, may be correlated with dissaving. We control for health in Wave 1 (measured by the functional items discussed above) to attempt to isolate the effect of a particular health event separately from a decline in general health. We find that hospital and nursing home stays are associated with lower savings rates, although only the coefficient on entering the nursing home is statistically significant. This echoes our earlier findings for the younger NBDS sample, which was that there is not strong evidence for widespread health expenditure-related dissaving.

Table 5.5 contains the regression results for married people who on average saw their wealth increase by 49 percent over the two years of the data. The age effects are somewhat smaller in model 1 than they were for single households, but the pattern is the same: younger households have higher savings rates than older ones do. Each additional year of education is associated with a 4.6 percentage point increase in savings. Race/ethnicity and income results are also similar to those of single households, though generally these effects are not precisely measured (i.e., are not statistically significant).

The effect of health is much smaller than the estimates for single individuals and estimated very imprecisely. We interpret these results as indicating that married households do not respond as strongly to changes in the health of one of its members because the household continues to need resources to finance consumption for the other members.

The portfolio composition results are similar to those for single households. Holding wealth other than cash (the excluded group) is associated with larger wealth gains. For married households, holding wealth in other property has a significantly larger impact than holding wealth in stocks and bonds.

In model 5 of Table 5.5, we include indicators for whether a spouse enters the nursing home, the respondent is hospitalized, or the spouse dies. We find that the nursing home and hospitalization variables are associated with lower savings rates, but the variable for a spouse dying enters positively. The latter result is particularly interesting because it suggests entering widowhood is not associated with large increases in dissaving; these results are consistent with those found in the NBDS. However, we note that all of these events are relatively uncommon in the two-year panel of the AHEAD: there are not enough occurrences to estimate the effect precisely; thus, we cannot say with confidence that the coefficients are non-zero. This does not, however, mean that the effects are not large for some households, even if they are not for the sample as a whole. Even in the nine years of the NBDS, we found that less than 3 percent of widows incurred out-of-pocket expenses for nursing home care, yet such costs, if incurred, were large (on the order of $15,000).

Taken as a whole, these regression results, despite the significant measurement error incurred by examining household-level changes in wealth over time, confirm what we found in the simple tabular analyses of Section 4. Less educated and female respondents had lower savings rates over the 1980s and 1990s. Effects by race and ethnicity change depending on the sample, making it difficult to draw general conclusions. However, we note that the coefficients for blacks are always negative and significant in the median regressions. We take these results as weak evidence of blacks having lower savings rates.

We also found that less healthy households dissave more over time. At younger ages (Wave 1 of the NBDS), less healthy households appeared to be accumulating savings, and households with a decline in health between waves had lower savings rates. By Wave 2 and in the older AHEAD sample, households in poorer health exhibited more dissaving. Medical, nursing home, and funeral expenses did not have significant effects on savings rates in our data, once other factors were taken into account. We did not find evidence supporting a bequest motive, in that households with children did not behave much differently than did households without children.

6. Discussion and Conclusions

The life-cycle hypothesis of consumption and findings from previous research have guided this descriptive analysis of dissaving among older persons. We examined trends in dissaving in the 1980s and early 1990s by marital status, age, education, health, out-of-pocket expenditures, portfolio composition, children, race/ethnicity, initial wealth, and other characteristics. We presented both tabular and multivariate analyses using the NBDS and the AHEAD data sets to support four main findings.

First, the results from the NBDS data for the 1980s show changes in wealth to be fairly flat. Mean wealth grew by just under 1 percent a year for the nine years of the sample period, while median wealth declined by about a quarter of a percentage point a year. In short, for this relatively young sample, ages 61 to 69, wealth stayed relatively constant. This is in contrast to results from the Retirement History Survey (RHS), which found that a similarly aged cohort in the 1970s dissaved. However, data from the Survey of Income and Program Participation (SIPP) in the mid-1980s suggest systematic dissaving does not begin until after the age of 70. The age at which dissaving begins appears to have risen over time. The NBDS results are also not inconsistent with theoretical predictions based on the life-cycle model, which under a reasonable set of parameters would predict dissaving after the age of 70.

Second, the results from the AHEAD data for the 1990s suggest that the sample members overall enjoyed wealth *increases*. Given that these individuals are aged 70 and above, these results are anomalous in light of the life-cycle hypothesis of consumption and other empirical research for previous time periods. One possible explanation for the anomalous results is that the wealth growth was due to the dramatic rise in stock prices over the two years of the AHEAD sample period. Older households might have been spending down their assets at their intended rate, but they may have formed their expectations about how fast or slow that rate should be before the market returns grew so high. Thus, households simply may not be dissaving because two years may be too short a period for households to make large adjustments to their spending behavior.

Third, we find considerable heterogeneity in dissaving patterns across households in both data sets. Less well-off households, whether measured by wealth, income, education, or health, dissaved more rapidly than did better-off households. Generally, there is increasing wealth inequality: households with few assets are more likely to dissave and households that own considerable wealth are more likely to save. Less educated households had lower wealth holdings and were more likely to dissave, as were those that did not own stocks or bonds, lower-income households, and widowed households. Not everyone enjoyed the apparent wealth gains during the 1990s.

Fourth, both the NBDS and AHEAD indicate substantial shifting of assets by older persons. Earlier research suggested that households do not reduce their housing wealth, but in both the NBDS and AHEAD, we found that large numbers of individuals in both data sets spend down their housing wealth. We also found that more of the wealth of

older households was held in equities over time, as was true of the population more generally. Clearly, older investors are not passively spending down their wealth but are instead actively managing their portfolios.

Some additional findings indicate that households whose health declined between waves were more likely to dissave, and we did not find evidence that dissaving was driven by unanticipated expenditures. For example, while we found that out-of-pocket nursing home costs were high if the household had to pay anything, most households do not pay anything for nursing home care. Overall, then, nursing home costs do not explain the dissaving we find among widows nor among other groups in the data. Similarly, though we find that households in poor or declining health dissaved, the magnitude of the change in wealth is not large; averaged over the population, the change in wealth is negligible.

Finally, we do not see strong evidence of a bequest motive, the explanation some researchers have given for slow dissaving among older households. We studied this by comparing savings patterns across households with and without children, as children are most often the recipients of bequests. We found that savings patterns of the two kinds of households are quite similar. In other words, we did not find dramatic savings differences that would suggest households with a bequest motive hold on to more of their wealth and that, as a result, aggregate dissaving rates are low. We also examine whether the absence of differential savings occurred because parents give resources to their children before they die, rather than waiting to bestow a posthumous bequest. This does not seem to be the case: wealthier households are likely to give their children money even before they die, but they are accumulating wealth at the same time. We conclude that our data do not provide strong evidence of a bequest motive.

Overall, we find that many of the important economic trends noted for the general population over the last decade have similarly affected older persons. The spectacular returns in the equity market, the shift of resources to equity holdings, and the increase in inequality, which have received much attention in the popular press and the academic literature, are also important to understanding the dissaving behavior of older persons. As new waves of AHEAD and related surveys become available, it will be very interesting to see which of the trends in household savings patterns persist.

Table 2.1
Previous Empirical Evidence on Dissaving

Data Set*	Annual Real Rate of Wealth Change	Source
1963, 1964 Federal Reserve**	-1.2%	Mirer, 1980
NLS Mature Men 1967-1976	-5.0	Diamond and Hausman, 1984
RHS 1969-1979 (Singles)	-4.5	Hurd, 1987
RHS 1969-1979 (Couples)	-1.6	Hurd, 1987
SIPP 1984, 1985 (Singles)	-3.9	Hurd, 1991
SIPP 1984, 1985 (Couples)	-1.8	Hurd, 1991
PSID, 1989-1994 (all 65+)	+	Hurst, Luoh, Stafford, 1998

Note: We simply note "+" for the Panel Study of Income Dynamics (PSID) because a comparable rate of change cannot be calculated. However, the change in wealth is positive.
*The results are drawn from the following data sets: Survey of Financial Characteristics of Consumers and Survey of Changes in Family Financing (Federal Reserve), National Longitudinal Survey (NLS), Retirement History Survey (RHS), Survey of Income and Program Participation (SIPP), and Panel Study of Income Dynamics (PSID).
**These results are based on changes in median wealth.

Table 2.2
Mean Annual Real Changes in Wealth (percent): SIPP 1984

Age Range	Singles	Couples	All
65-69	-0.1%	2.3%	1.3%
70-74	-4.8	-5.9	-5.3
75+	-6.0	-3.7	-5.1
All	-3.9	-1.8	-2.9

Note: These calculations are from the 1984 SIPP, Waves 4-7.
Source: Hurd, 1991.

Table 2.3
Mean Annual Income: AHEAD 1993
(in $000)

	Age Category			
Income Source	**70-74**	**75-79**	**80-84**	**85+**
Earnings	$ 4.0	$ 1.5	$ 1.0	$ 0.2
Pensions	16.6	15.9	12.4	10.4
Social Security	10.2	10.4	9.4	8.2
Private pension	6.4	4.5	3.0	2.2
Capital income	2.1	2.9	2.6	1.8
Other	1.1	0.8	0.7	0.8
Total	23.8	21.1	16.7	13.2

Source: Based on Gustman and Juster (1996).

Table 2.4
Mean Household Wealth: RHS 1975 and 1979
(in $000)

	1975		1979	
	Wealth	**Percentage**	**Wealth**	**Percentage**
Housing	$22.4	14%	$26.9	18%
Business and property	11.0	7	11.6	8
Financial	23.2	15	22.5	15
Pensions	23.2	15	18.0	12
SSI, welfare, and transfers	2.7	2	2.3	2
Medicare-Medicaid	15.8	10	17.7	12
Social Security	48.4	31	44.0	30
Future earnings	9.6	6	3.9	3
Total	156.3	100	146.9	100

Note: Wealth is measured in 1979 dollars. The calculations are based on 7,483 (1975) and 6,610 (1979) observations from the Retirement History Survey (RHS). Farm households and farm wealth were excluded.
Source: Hurd and Shoven, 1985.

Table 3.1
Demographic Characteristics: NBDS and AHEAD

	NBDS	AHEAD
Sample size	7,986	6,117
Earliest birth year	1914	1890
Mean birth year	1917	1916
Latest birth year	1920	1923
%Female	55.4	63.4
%White	88.5	85.8
%Black	8.1	9.5
%Latino	2.4	3.6
%Other	1.0	1.2
%Married 1st survey	78.6	50.9
%Married 2nd survey	53.0	46.9
%Have children	89.3	85.0
Average number of children	2.7	2.7
%Less than high school	45.0	41.0
%High school diploma	31.3	31.2
%Some college	13.5	15.3
%Completed 4-year degree	10.3	12.5
%U.S. born	N/A	91.7

Note: Weights are used for the analysis. N/A represents questions that were not available in a particular data set.
Source: Authors' tabulations from the NBDS and the AHEAD data files.

Table 3.2
Health Characteristics: NBDS and AHEAD

	Percent in NBDS		Percent in AHEAD	
	Wave 1	**Wave 2**	**Wave 1**	**Wave 2**
Difficulty with functional activities				
0	55.5%	40.5%	48.6%	40.8%
1	16.1	14.0	17.2	20.5
2	11.0	10.2	12.5	16.2
3	8.3	10.0	13.6	16.5
4	7.5	8.6	8.1	5.9
DK/RF Any	1.6	16.7	0.4	0.2
Prevalence of diseases				
Diabetes*	20.9	25.9	12.4	14.6
Cancer	3.6	12.1	13.1	15.6
Chronic lung disease	13.6	17.9	10.1	11.1
Heart attack/coronary disease	11.1	22.1	30.1	34.2
Stroke**	--	--	7.4	10.2
Current high blood pressure	42.9	39.9	49.6	52.3
Arthritis***	53.3	58.9	26.1	55.2
General health				
Excellent	N/A	9.0	11.1	10.1
Very good		18.3	24.5	23.8
Good		29.2	31.8	30.7
Fair		26.9	22.5	23.2
Poor		16.5	9.9	12.2
DK/RF		0.0	0.1	0.1

Note: Weights are used for the analysis. We consider four functional activities that are common in the data sets: walking several blocks, climbing stairs, able to lift ten pounds, and able to pick up a dime; the counts are for the number of activities for which any difficulty was reported. For diseases, the percentages represent the number of individuals who reported the problem. N/A represents questions that were not available in a particular data set. DK/RF indicates a response of "Don't Know" or "Refusal."
*In the NBDS, this is measured as all digestive system conditions, including diabetes, gallbladder, stomach, kidney, and liver conditions.
**Strokes are included with heart attacks and coronary disease in the NBDS.
***In the NBDS, this is measured as arthritis, rheumatism, or other bone and muscle conditions.
Source: Authors' tabulations from the NBDS and the AHEAD data files.

Table 3.3
Wealth Ownership Rates: NBDS and AHEAD

	Percent in NBDS		Percent in AHEAD	
	Wave 1	**Wave 2**	**Wave 1**	**Wave 2**
Positive total wealth	96.1%	96.0%	93.2%	93.0%
Non-housing wealth	91.2	92.3	89.1	92.9
Cash	90.3	91.8	79.9	86.2
Stocks, bonds, IRAs	33.0	37.7	33.5	41.3
Real property (excl. home)	20.4*	81.9	79.2	71.9
Debt	N/A	N/A	13.5	12.4
Housing wealth	82.8	77.3	74.3	67.0

Note: Weights are used for the analysis. N/A represents questions that were not available in a particular data set.

*Transportation property is not included in the Wave 1 tabulation of real property in the NBDS.

Source: Authors' tabulations from the NBDS and the AHEAD data files.

Table 3.4
Real Wealth Characteristics: NBDS and AHEAD
Means, Standard Deviations, Medians
(in $000)

	NBDS		AHEAD	
	Wave 1	**Wave 2**	**Wave 1**	**Wave 2**
Total wealth	$158.2	$172.1	$218.5	$255.8
	352.7	376.9	445.8	561.0
	99.7	97.5	98.0	107.6
Non-housing wealth	84.6	94.8	136.3	173.8
	324.6	322.0	383.2	500.5
	22.8	25.3	24.2	35.8
Cash	33.4	38.4	33.8	48.9
	57.4	68.1	73.1	121.4
	13.3	12.7	5.5	10.4
Stocks, bonds, IRAs	18.9	34.1	52.0	77.1
	258.4	258.6	246.0	267.7
	0.0	0.0	0.0	0.0
Real property*	30.8	21.2	51.6	48.5
(excluding home)	163.5	144.2	207.3	275.7
	0.0	0.0	5.5	4.2
Debt	N/A	N/A	1.1	0.7
			9.9	6.0
			0.0	0.0
Housing wealth	73.7	77.3	82.1	82.0
	89.5	102.9	137.7	133.9
	62.5	57.4	52.8	46.8

Note: For each set of numbers, the first, second, and third numbers are the mean, standard deviation, and median, respectively. Weights are used for the analysis. Dollar values were deflated using the CPI-U to 1998 dollars. N/A represents questions that were not available in a particular data set.
*Value of vehicles not included in NBDS estimates, to facilitate comparison across waves in the NBDS.
Source: Authors' tabulations from the NBDS and the AHEAD data files.

Table 3.5
Monthly Real Income Characteristics: NBDS and AHEAD
Means, Standard Deviations, Medians

Income Sources	Wave 1 NBDS	Wave 1 AHEAD
Social Security	$ 1,030	$ 961
	675	498
	980	884
Social Security + pensions +	1,512	1,411
government transfers	1,049	1,008
	1,339	1,168
Social Security + pensions +	1,970	1,659
government transfers +	1,429	2,618
earnings + transfers from	1,711	1,233
relatives and friends		
Total income	2,485	2,096
	13,889	2,764
	2,068	1,375

Note: For each set of numbers, the first, second, and third numbers are the mean, standard deviation, and median, respectively. Weights are used for the analysis. Dollar values were deflated using the CPI-U to 1998 dollars.
Source: Authors' tabulations from the NBDS and the AHEAD data files.

Table 4.1
Distribution of Wealth: NBDS and AHEAD
(in $000)

NBDS Wealth Percentiles	Total Wave 1	Total Wave 2	Non-housing Wave 1	Non-housing Wave 2	Housing Wave 1	Housing Wave 2
5th	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0
10th	4.4	1.4	0.0	0.0	0.0	0.0
25th	42.7	35.9	2.6	2.4	22.0	8.4
50th	99.7	97.5	22.8	25.3	62.5	57.4
75th	181.0	201.1	82.9	92.4	101.3	100.5
90th	321.3	375.9	190.0	228.6	152.0	179.5
95th	479.8	560.9	337.8	367.5	201.0	239.4
AHEAD Wealth Percentiles	**Total Wave 1**	**Total Wave 2**	**Non-housing Wave 1**	**Non-housing Wave 2**	**Housing Wave 1**	**Housing Wave 2**
5th	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0
10th	0.6	0.3	0.0	0.0	0.0	0.0
25th	28.5	23.3	2.7	2.5	0.0	0.0
50th	98.0	107.6	24.2	35.8	52.8	46.8
75th	228.9	265.1	120.3	154.9	99.1	104.0
90th	479.6	547.3	343.4	397.1	176.1	187.1
95th	773.2	905.4	577.8	734.4	220.1	249.5

Note: Weights are used for the analysis. Dollar values were deflated using the CPI-U to 1998 dollars. See the text for definition of the wealth components.
Source: Authors' tabulations from the NBDS and the AHEAD data files.

Table 4.2
Distribution of Non-Housing Wealth (in $000): NBDS and AHEAD
(in $000)

NBDS Wealth Percentiles	Cash Wave 1	Cash Wave 2	Stock/Bond Wave 1	Stock/Bond Wave 2	Real Prop Wave 1	Real Prop Wave 2
5th	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0
10th	0.0	0.0	0.0	0.0	0.0	0.0
25th	1.5	1.3	0.0	0.0	0.0	0.0
50th	13.3	12.7	0.0	0.0	0.0	0.0
75th	42.2	46.6	2.5	8.5	0.0	0.0
90th	90.4	105.8	25.3	65.9	67.6	29.2
95th	126.7	154.0	64.2	139.1	168.9	107.7
AHEAD Wealth Percentiles	**Cash Wave 1**	**Cash Wave 2**	**Stock/Bond Wave 1**	**Stock/Bond Wave 2**	**Real Prop Wave 1**	**Real Prop Wave 2**
5th	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0
10th	0.0	0.0	0.0	0.0	0.0	0.0
25th	0.1	0.7	0.0	0.0	0.3	0.0
50th	5.5	10.4	0.0	0.0	5.5	4.2
75th	33.0	49.9	11.0	26.0	22.0	16.6
90th	98.0	121.6	104.6	166.3	107.9	91.5
95th	154.1	202.7	259.7	372.1	236.6	207.9

Note: Weights are used for the analysis. Dollar values were deflated using the CPI-U to 1998 dollars. See the text for definition of the wealth components.
Source: Authors' tabulations from the NBDS and the AHEAD data files.

Table 4.3
Prevalence (in fractions) and Conditional Means (in $000)
of Underlying Wealth Components: NBDS and AHEAD

	Fraction Owners Wave 1	Fraction Owners Wave 2	Average Annual Change	Mean Value for Owners Wave 1	Mean Value for Owners Wave 2	Average Annual Change
NBDS Wealth Components						
Housing	0.83	0.77	-0.7%	$ 88.0	$ 99.9	1.4%
Other real property	0.12	0.10	-1.7	97.1	115.4	1.9
Business, farm and profess. practice	0.11	0.07	-3.6	180.5	155.1	-1.4
Savings, checking accounts	0.89	0.91	0.2	10.2	10.8	0.6
Money market accounts, CDs	0.49	0.52	0.6	49.1	54.6	1.1
Stocks, bonds	0.26	0.31	1.9	63.9	92.9	4.5
IRAs, Keogh	0.13	0.15	1.5	28.7	43.6	5.2
AHEAD Wealth Components						
Housing	0.75	0.67	-5.3	$115.2	$126.1	4.8%
Mortgage	0.11	0.08	-13.6	35.7	37.5	2.6
Other real estate	0.20	0.16	-10.0	146.2	169.0	7.8
Vehicles	0.77	0.70	-4.5	11.2	11.0	-1.1
Business	0.04	0.04	0.1	214.2	118.6	-22.3
Bank accounts	0.78	0.85	4.5	28.0	32.6	8.3
CDs/saving bonds	0.24	0.33	18.8	50.9	65.2	14.1
Corporate bonds	0.07	0.10	21.4	118.8	123.8	2.1
Stocks	0.22	0.32	22.7	154.3	174.4	6.5
IRAs	0.18	0.19	2.8	60.1	49.9	-8.5
Other assets	0.12	0.10	-8.3	33.8	47.9	20.9
Debt	0.13	0.12	-3.8	8.1	5.4	-16.4

Note: Weights are used for the analysis. Dollar values were deflated using the CPI-U to 1998 dollars, denominated in thousands.

Source: Authors' tabulations from the NBDS and the AHEAD data files.

Table 4.4
Distribution of Total Wealth by Marital Status: NBDS and AHEAD
(in $000)

	M-M		M-S		S-S	
NBDS	**Wave 1**	**Wave 2**	**Wave 1**	**Wave 2**	**Wave 1**	**Wave 2**
Sample Size	3,881	3,881	1,832	1,832	2,273	2,273
5th	$ 5.1	$ 2.4	$ 0.0	$ 0.0	$ 0.0	$ 0.0
10th	22.0	18.0	11.0	1.4	0.0	0.0
25th	64.9	63.0	44.8	31.2	5.6	2.6
50th	120.8	127.1	97.7	83.2	51.9	42.1
75th	214.5	241.4	171.0	187.9	111.7	114.9
90th	375.8	436.0	288.0	325.6	202.7	240.6
95th	567.5	639.7	463.2	471.5	299.0	383.3
Mean	198.1	217.3	146.6	150.2	96.0	106.9
Std. deviation	448.8	463.7	229.6	280.8	136.5	197.5
AHEAD	**Wave 1**	**Wave 2**	**Wave 1**	**Wave 2**	**Wave 1**	**Wave 2**
Sample Size	2,859	2859	289	289	2,969	2,969
5th	$ 2.8	$ 3.1	$ 0.0	$ 0.0	$ 0.0	$ 0.0
10th	21.7	18.7	1.5	0.5	0.0	0.0
25th	68.2	69.4	33.0	19.8	5.5	2.4
50th	156.3	181.9	95.8	104.0	54.6	52.0
75th	337.9	360.7	225.6	273.4	138.7	175.7
90th	656.0	755.7	465.6	580.0	297.2	343.6
95th	965.4	1226.6	765.4	904.8	477.7	550.8
Mean	302.1	362.0	235.4	223.4	137.8	158.4
Std. deviation	532.9	705.1	501.1	307.3	311.1	369.6

Note: Weights are used for the analysis. The percentile distributions were calculated separately by marital status. Dollar values were deflated using the CPI-U to 1998 dollars. We divide the sample into those who were married in both periods (M-M), those who were single in both periods (S-S), and those who changed marital status, most of whom were widowed (M-S). There is not sufficient sample size to divide M-S into those who married over the period and those who were widowed.
Source: Authors' tabulations from the NBDS and the AHEAD data files.

Table 4.5
Mean Real Wealth by Retirement Income Percentile: NBDS and AHEAD
(in $000)

Retirement Income Percentile	Total Wealth		Non-Housing Wealth		Housing Wealth	
NBDS	**Wave 1**	**Wave 2**	**Wave 1**	**Wave 2**	**Wave 1**	**Wave 2**
1-25th	$110.8	$ 91.3	$ 58.9	$ 46.6	$51.9	$ 44.6
26-50th	151.2	155.6	82.5	83.0	68.7	72.7
50-75th	163.2	175.9	83.2	94.2	80.0	81.7
76-100th	207.7	265.5	113.6	155.5	94.1	110.0
AHEAD	**Wave 1**	**Wave 2**	**Wave 1**	**Wave 2**	**Wave 1**	**Wave 2**
1-25th	$102.5	$114.7	$ 54.1	$ 63.5	$ 48.3	$ 51.2
26-50th	148.8	172.5	83.6	108.4	65.1	64.0
50-75th	249.8	281.3	160.1	188.1	89.7	93.2
76-100th	364.8	444.7	241.7	327.3	123.1	117.5

Note: Retirement income consists of Social Security, public and private pensions, and government transfers. Dollar values were deflated using the CPI-U to 1998 dollars.
Source: Authors' calculations from the NBDS and AHEAD data files.

Table 4.6
Median Real Wealth: NBDS and AHEAD
(in $000)

	NBDS			AHEAD		
Group	**Wave 1 Median**	**Wave 2 Median**	**Annual Change**	**Wave 1 Median**	**Wave 2 Median**	**Annual Change**
Age group in Wave 1						
Age 61-65	$ 94.3	$ 91.5	-0.3%			
Age 66-69	111.7	112.5	0.1			
Age 70-74				$121.3	$135.1	5.7%
Age 75-79				94.8	115.4	10.8
Age 80-84				87.2	84.5	-1.5
Age 85+				51.0	52.0	0.9
Education						
Less than high school	67.6	61.1	-1.0	47.3	41.9	-5.7
Completed high school	115.2	115.5	0.0	121.1	135.1	5.8
Some college	143.6	156.7	0.9	171.5	189.4	5.2
Completed college	187.3	214.3	1.4	272.9	339.4	12.2
Children						
Yes	101.4	99.4	-0.2	99.1	107.6	4.3
No	86.0	88.3	0.3	92.4	107.1	7.9
Owns house in Wave 1						
Yes	117.7	116.2	-0.1	139.8	162.5	8.1
No	2.7	4.8	7.7	2.2	3.1	20.0
Owns stocks/bonds in Wave 1						
Yes	179.6	179.9	0.0	297.4	296.3	-0.2
No	78.7	75.4	-0.4	70.4	71.7	0.9
Received $1000+ from child between waves						
Yes	65.9	27.8	-5.8			
No	100.5	98.3	-0.2			
Gave $1000+ to child between waves						
Yes	298.7	337.3	1.3			
No	132.7	142.0	0.7			
Household member entered nursing home between waves						
Yes				30.8	10.4	-33.1
No				100.1	112.3	6.1

Notes: Dollar values were deflated using the CPI-U to 1998 dollars. Appendix B contains tables with the results for mean and median total, housing and non-housing wealth by these and many other groups.
Source: Authors' calculations from the data.

Table 5.1
Multivariate Regressions for People Unmarried in Waves 1 and 2: NBDS
Dependent Variable: Ratio of Wealth Change between Waves to Wealth Level in Wave 1; N=1,566

	(1)-OLS		(2)-Median		(3)-OLS		(4)-OLS		(5)-OLS	
Regressors	**Coeff.**	**Std. Error**	**Coeff.**	**Std. Error**	**Coeff.**	**Std. Error**	**Coeff.**	**Std. Error**	**Coeff.**	**Std. Error**
Age	0.114*	0.068	0.028	0.018	0.120*	0.068	0.124*	0.068	0.113*	0.068
Age-squared	0.035	0.035	0.015	0.010	0.042	0.035	0.036	0.035	0.033	0.035
Female	-0.472**	0.228	-0.183**	0.078	-0.447*	0.229	-0.444*	0.231	-0.456**	0.229
Education	0.061**	0.029	0.032**	0.009	0.054*	0.029	0.060**	0.029	0.058**	0.029
Children (Yes=1)	-0.153	0.197	-0.108*	0.066	-0.142	0.196	-0.166	0.199	-0.154	0.197
Black	-0.336	0.308	-0.276**	0.095	-0.321	0.308	-0.406	0.315	-0.344	0.308
Latino	-0.214	0.521	0.099	0.171	-0.124	0.520	-0.271	0.522	-0.201	0.522
Other race/ethnicity (excl. white)	-1.117	1.016	0.229	0.370	-1.090	1.014	-1.069	1.016	-1.096	1.017
Log (W1 wealth)	-0.800**	0.048	-0.084**	0.014	-0.805**	0.049	-0.858**	0.060	-0.805**	0.048
Log (W1 quarterly income)	0.048	0.070	-0.008	0.020	0.055	0.070	0.062	0.071	0.051	0.071
Expects future pension income	-0.126	0.238	-0.069	0.076	-0.131	0.238	-0.097	0.239	-0.132	0.239
W1 functional difficulties					0.076	0.077				
W2 functional difficulties					-0.214**	0.068				
Missing W1 functional difficulties					1.038*	0.612				
Missing W2 functional difficulties					0.689	2.797				
W1 housing wealth share							0.284	0.283		
W1 other property wealth share							1.052*	0.507		
W1 stock/bond wealth share							0.940	0.752		
W1-W2 Medical costs of $1,000+									0.077	0.252
W1-W2 Long-term care of $1,000+									-0.064	1.002
W1-W2 Other losses of $1,000+									0.587	0.435
Constant	8.884**	0.789	0.777**	0.237	9.084**	0.805	9.145**	0.810	8.904**	0.790
R-squared	0.156		0.002		0.163		0.159		0.157	

Note: Weights are used for the analysis. The symbol * indicates coefficients with a p-value less than 0.1, and ** indicates coefficients with a p-value less than 0.05.
Source: Authors' calculations from the NBDS data file.

Table 5.2
Multivariate Regressions for People Married in Waves 1 and 2: NBDS
Dependent Variable: Ratio of Wealth Change between Waves to Wealth Level in Wave 1; N=3,736

	(1)-OLS		(2)-Median		(3)-OLS		(4)-OLS		(5)-OLS	
Regressors	**Coeff.**	**Std. Error**	**Coeff.**	**Std. Error**	**Coeff.**	**Std. Error**	**Coeff.**	**Std. Error**	**Coeff.**	**Std. Error**
Age	0.032	0.037	0.035**	0.012	0.031	0.037	0.017	0.037	0.028	0.037
Age-squared	0.054*	0.028	0.014	0.009	0.056**	0.028	0.056**	0.028	0.054*	0.028
Female	0.027	0.075	0.023	0.028	0.043	0.076	0.049	0.075	0.029	0.075
Education	0.083**	0.013	0.045**	0.005	0.080**	0.013	0.069**	0.013	0.079**	0.013
Children (Yes=1)	-0.113	0.134	-0.001	0.049	-0.114	0.134	-0.080	0.133	-0.118	0.134
Black	0.265	0.184	-0.202**	0.065	0.283	0.185	0.383**	0.185	0.264	0.184
Latino	0.171	0.260	0.178*	0.093	0.155	0.260	0.246	0.259	0.161	0.260
Other race/ethnicity (excl. white)	0.038	0.373	0.059	0.130	0.043	0.376	0.104	0.372	0.046	0.373
Log (W1 wealth)	-0.745**	0.033	-0.326**	0.011	-0.748**	0.034	-0.748**	0.038	-0.749**	0.034
Log (W1 quarterly income)	-0.035	0.036	-0.010	0.012	-0.036	0.036	-0.036	0.036	-0.033	0.036
Expects future pension income	0.079	0.106	0.076**	0.038	0.068	0.106	0.057	0.106	0.082	0.106
W1 functional difficulties					0.020	0.037				
W2 functional difficulties					-0.070**	0.031				
Missing W1 functional difficulties					0.083	0.363				
Missing W2 functional difficulties					-0.701	0.953				
W1 housing wealth share							-0.677**	0.150		
W1 other property wealth share							-0.268	0.225		
W1 stock/bond wealth share							0.586*	0.325		
W1-W2 Medical costs of $1,000+									0.038	0.088
W1-W2 Long-term care of $1,000+									-0.198	0.324
W1-W2 Other losses of $1,000+									0.472**	0.151
Constant	8.578**	0.484	3.482**	0.158	8.709**	0.493	9.130**	0.498	8.624**	0.484
R-squared	0.127		0.014		0.128		0.136		0.129	

Note: Weights are used for the analysis. The symbol * indicates coefficients with a p-value less than 0.1, and ** indicates coefficients with a p-value less than 0.05.
Source: Authors' calculations from the NBDS data file.

Table 5.3
Multivariate Regressions for People Widowed Between Waves: NBDS
Dependent Variable: Ratio of Wealth Change between Waves to Wealth Level in Wave 1; N=2,040

	(1)-OLS		(2)-Median		(3)-OLS		(4)-OLS		(5)-OLS	
Regressors	**Coeff.**	**Std. Error**	**Coeff.**	**Std. Error**	**Coeff.**	**Std. Error**	**Coeff.**	**Std. Error**	**Coeff.**	**Std. Error**
Age	0.071	0.060	0.047**	0.018	0.065	0.061	0.072	0.060	0.072	0.060
Age-squared	0.020	0.042	-0.024*	0.013	0.024	0.042	0.025	0.042	0.021	0.042
Female	-0.015	0.125	0.064	0.044	-0.007	0.139	0.002	0.125	-0.009	0.125
Education	0.130**	0.021	0.063**	0.007	0.130**	0.021	0.114**	0.022	0.124**	0.021
Children (Yes=1)	0.170	0.195	0.020	0.069	0.174	0.194	0.193	0.195	0.181	0.195
Black	-0.156	0.230	-0.219**	0.079	-0.150	0.231	-0.137	0.233	-0.161	0.230
Latino	0.594	0.456	0.142	0.152	0.563	0.456	0.601	0.455	0.609	0.456
Other race/ethnicity (excl. white)	1.294**	0.550	0.015	0.189	1.220**	0.551	1.270**	0.549	1.224**	0.550
Log (W1 wealth)	-0.766**	0.043	-0.229**	0.013	-0.770**	0.043	-0.798**	0.050	-0.771**	0.043
Log (W1 quarterly income)	-0.113*	0.064	-0.013	0.019	-0.108*	0.064	-0.115*	0.065	-0.114*	0.065
Expects future pension income (W1)	0.395**	0.170	-0.012	0.059	0.402**	0.170	0.389**	0.170	0.408**	0.170
W1 functional difficulties					0.060	0.051			-0.141	0.177
W2 functional difficulties					-0.107*	0.058			-0.229	0.529
Missing W1 functional difficulties					1.271**	0.478			0.274	0.197
Missing W2 functional difficulties					-0.103	0.157			0.676	0.282
W1 housing wealth share							-0.024	0.225	8.573	0.714
W1 other property wealth share							0.360	0.374		
W1 stock/bond wealth share							1.863**	0.603		
W1-W2 Medical costs of $1,000+									-0.141	0.177
W1-W2 Long-term care of $1,000+									-0.229	0.529
W1-W2 Funeral costs of $1,000+									0.274	0.197
W1-W2 Other losses of $1,000+									0.676**	0.282
Constant	8.505**	0.714	2.032**	0.219	8.523**	0.734	8.929**	0.725	8.573**	0.714
R-squared	0.151		0.002		0.155		0.156		0.154	

Note: Weights are used for the analysis. The symbol * indicates coefficients with a p-value less than 0.1, and ** indicates coefficients with a p-value less than 0.05.
Source: Authors' calculations from the NBDS data file.

Table 5.4
Multivariate Regressions for Wave 1 Single People: AHEAD
Dependent Variable: Ratio of Wealth Change between Waves to Wealth Level in Wave 1; N=2,592

	(1)-OLS		(2)-Median		(3)-OLS		(4)-OLS		(5)-OLS	
Regressors	**Coeff.**	**Std. Error**	**Coeff.**	**Std. Error**	**Coeff.**	**Std. Error**	**Coeff.**	**Std. Error**	**Coeff.**	**Std. Error**
Age	0.042**	0.013	0.003	0.004	0.050**	0.013	0.047**	0.013	0.051**	0.013
Age-squared	-0.003**	0.001	0.000	0.000	-0.003**	0.001	-0.003**	0.001	-0.002*	0.001
Female	0.106	0.150	0.011	0.046	0.177	0.150	0.108	0.150	0.136	0.150
Education	0.110**	0.020	0.027**	0.006	0.110**	0.020	0.106**	0.020	0.109**	0.020
Children (Yes=1)	-0.154	0.142	-0.033	0.046	-0.148	0.141	-0.155	0.142	-0.157	0.141
U.S. Born (Yes=1)	-0.416*	0.223	-0.025	0.071	-0.440**	0.223	-0.450**	0.224	-0.415*	0.222
Black	-0.219	0.189	-0.207**	0.052	-0.175	0.189	-0.233	0.191	-0.217	0.189
Latino	-0.240	0.371	-0.083	0.100	-0.324	0.371	-0.267	0.372	-0.260	0.369
Other race/ethnicity (excl. white)	0.032	0.577	-0.327*	0.174	0.053	0.574	-0.019	0.577	0.049	0.574
Log (W1 wealth)	-0.412**	0.032	-0.048**	0.010	-0.426**	0.032	-0.439**	0.037	-0.435**	0.032
Log (W1 annual income)	0.228*	0.124	0.086**	0.039	0.229*	0.124	0.237*	0.125	0.236*	0.124
W1 functional difficulties					-0.104*	0.060			-0.103**	0.049
W2 functional difficulties					-0.048	0.059				
W1 housing wealth share							0.323*	0.191		
W1 other prop. wealth share							0.423**	0.190		
W1 stock/bond wealth share							0.860**	0.366		
W1-W2 nursing home									-0.698**	0.260
W1-W2 hospital									-0.100	0.122
Constant	3.028**	0.851	-.0224	0.269	3.290**	0.860	3.059**	0.858	3.371**	0.855
R-squared	0.074		0.008		0.079		0.078		0.081	

Note: Weights are used for the analysis. The symbol * indicates coefficients with a p-value less than 0.1, and ** indicates coefficients with a p-value less than 0.05.
Source: Authors' calculations from the NBDS data file.

Table 5.5
Multivariate Regression for Wave 1 Married People: AHEAD
Dependent Variable: Ratio of Wealth Change between Waves to Wealth Level in Wave 1; N=3,043

	(1)-OLS		(2)-Median		(3)-OLS		(4)-OLS		(5)-OLS	
Regressors	**Coeff.**	**Std. Error**	**Coeff.**	**Std. Error**	**Coeff.**	**Std. Error**	**Coeff.**	**Std. Error**	**Coeff.**	**Std. Error**
Age	0.022**	0.006	0.005*	0.003	0.023**	0.006	0.028**	0.006	0.023**	0.006
Age-squared	-0.001	0.001	-0.001*	0.000	-0.001	0.001	-0.001	0.001	-0.001	0.001
Education	0.046**	0.009	0.022**	0.005	0.046**	0.009	0.042**	0.009	0.046**	0.009
Children (Yes=1)	-0.026	0.081	-0.047	0.042	-0.028	0.081	-0.044	0.080	-0.027	0.081
U.S. Born (Yes=1)	0.110	0.101	-0.077	0.051	0.088	0.102	0.067	0.100	0.101	0.102
Black	-0.213*	0.114	-0.232**	0.051	-0.223*	0.115	-0.210*	0.113	-0.222*	0.115
Latino	-0.450**	0.164	-0.252**	0.070	-0.465**	0.164	-0.499**	0.162	-0.459**	0.164
Other race/ethnicity (excl. white)	-0.283	0.283	-0.121	0.149	-0.293	0.283	-0.360	0.280	-0.290	0.283
Log (W1 wealth)	-0.299**	0.021	-0.169**	0.011	-0.302**	0.021	-0.278**	0.022	-0.302**	0.021
Log (W1 annual income)	0.056	0.058	0.069**	0.030	0.065	0.058	0.066	0.057	0.066	0.058
W1 functional difficulties					0.013	0.030			0.001	0.024
W2 functional difficulties					-0.020	0.028				
W1 housing wealth share							0.457**	0.115		
W1 other property share							0.960**	0.112		
W1 stock/bond wealth share							0.473**	0.165		
W1-W2 nursing home									-0.080	0.149
W1-W2 hospital									-0.023	0.055
W1-W2 spouse died									0.037	0.094
Constant	3.120**	0.440	1.564**	0.228	3.116**	0.447	2.455**	0.452	3.098**	0.447
R-squared	0.073		0.026		0.075		0.096		0.074	

Note: Weights are used for the analysis. The symbol * indicates coefficients with a p-value less than 0.1, and ** indicates coefficients with a p-value less than 0.05.
Source: Authors' calculations from the NBDS data file.

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Appendix A

A.1. Imputing Missing Data

As noted in the text, missing values are an important problem when analyzing wealth data. This problem arises because total wealth consists of many subcomponents. If any of these subcomponents are missing, then total wealth cannot be calculated for a given person. To remedy this situation, we employ a method of imputation that has been referred to as "predictive mean matching" (Little, 1988); this method can be viewed as an extension of "hot-decking." This method imputes missing values by using an outcome value from within the data set for a "similar" person. One of the primary benefits of this imputation procedure is that it is variance preserving.

To introduce "predictive mean matching," consider an outcome y_i that is related to a vector of predictors X_i,

$$(1)\quad y_i = f(X_i, b).$$

Suppose that the vector X_i is observed for all individuals in the sample but the outcome y_i is missing for a subset of individuals. Denote the set of individuals for whom y_i and X_i are available as J and denote the set of individuals for whom only X_i is available as K. For predictive mean matching, we first obtain an estimate of the parameter vector $\hat{b}$ from the individuals for whom a complete set of data is available (i.e., $i \in J$). Second, for every individual in the sample, we calculate a predicted outcome,

$$(2)\quad \hat{y}_i = f(X_i, \hat{b}).$$

Third, for every individual k for whom the outcome must be predicted ($k \in K$, the "donees"), a "donor" individual j is selected from the sample without missing information ($j \in J$), so that the predicted values of the donor and the donee are "nearest." Finally, the *actual* value of the donor is then assigned to the individual who requires an imputed value. Formally, let y_k be the imputed value for person k. Then the predictive mean matching method defines $y_k = y_{j^*}$, where j^* is the j that solves the expression

$$(3)\quad \min(\hat{y}_j - \hat{y}_k)^2 \quad \forall\ j \in J.$$

This assignment process is then repeated for all k in K.

This basic imputation procedure is extended along two dimensions. First, the imputation procedure, including both the prediction component and the donor component, can be applied separately to subsets of the data. For both data sets, we impute values separately by marital status. We make this decision because we believe that the process determining wealth is significantly different by marital status. Second, even though the initial predictive model might be pooled across various categories of individuals to obtain better predictive models, a donor could be selected from a smaller subset of individuals. We use this extension with the unfolding bracket information in the AHEAD; this is discussed further below.

For the NBDS, we impute all underlying wealth components listed in Table A.1.

We perform the imputation in two steps to exploit additional information in the NBDS. For most every wealth component, individuals were asked, "Do you own X?" We exploit this information by predicting whether an individual owns a particular component with exactly the same predictive mean matching procedure, except that the outcome variable is dichotomous. Then, in a second step, we repeat the predictive mean matching to obtain actual values for those with missing value information, but only doing this for those who have the asset (either by direct response or through imputation). Both matching methods use the following predictors (i.e., X_i): age, education dummies, and race. All imputations are done separately by marital status. For the NBDS, we exploit the panel nature of the data and use the particular wealth component from the other wave in the prediction.

In Table A.1, we present information for the NBDS imputations. Although the missing data problem is serious enough that imputing is very important, the respondents provided a great deal of information about their wealth. In the top panel of the table, we present the percentage of individuals who responded to the questions regarding the underlying wealth components. The vast majority of respondents answered whether or not they had a particular component; for example, the lowest response rate was 95.1 percent for certificates of deposits. Looking at the response rate for all of the "yes/no" questions, the response rate was often above 99 percent.

In the second two columns of the top panel, we present the percentage of individuals who gave a value for the particular components, including a value of zero (implicit in responding "no" to the question regarding any). For example, 88.9 percent and 90.3 percent of the sample gave a value for their money market accounts (including zeroes) in waves 1 and 2, respectively. The two wealth components for which a value was most often not given were savings accounts and checking accounts. Again, overall most individuals provided information about their wealth holdings.

Rather than impute all of the underlying components for the NBDS, we grouped these components into eleven assets, and then imputed these assets. We aggregate these eleven assets into eight categories and present the means before and after imputations for the eight categories in the second panel of Table A.1. Comparing these values, it is readily apparent that means on the imputed sample are higher for every asset. This should be expected, given the fact that individuals are more likely to not answer the value question rather than the yes/no question if they own the asset. Moreover, there is significant evidence that individuals who tend to be wealthy were less likely to provide a value for a component (results not shown). For example, the highly educated and married individuals were less likely to provide a value.

For the AHEAD, we impute all of the underlying wealth components listed in Table A.2. We use the same basic set of predictors as was used for the NBDS, utilize questions on whether not the household owned an asset, and impute wealth values separately by marital status. Importantly, an additional piece of information is available in the AHEAD that should improve the imputations dramatically. For individuals who refused to answer the question concerning the actual value of the component, a series of

questions were asked so that individuals' wealth level could be placed in a bracket (e.g., $25,000 to $50,000). We utilize the responses to these questions regarding brackets by choosing a donor only from within the respondent's bracket, although we run the prediction regressions across all brackets. We run the prediction across all brackets to obtain more precise estimates on the other covariates.

In Table A.2, we present information about the imputations for the AHEAD. Again, like the NBDS, the vast majority of the sample responded "yes" or "no" as to whether they had an asset. The component for which the response rate was lowest was CDs and savings bonds in Wave 2, where only 97.2 percent of the sample answered the question. In the AHEAD, we utilize the additional unfolding bracket questions. Importantly, most every individual answered some of the bracket questions concerning the actual value. Besides vehicle value in Wave 2, over 90 percent of the sample gave bracket or value information for every other wealth component. Once again, these results make clear that there is much information concerning wealth holdings for respondents in the AHEAD, making us confident that the end results are not overly dependent on our imputation methodology.

In the last three columns of Table A.2, we present the mean values for all of the wealth components. We first present the mean before imputations (dropping individuals when they are missing a particular component) as a comparison. We then present the mean of each wealth component after imputing missing values using only the response to the yes/no question regarding the wealth component and the predictors discussed above.

As found for the NBDS, most of the mean values increase after imputing the missing values. This result is consistent with the finding, for example, that more educated people are more likely to have missing values in the AHEAD (results not shown). In the final column, we include the bracketed information in the imputation process by selecting only donors from within the respondent's bracket. Comparing these mean values to the previous mean values, it is clear that the values generally increase again. The increase is particularly large for stock and bond wealth, where the mean wealth increases from $34,000 with no imputations to $53,000 with imputations using the brackets. Thus, even conditional on our predictors, those with higher wealth tend not to respond to the value question. Without the information of brackets, the mean level of wealth in the AHEAD would have been understated.

A.2. Measurement Error and Regression-to-the-Mean

As discussed in Section 2, measurement error is a significant problem when examining wealth data. Because wealth can be held in a multitude of forms, individuals often do not know their exact wealth holdings, particularly in the case when wealth is held in variable priced assets. A possible byproduct of measurement error is the phenomenon of regression-to-the-mean. In the case at hand, regression-to-the-mean is when individuals in the lower part of the distribution appear to save and individuals in the upper part of the distribution appear to dissave.

To see how measurement error can cause observed regression-to-the-mean, we first sketch a very simple mathematical example. Let X^* be true wealth for an individual that is constant over time. However, suppose that the researcher can only observe X_t in any given time period, where $X_t = X^* + e_t$ and e_t is mean-zero, serially independent measurement error.[28] Consider the case where an individual is observed to have wealth that is too high, i.e., $X_1 > X^*$. Such a person will likely have *lower* observed wealth in the next period. The reasoning behind this is straightforward. First, such a person had a positive draw of measurement error. Second, such a person will only have higher earnings if he or she has an *even higher* positive draw of measurement error. Because measurement error is assumed to be mean-zero, the probability of such an event must be less than (or equal to) 0.5.

Another way to think about this is to imagine dividing the data into two groups based on their Wave 1 wealth, so that the wealthiest are in the top half and the less wealthy in the bottom half. Now imagine that there is some positive probability that wealth was measured with error. Some households in the top group should really be in the bottom group and vice versa. On average, those who were mistakenly classified in the lower half will likely be correctly classified in the upper half in the next period. This means that even if no one actually dissaves, average wealth among the top group will decline. In other words, it will look like wealthier households dissaved even in the absence of any real dissaving whatsoever. The same phenomenon is at work in the bottom half of the wealth distribution, such that it looks like less wealthy households accumulated wealth over time.

We analyze the data in this report in two ways. Our preferred method is to examine wealth changes among aggregated groups, such as by grouping households into five-year age categories, and looking at each group's change in average wealth between the surveys. This method has the advantage of reducing the influence of measurement error whenever that error is uncorrelated with the group characteristic. Quite simply, the measurement error "averages out": some 70-year-olds, for example, will overreport wealth, and other 70-year-olds will underreport it. Grouping them and taking the average of wealth wipes out the effect of error because even if for any one household it is non-zero, on average the error is equal to zero. Repeating the process for both waves of the survey means we can reasonably cleanly measure wealth changes over time.

However, we also wanted to look at the decisions individual households made, in order to simultaneously consider a number of factors (age, health, portfolio composition, etc.) and also because this is the model people intuitively have in mind when they think about changes in household wealth: how much less wealth does a household have in 1991, for example, than in 1982? For the most part, we ignore the level of the changes. It seems rather unlikely, for example, that the wealth of the average single-headed household

[28] These assumptions are much stronger than are necessary for regression-to-the-mean; we make them simply to keep the example transparent.

increased by over 90 percent from 1982 to 1991. Nonetheless, the regressions are useful in thinking about the relative importance of various factors; rather than focus on the magnitude of change in the dependent variable (for that we emphasize the aggregated results of Section 4), we focus on the size and significance of coefficients.

That said, we largely ignore the largest coefficient, that of Wave 1 wealth. The consistently negative coefficient implies that wealthier households have lower savings rates. This is in direct contrast to the aggregated results of Section 4, in which every factor associated with higher wealth (education, stock holdings, etc.) suggests that households wealthier than average in Wave 1 also saw above-average wealth gains between surveys. This also contradicts the other regression coefficients that suggest the same tale as the aggregated results.

Table A.1
Wealth Component Imputations: NBDS

Wealth Components	*Responded Yes/No Wave **1***	*Responded Yes/No Wave **2***	*Gave Value Wave 1*	*Gave Value Wave 2*
Money market accounts	95.5%	97.5%	88.9%	90.3%
Certificates of deposit	95.1	97.4	87.3	86.7
Savings/credit union	95.3	97.5	81.5	86.7
Checking accounts	95.7	98.2	82.5	85.1
Bonds	98.0	98.7	93.1	93.7
Stocks and mutual funds	97.9	98.5	92.0	89.2
IRA/Keogh (respondent)	99.3	99.2	97.6	97.1
IRA/Keogh (spouse)	99.2	99.3	97.8	97.8
Home equity	99.6	99.7	90.9	91.8
Business equity	99.5	99.5	97.7	98.3
Professional practice equity	99.5	99.5	99.1	99.4
Farm equity	99.5	99.5	97.8	98.3
Equity in other property	99.4	99.5	97.5	98.2

Mean Quarterly Asset Values ($000's)	*Before Imputations Wave 1*	*Before Imputations Wave 2*	*After Imputations Wave 1*	*After Imputations Wave 2*
Money market and CD accounts	$14.0	$21.9	$15.9	$25.4
Savings, credit union, checking accounts	5.5	8.6	5.8	8.7
Stocks, bonds and mutual funds	8.1	19.7	10.3	31.7
IRA/Keogh (respondent)	1.6	3.2	2.0	4.0
IRA/Keogh (spouse)	0.5	1.3	0.6	1.6
Home equity	43.9	64.4	44.4	65.6
Business, professional practice, farm equity	11.2	6.4	14.4	8.6
Other property	6.6	8.5	7.4	9.5

Note: Weights are used for the analysis. Dollar values were deflated using the CPI-U to 1998 dollars.

Source: Authors' tabulations from the NBDS data file.

Table A.2
Wealth Component Imputations: AHEAD

Wealth Component	*Responded Yes/No*	*Gave Bracket Info or Value*	*Gave Value*	*Mean Before Imputations*	*Mean Using Only Y/N*	*Mean Using Bracket Info*
Wave 1 Variables						
Housing value	99.3%	98.3%	84.6%	$75.2	$78.6	$78.1
First mortgage	99.1	NA	97.7	3.0	3.3	3.3
Second mortgage	99.1	NA	99.0	0.1	0.1	0.1
Other real estate	98.9	98.2	92.8	18.5	25.8	27.1
Vehicles	99.9	98.3	83.3	7.7	8.1	7.8
Business	99.7	99.4	97.7	3.4	5.6	8.4
Bank accounts	98.0	93.0	74.6	16.7	17.7	19.7
CDs/saving bonds	97.6	95.5	89.1	7.1	11.0	11.0
Corporate bonds	98.0	97.4	95.4	2.5	3.8	7.1
Stocks	98.2	96.5	89.3	13.7	21.4	30.4
IRAs	98.8	97.8	94.7	7.1	9.0	9.7
Other assets	98.4	87.8	87.8	2.3	3.1	3.6
Debt	98.8	98.6	97.1	0.8	0.9	1.0
Wave 2 Variables						
Housing value	100.0	98.5	85.9	71.3	74.4	81.6
Mortgage	100.0	99.7	98.4	2.3	2.7	2.7
2nd mortgage	100.0	100.0	99.8	0.02	0.04	0.04
Other real estate	99.2	98.6	94.4	17.7	23.7	25.6
Vehicles	99.6	89.3	77.4	6.6	7.2	7.4
Business	99.5	98.7	96.6	9.2	14.3	17.4
Bank accounts	98.0	92.3	69.9	22.1	22.8	26.6
CDs/savings bonds	97.2	94.3	86.6	13.8	17.9	20.5
Corporate bonds	98.3	97.2	94.4	7.8	12.2	11.7
Stocks	98.1	95.8	85.0	33.8	40.9	53.4
IRAs	98.0	97.2	93.9	6.5	8.6	9.0
Other assets	98.6	98.0	96.1	3.7	5.2	4.4
Debt	99.1	98.8	96.7	0.5	0.6	0.6

Note: Weights are used for the analysis. Dollar values were deflated using the CPI-U to 1998 dollars.
Source: Authors' tabulations from the AHEAD data file.

Appendix B: Supplemental Results

In Tables B.1 through B.6, we present supplemental results for Section 4.3.

Table B.1
Total Real Wealth: NBDS
(in $000)

Group	*N*	*Wave 1 Mean*	*Wave 2 Mean*	*Annual Change*	*Wave 1 Median*	*Wave 2 Median*	*Annual Change*
W1 married							
Yes	5,803	$178.0	$192.6	0.8%	$112.2	$112.5	0.0%
No	2,183	85.9	96.7	1.3	50.8	42.2	-1.7
W1 age groups							
Age 61-65	4,309	151.5	163.6	0.8	94.3	91.5	-0.3
Age 66-69	3,677	175.0	193.0	1.0	111.7	112.5	0.1
Education							
Less than high school	3,489	100.0	100.8	0.1	67.6	61.1	-1.0
Completed high school	2,436	160.4	175.3	0.9	115.2	115.5	0.0
Some college	1,149	222.3	255.3	1.5	143.6	156.7	0.9
Completed college	912	322.8	365.8	1.3	187.3	214.3	1.4
Race/ethnicity							
White	7,014	171.7	186.1	0.8	108.4	107.9	0.0
Black	686	40.9	41.7	0.2	22.0	19.0	-1.3
Latino	206	77.1	111.3	4.4	44.3	53.9	2.2
Other	80	109.2	134.4	2.3	78.5	61.6	-2.2
Children							
Yes	6,944	162.1	174.7	0.8	101.4	99.4	-0.2
No	1,042	131.5	154.0	1.7	86.0	88.3	0.3
W1 homeowner							
Yes	6,473	184.0	194.6	0.6	117.7	116.2	-0.1
No	1,513	34.7	63.8	8.4	2.7	4.8	7.7
W1 stock/bond owner							
Yes	2,148	285.7	304.0	0.6	179.6	179.9	0.0
No	5,838	113.2	125.5	1.1	78.7	75.4	-0.4
W1 functional difficulties							
0	4,765	188.8	203.8	0.8	120.8	119.8	-0.1
1	1,196	138.0	152.0	1.0	92.7	86.8	-0.6
2	816	112.3	116.2	0.3	68.6	67.0	-0.2
3	582	101.4	118.5	1.7	59.1	54.1	-0.9
4	506	83.0	96.7	1.6	57.4	57.4	0.0
DK/RF	121	128.2	149.6	1.7	60.8	48.3	-2.0
Did not work between waves	5,090	154.9	165.3	0.7	99.5	92.6	-0.7
Worked between waves	2,896	164.4	184.7	1.2	101.2	107.8	0.7

Table B.1 (cont.)
Total Real Wealth: NBDS
(in $000)

Group	*N*	*Wave 1 Mean*	*Wave 2 Mean*	*Annual Change*	*Wave 1 Median*	*Wave 2 Median*	*Annual Change*
Gave $1,000+ to child							
No	6,711	$132.7	$142.0	0.7%	$88.7	$86.7	-0.2%
Yes	1,275	298.7	337.3	1.3	165.2	184.5	1.2
Received $1,000+ from child							
No	7,869	159.1	173.6	0.9	100.5	98.3	-0.2
Yes	117	93.1	58.6	-3.7	65.9	27.8	-5.8
Medical expense > $1,000							
No	6,472	146.2	159.2	0.9	92.9	90.1	-0.3
Yes	1,514	210.6	228.1	0.8	127.2	131.5	0.3
Long-term care > $1,000							
No	7,890	157.6	171.6	0.9	99.0	97.4	-0.2
Yes	96	211.9	214.1	0.1	149.3	123.7	-1.7
Funeral expenses > $1,000							
No	7,659	156.6	169.5	0.8	99.0	96.9	-0.2
Yes	327	193.9	229.7	1.8	113.2	128.3	1.3
W2 functional difficulties							
0	3,659	191.8	212.4	1.1	121.6	127.2	0.5
1	1,165	153.8	169.4	1.0	99.7	96.9	-0.3
2	857	134.9	128.0	-0.5	82.8	75.6	-0.9
3	796	104.8	106.5	0.2	64.3	61.4	-0.5
4	652	98.7	104.7	0.6	64.9	53.9	-1.7
Missing/DK	857	143.3	164.3	1.5	95.9	82.2	-1.4
Home or car expense > $1,000							
No	5,725	128.4	135.1	0.5	85.3	77.4	-0.9
Yes	2,261	232.7	264.5	1.4	137.3	152.6	1.1
Other loss > $1,000							
No	7,549	153.0	163.9	0.7	97.6	96.1	-0.2
Yes	437	251.8	317.4	2.6	155.7	168.8	0.8

Note: Weights are used for the analysis. Dollar values were deflated using the CPI-U to 1998 dollars.
Source: Authors' tabulations from the NBDS data file.

Table B.2
Non-Housing Real Wealth: NBDS
(in $000)

Group	*N*	*Wave 1 Mean*	*Wave 2 Mean*	*Annual Change*	*Wave 1 Median*	*Wave 2 Median*	*Annual Change*
W1 married							
Yes	5,803	$96.2	$107.0	2.0%	$28.7	$33.5	1.7%
No	2,183	41.9	50.1	1.1	7.5	6.8	-0.9
W1 age groups							
Age 61-65	4,309	80.0	90.0	1.3	19.6	21.5	1.0
Age 66-69	3,677	96.0	106.7	1.1	33.8	34.7	0.3
Education							
Less than high school	3,489	47.2	45.9	-0.3	8.3	7.9	-0.5
Completed high school	2,436	81.0	95.6	1.8	33.8	39.5	1.7
Some college	1,149	125.6	148.9	1.9	49.0	60.0	2.2
Completed college	912	205.4	236.2	1.5	70.9	93.9	3.2
Race/ethnicity							
White	7,014	93.5	104.5	1.2	28.9	32.3	1.2
Black	686	9.2	9.2	0.0	0.1	0.2	18.3
Latino	206	26.8	45.1	6.8	2.5	3.6	4.2
Other	80	46.8	54.9	1.7	16.9	12.0	-2.9
Children							
Yes	6,944	72.8	95.2	1.0	23.3	25.5	0.9
No	1,042	86.3	92.6	2.7	20.3	23.0	1.3
W1 homeowner							
Yes	6,473	95.1	104.5	1.0	28.9	33.5	1.6
No	1,513	34.3	48.4	4.1	2.7	2.3	-1.7
W1 stock/bond owner							
Yes	2,148	179.3	190.6	0.6	80.6	81.5	0.1
No	5,838	51.1	61.0	1.9	11.9	13.0	1.0
W1 functional difficulties							
0	4,765	104.3	116.8	1.2	35.5	39.5	1.1
1	1,196	70.0	79.3	1.3	18.4	18.2	-0.1
2	816	58.2	58.4	0.0	9.3	10.8	1.6
3	582	46.4	61.3	3.2	5.6	6.0	0.6
4	506	34.1	38.0	1.2	3.4	4.4	3.1
DK/RF	121	75.2	84.0	1.2	8.4	9.8	1.6
Did not work between waves	5,090	81.7	89.7	1.0	23.4	23.6	0.0
Worked between waves	2,896	90.0	104.4	1.6	22.0	29.9	3.4

Note: Weights are used for the analysis. Dollar values were deflated using the CPI-U to 1998 dollars.

Source: Authors' tabulations from the NBDS data file.

Table B.3
Housing Real Wealth: NBDS
(in $000):

Group	*N*	*Wave 1 Mean*	*Wave 2 Mean*	*Annual Change*	*Wave 1 Median*	*Wave 2 Median*	*Annual Change*
W1 married							
Yes	5,803	$81.7	$85.6	0.5%	$67.6	$62.2	-0.8%
No	2,183	44.0	46.6	0.6	25.3	18.0	-2.9
W1 age group							
Age 61-65	4,309	71.5	73.6	0.3	59.1	53.9	-0.9
Age 66-69	3,677	79.0	86.3	0.9	67.6	59.8	-1.1
Education							
Less than high school	3,489	52.8	54.9	0.4	45.6	41.9	-0.8
Completed high school	2,436	79.4	79.7	0.0	67.6	59.8	-1.1
Some college	1,149	96.7	106.4	1.0	84.5	77.8	-0.8
Completed college	912	117.4	129.6	1.0	101.3	95.7	-0.6
Race/ethnicity							
White	7,014	78.2	81.6	0.4	67.6	59.8	-1.1
Black	686	31.8	32.6	0.3	20.3	16.8	-1.7
Latino	206	50.3	66.3	3.2	33.8	34.7	0.3
Other	80	62.4	79.5	2.7	45.6	45.5	0.0
Children							
Yes	6,944	75.8	79.6	0.5	65.9	59.8	-0.9
No	1,042	58.7	61.4	0.5	50.7	40.7	-2.0
W1 homeowner							
Yes	6,473	88.9	90.1	0.1	74.3	68.2	-0.8
No							
W1 stock/bond owner							
Yes	2,148	106.4	113.4	0.7	84.5	83.8	-0.1
No	5,838	62.1	64.5	0.4	52.4	47.9	-0.9
W1 functional difficulties							
0	4,765	84.5	87.0	0.3	67.6	65.8	-0.3
1	1,196	68.0	72.7	0.7	59.1	50.3	-1.5
2	816	54.1	57.9	0.7	49.0	41.9	-1.4
3	582	55.0	57.2	0.4	42.2	35.9	-1.5
4	506	48.9	58.7	2.0	37.2	38.3	0.3
DK/RF	121	53.0	65.6	2.4	42.2	35.9	-1.5
Did not work between waves	5,090	73.2	75.6	0.3	60.8	53.9	-1.1
Worked between waves	2,896	74.5	80.3	7.8	64.2	59.8	-0.7

Note: Weights are used for the analysis. Dollar values were deflated using the CPI-U to 1998 dollars.

Source: Authors' tabulations from the NBDS data file.

Table B.4
Total Real Wealth: AHEAD
(in $000)

Group	*N*	*Wave 1 Mean*	*Wave 2 Mean*	*Annual Change*	*Wave 1 Median*	*Wave 2 Median*	*Annual Change*
W1 married							
Yes	3,148	$280.9	$331.1	8.9%	$150.8	$175.7	8.3%
No	2,969	126.7	149.0	8.8	54.6	52.0	-2.4
W1 age groups							
Age 70-74	2,396	246.7	266.3	4.0	121.3	135.1	5.7
Age 75-79	1,732	204.4	245.2	10.0	94.8	115.4	10.8
Age 80-84	1,233	169.6	225.8	16.5	87.2	84.5	-1.5
Age 85+	756	140.3	190.2	17.8	51.0	52.0	0.9
Education							
Less than HS	2,650	101.1	104.6	1.7	47.3	41.9	-5.7
Completed HS	1,827	212.6	243.0	7.1	121.1	135.1	5.8
Some college	908	302.8	369.7	11.1	171.5	189.4	5.2
Completed college	732	449.7	584.7	15.0	272.9	339.4	12.2
Race/ethnicity							
White	4,932	238.3	283.7	9.5	121.1	142.4	8.8
Black	794	57.0	66.1	8.0	24.8	21.1	-7.5
Latino	316	68.2	63.4	-3.5	25.2	19.0	-2.4
Other	75	246.5	170.2	-5.5	14.1	20.3	21.9
Children							
Yes	5,198	205.7	239.6	8.2	99.1	107.6	4.3
No	919	208.1	260.5	12.6	92.4	107.1	7.9
W1 homeowner							
Yes	4,542	261.2	305.6	8.5	139.8	162.5	8.1
No	1,575	47.0	61.4	15.3	2.2	3.1	20.0
W1 stock owner							
Yes	1,281	483.7	514.9	3.2	297.4	296.3	-0.2
No	4,836	132.5	170.6	14.4	70.4	71.7	0.9
W1 bond owner							
Yes	391	671.2	729.0	4.3	455.6	457.4	0.2
No	5,726	174.3	209.5	10.1	89.2	94.6	3.0
W1 functional difficulties							
0	2,928	259.2	305.5	8.9	136.5	159.0	8.3
1	1,131	215.7	228.7	3.0	99.1	105.0	3.0
2	854	143.1	186.1	15.0	69.3	74.2	3.5
3	957	121.7	153.1	12.9	44.9	37.4	-8.3
4	217	78.3	108.3	19.2	25.5	26.0	0.9
DK/RF	30	61.0	82.4	17.6	23.7	37.4	29.1

Table B.4 (cont.)
Total Real Wealth: AHEAD
(in $000)

Group	*N*	*Wave 1 Mean*	*Wave 2 Mean*	*Annual Change*	*Wave 1 Median*	*Wave 2 Median*	*Annual Change*
W 2 household type							
Married	2,885	$286	$342.2	9.8%	$156.3	$181.9	8.2%
Single-female	2,575	123.8	141.7	7.2	54.5	51.5	-2.8
Single-male	657	177.1	201.9	7.0	73.7	69.6	-2.8
W2 household member in nursing home							
Yes	283	123.5	127.7	1.7	30.8	10.4	-33.1
No	5,834	210	248.3	9.1	100.1	112.3	6.1
W2 respondent hospitalized							
Yes-fully covered	1,387	172.6	201.9	8.5	80.3	77.8	-1.6
Yes-not fully covered	638	244.5	268.1	4.8	74	88.5	9.8
No	4,000	213	254.3	9.7	110.1	123.5	6.1
DK/RF	92	143.9	178.9	12.2	85.1	86.3	0.7
W2 functional difficulties							
0	2,421	272.8	315.5	7.8	149.1	175.9	9.0
1	1,246	189.8	232.3	11.2	97.5	103.7	3.2
2	1,032	174.6	212.8	10.9	71.6	75.9	3.0
3	1,035	134.8	138.4	1.3	50.6	45.7	-4.8
4	373	114.2	180	28.8	37.6	36.4	-1.6
DF/RF	10	106.7	135.6	13.5	118.9	127.6	3.7
W2 subjective health							
Excellent	593	330.5	405.1	11.3	175	197	6.3
Very good	1,415	252.5	280.2	5.5	125.8	155.8	11.9
Good	1,868	202.8	249.6	11.5	108.8	118.5	4.5
Fair	1,461	152.8	184.9	10.5	71.5	70.7	-0.6
Poor	778	134.6	142.4	2.9	44	37.1	-7.8
DK/RF	2	130.4	356.7	86.8	130.4	356.7	86.8

Note: Weights are used for the analysis. Dollar values were deflated using the CPI-U to 1998 dollars.

Source: Authors' tabulations from the AHEAD data file.

Table B.5
Non-Housing Real Wealth: AHEAD
(in $000)

Group	*N*	*Wave 1 Mean*	*Wave 2 Mean*	*Annual Change*	*Wave 1 Median*	*Wave 2 Median*	*Annual Change*
W1 married							
Yes	3,148	$183.7	$236.0	14.2%	$56.6	$73.8	15.1%
No	2,969	70.7	91.4	14.7	8.8	12.0	17.9
W1 age groups							
Age 70-74	2,396	157.1	177.3	6.4	40.6	47.7	8.7
Age 75-79	1,732	124.1	164.0	16.1	20.9	34.3	32.0
Age 80-84	1,233	106.1	163.1	26.8	19.8	26.1	15.9
Age 85+	756	86.9	138.1	29.4	11.0	20.3	42.1
Education							
Less than high school	2,650	53.5	54.4	0.8	5.5	6.8	11.4
Completed high school	1,827	133.3	163.1	11.2	44.0	55.7	13.3
Some college	908	194.4	263.2	17.7	67.9	95.1	20.0
Completed college	732	309.0	455.2	23.7	150.2	208.1	19.3
Race/ethnicity							
White	4,932	152.7	199.1	15.2	41.8	57.7	19.0
Black	794	19.8	24.4	11.7	1.0	0.5	-23.8
Latino	316	24.8	18.5	-12.8	0.3	0.2	-18.5
Other	75	152.8	96.3	-18.5	1.7	0.9	-21.7
Children							
Yes	5,198	127.6	162.2	13.6	24.2	34.6	21.5
No	919	135.8	186.2	18.5	26.4	42.2	29.9
W1 homeowner							
Yes	4,542	157.2	203.6	14.8	42.5	57.6	17.8
No	1,575	47.0	56.7	10.3	2.2	2.1	-3.3
W1 stock owner							
Yes	1,281	364.8	399.1	4.7	189.3	184.1	-1.4
No	4,836	66.3	104.0	28.4	12.1	19.0	28.3
W1 bond owner							
Yes	1,281	524.5	596.1	6.8	346.7	320.2	-3.8
No	4,836	101.8	136.4	17.0	19.8	31.2	28.7
W1 functional difficulties							
0	2,928	164.4	211.4	14.3	47.3	64.4	18.1
1	1,131	139.8	154.8	5.4	24.2	35.3	23.0
2	854	84.2	126.8	25.3	13.2	22.5	35.7
3	957	69.3	99.4	21.7	5.5	6.2	6.7
4	217	45.4	71.2	28.4	1.7	1.6	-2.8
DK/RF	30	15.4	39.7	78.7	2.2	1.2	-22.8

Note: Weights are used for the analysis. Dollar values were deflated using the CPI-U to 1998 dollars.

Source: Authors' tabulations from the AHEAD data file.

Table B.6
Housing Real Wealth: AHEAD
(in $000)

Group	*N*	*Wave 1 Mean*	*Wave 2 Mean*	*Annual Change*	*Wave 1 Median*	*Wave 2 Median*	*Annual Change*
W1 married							
Yes	3,148	$97.2	$95.1	-1.1%	$71.5	$72.8	0.9%
No	2,969	56.1	57.6	1.4	27.5	12.5	-27.3
W1 age groups							
Ages 70-74	2,396	89.6	89.0	-0.3	66.0	62.4	-2.8
Ages 75-79	1,732	80.3	81.1	0.5	55.0	52.0	-2.8
Ages 80-84	1,233	63.5	62.7	-0.6	44.0	31.2	-14.6
Ages 85+	756	53.4	52.1	-1.2	21.5	0.0	-50.0
Education							
Less than high school	2,650	47.5	50.2	2.8	32.2	21.0	-17.3
Completed high school	1,827	79.4	80.0	0.3	59.4	52.0	-6.3
Some college	908	108.4	106.5	-0.9	77.0	78.0	0.6
Completed college	732	140.7	129.4	-4.0	98.5	93.6	-2.5
Race/ethnicity							
White	4,932	85.68	84.7	-0.5	60.5	57.2	-2.8
Black	794	37.2	41.7	6.1	16.5	16.6	0.4
Latino	316	43.4	45.0	1.8	19.3	15.6	-9.5
Other	75	93.8	74.0	-10.6	0.0	0.0	0.0
Children							
Yes	5,198	78.1	77.4	-0.5	54.5	46.8	-7.1
No	919	72.3	74.3	1.4	49.5	41.6	-8.0
W1 homeowner							
Yes	4,542	104.0	102.0	-1.0	77.0	72.8	-2.8
No							
W1 stock owner							
Yes	1,281	118.9	115.8	-1.3	83.6	88.4	2.8
No	4,836	66.2	66.6	0.3	44.0	36.4	-8.7
W1 bond owner							
Yes	1,281	146.8	132.9	-4.7	99.1	98.8	-0.2
No	4,836	72.5	73.1	0.4	49.5	41.6	-8.0
W1 functional difficulties							
0	2,928	94.8	94.1	-0.4	68.2	67.6	-0.5
1	1,131	75.8	73.9	-1.3	50.6	43.7	-6.9
2	854	58.9	59.3	0.3	38.5	31.2	-9.5
3	957	52.4	53.7	1.3	27.5	1.04	-50.0
4	217	32.8	37.1	6.4	6.6	0.0	-50.0
DK/RF	30	45.5	42.7	-3.1	13.8	5.2	-31.0

Note: Weights are used for the analysis. Dollar values were deflated using the CPI-U to 1998 dollars.

Source: Authors' tabulations from the AHEAD data file.