Planning and Saving for Retirement[*]

Annamaria Lusardi
(Dartmouth College)

December 2003

There are vast differences in wealth holdings, even among households in similar age groups. In addition, a large percentage of U.S. households arrive close to retirement with little or no wealth. While many explanations can be found to rationalize these facts, approximately thirty percent of households whose head is close to retirement have done little or no planning for retirement.

Planning is shaped by the experience of other individuals: individuals learn to plan for retirement from older siblings. They also learn from the experience of old parents. In particular, unpleasant events, such as financial difficulties and health shocks at the end of life, provide incentives toward planning. In addition, planning affects wealth levels as well as portfolio choice. Individuals who plan are more likely to hold large amounts of wealth and to invest their wealth holdings in high return assets, such as stocks. Thus, planning plays an important role in explaining the saving behavior of many households.

JEL classification: D91, E21, C21.
Keywords: Planning; siblings; wealth and portfolio choice.

1. Introduction

The intertemporal optimization model, such as the life-cycle-permanent income model, has been the basis for the work on savings. The basic implication of the model is that agents plan consumption and saving considering their life-time resources. Thus, agents are forward-looking, they anticipate the decline in income at retirement and save to offset the change in resources in the future.

There have been several extensions and modifications to this basic model. For example, a precautionary motive and a bequest motive have been incorporated into the intertemporal scheme. It is still rather difficult, however, to generate an accurate match of the distribution of wealth in the U.S. What is particularly difficult to rationalize is the huge differences in wealth holdings among households of similar characteristics and economic status. Many studies have documented that households with similar patterns of income end up accumulating vastly different amounts of wealth. [1] We know relatively little about what is causing the huge differences in wealth holdings that we observe across households and why some households save so little.

One aspect of behavior that the basic model of savings and intertemporal optimization has not much considered is that planning for retirement is a complex task, and many individuals may perform it very imperfectly, up to the extreme of postponing the decision until it is too late. Just to mention a few of the difficulties involved in the process, the information required for making decisions is extensive, and the rules concerning Social Security and pensions are rather elaborate. There is little evidence that households are well informed about their Social Security and pension benefits (Gustman and Steinmeier (1999a)).

Very little work has been done in investigating how households make saving plans and how they collect all the relevant information to make savings decisions. In particular, almost all models assume that there are no planning costs and, for example, no differences in how individuals access (and evaluate) information and how they overcome all the difficulties of devising savings plans. However, these costs exist and differences in

---

[1] See the review of the work on savings in Deaton (1992) and Browning and Lusardi (1996), the papers by Hubbard, Skinner and Zeldes (1995), Poterba, Venti and Wise (1994), Venti and Wise (1998, 2001) and the references therein.

devising saving plans and carrying those plans out can be powerful determinants of both wealth holdings and portfolio choice.

This topic is important not only to advance our knowledge of savings, but also to inform the current debate on the effectiveness of saving incentives, on the effects of privatizing Social Security, and on the consequences of different pension schemes (such as the current shift among employers from a defined benefit pension scheme to a defined contribution scheme).

In this paper, I use data from the Health and Retirement Study (HRS) to examine savings in older families and the importance of planning for retirement. There are several advantages in using the HRS to examine household behavior. First, there is much information about households that is not present in other U.S. data sets, as will be explained later. Second, since it concentrates on a specific cohort, the sample size is much bigger than in other data sets that cover the entire population. Third, the implementation of new techniques to elicit information about wealth has led to rather accurate wealth reports.[2]

I first show that approximately thirty percent of households whose head is close to retirement have done little or no planning for retirement. I further show that planning is shaped by the experience of other individuals: individuals learn to plan for retirement from older siblings. They also learn from the experience of old parents. In particular, unpleasant events, such as financial difficulties and health shocks at the end of life, induce people to plan. Even after accounting for many determinants of wealth, I find that households whose head does not plan have substantially lower wealth holdings than households whose head has made some retirement plans. Non-planners also hold different portfolios and, most specifically, they are less likely to hold stocks. Those who do not plan are also more likely to face difficulties in retirement. These findings are supported by other current research on planning and savings (Ameriks, Caplin and Lehay (2003) and Hurst (2003)) as well as studies of how savings and consumption choices can be influenced by the experience of others, in particular negative shocks experienced by family members (Shea (2002) and Cox, Ng and Waldkirch (2003)).

---

[2] For a thorough examination of the HRS, the quality of the data, and comparisons with other data sets, see Juster and Smith (1997) and Smith (1995). Also, see the data appendix.

The paper is organized as follows: in Section 2, I review previous work on retirement savings. In Sections 3 and 4, I examine the empirical evidence on planning and the effects of planning on savings and portfolio choice. In Section 5, I examine the consequences of not planning for retirement. In Section 6, I discuss my findings. In Section 7, I provide some brief conclusions.

2. Previous Work on Savings

Several studies emphasize there is huge heterogeneity in household savings behavior, particularly when looking at households close to retirement. Smith (1995), Venti and Wise (1998, 2001), and Lusardi (1999) use data from the HRS, a sample of U.S. households whose respondents were born between 1931 and 1941, to examine savings of households whose head is only a few years away from retirement. This survey provides detailed information on wealth and the retirement process, with a focus on health, labor markets, and economic and psycho-social factors, and provides researchers with an unusually rich set of information with which to analyze household behavior. They find huge differences in household savings, even after accounting for household characteristics such as permanent income, race, and education. Housing is the most important asset in many household portfolios, and many have little in anything else than their home equity. It is an issue, however, whether households use housing equity to support their consumption at retirement.[3]

A second important finding in these studies is the proportion of households that arrive close to retirement with little or no wealth. A quarter of the households in the sample have less than $30,000 (in 1992 dollars) in total net worth. While total net worth is only a partial measure of accumulation, since it does not include wealth in Social Security and pensions, it is hard to borrow against retirement assets, and it is not obvious how households with only $850 (the first decile of the distribution of net worth) can offset potential shocks to income, health, or family circumstances, and how quickly they can accumulate a stock of wealth in the remaining years up to retirement (Lusardi (1999)). Earlier studies have reported similar findings and emphasized the large

---

[3]See, among others, Venti and Wise (1990, 1991), and Sheiner and Weil (1992).

proportion of older families with little or no wealth (Diamond and Hausman (1984)). Even the paper of Engen, Gale and Uccello (1999), which finds it is possible to account for a large part of the observed variation in pre-retirement wealth once one accounts for heterogeneous earnings shocks and pension coverage, concludes that up to one quarter of the pre-retired population seem to under-save for retirement.

Some demographic groups are particularly important when considering families with little wealth. For example, families whose head has low education (less than high school), report very low wealth (Attanasio (1994), Bernheim and Scholz (1993), Smith (1995), Hubbard, Skinner and Zeldes (1995)). Not only is wealth very heterogeneous, but also portfolios vary widely across households. Only a fraction of the population hold stocks and bonds, and those assets are heavily concentrated among households whose head has a high school education. Most importantly, the less educated respondents are not only less likely to hold stocks and bonds, but they also do not hold basic assets, such as saving and checking accounts (Lusardi (1999)).

A simple way of evaluating household patterns of accumulation is provided in Moore and Mitchell (2000). They use data from the HRS to determine how much wealth (including Social Security and pensions) older households have, and how much they would need to save if they wished to preserve consumption levels after retirement. They conclude that the majority of older households will not be able to maintain current levels of consumption into retirement without additional saving. In particular, the median HRS household would still have to save an additional 16% of income to smooth consumption after retirement.[4]

Similar findings are reported in Warshawsky and Ameriks (2000). They perform the experiment of imputing the current wealth holdings of U.S. households, as reported in the Survey of Consumer Finances (SCF), into one of the most popular financial planners: Quicken Financial Planner. According to the predictions of the planner, they find that about half of working middle class American households will not have fully funded retirements. Some will actually run out of resources very shortly after retirement. These findings are concentrated on specific groups of households, in particular those with little education and those close to retirement (age 50 or more as in the HRS sample).

---

[4] See, however, the findings of Gustman and Steinmeier (1999b).

Additionally, one of the problems that these authors emphasize is that many households have limited resources until late in their life-cycle or start saving very late, up to the point where it is not possible to do much accumulation.

The empirical works on consumption suggest that these predictions may turn out to be accurate. There is a mounting set of evidence that consumption falls sharply at retirement, and much more than can be rationalized by explanations consistent with traditional models of saving, and/or extensions that take non-separabilities between consumption and leisure into account (such as, for example, the costs of going to work). In an early study, Hamermesh (1984) reports that consumption by white married couples early in retirement exceeds by 14% the income that their financial, pension, and Social Security wealth can generate. Thus, resources available to these retirees seem insufficient to allow them to sustain the level of real consumption. Mariger (1987), Hausman and Paquette (1987), and Banks, Blundell and Tanner (1998) report additional evidence of a decline in consumption at retirement.

Using more recent data, Bernheim, Skinner, and Weinberg (1997, 2001) again document that consumption exhibits a sharp drop at the time of retirement and an even more pronounced decline post-retirement. Most importantly, they find a strong negative correlation between retirement savings and the magnitude of the consumption drop; consumption falls sharply for those with little wealth. Recent research, such as Hurd and Rowhedder (2003) and Ameriks, Caplin and Leahy (2002) challenges these findings and shows that households expect their consumption to drop at retirement. Whether this expectation is the result of the costs of going to work, the increase in household production of good and services when workers retire (Aguiar and Hurst (2003)), or the low amount of wealth households end up with at retirement is still to be determined.

3. Evidence on Planning

A simple way to evaluate whether households obey the simple predictions of the life cycle model is to look directly at the evidence on planning. Little work has been done on this topic so far, but a few papers offer some provocative findings. Yakoboski and Dickemper (1997) examine data from the 1997 Retirement Confidence Survey (RCS), which collected information on American workers' retirement planning and saving

behavior. They report that a large proportion of workers have done little or no planning for retirement; only 36% of current workers have tried to determine how much they need to save to fund a comfortable retirement.[5] An important feature, however, is that many of the workers who have done the calculation could not give a figure when asked. Thus, according to this survey, as many as 3/4 of workers have little idea regarding how much money they need to accumulate for retirement.

As additional evidence that planning for retirement is considered an important but difficult task, many employers have started offering financial education to their employees. Financial education is particularly prevalent among firms offering defined contribution pensions, where workers have to make their own decisions on how to allocate pension funds (Bernheim and Garrett (2003)).

There are many books on financial planning and on saving for retirement, and it is instructive to read their suggestions. Many explain basic concepts, such as compound interest, risk diversification, etc. While sources of advice, to implement the strategies suggested in these books, individuals would still need to collect additional information before making investment decisions.[6] It is also useful to note the common "mistakes" reported in these books concerning how people manage their personal finances. For example, in her list of common mistakes, Glink (1999) places at the very top the tendency of people to "put it off 'till tomorrow." The Ernst & Young's Retirement Planning Guide (1997) lists the major obstacles to a secure retirement and places "procrastination" in third place in order of importance, after inflation and taxes.

The HRS also provides some information on indicators of planning.[7] In section K on "Retirement Plans," respondents are asked to report how much they have thought

---

[5] While older workers are more likely to report a retirement saving goal, only 44% of pre-boomers have done a retirement saving needs calculation as compared with 32% of late boomers. See Yakoboski and Dickemper (1997) for detail. These figures are close to the findings in the HRS, which samples older respondents.

[6] There is much information on retirement planning on the Internet. As reported by B. O'Brian in a Wall Street Journal article on February 7, 2000, a simple search on the web turned up 933 sites with retirement calculators. The problem of using that information, however, is that there are major differences in the suggestions offered by the most popular retirement planners (see Carroll (2003)).

[7] This information is only available in the first wave of the HRS and the empirical work will thus concentrate on that wave.

about retirement. Respondents can only choose across four different answers, which are reported at the top of Table 1. To construct the sample to look at these simple statistics, I consider the total sample of HRS households and exclude only those households whose respondents who are partially or fully retired and respondents younger than 50 or older than 61.

The first feature to notice from Table 1 is that approximately one third of respondents in this sample have "hardly thought" about retirement. This is a large percentage, in particular considering the age of the respondents. Many respondents are only a few years away from retirement and the event is imminent. Since the wording of the question under consideration is rather generic and can lead to several interpretations, I also report the characteristics of respondents across different answer modes (the figures are the fraction of households in each group).[8] Respondents who do not think about retirement are more likely to have low education. Not only is their education low, but also the education of their family of origin tends to be low (father or mother do not have a high school education). Individuals who have not thought about retirement are also less likely to be married. Additionally, they are less likely to have older siblings (older than 62) that could provide some guidance or experience on what happens after retirement.

The bottom three rows of the table report the average scores on the measures of cognitive abilities available in the HRS: 1) ability to think quickly (the score goes from 1 to 5, where 1 means excellent and 5 poor); 2) memory, which measures the numbers of words one person is able to recall in two subsequent trials (the total number of words is 20, and the total score therefore goes from 0 to 40); and 3) analogy, which measures the ability to report how some things are alike (there are 7 questions totaling 2 points each for a total score of 14). Overall the people who have not thought about retirement receive the worst average score on all questions. In particular, the question about analogy is where they get a score that is significantly lower than that of other groups of respondents. This is relevant, since this is one characteristic that can be most useful as a skill for planning for the future.

This evidence is not specific to this sample. In a sample of TIAA-CREF

---

[8] In the empirical work reported in the next sections, I will address further the problem of the wording of the question.

participants, Ameriks, Caplin and Leahy (2003) report similar results. Even when considering highly educated individuals, 27% of respondents report they do not have a specific financial plan for the long-term future. Among those that report planning, many were hesitant to assert they spent a great deal of time developing a financial plan. Several other studies support similar findings. Benartzi and Thaler (1999) examine data on retirement planning of recently hired (non-faculty) staff employees at the University of Southern California. They find that most of the respondents did not read materials other than those provided by their pension fund company and did not consult with anyone other than family members. Furthermore, many workers seem to lack the information necessary for making saving decisions. For instance, Gustman and Steinmeier (1999a) report that a large fraction of workers in the HRS are not well informed about their Social Security and pension benefits and are often erring about the type of pension plan they have.

How can we explain these findings? Households may differ substantially in the way they plan because they face different costs of planning and different ways of learning. There is some indirect evidence on these issues both in the SCF and in the HRS. In the 1995 SCF respondents are asked to report what sort of information they use to make decisions about saving and investment. To be consistent with the HRS sample, I examine the same age group, i.e., those who are 50-61 years old (see Table 2a).

Households use several sources of information. However, respondents most often report that they rely on planners or brokers, read magazines and newspapers, "call around," and rely on relatives and friends.[9] Households whose head has high education (more than high school education) rely most often on planners and brokers, and also make use of accountants and lawyers. They also rely more often than low education respondents on magazines and newspapers. Most importantly, both high and low education groups rely on relatives and friends to make decisions about saving and investment.

---

[9]The figures reported in Table 2a are the proportion of respondents who have indicated the specific source of information listed in the first column (all figures are weighted to take account of oversampling of rich households in the SCF). Since multiples answers are possible, the proportions sum to more than one. The remaining categories mentioned by respondents refer to not saving or investing, not getting advice, using other sources such as investment seminars and clubs, material from work, television, etc.

The effort of search is not only influenced by how hard the task is but also by how unpleasant it is. First, obtaining and evaluating information can be an unpleasant task for consumers with little financial literacy (and Table 1 shows that those with low education are less likely to plan). Second, retirement is not a pleasant event for every individual. In fact, some may view it as a time when one is unproductive, or lonely, or unhealthy. There is some evidence in support of this hypothesis in the HRS.

   Table 2b reports the proportion of respondents in the HRS sample according to how they evaluate a list of facts about retirement. Note that, for a sizable fraction of respondents, retirement is not necessarily an event to look forward to. Most importantly, the table indicates that health problems represent a worry for many respondents, and I will try to use this insight to explain household planning behavior, as will be explained in Sections 4.1 and 4.3.

3.1 Planning and Household Savings

   Do households whose head does not plan accumulate different amounts of wealth than households whose head does some planning? In Table 3, I report a simple classification of wealth across how much respondents have thought about retirement. Total net worth is defined as the sum of checking and savings accounts, certificate of deposits and other short-terms assets, bonds, stocks, other assets, housing equity, other real estate, IRAs and Keoghs, business equity, and vehicles minus all debts. The sample is the same as the one used in Table 1. Respondents who have "hardly" thought about retirement stand out as a very different group than those who have thought "a little" or "a lot" about retirement; their median wealth holdings are almost half the size of those who have thought about retirement and many households in this group report negative or little savings.[10]

   It is not easy to interpret this evidence since there are many reasons why households have low wealth holdings close to retirement and the variable measuring

---

[10]There are also a non-trivial number of respondents in the original sample who plan to never retire completely. This group is rather heterogeneous in terms of wealth holdings; some respondents report a high amount of wealth and others very little wealth. Approximately 30 percent of this group is accounted for by the self-employed, thus many will be excluded in the final sample because many of the questions about retirement and future expectations are not asked to these respondents.

planning could simply be a proxy for economic circumstance or for preferences. There are several different explanations for low accumulation that could be consistent with the life-cycle model or an enlarged version of the intertemporal optimization model of saving. For example, households may rely on pensions or Social Security. They may have little savings because they have low lifetime resources or have been hit by many shocks. In addition, they may accumulate little because they do not face high risks (for example, unemployment or health risks), or they have formal or informal insurance (through a network of families and friends) against adverse events. They may also expect to receive inheritances, or to enjoy big capital gains on their assets. In addition, they may expect a short retirement period, due perhaps to short longevity, or they may simply be impatient and discount the future heavily. These factors are also likely to be correlated with lack of planning.

This long but still partial list of explanations serves to emphasize that it is very hard to interpret the evidence on lack of savings and its correlation with planning, and, in particular, that one needs much data about individual circumstances to address the relationship between savings and planning. A criticism often raised in the empirical work on saving is that researchers use a very restrictive version of the life-cycle model and it becomes perhaps too easy to find evidence that does not support the predictions of the model.

One of the advantages of using the HRS is that it does provide a lot of information on individual respondents. This allows the researcher to examine many of the reasons for household behavior towards savings. Below, I briefly examine four important sets of information that can help in gaining insights into household saving behavior and in explaining the differences in patterns of accumulation:

1) Expectations about the future: Savings are inherently related to the future. Thus, it is critically important to account for expectations about the future. In the HRS, respondents are asked to report the probabilities that home prices will increase more than the increase in the general price level, and that Social Security will become less generous in the future. Since these are two of the major items in total household total accumulation, this information is critically important to understand saving but is not present in many data sets. Respondents are also asked to report the probability of living

up to 75 and 85.[11] In addition, respondents are asked about the probability they will have to give major financial help to family members in the next 10 years. Most importantly, respondents are asked about the probability of losing their job next year. I use this variable to construct a measure of income variation.[12] If households have a precautionary saving motive, they care not only about the decline in income at retirement, but also about risk, which can be measured empirically by the variance of earnings. Precautionary motive is important and is another potential explanation for the lack of a long planning horizon and the presence of what can resemble a high discount rate for the future.[13]

2) Past economic circumstances: The HRS provides information on past economic circumstances, such as past shocks. Respondents are asked whether they have been unemployed in the past. In addition, they are asked to report whether they faced any episodes that made it difficult to meet financial needs. There are also positive shocks in the past that affect household wealth, such as receiving inheritances, money from insurance settlements, or money from relatives and friends. These positive and negative shocks can be another important explanation for the wide differences in wealth holdings that we observe empirically.

3) Preferences: Another, not yet well explored dimension along which households can differ, is preferences. While it is very hard to measure individual preferences, it is also the case that parameters, such as the coefficient of risk aversion or the rate of time preference, play a pivotal role in many models of intertemporal optimization. There is a way to infer this information in the HRS, and therefore to account for variation in preferences when explaining household wealth holdings. In particular, I use the analysis provided in Barsky, Kimball, Juster, and Shapiro (1997) on willingness to take gambles to construct proxies for the coefficient of risk aversion. I also use data on smoking, drinking, caring about one's health, and exercising regularly to proxy for the rate of time preference and/or individual heterogeneity. Demographic variables that could be related to the rate of time preference, such as education, race, and country of origin, are also

---

[11]An excellent examination of subjective probabilities in the HRS is provided in Hurd and McGarry (1995).

[12]See, also, Lusardi (1998).

[13] See Zeldes (1989) and Carroll (1992).

included in the empirical estimation (Lawrance (1991)).

4) <u>Pension and Social Security wealth</u>: Using the HRS, it is possible to link to the Social Security records of respondents and use that information to calculate Social Security wealth.[14] However, not every household has given authorization to access their Social Security records, and I have used imputed Social Security wealth data for those households.[15] It is also possible to construct pension wealth from the self-reported pension information.[16] Thus, I can rely on a complete measure of household accumulation when examining saving behavior.

In the empirical work reported below, I examine household behavior by considering several regressions of household savings normalized by dividing by permanent income on this extensive set of variables.[17] This can be seen as a reduced form equation of a saving model, but also as a way to assess how well we can explain differences across households by using this rich set of information about households. In addition, and most importantly, I can examine whether, after accounting for many determinants of savings, lack of planning plays any role in explaining the differences in patterns of accumulation across households.

To construct the final sample, I further deleted from the samples those respondents that do not report information on the relevant variables. The self-employed are not asked many of the questions about subjective future probabilities and they are deleted from the sample. Few other respondents do not report information on subjective future probabilities and they are deleted from the sample too. Since the distribution of the ratio of savings to permanent income is so wide, I trim it and exclude the top and bottom

---

[14]Special authorization is needed to access Social Security records. For detail on the construction of Social Security wealth, see Mitchell, Olson and Steinmeier (2000).

[15]I thank Al Gustman and Tom Steinmeier for providing the imputed Social Security wealth data. For more information on pension and Social Security wealth in the HRS, see Gustman and Steinmeier (1999a,b).

[16]For a detailed explanation of the construction of the pension data, see Venti and Wise (2001).

[17]Permanent income is constructed by regressing total household income on a set of demographics and firm characteristics. I use age and age squared, sex, race, marital status, regions of residence, education and occupation dummies and those dummies interacted with age. I also use dummies for whether the respondent works in a small firm (fewer than 20 employees), whether the respondent belongs to a union and whether he/she works part time. In addition, I use the expectations of losing the job in the current year, the expectations that health problems will limit the work activity in the next 10 years, and dummies for whether income will go up or down in the following year. See also Lusardi (1998).

1%.[18] Finally, since lack of planning is the result of choice, I cannot simply run OLS regressions in this sample, but have to resort to other estimation strategies, as reported below.

4. Empirical Estimates
4.1 Household Savings

As illustrated in Table 3, respondents who have "hardly thought" about retirement represent a large group of the population and they stand out from the others in terms of savings. I have thus defined a simple planning dummy that takes the value one if respondents have indicated they hardly thought about retirement. Thinking about retirement is one indicator for retirement planning, but there is more information in the HRS concerning planning. I use this information to construct an index that measures a series of activities toward retirement planning. The method I follow in constructing this index is as follows: I assign points to respondents for how much they have thought about retirement (the ones who have "hardly thought about retirement" get 1 point, while the ones that have thought a lot about retirement get 4 points), and I add points for each additional planning activity. For example, I add a point if respondents have asked the Social Security administration to calculate their retirement benefits and another point if they have ever attended a retirement seminar.[19] In the empirical regressions reported below I use two indicators for retirement planning: the index I just described and the simple dummy variable for respondents who report they have hardly thought about retirement. In this way, I can examine different proxies for planning and also check upon the robustness of the empirical results.

As mentioned before, I cannot simply regress savings (or asset ownership) on whether households have planned for retirement since planning can be a choice variable. Additionally, the variables measuring planning are themselves proxies and may be affected by much measurement error, perhaps resulting from the ambiguity in

---

[18] See also the data appendix for more detail on the final sample and some descriptive statistics of the variables used in the empirical work.

[19] Even though it is arbitrary to assign the same weight to different retirement activities, it is useful to concentrate all the information on retirement planning into one variable.

interpreting the question and/or mis-classification in picking the appropriate answer. I address these problems by performing Instrumental Variables (IV) estimation.

It is very hard to find instruments for planning. When one considers extended models of savings, the set of variables related to planning that are not directly related to savings is inevitably very small. As argued in the previous sections, search and psychological costs affect planning. I use the age of siblings to capture these costs. One simple (and perhaps inexpensive) way of learning is to rely on siblings, in particular older siblings that already have experience with retirement and savings.[20] In Table 1, there is evidence that respondents with older siblings are more likely to think about retirement. There is also evidence from the SCF that relatives and friends are often consulted when making financial decisions (Table 2a). Since the order of birth may capture specific personality features (some have argued that a first-born is less likely to rebel), and there can be interaction and learning from other members of the family, I have also used the age of the siblings of the spouse. This could also avoid the problem of genetic transmission of preferences, at least as long as preferences of siblings and their spouses are not perfectly correlated.[21]

The instrument I use is the difference between the age of the oldest sibling in the household (considering both respondent and his/her spouse) and the age of the respondent (for respondents without siblings or with only younger siblings this difference is set to zero). I also use the difference squared to capture potential non-linearities. Note that the age difference is not small. For respondents with older siblings, the difference is six years on average. Additionally, many households have siblings that have passed the retirement age (siblings older than 62). Thus, the potential for learning is present. I also use the number of older siblings to capture the potential for interaction and learning.

---

[20]I thank David Laibson for providing many suggestions on the instrument set.

[21]One might argue that respondents with older siblings have also older parents. There is some (suggestive) evidence on the literature on savings that households who were born before the Great Depression have different preferences than younger generations. In particular, they are supposed to be more thrifty and alert to risk. Those households could have passed these types of preferences down to their children. As discussed in Browning and Lusardi (1996), this finding is still very controversial. Additionally, given the relatively narrow age range of respondents, it is doubtful that differences in preferences across adjacent generations are so large. Furthermore, given the way I have defined it, respondents could have older siblings simply because the siblings of the spouse are older.

Since the number of siblings could proxy for inheritances, I also add among the set of controls a variable for whether at least one parent is still alive.

In Table 4 (column 1), I report the results of regressing the simple dummy for not thinking about retirement on these variables. The age difference is a good predictor for planning; respondents with older siblings are more likely to think about retirement. The HRS reports information on the financial situation of siblings and whether it is better or worse than the financial situation of the respondent. Respondents are more likely to plan for retirement if the financial situation of older siblings is worse than their current financial situation (see Table 4, column 2). Thus, in addition to getting information about retirement from older siblings, one could also learn from the mistakes of others. Witnessing the financial difficulties of siblings may perhaps diminish the reluctance to undertake an unpleasant task. These variables remain significant even when accounting for a large set of controls.

One might argue that households save to help out their older siblings (particularly the ones in bad financial conditions). However, in the regressions, I account for the probability that households will have to give financial help to family members in the future. Thus, these variables are not likely to proxy for this additional motive for saving.

To pursue this argument further, apart from the experience of siblings, agents can learn from their own past experiences. There is information in the HRS about whether "in the last 20 years there were any really large expenses or events that have made it very difficult to meet your financial goals." Respondents who experienced those past shocks are much more likely to plan for retirement (Table 4, column 3). Past events can provide valuable information and, in particular, can provide incentives for putting effort in an unpleasant task. Note, however, that I cannot use past shocks as instruments. Past events can have a direct effect on wealth. Households that experienced past shocks could have suffered a substantial drain of resources and may therefore display lower wealth holdings than households who did not experience those shocks. Thus, past shocks are also used as controls in the second stage regressions.[22]

---

[22]It is useful to note that in the regressions of household savings on the large set of variables mentioned before, the empirical estimates for past shocks become more negative when accounting for whether households have thought about retirement.

As mentioned before, there are costs associated with the pain of dealing with an unpleasant event. As reported in Table 2b, health is the concern cited most often by respondents. One way to capture these costs is to use information on parents. Respondents may be afraid of being unhealthy after retirement if their parents have been unhealthy. Not only can illnesses be genetically transmitted, but also the health problems of a parent may be very painful experiences (as the above past shocks). In the HRS, I have information about whether the mother/father of the respondent (and spouse) had an illness lasting 3 months or more during the last year she/he was alive, and whether they ever lived in nursing homes. The health experience of parents while providing worries and making perhaps planning more unpleasant can also provide information on the costs one may incur after retirement. Thus, the sign of these variables is ambiguous ex-ante. The empirical evidence shows that respondents whose parents suffered health problems before dying or lived in nursing homes are more likely to think about retirement. As in the case of siblings and past shocks, painful events induce individuals to put effort into planning for retirement. Since I account for the current health status of the respondent and the subjective probability of living up to 75 in the regressions, these variables are not likely to account for individual longevity.

The extensive information about siblings and parents provided in the HRS has predictive power in explaining the lack of thinking about retirement (as measured by the dummy for the ones who have "hardly thought" about retirement) and plans for retirement (as measured by the index variable), even after accounting for all the other economic variables listed before. The predictive power of the instruments is not very high, but the F-test on the excluded instruments rejects the hypothesis that the instruments are not jointly significant.[23] To increase the predictive power, I have used additional information about siblings, such as whether siblings are female, have a house and whether they work. Additional demographic information about siblings (whether they are married, have children, etc.) has been used to perform checks and sensitivity analysis using different sets of instruments. The instruments appear to be valid; the test of over-identifying restrictions is not rejected (see last row of Table 5). Even though this

---

[23] See Staiger and Stock (1997) and Bound, Jaeger and Baker (1995).

test may have low power, it reports additional evidence in favor of the chosen specification and the set of instruments.[24]

I perform the empirical estimation using two measures of savings: total net worth and financial net worth. In the latter I exclude housing equity (and other real estates), since it is not clear that the investment in housing is to support consumption at retirement. I also exclude vehicles, and business equity. In Table 5, I report the results of regressing total and financial net worth over permanent income on a large set of explanatory variables and the indicator for lack of retirement planning (the dummy for not thinking about retirement is used in columns 2-5, the index for retirement planning is used in columns 6-9).

Among the set of explanatory variables, I consider not only age and age squared to capture the hump-shaped profile of wealth holdings, but also some simple demographics, such as the total number of children, and the number of children still living at home, gender, race, country of birth, marital status, and education that can account for heterogeneity in tastes. I also include dummies for regions of residence.[25] Permanent income is included among the regressors to account for non-homothetic preferences. I also account for health status, past shocks, preferences (risk aversion and impatience) and expectations about the future using the variables that I explained in the previous section. Additionally, I account for both Social Security and pension wealth (these variables, as the left-hand side variable, are divided by permanent income).

As emphasized in Browning and Lusardi (1996), there are other motives to save apart from providing for retirement. Households may save to leave a bequest to future generations, and I account for this motive by using information on the intentions to leave bequests to heirs. Additionally, I consider a precautionary saving motive and proxy for it using the subjective variance of earnings risk.[26] I also account for the fact that households accumulate little because they can rely on help from relatives and friends in case they run into severe financial difficulties in the future. As mentioned before, I consider the

---

[24] Given the large set of controls used in the empirical work, it is extremely hard to find instruments with high predictive power. Thus, in Section 4.3, I use proxies for planning costs directly in savings regressions.
[25] For brevity, the estimates of these demographic variables are not reported, but are briefly discussed in the text.

[26] See the construction of this variable in Lusardi (1998).

possibility of receiving bequests in the future by using a dummy for whether at least one parent is alive, and I also account for the probability of giving financial help to family members in the future.

Many of these variables play a role in explaining household savings in the expected way. Households whose head has a high education have higher savings. Married couples have high savings, while children have a depressing effect on wealth. Households who experienced negative shocks in the past end up having lower wealth, while receiving inheritances or other transfers leads to higher savings. Households with a bequest motive accumulate more, while those who are impatient accumulate less wealth. An interesting result from the regression is that households who have a large pension accumulate more rather than less wealth,[27] showing that households who have much in retirement assets also have more in other forms of accumulation.

The most important result of these regressions is that households who do not plan for retirement end up having much lower savings than households who have thought (a little or a lot) about retirement. The dummy for lack of planning is negative and statistically significant. The index for planning shows a similar effect. Respondents who have taken steps toward retirement planning accumulate more wealth. Thus, planning continues to have an effect, even after accounting for many of the variables that can explain savings. The estimates indicate very large effects. Respondents that do not plan have approximately half the savings than respondents that have done some planning.

This finding is confirmed in the study by Ameriks, Caplin and Leahy (2003) on TIAA-CREF data. In their sample, they also find that people who plan accumulate more wealth. Their empirical estimates, in particular the IV ones, are sizable as well. Thus, this finding is not restricted to the HRS age group and holds true even among households with high education. Similarly, in the 2001 RCS, respondents who have done a retirement needs calculation are more likely to report substantially higher amount of savings. For example, over 50% of those who have not done any retirement calculations report having accumulated $25,000 or less, and 28% report having accumulated nothing. Conversely,

---

[27]Similar results are reported by Gustman and Steinmeier (1999b), who use the HRS pension data from the Pension Provider data set.

more than half of those who have made retirement needs calculations report $50,000 or more in savings. These values are in line with my empirical estimates. Using data from the Panel Study on Income Dynamics, Hurst (2003) also finds evidence that households that did not plan when young end up having much lower amounts of wealth at retirement.

There is also evidence that those who have been exposed to retirement seminars and, thus, face lower planning costs, save more. Bernheim and Garrett (2003) show that retirement seminars offered by employers lead to higher private saving and contributions to pension plans. Similarly, Lusardi (2002, 2003) finds that retirement seminars foster accumulation in both financial and total net worth, particularly for those with low education attainment. Attending a retirement seminar is part of the planning activities considered in the planning index and the estimates in Table 5 (columns 6-9) show that people who plan more accumulate higher amounts of wealth.

4.2 Robustness and Sensitivity Checks

I have performed several checks on the empirical specification and the chosen instruments. First, I have considered different measures of accumulation. I have experimented with using a measure of financial net worth that includes other real estate, and I have examined the effects of including and excluding business equity. Hurst and Lusardi (2003) show that business owners have different motives to save than to support themselves at retirement and it may be advisable to exclude business equity from savings. Results do not change and I always obtain that planning has a significant effect on every chosen measure of accumulation.

Second, I have experimented with different sets of instruments. I have used as instruments only the age difference between the oldest sibling and the respondent and some characteristics of the siblings (gender, marital status, whether they have children, etc). One potential concern of the previous instrument set is that parents may compensate the children in worse financial conditions by leaving larger bequests. While there is little evidence that bequests are split unequally (Hurd and Smith (2002)), it is worth investigating whether results change when the financial condition of siblings is not included in the set of instruments.

I have also excluded the information about the parents. One could argue that

health shocks create a drain of resources and could proxy for reduced inheritances. There is not enough information in the HRS to disentangle whether parents were covered by insurance and whether they have a bequest motive. Additionally, it is well known that health and wealth are highly correlated, and some of this correlation may simply be due to unobserved differences in time preference: those who invest in health also save for the future. Healthy parents are also the ones most likely to place a high value on the future and to save at an above average rate. This tendency to save could have been passed down to children, along with attitudes about health. Hence, parental health may affect savings directly. While my instruments (being in a hospital or nursing home before dying) may capture more than general health, they may still suffer from the above-mentioned problem. Thus, I have experimented with different sets of instruments that include and exclude the information about parents. I should note, however, that the over-identification test does not indicate that the instruments used in Table 5 are invalid.

The set of instruments has less predictive power than the one used before. However, estimates do not change considerably, even though they are statistically significant only at the 10% level. I have also included among the regressors additional indicators for family resources, such as the education of the family of origin. Results are not affected. Additionally, I have used as an index of retirement planning the answers to how much respondents have thought about retirement. Thus, I do not consider attending retirement seminars and asking SS to calculate retirement benefits. Results do not change substantially.[28]

4.3 Reduced-Form Estimation

Since there are concerns about IV estimation when instruments are weak, in this section I opt for a very simple estimation method. Rather than instrumenting for planning, I use these variables directly in the savings regressions. If older siblings or bad shocks induce households to save more, I should be able to capture this effect directly by inserting these variables in place of the planning variables. In Tables 6a and 6b, I report the empirical estimates of regressing total and financial net worth over permanent income

---

[28]For brevity, estimates are not reported but are available from the author upon request.

on the set of variables mentioned before (same as in Table 5) and the variables directly proxying for planning. For brevity, only the estimates of the latter group of variables are reported.

The age difference between the oldest sibling and the respondent is significantly and positively related to wealth.[29] Each additional year of age difference with siblings, by increasing the opportunity for learning, increases the ratio of net worth over permanent income by 0.0208, which represents a 1% increase over the median ratio. The estimates for financial net worth are much smaller and less statistically significant. When accounting for the financial conditions of siblings (whether they are in better or worse financial situation than the respondent), I again find that witnessing siblings in bad financial conditions leads households to accumulate more wealth. Estimates are statistically significant and sizable for both total and financial net worth. Results are similar with regards to parents. Households accumulate more wealth when they witness their parents (in particular, their mother) spend time in a nursing home before death. All of these variables are jointly significant, particularly when considering net worth.

This is a strong result. As mentioned previously, these regressions include a very rich set of controls. The planning costs variables are unlikely to proxy, for example, for individual longevity, past shocks, or family characteristics since I account for these variables already in the estimated regressions. I also account for Social Security and pension wealth, which are data often not present in other data sets on saving and which can provide some rationale for why so many respondents do not plan for the future (i.e., they expect to rely on pension or Social Security). The reduced-form estimates confirm the finding that information and learning costs play a role in affecting the saving behavior of many households in the U.S.

4.4 Household Portfolio Choice

Portfolio choice can reveal a great deal about household behavior, and it is here

---

[29] In this case, the variable is simply the difference between the age of the oldest sibling and the age of respondents. Thus, it takes positive values when the sibling is older than the respondent and negative values when the sibling is younger. This eases the interpretation of the empirical estimates. In addition to the same set of variables reported in Table 5, the estimates reported in Tables 6a-b account also for the number of younger and older siblings.

that we may be able to differentiate clearly among different models of behavior. It is well known that even though historically returns on stocks have outperformed bonds, only a relatively small fraction of households invest in stocks. In fact, an important puzzle is why so few households hold stocks.[30] Additionally, as mentioned before, many household portfolios seem rather unsophisticated (Lusardi (1999)). Similarly, when looking at how individuals choose to invest their retirement assets in defined contribution plans, Benartzi and Thaler (2001) find evidence of very naive diversification strategies. Many participants in defined contribution saving plans simply divide their contributions evenly across the funds offered by the plan. If, as mentioned before, much effort has to be exerted to obtain information about complex investment assets, such as stocks, agents facing high costs will be less likely to invest in those assets. Recent work by Vissing-Jorgensen (2002) also emphasizes the importance of costs in explaining portfolio choice.

The dependent variable in the regressions is now a dummy variable for whether households hold stocks. As for the previous regressions on household savings, I have considered a large set of controls that can proxy for both household resources and preferences that can explain stock-ownership. In these regressions, rather than considering a measure of total pension wealth, I distinguish among those who have defined contributions, defined benefits, and other types of pensions. Respondents with defined contribution pensions can usually choose how to invest their pension assets, and studies such as Weisbenner (2002) suggest that this may also affect the allocation of their non-pension asset. Since many transaction costs can be fixed, I also control for other gross financial assets (i.e., total financial assets minus the amount invested in stocks), and financial assets squared (Vissing-Jorgensen (2002)). As reported before, financial wealth holdings are so small for many households that it is unlikely they invest these amounts in stocks.

As before, I use the age difference between respondents and older siblings and dummies for the financial status of siblings and health status of parents to capture the costs of planning and the potentials for learning. Unfortunately, there is no information in the HRS on the portfolios of siblings or of parents. Chiteji and Stafford (1999) report

---

[30]See the discussion in Haliassos and Bertaut (1995), Vissing-Jorgensen (2002), and Davis, Kubler and Willen (2003).

evidence that the holdings of stocks among certain groups of the population, such as African Americans, is strongly influenced by whether their family of origin held stocks. I will proxy for the potential learning from the family of origin by using information on whether the financial condition of parents is good or poor.

It is very hard to find high predictive power for the instruments given the large set of controls used in the regression. To increase the predictive power, in particular for the index of retirement planning, I added a dummy for whether respondents work in a small firm. The decreased possibilities of undertaking retirement activities (such as attending retirement seminars, which are normally offered in large firms only) and the smaller group of individuals from which workers can learn should increase the costs of planning. The instrument set seems valid. The test of over-identifying restrictions is not rejected (see last row of Table 7).

A parsimonious specification for stock ownership is reported in Table 7. Even though not reported, in addition to the variables listed in Table 7, I have accounted for age, gender, race, country of birth, marital status, number of children, education, and region of residence. The estimates I obtain are consistent with other work on stock-ownership.[31] For example, households with high education and permanent income are more likely to invest in stocks. Blacks are much less likely to invest in stocks. Respondents reporting excellent or good health are more likely to invest in stocks. The ones with defined contribution pensions are more likely to invest in stocks. Gross financial assets also affect stock ownership.

The most relevant result, however, is that even after controlling for many factors that can explain stock ownership, lack of planning is a strong determinant of portfolio choice. Both the dummy for the lack of planning and the index for retirement activities indicate that households who plan for retirement are more likely to hold stocks in their portfolios than households who did little or no planning.

5. The Consequences of Planning: Evidence from Retirees

The previous estimates show that, even accounting for many determinants of

---

[31] See Haliassos and Bertaut (1995), Heaton and Lucas (2000), and Vissing-Jorgensen (2002).

savings, individuals who do not plan end up accumulating less wealth than individuals who plan for retirement. This could be the result of low saving rates as well as different portfolio choices. Does this fact have consequences? While planning is found to affect private wealth and portfolio choice, it could well be that household who do not plan still manage a comfortable retirement, for example because there are variables I have not controlled for (help from children, other sources of support, etc.), or because it is hard to measure pension and Social Security accurately, or because the specification of preferences is not accurate.

However, as mentioned before, there is much evidence that consumption falls sharply at retirement, and much more than can be rationalized by explanations consistent with traditional models of saving. Most importantly, Bernheim, Skinner, and Weinberg (1997) show that the drop in consumption is much sharper for those households that arrive at retirement with little wealth. As the authors report: "our results appear to suggest that on average individuals who arrive at retirement with few resources experience a "surprise"—they take stock of their finances only to discover that their resources are insufficient to maintain their accustomed standards of living, e.g. because pension income is less than expected, or because they recognize that savings will go less far than they had hoped."

There is some information in the HRS to assess the experience of households whose respondent is already (partially or fully) retired. Those respondents were also asked how much they had thought about retirement. As for the sample of non-retired respondents, a large proportion of retirees had not thought about retirement (520 out of 1172 observations report that they had hardly thought about retirement). Respondents are also asked to rate their retirement experience in two independent questions. In one question, they are asked to report how retirement has turned out to be and in a second question they are asked to compare retirement years to the years just before they retire (Tables 7a, b).

A simple classification across different answer modes shows that a large proportion of the respondents who had not thought about retirement (43%) rate retirement as not at all satisfying. At the other extreme, a large majority of respondents who had thought a lot about retirement (68%) rate retirement as very satisfying.

The other indicator reports similar findings. More than 54% of respondents who had not thought about retirement rate the retirement years not as good as the years before retirement, while a much smaller fraction of respondents rate retirement not as good if they had thought (a little or a lot) about retirement. This evidence is only suggestive, but it is again consistent with the evidence on the low amount of accumulation for non-planners provided in the previous sections. These households may indeed be likely to experience a negative "surprise" after retirement.

6. Discussion

How can we rationalize the findings reported above? A suggestion to take away from the empirical analysis is that it is too simplistic to assume there are no costs of planning. Those costs exist and they may even be sizable for some households, for example, those with little financial literacy. In addition, not only search costs should be considered when modeling saving decisions (for example, the time spent collecting information or "calling around"), but also the psychological costs of dealing with unpleasant events.

One question that arises is: how large must these costs be to prevent so many individuals from planning for retirement? A model taken from the literature in psychology suggests that even small costs can have large effects. For agents that display hyperbolic discounting, even small costs that have to be paid immediately lead to wide regions of inaction: agents postpone actions that imply immediate costs (Akerlof (1991), Laibson (1997), O'Donoghue and Rabin (1999a,1999b)). In this alternative model, consumers discount the immediate future at a high rate, and this high rate combined with a cost that has to be paid immediately gives rise to inertia. In fact, contrary to the predictions of traditional models, some actions may never be taken; consumers may continue to procrastinate indefinitely and never put any effort into planning. This may be particularly relevant for behavior such as saving and portfolio choice. There are usually no deadlines or specific periods when decisions have to be made. Decisions can be made every day, but since one needs to put time and effort into them, decisions can be substantially delayed and perhaps never taken. This seems consistent with the predictions of many of the books on financial planning and the findings reported in the surveys

mentioned in previous sections.

This study also provides suggestions for why lack of planning leads to low rather than high wealth accumulation. If saving decisions were purely random, non-planners could end with higher rather than lower wealth holdings than planners. However, one can assume that planning requires effort and decreases utility, but at the same time it increases the rate of return individuals can obtain on their assets. For example, planning induces people to invest in stocks, as reported in Table 7. One can further assume this is not a one-time cost, but individuals have to spend time in investment decisions each period to obtain higher returns on their assets. Under certain conditions (the substitution effect is greater than the income effect), this will lead households to save more. Alternatively, as suggested by the findings of Ameriks, Caplin and Leahy (2003), those who plan are perhaps better able to keep consumption low because they can better monitor their expenses and check when and how often they went above their budget.

While this framework is very promising, there are perhaps other, and even simpler, explanations.[32] Empirical results from the macroeconomic literature on consumption has led some researchers to assume that there are two types of agents in the economy: a first type that behaves according to the predictions of the classical life-cycle-permanent income model, and a second type called "rule of thumb" consumers, that simply consume according to their current income. Empirically, the fraction of "rule of thumb" consumers in the economy has been estimated to range from 20 to 50%.[33]

One could assume that these two groups are not exogenous, but agents switch from one group to the other depending on the amount of "learning" acquired about retirement. For example, many (perhaps young consumers) start out as "rule of thumb" consumers. However, as they witness shocks to older siblings (who go through retirement) or to parents, they switch to the other group. While crude, this scheme is consistent with the fact that we do not see much saving until age 50 or so, which is also the time when older siblings start to retire and parents are more likely to experience

---

[32] Other authors have suggested alternative explanations. For an excellent discussion, see Ameriks, Caplin and Leahy (2003) and the references therein. See also Hurst (2003).

[33] See Campbell and Mankiw (1990) for the evidence on macro data and Browning and Lusardi (1996) for the review of the evidence in micro data.

health problems. Hurst (2003) also finds evidence that non-planners are more likely to behave as "rule of thumb" consumers.

There are, of course, alternative explanations for this finding. An important one is related to buffer-stock models of saving (see Carroll (1992)). People are prudent but also impatient and, on average, they hold little amounts of wealth until late in the life cycle. This model, however, does not explain why so many people do not plan, even when close to retirement, when uncertainty should be resolved. Additionally, it does not explain why planning is influenced by the experience of siblings and parents.

This work provides suggestions for another important area of research in saving, i.e., what explains the rapid decline in the saving rate in the U.S. during the 1990s. Many of the traditional explanations for why people save have been unable to account for the decline in saving. Some researchers have argued that people who grew up during the Great Depression learned to be more frugal and financially savvy than those who grew up during more recent and affluent times. While this explanation is often mentioned in macroeconomics, very few studies have provided empirical evidence to support this claim.[34]

My work can provide some direct links to that explanation. First, my paper shows that saving behavior can be influenced by the behavior of others and, in particular, by the experience of other family members. Thus, there are other determinants of savings, besides the traditional variables usually considered in many macro models of saving. Second, it shows that, consistent with the experience during the Great Depression, saving behavior is particularly influenced by negative shocks. This may help to model more explicitly why some cohorts behave differently.

The narrow age group in my sample does not allow me to purse a formal testing, but other works which can rely on larger samples that report information on parents' and children's wealth and consumption strongly support my findings. For example, Shea (2002) finds that children whose fathers were displaced from their jobs have more wealth as adults than children with otherwise similar fathers who do not experience job loss. This shows again that children learn from the experience of parents and in particular from negative shocks. Similarly, Cox, Ng and Waldkirch (2003) find that children whose

---

[34] See the discussion in Browning and Lusardi (1996).

parents experience a large drop in consumption upon retirement tend to subsequently reduce their own consumption. This again suggests that parents' experience can teach children the need to save.

My findings also help explain another puzzle in the literature on saving, i.e., the enormous differences in wealth holdings we observe across education groups. Bernheim and Scholz (1993), Attanasio (1994), and Hubbard, Skinner and Zeldes (1995) have all documented there are wide disparities in wealth holdings across different education groups. These disparities can hardly be justified by differences in preferences and economic circumstances. Since households whose head has low education are less likely to plan, this may explain why they accumulate little wealth or why they do not invest in high return assets, such as stocks. My findings also suggest that removing obstacles to planning, for example by providing information or improving financial literacy, can be an effective way to stimulate savings, particularly among low education households as shown in Lusardi (2002, 2003).

7. Concluding Remarks

In this paper, I examine wealth holdings of households whose head is close to retirement. Contrary to the predictions of many traditional models of saving, I find that a large share of households have not thought about retirement or taken steps toward planning. Lack of planning results in low wealth holdings and in portfolios that are less likely to contain high return assets, such as stocks.

The responsibility to save and contribute to a pension is increasingly left to the individual worker. For example, many firms have shifted from defined benefit to defined contribution pensions, where workers have to choose not only the amount of contributions, but also how to allocate their pension wealth. The current debate on the privatization of Social Security considers putting individuals in charge of their Social Security wealth. The findings of my research suggest that there are potential dangers in pursuing these policies if they are not accompanied by a serious consideration of the difficulties people face in making saving plans and in planning for the future and policies to address them. Much more research is needed to determine the reasons why households do not plan for retirement, and whether the provision of information, for example, on

Social Security and pension benefits, can play a role in affecting household decision making and, ultimately, the financial security of many American households.

Data Appendix

The data used in this paper is from the first wave of the Health and Retirement Study (HRS). The HRS is a representative sample of individuals born in the year 1931-1941 (approximately 51-61 at interview), but blacks, Hispanics, and Floridians were oversampled. The individual deemed most knowledgeable about the family's assets, debts, and retirement planning was asked questions on housing, wealth, and income.

One distinctive feature of the HRS is the attention paid to expectations about future events. The HRS includes a battery of questions about subjective probabilities concerning health, longevity, home prices, changes in Social Security, and some macroeconomic variables such as inflation and recessions. A second innovation of the HRS is the use of bracketing or unfolding techniques to reduce the size of the missing data problem in the measurement of financial variables. It is well known that missing data represents a major problem in survey measurements of household wealth. In the HRS respondents who did not know or refused to provide an estimate of the size of assets and liabilities were asked to report the value in a set of brackets. Smith (1995) and Juster and Smith (1997) report an evaluation of these techniques and a detailed description of their advantages in improving the accuracy of information about household wealth.

To construct the sample for the initial analysis, I deleted the respondents who are partially or fully retired at the time of the interview and those respondents older than 61 and younger than 50. The final sample for the empirical estimation (Tables 5-7) additionally deletes respondents that do not report information on the variables used in the empirical estimation. The self-employed are not asked many of the questions about subjective future probabilities and they are deleted from the sample. Additionally, expectations about changes in income are not asked to respondents who are not working and they are also excluded from the sample. Since the distribution of the ratio of total and financial net worth to permanent income is so wide, I trim the distribution and exclude the top and bottom 1%. The number of observations in my final sample 3,265. The following table reports simple statistics of the variables used in the empirical estimation. The original sample where I only excluded respondents who are retired or younger than 50 and older than 61 had 5,292 observations. The sample for the statistics reported in Table 1 and 3 has 4,489 observations since some those respondents who report they will

retire completely are not asked to report how much they have thought about retirement. The decrease in the number of observations to 3,265 in Tables 5-7 is mostly due to the fact that some questions are only asked to respondents who are working. I have examined whether the final sample suffers from self-selection, but I find very little evidence of self-selection. With respect to the original sample, the final sample covers respondents who are a little younger, more likely to be white, more likely to be born in the U.S., and slightly more educated. Overall, differences between these two samples are small.

Descriptive statistics of the final sample		
Variables	mean	(std.dev.)
Financial net worth/permanent income	.687	(1.211)
Total net worth/ permanent income	2.411	(2.548)
Stock ownership	.261	(.439)
Have not thought about retirement	.237	(.425)
Index of retirement activities	2.759	(1.638)
Age	54.40	(3.857)
# of children	3.105	(2.020)
# of children at home	.838	(1.032)
Male	.501	(.500)
White	.722	(.448)
Black	.180	(.384)
U.S. born	.918	(.274)
Married	.658	(.474)
Divorced	.175	(.380)
Widowed	.083	(.275)
Separated	.035	(.184)
Northeast region	.188	(.391)
Midwest region	.249	(.433)
West region	.152	(.359)
High school	.383	(.486)
Some college	.210	(.408)
College	.119	(.324)
More than college	.099	(.299)
Excellent health	.257	(.437)
Very good health	.322	(.467)
Good health	.290	(.454)
Past unemployment	.365	(.481)
Past shocks	.319	(.466)
Received inheritances	.180	(.384)
Received money from relatives	.073	(.260)
Received money from insurance settlements	.053	(.224)
High risk aversion	.654	(.476)
Moderate risk aversion	.123	(.329)
Medium risk aversion	.106	(.308)
Permanent income /1000	50.410	(20.980)
Probability to live to 75	.660	(.278)
Probability that SS will be less generous	.599	(.295)
Probability that house prices will go up	.485	(.292)
Prob to give major financial help to family	.417	(.312)

Descriptive statistics of the final sample (cont.)		
Smoker	.267	(.443)
Heavy drinker	.049	(.216)
No regular exercise	.432	(.495)
Talks to doctors about health	.783	(.412)
Bequest	.428	(.495)
Parents still alive	.685	(.464)
Variance of income	1.85	(7.155)
Can rely on help from relatives & friends	.421	(.494)
Never retire completely	0.099	(.299)
Pension wealth/permanent income	1.702	(2.435)
Social Security wealth/permanent income	2.662	(2.267)
# of observations	3,265	

References

Aguiar, Mark and Erik Hurst (2003), "Consumption vs. Expenditure." Mimeo, Chicago Business School.

Akerlof, George. 1991. "Procrastination and Obedience." *American Economic Review Papers and Proceedings* 81: 1-19.

Ameriks, John, Andrew Caplin and John Leahy. 2003. "Wealth Accumulation and the Propensity to Plan." *Quarterly Journal of Economics* 68: 1007-1047.

Ameriks, John, Andrew Caplin and John Leahy. 2002. "Retirement Consumption: Insights from a Survey." NBER Working Paper n. 8735.

Arnone, William, Norman Barker, Robert Garner, Martin Nissenbaum, Glenn Pape, Kenneth Rouse, and David Voss. 1997. *Ernst & Young's Retirement Planning Guide*, New York: John Wiley & Sons Press.

Attanasio, Orazio. 1994. "Personal Saving in the United States." In J. Poterba (ed.), *International Comparisons of Household Saving*, Chicago, University of Chicago Press: 54-123.

Banks, James, Richard Blundell and Sarah Tanner. 1998. "Is There a Retirement-Saving Puzzle?" *American Economic Review* 88: 769-788.

Barsky, Robert, Miles Kimball, Thomas Juster and Matthew Shapiro. 1997. "Preference Parameters and Behavioral Heterogeneity: An Experimental Approach in the Health and Retirement Survey." *Quarterly Journal of Economics* 62: 537-579.

Benartzi, Shlomo and Richard Thaler. 1999. "Risk Aversion or Myopia? Choices in Repeated Gambles and Retirement Investments." *Management Science* 45: 364-381.

Benartzi, Shlomo and Richard Thaler. 2001. "Naive Diversification Strategies in Defined Contribution Savings Plans." *American Economic Review* 91: 79-98.

Bernheim, Douglas and Daniel Garrett. 2003. "The Effects of Financial Education in the Workplace: Evidence from a Survey of Households." *Journal of Public Economics* 87, 1487-1519.

Bernheim, Douglas, Jonathan Skinner and Steven Weinberg. 2001. "What Account for the Variation in Retirement Wealth Among U.S. Households?" *American Economic Review* 91: 832-857.

Bernheim, Douglas, Jonathan Skinner and Steven Weinberg. 1997. "What Account for the Variation in Retirement Wealth Among U.S. Households." NBER Working Paper n. 6227.

Bernheim, Douglas and John Karl Scholz. 1993."Private Saving and Public Policy." In J. Poterba (ed.), *Tax Policy and the Economy*, Cambridge, MA: MIT Press: 73-110.

Bound, John, David Jaeger, and Regina Baker. 1995. "Problems with Instrumental Variables Estimation When the Correlation between the Instruments and the Endogeneous Explanatory Variable is Weak." *Journal of the American Statistical Association* 90: 443-450.

Browning, Martin and Annamaria Lusardi. 1996. "Household Saving: Micro Theories and Micro Facts." *Journal of Economic Literature* 34: 1797-1855.

Campbell, John and Gregory Mankiw. 1990. "Permanent Income, Current Income and Consumption." *Journal of Business and Economic Statistics* 8: 265-279.

Carroll, Cristopher. 1992. "The Buffer-Stock Theory of Saving: Some Macroeconomic Evidence." *Brookings Papers on Economic Activity 2:* 61-156.

Carroll, Erin. 2003. "An Evaluation of Retirement Planners." Mimeo, Dartmouth College.

Chiteji, Ngina and Frank Stafford. 1999. "Portfolio Choices of Parents and Their Children as Young Adults: Asset Accumulation by African American Families." *American Economic Review Papers and Proceedings*, 89: 377-380.

Cox, Donald, Serena Ng and Andreas Waldkirch (2003), "Intergenerational Linkages in Consumption Behavior." Forthcoming *Journal of Human Resources*.

Davis, Steven, Felix Kubler and Paul Willen. 2003. "Borrowing Costs and the Demand for Equity Over the Life Cycle." Mimeo, Chicago Business School.

Deaton, Angus. 1992. *Understanding Consumption*, Oxford: Oxford University Press.

Diamond, Peter and Jerry Hausman. 1984. "Individual Retirement and Saving Behavior." *Journal of Public Economics* 23: 81-114.

Engen, Eric, William Gale and Cori Uccello. 1999. The Adequacy of Household Saving." *Brookings Papers on Economic Activity* 2: 65-165.

Glink, Ilyce. 1999. "*100 Questions You Should Ask About Your Personal Finances and the Answers You Need To Help You Save, Invest, and Grow Your Money*," New York: Random House.

Gustman, Alan and Thomas Steinmeier. 1999a. "What People Don't Know about their Pensions and Social Security: An Analysis Using Linked Data from the Health and Retirement Study." NBER Working Paper n. 7369.

Gustman, Alan and Thomas Steinmeier. 1999b. "Effects of Pensions on Saving: Analysis with Data from the Health and Retirement Study." *Carnegie-Rochester Conference Series* 50: 271-236.

Haliassos, Michael and Carol Bertaut. 1995. "Why Do So Few Hold Stocks?" *Economic Journal* 105: 1110-1129.

Hamermesh, Daniel. 1984. "Consumption During Retirement: The Missing Link in the Life Cycle." *Review of Economics and Statistics* 66: 1-7.

Hausman Jerry and Lynn Paquette. 1987. "Involuntary Early Retirement and Consumption." In G. Burtless (ed.)," *Work, Health and Income Among the Elderly,*" Washington D.C.: Brookings Institution: 151-181.

Heaton, John and Deborah Lucas. 2000. "Portfolio Choice and Asset Prices: The Importance of Entrepreneurial Risk." *Journal of Finance*, 55: 1163-1197.

Hubbard, Glenn, Jonathan Skinner and Stephen Zeldes. 1995. "Precautionary Saving and Social Insurance." *Journal of Political Economy* 103: 360-399.

Hurd, Michael and Susann Rohwedder. 2003. "The Retirement-Consumption Puzzle: Anticipated and Actual Declines in Spending at Retirement." NBER Working Paper n. 9586.

Hurd, Michael and James Smith. 2002. "Expected Bequests and Their Distribution," NBER Working Paper n. 9142.

Hurd, Michael and Kathleen McGarry. 1995. "Evaluation of the Subjective Probabilities of Survival in the Health and Retirement Study." *Journal of Human Resources* 30: S268-S292.

Hurst, Erik. 2003. "Grasshoppers, Ants and Pre-Retirement Wealth: A Test of Permanent Income Consumers." Mimeo, Chicago Business School.

Hurst, Erik and Annamaria Lusardi. 2003, "Liquidity Constraints, Household Wealth and Entrepreneurship." Forthcoming *Journal of Political Economy*.

Juster, Thomas and James Smith, 1997. "Improving the Quality of Economic Data: Lessons from the HRS and AHEAD." *Journal of the American Statistical Association* 92: 1268-1278.

Laibson, David. 1997. "Golden Eggs and Hyperbolic Discounting." *Quarterly Journal of Economics* 112: 443-478.

Lawrance, Emily. 1991. "Poverty and the Rate of Time Preference: Evidence from Panel Data." *Journal of Political Economy* 99: 54-77.

Lusardi, Annamaria. 2003. "Financial Education and Saving." Forthcoming in O. Mitchell and S. Utkus (eds.), *Pension Design and Decision-Making Under Uncertainty*, Philadelphia, PA: Pension Research Council.

Lusardi, Annamaria. 2002, "Preparing for Retirement: The Importance of Planning Costs," *National Tax Association Proceedings - 2002*: 148-154.

Lusardi, Annamaria. 1999. "Information, Expectations, and Savings for Retirement," in Henry Aaron (ed.), *Behavioral Dimensions of Retirement Economics*, Washington, D.C.: Brookings Institution and Russell Sage Foundation: 81-115.

Lusardi, Annamaria. 1998. "On the Importance of the Precautionary Saving Motive." *American Economic Review Papers and Proceedings* 88: 449-453.

Mariger, Randall. 1987. "A Life-Cycle Consumption Model with Liquidity Constraints: Theory and Empirical Results." *Econometrica* 55: 533-557.

Mitchell, Olivia, Jan Olson and Thomas Steinmeier. 2000. "Social Security Earnings and Projected Benefits." In O. Mitchell, P. Hammond and A. Rappaport (eds.), *Forecasting Retirement Needs and Retirement Wealth*, Phildelphia: University of Pennsylvania Press: 68-94.

Moore, James and Olivia Mitchell. 2000. "Projected Retirement Wealth and Saving Adequacy." In O. Mitchell, P. Hammond and A. Rappaport (eds.), *Forecasting Retirement Needs and Retirement Wealth*, Philadelphia: University of Pennsylvania Press: 327-359

O'Brian, Bridget. 2000. "Calculating Retirement? It's No Simple Equation." *Wall Street Journal:* February 7, 2000.

O'Donoghue, Ted and Matthew Rabin. 1999a. "Doing It Now or Later." *American Economic Review* 89: 103-124.

O'Donoghue, Ted and Matthew Rabin. 1999b. "Procrastination in Preparing for Retirement." In H. Aaron (ed.), *Behavioral Dimensions of Retirement Economics*, Washington D.C.: Brookings Institution and Russell Sage Foundation: 125-156.

Poterba, James, Steven Venti, and David Wise. 1994. "Targeted Retirement Saving and the Net Worth of Elderly Americans." *American Economic Review Papers and Proceedings* 84: 180-85.

Shea, John. 2002. "Childhood Deprivation and Adult Wealth." Mimeo, University of Maryland.

Sheiner, Louise and David Weil. 1992. "The Housing Wealth of the Aged." NBER Working Paper No. 4115.

Smith, James. 1995. "Racial and Ethnic Differences in Wealth in the Health and Retirement Study." *Journal of Human Resources* 30: S159-S183.

Staiger, Douglas and James Stock. 1997. "Instrumental Variables Regressions with Weak Instruments." *Econometrica* 65: 557-586.

Venti, Steven and David Wise. 2001. "Choice, Chance, and Wealth Dispersion at

Retirement." In S. Ogura, T. Tachibanaki and D. Wise (eds.), *Aging Issues in the United States and Japan,* Chicago: University of Chicago Press.

Venti Steven and David Wise. 1998. "The Cause of Wealth Dispersion at Retirement: Choice or Chance?" *American Economic Review Papers and Proceedings* 88: 185-191.

Venti, Steven and David Wise. 1991. "Aging and the Income Value of Housing Equity." *Journal of Public Economics* 44: 371-395.

Venti, Steven and David Wise. 1990. "But They Do Not Want to Reduce Housing Equity." In D. Wise (ed.), *Issues in the Economics of Aging*, Chicago: University of Chicago Press: 13-29.

Vissing-Jorgensen, Annette. 2002. "Towards an Explanation of Household Portfolio Choice Heterogeneity: Nonfinancial Income and Participation Cost Structure." Mimeo, University of Chicago.

Weisbenner, Scott. 2002. "Do Pension Plans with Participant Investment Choice Teach Households to Hold More Equity?" *Journal of Pension Economics and Finance* 1: 223-248.

Warshawsky, Mark and John Ameriks. 2000. "How Prepared Are Americans for Retirement?," in O. Mitchell, P. Hammond and A. Rappaport (eds.), *Forecasting Retirement Needs and Retirement Wealth*, Phildelphia: University of Pennsylvania Press: 33-67.

Yakoboski, Paul and Jennifer Dickemper. 1997. "Increased Saving but Little Planning: Results of the 1997 Retirement Confidence Survey," *EBRI Issue Brief*, 191.

Zeldes, Stephen. 1989. "Optimal Consumption with Stochastic Income: Deviations from Certainty Equivalence." *Quarterly Journal of Economics* 104, 275-298.

Table 1: Who thinks about retirement?

	How much have you thought about retirement?				
	A Lot	Some	Little	Hardly at All	Total Sample
Characteristics					
Less than high school	0.20	0.13	0.22	0.32	0.22
High school	0.38	0.35	0.37	0.37	0.37
More than high school	0.42	0.52	0.40	0.31	0.41
Family has high education	0.45	0.53	0.46	0.40	0.45
Married	0.64	0.68	0.61	0.53	0.61
N. of siblings older than 62	0.23	0.28	0.22	0.19	0.23
Ability to think quickly	2.29	2.20	2.25	2.42	2.30
Memory	12.9	13.8	12.9	12.6	13.1
Analogy	6.32	7.00	6.40	5.80	6.35
N. of observations	1,331	1,039	681	1,438	4,489

Note: This table reports the characteristics of respondents across different responses to the question: "How much have you thought about retirement?" All figures are weighted using survey weights.

Sources	Table 2a: How do you make decisions about saving and investment?		
	Total sample	Low educ.	High educ.
Call around	0.25	0.22	0.30
Relatives/friends	0.21	0.21	0.21
Financial planners/brokers	0.28	0.14	0.45
Accountants	0.07	0.02	0.14
Lawyers	0.03	0.02	0.04
Magazines/newspapers	0.27	0.21	0.35
Material in the mail	0.11	0.08	0.15
N. of observations	798	284	514

Note: This table reports the fraction of households who use the sources of information listed in the first column to make decisions about saving and investment. Fractions are reported in the total sample of older respondents (50-61 years old) and across high and low education groups. The data is from the 1995 Survey of Consumer Finances and all figures are weighted using survey weights.

	Table 2b: Some unpleasant facts about retirement			
	The prospect of illness & disability	Not doing anything productive	Being bored	Missing people at work
worry a lot	0.23	0.12	0.09	0.07
worry somewhat	0.29	0.17	0.16	0.23
worry a little	0.26	0.19	0.17	0.29
worry not at all	0.22	0.52	0.58	0.41

Note: This table reports the fraction of households according to how they rated the unpleasant facts about retirement listed in the first row. The data is from the HRS and all figures are weighted using survey weights.

Percentile	How much have you thought about retirement?			
Table 3: Thinking about retirement and savings				
	A lot	Some	A little	Hardly at all
5	0	2,010	-120	-500
25	41,300	50,500	28,500	8,800
50	116,200	128,000	92,000	60,000
75	241,000	266,800	208,000	147,000
90	437,000	474,500	485,700	346,500
95	636,500	752,000	1,009,000	613,350
Mean (Std. Dev.)	224,252 (504,987)	239,298 (422,639)	245,304 (638,957)	165,367 (448,924)
N. of obs	1,331	1,039	681	1,438

Note: This table reports the distribution of total net worth across different responses to the question: "How much have you thought about retirement?" All figures are weighted using survey weights.

	Table 4: The effects of older siblings and parents on lack of planning			
	1	2	3	4
constant	0.2385 (0.0089)	0.2390 (0.0090)	0.2502 (0.0104)	0.3084 (0.0186)
age difference between the oldest sibling and the respondent	-0.0131 (0.0062)	-0.0108 (0.0064)	-0.0111 (0.0064)	-0.0122 (0.0064)
age difference squared	0.0004 (0.0003)	0.0004 (0.0003)	0.0004 (0.0003)	0.0005 (0.0003)
number of older siblings	0.0234 (0.0100)	0.0314 (0.0109)	0.0300 (0.0109)	0.0289 (0.0108)
siblings have worse financial situation than respondent		-0.0398 (0.0191)	-0.0387 (0.0191)	-0.0383 (0.0190)
siblings have better financial situation than respondent		-0.0168 (0.0168)	-0.0143 (0.0168)	-0.0140 (0.0167)
past shocks			-0.0333 (0.0160)	-0.0325 (0.0160)
parents lived in nursing homes before dying				-0.0624 (0.0174)
parents had an illness lasting 3 month or more before dying				-0.0507 (0.0194)
R^2	0.002	0.003	0.005	0.012

Note: This tables reports the regressions of lack of planning for retirement on the variables listed in the first column. The dependent variable is a dummy variable which equals one when respondents report they have hardly thought about retirement.

	Lack of planning dummy				Planning index			
	Total Net Worth		Financial Wealth		Total Net Worth		Financial Wealth	
	Coeff.	Std. err	Coeff.	Std. err	Coeff.	Std. err	Coeff.	Std. err
constant	1.9407	6.5397	2.5168	3.3177	-2.5367	6.4063	-0.2231	3.2651
planning	**-2.3044**	**1.1005**	**-1.4086**	**0.5583**	**0.9018**	**0.4241**	**0.5584**	**0.2161**
excellent health	0.5644	0.1820	0.1862	0.0923	0.6246	0.1961	0.2244	0.0999
very good health	0.1592	0.1616	0.0808	0.0820	0.2513	0.1715	0.1379	0.0870
good health	0.1689	0.1620	0.0992	0.0822	0.2483	0.1787	0.1490	0.0911
permanent inc./1000	-0.0275	0.0074	-0.0103	0.0038	-0.0341	0.0093	-0.0144	0.0047
past unemployment	-0.1081	0.1030	0.0036	0.0523	-0.1500	0.1070	-0.0223	0.0546
past shocks	-0.5783	0.1113	-0.3149	0.0565	-0.5906	0.1159	-0.3232	0.0591
received inheritances	0.5708	0.1278	0.2061	0.0648	0.5132	0.1386	0.1701	0.0706
money from relatives	0.5673	0.1840	0.1812	0.0934	0.4626	0.2049	0.1156	0.1044
money from insurance	1.0065	0.2216	0.5459	0.1124	1.0610	0.2289	0.5796	0.1166
high risk aversion	0.0441	0.1540	-0.0779	0.0781	0.0550	0.1590	-0.0704	0.0810
medium risk aversion	0.0687	0.1881	-0.1126	0.0954	0.0584	0.1934	-0.1192	0.0985
moderate risk aversion	0.1140	0.2142	-0.0501	0.1087	0.1733	0.2310	-0.0119	0.1177
variance of income	0.0032	0.0062	0.0030	0.0032	0.0031	0.0064	0.0029	0.0033
prob. live to 75	0.2201	0.1910	0.0749	0.0969	0.1705	0.1874	0.0454	0.0955
prob. SS less generous	-0.0846	0.1594	0.0221	0.0809	-0.1583	0.1707	-0.0238	0.0870
prob. house price up	-0.0898	0.1681	-0.1082	0.0853	-0.1190	0.1695	-0.1256	0.0864
prob. give help to famil	0.0866	0.1534	0.0220	0.0778	0.0669	0.1583	0.0096	0.0807
bequests	0.9879	0.0980	0.2772	0.0497	0.9437	0.1063	0.2495	0.0542
can rely on help	-0.0108	0.0963	0.0104	0.0489	0.0021	0.0979	0.0181	0.0499
parent alive	-0.1351	0.1090	-0.0609	0.0553	-0.1772	0.1137	-0.0870	0.0580
smoker	-0.2991	0.1107	-0.0914	0.0561	-0.3059	0.1127	-0.0952	0.0574
heavy drinker	-0.2607	0.2234	-0.0589	0.1133	-0.3499	0.2414	-0.1150	0.1230
no regular exercise	-0.1356	0.1016	-0.0414	0.0516	-0.0917	0.1096	-0.0140	0.0559
talk to doc about health	0.1595	0.1283	0.0790	0.0651	0.1021	0.1443	0.0424	0.0735
pension/ perm income	0.0729	0.0305	0.0117	0.0155	0.0323	0.0463	-0.0138	0.0236
SS wealth/perm inc.	0.0803	0.0234	0.0118	0.0119	0.0802	0.0240	0.0118	0.0122
Adjusted R^2	0.0700		0.0100		0.0210		0.0009	
p value of overid. test	0.232		0.909		0.299		0.953	

Note: This table reports instrumental variables regressions of total and financial net worth over permanent income on the variables listed in the first column. Even though not reported, regressions include several demographic variables. Refer to the text for a complete list of the variables and a list of the instruments used in the estimation. Two indicators of planning are used in the estimation: a dummy variable, which equals one if respondents have hardly thought about retirement, and an index for planning.

Table 6a: Explaining household savings Total net worth				
	1	2	3	4
age difference between the oldest sibling and the respondent	0.0208 (0.0113)	0.0192 (0.0116)	0.0196 (0.0116)	0.0195 (0.0116)
siblings have worse financial situation than respondent		0.3521 (0.1622)	0.3468 (0.1622)	0.3458 (0.1624)
siblings have better financial situation than respondent		-0.0855 (0.01442)	-0.0841 (0.1442)	-0.0848 (0.1443)
mother lived in nursing homes before dying			0.2391 (0.1453)	0.2412 (0.1459)
father lived in nursing homes before dying			-01.280 (0.1495)	-0.1252 (0.1505)
parents had an illness lasting 3 months or more before dying				-0.0196 (0.1167)
F-test of joint significance (p. value)		3.16 (0.0239)	2.57 (0.0251)	2.14 (0.0456)

Table 6b: Explaining household savings Financial net worth				
	1	2	3	4
age difference between the oldest sibling and the respondent	0.0078 (0.0055)	0.0068 (0.0057)	0.0069 (0.0057)	0.0070 (0.0057)
siblings have worse financial situation than respondent		0.1555 (0.0795)	0.1555 (0.0796)	0.1593 (0.0796)
siblings have better financial situation than respondent		-0.0204 (0.0707)	-0.0204 (0.0707)	-0.0178 (0.0708)
mother lived in nursing homes before dying			0.0314 (0.0713)	0.0235 (0.0716)
father lived in nursing homes before dying			-0.0512 (0.0733)	-0.0618 (0.0738)
parents had an illness lasting 3 months or more before dying				0.0734 (0.0572)
F-test of joint significance (p. value)		2.15 (0.0920)	1.42 (0.2130)	1.46 (0.1883)

Note: These tables report OLS estimates of total net worth (Tables 6a) and financial net worth (Table 6b) over permanent income on the variables listed in the first column. Even though not reported, regressions include many variables. Refer to the text for a complete list of the variables used in the regressions.

	Lack of planning dummy				Planning index			
Table 7: Planning and stock ownership								
	Coeff.	Std. err	Coeff.	Std. err	Coeff	Std. err	Coeff.	Std. err
constant	0.4537	0.2361	0.3757	0.2324	0.0674	0.1360	0.0291	0.1333
planning	**-0.4577**	**0.1845**	**-0.4111**	**0.1900**	**0.0812**	**0.0403**	**0.0715**	**0.0452**
excellent health	0.0906	0.0309	0.0886	0.0307	0.0846	0.0295	0.0828	0.0300
very good health	0.0861	0.0269	0.0854	0.0264	0.0837	0.0255	0.0832	0.0252
good health	0.0529	0.0268	0.0521	0.0265	0.0479	0.0253	0.0474	0.0253
past unemployment	-0.0157	0.0174	-0.0147	0.0169	-0.0175	0.0166	-0.0177	0.0161
past shocks	-0.0258	0.0183	-0.0232	0.0185	-0.0140	0.0162	-0.0129	0.0165
inheritances	0.0666	0.0211	0.0686	0.0208	0.0727	0.0199	0.0742	0.0196
high risk aversion	0.0039	0.0257	0.0028	0.0261	-0.0237	0.0236	-0.0206	0.0230
medium risk avers.	-0.0054	0.0312	-0.0066	0.0307	-0.0256	0.0309	-0.0239	0.0302
moderate risk avers.	0.0334	0.0356	0.0269	0.0361	-0.0047	0.0307	-0.0063	0.0304
permanent inc/1000	0.0027	0.0012	0.0026	0.0012	0.0023	0.0013	0.0023	0.0013
prob. live to 75	0.0095	0.0306	0.0077	0.0302	-0.0078	0.0278	-0.0074	0.0276
prob. give fin. help.	0.0028	0.0025	0.0026	0.0025	0.0037	0.0024	0.0035	0.0024
bequests	0.0377	0.0161	0.0343	0.0158	0.0363	0.0155	0.0332	0.0152
variance of income	0.0017	0.0011	0.0014	0.0011	0.0015	0.0010	0.0013	0.0010
parents are alive	-0.0019	0.0181	-0.0014	0.0178	-0.0081	0.0174	-0.0065	0.0172
smoker	-0.0221	0.0181	-0.0192	0.0177	-0.0156	0.0181	-0.0138	0.0180
heavy drinker	-0.0071	0.0363	-0.0070	0.0359	-0.0043	0.0344	-0.0048	0.0345
no regular exercise	-0.0097	0.0168	-0.0110	0.0165	-0.0100	0.0161	-0.0115	0.0159
talk doc about health	0.0112	0.0225	0.0144	0.0217	0.0226	0.0202	0.0257	0.0196
gross fin. wealth	0.0022	0.0004	0.0022	0.0004	0.0020	0.0005	0.0020	0.0005
fin. wealth sq./1000	-0.0041	0.0012	-0.0041	0.0012	-0.0040	0.0013	-0.0041	0.0013
def. benef./perm. inc			-0.0059	0.0052			-0.0077	0.0071
def. contr./perm. inc.			0.0456	0.0095			0.0444	0.0095
other pens./perm. inc			0.0043	0.0096			0.0087	0.0088
Adjusted R^2	0.0350		0.0730		0.1310		0.1520	
p value of overid test	0.4960		0.3940		0.2600		0.2010	

Note: This table reports instrumental variables regressions of stock ownership on the variables listed in the first column. Even though not reported, regressions include many demographic variables. Refer to the text for a complete list of the variables and a list of the instruments used in the estimation. Two indicators of planning are used in the estimation: a dummy variable which equals one if respondents have hardly thought about retirement and an index for planning.

Table 8a: Retirement and planning				
	How much have you thought about retirement?			
How has your retirement turned out to be?	A lot	Some	A little	Hardly at all
Very satisfying	0.68	0.50	0.35	0.22
Moderately satisfying	0.28	0.41	0.46	0.35
Not at all satisfying	0.04	0.09	0.19	0.43
N. of observations	343	217	92	520

Table 8b: Retirement and planning				
	How much have you thought about retirement?			
How is your retirement compared to the years just before you retired?	A lot	Some	A little	Hardly at all
Better	0.57	0.44	0.35	0.18
About the same	0.22	0.31	0.36	0.24
Not as good	0.11	0.15	0.22	0.54
Retired less than 1 year ago	0.10	0.10	0.07	0.04
N. of observations	343	217	92	520

Note: These tables report the fraction of respondents according to how they have rated retirement and how much they have thought about retirement.

Saving for your retirement is an important decision. There are various retirement plans you can choose from. In addition, in South Africa retirement annuity and pension fund contributions are tax deductible up to certain limits. How to save 1 million by age 65*. Age. That means you'll need to make provision for an additional 20 - 25 years if you are planning to retire at age 65. On the upside you should be debt-free i.e. you don't have to worry about car or bond repayments and university fees. On the downside you do need to take care of your health. With ageing comes many unwanted ailments. Having enough medical cover to keep you comfortable is essential in South Africa. Let's say you plan to retire at 65. You need to save or have another plan to provide the income you want for 25 years or more, and make sure your money lasts as long as you do. What sort of retirement lifestyle do I want? What will your cost of living be in retirement? Getting close to retirement? It might be a good time to work out a detailed budget. Think about what weekly expenses might be in today's money. Take basics into account, such as insurance, maintaining the house and car, or replacing a major appliance. Build in some funds for the unexpected. Think about the big things that might need to be paid for later on – like a new car, new roof or repainting the house. Make a retirement budget with our budgeting tool. Try it now.