

Planning Costs, Financial Education and Household Saving Behavior

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Abstract

Many traditional models of saving do not incorporate any planning costs in individual decision-making. However, these costs exist and can influence how households save and accumulate wealth. This paper first reviews the evidence on planning and shows that many households have not planned for retirement. Lack of planning is widespread not only among young workers but also among those who are only 5 to 10 years away from retirement. Planning is an important determinant of savings and portfolio choice. Those who do not plan arrive close to retirement with little private wealth and are less likely to invest in stocks. Consistent with the evidence on lack of planning, the paper shows individual workers are not well informed about Social Security and pensions; often, they do not even know the type of pensions they have. Recent data from financial literacy surveys also suggest that many workers lack basic knowledge about bonds, stocks and mutual funds and the working of interest compounding. While several employers have taken initiatives to improve the financial knowledge of their workers, many researchers have not found any effects of programs such as retirement seminars. This may be due to the fact that rarely data sets provide enough information to assess the effects of such programs. Data from the Health and Retirement Study, that provides a rich set of data on both workers and employers, show that retirement seminars can be effective in stimulating savings, particularly for those with low education and those at the bottom of the wealth distribution. To be able to provide an evaluation of the effectiveness of financial education programs, one needs to have a good understanding of the obstacles individuals face in making saving decisions. The paper also discusses some of the recent models of saving that explicitly incorporate planning costs.

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1. Introduction

Traditional models of saving predict that people base their consumption decisions on life-time income. Thus, consumers look ahead, anticipate the change in income at retirement, and make saving plans for the future. The decision on how much to save is certainly a complex one. It requires collecting information on a large set of variables: Social Security and pensions, inflation, and interest rates to just name a few, and making predictions about these variables in the future. It requires possessing knowledge about the working of compound interest rates, the effects of inflation, the working of financial markets and so on. Very little work has been done assessing how households make saving decisions, how they overcome all the difficulties of making these decisions, and whether they possess the financial literacy necessary for these decisions.² These topics are of paramount importance in particular at a time when households are increasingly in charge of choosing and allocating not only their private wealth but also part of their pension and Social Security wealth.

This paper looks directly at the evidence on retirement planning; whether households calculate how much money they need to accumulate for retirement, whether they collect the information necessary to make these calculations, and whether they possess the financial literacy to process information and formulate saving plans. To further assess the relevance of information and planning costs, it examines whether initiatives, such as retirement seminars, have any effects on savings. Much caution should be used in assessing the effects of these initiatives. As shown in the paper, the evaluation of financial education programs is intertwined with the evaluations of saving behavior,

² For an excellent survey of some of the existing work on how individuals make and execute saving plans which is complementary to this paper, see Venti (2005).

planning and financial literacy. If lack of planning and financial illiteracy are widespread, financial education programs may be ineffective simply because they do not address what they are supposed to address. The consideration of planning costs in both theoretical models of savings and in survey data will improve our understanding of how individuals make decisions about saving.

2. Planning for Retirement

One way to get insights on how households save for retirement is to look directly at the evidence on retirement planning. Yakoboski and Dickemper (1997) examine data from the 1997 Retirement Confidence Survey (RCS), which collects 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 percent of workers have tried to determine how much they need to save to fund a comfortable retirement. However, 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. A recent survey fielded for Vanguard finds that a larger percentage of households have given thoughts to how much money they will need at retirement. Nevertheless, only 41 percent of respondents report having a well-defined saving plan with a specific target for saving (Ameriks, Nestor and Utkus (2004)).

Planning may be particularly daunting for young workers who face much uncertainty about future income. Uncertainty coupled with the presence of liquidity constraints and the difficulties of borrowing against future income may, in turn, shorten

the planning horizon of individuals. In fact, lack of planning is pervasive even among older workers. One of the most comprehensive studies on retirement planning is the one by Lusardi (1999). She uses data from the Health and Retirement Study (HRS), which samples older respondents (in the age range 51-61). For these respondents, much of the income uncertainty should be resolved and they should be close to the peak of their wealth accumulation. Even though respondents are only 5 to 10 years away from retirement, Lusardi (1999, 2003) shows that as many as one third of respondents in this age group have not given any thoughts to retirement. Lack of planning is particularly pronounced among those with low education and low income, but the fraction of non-planners remains high even among other groups. This result is echoed in the study by Ameriks, Caplin and Leahy (2003). They use data from a sample of TIAA-CREF participants and show that, even when considering highly educated individuals, 27 percent 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.

Does lack of planning have any consequences for saving behavior? Planning needs not affect savings. One can think of many cases where households do not have to plan. For example, households with low income normally receive high replacement rates from Social Security and pensions. Consequently, they already face a smooth profile for income. Similarly, those who have accumulated large pensions may have already secured a comfortable retirement.³ Others may simply expect to be supported by family and friends, to receive inheritances in the future or to enjoy high capital gains on the assets

³ Gustman and Steinmeier (1999) show that Social Security wealth represents an important and large component of wealth for low income households. Moreover, households with low private wealth often have large pension wealth. See also Gustman, Mitchell, Samwick and Steinmeier (1999).

held in their portfolios. Because saving is a decision inherently about the future, it is formidably hard to evaluate saving decisions without information about individual expectations about future events. Moreover, planning is per se a decision variable and it is not clear where the causality goes, whether it is planning that influences savings or whether savings influence planning.

Very few data sets have all the information required to address this question. The HRS and surveys that have been designed to address specific topics (for example, the TIAA-CREF survey) are exceptions. The HRS offers a richness of information that may overcome some of the above shortcomings. First, it provides a rich set of information about household characteristics including data on attitudes toward risk and impatience, which can play a pivotal role on saving decisions. Second, it provides information about past negative and positive shocks (unemployment spells, inheritances or other lump sum payments). Third, it provides information about individual expectations about future events (inflation, house prices, Social Security, unemployment, health problems, etc.). This is one of the most original features of these data and the most important. Moreover, one has information not only on private wealth but also on Social Security and pensions and is not limited to looking at narrow and often noisy measures of wealth.

After accounting for many of the determinants of wealth and controlling for both pension and Social Security wealth, Lusardi (1999) finds that those who do not plan accumulate much less private wealth than those who plan. This result gets much stronger when performing instrumental variables estimation using the age difference with older siblings and the financial situations of siblings as proxies for planning costs (Lusardi

(2003a)).⁴ Similarly, Ameriks, Caplin and Leahy (2003) find that planning has a strong positive effect on wealth accumulation. The channels through which planning influences wealth are still unclear. However, if households were making random mistakes, wealth would not be systematically low when households do not plan. Using survey evidence, Ameriks, Caplin and Leahy (2004) suggest that planners, by monitoring their budget, are better able to keep their expenses low. Hurst (2003) reports that those who have planned when young are less likely to behave like “rule of thumb” consumers, which simply set their consumption equal to income and, thus, save nothing. Lusardi (2003a) shows that planning affects not only wealth holdings but also portfolio choice. Those who plan are more likely to invest in stocks and this, in turn, can influence the amount of wealth that people accumulate for retirement.

To further highlight the importance of planning, Lusardi (2003a) examines self-reported measures of well-being after retirement and correlate them with the degree of planning. For convenience, results are summarized in Tables 1a-b. Results are consistent with the previous evidence. Close to 70 percent of those who plan a lot find retirement very satisfying, while only 22 percent of those who did not plan find retirement satisfying. Conversely, 43 percent of the non-planners find retirement not at all satisfying while only 4 percent of those who plan a lot find retirement not at all satisfying. The other index of retirement satisfaction reported in Table 1b displays similar results. More than half of those who did not plan report that their retirement is not as good as the years before retirement. As mentioned before, there are many reasons why lack of planning may be correlated with well-being after retirement. However, if those who do not plan

⁴ Those who can learn from their siblings face lower planning costs.

end up with little wealth at retirement, this may explain why retirement is not satisfying and why non-planners experience a drop in well-being after they retire.

3. Information and financial literacy

Another way to assess how households prepare for retirement and what are the potential reasons behind lack of planning is to examine how well informed households are about the major variables affecting saving decisions. The HRS has made this analysis possible for both pension and Social Security wealth. Pension data in the HRS is collected from both respondents and their employers. Self-reported information about pensions from respondents can then be matched with employer-provided pension data. This comparison is certainly treacherous as the calculation of pension wealth is per se a very complex procedure. To keep matters simple, however, one can look at the information about the type and characteristics of pension plans. As reported by Gustman and Steinmeier (2004), only half of respondents with linked pension data correctly identify their pension plan (whether it is Defined Benefits, Defined Contributions or a mix of the two) and fewer than half identify, within one year, dates of eligibility for early and normal retirement benefits. Earlier papers had also suggested that workers are less than fully informed about their pensions (Mitchell (1988) and Gustman and Steinmeier (1989)). Information about Social Security seems also scanty. Only 43 percent of respondents in the HRS even ventured a guess about their expected Social Security benefits and many respondents knew little about the rules governing Social Security (see also Bernheim (1998b)). Following some of the recent changes in Social Security, the 2001 RCS documents that lack of information about Social Security persists; more than

half of current workers expect to reach full eligibility for Social Security benefits sooner (age 65 or earlier) than they actually will.

Unfortunately, major surveys do not provide much more information on how households collect information, the sources they use, and their degree of financial literacy.⁵ Some surveys on small and selected groups, however, offer some suggestions. For example, the State of Washington sponsored a survey to assess how financial literacy affects financial decisions. Two groups were asked to participate: a group representative of the general resident population and a group of consumers (referred to as the “victim pool”) who had loans with a lender that settled with the State of Washington in a large predatory lending case.⁶ Both groups were exposed to a long list of questions aimed to measure financial knowledge (Moore (2003)).

One feature that emerges from these data is that the degree of financial literacy varies substantially among respondents. While there is a strong correlation between education and financial literacy, differences remain large even among the same education group. However, several features were common among respondents. For example, questions about financial instruments were the ones where respondents displayed the lowest amount of knowledge. Specifically, the majority of respondents missed the questions aimed to measure knowledge of bond prices and mutual funds; 57 percent of the general population and 67 percent of the victim pool did not know what happens to bond prices when interest rates go up. A similar and large proportion of respondents did not know what a no load mutual fund is or that mutual funds do not pay a guaranteed rate

⁵ Olivia Mitchell and Annamaria Lusardi have designed a set of questions for a special 2004 HRS module on financial planning and financial literacy. In addition to asking about the tools and sources of information individuals use to plan for retirement, the module contains questions aimed to measure the understanding of interest compounding, the effects of inflation, and risk diversification.

⁶ The numbers of participants were 499 in the first group and 862 in the second group.

of return. More than 40 percent of the victim pool and 35 percent of the general population did not know that stocks gave the highest returns over a 40-year period. Most importantly, more than one third of the victim pool and one quarter of the general population did not know the working of interest compounding. Since the victim pools were loan applicants, this lack of knowledge seems particularly troublesome. Basic principles of risk diversification were also lacking in both groups.

Similar findings are reported by Agnew and Szykman (2004) who devised a financial literacy survey as part of an experiment held at a mid-size public university in the Southeast. Questions in this survey were designed following the structure of the John Hancock Financial Services Defined Contribution Plan Survey. The original Hancock survey (2002) reported that many investors lack basic financial literacy. The large majority of respondents in the experiment (which included college employees, local tourists, parents of students, local construction workers) display similar patterns. Participants knew little about the working of mutual funds; even the basic differences among stocks, bonds and money market mutual funds were not well understood. This also confirms the findings of an earlier survey from the Employee Benefits Research Institute in 1996 that showed that only 55 percent of workers knew that U.S. government bonds have provided a lower rate of return averaged over the past 20 years than the U.S. stock market. Bernheim (1998a) surveys several studies and shows too that workers display little financial literacy.

The important question is again whether lack of information and lack of financial literacy have any effects on savings. Since most of the surveys described above do not report information about wealth, often one cannot look at this question. It is also difficult

to know through which channels information and financial literacy operate. Whether they influence saving decisions directly or whether they influence planning and other important variables such as portfolio choice or retirement decisions. Data from the HRS has given mixed results so far. While Chan and Huff-Stevens (2003) find that lack of knowledge have large effects on retirement decisions, Gustman and Steinmeier (2004) show that lack of knowledge does not translate into large changes in household savings. The next section examines this question from a different angle. It examines whether financial education programs, such as retirement seminars, by reducing planning costs and providing information to workers, have any effects on savings.

4. Financial education and savings

Many employers, particularly those offering Defined Contributions (DC) pensions to their workers, have increasingly offered some form of financial education in the workplace. By providing information and improving financial literacy, seminars should reduce planning costs. If these factors play a role in saving decisions, the analysis of these programs provide an alternative way to evaluate the effects of information, financial literacy, and planning on savings.

Clearly, one cannot run simple regressions of savings on retirement seminars. Since attending retirement seminars is largely voluntary, it is possible that those who attend seminars are more likely to have an interest in them, for example because they have large wealth holdings. Similarly, attending retirement seminars could simply proxy for individual characteristics such as patience and diligence, which are also likely to affect wealth accumulation. Finally, as reported by Bernheim and Garrett (2003),

retirement education is often remedial and thus offered in firms where workers do very little savings. Very few data sets have enough information to allow researchers to sort these effects out. Consequently, empirical results about the effects of retirement seminars have been rather mixed (see, among others, McCarthy and Turner (1996), Bernheim (1995, 1998a), Bayer, Bernheim and Scholz (1996), Clark and Schieber (1998), Muller (2000), Clark and D'Ambrosio (2002), Clark, D'Ambrosio, McDermed and Sawant (2003) and Bernheim and Garrett (2003)).

The HRS offers a richness of information which may overcome some of the above shortcomings. Lusardi (2002, 2004) uses these data to try to disentangle the effects of retirement seminars on savings. The extent to which financial education increases saving is summarized in Table 2. If financial education is likely to be offered to workers who most need it, one might expect the effect to be stronger at the lower quartiles of the wealth distribution and among those with low education. Thus, quartile regressions are performed and the sample is split into two education groups. Moreover, she accounts for a large set of determinants of wealth.

Retirement seminars affect the lowest two quartiles of the wealth distribution and they also affect the lowest two quartiles of the distribution across education groups. Estimated effects are sizable, particularly for the least wealthy. Overall, attending seminars appears to increase financial wealth by approximately 18 percent. This effect derives mainly from the bottom of the distribution, where wealth increased by more than 70 percent. The effect is also large for those with low education with increases in financial wealth close to 100 percent. The reason for such large percentage changes is that households at the bottom of the wealth distribution and those with low education have

little financial net worth and increases of \$2000—the average change in wealth for those with low education that attend a retirement seminar—represent very large percentage increases.

Results for net worth show a similar pattern. Attending retirement seminars increases net worth in the sample by approximately 6 percent. Again, the effect is mostly coming from those at the bottom of the net worth distribution. For the lowest quartile, attending retirement seminars increases wealth by close to 30 percent. Seminars affect mostly those with less than a high school education, increasing wealth by 27 percent for those with low education and at the bottom of the wealth distribution. The effect of seminars decreases steadily as one moves to higher quartiles of wealth. Results are similar when looking at measures of wealth that include Social Security and pensions. Attending seminars increases net worth inclusive of pensions by about 20 percent and total net worth inclusive of pensions and Social Security by 16 percent. Every education groups is now affected by retirement education and estimates are significant for every quartile of total accumulation.

To fully address the potential endogeneity of financial programs, it is important to rely on other estimation strategies as well, such as instrument variables estimation or randomized experiments. Lusardi (2003b) undertakes the first strategy and uses the densities of large firms across states as instrument for the availability (rather than the use) of seminars in addition to the age differences with older siblings to proxy for planning costs. She finds that the effect of seminars is still strong and even larger than the estimates reported in Table 2.

Another approach to evaluate the effects of financial education programs is to run experiments, where a randomly chosen group of participants is exposed to education and their behavior is then compared to an otherwise similar group which was not exposed to the program. This is the approach taken by Duflo and Saez (2003). A random group of non-faculty employees at a large university were given financial incentives to participate to a benefit fair. Participation to pensions and pension contributions of this group were then compared to those who were not induced to participate. According to the authors (Duflo and Saez (2003 and 2004), the effects of this program are mixed and overall pretty small. Attending the benefit fair induced more employees to participate to pensions but the increase in contributions was negligible.

Other authors have argued that, even after households become aware they should change their saving behavior via information sessions or other incentives, in fact, they fail to follow through their actions (Choi, Laibson, Madrian and Metrick (2004)). Thus, the fact that participants attend retirement seminars and state they would like to change their saving behavior, as reported for example by Clark and D'Ambrosio (2002) and Clark, D'Ambrosio, McDermed and Sawant (2003), does not necessarily mean that these programs are effective. In fact, Madrian and Shea (2001) show that, after being exposed to financial education, many participants expressed plans to start contributing to pensions or to increase their contributions but, at least in the short-run, failed to do so.

How can we interpret this mixed evidence? If the findings reported in the previous sections are correct, one has to be very cautious in interpreting the effects of financial education on savings. First, if financial illiteracy is widespread and individuals do not know how interest rates and inflation work, attending a benefit fair is unlikely to

affect behavior. Similarly a one-time exposure to financial education may do little to affect savings. This is not because financial education is ineffective but because the “cure is not adequate for the disease.” Moreover, the fact that individuals have difficulties following through their actions is perhaps an argument for changing the design of financial education programs to make them more effective.⁷ Similarly, one of the lessons we have learned from the literature on saving is that there is large heterogeneity in saving behavior. Individuals seem to differ widely in their degree of financial literacy as well. A “one-size-fits-all” education program may do little to stimulate saving and may itself be one of the major disincentives to attend a financial education program.⁸ Most importantly, very little information is usually provided about the content of retirement seminars. For example, the HRS data does not provide information on what was covered in seminars or even when they were attended. To best evaluate the effects of seminars, we need to have a good understanding of the obstacles people face when planning for retirement. Designing financial programs and evaluating those programs is thus intimately intertwined with understanding the determinants of saving and planning and the presence or absence of financial literacy.

5. Incorporating planning costs into models of savings

Several authors have already started incorporating information and planning costs into models of saving. The predictions of these models are able to match some of the

⁷ For example, Duflo and Saez (2004) note that devices like “signing up on the spot” may mitigate problems of inertia and lack of action.

⁸ In the Washington Financial Literacy survey, most respondents state they would prefer personalized ways to learn how to manage money rather than attend information sessions, see Moore (2003).

characteristics of the consumption and saving data.⁹ One of the most elegant models is the one by Reis (2004). He assumes consumers face a cost in making consumption decisions. This cost can be interpreted as the money spent acquiring information and paying a financial advisor to interpret the information and compute the optimal financial plan or simply the opportunity cost of taking the time to plan (Reis 2004, page 5). Facing this cost, a consumer must choose not only how much to consume but also when to plan. While in a costless world, rational consumers choose to plan and update information at every instant in time, in this paper agents rationally choose to update their information and plans infrequently. This small modification has far-reaching consequences. Consumers are inattentive in this model and will adjust to news only sluggishly. This in turn makes consumption “excessively” sensitive to current income, a finding consistent with the macro literature and some of the micro evidence on consumption behavior.¹⁰ Most importantly, this model predicts that about one third of the US population rationally choose to never plan, live hand-to-mouth (the so-called “rule of thumb” consumers), and save very little. This evidence is roughly consistent with the data from the HRS reported above and the data from the Panel Study of Income Dynamics used by Hurst (2003).

Caliendo and Aadland (2004) adopt a simpler approach. They assume the planning horizon of consumers is not the lifetime, as predicted by traditional models of saving, but much shorter. Consumers in this model start planning only for the next T years (where T is shorter than the length of life), so initially they do not plan for retirement. However, the planning window slides along the time scale. Eventually retirement will come to sight and consumers will start saving to offset the decline in

⁹ For a discussion of the “puzzles” in the saving and consumption literature, see Lusardi, Skinner and Venti (2001).

¹⁰ For a survey of this evidence, see Browning and Lusardi (1996).

income after they stop working. While this model assumes rather than generates a short planning horizon as in Reis (2004), it has several advantages. First, one can derive an analytical solution to the model, which is very much an extension of traditional optimization models. Second, this model can explain several features of the consumption and saving data. For example, the model can rationalize why the profile of consumption is hump-shaped rather than growing smoothly over the life cycle. Moreover, when asked directly, many respondents state they would have liked to have saved more for retirement,¹¹ a dynamic inconsistency which is a feature of this model too. Of course the model is consistent with the facts that many people do not plan or have not made any calculations for how much they need at retirement, but this is not endogenously derived within the model. Even with this shortcoming, this model provides an easy way to incorporate characteristics of the data into models of saving..

If one is willing to move further from traditional models of saving and consider hyperbolic discounting preferences, the role of planning costs is even magnified. In the model by Akerlof (1991), Laibson (1997), O'Donoghue and Rabin (1999a, 1999b) where agents display hyperbolic discounting, even small costs have large consequences for saving behavior. Costs that have to be paid immediately lead to wide regions of inaction; agents postpone saving or planning decisions if those actions are costly. Some actions may never be taken; if planning takes time and effort, consumers may continue to postpone indefinitely and never put any effort into planning and saving decisions. 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

¹¹ This result is consistent with the work by Hurd and Zissimopoulos (2000), who examine subjective information about past saving behavior. When asked to evaluate their saving, a stunningly high proportion of respondents (73%) in the HRS report having saved too little over the past 20 and 30 years.

be made every day, but since one needs to put time and effort into them, decisions can be substantially delayed and perhaps never taken. Again this model can explain features of the data that other models cannot even start to rationalize. For example, this model can explain why “procrastination” is cited as one of the major obstacles to saving in many retirement planning books and why there is so much inertia in both saving and portfolio choice decisions. For example, according to Ameriks and Zeldes (2001), over 70 percent of investors in their sample of TIAA-CREF investors have never changed the initial allocation of their assets during a 10-year period. Incorporating more explicitly planning costs and modeling more accurately all the difficulties people face in making saving and portfolio decisions is an important avenue for future research.

6. Concluding remarks

When examining directly how much people plan for retirement, how much information they collect to make these decisions, and the financial literacy they possess to elaborate information, one finds that many of the usual assumptions behind many traditional models of saving are hardly satisfied. Does it really matter? Should consumers be fully informed to make saving decisions, do they need to possess an advanced knowledge about the working of financial markets, the effects of inflation, the working of interest compounding? Households could simply consult financial planners/advisors and delegate saving and investment decisions. Even conceptually, while classical intertemporal optimization models are very hard to solve and often one requires a super-computer to derive saving decisions, it could be that simple rules well approximate the optimal saving decisions resulting from an otherwise very complex problem. For

example, Deaton (1992, page 203) shows that a rule such as “spend everything when times are bad and save a fixed fraction of any excess over the amount required to achieve a minimum necessity” can very close approximate the optimal solution of an overly complex model of consumption under income uncertainty. Similarly, it could be that optimal saving decisions are indeed very complex, but deviations from optimality do not give rise to large welfare losses. Thus, those consumers facing high planning costs may optimally choose not to plan for retirement and not save optimally because those costs are much larger than the welfare gains of making these decisions. While these are plausible explanations, we need to explore these topics more formally. The evidence in Tables 1a-b suggests consequences for lack of planning can be dire; non-planners are much less likely than planners to experience a satisfying retirement. Moreover, lack of planning leads to large differences in the accumulation of wealth. It seems difficult to rationalize how such large differences in wealth give rise to only small welfare gains. Until these issues are formally derived and explained, the evidence provided in this paper is going to add to an already long list of saving “puzzles.”

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Table 1a: Retirement and planning				
How has your retirement turned out to be?	How much have you thought about retirement?			
	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 1b: Retirement and planning				
How is your retirement compared to the years just before you retired?	How much have you thought about retirement?			
	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. Data is from the 1992 HRS. See Lusardi (2003a) for details.

Table 2: The Effect of Retirement Seminars on Retirement Accumulation

	Total sample	1 st quartile	median	3 rd quartile
<i>a. Financial net worth</i>				
Total sample	17.6 %**	78.7%**	32.8%**	10.0%
Low education	19.5%	95.2%**	30.0%**	8.8%
High education	13.1%	70.0%**	19.4%**	10.2%
<i>b. Total net worth</i>				
Total sample	5.7%	29.2%**	8.7%	0.5%
Low education	3.4%	27.0%**	7.1%	4.0%
High education	7.3%	26.5%**	6.5%	3.6%
<i>c. Total net worth + Pensions</i>				
Total sample	20.5%**	32.7%**	26.8%**	19.5%**
Low education	20.7%**	31.4%**	14.6%*	18.2%**
High education	19.4%**	39.3%**	31.2%**	17.6%**
<i>d. Total net worth + Pensions and Social Security</i>				
Total sample	16.0%**	18.6%**	20.4%**	17.2%**
Low education	12.7%**	14.7%**	12.7%**	9.5%**
High education	17.7%**	25.4%**	25.8%**	17.0%**

Note: This table reports the percentage changes in different measures of retirement accumulation resulting from attending retirement seminars. The data is from the 1992 HRS. See Lusardi (2004) for detail.

* indicates that the estimates from which percentages are based are statistically significant at the 10% level

** indicates that the estimates from which percentages are based are statistically significant at the 5% level