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SAVING AND THE EFFECTIVENESS OF FINANCIAL EDUCATION[1]

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Abstract

In this paper, I examine the financial situation of older households and how employer provided retirement seminars affect household savings. Using data from the US Health and Retirement Study, I first show that many families arrive close to retirement with little or no wealth. Portfolios are also rather simple, and many families, particularly those with low education, hold little or no high-return assets. I further show that seminars do indeed foster savings. This is particularly the case for those with low education and those who save little. By offering financial education, both financial and total net worth increase sharply, particularly for families at the bottom of the wealth distribution and those with low education. Retirement seminars also increase total wealth (including pensions and Social Security) for both high and low education families. Taken together, my estimates show that retirement seminars can foster wealth accumulation and bolster financial security in retirement.

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Introduction

Individual workers are increasingly in charge of their pension wealth. For example, the large majority of pension plans are currently defined contribution (DC) pensions; as a percentage of all private pension plans, defined contribution plans increased from 66.8 percent in 1975 to 92.3 percent in 1998.[2] When looking at the number of active participants, almost 70 percent are now in DC plans. In these plans, workers must choose not only the amount of contributions but also, in many cases, how to allocate their pension saving. There is little research to date on the difficulties that people face in making decisions about pensions and savings and how they overcome the complexities of devising saving plans.

In this paper, I use data from the United States Health and Retirement Study (HRS) to examine the financial situation of older households. I first show that many families arrive close to retirement with little or no wealth. Portfolios are also rather simple: the major asset that families own is their home and only 30 percent of households hold stocks. Many families, in particular those with low education, hold neither high return assets (stocks, IRAs, business equity) nor basic assets, such as checking accounts. Next, I evaluate the reasons for such low wealth accumulation and simple portfolios. In particular, I argue that, in addition to many of the traditional explanations for low saving levels, planning costs play a role in explaining families' financial situation. To assess the importance of these costs, I examine whether the provision of financial education via retirement seminars can foster savings and the allocation of portfolio components into high-return assets, such as stocks. The evidence indicates that seminars can foster savings, particularly for those with low education and those who save little. My estimates suggest that, by offering financial education, wealth can be increased by approximately 20

[2] Data is from the U.S. Department of Labor's Abstract of 1998 Form 5500 Annual Reports.

percent in the total sample and much more for families at the bottom of the distribution and those with low education. Retirement seminars also increase total wealth (including pensions and Social Security) for both high and low education families. Thus, retirement seminars are a viable way to increase workers' savings and bolster financial security.

Previous Studies

Previous studies have shown that many households do not make provisions for retirement and adverse events. Warshawsky and Ameriks (2000) perform the experiment of importing the current wealth holdings of US households, as reported in the Survey of Consumer Finances, into one of the most popular financial planners. 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. 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 when it is not possible to accumulate much wealth. These results are 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 percent) in the HRS report having saved too little over the past 20 and 30 years. Similar findings are reported by 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 percent of income to smooth consumption after

retirement. Women appear particularly vulnerable to adverse events and a husband's death can precipitate his widow's entry into poverty (Weir and Willis 2000).

Other studies report evidence of lack of preparation for retirement. The 2001 Employee Benefit Research Institute's (EBRI) Retirement Confidence Survey (RCS) indicates that a large proportion of workers have done little or no planning for retirement. Only 39 percent of workers in 2001 have tried to determine with some accuracy how much they need to save to fund their retirement. In the early 1990s, often less than a third of workers indicated they had tried to calculate how much money they needed to save for retirement. When asked why the calculation was not attempted, many respondents replied that it was too difficult and they did not know where to find help to do it.

Lack of planning is also pervasive among older workers, 5 to 10 years from retirement according to Lusardi (2000). These findings are consistent with several other studies that show many workers lack the information necessary for making saving decisions. For instance, Gustman and Steinmeier (1999) report that many workers are not well informed about their Social Security and pension benefits and are often erring about the type of pension plan they have and the benefits associated with it. The 2001 RCS documents that more than half of current workers expect to reach full eligibility for Social Security benefits sooner (age 65 or earlier) than they actually will. A previous EBRI survey (1996) shows that only 55 percent of workers knew that government bonds have provided a lower rate of return averaged over the past 20 years than the United States stock market. Other researchers, such as Bernheim (1998), also show that workers are often ill-equipped to make saving plans.

An important finding by Lusardi (1999, 2000) is that planning for retirement has effects on both saving behavior and portfolio choice. Households whose head did not plan for retirement

appear to accumulate much less wealth than households whose head did some planning. This result holds true even after accounting for many determinants of wealth and including levels of pension and Social Security wealth. In addition, households that do not plan are less likely to invest in high return assets, such as stocks.

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 DC pensions, where workers have to make their own decisions on how to allocate pension funds. An important question, however, is whether these initiatives have any effects on workers' behavior.

A few studies have looked at the effects of financial education in the work place on private savings or contributions to pension funds.[3] The empirical findings are mixed: there is evidence of some positive effect of financial education on savings and pensions, but the form of education seems to matter. For example, Bernheim and Garrett (2003) find that programs that rely on print media (newsletters, plan description, etc.) have generally no effect on pension participation or contributions, even though the quality of financial information seems to matter (Clark and Schieber 1998). By contrast, retirement seminars are found to be effective, but they seem to affect only certain aspects of behavior, for example pension participation and the amount of contributions, but not total saving levels (Bernheim and Garrett 2003). Nevertheless, these and other similar studies suffer from severe data shortcomings, inasmuch as they lack much information about workers' characteristics, the characteristics of their pension plan and total wealth levels. There remain questions regarding the appropriate measure of wealth when looking at accumulation for retirement and how to treat housing when calculating retirement wealth. Some studies claim that few elderly sell their houses after retirement and even fewer use

contracts, such as reverse mortgages, to access their housing wealth. Most importantly, most previous studies do not consider pension and Social Security wealth, which are two major components of total household retirement savings. Leaving out these components of wealth and/or concentrating on narrow definitions of accumulation can have important effects on the empirical findings. In what follows, I use data from the HRS, which provides rich information about household characteristics and wealth measures, to examine the effects of retirement seminars.

Empirical Approach

The HRS offers a unique set of information that overcomes many of the shortcomings of previous research on savings and financial education. This survey, covering a nationally representative sample of United States households born between 1931 and 1941 provides detailed information on wealth and the retirement process with a focus on health, labor markets, and economic and psycho-social factors. Questions about wealth are asked to the most financially knowledgeable person in the household.

Five types of HRS information are critically important to understand saving behavior: (i) information about planning, (ii) past economic circumstances, (iii) expectations about the future, (iv) individual preferences, and (v) pension and Social Security wealth. The HRS provides several indicators about planning: how much respondents have thought about retirement, whether they attended a retirement seminar, and whether they asked Social Security to calculate their retirement benefits. Moreover, the HRS provides information on several past negative and positive shocks, including past unemployment, episodes of distress, inheritances, insurance settlements, and money received from relatives and friends. Most importantly, it reports information about anticipated future resources and future events. This is critically important

[3] See Lusardi (2004) for a review.

since decisions to save are intrinsically related to the future. In the HRS, respondents are asked to report how likely it is that future home prices will increase more than the general price level, and how likely it is that Social Security will become less generous in the future. Respondents are also asked to report their expectation of living to ages 75 and 85, working full-time after ages 62 and 65, and losing their job in the next year. In addition, respondents are asked to report the chance they will have to give major financial help to family members in the next 10 years.

Another generally neglected aspect in which households can differ is preferences. Preferences, specifically risk aversion or impatience, play a pivotal role in saving decisions. One can infer preferences from the HRS using the information on people's willingness to take gambles. Demographic variables that could be related to the impatience--such as education, race, and country of origin-- are also present in the survey. Additionally, information on smoking, drinking, health practices, and regular exercise may be used to proxy for individual differences in saving behavior.

In the HRS, it is possible to link to the Social Security records of respondents and use that information to calculate Social Security wealth. For those households who did not provide consent to link to Social Security records, I have used imputed Social Security wealth. It is also possible to construct pension wealth from the self-reported pension information. Thus, the data set offers a very complete measure of household resources.

Household Savings Close to Retirement.

Before looking at how financial education influences retirement wealth, it is useful to first describe two measures of household (non-pension) accumulation. The first measure, liquid net worth, is defined as the sum of checking and savings accounts, certificates of deposit and Treasury bills, bonds, stocks, and other financial assets minus short-term debt. The second

measure, total net worth or simply net worth, is obtained by adding IRAs and Keoghs, housing equity, other real estate, business equity, and vehicles to liquid net worth. Table 1 displays the major components of wealth including retirement assets (IRAs and Keoghs) and housing equity. All values are given in 1992 dollars and the sample includes all financial respondents between the age of 50 and 61 who are not partially or fully retired.

Table 1 here

The first important result from this table is that there are tremendous differences in wealth holdings for households on the verge of retirement. While some households have amassed large amounts of wealth, others have accumulated very little. Considerable differences in wealth are to be expected because normal income (average income over the lifetime) varies widely. But the actual variation of wealth across households, from $850 in net worth for households at the 10th percentile to $475,000 in the 90th percentile, is far larger than variation in normal income. It is also apparent that housing is an important asset in many household portfolios and, furthermore, many people have no assets other than home equity. As mentioned before, whether housing equity serves to sustain consumption at retirement is in dispute. Retirement assets, such as IRAs, have been one of the fastest growing components of household wealth in the last two decades, but the evidence shows that ownership and the amount invested in such tax-favored assets vary widely across the sample. Even though not shown in the table, a substantial portion of total net worth is accounted for by business equity.

A second important point to note in Table 1 is the prevalence of households that arrive close to retirement with little or no wealth; one quarter of HRS households have less than $30,000 in total net worth. Of course total net worth is only a partial measure of accumulation

since it omits Social Security and pension wealth. Nevertheless, it is difficult to borrow against retirement assets.

Wealth holdings across education, which can proxy for normal income, appear in Table 2. What is clear is that wealth differences both within and across groups remain large. Many of the households with low education have little net worth. Households whose head is college educated have more than twice the wealth (considering medians) of households with only a high school education. If one considers a restricted measure of wealth such as liquid net worth, the scenario worsens considerably. Low education households have little or no holdings of financial assets.

Table 2 here

I also examine the composition of wealth and portfolio choice by education groups. Results show that wealth is concentrated among households whose financial respondent has at least a high school education; this group is also more likely to holds stocks and bonds. Focusing on households with low education shows that a disproportionate fraction of these families are minorities. Over one third of Hispanics have only an elementary school education, and almost 60 percent have less than a high school education. Among Blacks, 40 percent have less than a high school education. Another important and striking feature among Blacks and Hispanics is that they lack many of the assets common to the portfolios of wealthier households, such as stocks, bonds and IRAs and few have even a checking account. Only 57 percent of Black households and 47 percent of Hispanic households have a checking account.

To account for the fact that normal (permanent) income varies across households and is one of the most important determinants of wealth, I examine wealth as a proportion of normal income in my empirical work. Normal income has been constructed by regressing total household income on a set of household demographics (age, sex, race, marital status, region), workers characteristics

(working in small firms, working part time, belonging to unions), occupation and education dummies and these occupation interacted with age, and the subjective expectations of income changes in the future (whether future income will increase or decrease, subjective probability of losing work next year and that health will limit work activity in next 10 years).

The Role of Financial Education

Many factors can explain the differences in wealth holdings close to retirement. Households with low normal income, those who are hit by many shocks, and people who are impatient or expect large capital gains on their assets may save differently from others. In addition, those facing high planning costs may also save differently. To help confront the problem of planning costs, some employers have started to offer some form of financial education in the workplace. By providing information and improving financial literacy, the hope is that seminars will reduce planning costs and foster savings. Nevertheless, as mentioned before, there is still much uncertainty regarding the effects of seminars on savings. Several studies discern a positive correlation between attending a retirement seminar and private wealth or contributions to pension funds, yet it is not completely clear what this correlation means. Attending retirement seminars is largely voluntary, so it is possible that those who attend seminars are more likely to have an interest in them because, for example, they have large wealth holdings. Thus, it may be wealth levels that drive participation in retirement seminars, and not the other way around. Similarly, attending retirement seminars could simply reflect individual characteristics, such as patience and diligence, both of which are likely to affect wealth accumulation as well. Attending a retirement seminar could then simply be a proxy for individual characteristics and attitudes towards saving, rather than a measure of the effects of providing information, improving financial literacy, and/or reducing planning costs.

Furthermore, as reported by Bernheim and Garrett (2003), retirement education is often remedial and thus offered in firms where workers do very little savings. Since few data sets have enough information to allow researchers to sort these effects out, findings regarding the effects of retirement seminars are often difficult to interpret.

I seek to remedy these shortcomings by using the HRS to examine the effectiveness of retirement seminars. One advantage is that the HRS provides rich information on individual characteristics that might affect savings. Another is that the detailed HRS information is more complete than those used in previous studies; for example, Bernheim and Garrett (2003) have limited and noisy data about private savings and other studies have only information about pension contributions and pension wealth, but no information about private wealth.

To illustrate the strength of the HRS financial education variables, in Table 3, I report two indicators of planning activities: (a) whether the respondent has attended a meeting on retirement and retirement planning organized by his/her spouse's employer and (b) whether he/she has asked Social Security to calculate retirement benefits (of husband or spouse). The results show that respondents who are male, white and married are more likely to have attended a seminar. Households whose head has low education or comes from a family of low education are less likely to have attended a seminar. Of course, this might occur if such families work in firms that tend not to offer such seminars. Nevertheless similar findings are obtained when considering those who have asked Social Security to calculate their retirement benefits. Again, the better educated, higher income, white and married respondents are more likely to ask for information about Social Security benefits. Households who plan are also more likely to have a pension and to invest in retirement assets such as IRAs and Keoghs.

Several other household characteristics are also considered, including whether the financially knowledgeable person in the household smokes or stopped smoking, drinks heavily, thinks he/she should cut down on drinking, does not exercise, and has talked to a doctor about health. All of these correlate strongly with planning activities and underscore the finding that individual differences should be taken into account in the empirical work.

When looking at the probabilities of future events, another important and unique source of information in the HRS, one finds that those who attend a retirement seminar or asked Social Security to calculate retirement benefits are less likely to work full-time after age 62. Those who plan are also somewhat less likely to report that they expect house prices to increase more than the general price level in the next ten years.

Table 3 here

To assess the importance of seminars on retirement wealth accumulation, I regressed wealth measures on an indicator variable for whether respondents have attended a retirement seminar and an extensive set of controls.[4] The dependent variable is the ratio of non-pension wealth to normal income, in some cases also controlling for pension and Social Security wealth. First, I consider financial net worth, which adds IRAs and Keoghs to liquid net worth, and next I consider total net worth; both are divided by normal income. Even after this normalization, variation in the ratio of wealth to normal income remains wide. Households in the first quartile of the distribution have financial wealth that is only 1 percent of income, while in the third quartile financial wealth is approximately equal to normal income. Considering net worth, households in the first quartile hold wealth equal to approximately 75 percent of their normal income, while at the third quartile they hold three times the amount of normal income. Among the explanatory variables, I use age and age squared (the latter to capture the hump-shaped

profile of wealth holdings) and also I evaluate demographic factors, such as the total number of children, the number of children still living at home, sex, race, country of birth, marital status, region of residence and education. Normal income is included among the explanatory variables to account for the fact that accumulation can vary across levels of normal income and to test whether rich households are simply a scaled-up version of poor households. The model also

are so sizable that it is important to analyze the effects of financial education on broader measures of net worth.

In what follows, I first consider a measure of pension wealth, as reported by HRS workers, which I sum to total net worth. I next add Social Security wealth (measured as of the time of the interview) to the previous measure. Hence, these models assess whether attending a retirement seminar influences not just total net worth but also accumulations in pension and Social Security wealth. Panels c and d of Table 4 report the effects of seminars on these more comprehensive measures of wealth.

Retirement seminars affect not only financial and net worth but also total accumulation patterns. The economic significance of the estimated effects is also in line with previous estimates. Overall, 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. When using these comprehensive measures of wealth, I find that all education groups are affected by retirement education and estimates are significant as well for every quartile of total accumulation.

Extensions

One possible concern in the evaluation of the effectiveness of retirement seminars is that seminars may not be offered exogenously. That is, firms may be more likely to offer seminars if they think workers are unprepared for retirement. Moreover, workers who attend such seminars may display specific characteristics, such as a proclivity to save. Thus, the relationship between saving and financial education may be difficult to interpret. If one could identify variation in attending retirement seminars that did not result from differences in saving, then it might be possible to distinguish between the hypothesis that knowledge causes the accumulation of

wealth, and the hypothesis that wealth causes the acquisition of knowledge. This can be analyzed via randomized experiments, as in Duflo and Saez (2003) or by using instrumental variables. This latter approach confirms the finding reported previously: retirement seminars are found to foster wealth accumulation even when using instrumental variables estimation (Lusardi 2004).

Additionally, seminars affect accumulation not only by changing how much people save, but also how they invest their portfolios. Several authors have emphasized that there can be large transaction and learning costs associated with investing in stocks, which may explain why so many households, particularly those with low education, do not invest in stocks. As reported by Lusardi (2004), retirement seminars influence the ownership of stocks: those who have attended seminars are more likely to hold stocks. Furthermore, employees with low wealth holdings are most affected by seminars, reinforcing the conclusion that education is remedial and mainly influences those households who otherwise might not hold stocks. Analysis by education groups confirms that those with low education and lower wealth (less than $60,000) respond to retirement seminars by purchasing more stocks, while there is no effect of seminars for those with high education. This may explain why the effects of seminars are present and significant even for restricted measures of accumulation, such as financial net worth, which includes stocks.

These estimates compare well with other works. They are consistent with the findings of Bernheim and Garrett (2003) that also show that virtually all measures of retirement accumulation are higher when the respondent's employer offers financial education. Most importantly, as in this work, the effect is concentrated on the 25th and 50th percentile of accumulation and decreases or disappears at higher percentiles, a finding difficult to rationalize simply by appealing to tastes for saving. It is also consistent with the findings of Clark and Schieber (1998) that employer-provided education programs that increase the quality and type of

financial information increase participation rates as well as contributions in pension plans. This may explain why the effects of retirement seminars get stronger when I consider measures of wealth inclusive of pension. My findings are overall consistent with the work of Clark, D'Ambrosio, McDermed, and Sawant (2004), who show that those individuals with less financial knowledge, such as women, are more likely to change their saving behavior after attending a financial education seminar, again suggesting that seminars may help those who display more difficulties in saving.

To put estimates in perspective, I have examined the effects of retirement seminars across other relevant determinants of wealth. For those in the first quartile of the net worth to normal income ratio distribution, attending a seminar has as large an effect as not smoking or having received inheritances or money from relative and friends. The effect is also comparable to have high education: college or more than college education. When looking at those with low education, seminars have a similar effect on net worth as having pensions. Given the difficulties or costs of changing these other variables, retirement seminars may represent a viable alternative to stimulate savings.

Other studies, such as Garman (1998) and the references therein, have argued that financial education increases workers productivity and reduces absenteeism to deal with personal financial matters and overall absences from work. The value to employers of these benefits of financial education is estimated to be well above the costs of providing financial education. While these studies are often qualitative and based on small samples, they represent initial evidence from which to build more research.

If saving stimulus improves household well-being, retirement seminars may be a worthy initiative. Examining data for workers who have already retired, Lusardi (2000) shows that those

who did not plan are more likely to report a less satisfying retirement. Since lack of planning is usually associated with low wealth, this may explain the link to retirement satisfaction.

Conclusions

This work examines how retirement seminars help explain the wide differences in retirement accumulation that we observe across older households. The results show that seminars are remedial and appear to affect those at the bottom of the wealth distribution the most. The effects become even stronger for every education group and every quartile of the wealth distribution if pension and Social Security wealth are included in the household wealth measures.

These estimates imply that retirement seminars can influence the accumulation of both net worth and broader measures of wealth. Both financial and net worth can increase by 20 percent and a lot more across sub-groups of low education when workers attend retirement seminars. A broader wealth measure, inclusive of pension and Social Security relative to permanent income, increases by 15-20 percent for both high and low education families.

While the provision of information and the reduction of planning costs could play an important role in improving the financial security of many U.S. households, it should be recalled that only a small number of workers—10 to 13 percent- attend retirement seminars. Consequently, many remain untouched by employers' efforts to provide financial education. Moreover, many of the households with low education or at the bottom of the wealth distribution are minorities, particularly Blacks and Hispanics. They not only save little but often do not hold any high-return and tax-favored assets or even simple assets, such as checking accounts. To understand the saving behavior and the effectiveness of financial education for these groups, it may be important to study them in isolation.

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Table 1: Pre-retirement Household Wealth in the 1992 HRS

Components of household wealth (excluding Social Security and pensions)				
Percentile	Liquid Net Worth	IRAs & Keoghs	Housing Equity	Total Net Worth
5	-6,000	0	0	0
25	0	0	0	27,980
50	6,000	0	42,000	96,000
75	36,000	15,000	85,000	222,200
90	110,000	45,000	150,000	475,000
95	199,500	75,000	200,000	785,000
Mean (Std. Dev.)	46,171 (178,654)	16,492 (49,754)	61,613 (100,646)	227,483 (521,467)

Note: This table includes HRS households whose head is 50-61 years old and not fully or partially retired. The total number of observations is 5,292. All figures are weighted using survey weights. Liquid net worth is defined as the sum of checking and savings accounts, certificate of deposits and Treasury bills, bonds, stocks, and other financial assets minus short-term debt. Total net worth is defined as the sum of liquid net worth, IRAs and Keoghs, housing equity, business equity, other real estate, and vehicles. All values are expressed in 1992 dollars.

Table 2

Pre-retirement Household Wealth by Education in the 1992 HRS

	Number of Observations	Liquid Net Worth		Total Net Worth	
		Median	Mean	Median	Mean
Education level					
Elementary	329	0	-707	9,000	82,215
Less than H. School	1,042	100	16,429	39,000	110,324
High School	1,876	5,500	29,668	90,000	183,678
Some College	1,041	10,000	47,312	122,700	243,571
College	800	28,000	90,910	186,000	358,848
More than College	204	41,000	175,160	234,000	636,366

Note: This table reports the distribution of liquid and total net worth across education groups. All figure are weighted using survey weights. See Table 1 for the definition of liquid and total net worth.

Table 3: Planning Activities Undertaken by HRS Pre-retirees

Characteristics	Attended retirement seminar	Asked SS to calculate benefits	Total sample
Demographics			
Age 50-53	0.32	0.28	0.36
Age 54-57	0.38	0.34	0.36
Age 58-61	0.29	0.38	0.27
White	0.85	0.90	0.79
Male	0.58	0.54	0.51
Married	0.72	0.73	0.61
Less than high school education	0.06	0.09	0.22
High school education	0.30	0.38	0.36
More than high school education	0.63	0.53	0.42
Family of origin has high school educat.	0.58	0.55	0.47
Income and wealth			
Income < $25,000	0.11	0.14	0.29
Have pensions	0.84	0.60	0.49
Have IRAs or Keoghs	0.63	0.63	0.41
General attitudes			
Heavy smoker	0.10	0.15	0.18
Stopped smoking	0.45	0.42	0.37
Heavy drinker	0.04	0.05	0.05
Feel should cut down on drinking	0.21	0.20	0.20
Do not exercise	0.27	0.37	0.46
Talk to a doctor about own health	0.83	0.81	0.77
Subjective expectations			
Expectation that health will limit work activity in the next 10 years *	0.36	0.38	0.39
Expect. to live to age 75 or more	0.68	0.67	0.65
Expect. to work full-time after age 62*	0.43	0.49	0.52
Expectations that SS will become less generous	0.59	0.62	0.59
Expect. that house prices will increase faster than prices in the next 10 years	0.46	0.48	0.49
# of observations	506	1,191	5,292

Note: This table reports the proportion of respondents who have attended a retirement seminar or asked Social Security to calculate retirement benefits. All figures are weighted using survey weights.
* indicates that the means are calculated on the sample of workers only.

Table 4: The Effect of Retirement Seminars on Retirement Accumulation

	Total sample	1st quartile	median	3rd quartile
a. Financial net worth				
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%
b. Total net worth				
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%
c. Total net worth + Pensions				
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%**
d. Total net worth + Pensions and Social Security				
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. See text 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