

# Planning for Retirement: The Importance of Financial Literacy

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Americans increasingly are in charge of their own financial security after retirement. With the shift from defined benefit (DB) to defined contribution (DC) pension plans, workers have to decide not only how much to save for retirement but also how to allocate their pension wealth. Moreover, in recent decades the complexity of financial instruments has increased, so individuals must use new and more sophisticated financial products. How well-equipped are Americans to make their own saving decisions? Do they even plan for retirement? Do they possess adequate financial literacy? These questions will be addressed in this article.

## Retirement Planning

One simple and direct way to examine whether individuals look ahead and make plans for the future is to study the extent of retirement planning. I examined this evidence several years ago using data from the 1992 Health and Retirement Study (HRS), which surveys U.S. respondents age 51 years and older. I found that as many as one-third of the respondents had not thought about retirement at all (Lusardi, 1999). While some of this behavior may have been perfectly rational,<sup>1</sup> it was nevertheless surprising that the majority of older respondents had not given any thought to retirement even when they were only five to ten years away from it. Lack of planning was concentrated among specific subgroups of the U.S. population, such as those with low education levels, African-Americans, Hispanics, and women. These potentially vulnerable groups were not only less likely to save for retirement than the general population, but also tended not to have a minimum level of precautionary savings to buffer themselves against sudden adverse shocks, such as job loss or unanticipated out-of-pocket medical expenses (Hubbard, Skinner, and Zeldes, 1995).

These findings are not specific to a particular time period. Notwithstanding the recently increased supply of financial products aimed to facilitate retirement planning, a lack of planning still is prominent among the current population of older respondents. Using data from the 2004 HRS and concentrating on respondents who are 51 to 56 years old, I found—in joint work with Olivia Mitchell and Jason Beeler—that close to 30 percent of respondents have not given any thought to their retirements (Lusardi and Mitchell, 2007a; Lusardi and Beeler, 2007).

These findings have been replicated in other surveys. For example, using data from a representative sample of U.S. workers from the Retirement Confidence Survey (RCS) in 1997, Yakoboski and Dickemper (1997) report that only 36 percent of workers have tried to determine how much they need to save to fund a comfortable retirement. When asked, however, many of the workers who report having done the calculation could not give a dollar figure. Thus, according to this survey, as many as 75 percent of workers have little sense of how much money they need to accumulate for retirement. Moreover, consistent with the finding of Lusardi and Mitchell (2007a), data from recent waves of the RCS confirm that the fraction of nonplanners has not changed much over time (Salisbury, Turyn, and Helman, 2001).

Retirement planning is an important determinant of household wealth. Table 1 reports the distribution of household wealth holdings across different degrees of planning for two household groups of the same age but in different time periods: the early baby boomers (those ages 51 to 56 in 2004) and the older cohort (ages 51 to 56 in 1992).<sup>2</sup> Planners have substantially more wealth than nonplanners; looking at the median levels of household net worth, planners accumulate more than double the amount of wealth accrued by nonplanners. The differences are even larger in the first quartile of the wealth distribution. For many households, a lack of planning is tantamount to a lack of savings. Note that even a small amount of planning goes a long way toward accumulating high wealth holdings; those households who have thought “a little” about retirement hold substantially more wealth than those who have thought “hardly at all” about retirement.

These findings hold true not only for the older cohort in 1992, but also for the early baby boomers in 2004. Thus, the relationship between retirement planning and household wealth accumulation did not seem to be influenced by changes in financial markets (including the late 1980s boom and bust in stock prices, the bust in the U.S. housing market in 1991, and the boom in the U.S. housing market before 2004), or by changes in the supply of products to foster planning (including the many financial education programs undertaken by U.S. employers throughout the 1990s).

Yet these statistics do not demonstrate that retirement planning causes higher household wealth. Because a lack of planning is disproportionately concentrated among specific demographic groups, it may simply be a proxy for low educational attainment and low income. Moreover, those who have high levels of wealth also may have an incentive to spend time and effort in planning, since they may benefit more from planning than households with little or no wealth. On the other hand, wealthy households may not need to give much thought to saving for retirement.

In my earlier work, I accounted for many determinants of retirement wealth using a large set of demographic characteristics including educational attainment, gender, race, marital status, and a host of variables that proxy for individual preferences (risk aversion and time preferences), subjective expectations about the future, past negative and positive shocks to wealth, and other motives for low

wealth holdings (for instance, a weak precautionary and bequest motive). I found that retirement planning continues to be a determinant of wealth even after accounting for many other reasons wealth may be low. According to these empirical estimates, at the mean, those who do not plan for retirement hold from 10 to 15 percent less wealth than those who do plan. As mentioned previously, however, differences are particularly large in the first and second quartiles of the wealth distribution rather than at the

mean. Looking at the medians, nonplanners accumulate 20 percent less wealth close to retirement than those who do plan for retirement (Lusardi, 1999, 2003).

The important question, however, is whether there is a causal relationship between retirement planning and wealth accumulation. In other words, if someone were to begin planning tomorrow, would he or she end up with a larger amount of wealth because of it? Together

with Mitchell, I used the following strategy to pin down the direction of causality between retirement planning and amassing wealth: we looked at changes in wealth that are outside of households' control and examined whether these changes influence the extent of retirement planning. Specifically, we considered the increase in wealth generated by the appreciation in housing equity during 2002 and 2003 and examined whether that increase in wealth led early baby boomers to change their retirement planning behavior. Similarly, we examined whether the housing bust before 1992 and the resulting decrease in wealth that the older cohort experienced at the beginning of the

**Table 1** Distribution of Net Worth by Planning (in 2004 dollars)

**A. Early Baby Boomers: Age 51–56 in 2004**

Group	Percent of Sample	25 <sup>th</sup> Percentile	Median	Mean	75 <sup>th</sup> Percentile
<b>Planning</b>					
Hardly at All	27.9	9,000	79,000	315,579	271,000
A Little	17.0	62,800	173,400	356,552	390,500
Some	27.7	51,000	189,000	365,354	447,200
A Lot	27.4	54,000	199,000	517,252	470,000

**B. 1992 Older Cohort: Age 51–56 in 1992**

Group	Percent of Sample	25 <sup>th</sup> Percentile	Median	Mean	75 <sup>th</sup> Percentile
<b>Planning</b>					
Hardly at All	32.0	10,100	76,910	224,3110	200,610
A Little	14.3	37,700	126,560	343,110	292,170
Some	24.8	71,360	172,340	340,340	367,300
A Lot	28.9	71,390	173,690	353,520	356,800

*Note:* All data weighted using HRS household weights. Total net worth is defined as the sum of checking and savings accounts, certificate of deposits and Treasury bills, bonds, stocks, IRAs and Keoghs, home equity, second homes and other real estate, business equity, vehicles and other assets minus all debt. Adapted from Lusardi and Mitchell (2007a).

1990s changed this group’s planning behavior.<sup>3</sup> In both cases, we did not find any evidence that this change in wealth influenced planning, a result showing that the direction of causality goes from financial planning to wealth accumulation rather than from amassing wealth to financial planning (Lusardi and Mitchell, 2007a).

Why does planning have such a powerful effect on wealth accumulation? As will be explained in more detail below, we propose a novel explanation for lack of savings: the low levels of financial knowledge among a large share of the population.

**Financial Literacy**

One reason individuals do not engage in retirement planning is because they lack financial literacy. Bernheim (1995, 1998) was one of the first researchers to emphasize that most individuals lack basic financial knowledge and numeracy. Several surveys covering the U.S. population or specific subgroups consistently have documented very

low levels of economic and financial literacy. The Council for Economic Education periodically surveys high school students and working-age adults to measure their financial and economic knowledge. When surveyed in 2005, adults received an average score of C on their financial and economic knowledge, while the high school population fared even worse, with most earning an F. Hilgert, Hogarth, and Beverly (2003) examined data from the 2001 Survey of Consumers, in which respondents (ages 18 to 98 years) were given financial literacy quizzes covering knowledge about credit, saving patterns, mortgages, and general financial management. Again, most respondents earned a failing score on these questions, documenting wide illiteracy among the entire U.S. population.

Together with Mitchell, I designed a special module on financial literacy for the 2004 HRS.

Adding financial literacy questions to a large U.S. survey is important not only because it allows researchers to evaluate levels of financial knowledge but also—and most importantly—because it makes it possible to link financial literacy to a very rich set of information about household saving behavior. The module measures basic financial knowledge related to how interest rates work, the effects of inflation, and the concept of risk diversification. The findings from this module reveal an alarmingly low level of financial literacy among older individuals in the United States (age 50 years and older). Financial illiteracy is particularly acute among the elderly, African-Americans, Hispanics, women, and those with low education levels (a common finding in the surveys of financial literacy). These demographic groups are

also those that have been documented as doing little or no retirement planning.

In Lusardi and Mitchell (2007a), I also examined numeracy and financial literacy among the early baby boomers, who should be close to attaining the peak of their wealth

accumulation and should have dealt with making many financial decisions already (e.g., mortgages, car loans, credit cards, pension contributions, and so on). The following survey questions were posed to this group of respondents:

- 1) *“If the chance of getting a disease is 10 percent, how many people out of 1,000 would be expected to get the disease?”*
- 2) *“If 5 people all have the winning number in the lottery and the prize is 2 million dollars, how much will each of them get?”*

For respondents who answered either the first or the second question correctly, the following question was asked:

**Table 2** Financial Literacy Among Early Baby Boomers

Question Type	Correct (%)	Incorrect (%)	Do Not Know (%)
Percentage Calculation	83.5	13.2	2.8
Lottery Division	55.9	34.4	8.7
Compound Interest*	17.8	78.5	3.2

*Note:* \*Conditional on being asked the question. Percentages may not sum to 100 due to a few respondents who refused to answer the questions. Observations weighted using HRS household weights. The total number of observation is 1,984. Adapted from Lusardi and Mitchell (2007a).

3) “Let’s say you have 200 dollars in a savings account. The account earns 10 percent interest per year. How much would you have in the account at the end of two years?”

Table 2 summarizes how the early boomers answered these questions. While more than 80 percent of respondents were able to do a simple percentage calculation, only about half could divide \$2 million by 5. Moreover, only 18 percent correctly computed the compound interest question. Of those who got the interest question wrong, 43 percent undertook a simple interest calculation, thereby ignoring the interest accruing on both principal and interest. These are discomfoting findings, especially considering that these respondents had already made many financial decisions during their lifetimes.

Does financial literacy matter?

Table 3 explores the link between financial literacy and planning. Two sets of dummy variables are defined to characterize those who correctly answered the literacy questions and those who did not know the answers to these questions. The table shows that those who are more financially knowledgeable also are much more likely to have planned for retirement. In terms of economic importance, both knowledge about compound interest and the ability to perform simple mathematical calculations (such as a lottery division) matter the most for planning. This result is

expected given that any savings plan requires some numeracy, the ability to calculate present values, and an understanding of the advantages of starting to save early in one’s working life. Financial literacy is not simply a proxy for low education, race, or gender; as previously noted, individuals with low educational attainment, certain minority groups, and women are disproportionately less likely to be financially literate. Even after accounting for many demographic characteristics, including education, marital status,

number of children, retirement status, race, and sex, Table 3 (column III) shows that financial literacy continues to be an important determinant of retirement planning.

One may argue that financial literacy and retirement planning are both decision variables and that planning may also affect financial knowledge. For example, those who want to plan for retirement may invest in acquiring financial knowledge. In Lusardi and Mitchell (2007b), we addressed this correlation using

the module on financial literacy and planning we designed for the Rand American Life Panel, which contains a more extensive dataset on financial literacy than does the HRS. Specifically, we used information on a person’s past financial literacy—before entering the job market—and showed that those who were financially literate when they were young are more likely to plan for retirement during their working years.

Other studies have confirmed the positive association between financial knowledge and

**Table 3** Empirical Effects of Financial Literacy on Retirement Planning

	Probability of Being a Retirement Planner		
	I	II	III
Correct Percentage Calculation	-.016 (.061)	-.012 (.062)	-.034 (.060)
Correct Lottery Division	.059* (.030)	.034 (.031)	.001 (.032)
Correct Compound Interest	.153*** (.035)	.149*** (.035)	.114*** (.039)
DK Percentage Calculation		.021 (.068)	.054 (.067)
DK Lottery Division		-.154*** (.050)	-.141*** (.051)
DK Compound Interest		-.114 (.080)	-.073 (.081)
Demographic controls	No	No	Yes
Pseudo R <sup>2</sup>	.031	.038	.074

Note: This table reports Probit estimates of the effects of literacy on planning; marginal effects reported. Analysis sample consists of HRS Early Baby Boomers who responded to financial literacy questions. Being a planner is defined as having thought a little, some, or a lot about retirement. Demographic controls include age, education, race, sex, marital status, retirement status, number of children, a dummy variable for those not asked the question about interest compounding, and dummies for those who can correctly state and those who do not know the name of the president and vice-president of the United States. DK indicates respondent who did not know the answer. Observations weighted using HRS household weights. The total number of observations is 1,716. \* Significant at 10% level; \*\* significant at 5% level; \*\*\* significant at 1% level. Adapted from Lusardi and Mitchell (2007a).

household financial decision making. Hilgert and colleagues (2003) document a positive link between financial knowledge and financial behavior. Stango and Zinman (2007) show that those who are not able to correctly calculate interest rates out of a stream of payments end up borrowing more and accumulating lower amounts of wealth. Van Rooij, Lusardi, and Alessie (2007) find that financially sophisticated households are more likely to participate in the stock market. Agarwal, Driscoll, Gabaix, and Laibson (2007) show that financial mistakes are most prevalent among the young and elderly, groups that also display the lowest levels of financial knowledge.

### New Ways to Make People Save

Having shown that Americans' financial literacy is very low and that financial literacy has an impact on retirement planning, we naturally arrive at the question of what can be done to improve financial knowledge and which programs can improve savings and wealth accumulation. This is the topic I pursued in my newly published book, *Overcoming the Saving Slump: How to Increase the Effectiveness of Financial Education and Saving Programs* (Lusardi, 2008). There are several venues for the delivery of financial education, one of which is the workplace. Given the benefits that financial literacy brings, there may be advantages to introducing financial education programs at work. The book offers an evaluation of employer-provided financial education programs. So far, the evidence is mixed, but as I argued in the book, we cannot necessarily learn much from existing programs. Workplace programs commonly offer very limited interventions, such as a one-time retirement seminar or a single benefit fair. It is hard to imagine that such interventions can do much to combat widespread financial illiteracy; a one-time, one-size-fits-all seminar can hardly be an adequate response to the problem of widespread financial illiteracy among U.S. workers (see also Lusardi and Mitchell, 2007c). The book provides evidence that programs that offer multiple financial education sessions have been effective in stimulating saving among low income workers, who are normally the least likely to save. It also shows that women are particularly receptive to financial education programs. Given that women tend to display low levels of literacy, these findings are encouraging and call for programs that target the

population groups that are most in need of improved financial literacy.

The book also shows that one way to promote saving is to facilitate and simplify retirement planning. In chapter seven, I describe a program that I have implemented at Dartmouth College in collaboration with a professor of marketing from the Tuck School of Business and the vice president for Finance and Administration at Dartmouth (Lusardi, Keller, and Keller, 2008). We provided new hires (non-faculty employees) with a planning aid. This is simply a double-sided sheet that describes the steps that new employees have to take to enroll in a supplementary retirement account (SRA). It also provides information that employees would otherwise have to collect in order to open an SRA. Thus, the planning aid simplifies decision-making, which can be particularly useful for those with low financial literacy. Moreover, the program provides information when it is needed (i.e., when decisions about pensions have to be made). This simple intervention doubled the enrollment into SRAs at Dartmouth. It also showed that by recognizing the many difficulties people face when making savings decisions—from limited financial literacy to barriers to retirement planning—we may hope to increase the effectiveness of financial education programs.

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### Endnotes

1. Some individuals may not benefit from planning because of uncertain income levels or because

they have been hit by many shocks. Others may desire to never stop working. The latter is often the case for those who are self-employed and business owners (Lusardi, 2003).

2. Household wealth is the sum of checking and savings account balances, certificates of deposits and T-bills, bonds, stocks, IRAs and Keoghs, home equity, second homes and other real estate, business equity, vehicles, and other assets, minus all debt. All values are expressed in 2004 dollars. For more detail, see Lusardi and Mitchell (2007a).
3. There is wide variation in home prices across regions in the United States. For example, while the Pacific region experienced an increase of 10.3 percent in 2003, the southeast region experienced an increase of 3.6 percent. The older cohort had the opposite experience; during 1990 and 1991 the housing market experienced a bust that was particularly pronounced in the eastern regions. See Lusardi and Mitchell (2007a) and Lusardi and Beeler (2007) for detail.

### References

- Agarwal, S., Driscoll, J., Gabaix, X., & Laibson, D. (2007). *The age of reason: Financial decisions over the lifecycle* (NBER Working Paper No. 13191). Cambridge, MA: NBER.
- Bernheim, D. (1995). Do households appreciate their financial vulnerabilities? An analysis of actions, perceptions, and public policy. In *Tax Policy and Economic Growth* (pp. 1-30). Washington, DC: American Council for Capital Formation.
- Bernheim, D. (1998). Financial illiteracy, education and retirement saving. In O. S. Mitchell & S. Schieber (Eds.), *Living with defined contribution pensions* (pp. 38-68). Philadelphia, PA: University of Pennsylvania Press.
- Hilgert, M., Hogarth, J., & Beverly, S. (2003). Household financial management: The connection between knowledge and behavior. *Federal Reserve Bulletin*, 89(7), 309-322.
- Hubbard, G., Skinner, J., & Zeldes, S. (1995). Precautionary saving and social insurance. *Journal of Political Economy*, 103, 360-399.
- Lusardi, A. (1999). Information, expectations, and savings for retirement. In H. Aaron (Ed.), *Behavioral dimensions of retirement economics* (pp. 81-115). Washington, DC: Brookings Institution and Russell Sage Foundation.
- Lusardi, A. (2003). *Planning and saving for retirement* (Working Paper). Hanover, NH: Dartmouth College. Retrieved September 15, 2009, from [http://www.dartmouth.edu/~alusardi/Papers/Lusardi\\_pdf.pdf](http://www.dartmouth.edu/~alusardi/Papers/Lusardi_pdf.pdf)
- Lusardi, A. (Ed.). (2008). *Overcoming the saving slump: How to increase the effectiveness of financial education and saving programs*. Chicago, IL: University of Chicago Press.
- Lusardi, A., & Beeler, J. (2007). Saving between cohorts: The role of planning. In B. Madrian, O. Mitchell, & B. Soldo (Eds.), *Redefining retirement. How will boomers fare?* (pp. 271-295). Oxford, England: Oxford University Press.
- Lusardi, A., Keller, P., & Keller, A. (2008). New ways to make people save: A social marketing approach. In A. Lusardi (Ed.), *Overcoming the saving slump: How to increase the effectiveness of financial education and saving programs* (pp. 209-236). Chicago, IL: University of Chicago Press.
- Lusardi, A., & Mitchell, O. S. (2007a). Baby boomer retirement security: The role of planning, financial literacy, and housing wealth. *Journal of Monetary Economics*, 54, 205-224.
- Lusardi, A., & Mitchell, O. (2007b). *Financial literacy and retirement planning: New evidence from the Rand American Life Panel*. Hanover, NH: Dartmouth College.
- Lusardi, A., & Mitchell, O. (2007c). Financial literacy and retirement preparedness. Evidence and implications for financial education. *Business Economics*, January, 35-44.

- Salisbury, D., Turyn, T., & Helman, R. (2001). *Retirement Confidence Survey (RCS), Minority RCS, and Small Employer Retirement Survey (SERS)* (EBRI Issue Brief No. 234). Washington, DC: Employee Benefit Research Institute.
- Stango, V., & Zinman, J. (2007). *Fuzzy math and red ink: When the opportunity cost of consumption is not what it seems* (Working Paper). Hanover, NH: Dartmouth College.
- Van Rooij, M., Lusardi, A., & Alessie, R. (2007). *Financial literacy and stock market participation* (NBER Working Paper No.13565). Cambridge, MA: National Bureau of Economic Research.
- Yakoboski, P., & Dickemper, J. (1997). *Increased saving but little planning: Results of the 1997 Retirement Confidence Survey* (EBRI Issue Brief No.191, November). Washington, DC: Employee Benefit Research Institute.