By Annamaria Lusardi

Financial **Literacy** and Financial **Decision-Making** in **Older Adults**

An economist's look at the level of financial knowledge among elders, and the quality of their financial decision-making.

In the United States and other industrialized countries around the world, individuals and their families are increasingly responsible for securing their own financial well-being. Prior to the 1980s, many U.S. workers relied for their retirement income mainly on Social Security and on employer-sponsored defined benefit (DB) pension plans.

Today, in contrast, baby boomers are increasingly relying on defined contribution (DC) plans and Individual Retirement Accounts (IRA) to finance their golden years. Indeed, in 1980, about 40 percent of private sector pension contributions went to DC plans; by the year 2000, almost 90 percent of such contributions went to personal accounts—mostly 401(k) plans (Poterba, Venti, and Wise, 2008).

The transition to the DC retirement saving model has the advantage of permitting more worker flexibility and labor mobility than in the past, yet it also imposes a greater responsibility on individuals to save, invest, and later decumulate their retirement wealth sensibly. Furthermore, the spread of DC plans means that workers today are directly and immediately exposed to financial market risks, a reality that was less evident in the old DB system.

Many DB plans have been frozen or terminated, and individually managed accounts will increasingly become the mainstay of retirement. For these reasons, individuals are increasingly called to "roll their own" retirement saving and decumulation plans, and their financial security in retirement will depend upon their own financial decisions and behavior.

At the same time, the financial landscape has become more challenging for the individual investor. Financial markets have become more complex, offering products that are often difficult to understand. Moreover, new products and financial services have become increasingly accessible to the small investor, and the expansion of consumer credit has increased opportunities to borrow.

Whether individuals—in particular, older individuals—are equipped to deal with this new financial landscape is an important question that has implications for both policy and for care providers. This article provides some evidence on what we know about both the level of financial knowledge among the elderly, and the quality of their financial decision-making.

What Is Financial Literacy?

Together with Olivia Mitchell, I designed a survey module to measure *financial literacy*, defined as the knowledge of basic financial investment concepts such as inflation and risk diversification and the capacity to do calculations related to interest rates (Lusardi and Mitchell, 2011a). The questions asked in this survey module, which first appeared in the 2004 Health and Retirement Study (HRS)—a survey covering respondents who are ages 50 and older—are as follows:

> *Suppose you had \$100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow: more than \$102, exactly \$102, less than \$102? Do not know; refuse to answer.*
>
> *Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, would you be able to buy more than, exactly the same as, or less than today with the money in this account? Do not know; refuse to answer.*
>
> *Do you think that the following statement is true or false? "Buying a single company stock usually provides a safer return than a stock mutual fund." Do not know; refuse to answer.*

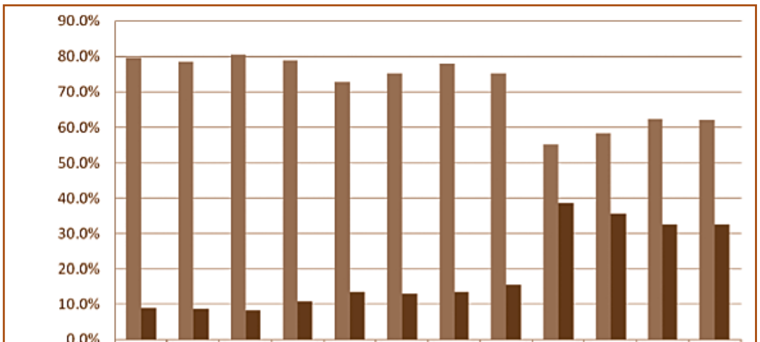
Assessing financial literacy and financial knowledge

Responses to these three questions revealed a very low level of financial literacy among the older U.S. population: only about one-half of the HRS respondents could do a simple 2 percent calculation and demonstrate an understanding of inflation; only one-third of respondents could correctly answer all three questions (Lusardi and Mitchell, 2011a). These are particularly worrisome findings because, by virtue of their age, this segment of the population should already have dealt with many financial decisions and financial transactions. Moreover, these respondents had over their lifetime experienced two to three periods of high inflation (depending on their age) and witnessed numerous stock market declines and other shocks, including the highly publicized demise of Enron (which should have informed them of the danger of investing in a single company stock).

These questions were thereafter incorporated into several other national surveys in the United States, including the RAND American Life Panel, and more recently they were added to the 2009 Financial Capability Study (Lusardi and Mitchell, 2011c), which covers all age groups. In these surveys as well, financial literacy was found to be low, particularly among older respondents. Moreover, financial literacy was found to decrease with age.

Figure 1 (left) reports how correct and "do not know" responses to survey questions changed among older (above age 50) respondents. While in a single cross section it is not

Figure 1. Correct and Don't Know Answers by Age Group



	Compound Interest				Inflation				Risk Diversification			
	50-54	55-59	60-64	≥65	50-54	55-59	60-64	≥65	50-54	55-59	60-64	≥65
Correct	79.6%	78.4%	80.4%	79.0%	72.8%	75.2%	78.0%	75.1%	55.2%	58.4%	62.3%	62.0%
Don't Know	8.9%	8.6%	8.3%	10.9%	13.6%	13.0%	13.6%	15.6%	38.6%	35.6%	32.7%	32.5%

Note: Author's calculations from the 2009 Financial Capability Study.

possible to disentangle age from cohort effects, it is clear that financial knowledge was not only low but also lower among older individuals and cohorts. Older respondents were less likely to answer correctly and they were more likely to indicate that they did not know the answer to these survey questions.

Subsequent to the aforementioned U.S. studies, these questions were fielded in seven other countries: Germany, the Netherlands, Italy, Sweden, Russia, Japan, and New Zealand (Lusardi and Mitchell, 2011b). The international comparison of financial literacy shows not only that financial literacy is low in many countries but also that the elderly group consistently displays the lowest level of financial knowledge.

Thus, irrespective of country-specific economic institutions, development of financial markets, or history, the older population across countries and cultures shares a common feature: a low level of financial knowledge.

These findings were not unique to this specific measure of financial literacy. When an alternative measure of financial knowledge covering additional economic and financial concepts was considered, the older population invariably scored very low. This is the case not only with questions measuring sophisticated financial knowledge, but also with questions measuring very basic financial knowledge (Lusardi, Mitchell, and Curto, 2012).

There is an additional worrisome feature of financial knowledge among elderly people. To a set of financial literacy questions I designed with Peter Tufano, which were fielded in a representative sample of the U.S. population in 2009, we added a question about self-assessed financial knowledge; i.e., how respondents rate their own financial knowledge (Lusardi and Tufano, 2009a, 2009b).

Individuals are increasingly called to "roll their own" retirement saving and decumulation plans.

We found a gulf between demonstrated and self-assessed financial knowledge among the elderly respondents. While older respondents score low on questions designed to measure financial literacy, they gave themselves the highest rankings when asked to assess their own level of knowledge. Finke, Howe, and Houston (2011) considered yet another measure of financial literacy comprised of many concepts and found a linear decline in financial literacy with age. However, they also documented that confidence in financial decision-making abilities does not decline; if anything, they find it increases with age. This mismatch between actual and perceived knowledge may explain the prevalence of scams perpetrated against elderly people.

Gender Differences in Financial Literacy

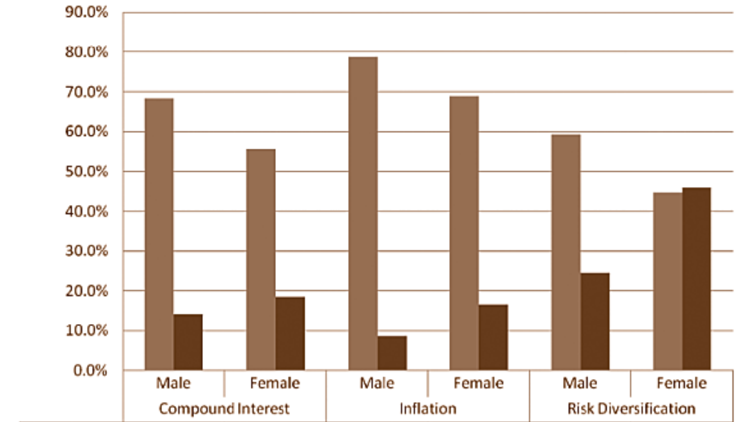
While we see low levels of financial literacy among the older population in general, there are marked gender differences in financial literacy. It is important to pay attention to these differences because women tend to live longer than men; thus, their saving needs and decumulation strategies should be different. Moreover, women are more likely to spend at least part of their retirement having been widowed. Evidence from the United States suggests that the death of a spouse is a significant determinant of poverty among elderly women due to reduced Social Security benefits and loss of pension income (Sevak, Weir, and Willis, 2004).

Additionally, women tend to have lower attachment to the labor market, with interrupted careers because of childbearing and family caretaking roles, and thus potentially fewer financial resources over the lifecycle. Therefore, it is important to consider gender-specific implications of the recent shift from DB to DC pension plans: with fewer resources available and higher life expectancies, women are potentially more affected by this shift than men.

Figure 2 (right) reports responses among respondents older than age 60, by gender, to the three financial literacy questions mentioned earlier, using data from the 2009 U.S. National Financial Capability Study. Older women are much less likely to correctly answer the financial literacy questions than men; for each question, the proportion of correct answers is lower among women. Moreover, women are much more likely than men to indicate they "do not know" the answer to a question. The proportion of "do not knows" is particularly high on the question about risk diversification. The very low level of financial knowledge among older women makes them a vulnerable group, in particular when they are likely to be the single financial decision-maker in the household.

Gender differences in financial literacy are not specific to the United States. In fact, gender differences are found in every country surveyed in Lusardi and Mitchell's (2011b) international comparison of financial literacy. Not only were the women in countries as diverse as Sweden, Japan, Italy, or New Zealand less likely to respond correctly to the three financial literacy questions, but in all countries

Figure 2. Correct and Don't Know Answers by Gender



	Compound Interest – Male	Compound Interest – Female	Inflation – Male	Inflation – Female	Risk Diversification – Male	Risk Diversification – Female
Correct	68.3%	55.6%	78.7%	68.9%	59.2%	44.8%
Don't Know	14.1%	18.5%	8.7%	16.5%	24.5%	46.0%

Note: Sample restricted to ages 60 and older. Author's calculations from the 2009 Financial Capability Study.

women were more likely to respond with "do not know." Because of women's greater longevity and the need for financial resources to last a lifetime, this gender difference is a cause for concern.

Does Financial Literacy Matter?

Many research papers have documented a strong correlation between financial literacy and a set of behaviors throughout the life cycle. For example, several papers have shown that individuals with greater numeracy and financial literacy are more likely to participate in financial markets and to invest in stocks (Van Rooij, Lusardi, and Alessie, 2011). Moreover, financially literate individuals are more likely to choose mutual funds with lower fees (Hastings, Mitchell, and Chyn, 2011).

Lusardi and Mitchell (2007) have shown that early baby boomers (ages 51 to 56) who display high levels of literacy were more likely to plan for retirement and, as a result, accumulate much more wealth, a finding reproduced in many of the countries that are part of the aforementioned international comparison of financial literacy (Lusardi and Mitchell, 2011b). Lusardi and Mitchell (2008) have also shown that lack of retirement planning is pervasive among older women and can be traced back to lack of financial literacy.

Financial illiteracy is widespread.

Financial literacy has been found to affect not only the assets side but also the liability side of household balance sheets. Gerardi, Goette, and Meier (2010) reported that those with low literacy are more likely to be delinquent and default on sub-prime mortgages. Lusardi and Tufano (2009a, 2009b) found that individuals with lower levels of financial literacy tend to transact in high-cost manners, incurring higher fees and using high-cost methods of borrowing. The less knowledgeable also report that their debt loads are excessive or that they are unable to judge their debt position. Campbell (2006) has shown that individuals with lower incomes and lower education levels—characteristics that are strongly related to financial literacy—are less likely to refinance their mortgages during a period of falling interest rates.

The high cost of ignorance

Making an individual with otherwise average characteristics more financially literate (specifically moving him or her from the twenty-fifth to the seventy-fifth percentile of the literacy distribution) is associated with a 17-percentage-point higher probability of stock market participation (Van Rooij, Lusardi, and Alessie, 2011).

Costs arise not only in the asset management arena, but also in the management of liabilities. Lusardi and Tufano (2009a) linked data on financial literacy with credit card behaviors that generate fees and interest charges. Specifically, they focused on several areas: paying bills late, going over the credit limit, using cash advances, and paying only the minimum amount due. They found that while less knowledgeable individuals accounted for only 28.7 percent of the cardholder population, they accounted for 42 percent of these charges. Thus, those with low financial literacy bear a disproportionate share of the costs associated with fee-inducing behaviors.

The connection between financial literacy and financial behavior is worrisome in light of the fact that elderly people have been shown to have the lowest levels of literacy; thus, they seem to be rather ill-equipped to make savvy financial decisions. However, money and debt management are particularly important for this group of the population for the following three reasons:

- First, they are in the decumulation phase of the life cycle; thus, they need to make sure their wealth lasts until the end of life. Given that Social Security and pensions account for about half of total wealth for the median household close to retirement, it is important to understand the decisions of older investors because investment income is likely to be a significant proportion of retirement income.
- Second, financial mistakes can be dire as elders face a limited set of options; for example, many cannot return to work.
- Finally, because they are at, or past, the peak of wealth accumulation, but display low levels of financial knowledge, they can become the target of financial scams.

The difficulties in managing debt

Older individuals have a mix of assets and liabilities in their portfolios. According to the 2007 Survey of Consumer Finances (Bucks et al., 2009), debt is still a prevalent component in the balance sheets of retirees. For example, in 2007, among those ages 65 to 74 years, 47 percent had mortgages or other loans on their primary house, 37 percent had credit card debt, and 26 percent had installment loans; overall, 65.5 percent had some debt (Bucks et al., 2009). However, debt management seems to present problems among older adults.

Agarwal and colleagues (2009) documented a link between age and the quality of financial decision making related to debt. Specifically, they documented a U-shaped, age-related curve in the prices paid for ten financial choices: credit card balance transfers; home equity loans and lines of credit; auto loans; credit card interest rates; mortgages; small business credit cards; credit card late-payment fees; credit card over-limit fees; and credit card cash-advance fees. They found that fees and interest payments are at the lowest levels at age 53, while elderly people pay some of the highest costs for these services. The effects they find vary in dollar magnitudes, but can be sizeable. For example, 75-year-olds pay about $265 more annually than do 50-year-olds for home equity lines of credit (Agarwal et al., 2009).

There is also an alarming trend in the proportion of elders filing for bankruptcy. According to Pottow (2012), the age 65-plus demographic is currently the fastest growing in terms of bankruptcy filings (from 2.1 percent in 1991, the proportion of filers older than 65 grew to 7 percent in 2007). He has documented that credit card interest and fees are the most cited reasons for bankruptcy filings by older individuals, with two-thirds of elderly debtors giving these reasons. Moreover, the median elderly debtor in bankruptcy carries 50 percent more credit card debt than the median younger debtor.

Investment behaviors: what the evidence shows

Additional evidence of problems related to financial decision-making is provided by Korniotis and Kumar (2011), who used data from a major U.S. discount brokerage house to study the investment behavior of a large set of investors who have traded common stocks. They found that older investors are less effective in applying their investment knowledge and exhibit worse investment skill. The age–skill relationship has an inverted U-shape, and investment skill deteriorates sharply around the age of 70. Moreover, the economic costs of aging are large: on average, investors with stronger aging effects earn about 3 percent lower risk-adjusted annual returns, and the performance differential is more than 5 percent among older investors with large portfolios.

Unfortunately, the incidence of scams is on the rise and could become a major threat to elders' financial security.

Evidence of bad investments is echoed in a series of studies by the FINRA Investor Education Foundation. A survey of older financial decision-makers (ages 60 and older) in 2006 showed that more than one-half of respondents reported having made a bad investment, and one in five of those respondents felt they were misled or defrauded, but often did not report the situation (Financial Industry National Regulatory Authority, 2006).

A subsequent survey in 2007 examined both older investors (ages 55 to 64) and victims of fraud (of any age) and found that many older investors engage in behaviors that put them at risk of becoming victims of fraud (Financial Industry National Regulatory Authority, 2007). For example, about 79 percent did not do a background check on their broker for legal violations, and 65 percent did not check their broker's registration. Older adults also often take risks by relying on the financial advice of relatives, friends, neighbors, and co-workers, something that more than one-third (36 percent) of older investors and as many as 70 percent of fraud victims report having done.

Warning: scammers and schemers ahead

Concerned about scammers tailoring investment pitches to elders, in 2007, the North American Securities Administrators Association, the trade organization for state securities regulators, alerted older adults to check the credentials of people they do business with (Blanton, 2012). Some states established programs specifically for elders. For example, in 2001, California's Department of Corporations established the Seniors Against Investment Fraud (SAIF) program to alert and educate Californians older than 50 about financial and investment fraud, common scams, and unscrupulous sales practices that specifically target this population.

Unfortunately, the incidence of scams is on the rise and could become a major threat to the financial security of older adults. According to the Federal Trade Commission, in 2011 Americans submitted more than 1.5 million complaints about financial and other fraud—up 62 percent in just three years. But these data do not fully represent fraud's pervasiveness because researchers say that it often goes unreported. Financial losses per capita due to fraud have also increased: the median loss per victim rose from $218 in 2002 to $537 in 2011.

As discussed in Blanton's *CRR Issue Brief* (2012), as baby boomers age, the problem is expected to grow. This generation is a potentially lucrative target due to three characteristics: it is enormous, with some 75 million people; it is increasingly well-off; and it is facing low and declining financial literacy.

Conclusion

The level of financial literacy among the older population provides reason for worry. Not only is financial illiteracy widespread but it is particularly severe among older women and the older old. Moreover, older individuals display poor outcomes in both asset and debt management and face increasing risk of frauds and scams. Addressing these problems is critically important to ensure financial security later in life.

Annamaria Lusardi, Ph.D., is the Denit Trust Distinguished Scholar in Economics and Accountancy at the George Washington University School of Business in Washington, D.C. She is also the director of the Financial Literacy Center.

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