

**The Case for Financial Literacy:
Recognizing Financial Education
as a Key Element of Future Retirement Income Policy**

A report prepared by the Global Center for Financial Literacy

Introduction

The last few decades have seen a dramatic transformation in the arena of retirement security. This transformation is marked by two significant changes: individuals have become progressively more responsible for making their own pension and retirement decisions, and financial markets around the world have become increasingly accessible to the small investor. This empowerment has been accompanied by greater individual exposure to market risk and increasingly complex financial products and services, many of which are difficult for financially unsophisticated investors to grasp. For people around the world, a secure retirement will depend on how well they make the transition to this new landscape.

The United States presents a powerful example of how these changes have played out. Prior to the 1980s, many Americans relied on Social Security and defined-benefit plans under which employers promised to provide specific pension payments upon retirement, usually based on a salary and tenure formula. Today, members of the so-called Baby Boom generation are seeing their retirement years financed through defined-contribution (DC) plans and Individual Retirement Accounts (IRAs), the values of which fluctuate depending upon contribution rates and investment gains and losses. Indeed, in 1980, about 40 percent of private-sector pension contributions went to defined-contribution plans; 20 years later, almost 90 percent of such contributions went to personal accounts, predominantly 401(k) plans (Poterba, Venti, and Wise, 2008). As more defined-benefit plans are frozen or terminated, individually managed accounts will be institutionalized as the mainstay of retirement.

There are advantages to the DC retirement savings model. It permits more worker flexibility and labor mobility. Since workers change jobs more often than in the past, their pensions need to be portable, which the DC model allows. However, the flexibility that permits workers to take the funds with them when they change jobs also can be exploited to tap the funds for non-retirement purposes. Defined-contribution plans also expose workers more immediately to financial market risks.

The living standards of aging citizens around the world will hinge on how well workers plan for retirement. Research shows that successful retirement planning depends strongly on an individual's level of financial literacy, defined as *the ability to process economic information and make informed decisions about household finances, wealth accumulation, pension contributions, and decumulation after retirement* (Lusardi and Mitchell, 2013). Government policies to promote financial education may, therefore, play a critical supporting role in enhancing retirement security.

This report provides a review of international scholarship in the area of financial knowledge and its relationship to retirement planning and security, drawing on recent studies to establish how much (or how little) people know and who falls into the high-risk groups. This report also reviews broad strategies for effective financial education programs, explaining why they must begin early in an individual's life cycle and why they must be institutionalized as lifelong learning.

The role of retirement planning

Retirement security can be boosted through early planning and saving. Yet many workers spend no time even thinking about their post-employment years. Notwithstanding the changes in the retirement landscape and the increase in individual responsibility, the majority of workers in an international comparison of financial literacy performed by Lusardi and Mitchell (2011c) did little or no planning for retirement. For example, in the United States, only about two-fifths of the respondents (43 percent) say they have ever even tried to figure out how much they need to save for retirement. This finding confirms the results of previous studies looking at different time periods. Many workers had given little or no thought to their retirement, even when they were only five to ten years away from it (Lusardi, 1999; Lusardi and Mitchell, 2007a; Lusardi and Beeler, 2007; Lusardi, 2009).

This failure to plan is concentrated among specific population subgroups, including respondents with low education levels, minorities, and women. These groups are less likely to save for retirement than the general population, leaving them potentially more vulnerable when their working years end. For women, the problem is especially worrisome since they generally live longer than men. These population subgroups also tend to have no minimum level of savings set aside as a buffer against job loss, sudden out-of-pocket medical expenses, or other adverse shocks (Hubbard, Skinner, and Zeldes, 1995; Lusardi, Schneider, and Tufano, 2011).

Even though a sizeable portion of the population does not think about its retirement needs, several studies have found that people who plan for retirement accumulate more retirement savings. In examining data from the 1992 Health and Retirement Study (HRS),

a longitudinal survey of more than 26,000 Americans which is supported by the National Institutes on Aging in the United States, Lusardi (1999) found that how much thought individuals 50 years old and older put into retirement was a strong predictor of retirement wealth. The impact was quantitatively important: Those who thought about retirement, even a little, had double the wealth of those who did not think about it (see median wealth holdings in Table 1). Similar findings came out of other waves of the HRS (Table 1, Wave 2004). A special module on financial literacy and retirement planning in the 2004 HRS asked older respondents whether they had ever tried to figure out how much they will need to save for retirement, whether they were able to develop a plan, and also whether they were able to stick to the plan. Those who answered affirmatively accumulated three times as much wealth as those who did not (Lusardi and Mitchell, 2011a). Table 2 reports the distribution of total net worth across different planning types from that module. At the median, planners accumulate three times the amount of wealth as non-planners. Moreover, the amount of planning also matters. Those who are able to develop a plan and stick to it accumulate much more wealth than simple planners. Similar results about planning and wealth are found using data from the American Life Panel (Lusardi and Mitchell, 2009) and the National Financial Capability Study (Lusardi and Mitchell, 2011c).

These findings are not unique to the United States. Similar questions about retirement planning were added to the Dutch Central Bank Household Survey (DHS), and research by Van Rooij, Lusardi, and Alessie (2012) shows that retirement planning is associated with much higher levels of retirement savings in the Netherlands.

However, these findings do not necessarily prove that retirement planning *causes* higher household wealth. It may be that possessing higher levels of wealth causes individuals to plan more for their retirement. Moreover, as mentioned earlier, lack of planning seems concentrated among specific groups, such as those with low education or women, populations that also tend to have low amounts of wealth.

Research by Lusardi and Mitchell (2007a) and van Rooji, Lusardi, and Alessie (2012) addressed the important issue of causality. They looked at variations in housing equity brought on by changes in home prices (an occurrence beyond a household's control) and other similar changes to see if these changes influenced the extent of retirement planning. They found that the direction of causality goes from retirement planning to wealth accumulation, rather than from amassing wealth to financial planning.

If planning can make such a difference, why do people fail to plan? Poor financial understanding is part of the answer. Studies show that low levels of financial literacy may detrimentally affect behavior linked to personal finances. Individuals with a poor grasp of interest compounding may engage in high-cost credit card borrowing. They may pay high fees when using financial services. Lusardi and Tufano (2009a, b) found that individuals with low financial literacy are more likely to enter into high-cost transactions, incurring high fees and problems with debt. More financially literate individuals, on the other hand, better understand risk diversification and tend to include stocks in their portfolios (Van Rooij et al., 2011; Christelis et al., 2010). There is also a strong correlation between

financial literacy and investment in lower-cost funds (Hastings and Tejada Ashton, 2008; Hastings and Mitchell, 2011)¹.

Financial literacy: measurement and findings

While it is important to assess how individuals make financial decisions, in practice financial knowledge is difficult to quantify. Measures of financial literacy suffer from limitations, including measurement error and the possibility that the answers might not reflect “true” knowledge. Prior to 2000, few researchers had incorporated financial literacy into theoretical models of saving and financial decision-making.

An experimental financial literacy module designed by Lusardi and Mitchell (2008, 2011b, c) first appeared in the 2004 Health and Retirement Study. The module carried questions around three basic concepts seen as necessary for informed retirement planning and saving decisions: interest compounding, inflation, and risk diversification. These three questions are now the benchmark by which many analysts measure financial literacy, and they have been added to national surveys around the world (Lusardi and Mitchell, 2011c):

- Suppose you had \$100 in a savings account and the interest rate was 2 percent per year. After five 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 percent per year and inflation was 2 percent per year. After one year, would you be able to buy: [more than, exactly the same as, or less than today; do not know or refuse to answer] with the money in this account?

¹ Lusardi and Mitchell (2013) provide a comprehensive overview of the literature on financial literacy and its effect on financial behaviors.

- 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]

The first question measures numeracy, or the capacity to do a simple calculation related to interest compounding. The second question measures understanding of inflation, again in the context of a simple financial decision. The third question is a joint test of knowledge about stocks, stock mutual funds, and risk diversification; a correct answer requires knowing what a stock is and knowing that a mutual fund is composed of many stocks. Since many retirement savings decisions deal with financial markets, it is important to both understand the stock market and differentiate among levels of financial knowledge.

To see how these literacy questions play out globally, Lusardi and Mitchell (2011c) collaborated with teams from several countries, including the United States, New Zealand, Japan, Italy, the Netherlands, Germany, Sweden, and Russia to compare financial literacy across countries. They discovered that financial illiteracy is widespread, even where financial markets are well developed, such as in Germany, the Netherlands, Sweden, Japan, and New Zealand. The findings suggest that financial literacy is not specific to a given country or stage of economic development. However, where people score high on math and science tests, they also tend to score high on questions measuring numeracy (OECD, 2005).

The research found that people are more knowledgeable about inflation if their country has experienced it recently. Italians, for example, tend to answer the question on inflation

correctly but respondents in Japan, which experienced deflation, do not. Meanwhile, residents of countries that underwent pension privatization, such as Sweden, have a better understanding of risk diversification, while Russians and people born in East Germany, who had little exposure to a market economy when they were growing up, know less about it. It is notable, however, that even in countries with very developed financial markets, many respondents incorrectly answer the question about risk diversification. As many as one-third of respondents in the United States respond that they ‘do not know’ the answer to that question.

The studies in this international project indicate that financial literacy levels differs along a range of demographics, including age, income, education, employment, and gender. Age patterns follow an inverted U-shape, with knowledge being lowest for young and older groups and peaking in the middle of the life cycle. Researchers hypothesize that this is consistent with knowledge rising with experience and decaying at older ages. In all countries, respondents with more education display higher financial knowledge than less-educated respondents, but even at high levels of schooling financial literacy tends to be low. Moreover, education is not a good proxy for financial literacy. When education and financial literacy are included in multivariate regression models, both are statistically significant—indicating that financial literacy has an effect above and beyond education.

Employment is also a factor. Financial literacy is higher among those who are working than those who are jobless and, in some countries, financial knowledge is stronger among the self-employed. These findings may reflect exposure to financial education programs

offered in the workplace, may be a result of learning from colleagues, or may be connected to skills acquired on the job.

When it comes to gender, the findings have broad implications. The research finds women to be less financially knowledgeable than men. Not only are they less likely than men to correctly answer key questions—these findings are consistent across countries as different as Sweden, New Zealand, Japan, and Italy—but they are more likely to state that they ‘do not know’ the answers. It is important to pay attention to these differences: women tend to live longer than men, and that means their savings needs and decumulation strategies should be different. Moreover, women are more likely to spend at least part of their retirement as widows.

Country by country, other interesting patterns take shape. Financial literacy can vary along racial and ethnic lines. In the United States, Whites and Asians consistently have more financial knowledge than African Americans and Hispanics. In New Zealand, differences were found between Māori and the rest of the population.² Geography can also be a factor. For example, financial literacy in Italy is higher in the northern and central regions than in the south (although not all of the northern regions show high levels of financial knowledge). Urban versus rural differences also emerge. Those living in large cities in Russia tend to be more financially literate than those living in rural areas; this may be due to differential exposure to the modern financial sector in the last few decades. There are also notable differences in financial knowledge among people

² However, the level of financial literacy among members of the Ngāi Tahu Māori tribe (iwi) was found to be not significantly different from that of the non- Māori New Zealand population (Crossan, Feslier, and Hurnard, 2011; Commission for Financial Literacy and Retirement Income, 2010).

with different religious beliefs. In the Netherlands, Muslims and members of other minority religions are less likely to be financially knowledgeable³.

Moreover, it is possible to compare what people actually know with how they assess their own financial literacy. Across countries, younger people tend to know very little and acknowledge it while older people, despite having below-average literacy, consistently rate themselves as very knowledgeable. This may explain why financial scams tend to be perpetrated upon older populations. Self-reported literacy varies by nationality. In the United States, most respondents give themselves high scores. In Japan, people score themselves quite low.

Most important, in addition to identifying the links between financial literacy levels and national and demographic characteristics, the international studies explore how financial literacy relates to retirement planning. In most of the countries covered by the international comparison, people who are more financially literate tend to plan for retirement, regardless of economic characteristics and circumstances. This result is remarkably consistent, holding across countries regardless of differences in pension schemes, pension privatization, and pension system generosity. The ability to correctly answer one additional financial question is associated with a 3 to 4 percentage point higher probability of planning for retirement. This holds true in countries as diverse as Germany, the United States, Japan, and Sweden.

³ However, please note that Muslim respondents may be considered at a disadvantage in answering questions on interest based on a non-Muslim model of banking since Sharia law prohibits the payment or acceptance of interest on money loans.

Multiple research papers have documented a strong correlation between levels of financial literacy and a set of behaviors that goes beyond retirement planning. For example, several papers have shown that individuals with stronger numeracy and financial literacy are more likely to participate in financial markets and to invest in stocks. Van Rooij, Lusardi, and Alessie (2011) show that an increase in the financial literacy of an individual with otherwise average characteristics (specifically, moving him/her from the 25th to the 75th percentile of the literacy distribution) is associated with a 17 percentage point higher probability of stock market participation.

At the same time, financial literacy is found to affect the liability side of household balance sheets. The less knowledgeable are more likely to report that their debt loads are excessive or that they are unable to judge their debt position (Lusardi and Tufano, 2009a, b). Those with low financial literacy are disproportionately more likely to use high-cost methods of borrowing, such as payday loans, auto title loans, pawn shops, rent-to-own contracts, and advance refunds contracts (Lusardi and de Bassa Scheresberg, 2013).

Campbell (2006) shows that individuals with lower incomes and lower education levels—characteristics strongly related to lower financial literacy—are less likely to refinance their mortgages during a period of falling interest rates, while Gerardi, Goette, and Meier (2010) report that those with low financial literacy are more likely to default on subprime mortgages.

Finally, Lusardi and Tufano (2009a) link data on financial literacy with credit card behaviors that generate fees and interest charges. Focusing on charges that result from 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 account for

only 28.7 percent of the cardholder population, they account for 42 percent of these charges. In other words, those with low financial literacy bear a disproportionate share of the costs associated with fee-inducing behaviors.

Financial literacy and wealth after retirement

Financial knowledge impacts key outcomes, including borrowing, saving, and investing decisions, not only during an individual's working years but also during retirement. Since financial literacy is associated with greater retirement planning and greater retirement wealth accumulation, it stands to reason that those who are more financially savvy are likely to be better endowed financially when they do retire. A related point is that the more financially knowledgeable are also better informed about pension system rules, pay lower investment fees in their retirement accounts, and more skillfully diversify their pension assets (Arenas de Mesa, Bravo, Behrman, Mitchell, and Todd, 2008; Hastings, Mitchell, and Chyn, 2011). To date, however, relatively little has been learned about whether older adults who are more financially knowledgeable are also more successful at managing their resources once in retirement.

Retirees must look ahead to a future of uncertainty when making irrevocable choices with far-reaching consequences. These choices may be based on forecasting one's own survival probability (and that of a partner), investment returns, pension income, and medical and other expenditures. Moreover, many of these financial decisions, such as when to retire or claim pension and Social Security benefits, are once-in-a-lifetime events. It would not be surprising if improved financial literacy enhanced people's ability to make these important decisions later in life.

The financial knowledge of the older population is especially relevant given that retirees face the decision of whether to purchase lifetime income streams with their assets since, by so doing, they insure that they will not run out of income in old age. Despite the fact that this form of longevity protection is very valuable in theory, relatively few payout annuities are purchased in practice—and this is the case in virtually every country (Mitchell, Piggott, and Takayama, 2011). This comes in part because people have been shown to be susceptible to framing and default effects (Agnew and Szkyman, 2011; Brown, Kapteyn, and Mitchell, 2010). This conclusion is corroborated and extended by Brown, Kapteyn, Luttmer, and Mitchell (2011), who demonstrate experimentally that people value annuities less when they are offered the opportunity to buy additional income streams, but the same people value annuities more if offered a chance to exchange their annuity flows for a lump sum. Importantly for the present purpose, the financially savvy provide more consistent responses across alternative ways of eliciting preferences. By contrast, the least financially literate give inconsistent results and respond to irrelevant cues when presented with the same set of choices. In other words, financial literacy appears to be highly influential in helping older households equip themselves with longevity risk protection in retirement.

Much more must be learned about how peoples' financial decision-making abilities change with age, and how this is related to financial literacy. For instance, Agarwal, Driscoll, Gabaix, and Laibson (2009) report that the elderly pay much more than the middle-aged for ten common financial products. The 75-year-olds in their sample pay about \$265 more per year for home equity lines of credit than do the 50-year-olds. How

this varies by financial literacy is not yet known, but it might be that those with greater baseline financial knowledge are better protected as they move into the second half of their lifetimes.

Given the substantial evidence on the likely costs of financial illiteracy, the question arises as to how to address the knowledge shortfall. Financial education programs have proven to be an effective response when effectively structured and implemented.

The role of financial education programs

In the United States and elsewhere, financial education programs have been implemented over the years in a variety of settings, including schools and the workplace, sometimes targeting specific subgroups of the population. A number of these efforts have been studied. Several U.S. states, for example, mandated financial education in high school at different points in time, generating ‘natural experiments’ studied by Bernheim, Garrett, and Maki (2001). Similarly, recent financial education pilot programs are being studied in high schools in Brazil, Italy, and other countries (Bruhn, Legovini, and Zia, 2012; Romagnoli and Trifilidis, 2012). Some large U.S. firms’ financial education programs are among those examined by Bernheim and Garrett (2003), Clark and D’Ambrosio (2008), and Clark, Morrill, and Allen (2012a, b). Often the employer’s intention is to boost direct-contribution plan saving and participation (Duflo and Saez, 2003, 2004; Lusardi, Keller, and Keller, 2008; Goda, Manchester, and Sojourner, 2012). Programs have also been adopted for especially vulnerable groups such as those in financial distress (Collins and O’Rourke, 2010), and there is an emerging set of literature on financial literacy in emerging countries.

Given the focus on retirement security, we looked at the evidence reported in the books *Overcoming the Saving Slump: How to Increase the Effectiveness of Financial Education and Saving Programs* (Lusardi, 2008) and *Financial Literacy: Implications for Retirement Security and the Financial Marketplace* (Mitchell and Lusardi, 2011). Both provide insight to strategies around financial education programs, including how the programs can be delivered. There are two ideal venues for the delivery: school and the workplace. These are the places where it is easy to reach two key groups—the young and the old—for whom financial literacy is especially important.

The case for financial education in schools

The need for financial education in schools cannot be overstated. There are three compelling reasons to require it starting with elementary school—or even earlier—in order to ensure that young people are financially literate *before* they find themselves engaging in financial contracts.

The first reason is that schools provide access to a population with great need for financial knowledge and they permit the knowledge to be transmitted at an important point in the life cycle. Young people face many important financial decisions, from how to use credit cards to how to buy a car or start a business. Yet findings from the Jump\$tart Coalition for Personal Financial Literacy, which surveys high school students, and from the National Longitudinal Survey of Youth, which surveys young adults, show that in the United States, for example, young people do not understand basic concepts of economics and finance, such as the power of interest compounding. They are making investment

decisions—including investment in their own education, one of the most important decisions they face right out of high school—without understanding rates of return.

The second reason why schools should be a focus for financial literacy is that financial knowledge is based on scientific concepts, and the groundwork for this type of conceptual learning is best handled in a formal educational setting. Risk management or rates of return are rarely explained in easy-to-understand terms, and the law of interest compounding and the concept of risk diversification are not necessarily best learned on the advice of friends, family, and colleagues. These concepts cannot readily be learned through experience since many financial decisions—buying a house or entering into retirement, for example—are not repeat occurrences. The early acquisition of basic knowledge also helps one make sense of and learn from more overarching financial experiences, such as the recent economic crisis.

The third major reason for having financial literacy programs in schools is that schools provide a universal forum, a setting where *everyone* has a chance to become financially literate. Surveys from the Jump\$tart Coalition find that the small groups of students identified as financially literate are disproportionately white males from college-educated families (Mandell, 2008). Similarly, data from the National Longitudinal Survey of Youth show that young adults (23–28 years old) who are financially literate have college-educated mothers and parents who had stocks and retirement savings when these young adults were teenagers (Lusardi, Mitchell, and Curto, 2010). Everyone—even those without highly educated and financially sophisticated parents—faces financial choices and should be equipped with the skills to make sound decisions. Some have argued that financial literacy is relevant only if one has wealth. But, in fact, individuals make

decisions not only about assets but also about debt, and debt is present, even pervasive, across all income strata.

There is not a lot of evidence on how to make financial literacy effective in school. However, research does indicate that it is important to provide targeted training to teachers who, otherwise, often are poorly prepared or equipped to teach the subject matter (Way and Holden, 2009). Tennyson and Nguyen (2001) looked at the U.S. states that mandated financial education in high school and found that when students are required to take a financial education course (giving them significant exposure to personal finance concepts), they perform much better than students in states with no such educational mandates.

The case for financial education in the workplace

The workplace provides an influential venue for improving the financial literacy of employees and, in particular, enhancing their ability and willingness to participate in and contribute to retirement plan accounts. Employers have multiple opportunities—such as at hiring or in conjunction with promotions—to introduce workers to relevant information and terminology about pension plans, tax obligations, inflationary effects, and other concepts.⁴ This knowledge can significantly improve participation in retirement planning and bring about more effective decision-making in conjunction with that planning. In workplace education programs, the information can also be customized to accommodate differences in financial literacy among certain groups, such as women, the young, or the old, or to direct the learning toward a particular career stage. Because of the

⁴ These best practices are based on a series of research studies conducted by affiliates of the Financial Literacy Center (FLC). Research papers and informational materials from these studies can be accessed on the FLC website: <http://www.rand.org/labor/centers/financial-literacy.html>.

difference in financial literacy among demographic groups, programs targeted to specific populations are more likely to be effective.

Workplaces can also offer budget advice to help workers navigate financial crossroads, from simple advice about interest rates on credit cards and student loans to more encompassing counseling about whether it is better to pay off debt or to contribute to a retirement plan. Information on how to choose retirement investment allocations would also be particularly useful. Studies from the Financial Literacy Center show that most employees lack knowledge about the workings of risk diversification. In fact, of the financial literacy concepts assessed in recent research, this one consistently presents the most difficulty. Therefore, even when contributions are being directed to target or life cycle funds, employees would benefit from greater understanding of what these funds do and the composition of risky assets within them. As the financial crisis has shown, poor asset allocation in other non-retirement assets may offset the benefits of well-diversified retirement assets and hinder retirement well-being.

Employers are also positioned to provide incentives that encourage more participation in retirement savings plans, from employer matches for contributions to automatic plan enrollment. Many studies have shown that automatic enrollment increased participation in retirement savings plans to more than 90 percent of newly hired employees (Madrian and Shea, 2001; Choi et al., 2004).

Financial advisors: an untapped resource

There is an alternative tool for enhancing an individual's financial performance in an increasingly complex world: outsource the job to financial advisors, which can provide

services and advice to make financial decisions. In the United States, only a small fraction of households currently consults financial advisors, bankers, certified public accountants, or other financial professionals. Instead, they rely on informal sources of advice. Even among those who indicate willingness to use professional investment advice services, two-thirds state they would probably implement only the recommendations in line with their own ideas (Employee Benefit Research Institute, 2007). Financial advice may not have much of an impact if individuals fail to seek out and act on the recommendations of their advisors.

The consultation of private advisors is far from a panacea. There are many types of “advice professional” credentials, each regulated by different private and/or public sector entities. As Mitchell and Smetters (2013) point out, it is often difficult or even impossible for consumers to determine whether the quality of advice provided is accurate, suitable, and consistent with their own goals. The least knowledgeable may face the greatest obstacles in identifying good advice sources; they most often turn to friends and family. Indeed, Collins (2011) suggests that financial literacy and financial advice may be complements rather than substitutes. Finally, relatively little is known about the effects of financial advice and whether it can improve financial decision-making. Some preliminary evidence suggests that financial counseling can be effective in reducing debt levels and delinquency rates (Collins and O’Rourke, 2010; Elliehausen, Londquist, and Staten, 2007).

Targeting vulnerable populations

Promising work assessing the effects of financial literacy has begun to emerge from research in developing countries. Researchers often focus on people with very low financial literacy and vulnerable subgroups that may have the most to gain through improved financial literacy. Many of these studies use experimental methods suited to addressing whether financial education programs *cause* changes in behavior. These studies contribute to an understanding of the mechanisms driving financial literacy as well as the economic advances experienced by financial education program participants. One example, by Carpena, Cole, Shapiro, and Zia (2011), seeks to disentangle how financial literacy programs influence financial behavior. The authors use a randomized experiment on low-income urban households in India. These households undergo a five-week comprehensive video-based financial education program with modules on savings, credit, insurance, and budgeting. The researchers conclude, perhaps not surprisingly given that only 4 percent of respondents had secondary education, that financial education in this context did not increase respondent numeracy. Nevertheless, the program did positively influence participant awareness of and attitudes toward financial products and planning tools. In a related study, Cole, Giné, Tobacman, Topalova, Townsend, and Vickery (2013) find that demand for rainfall insurance is higher in villages where individuals are more financially literate. Song (2011) shows that teaching Chinese farmers about interest compounding results in a sizeable increase in pension contributions.

Conclusions

Across the globe, individuals are being required to take greater responsibility for managing their own safety nets for retirement. Their ability to make informed judgments

and effective decisions about the use and management of money will, therefore, be a pivotal determinant of their long-term financial security. This will be challenging given that many of those financial decisions will address a future that is yet unknown and the tools that will be used include financial products and services about which, research shows, consumers often are poorly informed and unable to understand.

Research finds that planning—the earlier, the better—is a critical factor in determining whether these consumers will build the financial resources they will need for retirement. And yet workers around the world fail to make careful plans. Many do not plan at all. Disproportionately, this lack of action leaves those with the lowest levels of financial literacy, among them women, less educated citizens, and minorities, most vulnerable to economic hardship in their old age. The crucial challenge, one that falls in part to policymakers, will be to better equip a wide range of households with the financial literacy toolboxes they need to build and execute better retirement plans.

Schools and workplaces can serve as platforms for this effort, providing universal access to financial education. In-school financial education programs should be considered for the youngest students possible, and they are critical for teenagers, who are on the cusp of having to make financial decisions that can profoundly impact their future. But the effectiveness of these efforts will depend on properly training the teachers who deliver the information. In the workplace, key life-cycle moments, including new jobs and promotions, offer opportunities to strengthen workers' financial knowledge. Because people differ widely in their degree of financial literacy, however, a “one-size-fits-all” education program will not adequately stimulate saving. Financial education programs

are most effective when targeted to population subgroups. Employer-sponsored services (such as financial counseling) and incentives, from automatic retirement fund enrollment to matching employer contributions, can also be instrumental in boosting financial security for workers.

As old-age dependency ratios rise across the developed world and as government-run pay-as-you-go social security programs are replaced with worker-managed retirement plans, higher financial literacy levels will be indispensable. Effective and accessible financial education will be a necessary part of any effort to ensure that older citizens enter their post-employment years with security.

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Table 1. Planning and Total Net Worth for Original Health and Retirement Study (HRS) (1992) and Early Baby Boomer (EBB) (2004) Respondents (2004 \$)

<i>Group</i>	Sample	25 th	Median	75 th	Mean
	%	Percentile(\$)	(\$)	Percentile(\$)	(\$)
A. Original HRS Response to Planning Question					
Hardly at All	32.0	10,098	76,906	200,613	224,311
A Little	14.3	37,699	126,562	290,149	343,145
Some	24.8	72,032	173,753	367,298	340,681
A Lot	28.9	71,393	173,686	356,796	353,523
B. EBB Response to Planning Question					
Hardly at All	27.5	9,100	80,000	271,000	315,644
A Little	17.0	63,500	173,400	392,000	364,464
Some	27.9	53,000	189,000	447,200	366,074
A Lot	27.6	54,000	201,700	470,900	513,211

Note: Percentages of respondents in each planning group are conditional on being asked the planning question. Respondents/spouses age 51–56; all figures weighted using household weights. (2004 \$) Source: Authors' calculations.

Table 2. Planning and Wealth Holdings in the Health and Retirement Study (US\$ 2004)

	Non-planners	Simple Planners	Serious Planners	Successful Planners
25th percentile	30,400	107,750	171,000	197,500
Median	122,000	307,750	370,000	410,000
75th percentile	334,500	641,000	715,000	781,500
Mean	338,418	742,843	910,382	1,002,975

Notes: This table reports the distribution of total net worth across different planning types. 'Simple' Planners are those who tried to calculate how much they need to save for retirement; 'Serious' Planners are those who were able to develop a saving plan; and 'Successful' Planners are those who were able to stick to their saving plan. The total number of observations is 1,269. Source: Authors' calculations

based on unweighted data from the 2004 Health and Retirement Study, Planning Module; see text.