

# POLICY BRIEF

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## *How Much Do People Know About Economics and Finance?*

### *Financial Illiteracy and the Importance of Financial Education*

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The American pension environment is undergoing a dramatic shift from defined benefit, in which the amount of retirement benefits are determined largely by years of service, to defined contribution, in which retirement wealth depends on how much workers save and how they allocate their pension wealth. A wide range of financial products are now available for retirement saving, and workers are called upon to make investment decisions. Thus it is more important than ever for households to have a high degree of financial savvy. However, as this brief will demonstrate, there is widespread financial illiteracy. Many households are unfamiliar with even the most basic economic concepts needed to make sensible saving and investment decisions. This has serious implications for saving, retirement planning, retirement, mortgage, and other financial decisions, and it highlights a role for policymakers to improve financial literacy in the population.

#### **HOW MUCH DO PEOPLE KNOW?**

Several surveys exist that report information on financial knowledge in sub-groups or among the whole U.S. population. However, these surveys rarely provide information on variables related to economic outcomes such as saving, borrowing, or retirement planning. In an effort to combine data on financial literacy with data on financial

behavior, Lusardi and Mitchell (2006) have pioneered inserting questions measuring financial literacy into major U.S. surveys. They first designed a special module on financial literacy for the 2004 Health and Retirement Study (HRS); this module has now been added to the National Longitudinal Survey of Youth (NLSY). These and other questions measuring financial knowledge have also been added to the Rand American Life Panel (ALP) and to other surveys covering specific sub-groups of the population both in the US and in other countries.

The three questions Lusardi and Mitchell (2006) devised for the HRS measure basic but fundamental concepts relating to financial literacy, such as the working of interest rates, the effects of inflation, and the concept of risk diversification. Results from this survey module reveal an alarmingly low level of financial literacy among older individuals in the United States. Only 50 percent of older respondents (i.e., 50 and older) in the sample were able to correctly answer the first two questions, and only one-third of respondents were able to answer all three questions correctly. The question that was most difficult for respondents to answer was the one about risk diversification; more than one-third of respondents reported they did not know the answer.

Lusardi and Mitchell (2007a) have also examined numeracy and financial literacy among a younger segment of the population, the Early Baby Boomers, who were 51 to 56 years old in 2004. This segment of the population is particularly useful to study as respondents in this age group should be close to the peak of their wealth accumulation and should have dealt with many financial

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decisions already (mortgages, car loans, credit cards, pension contributions, etc.). The following questions were posed to these respondents in the 2004 HRS:

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:

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 1 summarizes how Early Boomers answered these questions. Again, numeracy is found to be low among respondents; only about half could divide \$2 million by 5. Moreover, the large majority did not have

a good grasp of the power of interest compounding: 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 not comforting findings, especially considering that these respondents have already dealt with many financial decisions during their lifetimes.

These findings are confirmed in several other studies. Bernheim (1995, 1998) was one of the first to emphasize that most individuals lack basic financial knowledge and numeracy. Lusardi and Mitchell (2007b) and Smith and Stewart (2008) survey the evidence on financial literacy in the United States and in other countries and report similar findings.

#### WHERE IS ILLITERACY MORE SEVERE?

Financial illiteracy is not only widespread, it is particularly acute among specific demographic groups. For example, financial literacy, as measured by the three questions in the 2004

HRS module, declines strongly with age/cohorts (Lusardi and Mitchell 2006). This is an important finding as individuals are required to make financial decisions until late in the life cycle and there is mounting concern about the incidence of financial scams that prey upon the elderly. There are sharp gender differences in financial literacy, with women displaying a lower level of knowledge than men, particularly with regard to risk diversification. Lusardi and Mitchell (2008) examine this issue in more detail and warn about the difficulties women may face in making financial decisions, particularly after the death of a spouse.

Financial literacy varies widely among education and race. In all three questions examined in Lusardi and Mitchell (2007a), financial literacy rises steeply with education: the more educated are much more likely to answer the economic literacy queries correctly. Moreover, Blacks and Hispanics are less likely to answer correctly than Whites. There are also similarities across answers. For instance, all three racial/ethnic groups score over 50% on the percentage calculation, but all three score low on the compound interest question.

These results are not specific to the age groups covered in the HRS, but are common to many other surveys on financial literacy. Moreover, the findings outlined above are already present among young respondents. For example, Mandell (2008) focuses on a small group of students who are defined as being financially literate (all had received a score of 75 percent or more on a financial literacy test) in the 2006 Jump\$tart Coalition survey. Note that this group represents a tiny fraction of the whole sample: only 7 percent. The financially literate students are overwhelmingly

**Table 1: Financial Literacy Among Early Baby Boomers**

(HRS observations = 1,984)

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

Notes: \*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. Adapted from Lusardi and Mitchell (2007a).

white, male, and the children of college graduates. Thus, the correlation between literacy and gender, race, and education is already present at early stages of the life cycle.

## WHERE DOES ILLITERACY HURT?

While the low levels of financial literacy are troubling in and of themselves, policymakers should be most concerned by the potential implications of financial illiteracy for economic behavior. One example is offered by Hogarth, Anguelov, and Lee (2005), who demonstrate that consumers with low levels of education are disproportionately represented amongst the “unbanked,” those lacking any kind of transaction account.

To further examine how financial illiteracy is tied to economic behavior, we used the 2004 HRS to connect financial knowledge to retirement planning abilities (Lusardi and Mitchell, 2007a). We found that those who are more financially knowledgeable are also much more likely to plan for retirement. Specifically, those who know about interest compounding are much more likely to plan for retirement, a critical variable to devise saving plans. Even after accounting for factors such as education, marital status, number of children, retirement status, race, and sex, we still found that financial literacy plays an independent role: Those who are more financially literate are more likely to plan for retirement. This is important, since lack of planning is tantamount to lack of saving. (Lusardi and Mitchell 2007a, and Lusardi and Beeler 2007). Moreover, it is planning that affects wealth and not the other way around (Lusardi and Mitchell 2007c).

Other authors have also confirmed the positive association between knowledge and financial behavior. For example, van Rooji, Lusardi and Alessie (2007) find that respondents who are not financially knowledgeable do not invest in the stock market. Campbell (2006) has highlighted how household mortgage decisions, particularly the refinancing of fixed-rate mortgages, should be understood in the larger context of ‘investment mistakes’ and their relation

*Those who are more financially literate are more likely to plan for retirement.*

to consumers’ financial knowledge. This is a particularly important topic, given that most US families are homeowners and many have mortgages. In fact, many households are confused about the terms of their mortgages. Bucks and Pence (2006) examine whether homeowners know the value of their home equity and the terms of their home mortgages. They show that many borrowers, especially those with adjustable rate mortgages, underestimate the amount by which their interest rates can change and that low-income, low-educated households are least knowledgeable about the details of their mortgages. Campbell (2006) also finds that younger, better-educated, better-off white consumers with more expensive houses were more likely to refinance their mortgages over the 2001-2003 period when interest rates were falling.

## FINANCIAL EDUCATION

Responding to reports of widespread financial illiteracy and workers’

under-saving, some employers have begun to offer employees financial education in the workplace. For instance, retirement seminars are often provided by firms that offer defined contribution pensions (DC), in order to enhance employee interest and willingness to participate in these voluntary saving programs. Whether such programs have an impact is, of course, a key question.

The idea is that if seminars provide financial information and improve financial literacy, they should reduce workers’ planning costs and thus enhance retirement saving. Yet it is difficult to evaluate the impact of such retirement seminars for several reasons. One is that participation in these seminars is typically voluntary, so the workers who attend them probably differ from those who do not (for instance, they may have more retirement wealth, and thus stand to benefit differently from seminars than low-wealth workers). Another is that workers who participate in a retirement seminar may also be more patient or diligent, personal characteristics associated with higher wealth accumulation. Third, as noted by Bernheim and Garrett (2003), employers may offer retirement education as a remedial device, when they perceive workers to be under-saving. This leads to a negative rather than positive correlation between seminars and saving. These complexities have meant that few researchers have been able to sort out the effects of seminars cleanly, and empirical findings are mixed.

Fortunately, the HRS can overcome some of these data challenges. For instance, Lusardi (2004) posits that if financial education is offered to those who need it most, the saving impacts would be strongest among the least educated and least wealthy.

The HRS data bear this out: Retirement seminars are found to have a positive wealth effect mainly in the lower half of the wealth distribution and particularly for the least educated. Estimated effects are sizable, particularly for the least wealthy, for whom attending seminars appears to increase financial wealth (a measure of retirement savings that excludes housing equity) by approximately 18%. Other authors have also suggested that financial education can be effective when targeted at the least well-off (Caskey 2006).

Yet even when the impacts work in the predicted direction, they can be rather small in dollar terms. Thus Duflo and Saez (2004) focus on non-faculty employees at a large university who were given financial incentives to participate in an employee benefits fair. The authors compared pension participation and contributions in that group with that of employees not induced to participate. Overall, they found that the program had fairly small effects: Attending the fair did induce more employees to participate in the pension, but the increase in contributions was negligible. And good intentions do not always translate into desired behavior. For instance, Clark and D'Ambrosio (2008) report that exposing workers to retirement seminars does influence workers' stated desire to save more. Yet many fail to follow through with their plans.

Further findings on the impact of financial education programs are available from Schreiner, Clancy, and Sherraden (2002). That project studied the effectiveness of Individual Development Accounts (IDAs), which are subsidized savings accounts targeted at the poor that provide matching contributions if the balance is used for a specific purpose

(e.g. home purchase, starting a business, etc.). As part of the American Dream Demonstration, that study included 2,364 participants ages 13-72 (in 2001), of whom 80% were female. The project had a financial education component, and the authors found that those with no financial education saved less than those exposed to the educational program. But the effect was nonlinear: After 8–10 hours of financial education, the result tapered off with no appreciable additional increases in saving.

In addition to fostering saving among the poor, financial education can affect behavior toward debt. For example, there is some evidence that financial counseling can be effective in reducing debt levels and delinquency rates (Hirad and Zorn 2001 and Elliehausen, Londquist, and Staten 2007).

## CONCLUDING REMARKS

Financial literacy surveys show that consumers are poorly informed about financial products and practices. This is troubling because financial illiteracy may stunt peoples' ability to save and invest for retirement, undermining their well-being in old age. It is also a matter of significant concern that these deficiencies are concentrated among particular population subgroups—those with low income and low education, minorities, and women—where being financially illiterate may render them most vulnerable to economic hardship in retirement.

While more is being learned about the causes and consequences of financial illiteracy, it is still the case that one must be cautious when concluding that financial education has a potent effect on retirement saving. First, a small fraction of workers ever

attend retirement seminars, so many are left untouched by this initiative. Second, widespread financial illiteracy will not be “cured” by a one-time benefit fair or a single seminar on financial economics. This is not because financial education is ineffective, but rather because the cure is inadequate for the disease. Third, the finding that people have difficulty following through on planned actions suggests that education alone may not be sufficient. Rather, it is important to give consumers the tools to change their behaviors, rather than simply delivering financial education. Fourth, people differ widely in their degree of financial literacy and saving patterns are very diverse. Accordingly, a “one-size-fits-all” education program will do little to stimulate saving and could even be a disincentive to participate in a financial literacy effort.

Evidently, consumers require additional support for old-age retirement planning and saving. Also, education programs will be most effective if they are targeted to particular population subgroups, in order to address differences in saving needs and in preferences. As old-age dependency ratios rise across the developed world, and as government-managed pay-as-you-go social security programs increasingly confront insolvency, these issues will become increasingly important. As a result, the crucial challenge is to better equip a wide range of households with the financial literacy toolbox they require, so they can better build retirement plans and execute them.

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