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**Article**

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# The Importance of Financial Literacy

Annamaria Lusardi\*

## How much do individuals know?

Increasingly, individuals are in charge of securing their own financial well-being after retirement. With the shift from defined benefit to defined contribution pensions, today's workers must decide both how much to save and how to allocate their retirement wealth. Financial markets have become more complex and individuals are faced with a proliferation of new investment products. Investment opportunities have expanded beyond national borders, permitting individuals to invest in a broad range of assets and currencies. However, as the financial crisis has made clear, it is very hard to navigate this new financial system, and the consequences of mistakes can be devastating. How well equipped are individuals to make financial decisions and how much do individuals know about economics and finance?

Very few datasets provide information about financial literacy, and those that do often do not have any facts about saving and financial decisionmaking. To address this, Olivia Mitchell and I designed a module on financial literacy for the Health and Retirement Study (HRS), a survey that provides information on people 50 and older.<sup>1</sup> We aimed to assess their knowledge of basic concepts that lay at the basis of saving and portfolio-choice decisions, such as interest compounding, inflation, and risk diversification. The results from that initial module were striking: only one-third of respondents could do simple inter-

est rate calculations and appeared to understand the effects of inflation and the workings of risk diversification. What is surprising is not that people lack financial knowledge, but rather how little people know about basic economic concepts. Financial illiteracy is not only widespread but is particularly severe in certain demographic groups. Two groups that stand out from our analysis are the elderly and women; both of them display very low knowledge.<sup>2</sup>

These findings are not unique to this survey or to this particular age group. We have confirmed these findings using different datasets, different methods of data collection, and different age groups. For example, we find low rates of numeracy among younger individuals (Early Baby Boomers)<sup>3</sup> and in the entire U.S. population.<sup>4</sup> Moreover, such results are not limited to the United States. With several co-authors, I examined financial literacy in the Netherlands using the same questions that I used in the U.S. HRS.<sup>5</sup> Like American households, Dutch households also exhibit fairly low levels of financial knowledge.<sup>6</sup>

Together with Peter Tufano, I also have assessed financial knowledge that is specifically related to debt, or *debt literacy*.<sup>7</sup> Our aim was to evaluate respondents' knowledge of the workings of interest compounding and credit cards and their ability to compare borrowing options and choose those with lower rates. We found that even though most individuals deal frequently with credit cards and other forms of borrowing, only a minority of individuals in the United States possess basic financial knowledge relating to debt. For example, only one-third of respondents in a representative sample of the U.S. pop-

ulation know that they cannot eliminate credit card debt by paying a minimum amount equivalent to the interest payments.

In this survey, we were able to go one step further in our analysis to compare *actual* financial knowledge (as determined by responses to our debt-literacy questions) to *self-assessed* knowledge, which was determined by asking respondents to rate their own financial knowledge. In stark contrast to responses to the questions measuring actual knowledge, the majority of individuals give themselves high knowledge ratings, pointing to a gulf between how much people actually know and how much they think they know. Two other findings stand out in our analysis: we find that women display low debt literacy, based on responses to our questions measuring actual financial knowledge, and that they give themselves low ratings when assessing their own financial knowledge. In contrast, elderly respondents rank the lowest in terms of actual financial knowledge but the highest in terms of self-assessed knowledge. This may explain the prevalence of financial scams perpetrated against the elderly.

## Does financial knowledge matter?

Even with little personal knowledge, individuals can avoid making mistakes by consulting with those who are more knowledgeable, including financial professionals. It is not enough to recognize that financial knowledge is low; we must also understand whether financial literacy matters in decision-making. Addressing this question is particularly difficult because financial literacy is not distributed randomly

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in the population: those who possess high levels of literacy are likely to possess characteristics, such as high talents and ability, or patience, which also are correlated with financial decisionmaking. Moreover, individuals may choose to invest in acquiring financial knowledge; thus, financial literacy itself can be a choice variable. And, it may be that those who have high wealth, rich pensions, or investments in financial markets care more about improving their financial knowledge.

In my work, I have examined a set of outcomes that are related to wealth accumulation. In many of my papers, I documented that significant numbers of workers do not plan for retirement, even when they are not far away from it.<sup>8</sup> Yet planning for retirement pays off: those who plan end up with twice as much wealth as those who do not. Looking at retirement planning data thus represents an easy and direct way to test the predictions of a simple version of the life-cycle model. According to this model, people should be forward-looking: they should look ahead, anticipate the drop in income after retirement, and calculate how much they need to save in order to maintain a constant stream of consumption over their lifetime. However, these calculations are not easy. They require the ability to make projections about future variables (such as income growth, inflation, and pension benefits) as well as the ability to determine present discounted values. In my work, I have examined whether individuals do make these calculations and whether financial literacy affects their ability to do so.

In the module we designed for the 2004 HRS, Olivia Mitchell and I added a question that asked whether individuals had ever tried to calculate how much they need to save for retirement. While respondents to the HRS are only five to ten years away from retirement, only around 30 percent of them had calculated how much they needed to save. Moreover, we found a strong link between retirement plan-

ning behavior and financial literacy: it is disproportionately those who can make interest rate calculations and who possess some sophisticated knowledge who reported having calculated how much they need to save for retirement. However, as mentioned above, one cannot rule out the possibility that it is the desire to plan for retirement that results in individuals making an effort to increase their financial knowledge, rather than financial knowledge causing individuals to plan for retirement.

To be able to disentangle this nexus of causality, we re-examined the link between financial literacy and planning. In another paper using data from the Rand American Life Panel, a survey in which we inserted the same questions that we designed for the HRS,<sup>9</sup> we use the fact that several U.S. states mandated financial literacy education in high school to measure respondents' exogenous exposure to financial education. The decision to mandate financial education is mostly the result of a political process. Moreover, states differed in what they mandated and the year the mandate went into effect. We also considered the amount of resources that were devoted to education across states, because mandates can be ineffective if few resources are allocated to training teachers and implementing new courses. We found that individuals who were born in states that mandated financial education in high school were more likely to display higher financial knowledge later in life. Moreover, respondents who received their education in states that not only mandated financial education but also had higher per pupil education spending had higher levels of financial knowledge. Most importantly, after instrumenting financial literacy with mandates across states, interacted with the amount of education expenses per pupil, we found a strong positive relationship between financial literacy and retirement planning, even stronger than the simple estimates based on HRS data. This finding is consistent

with another important paper in this area of research: Bernheim, Garrett, and Maki (2001) showed that individuals who were exposed to financial education in high school had higher savings later in life.<sup>10</sup> Given that retirement planning is a powerful proxy for wealth, there is now a body of evidence supporting the effects of financial literacy on wealth holdings.

In the debt literacy paper, I demonstrated that debt literacy can be linked to a variety of financial experiences, from borrowing on credit cards to using payday lending or pawn shops, to investing in stocks and mutual funds, or simply having a checking account. That paper emphasizes the fact that individuals make many financial decisions and that those decisions are highly interrelated. For example, those who always pay credit card bills in full are less likely to use other high-cost means of borrowing, such as payday loans. Conversely, those who only pay the minimum amount due on their credit cards are more likely to use other costly forms of borrowing. This means that financial literacy can have an effect above and beyond the single financial decisionmaking variable—for example, wealth accumulation, participation in the stock market, having a checking account—which we normally study when assessing the impact of financial literacy on behavior. Thus, to fully capture the effect of literacy on financial behavior, it is important to look at a rich set of financial experiences.

### **How to increase the effectiveness of financial education**

Having shown that financial literacy is very low and that it affects financial behavior, we naturally arrive at the question of what can be done to raise financial knowledge and which programs can influence saving 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* (University of Chicago Press, 2008). There are two ideal venues for the delivery of financial education: schools and the workplace. The book provides an overview of financial knowledge among high school students and shows that it is not only the adult population but also the young who lack basic financial knowledge. Given the benefits that financial literacy brings, there may be advantages to introducing financial literacy into high school curricula. The book also offers an evaluation of employer-provided financial education programs. The evidence, so far, is mixed, but as the book argues, we cannot necessarily learn much from existing programs. Workplace programs commonly offer very limited interventions, such as a one-time retirement seminar or one 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. 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 those 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 suggest that targeted education programs can raise financial literacy among 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 the decisionmaking process, including helping workers to implement saving plans. A recurrent result of financial education programs is that, although they seem to affect the intentions of workers, many of whom report plans to modify their saving or investment behavior after attending a seminar, these intentions do not

always translate into actions. This provides some explanation for why retirement planning seems to have such a large effect on saving. As some psychologists have argued, devising a plan of action makes it more likely for individuals to follow through on intentions. If this mechanism is important, it may be possible to devise cost-effective ways to stimulate saving. The book describes 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.<sup>11</sup> 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 decisionmaking, which can be particularly useful for those with low financial literacy. Having clear guidelines on what needs to be done in order to open an SRA also makes it easier to translate intentions into actions. Finally, the program provides information when it is needed, that is, when decisions about pensions have to be made. Preliminary evidence shows that this simple intervention doubled the enrollment into SRAs at Dartmouth. It also shows that, by recognizing the many difficulties that people face when making saving decisions—from limited financial literacy to barriers to implementing saving plans—we may hope to increase the effectiveness of financial education programs.

In a world of increased individual financial responsibility, where workers are in charge of their financial well-being and where financial markets offer new and complex financial products, financial literacy is essential. Just as it has proven to be impossible to succeed in the modern world without the ability to read and write (literacy),

so it will be impossible to succeed in the present-day financial system without knowing the abc's of economics and finance (financial literacy).

<sup>1</sup> See the review and discussion of these questions in A. Lusardi, "Financial Literacy: An Essential Tool for Informed Consumer Choice?" NBER Working Paper No. 14084, June 2008.

<sup>2</sup> See A. Lusardi and O. Mitchell, "Planning and Financial Literacy: How Do Women Fare?" NBER Working Paper No. 13750, January 2008, and American Economic Review 98(2), 2008, pp. 413–17.

<sup>3</sup> See A. Lusardi and O. Mitchell, "Baby Boomer Retirement Security: the Roles of Planning, Financial Literacy and Housing Wealth," NBER Working Paper No. 12585, October 2006, and Journal of Monetary Economics 54, 2007, pp. 205–24.

<sup>4</sup> See A. Lusardi and O. Mitchell, "How Ordinary Consumers Make Complex Economic Decisions: Financial Literacy and Retirement Readiness," unpublished paper, March 2009.

<sup>5</sup> See M. van Rooij, A. Lusardi, and R. Alessie, "Financial Literacy and Stock Market Participation," NBER Working Paper No. 13565, October 2007.

<sup>6</sup> The questions we have designed for the U.S. HRS have now been added to several national surveys. In addition to the Dutch DNB Household Survey, they have been added to the German SAVE, the Italian Household Income and Wealth, the World Bank Russia Survey, a survey of pension providers in Mexico, and a survey of entrepreneurs in Sri Lanka. It is therefore possible to perform international comparisons.

<sup>7</sup> See A. Lusardi and P. Tufano, "Debt Literacy, Financial Experiences, and Overindebtedness," NBER Working Paper No. 14808, March 2009.

<sup>8</sup> See A. Lusardi, "Household Saving Behavior: The Role of Financial Literacy, Information, and Financial Education Programs," NBER Working Paper No. 13824, February 2008,



and forthcoming in *Implications of Behavioral Economics for Economic Policy*.

<sup>9</sup> See A. Lusardi and O. Mitchell, "How Ordinary Consumers Make Complex Economic Decisions: Financial Literacy and Retirement Readiness," unpublished paper, March 2009.

<sup>10</sup> D. Bernheim, D. Garrett, and D. Maki, "Education and Saving: The Long-term Effects of High School Financial Curriculum Mandates," *Journal of Public Economics* 85, 2001, pp. 435–565.

<sup>11</sup> See A. Lusardi, P. Keller, and A. Keller, "New Ways to Make People Save: A Social Marketing Approach,"

NBER Working Paper No. 14715, February 2009, and chapter 7 of the book, *Overcoming the Saving Slump: How to Increase the Effectiveness of Financial Education and Saving Programs*, University of Chicago Press, 2008, pp. 209–36.

## Taxes and Market Work: A Cross-Country Comparison

Richard Rogerson\*

Time devoted to work varies greatly among OECD countries. In Belgium, France, and Germany for example, total hours of market work relative to population are roughly 30 percent lower than in the United States, Japan, and Australia. The issue is not simply one of "European" versus "non-European" countries, as there are also large differences within Europe. Hours of work in Spain and Sweden are roughly midway between the two previously mentioned groups, and in Switzerland, hours of work are almost the same as in the United States. These differences dwarf the changes in hours of work that are associated with typical business cycle fluctuations. Because labor is one of the key inputs in production, time devoted to market work is a key determinant of the material well being of individuals in an economy. Identifying the factors that lead to such different outcomes in apparently similar economies promises important insights relevant for many public policy discussions.

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### Time-Series Changes

As a first step, it is informative to look at the evolution of hours of work over time. Have these large differences been around for decades, or are they a more recent phenomenon? The answer to this question should provide important information about where to look for possible explanations. It turns out that these differences have not always been present. Comparable data exist going back to the mid-1950s, and at that time, hours of work in France and Germany were actually higher than they were in the United States. Specifically, whereas hours of work in the United States today are roughly similar to what they were in the mid-1950s, in France and Germany they have declined by more than 35 percent. The timing of this decline is also of interest—the pattern that one finds in these countries (as well as many others) is that there is a relatively constant rate of decline from the mid-1950s and lasting through the mid-1980s, at which time hours of work tend to flatten out.<sup>1</sup> The time-series analysis suggests that the key to understanding why hours of work are so different across countries today

is to understand why hours of work have changed so differently across countries since the mid-1950s.

### A Digression: A Comparison with Unemployment Evolutions

The relationship between differences in hours of work across countries and differences in unemployment across countries is also noteworthy. A large literature has documented and studied the fact that unemployment in many European countries exceeds that in the United States, and that this difference has emerged over the last 30 years. Is that observation just another way of presenting the same information? The answer is a resounding "no." In a 2006 paper<sup>2</sup>, I document that from a pure accounting perspective only a very small fraction of the differences in hours of work are explained by differences in unemployment. For example, if we transferred unemployed workers in France into employment to reduce the unemployment rate in France to the U.S. level, and we had these workers work the same number of hours as the average French worker, then the difference between hours of work in France and the United States