

# The Importance of Financial Literacy: Opening a New Field

Annamaria Lusardi and Olivia S. Mitchell

People face complex financial decisions with potentially long-lasting consequences at all stages of life. As young people grow into adulthood, they make decisions about loans for college tuition, cars, and houses, along with how to manage credit cards, health and other kinds of insurance, and living within a budget. The shift from defined benefit to defined contribution retirement plans implies that ordinary people must now shoulder decisions about saving, investing, and more. Older people face decisions about how to manage risks and costs of aging, as well as drawing down their retirement assets. These decisions have only become more complex with the advent of new financial products (which, with the help of technology, one can access with a click), novel ways to make payments (“buy now, pay later”), risky instruments such as crypto assets, and most recently the rise of inflation. According to Google Trends, searches for how to budget or save for retirement have increased fourfold since 2004.

For these reasons and others, *financial literacy*, by which we mean people’s knowledge of and ability to use fundamental financial concepts in their economic decision-making, matters and is more important than ever. The fact that so many people lack financial knowledge not only limits their ability to utilize their resources to the fullest, but also contributes to macroeconomic problems. Recent economic crises related to the subprime mortgage debacle and the COVID-19 pandemic

■ *Annamaria Lusardi is Senior Fellow at the Stanford Institute for Economic Policy Research (SIEPR) and the Director of the Financial Freedom Initiative, a collaboration between the Graduate School of Business (GSB), SIEPR, and the Economics Department, Stanford University, Stanford, California. Olivia Mitchell is Professor of Insurance/Risk Management and Business Economics/Policy, and Executive Director of the Pension Research Council, at The Wharton School, University of Pennsylvania, Philadelphia, Pennsylvania. Their email addresses are alusardi@stanford.edu and mitchelo@wharton.upenn.edu.*

For supplementary materials such as appendices, datasets, and author disclosure statements, see the article page at <https://doi.org/10.1257/jep.37.4.137>.

further illuminate how the confluence of debt and peoples' lack of financial cushions can affect the economy at large. In the wake of the pandemic and its consequent economic dislocations, it has become even clearer that people must hold precautionary savings and manage money properly to secure their economic wellbeing (Demertzis, Domínguez-Jiménez, and Lusardi 2020; Clark, Lusardi, and Mitchell 2021). In the longer term, differences in financial literacy also contribute to wealth inequality (Lusardi, Michaud, and Mitchell 2017).

In the early 2000s, we designed and fielded a survey in the United States to measure financial literacy and to understand how it affects financial decision-making. These questions have now been adopted in numerous surveys around the world. In what follows, we illustrate what we have learned about financial literacy in the United States and elsewhere, as well as how this knowledge differs across population subgroups. In turn, quantitative measurement of financial literacy permits researchers to measure the impact of financial literacy on important economic outcomes. In fact, financial literacy has become its own field of study and many countries have mandated financial literacy in school, beginning with elementary education. We conclude our discussion with thoughts on how our research findings can be used in research, teaching, and policy.

## Quantifying Financial Literacy

Our early work on financial literacy was prompted by concerns about inadequate saving, financial vulnerability, and retirement insecurity among Americans. At that time, no nationally representative datasets existed to measure what people knew (or did not know) about the fundamentals of economics and finance. In 2004, we created and fielded an experimental module on financial literacy for the Health and Retirement Study (HRS). Four principles informed the design of those questions: simplicity, relevance, brevity, and capacity to differentiate. Specifically, our questions sought to measure knowledge of the key building blocks for financial decision-making in an intertemporal setting (simplicity). We also required that the questions relate to concepts pertinent to peoples' day-to-day financial decisions over the life cycle (relevance) and captured general rather than context-specific ideas. Finally, the number of questions had to be parsimonious to ensure widespread adoption (brevity), while still differentiating across people in terms of their financial knowledge (capacity to differentiate).

This effort produced what is now known as the "Big Three," a short set of questions that over the years has proven to be an extremely good measure of peoples' understanding of basic financial concepts (Lusardi and Mitchell 2011a, b, c). Table 1 lists these questions.

In practice, the fact that we were limited to only a handful of questions in the Health and Retirement Study module proved to be a blessing in disguise, as it has been easy for other surveys to add the Big Three questions too. Among US surveys, the Big Three have been included in the National Longitudinal Survey of Youth (NLSY), the Rand American Life Panel (ALP), the Understanding America Study

*Table 1*

**The “Big Three” Financial Literacy Questions and Answers**  
*(correct answers indicated with two asterisks)*

- 
- 1) 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
- 2) Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account?
- More than today  
 Exactly the same  
 Less than today\*\*  
 Do not know  
 Refuse to answer
- 3) Please tell me whether this statement is true or false. “Buying a single company’s stock usually provides a safer return than a stock mutual fund.”
- True  
 False\*\*  
 Do not know  
 Refuse to answer
- 

*Source:* The Big Three originated with Lusardi and Mitchell (2011a).

(UAS), the National Financial Capability Study (NFCS), and the Survey of Consumer Finances (SCF), just to mention some of the most prominent. The Big Three have also been included in more than 40 surveys fielded in Europe, Latin America, and Asia (for a review of non-US findings, see Lusardi and Mitchell 2011c, 2014). The widespread use of these questions has enabled us to develop international comparisons of financial literacy, and financial literacy questions akin to the Big Three were also included in the S&P Global Financial Literacy Survey covering more than 140 countries (Klapper and Lusardi 2020).<sup>1</sup>

The Big Three questions are simple, yet they test for fundamental knowledge at the basis of most economic decisions. If people are unfamiliar with these topics, they are much less likely to know about more complex concepts such as the relationship between risk and return, the term structure of interest rates, and how interest compounds over long periods. In addition, answering these questions does not require difficult calculations, as we do not test for mathematical skills but rather for an understanding of how interest rates and inflation work. The questions also test knowledge of the language of finance, because, for example, we do not explain what interest rates, inflation, or a stock mutual fund are. Making the questions multiple choice and giving respondents the option to say “do not know” (or refuse to answer) avoids forcing respondents to pick an answer at random. Indeed, the prevalence

<sup>1</sup>These questions were designed by Leora Klapper and Annamaria Lusardi in collaboration with Gallup.

*Table 2*  
**Financial Literacy in the US Population: Big Three Questions**

	<i>Correct</i>	<i>Incorrect</i>	<i>Do not know/refuse</i>
Interest	80.6%	16.4%	3.0%
Inflation	75.5%	20.7%	3.8%
Risk	60.7%	17.1%	22.2%
All Big Three correct	43.3%		

*Source:* Authors' tabulations, 2019 Survey of Consumer Finance.

*Note:* All data weighted using sampling weights.

of these choices offers insights that go beyond correct versus incorrect responses, and they help us evaluate when respondents are unsure of their knowledge, as we explain in more detail below.

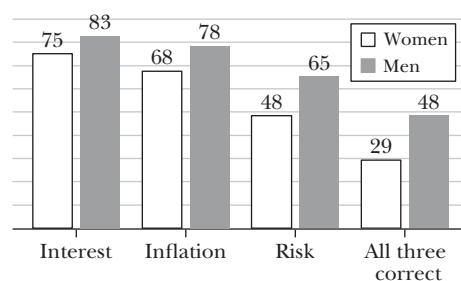
This question set offers rich information about peoples' financial literacy. To illustrate findings, we next provide evidence from the 2019 Survey of Consumer Finances, the most recent data available from one of the best surveys on wealth (Bhutta et al. 2020). We then describe our more detailed measures of financial literacy, which show similar patterns.

As reported in many of our previous studies, and as shown in Table 2, financial literacy is strikingly low in the United States. For instance, while 81 percent of Americans understand simple interest rates, about three-quarters get the inflation question correct, and only 61 percent of the population knows that a single stock is riskier than a stock mutual fund. Overall, only 43 percent of Americans answer all three questions correctly. Thus, knowledge of basic financial concepts cannot be taken for granted, even in a country with well-developed financial markets and where these topics have been important for decades. Knowledge is particularly low about risk diversification, a relevant and fundamental concept, and where the percentage of "do not know" answers is strikingly high with respect to the first two questions.

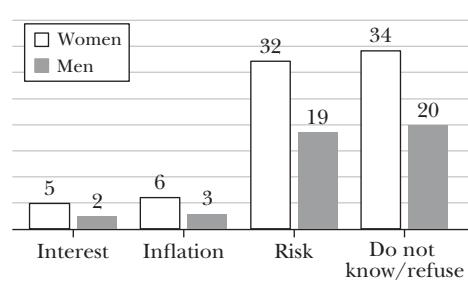
Financial illiteracy is not only widespread in the general population, but it also differs markedly across population subgroups. Panel A of Figure 1 reports financial literacy levels for women and men, where we see a sizeable gender gap for each of the financial literacy questions, as well as for all of the Big Three questions combined. Overall, only 29 percent of women answer all three questions correctly, versus 48 percent of men. This gender difference is remarkably stable across topics (Yakoboski, Lusardi, and Hasler 2022). It is also strikingly stable across the 140 countries examined by Klapper and Lusardi (2020). The percentage of those who refuse to answer is normally very small, but as Panel B of Figure 1 shows, women are much more likely than men to respond that they do not know the answer to at least one financial literacy question, especially the one about risk diversification. Such gender differences are likely to be the result of lack of self-confidence, in addition to lack of knowledge (Bucher-Koenen et al. 2021).

*Figure 1***Financial Literacy Differences by Sex**

Panel A. Percent of respondents answering the Big Three questions correctly, by sex



Panel B. Percent of respondents answering the Big Three questions with at least one “do not know/refuse,” response, by sex



*Source:* Authors' tabulations, 2019 Survey of Consumer Finance.

*Note:* All data weighted using sample weights.

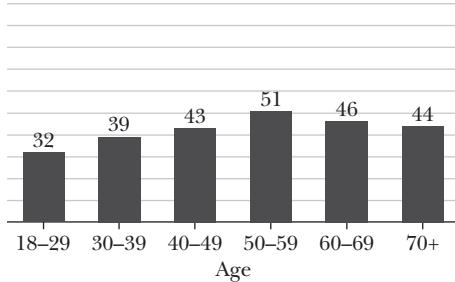
Financial literacy follows a hump-shaped pattern with age. As Figure 2 shows, young adults display very low financial literacy, with only one-third being able to answer all three questions correctly. Of course, this age group is also making important financial decisions with long-lasting consequences, including taking out student loans, contributing (or not) to a pension, managing credit card debt, buying a home, and raising a family. The hump-shaped financial literacy pattern peaks with only about half answering all questions correctly in the 50–59 age bin. Thereafter, the percentage getting all three answers correct falls. Because these data are cross sectional, one cannot distinguish whether the lower level of financial literacy among older respondents is an age or a cohort effect. For example, cognition may decline with age, or people may not have needed high financial knowledge in the past. Of course, the pattern raises concerns either way, because apparently many elderly Americans are managing their money in retirement with only a limited grasp of basic finance. A very recent longitudinal study (Boyle et al. under review), shows that literacy declines among older adults by 1 percent per year over time, confirming the importance of the age effect.

Given the recent rise in inflation, in panel B of Figure 2 we report the proportion of people by age who know about the loss of purchasing power in the presence of inflation. Clearly, it is the younger respondents who lack knowledge of this topic, as only 65 percent of those under age 40 understand inflation, most likely because they had not experienced it during their economic lifetimes until now. Older generations who lived through the 1970s period of double-digit inflation were more knowledgeable about inflation.

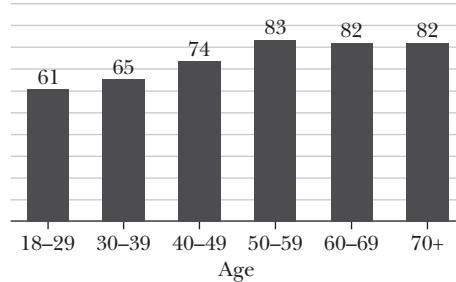
There are also sharp differences by educational levels. While 65 percent of those with college degrees or more earned a perfect score on the Big Three, only 18 percent of the high school dropouts attained this level, as shown in panel A of Figure 3. Nevertheless, even within the college-plus group, more than one-third

**Figure 2**  
**Financial Literacy Differences by Age**

Panel A. Percent of respondents answering all Big Three questions correctly, by age



Panel B. Percent of respondents answering the inflation question correctly, by age

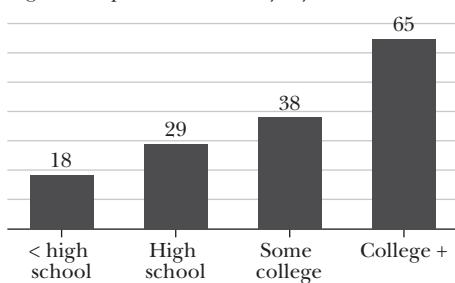


Source: Authors' tabulations, 2019 Survey of Consumer Finance.

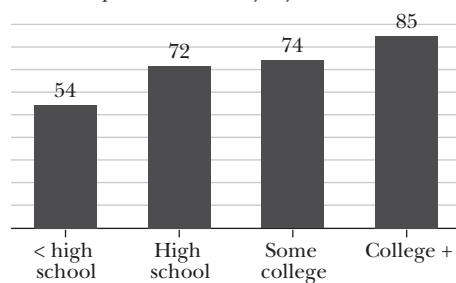
Note: All data weighted using sampling weights.

**Figure 3**  
**Financial Literacy Differences by Education**

Panel A. Percent of respondents answering all Big Three questions correctly, by education



Panel B. Percent of respondents answering the inflation question correctly, by education



Source: Authors' tabulations, 2019 Survey of Consumer Finance.

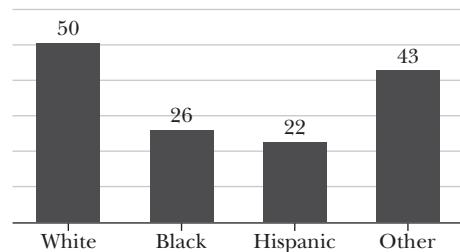
Note: All data weighted using sampling weights.

of respondents did not know one or more of the Big Three questions. In other words, higher education *per se* is insufficient to instill financial literacy in consumers. This underscores the fact that acquisition of financial know-how requires additional investment not currently part of a general education.

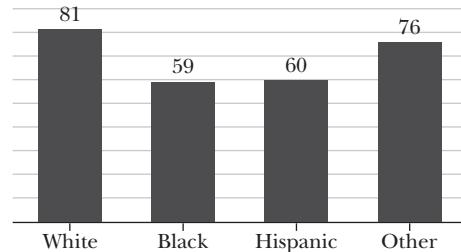
Knowledge of inflation also differs markedly across education groups. Only about half of those without a high school degree know about the eroding power of inflation, versus 85 percent of those with a college or more education, as shown in panel B of Figure 3. This speaks of the potential negative impact of inflation on the finances of the poor.

**Figure 4**  
**Financial Literacy Differences by Race/Ethnicity**

Panel A. Percent of respondents answering all Big Three questions correctly, by race/ethnicity



Panel B. Percent of respondents answering the inflation question correctly, by race/ethnicity



Source: Authors' tabulations, 2019 Survey of Consumer Finance.

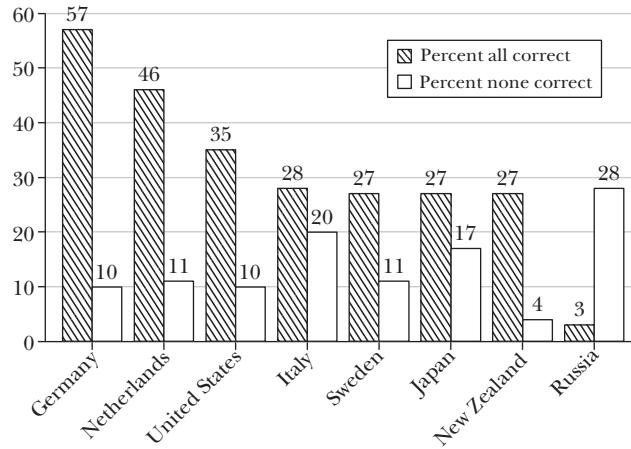
Note: All data weighted using sampling weights.

Sharp differences in financial literacy are also observed by race/ethnicity. Panel A of Figure 4 indicates that half of Whites could correctly answer all three questions, versus only 26 percent of Blacks and 22 percent of Hispanics. This low level of basic financial knowledge among Blacks and Hispanics may help account for the persistence of inequality along financial dimensions such as wealth. Similarly, there are sharp differences in the knowledge of inflation by race/ethnicity, with Blacks and Hispanics being less knowledgeable than Whites, as shown in panel B of Figure 4. Again, lack of knowledge about the loss of purchasing power in the presence of inflation can aggravate financial vulnerability.

These findings are relatively similar across developed nations, providing a robust set of evidence regarding the degrees of difficulty in answering these questions and the quality of the measurement as well (Lusardi and Mitchell 2011c, 2014). A major finding from other studies, shown in Figure 5, is that the level of financial literacy is low even in high-income countries (such as Italy and Japan), as well as those with a strong education system (such as Sweden). Our project on "Financial Literacy around the World" (FLAT World) showed that the world is *flat* indeed in terms of financial literacy, based on our comparisons of knowledge of fundamental concepts across countries (Lusardi and Mitchell 2011c, 2014). In developing countries, financial literacy tends to decline rather than increase with age (Klapper and Lusardi 2020), suggesting that younger cohorts may be acquiring financial literacy over time compared to their older counterparts, whose knowledge is low or has depreciated over time. Nevertheless, the young in emerging economies are still relatively poorly informed when compared to young people in developed economies.

While the Big Three is a strikingly effective indicator, we have also developed more complex measures of financial literacy which offer useful insights (Lusardi and Mitchell 2017; Clark, Lusardi, and Mitchell 2017). One index, now known as

**Figure 5**  
**Financial Literacy around the World**



Source: Authors' tabulations, based on data in Lusardi and Mitchell, eds. (2011d).

the “Big Five,” added two questions to the original Big Three.<sup>2</sup> These additional questions were originally designed for the 2009 National Financial Capability Study to evaluate financial literacy more broadly, particularly in the wake of the global financial crisis led by subprime financial mortgage market, and to further assess knowledge related to investing. The Personal Finance Index (or P-Fin Index), which started in 2016 and is done at an annual frequency, includes 28 questions (Yakoboski, Lusardi, and Hasler 2022). This survey covers a representative sample of the US population, and one or more subgroups are normally oversampled to

<sup>2</sup>See the Big Five in a self-quiz format at <https://gflc.org/education/questions-that-indicate-financial-literacy/>.

The two additional questions are as follows (correct answers identified with asterisks):

*If interest rates rise, what will typically happen to bond prices?*

- A) They will rise
- B) They will fall\*\*
- C) They will stay the same
- D) There is no relationship between bond prices and the interest rate
- E) Don't know
- F) Prefer not to say

*A 15-year mortgage typically requires higher monthly payments than a 30-year mortgage, but the total interest paid over the life of the loan will be less.*

- A) True\*\*
- B) False
- C) Don't know
- D) Prefer not to say

See the review of our questions in Hastings, Madrian, and Skimmyhorn (2013).

provide additional information. The questions in the P-Fin Index are divided into eight broad topics, and risk management is once again the category where people score the lowest (and there is a high proportion of “do not know” answers).

The P-Fin Index also shows that, overall, financial literacy has not changed much in the past six years (2017–2023), yet financial literacy has grown more unequal over time, in that the more financially literate subgroups in 2022 were also the most financially literate in 2017 (for example, men and the better-educated). The somewhat good news is that there was also an improvement in financial literacy scores among the young, possibly due to more US states having recently mandated financial education in school (Urban et al. 2015). These more extensive measures of financial literacy confirm the broad conclusions provided by the Big Three.

We have focused considerable attention on measurement of financial literacy, in the belief that good measurement is critically important to understand a new topic and identify potential problems. Indeed, this effort has propelled the opening of the new field of financial literacy.

## **How Financial Literacy Shapes Financial Decision-Making**

In this section, we investigate the effects of financial literacy on financial decision-making. Our early work using the Health and Retirement Survey showed that financial literacy is a strong predictor of retirement planning and wealth (Lusardi and Mitchell 2007, 2011a). We have replicated this finding in many other US datasets, as well as in several other countries (for example, Behrman et al. 2012; Hastings and Mitchell 2020; Lusardi and Mitchell 2014).

Our research has also shown that financial literacy produces better investment outcomes. For example, the more financially literate are more likely to invest in the stock market, and hence, earn higher (risk-adjusted) returns on their investments (van Rooij, Lusardi, and Alessi 2011; Clark, Lusardi, and Mitchell 2017). Stock market participation can be a conduit to higher wealth and, potentially for society as a whole, to greater wealth inequality, as we discuss below. Financial literacy also shapes the liability side of the balance sheet. Debt has risen across generations in the United States, and people are increasingly carrying debt well into retirement (Mitchell and Lusardi 2020). People who are more financially literate are also better able to manage this debt (Lusardi, Mitchell, and Oggero 2020).

Recent analysis has also sought to explain some of the observed demographic differences in financial literacy noted above. For example, several studies have sought to explain why women tend to be less financially literate than men, including from stereotypes and household specialization of labor (Hsu 2016; Cupák et al. 2018; Driva, Lührmann, and Winter 2016). Other work has focused on differences by race/ethnicity, with candidate explanations including differential maternal education and lack of financial exposure in the home (see, for instance, Angrisani et al. 2021). Other studies, including Okamoto and Komamura (2021) and Finke, Howe, and Huston (2017), evaluate the links between financial literacy and age.

In Table 3, we report coefficient estimates from median regressions of three wealth measures, as well as the wealth/income ratio, using our measure of financial literacy as the explanatory variable. Our goal in this analysis is simply to show the associations between financial literacy and wealth. Additional control variables include age, gender, education, marital status, employment status, race, and income, which are all factors that can proxy for other determinants of wealth. The first column of panel A indicates that one additional correct answer on the financial literacy (FinLit) measure is associated with 13 percent higher median net wealth, 24 percent higher financial wealth, and 7 percent more nonfinancial wealth. Moreover, the median wealth/income ratio is higher by 15 percent, holding other factors constant. Estimates are even larger when using the Big Three in Panel B. Both sets of results underscore the powerful positive association between financial literacy and wealth.

The observation that financial literacy is associated with wealth led us to develop a theoretical model to examine the impact of financial literacy on wealth and wealth inequality. In particular, our life-cycle model embeds several types of uncertainty regarding labor income, out-of-pocket medical expenses, and asset returns, as well as borrowing constraints and other features of the economy (Lusardi, Michaud, and Mitchell 2017). Of central interest is the role of financial literacy, where we posit that becoming financially knowledgeable requires people to expend time and money. In turn, this investment permits them to reap the benefits of having access to a better saving technology. Depreciation of knowledge is also a factor, so consumers must decide whether to keep investing in financial literacy or to let their knowledge decline with time. In this setup, financial literacy becomes an endogenous decision variable: people choose their financial knowledge optimally by comparing the costs and benefits of doing so.

Our theoretical framework is useful for several reasons. First, it rationalizes some of the financial literacy facts reported above. For example, financial literacy is predicted to be low among the young, but it should rise with age as people start investing in financial literacy. At some point, it can be optimal to let knowledge depreciate, generating the observed hump-shaped pattern.<sup>3</sup> Second, our model predicts that financial literacy will be higher for the better-educated, as this group is more likely to need to save more for retirement, compared to the lower-paid who receive relatively higher Social Security replacement rates. Third, this economic model makes it clear that people can be perfectly rational and yet choose not to be particularly financially sophisticated. Fourth, understanding the causal impact of financial literacy on wealth must take into account the fact that financial literacy is an endogenous variable. While the results in Table 2 are reported for descriptive reasons, different estimation strategies are required to assess the effect of financial literacy on wealth, as summarized in Lusardi and Mitchell (2014).

To this end, we use our theoretical model to assess the impact of financial literacy, not just on wealth, but also on wealth inequality. We document that

<sup>3</sup>In addition, of course, people may also elect to delegate money management decisions to financial advisers in lieu of devoting their own time and effort to acquiring the knowledge (Kim, Maurer, and Mitchell 2021).

Table 3

**Estimated Coefficients from Median Regressions of Financial Literacy on Various Wealth Measures**

	<i>Net wealth (\$100k)</i>	<i>Financial wealth (\$100k)</i>	<i>Non-financial wealth (\$100k)</i>	<i>Wealth/income ratio</i>
<i>A. Using FinLit index</i>				
FinLit index	0.161*** (0.036)	0.059*** (0.010)	0.121*** (0.022)	0.305*** (0.046)
Age	0.040*** (0.003)	0.008*** (0.001)	0.019*** (0.002)	0.082*** (0.003)
Female	0.195** (0.068)	0.078*** (0.024)	0.069 (0.047)	-0.145 (0.099)
Black	-0.383*** (0.092)	-0.121*** (0.034)	-0.304*** (0.052)	-1.081*** (0.080)
Hispanic	0.197* (0.091)	-0.043 (0.030)	0.011 (0.076)	-0.171 (0.119)
Race, others	-0.052 (0.105)	-0.076 (0.043)	-0.056 (0.061)	-0.469*** (0.099)
<High school	0.078 (0.136)	0.024 (0.042)	-0.526*** (0.071)	-1.370*** (0.186)
High school	0.009 (0.119)	-0.024 (0.044)	-0.467*** (0.076)	-0.823*** (0.114)
Some college	-0.073 (0.086)	-0.096* (0.037)	-0.378*** (0.055)	-0.797*** (0.098)
Pseudo <i>R</i> <sup>2</sup>	0.241	0.167	0.240	0.138
Median of dep. var.	1.215	0.250	1.643	1.982
<i>B. Using all Big Three correct</i>				
All Big Three correct	0.546*** (0.065)	0.206*** (0.024)	0.256*** (0.048)	0.725*** (0.066)
Age	0.038*** (0.002)	0.008*** (0.001)	0.019*** (0.002)	0.084*** (0.003)
Female	0.204** (0.066)	0.099*** (0.027)	0.076 (0.044)	-0.104 (0.087)
Black	-0.355*** (0.093)	-0.128*** (0.036)	-0.297*** (0.054)	-1.072*** (0.093)
Hispanic	0.228** (0.087)	-0.019 (0.030)	0.027 (0.079)	-0.102 (0.103)
Race, other	-0.023 (0.091)	-0.074 (0.041)	-0.065 (0.068)	-0.449*** (0.081)
<High school	0.176 (0.130)	0.045 (0.045)	-0.517*** (0.067)	-1.426*** (0.169)
High school	0.053 (0.114)	-0.006 (0.044)	-0.437*** (0.074)	-0.753*** (0.093)
Some college	-0.061 (0.092)	-0.083* (0.039)	-0.354*** (0.059)	-0.741*** (0.090)
Pseudo <i>R</i> <sup>2</sup>	0.242	0.168	0.240	0.140
Median of dep. var.	1.215	0.250	1.643	1.982

Source: Authors' tabulations, 2019 Survey of Consumer Finance. All data weighted using sampling weights.

Notes: In both panels, median regression models also control on marital status, number of children at home, employment status, and income; reference groups are White, college+, never married, and working. N = 5,777. \*p<0.10; \*\*p<0.05; \*\*\*p<0.01.

financial literacy is indeed not a sideshow; instead, in the United States, we show that 30–40 percent of wealth inequality near retirement can be accounted for by financial literacy (Lusardi, Michaud, and Mitchell 2017). In other words, financial literacy matters, and it matters a great deal. Accordingly, it is time to incorporate financial literacy into standard intertemporal models of saving behavior, because leaving it out omits a key explanation for why wealth holdings are so heterogeneous.

Adding financial literacy into calibrated intertemporal models of saving is one important way to measure its effects. Another is to seek sources of exogenous variation in access or opportunities to become financially literate. This includes, for example, financial education mandates in school or initiatives in the workplace, and studying the effects of specific programs.<sup>4</sup>

Empirical evaluations are most credible when they result from randomized control trials, as these can avoid issues resulting from more able people self-selecting into the programs of interest. A recent meta-analysis of financial education programs (Kaiser et al. 2022) concentrated exclusively on such randomized control trials (including some programs based on our own financial education initiatives). After reviewing 76 financial education programs across 33 countries in six continents, three major conclusions emerge. First, financial education positively affects both financial knowledge and behavior. Second, the impact is three to five times larger than found by older studies (Fernandes et al. 2014), mainly due to the inclusion of many more recent efforts to improve financial literacy and perhaps awareness of the low levels of financial literacy we were able to document. Third, using the scale by Kraft (2020), financial education programs are found to be cost-effective and the effects are similar to other education programs, such as those related to health, energy, or the environment.

## **Discussion**

Research on financial literacy has grown exponentially in recent decades. If one searches for the term “financial literacy” in the Social Science Citations Index (now published as the Clarivate Web of Science™), there were essentially no citations from 1994 to 2004. As recently as 2011, this search uncovered fewer than 500 papers per year. But by 2015, the total number of papers on the topic topped 1,500, and by 2018 it exceeded 3,000 (Kaiser et al. 2022). This expansion underscores the widespread recognition of the new field of financial literacy. This has several implications for research, teaching, and policy and programs.

### **Implications for Research**

After 20 years of research on this topic, financial literacy has now become an official field of study in the economics profession, with its own JEL code (G53). We now have metrics for measuring financial literacy that range from a few to

<sup>4</sup>For instance, see Bernheim, Garrett, and Maki (2001), Bernheim and Garrett (2003), Frisancho (2023), Bruhn et al. (2016), and Urban et al. (2015).

many questions, which have been adopted across the world, and which are good predictors of financial behavior. Moreover, we have shown that financial literacy can be incorporated into standard intertemporal models of financial behavior; in fact, not doing so will limit our understanding of the determinants of wealth. A new academic journal, the *Journal of Financial Literacy and Wellbeing*, published by Cambridge University Press, provides further evidence of the expansion of this field. The number and sophistication of financial literacy programs is growing rapidly around the world;<sup>5</sup> in particular, many have moved beyond very short interventions—such as a single retirement seminar or sending employees to a benefits fair—to more robust designs. An invaluable next step would seek to understand both the short-term and long-term costs and benefits of such treatments (compare discussions in Bruhn et al. 2023; Frisancho 2023).

We also recognize that it may not always be optimal for people's behavior to change, as our theoretical model indicated (Lusardi, Michaud, and Mitchell 2017, 2020). In fact, the best response may be sometimes to do nothing, something that evaluation programs should take into account to provide an accurate assessment of the impact of financial education.

### **Implications for Teaching**

Early research on financial education confirmed the importance of having it in school (Bernheim, Garrett, and Maki 2001), and now that the crucial role of financial literacy skills has become widely recognized, a variety of personal finance classes is offered in colleges and universities, particularly in the United States. We started offering such courses at our own universities in 2013, motivated and guided by our research findings.<sup>6</sup> Of course, business schools regularly teach corporate finance to aspiring chief financial officers, but it is now clear that regular consumers must also be exposed to rigorous preparation if they are to successfully manage their money, save and invest properly, and decumulate their assets in retirement; in other words, they must become their own chief financial officers.

Our research also provides insight into what such courses should teach. For example, the Big Three and the P-Fin Index tell us that most people fail to grasp key fundamental financial concepts, particularly financial risk management. Moreover, people must make decisions that require them to know about specific financial instruments and contracts; they must also be aware of their rights and obligations in the financial marketplace. Several years ago, the Council for Economic Education (2013) established National Standards for Financial Literacy, detailing what should

<sup>5</sup>Moreover, there are now numerous seminar series, conferences, and major economics and finance meetings dedicated to financial literacy. For example, researchers regularly present their work at the annual US conference jointly organized by the US Board of Governors of the Federal Reserve System and the Global Financial Literacy Excellence Center. The Mannheim Institute for Financial Education has also introduced European researchers to the topic, and the European Finance Association annual meetings have tracks related to financial literacy. The OECD also holds conferences and symposia related to financial literacy at a semi-annual frequency.

<sup>6</sup>We teach courses at both the undergraduate and graduate level. Our course syllabi are available in the online Appendix.

be covered in personal finance courses in US schools. We have extended those standards, borrowing from both the theory and the evidence on financial literacy, to design our own personal finance courses. Lusardi, together with John Shoven and Michael Boskin from Stanford University, also organized the first academic conference for the economics profession dedicated to the teaching of personal finance, held in September 2022 at Stanford University.<sup>7</sup> The most recent meta-analysis of financial education programs also found that financial education had substantial positive impacts on financial knowledge in both developing and in developed countries, and versions of financial literacy courses can now be found everywhere (Kaiser et al. 2022).

Some US states have also mandated financial literacy in high schools, a step which will help the young acquire basic financial skills (widen the access and reduce the cost), and also avoid getting into financial trouble early in life (Urban et al. 2015; Barua, Koh, and Mitchell 2017). Not surprisingly, financial education is most effective when there is a rigorous curriculum, a specific course devoted to personal finance (rather than embedding these concepts into other classes), and trained teachers (Tennyson and Nguyen 2005). Of course, it is also critical to reinforce this training periodically, to offset the effect of human capital depreciation (Lusardi, Michaud, and Mitchell 2020).

### **Implications for Policy and Programs**

This research also has implications for policy and programs. Given low global levels of financial literacy, it will be critical to step up the effort to improve financial knowledge. Indeed, more than 80 countries have set up national committees entrusted with the design and implementation of national strategies for financial literacy (OECD/INFE 2017); one of us chaired the Financial Education Committee charged with improving financial literacy in Italy. Several nations have already established ambitious and innovative programs. New Zealand has been a pioneer in building a national website for financial education, and today, many nations dedicate a week or month to financial literacy (for example, April in the United States, November in Canada, and October in Italy). This has become a powerful way to increase awareness about the importance of financial literacy/education.<sup>8</sup> Since 2012, the Programme for International Student Assessment (PISA) run by the OECD has added financial literacy to the set of topics that 15-year-old students need to know to participate in modern society and succeed in the labor market, evidence that financial literacy is now considered an essential skill, like reading, writing, and knowledge of science.<sup>9</sup> Additionally, the European Commission (2020) has acknowledged the importance of financial literacy as a key step for a capital markets union, and it has now collected data on financial literacy similar to the Big Three across the 27 EU nations (European Commission 2023). Policy leaders

<sup>7</sup>More information about this initiative is provided at <https://personalfinanceteaching.org/>.

<sup>8</sup>For individual programs receiving awards, see <https://maiawards.org/>.

<sup>9</sup>Lusardi led the team that designed these questions, and concepts relating to the Big Three are included in the assessment.

including António Guterres (2022), Secretary General of the United Nations, have noted that financial skills must be part of the toolkit that all young people must acquire to make good decisions about their economic futures.

Because acquiring financial knowledge is a lifelong process and the crucial financial challenges vary by age, financial education must also be provided after people leave high school. The workplace is one prominent setting: Clark (2023) reviews the literature on the importance of workplace financial education, showing its relevance across types of employers and sectors. Analysis of P-Fin Index data shows that Americans spend an average of seven hours a week dealing with their personal finance issues, and three of these hours occur during worktime. Moreover, the least financially literate are four times more likely to spend ten or more hours per week thinking about and dealing with issues and problems related to personal finances (Hasler et al. 2023; Yakoboski, Lusardi, and Hasler 2022). Given that the costs of financial education programs need not be high, employers are increasingly finding it beneficial to provide financial education for their employees.

Moreover, as there are large differences in financial knowledge across people, it will be critical to provide tailored programs so as to best address the needs of specific subgroups. For example, some of the observed gender differences in financial literacy may be due not only to knowledge, but also to self-confidence. Programs targeting financial literacy for women could therefore try to promote both.

Poor financial literacy also has negative externalities reaching beyond households themselves. Consumers who fail to understand risk and risk management may underinsure (Brown, Kapteyn, and Mitchell 2016; Brown et al. 2017, 2021; Gottlieb and Mitchell 2020). Families can suffer if they lack buffer savings to hedge even small shocks, much less against economic crises or the recent pandemic (Demertzis, Domínguez-Jiménez, and Lusardi 2020; Hurwitz, Mitchell, and Sade 2021). In volatile economic times, if people do not understand inflation or the power of interest compounding, they may not set aside enough for precautionary reasons and retirement. To reduce the political demand for taxpayer support of such families, it could be less costly to try to prevent these behaviors.

Policymakers may also gain an additional benefit from promoting financial literacy. For example, the financially illiterate are less able to appreciate pension reforms, and in turn, to vote for them (Fornero and Lo Prete 2023). Finally, since financial literacy also has such important implications for wealth and wealth inequality, investing in financial literacy may help reduce gaps that arise because of unequal access to financial education.

## **Conclusions**

People who wish to save for retirement, budget, invest for the long term, and draw down their assets in old age can access a wide range of resources, yet they are often unable to make good decisions about the broad range of financial choices they face. Robust interventions are needed to address the persistently low and widespread lack of financial literacy. Indeed, the topic of financial literacy is ripe to be

integrated into syllabi, textbooks, and microeconomic as well as macroeconomic courses at both the undergraduate and graduate levels. Moreover, teaching personal finance in both high school and college is an ideal way to make financial education more widely accessible, while workplace-based programs also have a role to play.

We propose that measures of financial literacy be explicitly added to national statistics indicators, as part of an overall picture of a country's wellbeing, together with data on consumption and savings. Indeed, financial literacy can be an important policy target; for example, Finland recently launched a national strategy for financial literacy, pledging to become the country with the highest level of financial literacy in the world by 2030 (Raijas 2021).

Finally, economic models can and should be amended to incorporate the fact that many people lack the necessary knowledge to participate in financial markets effectively and to use financial instruments properly. Inasmuch as we make financial decisions with potentially lifelong consequences every day, the field of financial literacy has become an integral component of economics research and teaching, and a valuable tool for policymakers.

■ *This research was supported by the Pension Research Council and Boettner Center at the Wharton School of the University of Pennsylvania. We thank Erik Hurst, Nina Pavcnik, Timothy Taylor, and Heidi Williams for many helpful suggestions and comments. The authors thank Yong Yu for research assistance. Opinions and conclusions expressed herein are solely those of the authors and do not represent the opinions or policy of any institutions with which the authors are affiliated.*

## References

- Angrisani, Marco, Sergio Barrera, Luisa R. Blanco, and Salvador Contreras.** 2021. "The Racial/Ethnic Gap in Financial Literacy in the Population and by Income." *Contemporary Economic Policy* 39 (3): 524–36.
- Barua, Rashmi, Benedict Koh, and Olivia S. Mitchell.** 2017. "Does Financial Education Enhance Financial Preparedness? Evidence from a Field Experiment in Singapore." *Journal of Pension Economics and Finance* 17 (3): 254–77.
- Behrman, Jere R., Olivia S. Mitchell, Cindy K. Soo, and David Bravo.** 2012. "How Financial Literacy Affects Household Wealth Accumulation." *American Economic Review* 102 (3): 300–304.
- Bernheim, B. Douglas, and Daniel M. Garrett.** 2003. "The Effects of Financial Education in the Workplace: Evidence from a Survey of Households." *Journal of Public Economics* 87 (7–8): 1487–1519.
- Bernheim, B. Douglas, Daniel M. Garrett, and Dean M. Maki.** 2001. "Education and Saving: The Long-Term Effects of High School Financial Curriculum Mandates." *Journal of Public Economics* 80 (3): 435–65.
- Bhutta, Neil, Jesse Bricker, Andrew C. Chang, Lisa J. Dettling, Sarena Goodman, Joanne W. Hsu, Kevin B. Moore, Sarah Reber, Alice Henriques Volz, and Richard A. Windle.** 2020. "Changes in U.S. Family Finances from 2016 to 2019: Evidence from the Survey of Consumer Finances." *Federal*

- Reserve Bulletin* 106 (5): 1–42.
- Boyle, Patricia, Olivia S. Mitchell, Gary Mottola, and Lei Yu.** 2023. Declining Financial and Health Literacy among Older Men and Women. Unpublished.
- Brown, Jeffrey R., Arie Kapteyn, Erzo F. P. Luttmer, and Olivia S. Mitchell.** 2017. “Cognitive Constraints on Valuing Annuities.” *Journal of the European Economic Association* 15 (2): 429–62.
- Brown, Jeffrey R., Arie Kapteyn, Erzo F. P. Luttmer, Olivia S. Mitchell, and Anya Samek.** 2021. “Behavioral Impediments to Valuing Annuities: Complexity and Choice Bracketing.” *Review of Economics and Statistics* 103 (3): 533–46.
- Brown, Jeffrey R., Arie Kapteyn, and Olivia S. Mitchell.** 2016. “Framing and Claiming: How Information-Framing Affects Expected Social Security Claiming Behavior.” *Journal of Risk and Insurance* 83 (1): 139–62.
- Bruhn, Miriam, Luciana de Souza Leão, Arianna Legovini, Rogelio Marchetti, and Bilal Zia.** 2016. “The Impact of High School Financial Education: Evidence from a Large-Scale Evaluation in Brazil.” *American Economic Journal: Applied Economics* 8 (4): 256–95.
- Bruhn, Miriam, Gabriel Garber, Sergio Koyama, and Bilal Zia.** 2022. “The Long-Term Impact of High School Financial Education: Evidence from Brazil.” Banco Central do Brasil Working Paper 563.
- Bucher-Koenen, Tabea, Rob J. Alessie, Annamaria Lusardi, and Maarten van Rooij.** 2021. “Fearless Woman: Financial Literacy and Stock Market Participation.” NBER Working Paper 28723.
- Clark, Robert L.** 2023. “Effectiveness of Employer-Provided Retirement Planning Programs.” *Journal of Financial Literacy and Wellbeing* 1 (1): 154–68.
- Clark, Robert L., Annamaria Lusardi, and Olivia S. Mitchell.** 2017. “Financial Knowledge and 401(k) Investment Performance.” *Journal of Pension Economics and Finance* 16 (3): 324–47.
- Clark, Robert L., Annamaria Lusardi, and Olivia S. Mitchell.** 2021. “Financial Fragility during the COVID-19 Pandemic.” *AEA Papers and Proceedings* 111: 292–96.
- Clark, Robert, Annamaria Lusardi, Olivia S. Mitchell, and Hallie Davis.** 2021. “Factors Contributing to Financial Well-Being among Black and Hispanic Women.” *Journal of Retirement* 9 (1): 71–97.
- Council for Economic Education.** 2013. *National Standards for Financial Literacy*. New York: Council for Economic Education.
- Cupák, Andrej, Pirmin Fessler, Alyssa Schneebaum, and Maria Silgoner.** 2018. “Decomposing Gender Gaps in Financial Literacy: New International Evidence.” *Economics Letters* 168: 102–06.
- Demertzis, Maria, Marta Domínguez-Jiménez, and Annamaria Lusardi.** 2020. “The Financial Fragility of European Households in the Time of COVID-19.” Bruegel Policy Contribution 2020/15.
- Driva, Anastasia, Melanie Lührmann, and Joachim Winter.** 2016. “Gender Differences and Stereotypes in Financial Literacy: Off to an Early Start.” *Economics Letters* 146: 143–46.
- European Commission.** 2020. “Capital Markets Union 2020 Action Plan: A Capital Market Union for People and Businesses.” [https://finance.ec.europa.eu/capital-markets-union-and-financial-markets/capital-markets-union/capital-markets-union-2020-action-plan\\_en](https://finance.ec.europa.eu/capital-markets-union-and-financial-markets/capital-markets-union/capital-markets-union-2020-action-plan_en).
- European Commission.** 2023. “Eurobarometer Survey Reveals Low Levels of Financial Literacy across the EU.” European Commission, July 18. [https://finance.ec.europa.eu/news/eurobarometer-survey-reveals-low-levels-financial-literacy-across-eu-2023-07-18\\_en](https://finance.ec.europa.eu/news/eurobarometer-survey-reveals-low-levels-financial-literacy-across-eu-2023-07-18_en).
- Fernandes, Daniel, John G. Lynch Jr., and Richard G. Netemeyer.** 2014. “Financial Literacy, Financial Education, and Downstream Financial Behaviors.” *Management Science* 60 (8): 1861–83.
- Finke, Michael, John S. Howe, and Sandra J. Huston.** 2017. “Old Age and the Decline in Financial Literacy.” *Management Science* 63 (1): 213–30.
- Fornero, Elsa, and Anna Lo Prete.** 2023. “Financial Education: From Better Personal Finance to Improved Citizenship.” *Journal of Financial Literacy and Wellbeing* 1 (1): 12–27.
- Frisancho, Veronica.** 2023. “Is School-Based Financial Education Effective? Immediate and Long-Lasting Impact on High School Students.” *Economic Journal* 133 (651): 1147–80.
- Gottlieb, Daniel, and Olivia S. Mitchell.** 2020. “Narrow Framing and Long-Term Care Insurance.” *Journal of Risk and Insurance* 87 (4): 861–93.
- Guterres, António.** 2022. “Transforming Education: An Urgent Political Imperative for our Collective Future.” Speech. United Nations Transforming Education Summit. <https://www.un.org/en/transforming-education-summit/sg-vision-statement>.
- Hasler, Andrea, Annamaria Lusardi, Nikhil Yagnik, and Paul Yakoboski.** 2023. “Resilience and Wellbeing in the Midst of the COVID-19 Pandemic: The Role of Financial Literacy.” *Journal of Accounting and Public Policy* 42 (2): 107079.
- Hastings, Justine S., Brigitte C. Madrian, and William L. Skimmyhorn.** 2013. “Financial Literacy, Financial Education, and Economic Outcomes.” *Annual Review of Economics* 5 (1): 347–73.

- Hastings, Justine, and Olivia S. Mitchell.** 2020. "How Financial Literacy and Impatience Shape Retirement Wealth and Investment Behaviors." *Journal of Pension Economics and Finance* 19 (1): 1–20.
- Hsu, Joanne W.** 2016. "Aging and Strategic Learning: The Impact of Spousal Incentives on Financial Literacy." *Journal of Human Resources* 51 (4): 1036–67.
- Hurwitz, Abigail, Olivia S. Mitchell, and Orly Sade.** 2021. "Longevity Perceptions and Saving Decisions during the COVID-19 Outbreak: An Experimental Investigation." *AEA Papers and Proceeding* 111: 297–301.
- Kaiser, Tim, Annamaria Lusardi, Lukas Menkhoff, and Carly Urban.** 2022. "Financial Education Affects Financial Knowledge and Downstream Behaviors." *Journal of Financial Economics* 145 (2A): 255–72.
- Kim, Hugh H., Raimond Maurer, and Olivia S. Mitchell.** 2021. "How Financial Literacy Shapes the Demand for Financial Advice at Older Ages." *Journal of the Economics of Ageing* 20: 100329.
- Klapper, Leora, and Annamaria Lusardi.** 2020. "Financial Literacy and Financial Resilience: Evidence from Around the World." *Financial Management* 49 (3): 589–614.
- Kraft, Matthew A.** 2020. "Interpreting Effect Sizes of Education Interventions." *Educational Researcher* 49 (4): 241–53.
- Lusardi, Annamaria, Pierre-Carl Michaud, and Olivia S. Mitchell.** 2017. "Optimal Financial Knowledge and Wealth Inequality." *Journal of Political Economy* 125 (2): 431–77.
- Lusardi, Annamaria, Pierre-Carl Michaud, and Olivia S. Mitchell.** 2020. "Assessing the Impact of Financial Education Programs: A Quantitative Model." *Economics of Education Review* 78: 101899.
- Lusardi, Annamaria, and Olivia S. Mitchell.** 2007. "Baby Boomer Retirement Security: The Roles of Planning, Financial Literacy, and Housing Wealth." *Journal of Monetary Economics* 54 (1): 205–24.
- Lusardi, Annamaria, and Olivia S. Mitchell.** 2011a. "Financial Literacy and Planning: Implications for Retirement Well-Being." In *Financial Literacy: Implications for Retirement Security and the Financial Marketplace*, edited by Olivia S. Mitchell and Annamaria Lusardi, 17–39. Oxford, UK: Oxford University Press.
- Lusardi, Annamaria, and Olivia S. Mitchell.** 2011b. "Financial Literacy and Retirement Planning in the United States." *Journal of Pension Economics and Finance* 10 (4): 509–25.
- Lusardi, Annamaria, and Olivia S. Mitchell.** 2011c. "Financial Literacy around the World: An Overview." *Journal of Pension Economics and Finance* 10 (4): 497–508.
- Lusardi, Annamaria, and Olivia S. Mitchell, eds.** 2011d. "Special Issue on Financial Literacy around the World." *Journal of Pension Economics and Finance* 10 (4): 471–630.
- Lusardi, Annamaria, and Olivia S. Mitchell.** 2014. "The Economic Importance of Financial Literacy: Theory and Evidence." *Journal of Economic Literature* 52 (1): 5–44.
- Lusardi, Annamaria, and Olivia S. Mitchell.** 2017. "How Ordinary Consumers Make Complex Economic Decisions: Financial Literacy and Retirement Readiness." *Quarterly Journal of Finance* 7 (3): 1–31.
- Lusardi, Annamaria, and Olivia S. Mitchell.** 2023. "Replication data for: The Importance of Financial Literacy: Opening and New Field." American Economic Association [publisher], Inter-university Consortium for Political and Social Research [distributor]. <https://doi.org/10.3886/E193204V1>.
- Lusardi, Annamaria, Olivia S. Mitchell, and Noemi Oggero.** 2020. "Debt and Financial Vulnerability on the Verge of Retirement." *Journal of Money, Credit, and Banking* 52 (5): 1005–34.
- Mitchell, Olivia S., and Annamaria Lusardi eds.** 2020. *Remaking Retirement: Debt in an Aging Economy*. Oxford, UK: Oxford University Press.
- OECD/INFE.** 2017. *G20/OECD INFE Report on Adult Financial Literacy in G20 Countries*. Paris: OECD.
- Okamoto, Shohei, and Kohei Komamura.** 2021. "Age, Gender, and Financial Literacy in Japan." *PLoS ONE* 16 (11): e0259393.
- Raijas, Anu.** 2021. "The First National Strategy of Financial Education in Finland." Presentation to the Financial Literacy Seminar Series, George Washington University. <https://gflec.org/wp-content/uploads/2021/09/Presentation.pdf>.
- Tennyson, Sharon, and Chau Nguyen.** 2005. "State Curriculum Mandates and Student Knowledge of Personal Finance." *Journal of Consumer Affairs* 35 (2): 241–62.
- Urban, Carly, Maximilian Schmeiser, J. Michael Collins, and Alexandra Brown.** 2015. *State Financial Education Mandates: It's All in the Implementation*. Washington, DC: FINRA Investor Education Foundation.
- van Rooij, Maarten, Annamaria Lusardi, and Rob Alessi.** 2011. "Financial Literacy and Stock Market Participation." *Journal of Financial Economics* 101 (2): 449–72.
- Yakoboski, Paul J., Annamaria Lusardi, and Andrea Hasler.** 2022. *How Financial Literacy Varies among U.S. Adults*. TIAA Institute GFLEC Personal Finance Index. New York: TIAA Institute.