Executive Summary[1]

How Ordinary Consumers Make Complex Economic Decisions: Financial Literacy and Retirement Readiness

Annamaria Lusardi
Dartmouth College and NBER
and
Olivia S. Mitchell
University of Pennsylvania and NBER

In this paper we report and evaluate several self-assessed and objective measures of financial literacy newly added to the American Life Panel (ALP). We also link these performance measures to consumer efforts to plan for retirement. Our goal is to untangle the causal relationship between financial literacy and retirement planning, by exploiting information about respondents' financial knowledge acquired in school before entering the labor market and certainly before starting to plan for retirement. Our results show that those with more advanced financial knowledge are those more likely to be retirement-ready.

CONTRIBUTIONS OF OUR PAPER

We designed questions for the Rand American Life Panel (ALP) that measure financial literacy in a representative sample of the U.S. population. Our financial literacy questions are more extensive than those in previously available datasets. We measure both *basic financial literacy* and *sophisticated financial literacy*. We also evaluate the quality of the financial literacy

[1] This research was supported by a grant from the U.S. Social Security Administration (SSA) as part of the Retirement Research Consortium (RRC). Additional support from the U.S. Department of Labor, the FINRA Investor Education Foundation, and the Pension Research Council at the Wharton School is gratefully acknowledged. Useful comments and data suggestions were provided by Sandy Chien, Jeff Dominitz, Angela Hung, Arie Kapteyn, Karen Pence, Scott Weisbenner, Joanne Yoong, and participants to seminars at Bocconi University, the 2009 NBER Summer Institute, the NBER meeting on Economics of Household Saving, and the 2009 Retirement Research Consortium meeting. Arthur van Soest provided invaluable help in devising the financial literacy questions. Yuni Yan, Hiroaki Matsuura, and Vilsa Curto provided excellent research assistance. Findings and conclusions expressed are solely those of the authors and do not represent the views of SSA, any agency of the Federal Government or the RRC.

data by randomizing the wording in three questions to determine whether respondents are guessing or confused. Another innovation is to ask respondents for a self-assessment of their own financial knowledge and compare this self-reported knowledge to actual financial knowledge. Using an instrumental variables approach, we successfully disentangle the nexus of causality between financial literacy and retirement planning.

DATA AND METHODOLOGY

The Rand American Life Panel (ALP) is an Internet-based survey of respondents age 18+ recruited by the University of Michigan's Survey Research Center. For the empirical analysis we have 989 observations. The average respondent age is 45, 60% of respondents are married, 48% are male, 29% of the sample has a high school or lower degree, and 16% are fully retired.

Basic Financial Literacy Questions

1. Numeracy

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? (i) More than $102; (ii) Exactly $102; (iii) Less than $102; (iv) Do not know (DK); (v) Refuse.

2. Compound Interest

Suppose you had $100 in a savings account and the interest rate is 20% per year and you never withdraw money or interest payments. After 5 years, how much would you have on this account in total? (i) More than $200; (ii) Exactly $200; (iii) Less than $200; (iv) DK; (v) Refuse.

3. Inflation

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? (i) More than today; (ii) Exactly the same; (iii) Less than today; (iv) DK; (v) Refuse.

4. Time Value of Money

Assume a friend inherits $10,000 today and his sibling inherits $10,000 3 years from now. Who is richer because of the inheritance? (i) My friend; (ii) His sibling; (iii) They are equally rich; (iv) DK; (v) Refuse.

5. Inflation/Money Illusion

Suppose that in the year 2010, your income has doubled and prices of all goods have doubled too. In 2010, how much will you be able to buy with your income? (i) More than today; (ii) The same; (iii) Less than today; (iv) DK; (v) Refuse.

Sophisticated Financial Literacy Questions

1. Stock Market Functioning

Which of the following statements describes the main function of the stock market? (i) The stock market helps to predict stock earnings; (ii) The stock market results in an increase in the price of stocks; (iii) The stock market brings people who want to buy stocks together with those who want to sell stocks; (iv) None of the above; (v) DK; (vi) Refuse.

2. Knowledge of Mutual Funds

Which of the following statements is correct? (i) Once one invests in a mutual fund, one cannot withdraw the money in the first year; (ii) Mutual funds can invest in several assets, for example invest in both stocks and bonds; (iii) Mutual funds pay a guaranteed rate of return which depends on their past performance; (iv) None of the above; (v) DK; (vi) Refuse.

3. Interest Rate/Bond Prices Link

If the interest rate falls, what should happen to bond prices? (i) Rise; (ii) Fall; (iii) Stay the same; (iv) None of the above; (v) DK; (vi) Refuse.

4. Safer: Company Stock or Mutual Fund

True or false? Buying a company stock usually provides a safer return than a stock mutual fund. (i) True; (ii) False; (iii) DK; (iv) Refuse.

5. Riskier: Stocks or Bonds

True or false? Stocks are normally riskier than bonds. (i) True; (ii) False; (iii) DK; (iv) Refuse.

6. Long Period Returns

Considering a long time period (for example 10 or 20 years), which asset normally gives the highest return? (i) Savings accounts; (ii) Bonds; (iii) Stocks; (iv) DK; (vi) Refuse.

7. Highest Fluctuation/Volatility

Normally, which asset displays the highest fluctuations over time? (i) Savings accounts; (ii) Bonds; (iii) Stocks; (iv) DK; (v) Refuse.

8. Risk Diversification

When an investor spreads his money among different assets, does the risk of losing money: (i) Increase; (ii) Decrease; (iii) Stay the same; (iv) DK; (v) Refuse.

Other Important Questions

- Self-reported financial knowledge:
  On a scale from 1 to 7, where 1 means very low and 7 means very high, how would you assess your understanding of economics?

- Exposure to financial education at school:
  How much of your school's education (high school, college or higher degrees) was devoted to economics? A lot, some, little, or hardly at all?

- Exposure to financial education in the workplace:
  Did any of the firms you worked for offer financial education programs, for example retirement seminars? i)Yes, ii) No, iii) Not applicable.

- Retirement planning:
  How much have you thought about retirement? A lot, some, little, or hardly at all?

SOME DESCRIPTIVE FINDINGS

Based on this new survey, we highlight which people are least financially knowledgeable, whether they know it, and how knowledge can be acquired.

Who Knows the Least?

- Women and less educated people exhibit lower financial literacy than men and the better educated.
- Younger respondents know less than middle-age and older respondents.

Do People Know What They Don't Know?

- Many respondents give themselves high scores with regard to their knowledge of economics.
- Subjective and objective financial knowledge are correlated, but people are far from well-informed.

How Is Financial Knowledge Acquired?

- People who took courses in finance and economics in school prove to be more financially literate later in life.
- Those who are exposed to employer-provided financial education are also more literate.

MULTIVARIATE ANALYSIS

Using a multivariate regression model, we show that there is a strong positive relationship between financial literacy and retirement planning, even after controlling on other sociodemographic factors. We also probe the endogeneity of financial literacy using an instrumental variable approach. Specifically, we control for whether a respondent lived in a state with mandated financial education at age 17, interacted with the amount that state spent on education at that age (measured by educational expenses per pupil). We also add interactions to allow for nonlinear exposure to financial literacy training (age and sex).

Our empirical results imply that the instrumental variable impact of a financial literacy index on retirement planning is positive, statistically significant, and larger than a simpler estimate that does not control for reverse causality. According to our estimates, moving from the first to the third quartile of the financial literacy distribution is associated with moving up one level on the retirement planning scale (the scale goes from 1 to 4).

OVERVIEW:

- Financial illiteracy is widespread. Many respondents are unfamiliar with crucial financial and economic concepts which are critical for saving and investment decisions.
- Financial illiteracy is particularly severe for women, the young, and those with low education.
- Irrespective of low scores on financial literacy questions, many respondents think they are very knowledgeable about economics.
- Financial literacy matters: Those who are most literate are more likely to plan for retirement and more likely to successfully build retirement savings.