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USING THE RIGHT YARDSTICK: ASSESSING FINANCIAL LITERACY MEASURES BY WAY OF FINANCIAL WELL-BEING

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Given the shift of responsibility for retirement planning from employers to employees, the growth of 401(k) plans, and the recent financial crisis, assessing the financial literacy of the United States' population has become increasingly important. However, the measurement of financial literacy is still in its infancy. The measurement of financial literacy among low-income populations is of particular concern, as they rely more heavily on Social Security benefits, and who encounter different financial decisions and financial products than upper/middle-income households. Using data from nine waves of the Health and Retirement Study (HRS), we examine whether existing measures of financial literacy are descriptive and/or predictive of successful household financial management, as well as resilience in the recent financial crisis. We find that once individual characteristics are carefully accounted for in our analysis, correct responses to many of the financial literacy questions in widespread use are not significant predictors of asset accumulation or resilience to financial shocks.

Financial well-being in retirement increasingly depends on individuals' effective management of savings and investments during both the work and retirement years. Moreover, the recent financial crisis highlighted the importance of consumer financial knowledge to economic growth and stability in the economy as a whole. Consequently, financial literacy is drawing an increasing amount of attention (Hilgert et al. 2003). Policymakers are concerned that many consumers lack the basic financial knowledge and money-managing capacities essential for financial security.

There is no standardized instrument for the measurement of financial literacy, and this study suggests that a great deal more work is required in this area. Despite the proliferation of recent research examining the relationship between financial literacy and financial well-being, no current measures of financial literacy have been fully validated. Questions currently in widespread use may be more salient to respondents of higher socio-economic status; it is unclear whether they effectively assess the financial knowledge of individuals with fewer resources. It is also unclear whether many widely used financial literacy assessments adequately distinguish financial competence from basic math skills (Kozup and Hogarth 2008; Gerardi, Goette and Meier 2010).

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This study seeks to assess the validity of existing questions used to measure financial literacy by taking advantage of longitudinal data on responses to financial literacy questions and detailed information on assets available in four recent waves (2002-2008) of the Health and Retirement Study (HRS). Specifically, the analyses assess whether correct responses to various financial literacy questions are significant predictors of successful asset accumulation, resilience to asset loss, and changes in retirement expectations.

Data

The primary data come from the HRS. The original HRS cohort consists of individuals born between 1931 and 1941 and their spouses. Members of the cohort were first interviewed in 1992 and have been re-interviewed once every two years; additional cohorts were added in subsequent waves.

In 2002, variants of numeracy questions were included along with a module devoted to risk assessment, and a large subsample of the HRS population took a three item financial literacy quiz with numeracy questions framed in varying contexts. The 2004 and 2006 waves added modules on risk, annuities, social security, and financial literacy.

Question Frame and Context

This study supports previous findings that the way questions are framed affects the way respondents answer. For example, respondents were asked "If you start out with $1,000 and earn an average return of 10% per year for 30 years, after compounding, the initial $1,000 will have grown to [more/less] than $6,000 (True or False?)." Roughly half were asked the [more] version, and half were asked the [less] version. While 81 percent answered the [more] version correctly, only 63 percent answered the [less] version correctly. This pattern held across many of the questions. The population appears prone to agreement, especially in cases in which the respondent was asked to agree or disagree, as in true/false contexts. Question variants that require participants to answer "false" appear consistently more difficult.

Similarly, when questions required respondents to demonstrate numerical skills, respondents found it more difficult to answer correctly in some contexts than in others (such as a medical versus a commercial context). The context and frame of a question matter—variations on a question that required the same mathematical skill yielded varying rates of correct responses. More importantly however, the inability to answer correctly was consistently correlated with lower asset balances.

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In addition to context and framing, repeated exposure to questions about financial literacy may also constitute a treatment. Respondents might be motivated to learn more about financial matters if they are repeatedly asked about them in surveys. Further, respondents' correct responses to the same numeracy questions may increase over repeated exposure. However, we found no evidence that respondents learned from repeated exposure to the same numeracy or financial literacy questions over several waves of the survey. For example, in a question about sharing lottery winnings that required basic division skills, respondents who answered the question correctly prior to 2008 had only about a 53 percent chance of answering correctly in 2008. Respondents who answered correctly twice in the past increased their probability of responding correctly in 2008 to just 71 percent. In summary, the data did not suggest that taking part in a survey asking financial literacy questions motivated additional learning about financial matters. Again however, the inability to answer these questions correctly at least some of the time was correlated with lower asset levels.

Multivariate Analyses

We also conducted multivariate analyses examining the relationship between financial literacy, wealth, and holistic measures of retirement satisfaction, while controlling for personal characteristics such as pension plan participation, risk aversion, level of education, age, sex, race, and having ever applied for disability insurance.

Using measures of both total wealth and non-housing wealth, correct responses to questions in the financial literacy modules were strongly correlated with greater asset holdings in later waves.

Using measures of total wealth and non-housing wealth, correct responses to the 2002-2006 financial literacy modules were strongly correlated with greater asset holdings in 2008. Results also indicated that educational attainment was important for generating wealth, and suggested that non-white respondents who answered some of the most difficult financial literacy questions correctly were in stronger financial positions than the baseline white male. Concerning changes in total and non-housing wealth, however, correct answers in the financial literacy modules were not as frequently predictive of statistically significant economic improvements.

Results suggest that having ever applied for disability had a negative impact on assets relative to other respondents. However, none of the tested financial literacy measures had meaningful influences on retirement satisfaction, though having ever applied for disability was associated with lower retirement satisfaction.

Discussion

Continued research is imperative for the development of improved financial literacy measures. In this study, vulnerable populations clearly differed from the general population with respect to both responses to existing financial literacy questions and how accurately correct responses predicted their financial well-being.

In this study, vulnerable populations clearly differed from the general population with respect to both responses to existing financial literacy questions and how accurately correct responses predicted their financial well-being.

Findings from studies using current financial literacy measures suggest that women and some minorities have lower levels of financial ability than white males; however, it is unclear whether the differences in correct responses represent an actual difference in ability or are a byproduct of bias in the types of questions used.

Item Response Theory (IRT) is a promising avenue for developing more useful financial literacy instruments (Knoll and Houts 2011).

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IRT can be used to identify the set of questions that best assesses an individual's underlying ability in a given area on the basis of correct responses. (IRT is employed in the production of widely used tests such as the Scholastic Aptitude Test).

IRT can also be used to identify how item success differs across subgroups. We suggest that future financial literacy survey efforts be designed with IRT-based identification in mind.

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Acknowledgments

The HRS is sponsored by the National Institute on Aging (grant number NIA U01AG009740) and was conducted by the University of Michigan. The authors wish to thank graduate students Sudipto Banjeree and Dee Warmath for research assistance and are grateful for feedback from discussants and participants at the summer CFS FLRC workshop in Madison, WI.

The research reported herein was performed pursuant to a grant from the U.S. Social Security Administration (SSA) funded as part of the Financial Literacy Research Consortium. The opinions and conclusions expressed are solely those of the author(s) and do not represent the opinions or policy of SSA, any agency of the Federal Government, or the Center for Financial Security at the University of Wisconsin-Madison.

The Financial Literacy Research Consortium

The Financial Literacy Research Consortium (FLRC) consists of three multidisciplinary research centers nationally supported by the Social Security Administration. The goal of this research is to develop innovative programs to help Americans plan for a secure retirement. The Center for Financial Security is one of three FLRC centers and focused on saving and credit management strategies at all stages of the life cycle, especially helping low and moderate income populations successfully plan and save for retirement and other life events, including the use of Social Security's programs.

The Center for Financial Security

The Center for Financial Security at the University of Wisconsin-Madison conducts applied research, develops programs and evaluates strategies that help policymakers and practitioners to engage vulnerable populations in efforts which build financial capacity. The CFS engages researchers and graduate students through inter-disciplinary partnerships with the goal of identifying the role of products, policies, advice and information on overcoming personal financial challenges.

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