Does Overconfidence Affect Financial Behaviors? Evidence from Retirement Readiness, Precautionary Savings, and Household Investments

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1 Literature Review

1.1 Demographic Factors that Affect Financial Literacy and Overconfidence

Households do not always behave optimally in the financial markets. Campbell (2006) points out that it is common for households to make "investment mistakes". Existing literature suggests that financial literacy and overconfidence can be potential reasons. A natural question is what demographic factors would affect financial literacy and overconfidence.

A large amount of literature has worked on disaggregating financial literacy. Lusardi and Mitchell (2014) build a life cycle model with endogenous financial literacy investment and find that young and old people tend to have low financial literacy. This finding is verified in Agarwal et al. (2009), which employs data from Health and Retirement Study (HRS) and finds that the youth and the old are more likely to make suboptimal decisions. Hsu (2016) constructs a life cycle model with marriage decision to explain why women tend to be less financially literate, which is supported by Hung et al. (2009), Lusardi et al. (2010) and Lusardi et al. (2014) among both the youth and the old using data from different national surveys. Education also has an impact on financial literacy. Lusardi and Mitchell (2007a) use HRS data and find that high

education is correlated with high financial literacy. The questions in HRS regarding financial literacy are also implemented in other surveys all over the world gradually. Lusardi and Mitchell (2011b) make use of these surveys and find the same pattern. However, they also emphasize that education alone is not a good proxy for financial literacy.

Less literature examines the demography of overconfidence. Bhandari and Deaves (2006) use a survey with nearly 2,000 defined contribution pension plan members and conclude that the male and the well-educated are more likely to be overconfident. Lin (2011) conducts a questionnaire survey in Taiwan and suggests that the male, the youth, and the old are more vulnerable to overconfidence bias.

1.2 How Financial Literacy and Overconfidence Affect Financial Behaviors

How will financial literacy and overconfidence affect financial behaviors?

On one hand, the lack of financial literacy makes it difficult for consumers to figure out their optimal choices. Hence, we may observe sub-optimal behaviors. The life cycle model in Lusardi and Mitchell (2014) also implies that consumers with low financial literacy choose to receive lower returns and thus accumulate less wealth during their life. There are also empirical evidences that support this argument. Calvet et al. (2007) and Calvet et al. (2009) make use of Swedish households data to examine the relationship between financial literacy and investment mistakes. Although they do not construct financial literacy directly, they find that proxies such as wealth, income, education, and immigration status are associated with mistakes. Lusardi and Mitchell (2007b), Lusardi and Mitchell (2011a), and Lusardi and Mitchell (2017) formally construct a measure of financial literacy according to different surveys and find that financial literacy is positive related to retirement-readiness.

On the other hand, consumers may be overconfident in their ability, which leads to misperception of optimum. Odean (1998) examines overconfidence bias in stock markets. Under an extensive form game structure with traders, insiders, and market-

makers, he finds that overconfident players tend to receive lower returns due to their excess trade. Empirically, Barber and Odean (2001) use gender as a proxy of overconfidence and find that male traders trade more and thus receive less. With financial markets becoming more accessible in this time and age, households are expected to be affected by their overconfidence. Anderson et al. (2017) try to combine these two sources together for the first time. They conduct a survey on LinkedIn to capture true financial literacy and perceived financial literacy and find that households tend to overestimate their financial literacy. Additionally, both true and perceived financial literacy affect their financial behaviors. Nevertheless, they do not directly examine the effect of overconfidence.

1.3 A Brief Summary

Most existing literature uses surveys to capture either financial literacy or overconfidence. Similarly, this paper also uses data from National Financial Capability Study (NFCS), a survey covering 27,091 American adults. However, this paper combines overconfidence and financial literacy for the first time. I am going to construct a measure for the overconfidence in financial literacy, examine the demographic factors that affect it by both traditional regression models and machine learning algorithms, and investigate its impact on financial behaviors of households.

References

Agarwal, Sumit, John C Driscoll, Xavier Gabaix, and David Laibson, "The age of reason: Financial decisions over the life cycle and implications for regulation," *Brookings Papers on Economic Activity*, 2009, *2009* (2), 51–117.

Anderson, Anders, Forest Baker, and David T Robinson, "Precautionary savings, retirement planning and misperceptions of financial literacy," *Journal of Financial Economics*, 2017, *126* (2), 383–398.

Barber, Brad M and Terrance Odean, "Boys will be boys: Gender, overconfidence, and common stock investment," *The quarterly journal of economics*, 2001, *116* (1), 261–292.

Bhandari, Gokul and Richard Deaves, "The demographics of overconfidence," *The Journal of Behavioral Finance*, 2006, *7* (1), 5–11.

Calvet, Laurent E, John Y Campbell, and Paolo Sodini, "Down or out: Assessing the welfare costs of household investment mistakes," *Journal of Political Economy*, 2007, *115* (5), 707–747.

_ , _ , and _ , "Measuring the financial sophistication of households," *American Economic Review*, 2009, *99* (2), 393–98.

Campbell, John Y, "Household finance," *The Journal of Finance*, 2006, *61* (4), 1553–1604.

Hsu, Joanne W, "Aging and strategic learning: The impact of spousal incentives on financial literacy," *Journal of Human Resources*, 2016, *51* (4), 1036–1067.

Hung, Angela, Andrew M Parker, and Joanne Yoong, "Defining and measuring financial literacy," *RAND Working Paper Series 708*, 2009.

Lin, Huei-Wen, "Elucidating the influence of demographics and psychological traits on investment biases," *International Scholarly and Scientific Research & Innovation*, 2011, *5* (5), 424–429.

Lusardi, Annamaria and Olivia S Mitchell, "Baby boomer retirement security: The roles of planning, financial literacy, and housing wealth," *Journal of monetary Economics*, 2007, *54* (1), 205–224.

_ and _ , "Financial literacy and retirement preparedness: Evidence and implications for financial education," *Business economics*, 2007, *42* (1), 35–44.

_ and _ , "Financial literacy and retirement planning in the United States," *Journal of Pension Economics & Finance*, 2011, *10* (4), 509–525.

_ and _ , "Financial literacy around the world: an overview," *Journal of pension economics & finance*, 2011, *10* (4), 497–508.

_ **and** _ , "The economic importance of financial literacy: Theory and evidence," *Journal of economic literature*, 2014, *52* (1), 5–44.

_ **and** _ , "How ordinary consumers make complex economic decisions: Financial literacy and retirement readiness," *Quarterly Journal of Finance*, 2017, *7* (03), 1750008.

_ **,** _ **, and Vilsa Curto**, "Financial literacy among the young," *Journal of consumer affairs*, 2010, *44* (2), 358–380.

_ **,** _ **, and** _ , "Financial literacy and financial sophistication in the older population," *Journal of pension economics & finance*, 2014, *13* (4), 347–366.

Odean, Terrance, "Volume, volatility, price, and profit when all traders are above average," *The Journal of Finance*, 1998, *53* (6), 1887–1934.