

2016

Financial Literacy Overconfidence and Financial Advice Seeking

Nilton Porto
University of Rhode Island

Jing Jian Xiao
University of Rhode Island, xiao@uri.edu

Follow this and additional works at: https://digitalcommons.uri.edu/hdf_facpubs

**The University of Rhode Island Faculty have made this article openly available.
Please let us know how Open Access to this research benefits you.**

This is a pre-publication author manuscript of the final, published article.

Terms of Use

This article is made available under the terms and conditions applicable towards Open Access Policy Articles, as set forth in our [Terms of Use](#).

Citation/Publisher Attribution

Porto, N. * Xiao, J. J. (2016). Financial literacy overconfidence and financial advice seeking. *Journal of Financial Service Professionals*, 70(4), 78-88.

Available at: https://www.researchgate.net/publication/323856184_Financial_literacy_overconfidence_and_financial_advice_seeking

This Article is brought to you for free and open access by the Human Development and Family Science at DigitalCommons@URI. It has been accepted for inclusion in Human Development and Family Science Faculty Publications by an authorized administrator of DigitalCommons@URI. For more information, please contact digitalcommons@etal.uri.edu.

Financial Literacy Overconfidence and Financial Advice Seeking

August 24, 2015

Abstract

The objective of this study is to examine potential effects of overconfidence on financial advice usage. We define financial literacy overconfidence as the gap between consumers' subjective and objective financial knowledge. Using data from the 2012 National Financial Capability Study, we find that roughly ten percent of respondents display financial literacy overconfidence: they score themselves higher than the sample average on perceived financial knowledge but are unable to answer three or more financial literacy questions correctly. These overconfident consumers are less likely to seek the types of financial advice usually associated with asset building such as investment advice but more likely to demand advice related to financial difficulties such as debt counseling. Other levels of confidence in financial knowledge and policy implications are also discussed.

1 Introduction

One of the major reasons to seek advice is our need to improve the accuracy of our judgments and choices (Yaniv 2004). Financial advice has been shown to act as a complement to financial knowledge (Collins 2012). However, as discussed on that paper, the pattern does not hold for all types of financial advice. Higher income households are the most likely to seek investment, insurance, and tax-related advice. Since these households are also the most likely to hold considerable assets, they could be using the advice to grow, protect, and reduce the taxation on their assets.

Low perceived levels of financial expertise has also been linked to advice seeking for financial investment decisions, yet again household with considerable financial assets are most likely to receive advice (Lee and Cho 2005). The reality of the marketplace is that a large set of the financial advice available is aimed at higher income households. The type of advice aimed at low to moderate income household often takes the format of financial counseling via a non-profit agency. More often than not, counseling for these households

are used as potential remedies to credit such as counseling for distressed mortgage (Collins et al. 2011) and tax issues.

The objective of this study is to examine potential effects of overconfidence on financial advice usage among consumers. Overconfidence is a deviation from a framework of revealed preferences. As Campbell (2006) pointed out, the field of household finance presents several challenges to the application of the standard positive model: what households actually do is not always in line with what they should do. When overconfidence is present, households might fail to perform optimal financial behaviors and choices since they overestimate their abilities and knowledge. This bias, in turn, can lead to the illusion of control where households shy away from taking precautionary action in their financial lives. More specifically, overconfident individuals might fail to save properly for emergencies or retirement, fail to insure themselves against the potential of loss, and fail to seek financial advice.

In the field of personal finance, overconfidence is usually associated with detrimental behaviors. Overconfident investors trade more often and earn lower returns than the average household (Barber and Odean 1999, 2000). Similarly, investors that display overconfidence trade in higher volumes but realize lower gains (Statman et al. 2006). Business entrants could also be underestimating their skills against the competition (Camerer and Lovallo 1999).

This paper defines *financial literacy overconfidence* as the difference between respondents' objective and subjective financial knowledge, similar to the strategy employed by Xia et al (2014). We used the sample average on each financial knowledge category - objective and subjective - as cutoffs when building the financial literacy overconfidence variable. Also, we used the same cutoffs to determine three other levels of confidence in financial literacy: *underconfident* (low subjective/high objective), *competent* (both highs),

and *naive* (both lows).

Next, we examine the associations between the four levels of financial literacy confidence and financial advice usage. Both types of knowledge plus measurements of positive financial behavior have been considered important factors on individuals financial capability (Xiao et al. 2013). The rather new concept of financial capability has also been positively linked to financial well-being (Taylor et al. 2009; Xiao et al. 2013).

Overconfident consumer might be more likely to engage in detrimental financial behaviors. Perry (2008) finds that consumer that overestimate their credit score are less knowledgeable in financial matters and acquire this limited knowledge from difficult past experiences. Similarly, we found that respondents displaying financial literacy overconfidence in our sample are more likely to seek debt and tax planning advice after controlling for income and other characteristics, possibly indicating financial difficulty or stress (Grable and Joo 1999).

The potential effect of financial literacy overconfidence has important policy implications. Overconfident consumers might fail to procure adequate and necessary financial advice and further reduce their welfare. Mandate financial literacy interventions before important financial decisions such as first-time home purchases or during choices of retirement benefits at a new job might be necessary to reach overconfident consumers. Other innovative proposals could help to reduce or deter this bias; for example, an offer for free financial counseling could be automatically sent from a credit report agency after a borrower misses a few loan payments.

This paper proceeds as follows. Section 2 reviews the prior literature on overconfidence and advice seeking behavior in personal finance. Section 3 presents the data and variables used on this study. Section 4 contain our analysis of the relationship between

financial literacy overconfidence (and other levels of confidence) and demand for financial advice. Finally, Section 5 reviews our conclusions and public policy implications.

2 Literature Review

Overconfidence is associated to individuals' perception of their own ability or knowledge. Overconfidence is displayed when actual knowledge/ability fails to measure up with one's subjective expectations. In addition, overconfidence also takes the form of a social bias when individual compares their performance and ability to others (Proeger and Meub 2014). As suggested in Lusardi and Mitchell (2007), overconfidence might prevent individuals from seeking financial advice and further increase the knowledge gap in personal finance.

To make matters worse, consumers perception of their financial knowledge may also influence how likely they are to follow the advice. In a lab experiment setting, subjects were not willing to follow the advice given if deviates from their initial perceptions and also placed a higher value to their own opinions than the worthy advice available (Yaniv 2004).

Our definition of overconfidence is rather restrictive but also innovative since it encompass two of the main research definitions of the topic: the overestimation of ones performance (low objective/high objective knowledge) and placement of ones performance relative to others when we utilize the sample financial knowledge means (for a further review of definitions of overconfidence, see Moore and Healy (2008)). The third main definition of overconfidence - the excessive precision we place in our own beliefs - is mostly used on lab experiments where subjects are asked how certain they are that their answer to a certain question is correct. This last type of overconfidence used in research has come under some recent criticism since the format of the question can lead to erroneous

calibrations of confidence (Olsson 2014).

Self-efficacy - a close relative of confidence - help explain people choice of tasks that are in line with their perception of ability. According to Bandura (1977), people would stick with tasks that they judge to be within their own abilities while shying away from tasks that are perceived above their perceived level of efficacy.

3 Methods

The data used to estimate overconfidence and use of financial advice is from the National Financial Capability Study of 2012. FINRA commissioned the study to better understand the challenges American families face on their finances, following a similar wave done in 2009. The study included two components measuring financial literacy/knowledge: a subjective and an objective component. The subjective component comes from the survey item that asked “On a scale from 1 to 7, where 1 means very low and 7 means very high, how would you assess your overall financial knowledge?”.

Our main predictor is *overconfidence*. The overconfidence variable was created by using subjective and objective financial literacy variables. The subjective measure came from the survey item that asked “On a scale from 1 to 7, where 1 means very low and 7 means very high, how would you assess your overall financial knowledge?”. The objective measure is the score of five financial knowledge quizzes about interest rate, inflation, bond pricing, mortgage costs, and stock risk. Respondents that answered “Don’t Know” or “Prefer not to say” to the financial literacy questions were coded as incorrect, in line with previous research that utilizes don’t know as a measure of financial literacy (Herd et al. 2012).

We created overconfidence by first looking at the average sample mean of subjective and objective knowledge variables. The mean of subjective financial literacy was 5.17. The mean of objective knowledge was 2.99, meaning that roughly half of the respondents were only able to answer three or less financial literacy questions correctly. Based on these mean scores, four types of consumers were defined.

Respondents display overconfidence when they rated themselves higher than the sample average on their self-assessed (subjective) financial knowledge but scored lower than the sample average on the five-item financial literacy quiz (representing actual knowledge).

We expanded our analysis of overconfidence by creating four groups of different levels of financial knowledge. Respondents that scored high in both the subjective and the objective measurements are called *competent*. Conversely, those with low scores in both constructs are called *naive*. Finally, respondents with high objective scores but lower levels of self-assessed knowledge are called *underconfident*. The overconfident groups was previously explained in detail. This nomenclature is somewhat arbitrary in regards to the first two groups and the grammar is creative in naming our cautious group, however is our hope that this choice of terminology will help the reader more easily distinguish among the four levels of intrinsic financial knowledge.

The financial advice usage variables were formed using information from consists of the survey question “In the last 5 years, have you asked for any advice from a financial professional about any of the following?” . Respondents give individual answers to each of the five types of advice: debt counseling, savings and investments, taking out a mortgage or a loan, insurance of any type, and tax planning. These are binary variables (1=yes, 0=no). In addition to the five financial advice usage questions included in the survey, we also created a binomial variable indicating that respondents have utilized any form of financial advice (1=yes, 0=no).

To account for previous research on the demand for financial advice, our models control for gender, age, income, marital status, and educational attainment (Joo and Grable 2001; Lusardi and Mitchell 2007; Gerhardt and Hackethal 2009; Finke et al. 2011). Specifically, financial advisors are usually matched with older, wealthier, more experienced, and female investors (Hackethal et al. 2012).

sectionResults

3.1 Bivariate Analysis Results

Table 1 presents summary statistics of relevant control variables. The *t*-test in column four compares means of overconfident respondents to the rest of the sample. Descriptively, overconfident respondents are younger and have lower incomes than their counterparts. Regarding education, overconfidence seems to rise until respondents complete high school level but then it falls again after attending some college and other post-secondary education.

Singles and, surprisingly, females are more likely to display overconfidence. However, females do not appear to display overconfidence in our further analysis in the next section.

Figure 1 shows the distribution of financial literacy confidence levels found in this sample. Overconfidence is the less populous group, an expected result from our restrictive definition of this bias. Roughly 35% of respondents are categorized as *underconfident*: low subjective but high objective financial knowledge. The two groups that calibrated their two levels of knowledge precisely - *competent* and *naive* - comprised over half of our respondents.

Table 2 present the four levels of financial knowledge and demand for financial advice usage. The competent group had the highest take-up rate of advice in all categories except for debt counseling, a possible indication of the complementary characteristic of their demand. The naive group, on the other hand, is the least likely to seek financial advice in all categories but debit, a possible indication of the remedial nature of the advice they seek. Our overconfident respondents have some of the most interesting characteristics: they are twice more likely than any other group to have received debt advice but place themselves on the lower range for two types of asset building advice: to invest or to take out a loan/mortgage.

3.2 Multinomial Regression Results

In Table 3, odds ratios are presented for each individual type of financial advice. The last column represents any type of financial advice. In this model, we used *competent* as the baseline group of financial literacy. The competent consumer is less of a policy or practitioner concern than the other three categories since they are able to calibrate their knowledge effectively (high objective and high subjective) and also appear to have the necessary financial literacy tools in place. As such, the effects of each variable on the likelihood being part of any of the other groups are relative to the competent category. To simplify this analysis, we will discuss the results without any further references to this normalization.

Overconfident respondents are more likely to seek Debt and Tax Advice even after controlling for a number of other factors. In fact, this category demand for debt advice is considerable higher than any other group. In addition, overconfidence is also associated with a lower demand for savings/investment advice or advice to take out a loan or a mortgage. All these results are statistically significant at the 95% level or higher. Taken

together, we feel confident (no pun intended) that our overconfident respondents are failing to seek financial advice in areas that could help them to grow or acquire new assets but appear to be the most likely group to have received some type of debt counseling in the last five years.

Overall, the baseline competent subjects are also the most likely to have sought any type of financial advice in the past, a result in line with prior research that suggest that financial advice is a complement (Collins 2012). In other words, our categories that have low actual financial knowledge (naive and overconfident) or undervalued their actual financial knowledge (underconfident) are the ones more likely to shy away from financial advice as a whole (last column). The negative relationship between financial capability and financial satisfaction as suggested by Xiao et al (2013) adds to the worrisome nature of our findings: some categories of people underestimate or lack the necessary financial knowledge leading to lower levels of financial capability and decreased wellbeing.

4 Multinomial for Factors of Confidence

We start our analysis by reviewing the factors involved in the likelihood to belong to one of the groups. Table 4 contains the results of this review using a multinomial logit model since our dependent variables are categorical. Although there are levels of subjective and objective financial knowledge involved in the partition of the four levels of confidence, there is no clear ordering of these categories. Hence, results are presented using relative risk ratios (rrr) and the *competent* group (high objective and subjective knowledge) as the baseline. Therefore, the effects of each variable described below are relative to the probability of choosing the *competent* category.

The second columns of results shows the risk of being in the *naive* category in com-

parison to the baseline. The relative risk of being in the *naive* group decreases with age, education attainment and higher income levels. Across all categories, females seem less likely to fall into the *competent* group.

Overconfident respondents are compared in the second column. Similar to the naive, overconfidence falls with age and higher educational attainment. In fact, as people age they are more likely to become part of the financial literacy competent group, a finding that can be explained by the acquisition of knowledge via life experience. In line with previous research (Timmermann 2013), older respondents display higher levels of perceived and actual knowledge. Homeowners are also more likely to be competent than the other three categories.

5 Conclusion

As noted in previous research, people display overconfidence in many facets of their lives. Financial literacy overconfidence is of particular concern to policymakers, practitioners and researchers in personal finance since it can easily lead to behaviors and choices harmful to our financial health. This study suggests that the demand for financial advice is not created the same in all levels of financial knowledge. The more knowledgeable and more accurate group (*competent*) uses financial advice more often, possibly as a complement to their own financial capability. The overconfident group picks and chooses when to use advice, apparently driven by financial difficulties in managing their debt or their taxes.

We err on the side of caution by only labeling a small set of our sample as displaying overconfidence. We could have applied a more inclusive definition of this category to include those that rate themselves at or above the average in any of two types of knowledge and greatly increase our sample of interest. A different strategy might bring us closer

to other instances of overconfidence showed in other research such as perceived driving ability or probability of business success. However, by working with this limited group of only ten percent of all survey respondents we can better uncover the more evident signs of less than optimal use and demand for financial advice. More importantly, by focusing on the uppermost tier of the overconfidence distribution, we hope to highlight an instance where merely the supply of information or advice might not be suffice to overcome a bias; overconfident consumers will have a low take-up rate of most types of advice since they believe to possess the necessary tools to navigate their financial lives. Their demand for advice only becomes substantial when a financial problems arise.

Mandate financial education or advice can be a channel used to reduce overconfidence bias. For instance, college students now face restrictions imposed by the Credit Card Act of 2009 to obtain their first credit card. Although the new regulation appears to have reduced some of the students debt, the students own behavioral intentions and knowledge still drive most of their risk choices (Xiao et al. 2011). Mandate extra education before applying for a card or advice when falling behind on payments might help students where the source of the problem was an overconfidence of their own knowledge.

Consumers' choice to seek financial advice is also based on how much they value the advice (Vitt 2004). As such, miss-calibrations between actual and perceived knowledge may hamper consumer's valuation of when and what type of financial advice they may seek. Financial service professionals might benefit from linking the value of the advice with their clients level of financial knowledge. For instance, the advice to competent clients may be presented as confirmatory while advice to naive clients may be also packaged as educational/instructional; this targeting approach can help apprehend each group intrinsic valuation of advice.

References

- Bandura, A. (1977). Self-efficacy: toward a unifying theory of behavioral change. *Psychological Review*, 84(2):191.
- Barber, B. and Odean, T. (1999). Do investors trade too much? *American Economic Review*, 89(5):1279–98.
- Barber, B. M. and Odean, T. (2000). Trading is hazardous to your wealth: The common stock investment performance of individual investors. *The Journal of Finance*, 55(2):773–806.
- Camerer, C. and Lovallo, D. (1999). Overconfidence and excess entry: An experimental approach. *American Economic Review*, 89(1):306–318.
- Campbell, J. Y. (2006). Household finance. *The Journal of Finance*, 61(4):1553–1604.
- Collins, J. M. (2012). Financial advice: A substitute for financial literacy? *Financial Services Review*, 21(4):307–322.
- Collins, J. M., Lam, K., and Herbert, C. E. (2011). State mortgage foreclosure policies and lender interventions: Impacts on borrower behavior in default. *Journal of Policy Analysis and Management*, 30(2):216–232.
- Finke, M. S., Huston, S. J., and Winchester, D. D. (2011). Financial advice: Who pays. *Journal of Financial Counseling and Planning*, 22(1):18.
- Gerhardt, R. and Hackethal, A. (2009). The influence of financial advisors on household portfolios: a study on private investors switching to financial advice. *Available at SSRN 1343607*.
- Grable, J. E. and Joo, S.-h. (1999). Financial help-seeking behavior: Theory and implications. *Financial Counseling and Planning*, 10(1):13–24.
- Hackethal, A., Haliassos, M., and Jappelli, T. (2012). Financial advisors: A case of babysitters? *Journal of Banking & Finance*, 36(2):509–524.
- Herd, P., Holden, K., and Su, Y. T. (2012). The links between early-life cognition and schooling and late-life financial knowledge. *Journal of Consumer Affairs*, 46(3):411–435.
- Joo, S.-H. and Grable, J. E. (2001). Factors associated with seeking and using professional retirement-planning help. *Family and Consumer Sciences Research Journal*, 30(1):37–63.
- Lee, J. and Cho, J. (2005). Consumers use of information intermediaries and the impact on their

- information search behavior in the financial market. *Journal of Consumer Affairs*, 39(1):95–120.
- Lusardi, A. and Mitchell, O. (2007). Financial literacy and retirement preparedness: Evidence and implications for financial education. *Business Economics*, 42(1):35–44.
- Moore, D. A. and Healy, P. J. (2008). The trouble with overconfidence. *Psychological Review*, 115(2):502.
- Olsson, H. (2014). Measuring overconfidence: Methodological problems and statistical artifacts. *Journal of Business Research*, 67(8):1766–1770.
- Perry, V. G. (2008). Is ignorance bliss? Consumer accuracy in judgments about credit ratings. *Journal of Consumer Affairs*, 42(2):189–205.
- Proeger, T. and Meub, L. (2014). Overconfidence as a social bias: Experimental evidence. *Economics Letters*, 122(2):203–207.
- Statman, M., Thorley, S., and Vorkink, K. (2006). Investor overconfidence and trading volume. *Review of Financial Studies*, 19(4):1531–1565.
- Taylor, M., Jenkins, S., and Sacker, A. (2009). *Financial capability and wellbeing: Evidence from the BHPS*. Financial Services Authority UK.
- Timmermann, S. (2013). Healthy brains and financial decision making: Is decline inevitable? *Journal of Financial Service Professionals*, 67(3).
- Vitt, L. A. (2004). Consumers financial decisions and the psychology of values. *Journal of Financial Services Professionals*, 58(6):68–77.
- Xia, T., Wang, Z., and Li, K. (2014). Financial literacy overconfidence and stock market participation. *Social Indicators Research*, 119(3):1–13.
- Xiao, J. J., Chen, C., and Chen, F. (2013). Consumer financial capability and financial satisfaction. *Social Indicators Research*, 118(1):415–432.
- Xiao, J. J., Tang, C., Serido, J., and Shim, S. (2011). Antecedents and consequences of risky credit behavior among college students: Application and extension of the theory of planned behavior. *Journal of Public Policy & Marketing*, 30(2):239–245.
- Yaniv, I. (2004). Receiving other peoples advice: Influence and benefit. *Organizational Behavior and Human Decision Processes*, 93(1):1–13.

6 Tables

Table 1: Summary statistics

	Full Sample	Other Confidence Levels	Overconfidence	ttest
Less than \$15,000	13.26	12.88	16.54	-4.8433***
At least \$15,000 but less than \$25,000	11.69	11.31	14.95	-5.0306***
At least \$25,000 but less than \$35,000	11.31	11.07	13.33	-3.2565**
At least \$35,000 but less than \$50,000	14.70	14.61	15.44	-1.1288
At least \$50,000 but less than \$75,000	19.08	19.17	18.27	1.1250
At least \$75,000 but less than \$100,000	12.11	12.44	9.21	5.3563***
At least \$100,000 but less than \$150,000	11.23	11.68	7.32	7.9338***
\$150,000 or more	6.62	6.81	4.90	4.2274***
Gender (Female=1)	55.38	54.52	62.72	-8.2311***
Age 18 to 24	10.12	9.53	15.18	-7.8035***
Age 25 to 34	16.79	15.98	23.75	-9.0095***
Age 35 to 44	16.81	16.79	16.91	-0.1576
Age 45 to 54	20.45	20.96	16.01	6.5016***
Age 55 to 64	19.01	19.53	14.38	7.0489***
Age 65 or older	16.82	17.17	13.74	4.8043***
Incomplete High School	7.46	7.13	10.27	-5.1087***
High school graduate (regular)	19.47	18.76	25.52	-7.6337***
High school graduate (GED)	6.25	5.96	8.76	-4.8987***
Some college	33.00	33.26	30.74	2.6606*
College graduate	20.95	21.39	17.03	5.6034***
Post graduate	12.87	13.47	7.66	10.2902***
Married	56.14	56.76	50.67	5.9380***
Single	26.52	25.94	31.53	-5.8929***
Separate	1.74	1.63	2.68	-3.2301**
Divorced	11.61	11.75	10.34	2.2420*
Widowed	3.99	3.89	4.75	-1.9875

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

FINRA 2012 National Financial Capability Study

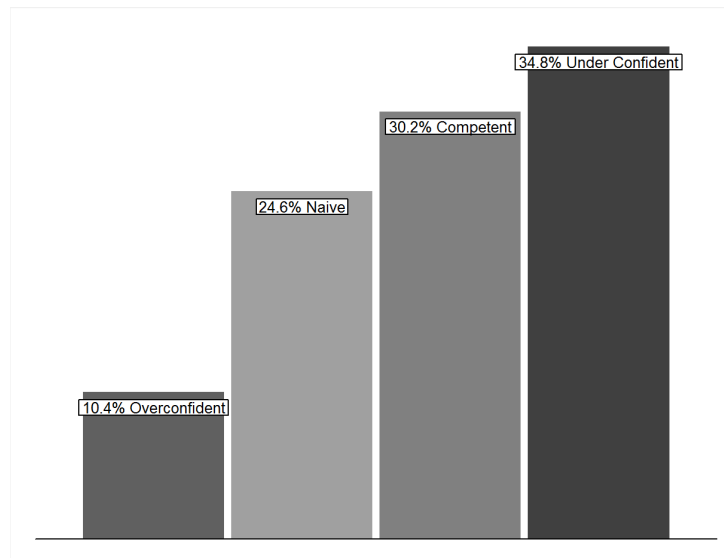


Figure 1: Levels of Confidence

Table 2: Means of Financial Advice by Levels of Financial Knowledge

	Debt Advice	Inv/Sav Advice	Mortgage/Loan Advice	Insurance Advice	Tax Advice
Naive	.082 (.28)	.16 (.36)	.13 (.33)	.21 (.41)	.10 (.30)
Overconfidence	.15 (.35)	.30 (.46)	.21 (.41)	.34 (.47)	.22 (.41)
Underconfident	.08 (.28)	.30 (.46)	.23 (.42)	.32 (.47)	.18 (.38)
Competent	.07 (.25)	.43 (.49)	.27 (.44)	.39 (.49)	.27 (.44)
Total	.09 (.28)	.30 (.46)	.21 (.41)	.32 (.46)	.19 (.39)

Standard deviations in parenthesis - Source: FINRA 2012 National Financial Capability Study

Table 3: Odds Ratio, Financial Advice and Levels of Confidence

	Debt Advice	Savings/Investment Advice	Mortgage/Loan Advice	Insurance Advice	Tax Planning Advice	Any Financial Advice
What is your gender?	0.9009* (0.043)	1.0469 (0.032)	1.0077 (0.033)	1.1055*** (0.032)	0.9965 (0.035)	1.1127*** (0.031)
Age 25 to 34	1.1775 (0.105)	0.6692*** (0.044)	1.0353 (0.073)	0.9483 (0.057)	0.7107*** (0.054)	0.8097*** (0.045)
Age 35 to 44	0.9558 (0.091)	0.4578*** (0.032)	0.6644*** (0.050)	0.7977*** (0.050)	0.4671*** (0.038)	0.6210*** (0.037)
Age 45 to 54	0.7963* (0.078)	0.5116*** (0.035)	0.4817*** (0.037)	0.7752*** (0.049)	0.4692*** (0.037)	0.5994*** (0.035)
Age 55 to 64	0.7749* (0.081)	0.6839*** (0.047)	0.4223*** (0.033)	0.7646*** (0.050)	0.5149*** (0.042)	0.7017*** (0.043)
Age 65 or older	0.4522*** (0.056)	0.9379 (0.068)	0.3524*** (0.030)	0.6878*** (0.048)	0.6664*** (0.056)	0.8517* (0.055)
High school graduate (regular)	1.2957* (0.151)	1.6067*** (0.139)	1.4153*** (0.135)	1.1186 (0.079)	1.1998 (0.121)	1.2465*** (0.077)
High school graduate (GED)	1.3044 (0.179)	1.2070 (0.127)	1.3161* (0.151)	1.1735 (0.100)	1.1610 (0.141)	1.1351 (0.086)
Some college	1.6330*** (0.180)	1.9712*** (0.165)	1.8732*** (0.172)	1.5506*** (0.105)	1.5530*** (0.151)	1.6173*** (0.096)
College graduate	2.0929*** (0.244)	2.7057*** (0.233)	2.0314*** (0.192)	1.7243*** (0.122)	1.9272*** (0.192)	2.0238*** (0.128)
Post graduate	1.7526*** (0.228)	2.8727*** (0.261)	2.0759*** (0.207)	1.7064*** (0.131)	2.3378*** (0.242)	2.1658*** (0.153)
Single	1.0375 (0.069)	1.2201*** (0.055)	0.8144*** (0.041)	0.8772** (0.037)	0.9100 (0.049)	0.9323 (0.037)
Separate	1.2023 (0.197)	0.8935 (0.123)	0.7423 (0.115)	0.9953 (0.112)	1.0974 (0.163)	0.8809 (0.095)
Divorced	1.1872* (0.092)	1.0050 (0.053)	1.0503 (0.061)	1.0071 (0.048)	0.9565 (0.059)	1.0078 (0.046)
Widowed	1.5267** (0.197)	1.0848 (0.086)	1.0010 (0.099)	1.1325 (0.086)	1.0771 (0.100)	1.0909 (0.078)
\$15,001 - \$25,000	1.6948*** (0.168)	1.3556*** (0.103)	1.4463*** (0.128)	1.5915*** (0.103)	1.3533** (0.132)	1.5396*** (0.086)
\$25,001 - \$35,000	1.6928*** (0.173)	1.7784*** (0.131)	1.8023*** (0.155)	1.6477*** (0.107)	1.7013*** (0.161)	1.7307*** (0.099)
\$35,001 - \$50,000	1.9016*** (0.187)	2.0286*** (0.142)	1.9518*** (0.161)	1.7975*** (0.112)	2.0878*** (0.187)	1.9543*** (0.107)
\$50,001 - \$75,000	1.5075*** (0.155)	2.7146*** (0.186)	2.3141*** (0.185)	1.9792*** (0.122)	2.5045*** (0.219)	2.3064*** (0.126)
\$75,001 - \$100,000	1.4894*** (0.169)	3.4075*** (0.250)	2.6539*** (0.226)	1.9777*** (0.133)	3.1105*** (0.286)	2.5846*** (0.158)
\$100,001 - \$150,000	1.2176 (0.149)	4.1073*** (0.308)	2.8674*** (0.249)	2.1383*** (0.148)	3.7499*** (0.349)	3.0105*** (0.194)
Over \$150,000	1.1239 (0.159)	5.1212*** (0.428)	3.3282*** (0.312)	2.3887*** (0.185)	5.3915*** (0.533)	3.6248*** (0.278)
Dependent Child	1.7641*** (0.095)	1.0507 (0.038)	1.3339*** (0.051)	1.2759*** (0.042)	1.1738*** (0.048)	1.2353*** (0.040)
Homeowner	0.9636 (0.055)	1.5859*** (0.060)	2.2354*** (0.095)	1.2956*** (0.045)	1.6822*** (0.077)	1.5341*** (0.049)
Naive	1.1208 (0.084)	0.4992*** (0.024)	0.5968*** (0.031)	0.5506*** (0.024)	0.5817*** (0.033)	0.5254*** (0.021)
Underconfident	1.1360* (0.070)	0.7505*** (0.026)	0.8826** (0.034)	0.7879*** (0.027)	0.7766*** (0.031)	0.7851*** (0.026)
Overconfident	2.0758*** (0.161)	0.8907* (0.047)	0.8500** (0.050)	0.9143 (0.046)	1.1505* (0.067)	0.7989*** (0.039)
Observations	25509	25509	25509	25509	25509	25509

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

FINRA 2012 National Financial Capability Study

Table 4: Multinomial Logit Relative Risk Ratio, Financial Knowledge

(1)			
Subjective and Objective Knowledge			
<i>omitted = Competent</i>			
	Naive	Overconfident	Under-confident
	low subj/low obj	high subj/low obj	low subj/high obj
Gender (Female=1)	2.7466*** (0.109)	1.9501*** (0.094)	1.3399*** (0.043)
Age 25 to 34	0.6722*** (0.059)	0.7160** (0.073)	0.8752 (0.075)
Age 35 to 44	0.5099*** (0.046)	0.4259*** (0.046)	0.8957 (0.077)
Age 45 to 54	0.3874*** (0.034)	0.2851*** (0.031)	0.7811** (0.065)
Age 55 to 64	0.2593*** (0.024)	0.2453*** (0.027)	0.6369*** (0.054)
Age 65 or older	0.1522*** (0.015)	0.2111*** (0.025)	0.4257*** (0.037)
High school graduate	1.7496*** (0.105)	2.0305*** (0.153)	1.3115*** (0.072)
Some college	1.9668*** (0.176)	2.2457*** (0.242)	1.3143** (0.112)
College graduate	0.8785* (0.047)	1.0765 (0.074)	1.1784*** (0.053)
Post graduate	0.5803*** (0.035)	0.8187** (0.062)	1.0310 (0.050)
\$15,001 - \$25,000	0.6713*** (0.055)	0.7867* (0.078)	0.8657 (0.071)
\$25,001 - \$35,000	0.5501*** (0.045)	0.6479*** (0.066)	0.8442* (0.068)
\$35,001 - \$50,000	0.3772*** (0.030)	0.5056*** (0.049)	0.7919** (0.059)
\$50,001 - \$75,000	0.2503*** (0.020)	0.4017*** (0.038)	0.6934*** (0.050)
\$75,001 - \$100,000	0.1790*** (0.016)	0.2803*** (0.030)	0.5859*** (0.045)
\$100,001 - \$150,000	0.1221*** (0.012)	0.2292*** (0.026)	0.4766*** (0.037)
Over \$150,000	0.0842*** (0.010)	0.2301*** (0.029)	0.3494*** (0.030)
Dependent Child	1.1537** (0.053)	1.3904*** (0.079)	0.9509 (0.037)
Homeowner	0.5262*** (0.024)	0.9026 (0.052)	0.7204*** (0.029)
Observations	25509		

Exponentiated coefficients - Control: marital status

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

FINRA 2012 National Financial Capability Study