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FINANCIAL LITERACY AND RETIREMENT PLANNING IN THE UNITED STATES

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ABSTRACT

We examine financial literacy in the United States using the new National Financial Capability Study, wherein we demonstrate that financial literacy is particularly low among the young, women, and the less-educated. Moreover, Hispanics and African-Americans score the least well on financial literacy concepts. Interestingly, all groups rate themselves as rather well-informed about financial matters, notwithstanding their actual performance on the key literacy questions. Finally, we show that people who score higher on the financial literacy questions are also much more likely to plan for retirement, which is likely to leave them better positioned for old-age. Our results will inform those seeking to target financial literacy programs to those in most need.

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Introduction

Individuals and their families are increasingly taking on responsibility for securing their own financial wellbeing in retirement in the United States and around the world. Prior to the 1980s, many U.S. workers relied mainly on Social Security and employer-sponsored defined benefit (DB) pension plans. Today, by contrast, Baby Boomers are increasingly turning to defined contribution (DC) plans and Individual Retirement Accounts (IRAs) to help finance their golden years. Indeed, in 1980, about 40% of private-sector pension contributions went to DC plans; 20 years later, almost 90% of such contributions went to personal accounts (mostly 401(k) plans; Poterba, Venti and Wise, 2008). The transition to the DC retirement saving model has the advantage of permitting more worker flexibility and labor mobility than in the past, yet it also imposes on employees a greater responsibility to save, invest, and decumulate their retirement wealth sensibly. Furthermore, the spread of DC plans means that workers today are directly and immediately exposed to financial market risks, a reality that was less evident in the old DB system. And as many DB plans have been frozen or terminated, the individually-managed model will increasingly become the mainstay of retirement.

For this reason, individuals will increasingly be called to "roll their own" retirement saving and decumulation plans, and their retirement security will depend ever more on individual decisions. This paper investigates the extent to which Americans are equipped to make decisions in this new pension and financial landscape, and in particular, whether they are sufficiently knowledgeable about economics and finance to plan for retirement. Our goal is to focus on financial literacy, by which we mean the ability to do some simple calculations and knowledge

of some fundamental financial concepts.[1] The analysis is facilitated by a new U.S. dataset

known as the 2009 National Survey of 1,488 American adults collected as part of the National

Financial Capability Study (described in more detail below).[2] We show that a large majority of

Americans fails to understand critical financial concepts including interest compounding,

inflation, and risk diversification, and these shortcomings are most acute for women, the less-

educated, and older individuals. Moreover, many people have failed to plan for retirement, even

when this life event looms only five to ten years off. This is critical since, as we have shown

elsewhere, lack of retirement planning translates into low levels of retirement wealth

accumulation (Lusardi and Mitchell 2007a, 2008a, 2009, 2011). As the National Commission on

Fiscal Responsibility and Reform (2010: 53) recently argued, it is key to provide "better

information to the public on the full implications of various retirement decisions, with an eye

toward encouraging delayed retirement and enhanced levels of retirement savings." Yet if people

are unable to make sense of this information when provided, the messages may fall on deaf ears.[3]

In what follows, we first offer an overview of the new dataset used in the analysis. We

then describe the key questions on financial literacy and retirement planning and provide a

multivariate analysis linking these two. A final section concludes.

Data Overview and Summary Statistics

The Financial Industry Regulatory Authority (FINRA) Investor Education Foundation,

undertook a detailed telephone survey in 2009 known as the National Financial Capability Study,

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[1] See Behrman et al. (2010) and Lusardi (2010). The alternative term *financial capability* is often used by U.K. regulators (c.f. Atkinson et al. 2007).

[2] The FINRA Investor Education Foundation collaborated with the U.S. Department of the Treasury to design and field the survey, described at http://www.finrafoundation.org/resources/research/p120478; see also Lusardi (2010).

[3] The problem of financial illiteracy and lack of retirement planning is now salient in several other countries as well, and the awareness has driven data collection efforts in at least 20 nations. The United Kingdom fielded a survey on financial capability in 2005, and similar efforts have underway in New Zealand, Australia, Ireland, Canada, and the Netherlands (Atkinson et al. 2006, 2007). New Zealand, about which more is provided in Crossan et al. (2011), is one of the few countries to have a panel survey affording new information over a three-year span.

with the purpose of benchmarking key indicators of financial capability and linking these indicators to demographic, behavioral, attitudinal, and financial literacy characteristics. About 1,500 American adults were contacted by telephone; the primary sample of 1,200 respondents was constructed to be representative of the general adult U.S. population.[4] Since financial capability is multidimensional, several indicators were collected. Consistent with surveys from other countries, the National Survey explored how people manage their resources and make financial decisions, what skill sets they use in making such decisions, and how they search for and glean information when making those decisions. In the present paper, we focus on two main areas of financial capability, namely financial literacy and self-assessed skills, and retirement planning. We outline key findings next.

Findings Regarding Financial Literacy. To evaluate Americans' financial knowledge, respondents were asked three questions covering fundamental concepts of economics and finance, expressed as they would be in everyday transactions, such as simple calculations about interest rates and inflation and the workings of risk diversification.[5] The exact wording of questions is as follows:

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

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[4] To ensure representativeness, African-Americans, Hispanics, Asian-Americans, and adults with less than a high school education were oversampled.

[5] These questions were first used by Lusardi and Mitchell (2011) in their analysis of older Americans in the 2004 Health and Retirement Study.

> *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*

The first two questions indicate whether respondents have command of the economic concepts most fundamentally related to saving. The third question evaluates knowledge of risk diversification, crucial to the making of informed investment decisions.[6]

Summary statistics to these questions appear in Table 1. Panel A shows that some 65 percent of the respondents can correctly answer the question about interest rates. This is a discouragingly low number, given the question's simplicity and the fact that respondents did not have to make a calculation but could merely select from a set of answers. The proportion rises a bit for respondents age 25-65, but not much. Only 64 percent of respondents get the inflation question right. Around 20 percent of respondents gets this question wrong, and another 14 percent cannot answer the question (Panel B). While more of the 25-65 age bracket get the answers right, still over 20 percent are incorrect and 12 percent state they do not know. The third question, on risk diversification, gives respondents the most difficulty: only about half of this representative sample of the US population gets it right, while around a third cannot answer (Panel C). Even among the prime age group (25-65), almost a third (31 percent) cannot provide an answer.

Table 1 here

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[6] The National Survey also asks questions on financial literacy related to bond pricing and mortgages; see Lusardi (2010) for detail. Since these questions are not available in the surveys conducted in other countries, we do not report them here.

Responses to these three literacy questions are also positively correlated, meaning that those who answer one question correctly are also likely to get the other two right. Nevertheless, the correlation is not particularly high which suggests that each question measures a different aspect of financial knowledge. Across all age groups, under half (46 percent) can correctly answer both the interest rate and inflation questions, and fewer than a third (30 percent) get all three questions correct in Table 1 (Panel D). Among those age 25-65, half (51 percent) get the first two questions right, and a third (35 percent) handles all three accurately. In view of the complex financial decisions that individuals confront in the current economic environment, these are discouragingly low success rates. Moreover, many respondents (40 percent in some cases) indicate they "do not know" how to answer; this is important since such response characterize those who know the least (Lusardi and Mitchell 2011).

Our findings using the National Capability Survey reinforce reports from past studies of the US population as a whole (Bernheim 1995, 1998; Hilgert, Hogarth and Beverly 2003; Moore 2003); surveys on the over-50 group in the Health and Retirement Study (Lusardi and Mitchell, 2007a); and recent work with all ages in the American Life Panel (Lusardi and Mitchell, 2009).

Who Is Financially Illiterate? We also find that specific socio-demographic groups are particularly vulnerable, as indicated in Table 2. Here financial literacy is lowest among younger persons (under age 35) as well as the group older than age 65. While we cannot differentiate age from cohort effects in a cross-section, it is striking that so many of the young are poorly informed about risk diversification and inflation. Fewer than half (46 percent) of young respondents answer the inflation question correctly, and fewer still (43 percent) understand risk diversification. This confirms recent reports of low financial literacy among young adults (age 23-28) in the National Longitudinal Survey of Youth (Lusardi, Mitchell, and Curto, 2010) and

high school students (NCEE 2005; Mandell 2008). Shortfalls in financial literacy at older ages are confirmed by Lusardi and Mitchell (2011) and Lusardi and Tufano (2009a, b).

Table 2 here

Table 2 also shows that women are less financially literate than men, and these differences are statistically significant, particularly for the interest rate and inflation questions. Women are also much more likely to state that they cannot answer a question, indicative of very low levels of knowledge; this is the most pronounced for the risk diversification question, where 41 percent cannot answer. Moreover, women are less likely to answer all questions correctly. These findings underscore sex differences in literacy detected among the young and the older population (Lusardi, Mitchell, and Curto, 2010; Lusardi and Mitchell, 2008a), and in the American Life Panel and TNS surveys (Lusardi and Mitchell, 2009; Lusardi and Tufano, 2009a, b). Table 2 also shows that financial literacy is positively correlated with schooling attainment. The least financially literate are those who lack a high school degree; only about half of such respondents can answer the interest rate question right (and another quarter cannot answer). The prevalence of correct answers to the interest rate question rises with education, while the proportion of both incorrect and "don't know" answers (DKs) falls. A similar pattern characterizes the inflation question: those without a high school degree are more often incorrect or unable to answer. The risk diversification question is clearly more difficult, since only those with at least a college degree can answer accurately; even here, however, about one-fifth cannot supply an answer. Conversely, half of those lacking a high school degree indicate they cannot answer the diversification question. And scores also differ by employment status, as indicated in Table 2: those not employed do much worse on the three questions than do workers or the self-employed (and differences are statistically significant). Nonworkers are also much more likely to

respond DK, with the proportion as high as 42 percent.[7] It is noteworthy that the retired are much more likely to answer correctly the question about inflation, perhaps because they have experience with it.

Racial/Ethnic Differences in Actual and Self-assessed Financial Literacy. It is also instructive to compare financial literacy differences by racial/ethnic groups, and the National Survey oversampled these groups so as to be able to study them in more detail. Prior research has found quite different patterns of wealth and retirement saving (Lusardi and Mitchell, 2007a; Lusardi and Beeler, 2007; Ariel Investment 2010), which may be in part the result of differential patterns displayed in Table 3 which tallies the results for Whites, African-Americans, Hispanics, Asians, and others, and it shows that both African-American and Hispanic respondents display lower levels of financial knowledge than do White/Asian respondents.

Table 3 here

Specifically, only 56 percent of Hispanics correctly answer the interest rate question, and a sizable fraction (19 percent) does not know the answer. This is a potentially important result in view of the fact that many Hispanics tend to be unbanked and do not hold checking accounts (Hogarth, Anguelov, and Lee, 2004). A similar pattern emerges with regard to the inflation question: Hispanic respondents are least likely to answer correctly (42 percent). African-American respondents also have a low fraction of correct responses to this question (56 percent). As far as knowledge of risk diversification, Hispanic and African-American respondents both have difficulty: only one-third (38 percent) of Hispanics and 42 percent of African-Americans respond correctly, and many cannot answer the question at all. These figures confirm other reports of U.S. racial/ethnic differences in financial literacy (Lusardi and Tufano, 2009a).

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[7] Response patterns between self-employed and wage workers are not significantly different, perhaps because the self-employed group is heterogenous (it does not include only business owners or entrepreneurs; c.f. Hurst and Lusardi, 2004).

To complement the questions measuring actual financial literacy, the National Survey also asks respondents about how they self-assess their own financial knowledge. This is useful to identify if there is any mismatch between perceived versus actual knowledge. To this end, survey respondents are 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?

While we have seen that many respondents actually fare poorly on the three financial concepts questions, results in Table 4 indicate that they *believe* that they do rather well. Around two-fifths (38 percent) award themselves the top knowledge scores (6-7), and only 13 percent give themselves failing marks (1-3). Overall, almost 70 percent of respondents believe they are above-median with regard to financial knowledge, a figure that greatly exceeds what is revealed from our review of actual knowledge.

Table 4 here

We can determine whether sub-groups are aware of their lack of financial knowledge by comparing Tables 2 and 4. The young seem aware of their lack of financial knowledge and give themselves relatively low scores (the lowest score of any age subgroup), but the opposite is true among the older group where actual knowledge is low but self-rated scores are high. As many as 27 percent of older respondents grant themselves the highest self-rated score (7), and on average they score themselves a mark of 5.2, higher than other age subgroups. The extent of the mismatch between actual and self-assessed knowledge may explain why older people often are offered less financially attractive deals than other groups (Agarwal et al., 2009); this also corroborates Lusardi and Tufano (2009a) who show that older persons display the largest gap between actual and self-assessed financial knowledge related to debt.

Patterns for other factors are also of interest. While women are less financially literate than men by actual metrics, they also score themselves more conservatively. The less educated know they are uninformed and grade themselves low; even among the least educated, however, over half (57 percent) score themselves as fairly well-informed (5-7). Looking across racial/ethnic groups, Whites score themselves the highest which correlates with their higher actual knowledge, whereas the relationship is weaker for other racial groups. Interestingly, some 40 percent of Whites bestow on themselves top self-assessment scores (6-7), though earlier we showed that many could not answer simple financial questions. Hispanics and African-Americans give themselves lower scores than Whites, but differences in self-assessed knowledge are narrower than the patterns of correct responses to the three financial literacy questions. Overall, while self-assessments and actual knowledge are positively correlated, the relationship is only loose. Few respondents self-assess themselves as having low financial knowledge, though they may be unable to address basic financial concepts.

Planning for Retirement. Another measure of financial capability we can investigate using the National Survey has to do with whether respondents look ahead and plan for the future. Our particular focus is on retirement planning, so we pose the following question (also asked in the 2004 HRS):

Have you ever tried to figure out how much you need to save for retirement?

This is important since prior research has established that planners also accumulate far more retirement wealth (Lusardi, 1999; Lusardi and Beeler, 2007; Lusardi and Mitchell 2007a, 2007b, 2011).

Unfortunately, and despite the need for self-reliance in retirement saving, the data show that most Americans do not engage in retirement planning (see Table 5). For instance, only about

two-fifths of our respondents (43 percent) say they ever even *tried* to figure out how much they should save for retirement, and this pattern is pervasive across all groups examined. Younger respondents are least likely to plan, perhaps feeling they have a longer time horizon; more worrisome is the fact that only 57 percent of respondents age 50–65 have *attempted* to figure out how much they need to save for retirement (and the proportion is only slightly higher for those who have not yet retired.) While the prevalence of planning does rise with age, there is a sizable share of people near retirement that has never attempted to figure out how much they need. These results underscore findings from the Health and Retirement Study and the Retirement Confidence Survey (Lusardi 1999, 2005, 2009; Lusardi and Mitchell, 2007a; Yakoboski and Dickemper, 1997).

Table 5 here

We also examine whether financial literacy and retirement planning are correlated, because lack of planning may be perhaps due to lack of financial knowledge. Table 5 confirms that retirement planning and financial literacy are, in fact, strongly positively associated in this dataset. For instance, those who get all three financial literacy questions correct are much more likely to have tried to figure out how much they need to save for retirement, and the positive relationship is particularly sharp for those that understand risk diversification. To explore these topics in more detail, in the next section we employ a multivariate model to examine the links between financial literacy and planning.

A Multivariate Model of Planning and Financial Literacy

Previous work has demonstrated that financial literacy is an essential tool for informed consumer choice in a variety of settings. For example, the less financially literate participate less in the stock market (van Rooij et al. 2011); choose mutual funds with higher fees (Hastings and Tejeda-Ashton, 2008); select higher-cost pension managers (Hastings and Mitchell 2010); and amass less retirement wealth (Behrman et al. 2010). There is also evidence that financial literacy affects borrowing behavior; for instance, the less literate are more likely to have costly mortgages (Moore 2003) and more likely to engage in high-cost borrowing (Lusardi and Tufano 2009a). Moreover, people with characteristics linked to low literacy, including low pay and little education, tend not to refinance their mortgages when interest rates are falling (Campbell 2006). There is also research linking financial literacy and retirement planning for a range of population subgroups (Lusardi, 2008, Lusardi and Mitchell 2007a, 2008a, 2009, 2011).

Our new dataset is useful in determining whether this finding is robust and whether it holds true in the aftermath of the unusually severe financial crisis of 2008-09. To do so, we use multivariate regression analysis to relate the determinants of retirement planning to financial literacy, controlling for variables reflective of differences in preferences, lifetime income, and macroeconomic shocks. The sample is restricted to non-retired respondents younger than age 65, to exclude those in the decumulation phase of the lifecycle. We also omit those younger than age 25, to eliminate those in school or not yet working. The list of controls includes age (and age squared to test for a hump-shaped profile), as well as sex, race/ethnicity, and marital status; other controls include income levels, region of residence, and educational attainment. We also add an indicator for the self-employed, as they are very different from the rest of the population both in terms of lifetime income and wealth (Hurst et al. 2010). To proxy for household shocks and liquidity constraints, we add an indicator for having a large and unexpected drop in income

during the past year, for non-working which includes the unemployed, and for the number of children financially dependent on the respondent. Two different measures of financial literacy are used, one an indicator equal to 1 if the respondent answers all three questions correctly (and 0 otherwise), and a second which sums each respondent's number of correct answers to the financial literacy questions (0-3).

Table 6 reports results using OLS regression with our two different financial literacy measures. In both cases, the coefficient on the literacy term is positive and statistically significant. In other words, financial literacy is positively linked to retirement planning, even after accounting for a rather complete set of control variables. In column 1, for instance, those who answer all three questions correctly are almost 10 percentage points more likely to plan for retirement; in column 2, those who answer one more financial literacy questions correctly are four percentage points more likely to be planners. We also note that the effect of financial literacy is smaller than but similar to the effect of having some college or a college degree; furthermore, financial literacy has an independent and statistically significant effect even after controlling for educational attainment. In other words, education alone does not account for the effect of having financial knowledge.[8] We also call attention to an interesting effect resulting from the financial crisis. Those who suffered a large decrease in income are more likely to plan for retirement afterwards, suggesting that negative shocks of the last few years have motivated people to think more about the future.[9] Other factors important to planning include income levels, race/ethnicity, and having many children.

Table 6 here

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[8] This confirms findings in the developing country context reported by Behrman et al. (2010) and Hastings and Mitchell (2010).
[9] A related finding is reported by Lusardi (2005).

These findings are consistent with evidence on subgroups of Americans reported in other studies. For example, among the older Health and Retirement Study population, as well the broader age group in the American Life Panel, we have shown that more financial knowledge increases people's likelihood of planning for retirement (Lusardi and Mitchell, 2008a, 2009, 2011). Inasmuch as the National Survey questions closely track questions used in these other surveys, we believe that the relationship between financial literacy and retirement planning is a robust finding.

In Table 7, we take up the ancillary question of whether financial literacy may itself be endogenous. That is, financial literacy might be the result of choice, so for example some who will plan for retirement may invest in financial education that in turns boosts their financial literacy levels. For this reason, a positive relationship between planning and financial literacy could be contaminated due to reverse causality. Additionally, financial literacy could be measured with error which could yield downward biased estimates. And finally, respondents might be sensitive to how questions are asked, and there is at least the possibility of some amount of guessing (van Rooij et al. 2011 ; Lusardi and Mitchell 2009).

Table 7 here

To address these issues, it is useful to re-estimate the impact of financial literacy on planning controlling for possible causality with an Instrumental Variables (IV) approach.[10] To do so in the U.S. context, we take advantage of the fact that several states mandated high school financial education in the past (mostly for political reasons rather than to stimulate retirement planning; see Bernheim et al., 2001). Accordingly we can estimate a first-stage regression of financial literacy on exposure to the mandate, to account for exogenous variation in financial literacy. The National Survey asks respondents to indicate the state in which they lived in their

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[10] This approach was first proposed by Bernheim et al. (2001) and later extended by Lusardi and Mitchell (2009).

senior year of high school, which permits us to compute the number of years the mandate was in effect relevant to the respondent. This approach accounts not only for whether a state implemented the mandate, but also for the length of time that mandated benefits were in effect. For example, if a respondent was a high school Senior in 1980 and his home state had implemented a mandate in 1970, the instrument would take the value of 10.[11] We then re-estimate the planning model given the instrumented financial literacy variable.

Results in Table 7 use an enlarged sample to increase the strength of our instrument; specifically we include respondents younger than 25. Because the instrument only predicts one measure of financial literacy (correct number of answers) significantly, we focus mainly on that measure. Our results indicate that the impact of financial literacy on planning is still positive and statistically significant. Moreover, the estimated financial literacy coefficient is larger than the OLS estimate. For this reason, it appears that financial literacy does drive retirement planning, even after accounting for endogeneity and possible error in the financial literacy measures. This finding underscores the importance of enhancing financial literacy for retirement wellbeing, particularly building on prior studies showing evidence of similar causality.

Discussion and Conclusions

Our findings from the National Financial Capability Survey paint a troubling picture of the current state of financial knowledge in the United States. Many respondents lack key knowledge of financial concepts and fail to plan for retirement, even when retirement is close at hand, only 5-10 years off. This is important since being able to develop and implement

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[11] Because the mandate may have been in place a long time before younger respondents went to high school, the sign of this term in the first stage regression could be positive or negative. Table 6 shows the first stage estimates and indicates that the number of years the mandate has been in effects has a negative sign.

retirement plans is key to retirement security: those who do not plan reach retirement with half the wealth of those who do. Perhaps part of the explanation is debt illiteracy*;* people lack knowledge about the workings of credit cards and interest compounding (Lusardi and Tufano 2009a), which might explain why financial illiteracy correlates with lower retirement wealth accumulation. It is also worrisome that the low-paid and less educated persons know less, as they are most vulnerable to bad financial decisions. Indeed financial illiteracy may place great strain on families and personal finance, leading to suboptimal decisions regarding investment, retirement, and spending. Moreover, when people make poor financial decisions, the cost of those decisions may be passed on to others when they rely on social safety nets requiring consequent tax increases.

Clearly the cost of financial illiteracy is a social problem which is likely to devolve not only to the least capable individuals, but to society as a whole. As the President Obama's Advisory Council on Financial Literacy recently stated (PACFL, 2008, np): "While the crisis has many causes, it is undeniable that financial illiteracy is one of the root causes... Sadly, far too many Americans do not have the basic financial skills necessary to develop and maintain a budget, to understand credit, to understand investment vehicles, or to take advantage of our banking system. It is essential to provide basic financial education that allows people to better navigate an economic crisis such as this one." Enhancing financial literacy is critical to successful retirement, particularly among the most financially vulnerable.

Data Appendix

In consultation with the U.S. Department of the Treasury and the President's Advisory Council on Financial Literacy, the FINRA Investor Education Foundation supported a national study of the financial capability of American adults. The overarching research objectives were to benchmark key indicators of financial capability and evaluate how these indicators vary with underlying demographic, behavioral, attitudinal, and financial literacy characteristics.

The National Financial Capability Study consists of three linked surveys:

- **National Survey**: A nationally-projectable telephone survey of 1,488 American adults;

- **State-By-State Survey**: A state-by-state online survey of approximately 28,000 American adults (roughly 500 per state, plus the District of Columbia);

- **Military Survey**: An online survey of 800 military service members and spouses.

The survey instruments were designed by a multi-disciplinary team including Dr. Annamaria Lusardi, the Applied Research & Consulting LLC (ARC), the FINRA Investor Education Foundation, and the Office of Financial Education of the U.S. Treasury Department. Additional input was provided by Craig Copeland of the Employee Benefit Research Institute (EBRI), the American Institute of Certified Public Accountants (AICPA) and Robert Willis of the University of Michigan, among others. The National Survey was administered to respondents between May and July of 2009 on a primary sample of 1,200 respondents constructed to be representative of the general adult U.S. population. To ensure a sufficient number of respondents for the analysis, African-Americans, Hispanics, Asian Americans and adults with less than a high school education were oversampled. The total number of respondents in the sample was 1,488. The results of the State-by-State Survey and the Military Survey were released in December 2010.

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Table 1: Summary Statistics on Three Financial Literacy Questions in the National Financial Capability Survey (%)

A: Interest Question	Full Sample	Age 25-65
>$102	64.9%	67.7%
=$102	11.3%	12.4%
<$102	9.2%	8.1%
DK	13.5%	11.1%
RF	1.0%	0.7%
B: Inflation Question		
More	11.2%	10.7%
Exactly the same	9.0%	8.1%
Less	64.3%	68.4%
DK	14.2%	11.7%
RF	1.4%	1.1%
C: Risk Question		
Correct (false)	51.8%	55.5%
Incorrect (true)	13.3%	12.5%
DK	33.7%	31.0%
RF	1.2%	1.1%
D: Cross-question Consistency		
Interest & Inflation	46.2%	50.9%
All correct	30.2%	35.0%
None correct	12.3%	10.4%
At least 1 DK	42.4%	37.2%
All DK	4.7%	4.0%
# Observations	1488	1042

Note: Distributions of responses to financial literacy questions in full sample and for those aged 25-65. All figures are weighted. DK indicates respondent does not know. RF indicates responded refused to answer.

Table 2: Distribution of Responses to Financial Literacy Questions by Age, Sex, Education, and Employment Status in the National Financial Capability Survey (%)								
	Interest		Inflation		Risk		Overall	
Age	Correct	DK	Correct	DK	Correct	DK	3 Correct	>=1 DK
<35	64.1	14.6	45.8	21	43	38.8	19.4	50.6
36-50	66.5	10.4	71.4	9.9	58.1	29.4	36.8	35.4
51-65	69	11.5	77.6	9.2	60.3	26.9	40.5	32.6
<65	58.2	19	0.4	15.1	46.9	40.3	26.2	51.2
Sex								
Male	71.3	10.3	71	9.8	57.1	25.6	38.3	34.3
Female	58.8	16.6	58	18.4	46.8	41.4	22.5	50
Education								
<HS	51.3	25.1	46.1	29.4	37.8	48.2	12.6	59.6
HS grad	57.5	17.4	57.1	16	36.3	43.2	19.2	53.8
Some College	67.7	10.7	71.8	12.9	54.7	32.3	31.3	40.6
College grad	74.4	6.6	69.6	7	69.9	19.5	44.3	25.8
Post grad	84.2	4.2	83.8	2.6	82.2	11	63.8	14.1
Employment Status								
Self employed	66.8	6.5	68.5	8.8	59.9	25.6	36.8	29.5
Not employed	56.2	19.5	50	20.7	39.3	42.1	15.3	53.9
Working	69.8	10.9	66.8	12	56.7	30.3	36.3	37.9
Retired	62.6	15.9	74.8	14.2	51.3	35.7	30.4	45.5
Note: All figures are weighted. DK indicates respondent does not know. RF indicates responded refused to answer.								

Table 3: Distribution of Responses to Financial Literacy Questions by Race/Ethnicity in the National Financial Capability Survey (%)

	Interest		Inflation		Risk		Overall	
	Correct	DK	Correct	DK	Correct	DK	3 Correct	>=1 DK
White	67.1	12.8	69.5	12.9	55.7	33.7	34.7	41.7
African-American	61.8	11.7	56.3	16.5	42.5	32	20.3	40.4
Hispanic	56.2	19.2	42.4	21	37.9	38.9	13.1	50.7
Asian	68	11.9	69.8	8.7	60	25.9	39.8	33.6
Other*	58.4	13.8	66.7	13.5	46.9	26.4	24.7	42.2

Note: All figures are weighted. DK indicates respondent does not know. RF indicates responded refused to answer..
*N=49.

Table 4: Distribution of Responses to Self-Reported Financial Literacy Questions by Age, Sex, Education, Employment Status, and Race/Ethnicity in the National Financial Capability Survey (%)						
	Number Correct					
	1-3	*4*	*5*	*6*	*7*	*Average*
Full Sample	13.5	16.2	32.3	20.2	17.5	5
Age						
25-65	12.4	15.1	34.1	22	16	5
<=35	17	18.1	34.6	16.8	13.2	4.8
36-50	11.7	18.5	34.1	22	13.7	5
51-65	11.4	12.8	29	24.8	21.2	5.2
>65	12.5	13.4	28.8	17.7	27.1	5.2
Sex						
Male	12.6	16.9	31.9	21	17.4	5
Female	14.3	15.6	32.5	19.5	17.5	5
Education						
<HS	23	18.8	31	10.4	15.8	4.5
HS grad	17.1	16.3	30	17.9	18.1	4.9
Some College	10.9	18.5	32.8	20.4	17.2	5.1
College grad	6.1	12.1	35.7	28.4	17.7	5.4
Post grad	8.7	12.6	33.8	26.7	18.2	5.3
Employment Status						
Self employed	10.9	11.6	30.9	16.6	30	5.3
Not employed	22.2	18.7	27.7	15.5	15.4	4.6
Working	11.1	17	35.4	22.8	13.5	5
Retired	9.5	13.3	30.4	21.7	24.4	5.3
Race/Ethnicity						
White	12.2	14.8	32.6	22.1	17.9	5.1
African American	18.8	15.7	26.1	18.2	20.1	4.8
Hispanic	16.3	22.1	35.5	13.3	12.8	4.7
Asian	11.6	18.9	32.3	20.3	16	5
Other	13	22.2	29.6	13.5	21.6	5
Note: All figures are weighted.						

Table 5: Financial Literacy of Planners and Non-Planners in the National Financial Capability Survey (%)		
	Planners	Non-Planners
Interest Rate Question		
Correct	73.1	62.2
DK	6.7	15.1
Inflation Question		
Correct	76.1	58.9
DK	5.3	18
Risk Diversification Question		
Correct	68.7	43.7
DK	20.8	40.1
Summary		
Correct: Interest & Inflation	59.7	40.9
Correct: All three	47	23.9
Number Correct Answers	2.2	1.6
Note: Sample consists of 966 non-retired respondents age 25-65.		

Table 6: OLS Estimates of Retirement Planning on Financial Literacy in the National Financial Capability Survey		
Column (1) dependent variable = 1 if correct on all 3 financial literacy questions (0 else)		
Column (2) dependent variable is the total count of correct answers to 3 financial literacy questions.		
	1	2
Financial Literacy Measure		
All three correct	0.091***	
	(0.04)	
Total number correct		0.043**
		(0.02)
Socio-demographic Controls		
Age	0.003	0.003
	(0.01)	(0.01)
Female	-0.009	-0.007
	(0.03)	(0.03)
>=High School	0.07	0.065
	(0.06)	(0.06)
Some college	0.139**	0.130**
	(0.06)	(0.07)
College	0.222***	0.217***
	(0.07)	(0.07)
Post graduate	0.205***	0.203***
	(0.03)	(0.03)
Single	-0.019	-0.024
	(0.04)	(0.05)
Separated	0.02	0.02
	(0.05)	(0.05)
Widow	0.241**	0.236**
	(0.10)	(0.10)
Income, 2nd quartile	0.099**	0.096**
	(0.05)	(0.05)
Income, 3rd quartile	0.300***	0.295***
	($0.06)	($0.06)
Income, 4th quartile	0.373***	0.370***
	(0.06)	(0.06)
Self-employed	-0.085*	-0.083*
	(0.05)	(0.05)
Not working	-0.058	-0.057
	(0.04)	(0.04)
Had income shock	0.101***	0.096***
	(0.03)	(0.03)
Constant	-0.034	-0.059
	(0.27)	(0.27)
R-squared	0.227	0.226
Note: Robust standard errors in parentheses; ***p<0.01; **p<0.05; *p<0.1		
Other controls include number of children, age squared, region of residence, and homeowner. Sample consists of 966 non-retired respondents age 25-65.		

Table 7: OLS versus IV Estimates of Financial Literacy Impact in the National Financial Capability Survey

Columns (1 and 3) dependent variable = 1 if planner (0 else); Column (2) dependent variable is the total count of correct answers to 3 financial literacy questions.

	OLS Planner	1st stage	IV Planner
Financial Literacy Measure		# correct	
Total number correct	0.051***		0.277**
	(0.02)		(0.14)
Mandate Years		-0.012***	
		(0.00)	
Socio-demographic Controls			
Age	0.001	0.01	-0.004
	(0.01)	(0.02)	(0.01)
Female	-0.004	-0.374***	0.081
	(0.03)	(0.06)	(0.06)
>=High School	0.001	0.115	0
	(0.05)	(0.12)	(0.05)
Some college	0.054	0.529***	-0.039
	(0.06)	(0.12)	(0.08)
College	0.159***	0.588***	0.051
	(0.06)	(0.13)	(0.09)
Post graduate	0.142**	0.856***	-0.026
	(0.07)	(0.14)	(0.13)
Single	-0.037	0.012	-0.04
	(0.04)	(0.08)	(0.05)
Separated	0.019	0.143	0.05
	(0.05)	(0.10)	(0.06)
Widow	0.246**	-0.201	0.297***
	(0.10)	(0.18)	(0.11)
Income, 2nd quartile	0.101**	-0.018	0.103**
	(0.04)	(0.09)	(0.05)
Income, 3rd quartile	0.287***	0.274**	0.223***
	($0.05)	($0.11)	(0.07)
Income, 4th quartile	0.358***	0.316***	0.284***
	(0.05)	(0.11)	(0.08)
Self-employed	-0.041	-0.148*	-0.009
	(0.05)	(0.09)	(0.06)
Not working	-0.060*	-0.139(	-0.031
	(0.03)	(0.07)	(0.04)
Had income shock	0.079***	0.054	0.068**
	(0.03)	(0.06)	(0.03)
Constant	0.049	1.255***	-0.173
	(0.15)	(0.35)	(0.20)
R-squared	0.251	0.252	0.09

Note: Robust standard errors in parentheses; ***p<0.01; **p<0.05; *p<0.1.
Other controls include number of children, age squared, region of residence, and homeowner. Sample consists of 1169 non-retired respondents under the age of 65.