The National Financial Capability Study:

Empirical Findings from the American Life Panel Survey

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I. Introduction

The National Financial Capability Study (NFCS) is an ongoing study first conducted in 2009. It is commissioned and supported by the FINRA Investor Education Foundation, in consultation with the U.S. Department of the Treasury and the President's Advisory Council on Financial Literacy. Its main objectives are the elicitation of key measures of financial capability among American adults, an assessment of how such measures evolve over time and with the business cycle and an evaluation of how they vary with demographic and attitudinal characteristics as well as with the level of financial literacy possessed by individuals.

The NFCS consists of: 1) a telephone survey administered in 2009 to about 1,500 respondents nationwide; 2) three State-by-State surveys conducted online in 2009, 2012 and 2015 among 26,000/28,000 adults; and 3) two online surveys taken in 2009 and 2012 by roughly 1,000 military service members. In 2012, an additional online survey was administered to a nationally representative sample of 2,000 Americans selected within the RAND American Life Panel (ALP). A major advantage of fielding the NFCS survey in the ALP was represented by the possibility of linking indicators of financial capability, as elicited by the NFCS questionnaire, to a rich set of socio-economic variables readily available for ALP members. These include, but are not limited to, detailed household wealth and income information, physical and emotional health markers, as well as scores on standard cognitive tests. The availability of such measures allows to more comprehensively document heterogeneity in financial capability across individuals, to more precisely identify which groups exhibit poor financial decision making and to better gauge the adverse economic consequences that their behavior entails.

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This report provides a descriptive analysis of the financial capability of American adults based on a unique data set constructed by merging individual answers to the NFCS questionnaire with and extensive range of socio-economic status variables available, for each respondent, through other ALP surveys.

The report proceeds as follows. Section II briefly illustrates the sample selection and weighting procedures for the ALP-NFCS survey. Section III describes the construction of the data set combining the NFCS and other ALP surveys. Section IV presents and discusses the empirical findings of the study. Section V concludes.

II. Sample Selection and Weighting Procedures

In November 2012, the ALP counted 5,864 active members. Of these, 697 were recruited through a so-called snowball method, by which existing members could suggest friends and acquaintances to join the panel. After excluding the snowball group, respondents who had indicated a preference to receive only surveys translated in Spanish (226), and respondents with missing gender and age (6), 4,941 individuals were available to be selected for the NFCS survey.

The ALP-NFCS survey was scheduled to be fielded in December 2012. The target sample size was set at 2,000 respondents to be reached within the fielding period. Assuming a conservative response rate of 66%, we selected a sample of 3,000 individuals who received the invitation to take the survey. The sample of invitees was selected to be representative of the US population as far as the distributions of race, age and household income were concerned. Specifically, we divided the pool of available respondents in strata defined by the interaction of two race groups (White/Non-White), three age brackets (18-39, 40-59 and 60+) and three household income categories (<$35,000, $35,000-$74,500 and $75,000+). To avoid too small cell sizes, we reduced the number of income categories to two (<$35,000 and $35,000+) for Non-White individuals. Thus, we obtained 15 strata overall, as reported in Table 1 below. We randomly selected 3,000 individuals in each of the aforementioned 15 strata so that the resulting sample proportions would match their population counterparts, which were taken from the Current Population Survey (CPS) Annual Social and Economic Supplement (ASEC) of March 2012.

The NFCS survey was made available to the 3,000 selected invitees on November 28th, 2012. By December 12th, 2012, 2,075 respondents had answered the survey and, having the target sample size been reached, the survey was closed. Table 1 shows the strata composition for the different samples described above.

Table 1: Sample Selection Statistics

	% Proportions				
Strata: Race/Age/Income	*Population*	*ALP pool (N=4,935)*	*Invitees (N=3,000)*	*Respondents (N=2,075)*	*Non-Respondents (N=925)*
White/18-39/<$35k	6.37	4.42	6.43	5.93	7.55
Non-White/18-39/<$35k	7.57	11.04	7.60	7.18	8.52
White/40-59/<$35k	5.47	6.95	5.53	5.83	4.85
Non-White/40-59/<$35k	4.58	8.57	4.67	4.39	5.29
White/60+/<$35k	8.10	6.20	8.13	9.49	5.18
Non-White/60+/<$35k	2.94	2.70	3.03	2.75	3.67
White/18-39/$35k-$74,999	7.67	5.17	7.67	7.57	7.98
Non-White/18-39/$35k+	8.79	6.93	8.83	7.23	12.41
White/40-59/$35k-$74,999	7.94	8.35	7.97	8.24	7.34
Non-White/40-59/$35k+	7.12	7.11	7.17	6.70	8.20
White/60+/$35k-$74,999	6.92	8.39	6.97	8.14	4.31
Non-White/60+/$35k+	2.60	2.19	2.70	2.89	2.27
White/18-39/$75k+	8.02	4.42	7.27	6.51	8.95
White/40-59/$75k+	11.19	11.45	11.23	11.42	10.79
White/60+/$75k+	4.74	6.12	4.80	5.73	2.70

As can be seen by comparing the columns "*Population*" and "*Respondents*," the final NFCS sample is relatively well balanced in terms of race, age and income composition. The absolute difference between sample proportions and corresponding population benchmarks is below one for 11 out of 15 strata. The sample slightly over-represents White/middle-age/middle-income and White/older/low-income households. On the other hand, it under-represents young individuals with relatively high income, regardless of race. There is little evidence of large differential non-response rates across strata. Yet, young and middle-age Non-White households were significantly less likely to respond, while older White individuals were much more likely to answer the survey. These patterns are in line with those observed for other ALP surveys and within other internet panels. Minorities and low-income households are notoriously more difficult to engage, despite monetary rewards promised by survey completion. In contrast, older individuals

are more willing to participate and, typically, respond more quickly to the invitation to take an online survey. This is also confirmed by the timing distribution of completed surveys. About 60% respondents answered the NFCS questionnaire within three days from when launching of the survey, and 75% did so after five days. Among respondents age 60 and older, 70% answered the survey within three days, and 82% within five days.

As discussed so far, while the sample of panel members invited to take the NFCS survey was representative of the population along a number of dimensions, the sample of actual respondents exhibited discrepancies (although modest in size) because of differences in response rates across groups[1] and/or other issues possibly related to the fielding time and content of the survey. To ensure representativeness of the final survey sample with respect to the US population, we adopted a raking algorithm to generate post-stratification weights. This procedure involves the comparison of target population relative frequencies and actually achieved sample relative frequencies on a number of socio-demographic variables independently and sequentially. More precisely, at each iteration of the algorithm weights are proportionally adjusted so that the distance between survey and population marginal distributions of each selected socio-demographic variable decreases. The algorithm stops when survey and population distributions are perfectly aligned.

Four interacted socio-demographic variables (two-way marginals) were used to generate sample weights:[2]

- Gender × Race (White, Non-White)
- Gender × Age (18-32, 33-43, 44-54, 55-64, 65+)
- Gender × Education (High school or less, Some college, College or more)
- Household Income (<$30k, $30k-$59,999, $60k-$99,999, $100k+) × Household Composition (Single, Couple, 3 or more members)

with benchmark distributions derived from the CPS-ASEC of March 2012.

[1] Note that even with perfectly equal response probabilities across all selected ALP members, one would expect some variation in realized response rates across groups, purely as a result of chance.

[2] Two-way marginals allow to correct for discrepancies between distributions referring to specific sub-groups that would not be accounted for by one-way marginals alone. For example, discrepancies in the distribution of educational attainment by gender can be corrected by using the interacted variable (gender x education), but not by using gender and education alone. Moreover, since two-way marginals subsume one-way marginals, using the interaction variable (gender x education) also guarantees that the distributions of gender and education for the entire sample are matched to their population counterparts.

The flexibility of the raking algorithm enabled us to consider finer strata classifications than those adopted within the selection procedure and to add gender, education and household composition to the definition of strata. Thus, not only do post-stratification weights correct for the differential non-response rates documented in Table 1, but they also ensure representativeness along other important dimensions that could not be accounted for when selecting the sample (to avoid creating too small strata). The extent to which sample weights correct for misalignment between sample and population distributions of key socio-economic variables is shown in Table 2. Clearly, the distributions of variables not considered in the selection process – namely gender, education and household composition – exhibit a larger correction when post-stratification weights are applied. In what follows, we will use weights when computing sample statistics of variables of interest to make population projections.

Table 2: Unweighted and Weighted Distributions

	Unweighted % Proportions ALP-NFCS Sample	**Weighted/Population % Proportions**	**Unweighted % Proportions Combined Data Set**
Gender			
Male	41.78	48.11	41.80
Female	58.22	51.89	58.20
Race			
White	68.92	66.41	70.03
Non-White	31.08	33.59	29.97
Age			
18-32	21.54	26.84	20.31
33-43	18.55	18.70	18.61
44-54	19.52	20.41	19.69
55-64	22.41	16.32	22.98
65+	17.98	17.73	18.41
Education			
High School or Less	21.88	42.92	21.13
Some College	37.64	28.77	37.58
College or More	40.48	28.31	41.29
Household Income			
<$30k	29.09	29.22	28.56
$30k-$59,999	31.11	28.40	30.83
$60k-$99,999	22.43	22.69	22.65
$100k+	17.37	19.68	17.96
Household Composition			
Single	20.44	14.33	20.47
Couple	35.58	34.03	36.21
3 or More Members	43.97	51.64	43.31

III. The Combined Data Set

The analytical data set used in this study is created by merging the ALP-NFCS survey with a series of economic cognition surveys, measuring cognitive ability of ALP respondents in several domains, and with the first two waves of the ALP Health and Retirement Study (HRS), a data collection effort aiming at administering the full 2008 HRS questionnaire (version K) to all ALP members. Since cognitive test scores and HRS variables are available for the entire ALP pool of respondents, the combined data set has the same sample size as the original ALP-NFCS sample, although item non-response and, therefore, number of missing values across variables may vary.[3] In the last column of Table 2, we report the demographic composition of the most narrowly defined sub-sample of ALP-NFCS respondents for whom all cognitive test scores and HRS health markers are available. In this sub-sample of 1,945 respondents, the distributions of all socio-economic variables used in the weighting procedure mimic very closely those in the full ALP-NFCS sample.

The various surveys combined together were taken by respondents at different points in time, with gaps ranging from a few days to a few years. Extensive cognitive testing of ALP members was conducted between September 2012 and May 2013. In view of this and the NFCS' fielding period, and considering that cognition is unlikely to change over a relatively short time span, measures of cognitive ability can be considered contemporaneous with the NFCS survey. The second wave of the ALP-HRS was completed by 80% of invited panel members between December 2012 and March 2013. Thus, it can be thought of as concurrent with the NFCS survey. Data for the first wave of the ALP-HRS started being collected as early as July 2008. As the ALP expanded, however, new cohorts of respondents were invited to answer the HRS questionnaire in 2011 and 2012. Of those who completed the NFCS survey, 45% took the first ALP-HRS survey between 2008 and 2010, while the remaining 55% did so between 2011 and 2013.[4]

The combined data set contains a unique, in-depth characterization of respondents' cognitive ability obtained by means of computer-adaptive tests administered to ALP members. These include (i) the number series test, where respondents are given a sequence of numbers with a blank

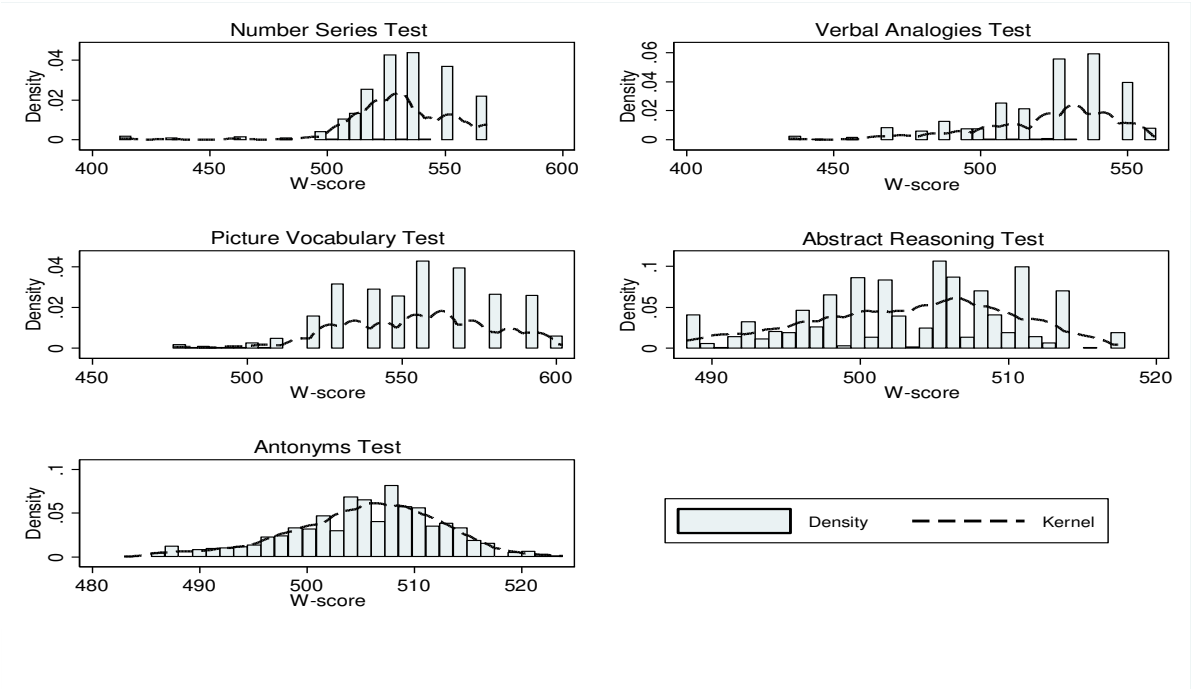
[3] For instance, out of 2,075 ALP-NFCS respondents, 2030 have a non-missing score for the antonyms test and 1,960 have a non-missing score for the number series test; also 2,068 and 2,037 have a non-missing value for self-reported health and total household income as elicited by the HRS questionnaire, respectively.

[4] Since the ALP-HRS study is composed of multiple modules administered as separate surveys, respondents may have answered different sections of the questionnaire at different times (although gaps are limited to a few months). The statistics presented in the text are based on the time of completion of the first section of the HRS questionnaire.

somewhere in the sequence and asked to provide the missing value; (ii) the verbal analogies test, where respondents are shown words that make up an analogy and, based on this relationship, are asked to complete a second analogy where one word is missing; (iii) the picture vocabulary test, where respondents are shown pictures and asked to name the object they see; (iv) the abstract reasoning test, where respondents are asked to solve various problems involving abstract reasoning; and (v) the antonyms test, where respondents are shown a word and asked to type another with the opposite meaning.

Each test provides a W-score (Woodcock, McGrew and Mather, 2001), normed to the population, with higher values indicating greater cognitive ability. The tests are designed to be centered at 500 and have a standard deviation of about 10. About 94% of the NFCS sample have non-missing score for all these five tests. Score distributions for all available cognitive tests are presented in Figure 1. Averages are well above 500 for number series, verbal analogies and picture vocabulary tests and slightly above 500 for abstract reasoning and antonyms tests. This suggests that ALP members have greater-than-average cognitive ability.

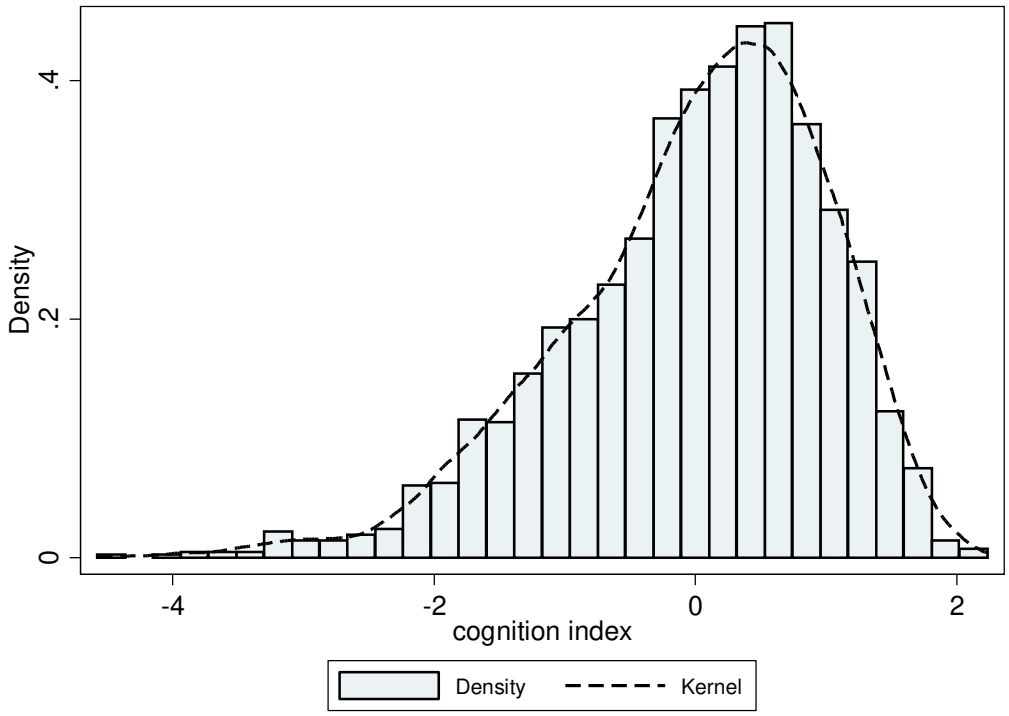
Figure 1: Cognitive Test Scores



At the same time, there exists substantial heterogeneity in scores across ALP respondents, especially for number series, verbal analogies and picture vocabulary tests. Interestingly, there is noticeable variation within education groups. For example, among individuals with high school or less, median score in the number series test is 525 and the interquartile range is 25. Among individuals with a college degree or more, these statistics are 536 and 26, respectively. Similarly, median score in the verbal analogies test is 516 for those with the lowest level of education and 537 for those with the highest. The interquartile range is 40 for the former and 28 for the latter.

To ease exposition, in what follows we will often use a cognition index, which we construct combining all the available test scores via principal component analysis. The sample distribution of this index, which is normalized to take mean zero and variance one, is shown in Figure 2.

Figure 2: Cognition Index Distribution



Besides cognitive ability, the data set used in this study includes a rich set of individual- and household-level variables collected through the HRS questionnaire. In a series of modules, the

HRS questionnaire elicits information about health and health insurance, financial and housing wealth, income, pension, employment, retirement plans and expectations about future events (e.g., chances of leaving a bequest, survival probabilities). Waves 1 and 2 of the ALP-HRS are similarly structured and collect the same information allowing to measure changes in personal and economic circumstances experienced by ALP members. Because of budgetary constraints and technical issues, however, fewer variables were collected in wave 2 than in wave 1. While the complete ALP-HRS longitudinal data set can be obtained from the ALP data page, we limited the number of ALP-HRS variables merged to the NFCS survey to a subset that is more likely to inform and influence financial behavior. This subset includes self-reported health, wealth and income variables, labor force status indicators, retirement plans and subjective expectations. All these variables have been cleaned, processed and renamed following the RAND HRS standards (Chien et al, 2014) in order to convert them in a more user-friendly format.

Information from the ALP-HRS is present for the vast majority of the NFCS sample, although its time of collection may not adequately align with the one of the NFCS survey. For instance, self-reported health and labor force status are available for 99% of the NFCS sample, but, since missing in the second wave of the ALP-HRS, they were reported before 2010 by about 45% of the NFCS respondents. Income and wealth measures, with the exception of housing wealth (self-reported house values and mortgage/loan information are missing in the second wave of the ALP-HRS), are available in both ALP-HRS waves for approximately 55% of the NFCS sample. For these respondents, changes over time in financial circumstances can be computed and analyzed. We create unique ALP-HRS income and wealth variables for the entire NFCS sample using the value reported at the time closest to the fielding period of the NFCS survey.

Summary statistics of selected ALP-HRS health outcomes are presented in Table 3. The NFCS sample exhibits apparent age and income gradients as far as health outcomes are concerned. The fraction of individuals reporting their health to be “fair” or “poor” is around 9% among 18-39 year-olds and close to 18% among respondents over the age of 60. Differences across income brackets are more striking as the fraction of individuals in fair and poor health ranges from 5%, among those with yearly household income above $75,000, to 23% among those with household income below $35,000 a year. The likelihood of being diagnosed with high blood pressure increases sharply with age, while obesity (having a BMI greater or equal than 30) and smoking

rates vary relatively little over the life cycle. Outcomes associated with health risk, such as high BMI values and smoking, are significantly more prevalent at the bottom than at the top end of the income distribution.

Table 4 reports summary statistics of financial variables for the NFCS sample as elicited by the HRS questionnaire. All monetary values are expressed in 2012 $U.S. and statistics are computed using sample weights. Mean (median) individual labor earnings is $49,158 (34,340), while mean (median) household income is 85,455 (45,470). These values are in line with those reported by the U.S. Census Bureau for the year 2012. Household financial wealth, computed as the sum of the values of checking/savings accounts, stocks, bonds, certificates of deposit and Treasury bills, is relatively low and its distribution highly skewed. Specifically, a quarter of the sample have no financial wealth, and three quarters have financial wealth below $20,000. Median financial wealth is only $1,000, while the mean is slightly above $85,000. Taking into account the value of IRAs, mean financial wealth is around $150,000, while the median is $3,000.

Table 3: Health Outcomes of Survey Respondent (weighted sample proportions)

	All	**Age**			**Income**		
		18-39	*40-59*	*60+*	*<$35k*	*$35k-$75k*	*$75k+*
Self-Reported Overall Health							
Excellent	12%	16%	10%	10%	10%	11%	17%
Very Good	41%	40%	42%	40%	31%	43%	50%
Good	34%	35%	34%	32%	36%	37%	28%
Fair	10%	8%	11%	13%	17%	7%	5%
Poor	3%	1%	4%	5%	6%	2%	0%
High Blood Pressure							
	32%	14%	33%	61%	38%	32%	26%
BMI $\geq$ 30							
	35%	32%	36%	37%	42%	36%	26%
Smoking							
	17%	18%	18%	13%	24%	15%	9%

The proportion of homeowners in the NFCS is 60% and 65% of them have a mortgage on their primary residence. Mean and median self-reported home values are $219,683 and $155,000, respectively. They are in line with nationwide figures for 2012 according to which the existing home median price was about $180,000. The ratio of median mortgage to median home value is highest (54%) among households age 50-59 and lowest (close to 0%) among households over the age of 60. Approximately, 50% of the sample have some form of non-housing debt. The average (median) sample household owes $9,000 ($0) in non-housing debt, while, conditional on having some debt, the average (median) sample household owes $20,000 ($10,000). The distribution of total household net worth is highly skewed, with a mean slightly below $350,000 and a median of $40,000. The latter figure falls short of the median net worth of $66,000 provided by the Federal Reserve Board for 2012. Several factors may contribute to this discrepancy.

Table 4: Income and Wealth of Survey Respondent (weighted statistics)

	Mean	25th pctile	Median	75th pctile
Individual Labor Earnings	49,158	13,000	34,340	60,000
Household Income	85,455	17,600	45,470	92,667
Household Financial Wealth (no IRA)	85,798	0	1,000	17,000
Household Financial Wealth (with IRA)	149,238	0	3,000	66,660
Home Value	219,683	90,000	155,000	275,000
Mortgage Value	79,543	0	42,000	125,000
Household Debt (non-housing)	8,928	0	0	8,080
Household Total Net Worth	346,939	0	40,000	237,400

Household financial wealth is computed as the sum of the value of checking/savings accounts, stocks, bonds certificates of deposit, and Treasury bills, excluding or including the value of IRAs. Household total net worth is the sum of household financial wealth, net value of primary home and other real estate, net value of business, net value of vehicles minus household (non-housing) debt. Monetary values are expressed in 2012 $U.S.

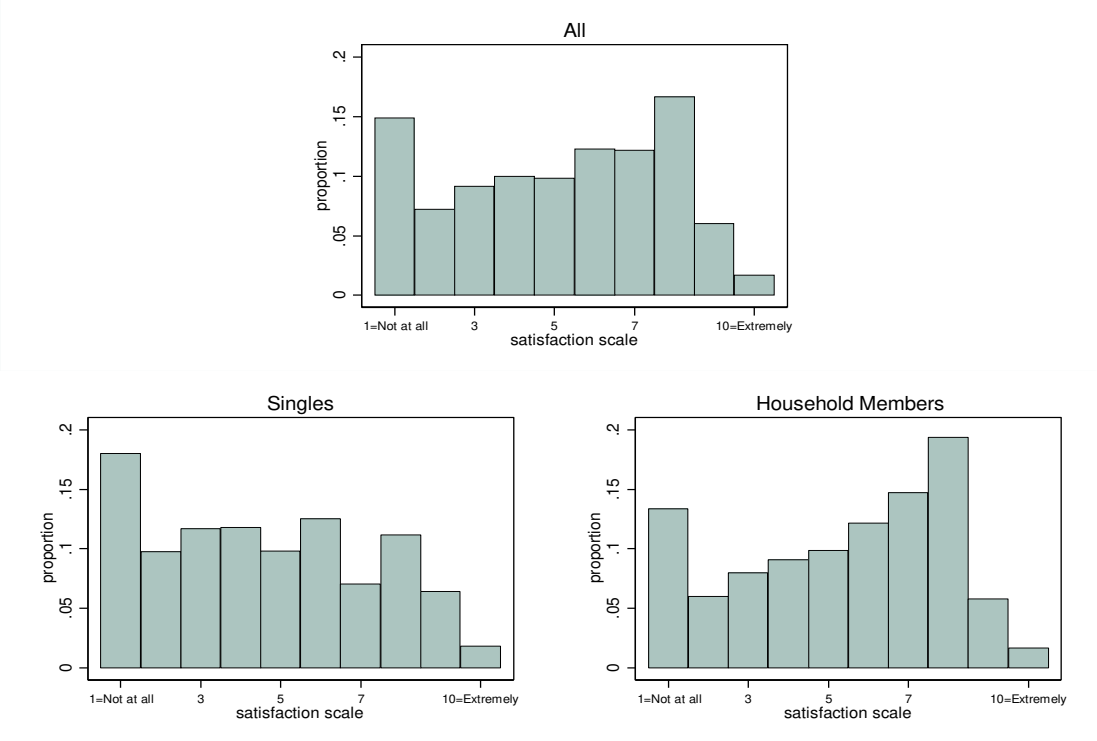
First, the Federal Reserve Board figure is based on data from the Survey of Consumer Finances which disproportionately includes wealthy families. Second, about half of the NFCS sample answered the ALP-HRS questionnaire between 2008 and 2009 and, therefore, reported their wealth in the midst of the Great Recession, when assets were depreciating or had not yet recovered their lost value. Third, conducting a long and complex survey like the HRS over the

internet comes with pros and cons. On the one hand, respondents can take the survey at their own pace and are less subject to social desirability bias than with interviewer-administered modes. On the other, respondents' reticence to provide information on sensitive topics, like household wealth, may be exacerbated by the absence of an interviewer and the resulting pressure to provide "more truthful" answers. Systematic underreporting may also be related to respondents learning the questionnaire's structure and skipping questions to reduce survey time (e.g., declaring no ownership of checking accounts implies no question about the value of checking accounts).

IV. Empirical Findings

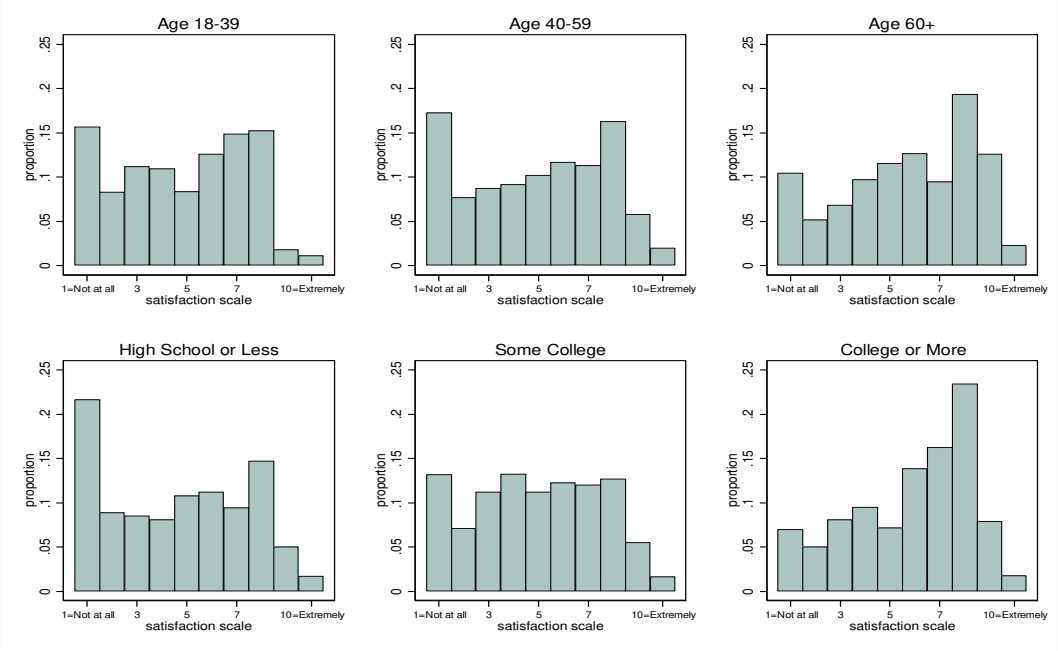
We gauge individuals' financial capability focusing on four main areas: (a) making ends meet; (b) planning ahead; (c) managing financial products and debt; and (d) financial literacy. Exploiting the richness of information at our disposal, the empirical analysis in this section offers a complete assessment of the financial capability of American adults, spanning several dimensions, and a comprehensive examination of its heterogeneity across different segments of the population.

Figure 3: Satisfaction with Personal Finances (weighted proportions)



We begin with an overall picture of Americans' satisfaction with their personal finances. The NFCS questionnaire asks respondents to rate their level of satisfaction with their personal finances using a 1-10 scale, where 1 corresponds to "not at all satisfied" and 10 to "extremely satisfied." Figure 3 shows that 15% of the sample are not at all satisfied with their financial circumstances and about 40% report levels of satisfaction below the scale's mid-point. There are noticeable differences between singles and individuals belonging to a household. The former are significantly less satisfied with their personal finances as only 38% report values above 5 versus 54% of household members.

Figure 4: Satisfaction with Personal Finances by Age and Education (weighted proportions)

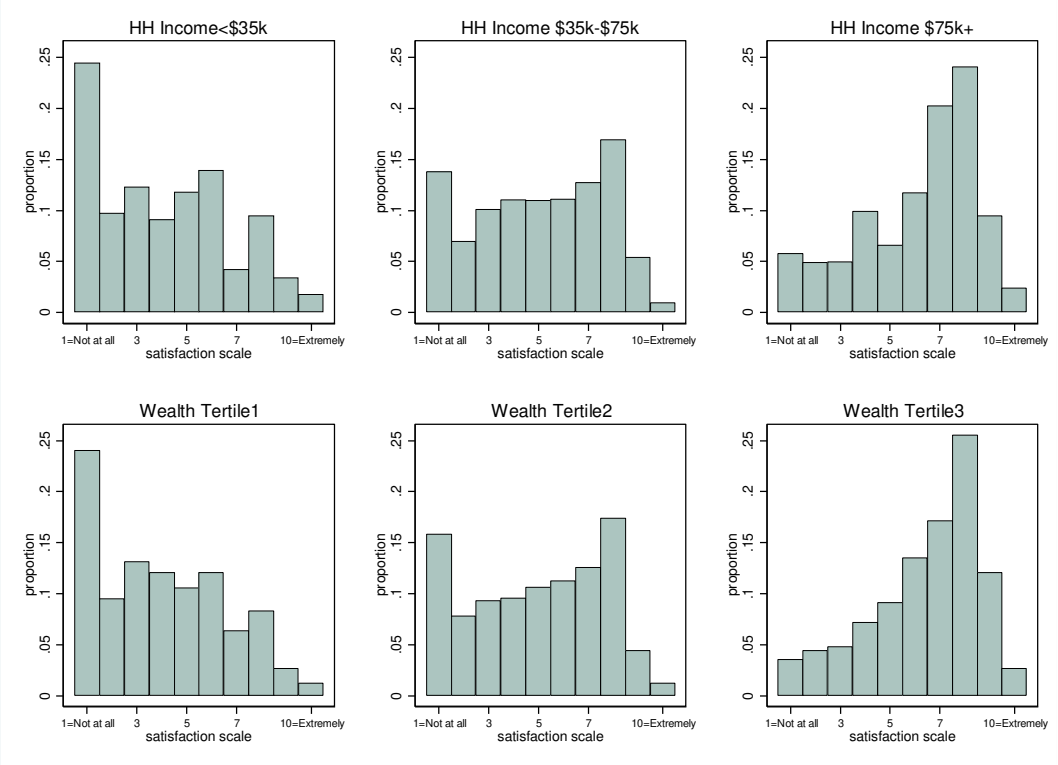


Figures 4 and 5 document substantial heterogeneity across socioeconomic status (SES) groups. Satisfaction with personal finances tends to increase with age. Young and middle-age individuals are about 10 percentage points more likely than individuals over the age of 60 to report very low values of satisfaction (values of 1 or 2). Only 3% of young adults are very satisfied with

their personal finances (values of 9 or 10). This percentage increases to 8% among middle-age individuals and to 15% among those age 60 and older. The fraction of individuals with high school or less revealing very low levels of satisfaction is 30%, versus 20% and 10% among those with some college and college education, respectively. The fraction reporting values above the scale's mid-point is 43% within the first two education groups and 64% within college graduates.

The distribution of self-reported satisfaction with financial circumstances shifts markedly to the right as the levels of household income and wealth increase. Specifically, median satisfaction is 4 among individuals with income below $35,000 per year or in the bottom wealth tertile. In contrast, median satisfaction is 7 for those in the highest income bracket (above $75,000 per year) and in the top wealth tertile. The distributions of reported satisfaction levels appear more skewed within wealth tertiles than within income brackets.

Figure 5: Satisfaction with Personal Finances by Income and Wealth (weighted proportions)



IVa. Making ends meet

A critical component of financial capability is making ends meet. This can be measured by households' difficulty in keeping up with monthly expenses and by the frequency with and the extent to which outlays exceed disposable income. Table 5 presents the proportions of households that find it difficult to cover expenses and spend all or more of their regular income. These proportions are computed using sample weights to ensure population representativeness.

The data indicate clear evidence of financial strain among American adults. The fraction of households that struggle paying their bills is 54%, and 12% find it very difficult to do so. About two-thirds of the sample do not save any money and one-quarter report spending systematically more than their income. Difficulty to make ends meet is somewhat lower among individuals over the age of 60 than among their younger counterparts. This is in line with their relatively higher levels of satisfaction with personal finances shown in Figure 4. Having less incentives to save, older individuals are significantly more likely to spend all their income than middle-age and younger individuals. On the other hand, they are less prone to spend more than what they regularly have at their disposal. Overall, the fraction of active savers is well below 40% across all age groups.

Table 5: Difficulty Making Ends Meet (weighted proportions)

	All	**Age**			**Education**			**Income**		
		18-39	*40-59*	*60+*	*≤HS*	*SC*	*≥C*	*<$35k*	*$35k-$75k*	*$75k+*
Difficult covering expenses	54%	57%	59%	44%	66%	52%	39%	74%	55%	33%
Spend all income	38%	33%	38%	46%	41%	41%	31%	43%	41%	31%
Spend more than income	25%	28%	26%	20%	30%	23%	20%	34%	25%	16%
Loan from RA	10%	10%	11%	7%	12%	13%	6%	7%	11%	9%
Hardship withdrawal from RA	4%	3%	5%	4%	6%	5%	2%	7%	6%	2%
Late with mortgage payment	15%	12%	18%	9%	20%	18%	7%	31%	17%	8%

The SES gradient in the ability to make ends meet is striking and less steep in education than income. Specifically, the fraction of individuals experiencing difficulty covering their expenses is 66%, among those with high school or less, and is reduced to 39% (a 40% reduction) among those with at least a college degree. In the lowest income bracket, 74% face difficulty paying their bills, but only 33% do so in the highest income bracket (a 55% reduction). Saving is notably more common among better-educated and better-off households. Differences along the wealth distribution (not shown in Table 5) echo those observed across income brackets.

Table 6: Difficulty Making Ends Meet by SES and Cognition (weighted proportions)

	Education & Cognition					
	≤HS LowCog (Y)	*≤HS LowCog (N)*	*SC LowCog (Y)*	*SC LowCog (N)*	*≥C LowCog (Y)*	*≥C LowCog (N)*
Difficult covering expenses	74%	58%	57%	50%	55%	36%
Spend more than income	34%	24%	29%	20%	24%	18%
Loan/withdrawal from RA	23%	12%	18%	11%	6%	7%
Late with mortgage payment	27%	17%	21%	17%	20%	5%
	Income & Cognition					
	<$35k LowCog (Y)	*<$35k LowCog (N)*	*$35k-$75k LowCog (Y)*	*$35k-$75k LowCog (N)*	*$75k+ LowCog (Y)*	*$75k+ LowCog (N)*
Difficult covering expenses	80%	66%	58%	54%	45%	29%
Spend more than income	38%	30%	26%	23%	21%	14%
Loan/withdrawal from RA	19%	11%	19%	11%	15%	8%
Late with mortgage payment	35%	27%	23%	16%	17%	6%

Table 6 shows a breakdown by SES and cognition. Specifically, within each education and income category, we identify individuals with low and normal/high cognitive ability. Since ALP members tend to perform better than the average American adult in cognitive tests, we classify individuals as having low cognitive ability if their cognition index is below the first tertile of the sample distribution. The statistics in Table 6 reveal sizeable differences between cognition groups, especially among individuals in the bottom and top ends of the education and income distributions. For example, among respondents with high school or less and college education, those with low cognitive ability are about 20 percentage points more likely to report difficulty covering expenses than the rest. Similarly, within the lowest and highest income brackets, respondents with low cognition are 16 percentage points more likely to face difficulty covering expenses than those with normal/high cognition. Low cognitive ability is also associated with a higher tendency to spend more than disposable income, especially among high SES households.

Returning to Table 5, approximately 65% have a retirement account (RA), such as an employer provided 401(k) or a Thrift Savings Plan, or a private plan, like an IRA, Keogh or Simplified Employee Pension plan. Of these, 10% have taken a loan against their RA and 4% have made a hardship withdrawal. The likelihood of borrowing against a RA is highest for middle-age and middle-income households. The probability of a hardship withdrawal is twice as high for those who report being in poor health (9%) rather than in good health (4%). It is also relatively high among those with a BMI greater than 30 (8%), as obesity might be a good predictor of severe health issues and, consequently, of large out-of-pocket medical expenses. As shown in Table 6, within most SES groups, the likelihood of taking a loan against or making a hardship withdrawal from a retirement account is significantly larger for individuals with low cognitive ability.

The proportion of homeowners with a mortgage who have been late with their mortgage payments in the past 2 years is 15% and two-thirds of them have been late more than once. While differences are modest across ages, they are very marked across SES groups. On average, individuals with the lowest level of education and in the lowest income bracket are three times more likely to be late with their mortgage payment than those with at least a college degree and household income over $75,000 per year. Conditional on educational attainment or income level, individuals with low cognition are from 5 to 15 percentage points more likely to be late with mortgage payments (Table 6). Only 2% of the NFCS sample have been through a foreclosure

process in the past 2 years. Prevalence of foreclosure is relatively higher at the bottom end (3%) than at the top end (1%) of the income distribution.

Signs of financial strain have been more often observed among minorities, who are more likely to exhibit lower levels of education and income. Consistently with previous studies (Lusardi, 2011), the probability of facing difficulty covering expenses is above average for both African-Americans (67%) and Hispanics (65%). These households also manifest low tendency to save as about 36% of the minority sample report spending all their regular income and 35% spending above their available resources. Within the groups of African-Americans and Hispanics, there is little evidence of differential ability in making ends meet between those with low and normal/high cognitive ability (among racial/ethnic minorities, the fraction of low-cognition respondents is disproportionately higher, though). While minorities are significantly less likely than Whites to own a retirement plan (43% versus 69%, on average), they tap into their long-term savings more frequently. Indeed, 22% African-American and 20% Hispanic households have borrowed against their RA in the past 12 months. Mirroring their (in)ability to make ends meet, minorities reveal dissatisfaction with their personal finances. More precisely, 26% and 21% of African-American and Hispanic respondents report being not at all satisfied with their personal finances, respectively. These proportions are double those observed among White households.

IVb. Planning ahead

Financial planning is critical to secure economic wellbeing over the life cycle. Recent trends have made this task more compelling and challenging for current generations. Life expectancy has increased substantially and, with it, the need for large savings to finance consumption over a longer horizon and guard against medical expenses at older ages. The progressive shift towards defined-contribution pensions has put more investment responsibility onto households. The cost of higher education has been consistently rising in the past few decades, forcing college graduates deeper into debt. In this scenario, understanding the extent to which individuals are able to set long and short-term financial goals and stay on track to meet them is crucial to design policies that can help them to make better decisions and achieve financial security.

Emergency Savings

As noted above, a large proportion of Americans tend to live from paycheck to paycheck with very little or nothing left for savings. While the absence of savings may seem inconsequential in everyday life, it is a leading indicator of poor financial planning and often cause of great distress when unexpected expenses arise. The NFCS questionnaire asks respondents whether they have set aside a "rainy day" fund that could cover expenses for three months in case of job sickness, job loss or other adverse circumstances. As can be seen from Table 7, only 41% answer affirmatively. Even more concerning is the fact that only 44% report being absolutely certain they could come up with $2,000 if an unexpected need arose. Thus, the vast majority of American households are not buffered at all against economic shocks. Even among high SES households, less than 40% would be able to draw on a buffer stock of financial resources.

Table 7: Planning Ahead – Emergency Savings (weighted proportions)

	All	**Age**			**Education**			**Income**		
		18-39	*40-59*	*60+*	*≤HS*	*SC*	*≥C*	*<$35k*	*$35k-$75k*	*$75k+*
Have a rainy day fund	41%	31%	41%	56%	32%	38%	57%	23%	43%	59%
Certain to come up with $2,000	44%	32%	47%	57%	32%	38%	66%	21%	44%	67%

This picture becomes more worrisome if we combine information on emergency savings with measures of vulnerability to economic shocks. About one-quarter of the sample report having experienced a large, unexpected drop in income in the previous 12 months. This fraction is highest – ranging from 27% to 32% – among young and middle-age individuals, non-college graduates and households with less than $75,000 income. As is apparent from Table 7, these are precisely the groups less prepared to weather this type of shock. Nonetheless, some of these households may have depleted their buffer stock savings because of the unexpected income loss. Exploiting the linkage between the NFCS survey and the ALP-HRS, we can actually assess the extent to which this second instance may be relevant. In fact, we can restrict attention to NFCS respondents who answered the first wave of the ALP-HRS between November 2010 and November 2011 and,

therefore, reported the value of their financial assets before experiencing the unexpected drop in income mentioned by the NFCS question and potentially responsible for asset depletion. If we do so, we observe that the median (mean) value of checking and savings accounts reported by NFCS respondents between November 2010 and November 2011 is 0 (about $7,000) among young and middle-age individuals, non-college graduates, and households with income less than $75,000. In contrast, the median (mean) is approximately $2,500 ($15,000) among respondents age 60 and older, those with college education and income above $75,000 per year. When we consider the value of all financial assets outside retirement plans, including checking/savings accounts, stocks, bonds, certificates of deposit and Treasury bills, the median (mean) value among young and middle-age individuals, non-college graduates, and households with income less than $75,000 is 0 (about $15,000) and gaps with their older and higher SES counterparts are significantly wider. These statistics confirm that the groups who face a higher risk of unexpected income loss tend to be also less prepared to absorb this type of shocks. Overall, NFCS respondents who suffered an unexpected drop in income between November 2011 and November 2012 reported median (mean) financial wealth equal to 0 ($9,000) over the period November 2010-November 2011. In other words, they had little or no resources at all to cushion the experienced income loss.

Table 8: Planning Ahead – Emergency Savings by Health and Health Insurance
(weighted proportions)

	Self-Reported Health Status		**Risk of Health Shock**		**Health Insurance**	
	Good, Very Good or Excellent	*Fair or Poor*	*Low*	*High*	*Insured*	*Not Insured*
Have a rainy day fund	44%	21%	49%	36%	46%	18%
Certain to come up with $2,000	47%	22%	51%	39%	49%	18%

An important source of financial strain for households is represented by out-of-pocket medical expenses, either related to preventive care or to treatment following a health shock. The likelihood of incurring large out-of-pocket medical expenses depends on an individual's health as well as on his/her health insurance status. In Table 8, we present the weighted proportions of households with emergency savings by health status and availability of health insurance. We

consider overall health status as elicited by the HRS questionnaire and separate individuals into those who report their health to be "good," "very good" or "excellent" and those who report their health to be "fair" or "poor." We also construct an indicator for high risk of facing health shocks, taking value 1 if the individual smokes, or has a BMI greater than 30 or has been diagnosed with high blood pressure. Finally, we stratify by ownership of health insurance as reported in the NFCS survey.

Respondents in worse health and facing a higher risk of health shocks, which should increase the chances of incurring medical costs, are half as likely as their healthier counterparts to have set aside money for emergencies. Given that low-educated and low-income households tend to be in worse health (see Table 3), this confirms that low SES households are more vulnerable to, yet less prepared to deal with economic shocks.

The proportion of sample respondents covered by health insurance is 83%. The fraction of insured individuals is 76%, among those with high school or less, and 93% among those with at least college education. The income gradient is steeper, though, as only 67% of individuals with income less than $35,000 are insured versus 97% of those with income above $75,000. The likelihood of having an emergency fund and being able to pay for an unexpected expense is substantially lower among individuals without health insurance, reinforcing the vicious circle from shock vulnerability to lack of preparedness experienced by low SES households. The proportion of households without a rainy day fund and without health insurance coverage is 14%, but is as high as 21% in the lowest education group and 28% in the lowest income bracket. These statistics and those reported in Table 8 are qualitatively unaffected if Medicare eligible respondents are excluded from the sample.

Retirement Planning

An important aspect of planning ahead is to set medium- and long-term financial goals in order to prepare for future, predictable events. One that concerns most people is retirement and, in the current pension landscape, achieving financial security in retirement requires commitment and careful planning. The NFCS asks respondents whether they have thought about retirement and

tried to figure out their savings needs. The proportions of those who answered affirmatively by age, SES and cognitive ability are reported in Table 9.

The data reveal prominent a lack of planning attitude, as only 40% have ever thought about their saving needs in retirement. This proportion is up to 47%, among middle-age and older workers, and down to 31%, among those age 18-39. While the observed age pattern is not surprising, it shows that young individuals largely miss the benefits of starting early to save for retirement and that half of older workers have not attempted to compute how many resources they need to finance their imminent retirement years. Exploiting the link between the NFCS and the ALP-HRS surveys, we run an additional check. The HRS questionnaire elicits the subjective probabilities of working past age 62 and 65. We take NFCS respondents who reported these probabilities when they were at most 5 years away from the target ages mentioned by the HRS questions and separate them into two groups, according to whether their subjective probabilities of working past the target ages were below or above 50%. We assume that the former group consists of workers who considered it relatively likely to exit the labor force by the target ages. As a result, we would expect them to have put more thought into their retirement savings by the time they answered the NFCS survey (from a few months to a few years later). Indeed, the proportions of planners are 71% and 56% among those who had reported a probability of working past age 62 below and above 50%, respectively. Similarly, they are 66% and 56% among those who had reported a probability of working past age 65 below and above 50%, respectively. Yet, it is striking that about one-third of older workers on the verge of (expected) retirement have not done any retirement planning.

Developing an adequate retirement plan is a complicated and challenging task. It requires taking into account a variety of future, uncertain variables, including earnings, contributions rates, amount of expected Social Security and pension benefits (if applicable), investment returns and tax rules, and using this information to gauge the resources needed to sustain a certain lifestyle in retirement. The cognitive effort inherent in these computations is substantial and might discourage individuals who are not equipped with the necessary skills to successfully perform them. In line with this hypothesis, the statistics in Table 9 reveal a strong association between cognitive ability and propensity to plan for retirement. Within each education group, individuals with low cognitive ability (first tertile of the cognition index distribution) are about 15 percentage points less likely to

plan for retirement. The proportion of planners with poor cognitive skills is about 20 percentage points lower within the middle and the highest income brackets. On the other hand, the gap between individuals with low and normal/high cognitive ability is rather modest at the bottom of the income distribution. This pattern suggests that, while poor cognitive skills represent a big barrier for retirement planning, resource scarcity may be a more difficult hurdle to overcome towards setting mid- and long-term saving goals.

Table 9: Planning for Retirement (weighted proportions)
"*Have you tried to figure out saving needs?*"

All	**Age**			**Education**			**Income**		
	18-39	*40-59*	*60+*	*≤HS*	*SC*	*≥C*	*<$35k*	*$35k-$75k*	*$75k+*
40%	31%	47%	47%	26%	40%	58%	19%	40%	59%
by Education & Cognition									
≤HS LowCog (Y)		*≤HS LowCog (N)*		*SC LowCog (Y)*		*SC LowCog (N)*		*≥C LowCog (Y)*	*≥C LowCog (N)*
21%		36%		30%		46%		44%	61%
by Income & Cognition									
<$35k LowCog (Y)		*<$35k LowCog (N)*		*$35k-$75k LowCog (Y)*		*$35k-$75k LowCog (N)*		*$75k+ LowCog (Y)*	*$75k+ LowCog (N)*
17%		21%		28%		49%		44%	64%

The type of employer-provided pension plan may influence people's attitude towards retirement planning. For instance, compared to those in defined-contribution (DC) plans, workers in defined-benefit (DB) plans may feel less the need for a long-term saving plan as they are guaranteed a predictable and secure lifetime allowance once they retire. The HRS questionnaire elicits detailed information about individuals' job characteristics, including the type of employer-provided pension plan, whether a DB, a DC or a mixed plan (DB and DC). Only 30% of the NFCS survey respondents report the type of pension plan provided by their employer. Among them, 24% have a DB, 60% a DC and 16% a mixed plan. These respondents appear to be a highly selected sample with relatively high SES. They exhibit an above-average propensity towards retirement planning and little differences across pension types. Indeed, the fractions of planners with a DB and a DC are 53% and 57%, respectively.

Lack of retirement planning does not occur because individuals have already accumulated the resources necessary to support them in retirement. In fact, the fraction of those with a retirement account is 85% among planner and only 51% among those who fail to plan. Interestingly, conditional on having a retirement plan, planners and non-planners are equally likely to make regular contributions to the account. Yet, the latter are more likely to borrow against the RA (13% versus 8%). In order to further delve into this issue, we take advantage of ALP-HRS data and compare total financial wealth of workers who do not plan and plan for retirement. This measure includes the value of checking/savings accounts, certificates of deposit, Treasury bills, stocks, bonds, IRAs and other privately owned retirement accounts. It excludes, though, wealth accumulated in employer-provided retirement plans. Table 10 shows striking differences between non-planners and planners in the amount of available financial resources and a gap that widens substantially with age. Among workers over the age of 60 and approaching retirement, median (mean) financial wealth is only $1,500 ($65,000) for individuals who do not plan and $160,000 ($310,000) for planners.

Table 10: Financial Wealth by Propensity to Plan for Retirement (weighted statistics)

	All		**Age 18-39**		**Age 40-59**		**Age 60+**	
	Non-Planners	*Planners*	*Non-Planners*	*Planners*	*Non-Planners*	*Planners*	*Non-Planners*	*Planners*
Median	$250	$24,000	$0	$6,000	$1,000	$64,000	$1,500	$160,000
Mean	$27,000	$151,000	$10,000	$36,000	$42,000	$190,000	$65,000	$310,000

Savings for Higher Education

For those with dependent children, paying for college education is probably the most expensive (yet predictable) event outside of paying for retirement. This is, however, another area where Americans exhibit lack of planning. Overall, only 31% of parents are setting aside money for their children's college education (Table 11). This proportion is above 50% among high-educated and high-income households, but as low as 11% at the bottom end of the income distribution. Individuals may assign different priority to different future events or prefer to save

first for events that are closer at hand. The data reveal that 25% of those who have not planned for retirement are setting aside money for their children's higher education and 43% of those who have a retirement plan, do not have a college fund.

Table 11: Planning Ahead – Children's Education (weighted proportions)
"*Are you setting aside money for your children's college education?*"

All	Age			Education			Income		
	18-39	*40-59*	*60+*	*≤HS*	*SC*	*≥C*	*<$35k*	*$35k-$75k*	*$75k+*
31%	30%	35%	11%	22%	27%	50%	11%	25%	54%

IVc. Managing financial products and debt

The ability to navigate the current financial landscape, understand and choose among a variety of existing, and often complex, financial products is crucial for a better management of personal finances. The issues of inclusion in mainstream financial markets, mitigation of financial risk, asset diversification, reduction of financial services fees, protection against fraud and financial abuse have been at the top of the policymaker's agenda in recent years and concern, although each to a different extent, all segments of the population.

Table 12: Bank Account Ownership by Age, SES and Race/Ethnicity (weighted proportions)

	All	Age			Education			Income		
		18-39	*40-59*	*60+*	*≤HS*	*SC*	*≥C*	*<$35k*	*$35k-$75k*	*$75k+*
Have checking account	91%	85%	93%	99%	84%	94%	99%	79%	96%	99%
Have savings account	75%	70%	77%	78%	63%	76%	90%	51%	81%	93%
Banked	92%	86%	94%	99%	86%	95%	99%	81%	97%	99%

	Whites	African-Americans	Others	Hispanics
Have checking account	95%	70%	86%	85%
Have savings account	79%	58%	59%	61%
Banked	96%	72%	87%	86%

Ownership of Bank Account

The NFCS collects extensive information about how individuals access existing financial products and manage their liquidity. We begin examining the subject of bank account ownership. Table 12 presents the proportions of individuals with basic financial instruments like a checking and a savings account. Households are classified as "banked" if they own either a checking or a savings account. About 9% do not have a checking account and 15% do not have a savings account. This implies that the fraction of unbanked households in the population is 8%. However, there exists great heterogeneity across groups. The unbanked rate is between 15% and 20% among young, low-educated and low-income households. Being unbanked is also disproportionately more prevalent among minorities, with rates ranging from 28%, among African-Americans, to about 15% among other/mixed races and Hispanics. Cognitive ability is strongly associated with ownership of a bank account, especially within low SES groups. For instance, among those with high school or less, unbanked rates are 21% and 8% for individuals with low and normal/high cognitive skills, respectively. Similarly, among those with income less than $35,000, unbanked rates are 29% and 9% for individuals at the bottom and top end of the cognitive score distribution, respectively.

Individuals without a bank account are likely to incur significant monetary costs for everyday transactions. Considering only the transaction fees associated with non-bank payments, such as money orders and check cashing services, it has been estimated that the cost of the unbanked in the United States can run up to 4% of median household income (Caskey, Solo, and Ruiz Duran, 2006). Table 13 shows adoption of "alternative" methods of payment in the population and, separately, for banked and unbanked households. Those without a checking/savings account are significantly more likely to use check cashing services, pre-paid debit cards and money orders. It should be noted, however, that bank account owners are not free of behaviors that generate expenses and fees. In fact, approximately one-quarter of them occasionally overdraw from their checking accounts. This fraction is highest among young and middle-age individuals (27%) and lowest among individuals over the age of 60 (14%). It exhibits modest variation across SES groups, being around 20% among college graduates and individuals with income above $75,000 and around 26% among less-educated and worse-off households.

Table 13: Alternative Methods of Payment (weighted proportions)

	All	Unbanked	Banked
Use check cashing services	7%	48%	5%
Pay using pre-paid debit card	20%	48%	18%
Pay using money orders	22%	54%	19%
Pay using mobile phone	4%	8%	3%

Borrowing and Debt

In order to comprehensively assess Americans' financial capability, it is essential to understand how they borrow money and manage their debt. We have already described that 65% of homeowners have a mortgage and about 15% of them have been late with their mortgage payment at least once in the past 2 years. The most common form of unsecured debt is credit card debt. Three-quarters of American households have a credit card and one-third report having four or more credit cards. At the top end of the SES distribution, these fractions increase to 93% and 50%, respectively.

Table 14: Credit Card Behaviors (weighted proportions)

In the past 12 months…	All	Age			Education			Income		
		18-39	*40-59*	*60+*	*≤HS*	*SC*	*≥C*	*<$35k*	*$35k-$75k*	*$75k+*
Always paid credit card in full	45%	35%	44%	59%	40%	40%	55%	37%	44%	52%
Sometimes carried over a balance and paid interest	53%	61%	56%	39%	52%	60%	48%	52%	56%	50%
Sometimes paid the minimum payment	34%	44%	35%	20%	39%	37%	25%	43%	36%	26%
Sometimes was charged fee for late payment	15%	18%	18%	8%	18%	15%	12%	19%	17%	12%
Sometimes was charged fee for exceeding credit limit	7%	10%	8%	2%	10%	7%	4%	9%	7%	6%
Sometimes used credit card for cash advance	6%	6%	7%	5%	9%	5%	4%	10%	4%	6%

As illustrated in Table 14, less than half of credit card holders have always paid their balance in full in the past 12 months and about 60% have engaged in at least one behavior that results in interest charges or fees. The most common of these activities is carrying unpaid balances from one pay cycle to the next. The prevalence of this behavior decreases significantly with age, while showing only modest variability across education and income groups. More marked age and SES gradients are observed for the proportion of credit card holders who sometimes pay just the minimum payment. Only a minority of households incur fees for exceeding their credit line or ask for cash advance. Fees for late payments are more frequent and do not appear to be distinctive of specific segments of the population. However, further checks reveal that the proportion of those who are occasionally late with their payment is substantially larger at the bottom of the cognitive ability distribution. Similarly, the fraction of those who have used their credit card for cash advance ranges from 12%, among individuals with the lowest cognitive test scores, to 2%, among those with the highest scores.

Table 15: Alternative Forms of Borrowing (weighted proportions)

In the past 5 years have you…	**All**	**Whites**	**African-Americans**	**Hispanics**	**Unbanked**	**Banked**	**Credit Card (N)**	**Credit Card (Y)**
taken out an auto title loan	8%	7%	15%	17%	17%	8%	15%	6%
taken out a payday loan	9%	7%	16%	18%	21%	7%	17%	6%
gotten an advance on tax refunds	5%	4%	7%	11%	20%	4%	10%	3%
used pawn shops	12%	9%	25%	25%	44%	9%	29%	6%
used rent-to-own stores	6%	4%	9%	12%	22%	4%	17%	2%
used one of these methods	23%	19%	42%	40%	61%	20%	46%	16%

Besides credit cards, alternative forms of borrowing are available to Americans, such as auto title and payday loans, advanced cash on tax refunds, use of pawn shops and rent-to-own

stores. These methods usually entail unfavorable conditions for borrowers, including relatively high interest rates. Table 15 presents statistics about their adoption in different segments of the population. Less than one-quarter of Americans have used an alternative form of borrowing in the past 5 years. However, this proportion is around 40% among minorities, 60% among unbanked individuals and 45% among those without a credit card. These results clearly indicate that financial exclusion, defined by lack of a bank account and of formal ways to borrow, translates into higher utilization of alternative borrowing methods. Since financial exclusion is substantially more prevalent among young individuals, low SES groups and racial/ethnic minorities, it is apparent that the most vulnerable segments of the population are also those that disproportionately pay higher costs for the financial services they receive.

To complete the picture of how Americans manage their level of debt, in Table 16 we report statistics for the prevalence of unpaid medical bills and student loans as well as for household concerns about overall debt exposure. Unpaid medical bills are more prevalent among young, low-educated and low-income individuals. The proportions of households with unpaid medical bills are 20% and 41% among those with and without health insurance, respectively. Interestingly, within the highest education and income categories, where unpaid medical bills are less prevalent, cognitive skills seem to play an important role. Specifically, the fraction of college graduates with unpaid medical bills is 25% in the lowest tertile of the cognitive ability distribution and 8% in the top tertile. Within the highest income bracket, 19% of those with low cognition have unpaid medical bills versus 7% of those with high cognition. This suggests that where resource scarcity is not an issue, cognitive skills that help stay in control of money matters may also reduce debt exposure and financial mistakes.

Table 16: Other Debt (weighted proportions)

	All	**Age**			**Education**			**Income**		
		18-39	*40-59*	*60+*	*≤HS*	*SC*	*≥C*	*<$35k*	*$35k-$75k*	*$75k+*
Have unpaid medical bills	23%	28%	27%	12%	31%	24%	13%	31%	27%	11%
Have student loan	21%	37%	16%	5%	9%	25%	34%	16%	23%	24%
Think have too much debt	41%	52%	40%	24%	37%	46%	41%	42%	40%	40%

Student loan debt is becoming an increasingly heavy burden for Americans, especially for young and middle-age households. While 21% of the sample report having a student loan, this fraction approaches 40% among individuals age 18-39 and college graduates. The NFCS questionnaire asks student loan holders whether they are concerned about repaying it. About half of these respondents answer affirmatively. Not surprisingly, the fraction of concerned student loan holders correlate negatively and very strongly with household income. Specifically, it is 75% among those with income less than $35,000, 52% among those with income between $35,000 and $75,000, and 26% among those with income greater than $75,000.

The NFCS elicits individual perceptions about indebtedness. Respondents are asked to use a 7-point scale to state how much they agree (1 indicates strong disagreement and 7 strong agreement) with the statement "*I have too much debt right now*." In Table 16, we compute the proportion of respondents who report values from 5 to 7, therefore manifesting concerns about their debt exposure. A large fraction of Americans (40%) feel they have too much debt. This proportion decreases significantly with age, but is virtually constant across different education and income groups. Among homeowners and mortgage holders, 39% are concerned about their level of debt, but this proportion rises to 45% for those who also have a home equity line of credit. The fraction of individuals who feel they have too much debt reaches its peak at 67% among student loan holders. Not surprisingly, credit card debt plays a major role in people's debt exposure. The likelihood of expressing concerns about indebtedness is 17%, for those who always pay their credit card balance in full, and adds up to 55% for those who carry an unpaid balance from one cycle to the next. Similarly, individuals who have relied on non-bank borrowing in the past 5 years are 20 percentage points more likely to feel they are over-indebted: 55% versus 36% among those who have not used alternative forms of borrowing.

Excluding mortgages and home equity lines of credit, median and mean household debt for those who strongly disagree with the statement "*I have too much debt right now*" are $0 and $3,350; for those who neither agree or disagree they are $0 and $6,250; and for those who strongly agree they are $7,100 and $17,750, respectively. The fraction of sample households who have sought debt counseling is 7%, ranging from 5%, among those who are the least worried about their debt exposure, to 11% among those who perceive they have too much debt.

Financial Asset Holdings

We conclude this section examining financial asset holdings outside of retirement accounts in the form of bonds, stocks, mutual funds and other securities. The fraction of households investing in financial markets is 32%, but there exist large differences across age, education and income groups. Securities are disproportionately held by older, better-educated and better-off households. These statistics are in line with the overall lack of participation in financial markets observed across different segments of the population and especially among low SES groups (Vissing-Jorgensen, 2002; Curcuru et al., 2006).

Table 17: Financial Asset Holdings Outside of RA (weighted proportions)

All	**Age**			**Education**			**Income**		
	18-39	*40-59*	*60+*	*≤HS*	*SC*	*≥C*	*<$35k*	*$35k-$75k*	*$75k+*
32%	23%	34%	41%	22%	27%	49%	12%	32%	50%
by Education & Cognition									
≤HS *Low Cognition (Y)*		*≤HS* *LowCog (N)*		*SC* *LowCog (Y)*		*SC* *LowCog (N)*	*≥C* *LowCog (Y)*		*≥C* *LowCog (N)*
20%		26%		25%		29%	43%		50%
by Income & Cognition									
<$35k *LowCog (Y)*		*<$35k* *LowCog (N)*		*$35k-$75k* *LowCog (Y)*		*$35k-$75k* *LowCog (N)*	*$75k+* *LowCog (Y)*		*$75k+* *LowCog (N)*
9%		18%		28%		34%	52%		49%
by Education & Risk Preference									
≤HS *RiskTaker (N)*		*≤HS* *RiskTaker (Y)*		*SC* *RiskTaker (N)*		*SC* *RiskTaker (Y)*	*≥C* *RiskTaker (N)*		*≥C* *RiskTaker (Y)*
17%		36%		23%		37%	41%		58%
by Income & Risk Preference									
<$35k *RiskTaker (N)*		*<$35k* *RiskTaker (Y)*		*$35k-$75k* *RiskTaker (N)*		*$35k-$75k* *RiskTaker (Y)*	*$75k+* *RiskTaker (N)*		*$75k+* *RiskTaker (Y)*
11%		19%		28%		39%	39%		62%

As shown in Table 17, within each education category, individuals with low cognitive ability are from 4 to 7 percentage points less likely to invest than their better skilled counterparts. The same cognition gradient is observed within the first two income brackets. Among those with income below $35,000, participation in financial markets is twice as large in the two upper tertiles of the cognition distribution (18%) than in the bottom one (9%). On the other hand, those with high income and low cognitive ability are slightly more likely to hold securities than those with normal/high cognition.

Holding stocks and bonds is often seen as an indication of financial sophistication (Campbell, 2006), which could explain why individuals with more education and better cognitive skills tend to participate more in financial markets. These investments, however, also entail some risk and exposure to market volatility. It is therefore important to understand how individuals' attitude toward risk affects portfolio choices. The NFCS elicits individuals' willingness to take risks when making financial investments. Respondents are asked to rate their attitude toward risk using a 10-point scale, where 1 means they are "not at all willing" to take risks and 10 that they are "very willing" to take risks. The data indicate that Americans are reluctant to take financial risks, as 15% rate themselves as 1, 38% rate themselves between 1 and 3, and 65% rate themselves between 1 and 5. We construct an indicator for risk taking that equals 1 if respondents report values above 5 and equals 0 otherwise. In Table 17, we compute the proportion of financial market participants within SES groups by risk attitude. The results reveal a strong correlation between attitude toward risk and holding of securities. Within SES groups, those who are more willing to take risk are systematically more likely – from 8 (in the lowest income bracket) to 23 (in the highest income bracket) percentage points – to have stocks, bonds or mutual funds in their portfolios than their more risk averse counterparts. Conditional on holding securities, the median share of stocks on financial wealth is 65%, among non-risk takers, and 80% among risk takers.

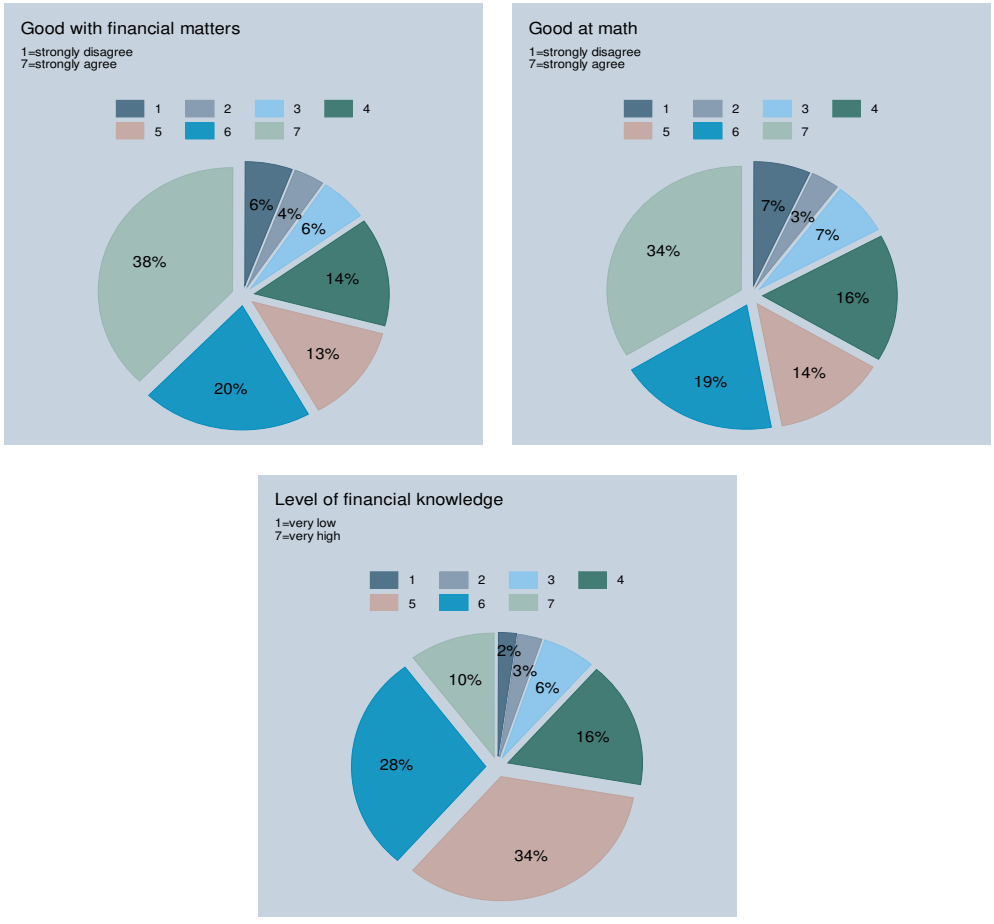
The degree of idiosyncratic risk faced by the household is bound to influence portfolio choices. Other things equal, higher income volatility and higher risk of facing health shocks should discourage households from investing in risky assets (Kimball, 1993; Gollier and Pratt, 1996; Heaton and Lucas, 2000; Edwards, 2008). The combined NFCS/ALP-HRS data set allows us to check this hypothesis. We find evidence supporting it. Specifically, the fraction of workers investing in financial markets is 23%, among those who receive income from a business, and 76%

among those who are paid a salary or wage. Also, when we restrict attention to individuals below the age of 65 who are not eligible for Medicare, we compute that the fraction of stockholders is only 7%, among those who report being in poor health, versus 93% among their healthier counterparts.

IVd. Financial literacy

Educational attainment and cognitive test scores may not accurately proxy for the level of financial knowledge possessed by individuals and/or completely capture the skills necessary to understand and process the information involved in actual financial decision-making situations. The NFCS questionnaire is explicitly designed to elicit both self-perceptions of financial knowledge and a more objective assessment of individuals' financial literacy through a quiz.

Figure 6: Self-Perceptions of Financial Knowledge and Math Skills (weighted proportions)



Respondents are presented the following two statements "*I am good at dealing with day-to-day financial matters, such as checking accounts, credit and debit cards, and tracking expense*" and "*I am pretty good at math*," and asked to rate how much they agree with them using a scale from 1 to 7, where 1 corresponds to strong disagreement and 7 to strong agreement. They are also asked to assess their overall financial knowledge on a 1-7 scale, where 1 indicates a very low level and 7 a very high level. Figure 6 shows that American adults give themselves very high scores in these three domains. About 60% think they are very good with financial matters and at math. As far as the level of financial knowledge is concerned, 72% of the respondents rate themselves above the scale mid-point. Males appear to be more confident than females. Individuals with higher cognitive test scores tend to rate themselves higher when it comes to financial knowledge and math skills. The fraction of respondents feeling that they have a good handle on daily financial matters and a good level of overall financial knowledge (rating 5-7) is 80%, among those who are in charge of the household's finances, and about 53%, among those who are not. The proportions of respondents who perceive their grasp of financial matters and level of financial knowledge to be good (rating 5-7) are 65% and 80%, among those who did not and did receive financial education at school, respectively.

NFCS respondents are administered a brief quiz covering fundamental concepts of economic and finance. The first part of this quiz consists of three multiple choice questions concerning simple calculations of interest in a savings account and inflation, and the relationship between interest rate and bond prices. An additional two true/false questions test individuals' knowledge of the relationship between the length of a mortgage and the overall interest paid over the life of the loan, and the concept of risk diversification.[5]

Only 18% of the sample answer all questions correctly and 31% answer 4 questions correctly. A non-negligible proportion of 6% provide incorrect answers to all questions and 10% answer only one question correctly. The questions about interest in a savings account and the relationship between mortgage maturity and interest over the life of the loan are those with the highest proportion of correct answers (about 80%). Conversely, slightly less than 30% of the sample answer the question about the relationship between interest rate and bond prices correctly.

[5] The ALP-NFCS codebook data set contains the exact wording of these questions.

Table 18: Financial Literacy Questions (weighted proportions)

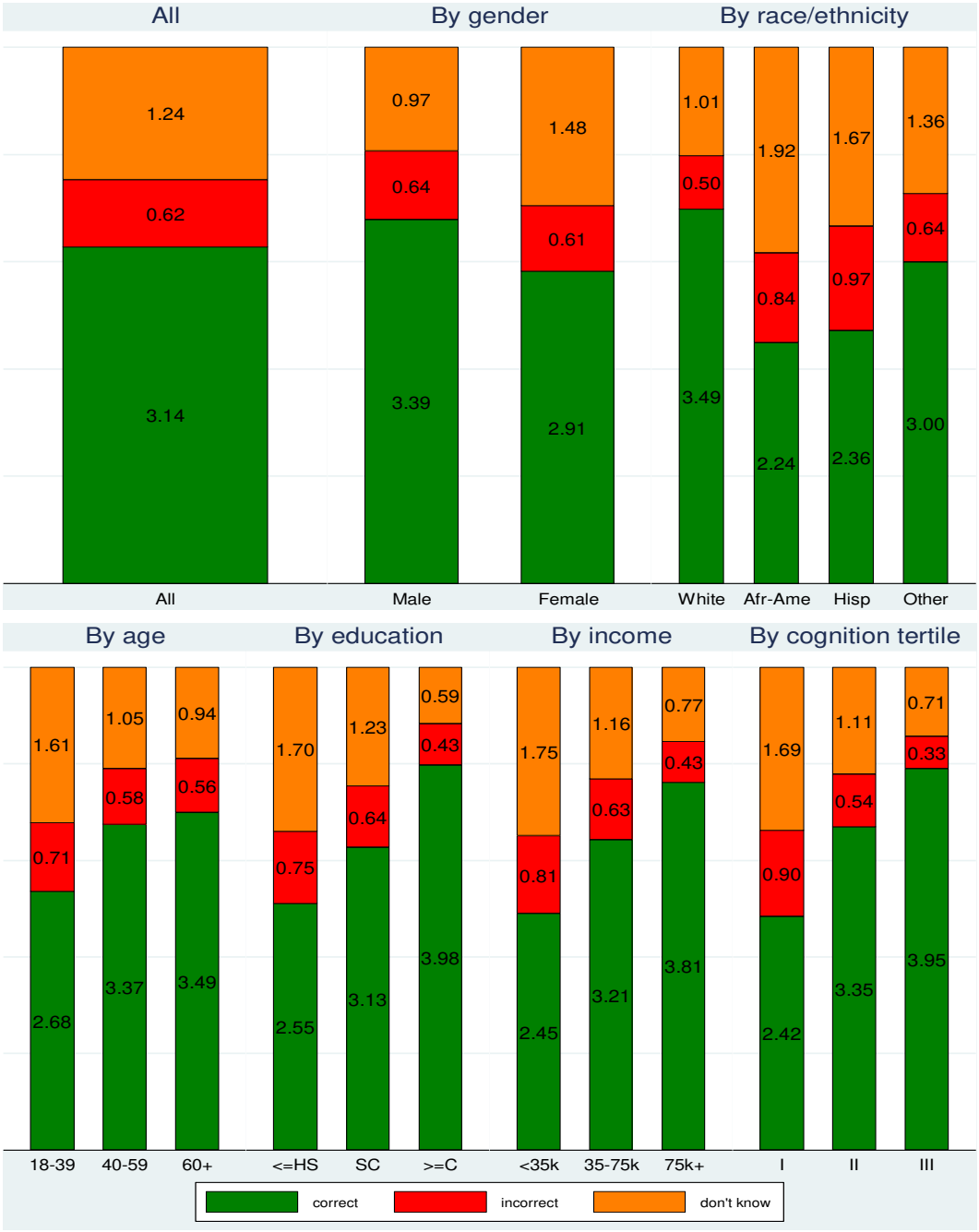
	Correct	**Incorrect**	**Don't know**
Interest rate question	81%	8%	11%
Inflation question	67%	17%	16%
Bond price question	28%	24%	48%
Mortgage question	80%	7%	13%
Risk question	57%	6%	37%

These findings are qualitatively consistent with those documented in other studies (Lusardi and Mitchell, 2009; Lusardi, 2011) and point to lack of financial literacy and poor knowledge of basic economic concepts among American adults. From a quantitative point of view, the proportion of respondents answering the quiz questions correctly in the ALP is systematically higher than in other surveys, although by a modest amount. Observed differences may stem from different interview modes (the HRS and 2009 NFCS National Survey data analyzed by Lusardi and Mitchell (2009) and Lusardi (2011) come from telephone interviews), but may also indicate a higher level of financial literacy among ALP members (who have been often exposed to surveys about financial matters).

Figure 7 reports the performance in the financial literacy quiz, as measured by the average number of correct, incorrect and "don't know" answers across the 6 quiz questions, by gender, race/ethnicity, age, education, income and cognitive ability. It reveals substantial differences in overall financial literacy levels across demographic and SES groups. Males, Whites older and high SES respondents perform significantly better in the quiz. The steeper gradients in financial literacy can be observed along the education, income and cognitive ability distributions.

Performance in the financial literacy quiz is rather consistent with individuals' self-assessment of financial knowledge. As shown in Figure 8, the average number of correct answers rises sharply with the perceived level of financial knowledge stated by respondents. Yet, there is a certain degree of disconnect between perceived and actual financial knowledge.

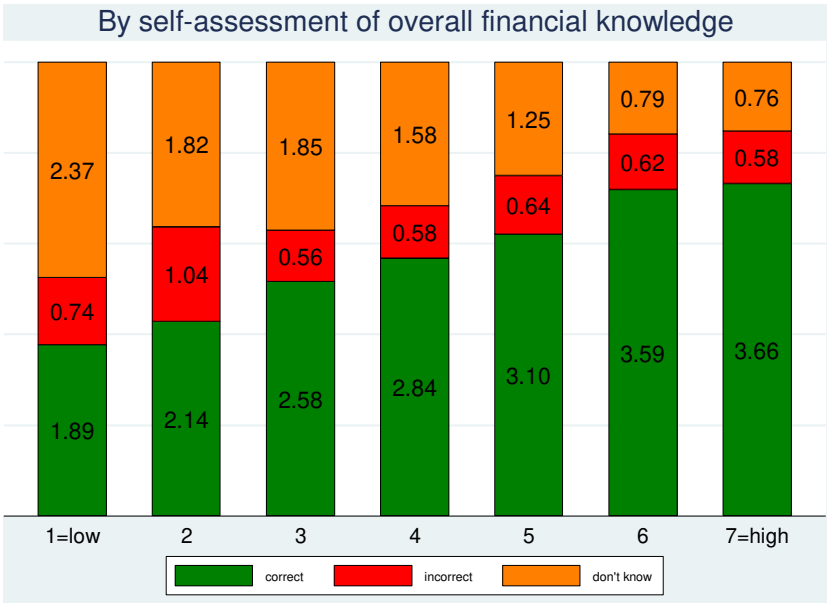
Figure 7: Performance on Financial Literacy Quiz Questions – I (weighted means)



Indeed, even among those who believe they have a good level of financial knowledge (rating 5-7), the fraction of those who answer the interest and mortgage questions (those with the highest proportion of correct answers) correctly is 85%, thus only slightly above average. Similarly, the

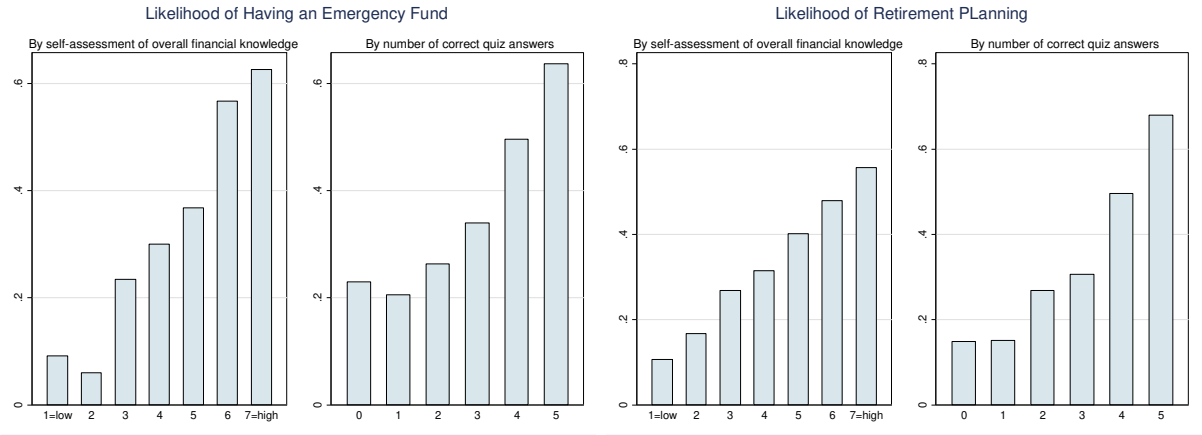
fractions answering the bond price and risk questions (those with the lowest proportion of correct answers) correctly are 32% and 64%, respectively. Again, these values are above average, but only by a modest amount. In general, there is evidence of over-confidence in one's financial knowledge.

Figure 8: Performance on Financial Literacy Quiz Questions - II (weighted means)



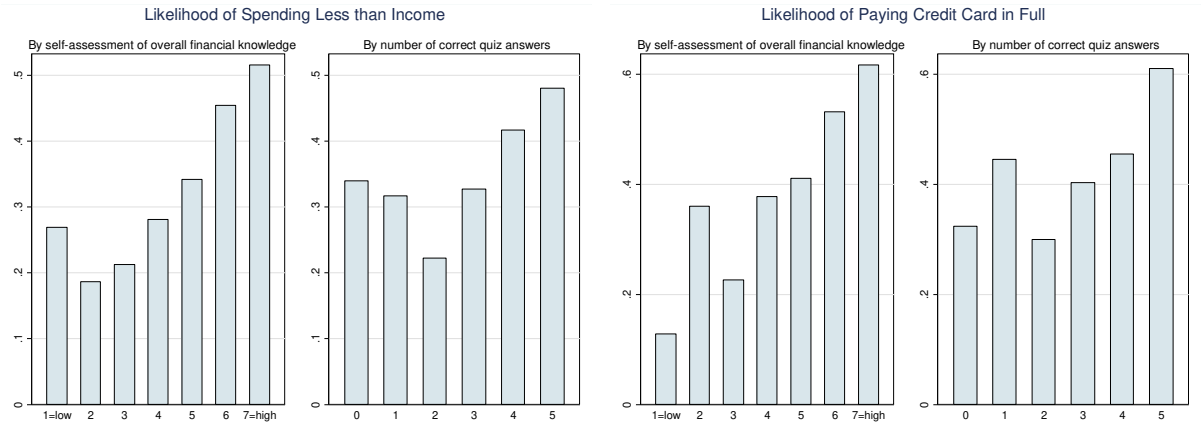
A very important question is whether self-assessed and actual financial knowledge are associated with behaviors that are indicative of financial capability. Figure 9 shows very strong correlations with planning ahead, as measured by the availability of a rainy day fund and the existence of a retirement saving plan. Self-assessed and actual financial knowledge impact behavior in a very similar way. The likelihood of having an emergency fund exhibits a steeper gradient in self-assessed than actual knowledge. The opposite is true for retirement planning. Even among the most skilled individuals, however, the fraction of those who have not put aside money for emergency and thought about resources needed to finance retirement remains large and above one-third.

Figure 9: Planning Ahead by Financial Knowledge (weighted means)



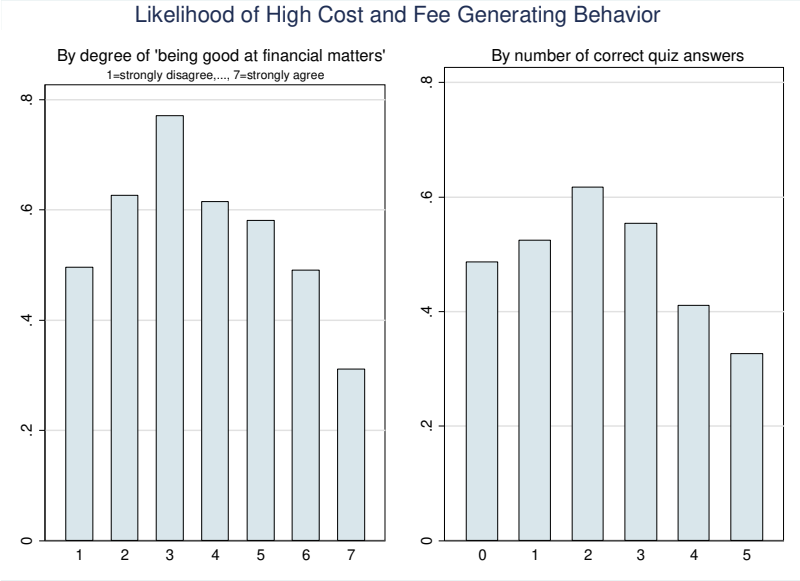
In Figure 10, we look at the extent to which better equipped individuals are more able to spend within their means and avoid carrying credit card balances from one pay cycle to the next. While both self-assessed and actual financial knowledge increase the probabilities of spending less than disposable income and paying credit card in full, gradients are not very steep and the correlation with these behaviors is stronger for self-assessed than for measured financial knowledge. Also for these outcomes, there is a disconnect between knowledge and actual behavior. Among the most skilled respondents, about half regularly spend all or more than their income and about 40% do not pay their credit card balance in full.

Figure 10: Spending and Credit Card Payment by Financial Knowledge (weighted means)



Next, we examine the extent to which perception of a good handle on daily financial matters and measured level of financial literacy correlate with day-to-day actions. We create an indicator taking value 1 if the respondent engages in one of the following high cost and fee-generating behaviors: paying the minimum credit card payment, incurring late payment and over the limit fees, using credit card for cash advances and overdrawing the checking account. We then plot the likelihood of engaging in these behaviors against the perception of "being good at financial matters" and the number of correct financial literacy quiz answers.

Figure 11: High Cost and Fee Generating Behavior by Financial Knowledge (weighted means)



The charts in Figure 11 show a bell-shape pattern in the likelihood of incurring high costs and fees for financial services. The likelihood of incurring high costs and fees for financial services starts to decrease monotonically roughly at the middle of the self-evaluation and quiz score distributions. Even among the 38% of respondents who give themselves the highest score in the ability to handle daily financial matters, more than 30% engage in costly and fee generating behaviors. Similarly, among the 19% of respondents who have a perfect score in the financial literacy quiz, one-third incur high costs and fees related to the (mis)management of credit cards and checking accounts.

We conclude by investigating the extent to which individuals seek information about their credit situation and look for advice to improve their economic situation. While credit scores are a critical determinant of borrowing conditions, only 41% of the sample have checked their credit score in the past year. Since the probability of applying for loans and mortgages is higher at younger ages, individuals age 18-39 are significantly more likely than those age 60 and older to be informed about their credit worthiness. Heterogeneity across SES groups indicates that those who have higher credit scores (better-educated and higher-income households) are also those who seek out information about their credit situation. Among individuals with low education and low income, those with low cognitive ability are from 10 to 15 percentage points less likely to have checked their credit score than those with normal/high cognition. Self-assessed level of financial knowledge is positively correlated with the likelihood of checking the credit score within education and income groups.

Table 19: Checked Credit Score in the Past 12 Months (weighted proportions)

All	**Age**			**Education**			**Income**		
	18-39	*40-59*	*60+*	*≤HS*	*SC*	*≥C*	*<$35k*	*$35k-$75k*	*$75k+*
41%	47%	40%	31%	34%	43%	48%	26%	45%	52%

Seeking professional financial advice is not very common among American adults. In the previous 5 years, 37% have obtained counseling regarding insurance, 33% regarding savings and investments, 26% regarding taking out a mortgage or a loan, 18% regarding taxes, and 7% regarding debt consolidation. In general, the proportions of individuals who ask for advice from a financial professional increase with the level of self-assessed financial knowledge and performance in the financial literacy quiz. In other words, those who seek advice are likely those with more resources at stake and/or those who want to pursue more sophisticated investment and asset allocation strategies. The only domain where the least-skilled are slightly more likely to seek advice is debt counseling (9% among those with low financial knowledge versus 6% among those with high financial knowledge).

V. Conclusions

This report provides a comprehensive picture of Americans' financial capability using a unique data set that combines the National Financial Capability Study (NFCS) and the Health and Retirement Study (HRS) surveys as well as the scores of a series of cognitive tests administered to a nationally representative sample in the American Life Panel (ALP). By linking detailed household wealth and income information, physical and emotional health markers, and measures of cognitive abilities to the NFCS questionnaire answers, we are able to delve deeper into the mechanisms and circumstances underlying observed financial behaviors and document heterogeneity in financial capability across finely defined segments of the population.

The overall assessment of Americans' financial capability emerging from our empirical investigation is somewhat discouraging. We observe clear evidence of financial strain, with 54% of households struggling to make ends meet, and 12% finding it very difficult to do so. A large proportion of Americans tend to live from paycheck to paycheck with very little or nothing left for savings. Even among high SES households, less than 40% would be able to draw on a buffer stock of financial resources in case of an unexpected economic shock and only 50% have a saving plan for retirement. Less than half of credit card holders regularly pay their balance in full and about 40% of the respondents feel they have too much debt. Financial capability varies greatly with cognitive ability within SES groups and shows tremendous heterogeneity across them. Individuals at the bottom of the education and income distributions are significantly more likely to face health and economic shocks, yet they are the least prepared to absorb them. Racial/ethnic minorities exhibit very high rates of financial exclusion, as measured by not having a bank account or access to formal ways to borrow money, and, consequently, face higher costs for the financial services they receive.

Americans tend to have positively biased self-perceptions of their level of financial knowledge and ability to take sound financial decisions. Respondents' performance in a financial literacy quiz reveals that a large fraction know less about financial matters than they think. Self-assessed and actual financial knowledge are associated with behaviors that are indicative of financial capability, with the former correlating more strongly with the likelihood of spending less than disposable income and the latter being a better predictor of retirement preparedness. Nonetheless, even among respondents who rate themselves very highly in terms of ability to handle

daily financial matters and have a perfect score in the financial literacy quiz, about one-third incur high costs and fees related to the mismanagement of credit cards and checking accounts.

Compared to the findings of Lusardi (2011), based on 2009 NFCS national survey, and those of the 2012 NFCS FINRA report, the data considered in this study depict a slightly more optimistic scenario. The fraction of individuals who are satisfied (rating 8-10 on a 1-10 scale) with their financial situation is 16% in 2009 NFCS and 24% in the 2012 NFCS and in the ALP-NFCS. The proportion of those who find it not at all difficult to making ends meet is 36% in 2009 NFCS, 40% in the 2012 NFCS, and 45% in the ALP-NFCS data. About 41% of ALP respondents have an emergency fund, while 35% and 40% have it in the 2009 and 2012 NFCS, respectively. In contrast, 25% of ALP respondents spend more than their income versus 20% in the 2009 NFCS and 19% in 2012 NFCS. The prevalence of retirement planning is about 40% in the ALP versus 37% in the 2009 and 2012 NFCS. Finally, the proportion of ALP respondents who answered correctly at least 4 questions of the financial literacy quiz is 49%, against 42% in the 2009 NFCS and 39% in the 2012 NFCS. These differences, however, mask a great deal of heterogeneity across SES groups and the fact that financial capability remains extremely low among some segments of the population.

Overall, the empirical evidence emerging from the NFCS data since 2009 calls for a deeper understanding of the financial behavior of American adults – especially of more vulnerable groups – and the barriers they face towards more sound financial choices. This knowledge is crucial for devising and implementing interventions that can effectively change financial decision making among households, in particular among those where resources are relatively scarcer and cultural/psychological hurdles more difficult to overcome. Linking NFCS survey data to individual- and household-level information about income, wealth, expenditure, health, cognition and preferences within the ALP represents a unique opportunity to gain further insight on this topic and a promising avenue for future research.

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