

New Evidence on the Financial Knowledge and Characteristics of Investors

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Abstract:

Increased individual responsibility for retirement saving and investing, together with the growing complexity of financial products, require that investors have financial knowledge and awareness. This report provides evidence of substantial differences across investor types. Workplace-only investors, whose exposure to investment decisions comes solely through participation in an employer-sponsored retirement plan, are much less equipped to manage their investments and are more likely to be women compared to active investors who have made investment decisions outside of an employer-sponsored retirement plan. Workplace financial wellness programs can provide an impactful way to reach a large share of the adult population and help them prepare to make sound financial decisions.

This work was conducted with financial support from the FINRA Investor Education Foundation (FINRA Foundation) and is based on data from the National Financial Capability Study (NFCs). The NFCs is a project of the FINRA Foundation.

Introduction

The financial landscape has undergone rapid and substantial changes, ranging from an expansion in investment products to a fundamental shift in the retirement system. Many individuals used to rely on defined benefit (DB) pension plans for their retirement savings but, with the rise of defined contribution (DC) plans, the responsibility for saving and investing has shifted to workers. The ability to make sound decisions and reach financial goals in increasingly complex financial markets requires financial knowledge and awareness.

There is growing evidence that individuals are not well equipped to manage their personal finances, in particular, their financial investments. Data from the 2018 National Financial Capability Study (NFCS) show that only 30% of the general population demonstrates understanding of basic financial concepts such as the workings of interest rates, inflation, and risk diversification, and these findings are consistent with data from previous years of the NFCS.¹ These results are worrisome, as a basic understanding of these concepts is central to sound and informed investment behavior.

Research shows that financial literacy matters; investors with low levels of financial knowledge are more likely to exhibit poor investing behavior: diversifying naively, failing to identify dominated funds, and paying higher fees.² Such behaviors can become costly for investors and be an impediment to financial security. Findings from the existing research reveal the importance of not only saving for retirement but understanding how to invest retirement savings. Many individuals enrolled in DC plans lack basic financial knowledge, so as the expansion of, and consumer reliance on, DC plans continues, the need for financial education is increasing, as is the need for regulation and investor protection.

In this report, we use data from the 2018 NFCS to analyze the characteristics of different types of investors, with a particular focus on those who invest only through DC retirement accounts, and the factors influencing the decisions to invest. We show that investment behavior is linked to a combination of factors: financial knowledge, risk attitudes, and self-efficacy, as well as investors' financial situation.³

Data and Investor Definition

In this report, we analyze data from the 2018 NFCS, a FINRA Foundation research project that has been conducted every three years starting in 2009. The NFCS survey results provide detailed information not only on measures of personal finance and indicators of money management behavior but also on the financial literacy of a large and representative sample of the U.S. population. One of the important features of the data is that the 2018 NFCS

¹ See Mottola, G.R. 2015. A Snapshot of Investor Households in America. FINRA Investor Education Foundation, and Lusardi A. and O.S. Mitchell, 2014. The Economic Importance of Financial Literacy: Theory and Evidence, *Journal of Economic Literature*, 52(1): 5-44.

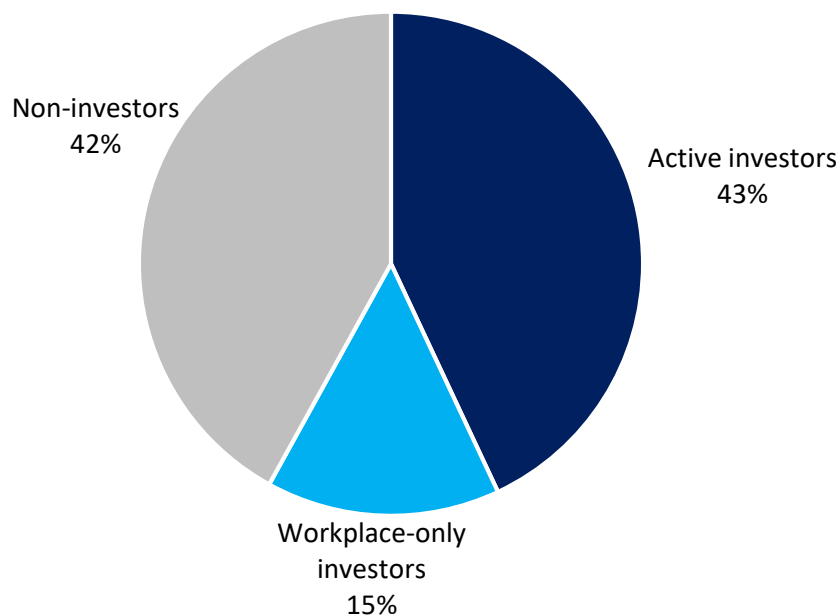
² See Fisch, J. E., T. Wilkinson-Ryan, and K. Firth. 2016. The Knowledge Gap in Workplace Retirement Investing and the Role of Professional Advisors. *Duke Law Journal*, 66: 633-672.

³ This analysis builds on previous research reported in: Fisch, J. E., A. Lusardi, and A. Hasler. 2019. Defined Contribution Plans and the Challenge of Financial Illiteracy. *Cornell Law Review*, 2019, Forthcoming; Available at SSRN: <https://ssrn.com/abstract=3384778>. The current report uses the most recent wave of the NFCS.

includes more than 27,000 observations. Data on such a large number of individuals makes it possible to study specific subgroups, such as those who invest in retirement and non-retirement taxable accounts. We restrict the sample to 25- to 65-year-old people who are not retired to focus on individuals who are in the workforce and most likely to be saving and investing for retirement.

Our overall sample consists of 14,689 survey respondents. Of these, approximately 60% are investors, *i.e.*, they invest through an employer-provided retirement account, through a self-directed retirement savings account, in non-retirement account investments, or through any combination of these. As shown in Figure 1, we further divide the investor population into two groups: workplace-only investors and active investors. *Workplace-only investors* are those who only have retirement accounts through their employers.⁴ They choose how the money is invested but do not have any other type of retirement accounts or any independent financial investments in stocks, bonds, mutual funds, or other securities. Workplace-only investors account for 15% of the total population considered in our analysis; thus, they are an important group to study. *Active investors* are those who have investments outside of an employer-provided retirement account. Specifically, active investors have self-directed retirement savings accounts and/or independent financial investments in stocks, bonds, mutual funds, or other securities. They may also have employer-sponsored retirement plans but must have outside accounts to be included in this group. We aggregate active investors into one group for the purpose of comparing them to workplace-only investors.

Figure 1: Our sample: Investors and non-investors



Source: 2018 FINRA Foundation National Financial Capability Study

Note: Sample restricted to non-retired individuals aged 25 – 65; all estimates are weighted.

⁴ This definition is taken from Fisch, J. E., A. Lusardi, and A. Hasler. 2019. Defined Contribution Plans and the Challenge of Financial Illiteracy. Cornell Law Review, 2019, Forthcoming; Available at SSRN: <https://ssrn.com/abstract=3384778>

Research Findings

A. Investor Demographics

Table 1 shows the demographic characteristics of the two investor subgroups, the investor population as a whole, and the general population. This classification is useful to compare across different groups. For example, the table shows that workplace-only investors are more likely to include vulnerable subgroups of the population compared to active investors. Specifically, workplace-only investors are more likely to have lower income, less education, and to be divorced or separated. Predictably, workplace-only investors are less likely to be self-employed. One important finding is the large percentage of women in the workplace-only investor group (53%) compared to the percentage among active investors (38%).

Table 1: Demographic distribution within the investor groups and the general population

		(1)	(2)	(3)	(4)
		Active investors	Workplace-only investors	Investor population	General population
Gender					
	Male	62%	47%	58%	51%
	Female	38%	53%	42%	49%
Ethnicity					
	White	64%	61%	63%	60%
	Black	12%	11%	12%	13%
	Hispanic	14%	19%	15%	18%
	Asian	8%	6%	8%	6%
	Other	2%	3%	2%	3%
Age					
	25 – 34 years	27%	24%	26%	27%
	35 – 49 years	35%	44%	37%	38%
	50 – 65 years	38%	32%	37%	35%
Income					
	Below \$25,000	8%	5%	7%	22%
	\$25,000 – \$49,000	16%	25%	18%	24%
	\$50,000 – \$99,000	41%	43%	42%	33%
	Over \$100,000	35%	27%	33%	21%
Education					
	High school or less	16%	25%	19%	28%
	Some college	36%	43%	38%	40%
	College graduate or above	47%	32%	43%	32%
Marital Status					
	Married	62%	63%	62%	52%

Single, not married	28%	25%	27%	33%
Divorced or separated	9%	11%	9%	13%
Widowed	1%	1%	1%	2%
Employment				
Employed (full, part time)	77%	84%	79%	65%
Self-employed	11%	4%	9%	10%
Unemployed	2%	2%	2%	6%
Not in the labor force	9%	10%	10%	19%
Observations	6,482	2,330	8,812	14,689

Source: 2018 FINRA Foundation National Financial Capability Study

Note: Sample restricted to non-retired individuals aged 25 – 65; all estimates are weighted. The income brackets report household annual income from all sources, such as wages, tips, investment income, public assistance, and retirement plans. The workplace-only investors who are not in the labor force or unemployed have an employer-sponsored retirement plan that was likely set up through previous employers.

Next, we will discuss the factors influencing investment decisions: financial knowledge and education, risk attitudes and self-efficacy, and investors' financial situation.

B. Financial Knowledge and Education

Financial Knowledge

Investors have traditionally been studied as one group, but our research shows we need to differentiate across investor types. One notable difference is the level of financial knowledge; workplace-only investors show strikingly lower financial literacy levels than active investors, as measured by the responses to the Big Three financial literacy questions as well as questions that measure understanding of more sophisticated concepts, such as the workings of interest compounding in the context of debt (see the Appendix for a description of the financial literacy questions). The Big Three financial literacy questions measure knowledge of basic financial concepts — numeracy, inflation, and risk diversification. Among workplace-only investors, only about one-third (32%) correctly answer the Big Three questions (see Table 2) compared to 44% of active investors. Despite these differences, it is worth noting that knowledge between both investor groups is alarmingly low.

The NFCS includes a total of six financial literacy questions and two among those questions are of particular interest as they are strictly connected with investment decisions; specifically, the asset pricing question measures understanding of the negative relationship between interest rates and bond prices, and the risk diversification question measures understanding of what stocks and stock mutual funds are and that a single company stock is usually riskier than a stock mutual fund. While the asset pricing question was answered correctly by a small proportion of active investors (35%), workplace-only investors exhibited an even lower understanding of asset pricing, with only one-quarter (25%) answering this question correctly (see Table 2). The same pattern holds for the risk diversification question, which was answered correctly by around 60% of active investors but only 46% of workplace-only investors.

Overall, it appears that investors who actively decide on financial investments in taxable accounts and self-directed retirement savings accounts are more likely to have higher levels of financial literacy. The low financial knowledge levels among workplace-only investors might reflect the impact of the rise in automatic enrollment among employer-sponsored retirement accounts over the past decade, particularly among large companies. Workplace retirement savings plans that feature automatic enrollment typically require participants to make few or no active choices about their retirement account investments. The NFCS does not measure the extent to which workplace-only investors were auto-enrolled. These findings are simple, univariate statistics and correlations, but they show a striking difference in financial knowledge across investors and overall low levels of financial literacy.

Table 2: Financial literacy among the investor groups and the general population

	(1) Active investors	(2) Workplace-only investors	(3) Investor population	(4) General population
Big Three	44%	32%	41%	30%
<i>Single financial literacy questions</i>				
Risk diversification	59%	46%	56%	45%
Asset pricing	35%	25%	32%	26%
Interest compound	40%	33%	38%	32%
Mortgage question	85%	85%	85%	75%
Inflation question	63%	60%	62%	54%
Interest question	94%	93%	94%	93%
Observations	6,482	2,330	8,812	14,689

Source: 2018 FINRA Foundation National Financial Capability Study

Note: Sample restricted to non-retired individuals aged 25 – 65; all estimates are weighted. The Big Three financial literacy measure is a dummy variable with value 1 if the respondent answered the interest, inflation, and risk diversification questions correctly.

Financial Education

One reason why financial literacy varies so much among the subgroups displayed in Table 2 may be access to and participation in financial education programs. Among workplace-only investors, 28% were offered financial education in an educational institution or a workplace (Table 3). Among active investors, this percentage is much higher, at 42%. In the same context, a much lower percentage of workplace-only investors was required to take financial education compared to active investors. Further, less than 20% of workplace-only investors reported participating in a financial education program (compared to 30% of active investors). Respondents who participated in a financial education program reported receiving about the same length and quality of instruction, so it appears that program length or quality does not explain the financial literacy gap between active and workplace-only investors. Access to and participation in financial education programs likely has an influence on the observed financial literacy gap between workplace-only and active investors.

Table 3: Financial education among the investor groups and the general population

	(1) Active investors	(2) Workplace-only investors	(3) Investor population	(4) General population
Financial Education				
Required	25%	13%	22%	17%
Offered	42%	28%	38%	30%
Participated	30%	19%	27%	21%
More than 10 hours*	52%	50%	52%	51%
High quality*	83%	73%	81%	77%
Observations	6,482	2,330	8,812	14,689

Source: 2018 FINRA Foundation National Financial Capability Study

Note: Sample restricted to non-retired individuals aged 25 – 65; all estimates are weighted. Both variables, the total hours and quality of the financial education received, are conditional on having participated in a financial education program offered by a school or college or a workplace the respondent was employed. The perceived quality of financial education received is classified as high when people responded 5 – 7 on a 1 – 10 scale.

The decision to invest in financial markets is influenced by many variables besides financial literacy. We will next turn to regression analyses to study investor behavior in more detail.

Regression Analyses

Table 4 reports the results from our regression analysis. Given the differences between investor types, we run regressions separately for active and workplace-only investors. Our dependent variables are dummy variables which take the value 1 when being in a specific investor group. Among the explanatory variables, we include not only levels of financial literacy but also a list of demographic characteristics that are linked to investor behavior, such as gender, age, race/ethnicity, marital status, education, income, and employment status. Some interesting findings emerge from these initial estimates. A highlight of these first findings is that women are more likely to be workplace-only investors and significantly less likely to invest in financial markets via taxable investment accounts and/or self-directed retirement savings accounts. Specifically, women are 4 percentage points more likely to be workplace-only investors compared to men. However, women are 10 percentage points less likely to be active investors compared to men. These findings support the simple demographic statistics shown in Table 1 but, in the regression analysis, we are able to control for various demographic characteristics, including income and marital status. Moreover, as we discuss in Section C, these gender coefficients are partly driven by risk preferences, with men being much more likely than women to state that they are willing to take financial risks. We also note the positive relationship between being an active investor or a workplace-only investor and education and income.

Further, Table 4 shows a positive link between the likelihood of being an active investor and financial literacy, even after controlling for many demographic variables, including education. Thus, there is a relationship between being an active investor and financial knowledge above and beyond general education. However, financial literacy shows no significant correlation with the likelihood of being a workplace-only investor.

Table 4: Regression results with Big Three financial literacy variable

	(1) Active investors	(2) Workplace-only investors
Big Three	0.108*** (0.009)	-0.004 (0.007)
Gender (BL: Male)		
Female	-0.100*** (0.007)	0.041*** (0.006)
Ethnicity (BL: White)		
Black	0.041*** (0.011)	-0.004 (0.009)
Hispanic	-0.049*** (0.010)	0.019** (0.008)
Asian	0.018 (0.015)	-0.019 (0.012)
Other	-0.063*** (0.022)	0.029 (0.018)
Age (BL: 25 – 34)		
35 – 49 years	-0.065*** (0.009)	0.027*** (0.007)
50 – 65 years	0.003 (0.010)	-0.008 (0.008)
Income (BL: less than \$25,000)		
\$25,000 – \$49,000	0.090*** (0.011)	0.120*** (0.009)
\$50,000 – \$99,000	0.280*** (0.011)	0.171*** (0.009)
Over \$100,000	0.383*** (0.013)	0.173*** (0.011)
Education (BL: High school or less)		
Some college	0.059*** (0.009)	0.001 (0.007)
College graduate or above	0.187*** (0.010)	-0.040*** (0.008)
Marital Status		
Married	0.018** (0.008)	0.023*** (0.007)
Employment		
Unemployed	-0.107*** (0.015)	-0.035*** (0.013)

Constant	0.189*** (0.012)	0.006 (0.010)
Observations	14,689	14,689
R-squared	0.231	0.043

Source: 2018 FINRA Foundation National Financial Capability Study

Note: Sample restricted to non-retired individuals aged 25 – 65; all estimates are weighted. The Big Three financial literacy measure is a dummy variable with value 1 if the respondent answered the interest, inflation, and risk diversification questions correctly. The income brackets report household annual income from all sources, such as wages, tips, investment income, public assistance, and retirement plans. BL stands for baseline and indicates the baseline value of categorical variables. Robust standard errors are reported in parentheses. *** p<0.01, ** p<0.05, * p<0.1

We further analyze the impact of the financial literacy questions most related to investment. Table 5 shows that knowledge about asset pricing, one of the most complex concepts in our list of financial literacy questions, is significantly positively related to being an active investor and negatively related to being a workplace-only investor. Knowledge of risk diversification and interest compounding, which are relatively complex concepts, is also linked to the likelihood of being an active investor. Yet again, we confirm the findings reported in Table 2.

Table 5: Regression results with individual financial literacy questions

	(1) Active investors	(2) Workplace-only investors
Risk Diversification	0.089*** (0.008)	-0.003 (0.007)
Asset Pricing	0.072*** (0.009)	-0.019*** (0.007)
Interest Compound	0.041*** (0.008)	-0.003 (0.006)
Demographic Controls	YES	YES
Constant	0.156*** (0.013)	0.010 (0.010)
Observations	14,689	14,689
R-squared	0.237	0.044

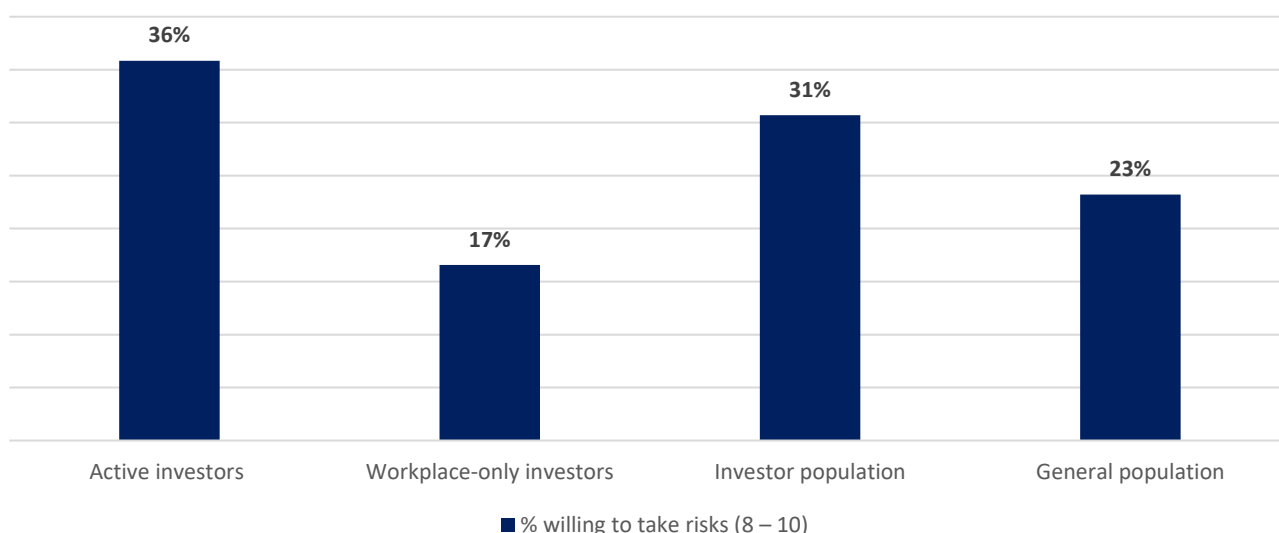
Source: 2018 FINRA Foundation National Financial Capability Study

Note: Sample restricted to non-retired individuals aged 25 – 65; all estimates are weighted. The demographic controls are identical to those used in Table 4. Robust standard errors are reported in parentheses. *** p<0.01, ** p<0.05, * p<0.1

C. Attitude Toward Financial Risk and Self-efficacy

An individual's decision to invest in self-directed retirement savings accounts and the financial markets via taxable accounts may be influenced by the attitude toward financial risk and the ability to achieve financial goals. The NFCS reports a measure of the willingness to take risks using a scale from 1 (not at all willing) to 10 (very willing). As expected, Figure 2 shows that the willingness to take financial risks is much higher among active investors (36%) as compared to workplace-only investors (17%).

Figure 2: Risk preference



Source: 2018 FINRA Foundation National Financial Capability Study

Note: Sample restricted to non-retired individuals aged 25 – 65; all estimates are weighted. The exact question wording is: “When thinking of your financial investments, how willing are you to take risks?” The possible answers range from 1 (not at all willing) to 10 (very willing). Figure 2 defines willingness as those who answered 8 – 10 on this 10-point scale.

In Table 6, we report the findings from the regressions reported in Table 4 but augmented with the variable measuring risk preferences. The willingness to take financial risks is positively linked to being an active investor in a self-directed retirement savings account and/or in the financial markets via taxable accounts while it is negatively related to being a workplace-only investor. Interestingly, the financial literacy coefficient estimates do not change with the inclusion of the risk preference variable (see Table 4). Thus, even though we might expect those with higher levels of financial literacy (who understand risk better) to be more willing to take financial risks, financial literacy seems to relate to the decision to invest in self-directed retirement savings accounts and financial markets above and beyond the effect of risk preferences. However, the gender coefficient estimates decrease in magnitude in both regressions when compared to the estimates shown in Table 4. This might be driven by the large gender gap in willingness to take risks. In the general population one-third (33%) of men but just 12% of women are willing to take financial risks. However, even after controlling for willingness to take risk, the gender coefficients continues to remain statistically significant in both regressions. This is in line with the results discussed above.

Table 6: Regression results including the risk preference variable

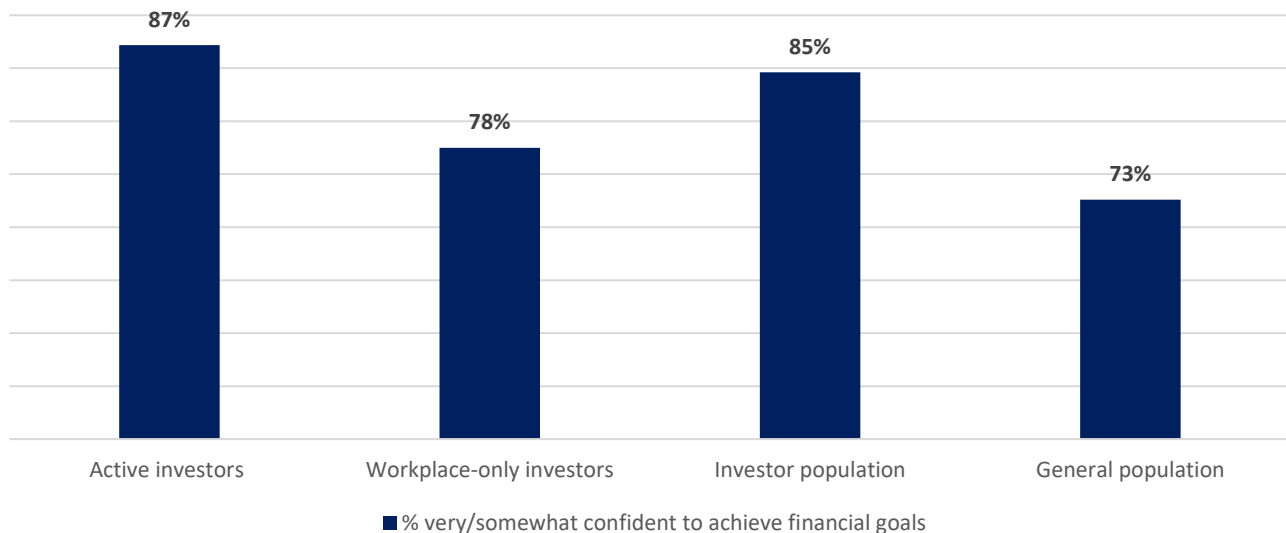
	(1) Active investors	(2) Workplace-only investors
Willingness to take financial risks	0.206*** (0.009)	-0.076*** (0.007)
Big Three	0.107*** (0.009)	-0.004 (0.007)
Gender (BL: Male)		
Female	-0.062*** (0.008)	0.027*** (0.006)
Demographic controls	YES	YES
Constant	0.128*** (0.013)	0.029*** (0.011)
Observations	14,387	14,387
R-squared	0.256	0.050

Source: 2018 FINRA Foundation National Financial Capability Study

Note: Sample restricted to non-retired individuals aged 25 – 65; all estimates are weighted. The Big Three financial literacy measure is a dummy variable with value 1 if the respondent answered the interest, inflation, and risk diversification questions correctly. The exact wording for the risk preference question is: “When thinking of your financial investments, how willing are you to take risks?” The possible answers range from 1 (not at all willing) to 10 (very willing). Risk willingness is defined as 1 for those who answered 8 – 10 on a 10-point scale and 0 otherwise. The “don’t know” and “refuse to answer” responses to the risk preference question were deleted from the sample. The demographic controls are identical to those used in Table 4. BL stands for baseline and indicates the baseline value of categorical variables. Robust standard errors are reported in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Besides risk preference, an investor’s confidence in his/her ability to achieve financial goals can influence the decision to invest. This information is also available in the NFCS. As shown in Figure 3, active investors are more likely to have confidence about their ability to achieve their financial goals compared to workplace-only investors. This difference, though small in absolute magnitude, again speaks of the difference between active and workplace-only investors and the potential effects of automatic enrollment into retirement accounts.

Figure 3: Financial self-efficacy



Source: 2018 FINRA Foundation National Financial Capability Study

Note: Sample restricted to non-retired individuals aged 25 – 65; all estimates are weighted. The exact question wording is: “If you were to set a financial goal for yourself today, how confident are you in your ability to achieve it?” The possible answers are “not at all confident,” “not very confident,” “somewhat confident,” and “very confident.” Figure 3 shows the percentage of people reporting that they are very or somewhat confident in their ability to achieve financial goals.

The regression results in Table 7 show that investors who are somewhat or very confident in their ability to achieve financial goals are more likely to be active investors. The coefficient estimate of confidence for the active investors’ regression (column 1) is statistically significant and relatively large in magnitude, whereas the coefficient estimate for the workplace-only investors’ regression (column 2) is not statistically significant and is of the opposite sign. Again, even after including the self-efficacy variable, the estimated coefficients for the financial literacy measure (Big Three) do not change and remain statistically significant for the active investors’ regression. This shows once again that financial literacy is important above and beyond other investor characteristics, such as risk preference and financial self-efficacy. The estimated coefficients for the income categories change substantially after including the self-efficacy variable. This is likely driven by the fact that those with lower income report being much less confident in their ability to achieve financial goals compared to those with higher income. Specifically, only about 51% of those with income less than \$25,000 in the general population stated being very or somewhat confident in their ability to achieve financial goals; this percentage jumps to 81% among those with income between \$50,000 and \$100,000 and reaches 90% for those with income greater than \$100,000.

Table 7: Regression results including self-efficacy variable

	(1) Active investors	(2) Workplace-only investors
Confident about achieving financial goals	0.166*** (0.009)	-0.007 (0.007)
Big Three	0.100*** (0.009)	-0.005 (0.007)
Income (BL: less than \$25,000)		
\$25,000 – \$49,000	0.068*** (0.011)	0.123*** (0.009)
\$50,000 – \$99,000	0.238*** (0.011)	0.174*** (0.009)
Over \$100,000	0.325*** (0.014)	0.176*** (0.011)
Demographic Controls	YES	YES
Constant	0.097*** (0.014)	0.013 (0.011)
Observations	14,237	14,237
R-squared	0.246	0.043

Source: 2018 FINRA Foundation National Financial Capability Study

Note: Sample restricted to non-retired individuals aged 25 – 65; all estimates are weighted. The Big Three financial literacy measure is a dummy variable with value 1 if the respondent answered the interest, inflation, and risk diversification questions correctly. The exact wording for the self-efficacy question is: “If you were to set a financial goal for yourself today, how confident are you in your ability to achieve it?” The possible answers are “not at all confident,” “not very confident,” “somewhat confident,” and “very confident.” The variable is defined as 1 for those who answered that they are very or somewhat confident in their ability to achieve financial goals and 0 otherwise. The “don’t know” and “refuse to answer” responses to the self-efficacy question were deleted from the sample. The demographic controls are identical to those used in Table 4. BL stands for baseline and indicates the baseline value of categorical variables. Robust standard errors are reported in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

We are aware that some of the control variables are endogenous. The findings reported in Tables 6 and 7 are mainly descriptive and aiming to illustrate the factors influencing investor behavior in a multivariate setting.

D. Investors’ Financial Situation

Besides knowledge, attitudes toward risk, and financial self-efficacy, the investors’ financial situation can also be a factor influencing decisions about how to invest. We do not have a measure of wealth in the NFCS. As a proxy for wealth and the investor’s financial situation, we use the self-reported ability to make ends meet and the ability to weather financial shocks.

Table 8 shows that workplace-only investors are much more likely (49%) to have difficulties covering expenses and paying bills in a typical month than do active investors (38%). Further, the percentage of workplace-only investors who spent more than their income in the year prior to the survey is 23%; the percentage of active investors who spent more than their income is 18%. Thus, workplace-only investors are more likely to have debt. This is in line with the finding that 50% of workplace-only investors state that they have too much debt compared to 39% of active investors. The percentage of workplace-only investors stating they have too much debt even exceeds the percentage in the general population. Previous research shows similar results: workplace-only investors are less likely to own assets but more likely to be in debt compared to active investors.⁵ Hence, we see a significant gap between active and workplace-only investors, which indicates that the level of debt might be contributing to investment decisions.

Moreover, workplace-only investors are less likely to report being able to cope with an unexpected expense of \$2,000 within the next month. Specifically, almost one-third of workplace-only investors (30%) could probably or certainly not come up with \$2,000 within 30 days if an unexpected need arose; this percentage drops to 12% for active investors. This measure too captures not only having savings but having debt as well.⁶ These findings indicate that workplace-only investors are more likely to have difficulties handling day-to-day financial matters and short-term unexpected expenses. This calls into question whether investing in employer-provided accounts is an optimal strategy for all investors.

Table 8: Ability to make ends meet and cope with financial shocks among the investor groups and the general population

	(1) Active investors	(2) Workplace-only investors	(3) Investor population	(4) General population
Very/somewhat difficult to cover expenses and pay all bills in a month	38%	49%	41%	52%
Spending more than income	18%	23%	19%	21%
Having too much debt	39%	50%	42%	45%
Could probably/certainly not come up with \$2,000 within 30 days	12%	30%	17%	34%
Observations	6,482	2,330	8,812	14,689

Source: 2018 FINRA Foundation National Financial Capability Study

Note: Sample restricted to non-retired individuals aged 25 – 65; all estimates are weighted. The variable measuring if the respondents are spending more than, less than, or about equal to their income refers to the financial situation over the year prior to the survey and does not include any big investments or purchases, such as a car or house. People classified as experiencing too much debt responded with 5 – 7 on a 7-point scale, ranging from 1 (strongly disagree) to 7 (strongly agree), to the statement “I have too much debt right now.”

⁵ See Fisch, J. E., A. Lusardi, and A. Hasler. 2019. Defined Contribution Plans and the Challenge of Financial Illiteracy. Cornell Law Review, 2019, Forthcoming; Available at SSRN: <https://ssrn.com/abstract=3384778>

⁶ See Hasler, A, A. Lusardi and N. Oggero, 2018. Financial fragility in the US: Evidence and Implications. GFLEC Working Paper.

Conclusion

The financial landscape has undergone systemic changes over recent decades. Increasingly complex financial markets coupled with the growing individual responsibility for retirement saving and investing decisions require that investors be equipped to make sound decisions. This report provides evidence that not all investors are equally prepared to manage their personal finances, and in particular, their financial investments. We use data from the 2018 NFCS to study different types of investors. We find that workplace-only investors, who are exposed to investment decisions solely through participation in an employer-sponsored retirement plan, are different from more active investors and are largely unprepared to make sound saving and investment decisions. In comparison, active investors, who have self-directed retirement savings accounts separate from any employer-provided plans and/or other financial investments, are more equipped to make financial decisions.

Vulnerable subgroups of the population are more likely to be workplace-only investors rather than active investors. One striking finding is the large gender gap among investors. Significantly more women are invested only in employer-sponsored retirement accounts and do not have any investments in self-directed retirement savings accounts or the financial markets via taxable accounts. This gender gap persists even after controlling for individuals' willingness to take financial risks.

We also analyze the importance of financial knowledge, risk attitudes and self-efficacy, as well as investors' financial situation. Workplace-only investors show strikingly lower financial literacy levels and, on average, were less likely to have been offered financial education through a school or workplace. On the other hand, we find that willingness to take financial risks and confidence in the ability to achieve financial goals is positively linked to being an active investor. Further, active investors are more likely to report being able to make ends meet and cope with financial shocks.

Our report shows lack of knowledge and preparedness for many investors, especially workplace-only investors. This problem needs to be addressed. Workplace education could be a useful way to reach a large share of the adult population and help prepare employees for the sort of financial decision making that they are required to make. Further, employer-sponsored retirement plans may have the additional benefit of serving as an on-ramp to investing in taxable investment accounts.⁷

As reported in our empirical work, many factors can impact financial decision making. Accordingly, an effective financial education program should take into account the employees' financial situation and follow an integrated approach that considers both assets and debt rather than focusing only on retirement savings. Moreover, besides the large differences between investor groups, there is also substantial heterogeneity within investor groups. Thus, the more targeted the programs are, the more effective they are likely to be. Finally, given the alarmingly low levels of financial literacy across the entire population, programs using clear, jargon-free language and well-structured action plans are more likely to increase engagement and result in positive behavioral change.

⁷ See FINRA Investor Education Foundation and CFA Institute. 2018. Uncertain Futures: 7 Myths about Millennials and Investing. <https://www.finrafoundation.org/millennials>.

Appendix

A) Financial Literacy Questions

The Big Three Financial Literacy Questions:

Interest Rate Question

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; Don't know; Prefer not to say]

Inflation Question

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; Less than today; Don't know; Prefer not to say]

Risk Diversification Question

Buying a single company's stock usually provides a safer return than a stock mutual fund.

[True; False; Don't know; Prefer not to say]

Additional Financial Literacy Questions:

Bond Pricing Question

If interest rates rise, what will typically happen to bond prices?

[They will rise; They will fall; They will stay the same; There is no relationship between bond prices and the interest rate; Don't know; Prefer not to say]

Compound Interest Rate Question

Suppose you owe \$1,000 on a loan and the interest rate you are charged is 20% per year compounded annually. If you didn't pay anything off, at this interest rate, how many years would it take for the amount you owe to double?

[Less than 2 years; At least 2 years but less than 5 years; At least 5 years but less than 10 years; At least 10 years; Don't know; Prefer not to say]

Mortgage Question

A 15-year mortgage typically requires higher monthly payments than a 30-year mortgage, but the total interest paid over the life of the loan will be less.

[True; False; Don't know; Prefer not to say]



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