

The Role of Information on Retirement Planning: Evidence from a Field Study

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Abstract

Despite the proliferation of websites devoted to personal financial matters, the literature examining online financial education is sparse. Online financial education is an important area of inquiry. First, online courses can be delivered to a much larger audience and at a lower cost per participant than face-to-face delivery. Second, online courses can potentially reach people who would not otherwise attend financial education, attracting people who would not be interested in or able to attend workshops or classes. Third, online financial education potentially gives people the freedom and privacy to explore financial issues that they would shy away from in other settings.

This study is based on a field study where individuals within 45 credit unions across Wisconsin had randomized access to a 10-hour online financial education on savings and debt management. Employees at the credit unions that offered the program in the first half of the study constitute the treatment group. In turn, employees at the credit unions that offered the program in the second half constitute the 'control' group based on the assumption that individual financial behaviors are not correlated with a credit unions assignment into each cohort. Employees in both groups completed a 48-question survey concerning their self-assessed financial knowledge and self-reported behavior at three points in time, before any education, after half of sites had access and after all sites had access.

The results show an increase in knowledge regarding interest, loans, credit scores, stocks and bonds, and retirement investment. We also show that the education is associated with greater retirement plan participation, more frequent emergency savings, and more instances of creating a budget or financial plan. These findings are corroborated with actual retirement plan contribution accounts. Overall these results are promising that online financial education can generate gains in knowledge and subsequent shifts in

behavior.

1 Introduction

Employees are increasingly responsible for planning and saving for their retirement; few employees today have access to defined benefit pensions and instead rely on employer-based 401k or related savings options, or use individual retirement accounts (IRAs). Yet participation rates in employer based savings plans remains low. Even among active savers, there are concerns about how well people are able to manage their accounts and make choices that reflect optimal planning horizons.

Workplace-based financial education is one channel for providing financial information to employees. Several studies document a positive correlation between financial literacy and planning for retirement and saving (for example, see (Hilgert *et al.* 2003; Lusardi and Mitchell 2007c,b,a; Mandell and Klein 2009)). Several studies examine the effects of financial education provided in the workplace. Bayer, Bernheim, and Scholz (Bayer *et al.* 2009), for example, find that offering frequent retirement seminars to employees is associated with higher participation in and contributions to voluntary savings plans, especially among employees at lower compensation levels. Many studies concerning workplace-based seminars are difficult to interpret, in large part because firms often simultaneously promote retirement planning seminars and introduce new retirement savings programs.

Other studies also associate employer-based interventions with improvements in employees financial knowledge (Clark and d'Ambrosio 2003; Kim 2007; Kim *et al.* 1998; Holland *et al.* 2008). However, these studies lack robust models of causal inference and may just be driven by which employees attend the programs studied. Meier and Sprenger (2008) highlight this fact, providing strong evidence that differences in outcome measures between individuals who participate in voluntary financial education and nonparticipants are attributable to unobserved differences between the two groups.

Despite the proliferation of websites devoted to personal financial matters, the literature examining online financial education is sparse. Online financial education is an important area of inquiry for several reasons. First, online courses can be delivered to a much larger audience and at a lower cost per participant than face-to-face delivery. Second, online courses can potentially reach people who would not otherwise attend financial education, attracting people who would not be interested in or able to attend workshops or classes. Third, online financial education potentially gives people the freedom and privacy to explore financial issues that they would shy away from in other settings.

This field study is of a program where employees at 45 credit unions had randomized access to a 10-unit online financial education course. Employees completed a 48-question survey concerning their

self-assessed financial knowledge and self-reported behavior at three points in time, before any education, after half of sites had access and after all sites had access. The study includes a sample of 1,052 employee surveys (729 in the control group), as well as actual employer-based retirement account contributions for a subsample of about 220 employees.

The study shows that employees offered education demonstrate measured increases in self-reported financial knowledge based on the online education. Second, we show that the education is associated with greater self-reports of retirement plan participation, more frequent emergency savings, and more instances of creating a budget or financial plan. Data on actual retirement plan contributions show an increase in terms of contributions. Overall these results are consistent with financial education leading to measurable gains in financial knowledge is also associated with relevant financial behavior.

2 The Role of Information

Studies of financial education related to retirement planning delivered in the workplace have proposed a variety of mechanisms for learned information to influence behavior, including the effects of peers (Duflo and Saez 2003) and complicated changes in retirement options (Bayer *et al.* 2009).

People need information in order to calibrate expectations about retirement, determine how much to save and in what form. In the absence of information people may fail to optimally use employer based investment options. Workers who are not using employer based retirement and related benefits may be better off if they learn about and decide to enroll in alternative saving options. Workers who are using these options may need to increase how much they are saving or change the form of their retirement investments.

Employees must make ongoing decisions about current and future consumption; people generally behave as if they are attempting to smooth spending over the earnings lifecycle. Earlier in work careers, employees set initial retirement planning goals, and then revise them as their income profile changes. Even in the context of stable income expectations, new information can trigger people to revise consumption and saving choices.

And employee will revise their expectations of savings levels based on their understanding that retirement earlier in life (at a younger versus older age), or retirement with higher levels of income replacement (versus lower consumption in retirement), both would require higher levels of current savings, they should adjust their savings amounts and consider more savings options if either become a driving goal (retiring early or maintaining a higher standard of living in retirement).

One signal of taking on greater focus on retirement planning is that an employee reports using a

budget or spending plan. This mechanism helps people to limit consumption in order to allocate income towards savings. We would also expect employees who are engaged in retirement planning to focus on employer-based benefits, including using retirement accounts, life insurance coverage and other benefits. Looking beyond employer-benefits, another measure is using a non-employer based account such as an Individual Retirement Account (IRA). These accounts represent individual efforts to save, over and above any employer provided pension or defined contribution account. Finally, recognizing that savings can be derailed by an emergency or short term drop in income, another key indicator is designating savings for an emergency that is the equivalent of 3 months income.

Generally, all employees are calibrating expectations about saving over their working years. We might predict people with lower initial levels of financial education, people with lower levels of general education and people at younger ages might be most responsive to education efforts.

3 The Experiment

In the fall of 2009, the Wisconsin Credit Union League sponsored the REAL Progress & Pathways to Prosperity (RP3) program. The goal of the RP3 program was to recruit credit unions in Wisconsin to enroll their employees in an online financial education program. The ten-module RP3 program took an average of 10 hours to complete and covered the following topics: 1) Getting Started on Investing; 2) Basics of Personal Finance; 3) Basics of Investing; 4) Basics of Investment Strategies; 5) Investment Risks; 6) Basics of Retirement Planning; 7) Investing in Mutual Funds; 8) Working with Financial Advisors; 9) Saving for College; and 10) Getting Started. The majority of the content focused on saving for retirement, retirement planning and understanding the tradeoffs of starting later versus earlier related to retirement saving.

Forty-five credit unions agreed to participate in a randomized evaluation of the program. The average credit union had 6 branches (median=4) and 48 full time employees (median=20). Participating credit unions were randomly assigned to offer the course to their employees either in the fall of 2009¹ or in the spring of 2010². Employees at the credit unions that offered the RP3 program in the fall constitute the treatment group. In turn, employees at the credit unions that offered the program in the spring constitute the 'control' group based on the assumption that individual financial behaviors are not correlated with a credit unions assignment into the fall or spring cohort. This design allowed for the estimation of causal effects without withholding services. Employees in both groups completed a 48-question survey concerning their self-assessed financial knowledge and self-reported behavior in October 2009, January

¹The first fall cohort employee began the course September 29th, 2009 and the last completed the course December 28th.

²The first employee in the spring cohort began the course January 28th, 2010 and the last completed the course April 15th.

2010, and April 2010. These three surveys constitute Waves 1, 2, and 3 of the survey data, respectively. All participants completed the same surveys at the same point in time, regardless of whether their employer offered the education program in the fall or spring. Figure 8 provides a timeline of the study period, including the periods data on employer-based accounts were tracked (from January 2009 to December 2010).

The data were provided by the online financial education company Precision Information, LLC from web-based surveys. The usable sample includes 1,052 employees, including 729 in the control group and 323 in the treatment group.³ In addition, data on monthly retirement account use was obtained from 10 credit unions, including 5 from the treatment group, covering about 220 employees making regular contributions or moving existing funds between investment options. This provides a means to externally validate the self-reported survey data.

Figure 1 displays a cursory fidelity check for treatment; here we see the average score on objective financial content questions taken before the education modules and the score after taking modules (among those assigned to treatment and completing the course). The mean score pre-treatment was 60 out of 100, rising to over 75 on the post test.

4 Methods

Because assignment occurred at the level of the employer, there are differences at baseline between the treatment and control groups. Table 1 shows the means for employees at the baseline in each cohort. Respondents in the treatment group are less likely to be married or have children, less likely to have attended college, lower income. These differences are generally not large in magnitude, but they are all statistically significant. Therefore, the statistical models need to be carefully specified, and as such the experimental estimations outlined below.

We use the following regression adjusted estimator to measure the effects of RP3:

$$Y_{it} = \alpha_0 + \beta_1(T_i) + \beta_2(P_{t=2}) + \beta_3(T_s \times P_{t=2}) + \beta_4(P_{t=3}) + \beta_5(T_i \times P_{t=3}) + X_i + \epsilon_{it} \quad (1)$$

Estimates for β_3 and β_5 are of interest as the causal effects of assignment to the course at the end of the first treatment period and then the period for the second cohort—the control group here is the non-treated group for the first cohort and the prior period for the second cohort. X_i is a vector of

³508 employees were initially in the treatment group but only 323 completed all 3 survey waves. A probit model to predict which employees dropped out showed no statistically significant patterns related to age, education, income, homeownership, gender, financial satisfaction, number of children or other factors.

individual level controls including income, assets, age, sex, minority, college, homeownership, test score and number of children. ϵ_{it} is a standard error term corrected using Huber-White ‘robust’ corrections for a panel model, with clustering by survey wave t , and employee, i .

Most of the dependent variables related to knowledge are using five-point scales, where 1=low and 5=high self-reported knowledge. These measures have been re-scaled to be between 0 and 1. This OLS regression specification controls for baseline levels, so these estimates can be interpreted as changes in scores (and in theory could range from -5 to 5). Knowledge areas include: credit reporting, interest rates, stocks and bonds and investments.⁴ The dependent variables related to behavior are generally dichotomous variables (0-1) and estimated in a similar fashion using a linear probability model. The means of these behaviors are shown in Table 2.

Note that only 17 percent of respondents overall were male, which reflects the high proportion of females employed by credit unions. The U.S. Department of Labor reports that 75 percent of individuals employed at savings institutions, including credit unions, are female.

We also obtained a smaller set of data on 220 employees across 10 credit unions with actually monthly contributions to an employer sponsored retirement account. Here the data are group into 5 credit unions in the earlier fall cohort with an offer of online financial education and then employees at the 5 credit unions offering the same education in the spring of the following year. The data span 24 months providing 3 time periods: before either set of employees had access to education (January 2009 to September 2009), after the first cohort had access to the education (after September 2009) and then after both groups had access to the education (after January 2010, until December 2010). We would expect the first treatment group to adjust contributions after the first period, and the second cohort after the second. By the third period both groups had education; the comparison are primarily the differences in differences relative to the prior period. The specification below is used to estimate the logged value of mean monthly contributions to retirement accounts per employee:

$$Y_{it} = \alpha_0 + \beta_1(Treat1) + \beta_2(Post1) + \beta_3(Treat1 \times Post1) + \beta_4(Post2) + \epsilon_{it} \quad (2)$$

Estimates for β_3 is of interest as the causal effects of assignment to the course at the end of the first treatment period. However, for consistency with the prior model, we also show an interaction of the first cohort with the second post period (Post2), although since all employees are treated at this point in time, we would not predict a difference in contribution rates.

⁴See Appendix for question wording.

5 Results

We begin with a series of charts showing the mean values for the pre- and post-education periods for the treatment cohort (those employees at credit unions offering the course in the fall) and those in the control (offering the course in the spring). The control credit union employees have not had access to the education and are a proxy for an un-treated condition. Figure 2 shows the overall average gain in self-reported measure of retirement planning knowledge, with no change for employees in the control cohort and an increase among those in the treatment cohort. There are similar patterns in Figure 3 related to self-assessed knowledge of stocks and bonds. Figure 4 shows changes in retirement account contributions (including transfers between funds), with the treatment cohort showing more shifts in accounts. This pattern is reflected in the cash contributions show in Figure 5 (excluding intra-fund transfers) and in Figure 6 which is isolated to contributions to equity funds (as opposed to cash accounts or bond funds).

This graphical analysis is encouraging but fails to account for the variation over time as the second cohort has access to the education. A more robust estimate of causal effects is based on the difference-in-differences, controlling for employee level baseline demographics. Table 3 presents the first of this series of estimates, where Treatment X Wave2 is the main estimate of interest. This represents the change relative to baseline among the fall cohort of employees, relative to the pre-education period and relative to the spring, or control, cohort. The outcomes are based on the 0-1 scale so could be interpreted as a percentage point change. The self-assessed score for credit score knowledge, stock and bond market knowledge and investments knowledge all show increases of between 5 and 17 points. Both groups show increases by the final wave of the survey, but as predicted there are no additional effects of being in the fall cohort relative to the spring cohort, nor do effects seem to atrophy over time.

Table 4 shows self-reported behaviors using the same specification. Here the results are linear probability estimators and can be interpreted as percentage point changes relative to baseline in the coefficients for Treat x Wave2, while Treat x Wave3 is the additional effects in the third period (when all employees have had access to education). The education had measurable effects on contributing to a non-employer based Individual Retirement Account (IRA), having a budget, designating savings for an emergency that is the equivalent of 3 months income and taking advantage of employer-based retirement, life insurance coverage and other benefits.

Table 5 shows these same estimates but only for Waves 1 and 2, showing similar patterns. This is a smaller sample and permits a comparison of the treatment and controls directly before the spring cohort has access to education. Here only the insurance and 3 months savings outcomes are statistically significant, but the magnitude and direction are consistent with Table 4. Behaviors likely related to retirement planning appear to be influenced, as well as savings more generally.

Table 6 shows the results of the offer of education for employees on actual contributions to employer sponsored accounts. The Post1 period is after December 2009, when the treatment (fall) cohort had completed the education. Post2 is after April 2010, when the remaining cohort completed the education. The log value of contributions to accounts increased for the treated group after the education was completed. It does not appear this effect atrophies—in the Post2 period effects do not reverse for the fall cohort. These results are consistent with a shift in savings behavior, with employees offered the education being more likely to save in employer-sponsored accounts after the education is completed.

As a check, we also include estimates for self-reported behaviors not related to retirement planning, as well as to make sure employees are not increasing savings for retirement at the same time as they are neglecting other savings or missing payments on bills. Table 7 shows reports of savings for education, paying late fees on bills and using automated deposits for savings. None of these show any impact of the assignment to education.

Figure 7 shows breakdown of IRA use by age across waves. Predictably, younger employees have lesser use of IRAs; older employees greater use. This raises the potential that response to treatment might differ by demographic characteristics. Tables 8 shows the outcome of using an IRA, and Table 9 shows using employer benefits. Column 1 shows the estimated effects for the full sample, and then each column restricts the sample to a sub-group, including ‘no college’ education, ‘female’, reporting that parents and family provided little financial education (‘parent fin’), having a low baseline financial quiz score (‘lo score’) and being under age 46. Here the primary analysis is to compare coefficients across columns relative to column 1. Tests of these coefficients does not show any statistically significant differences. Other tests using interactions for employees under age 30, having assets under \$20,000, by marital status or race also failed to find evidence of statistically significant relationships. There does not seem to be systematic differences in the effects of treatment overall.

6 Conclusion

Self-assessed financial knowledge, self-reported financial planning and management behaviors, and self-reported savings behaviors appear to have been positively affected by this online education program. Effects include changes in behavior such as the increased use of IRAs (7-8 percentage point increase from a baseline average rate of 52 percent), using employer benefits like life insurance (nearly 9 percentage points relative to a baseline average of 78 percent) and saving three months of expenses (a 12 point increase compared to a baseline of 48 percent).

These results appear broadly consistent with previous studies, but the results documented in this

analysis are somewhat smaller in magnitude. For example, Bernheim and Garrett (2003) documented a 22 percent increase in the median rate of saving when financial education is available at the workplace. Bayer *et al.* (2009) found a 12 percent higher rate of participation in retirement plans by non-highly compensated employees whose workplaces offered financial education seminars. Still the direction of effects is promising.

The average employer sponsored monthly contribution in the sample provided was overall \$306. The implied increase in contributions from the education was about a 56 percent increase, or just over \$145. This is a significant increase and suggests a strong behavioral response.

The present study uses longitudinal data, estimates the effects of the intention-to-treat, and compares quasi-experimental control group, all of which are methodological strengths. Even among employees working in the financial industry it appears a relatively modest online financial education program has potential to influence financial knowledge and behaviors.

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7 Tables and Figures

Fig. 1: Knowledge Gains (testing)

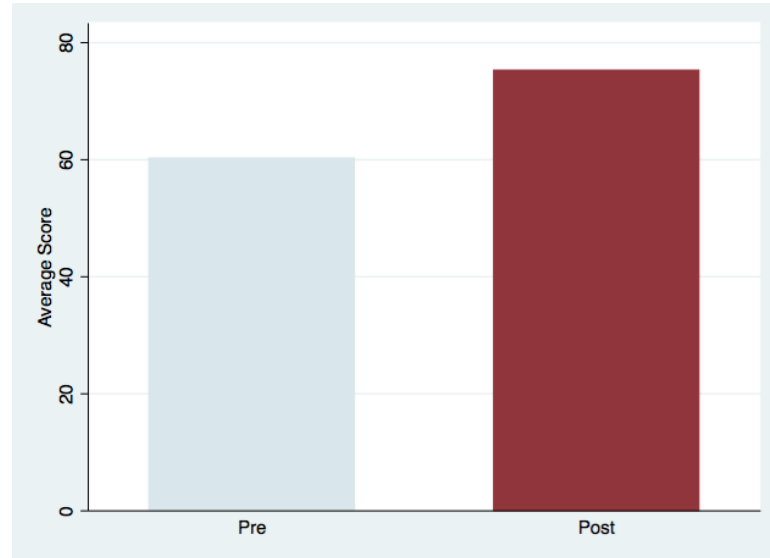


Fig. 2: Retirement Knowledge (Self-Assessed)

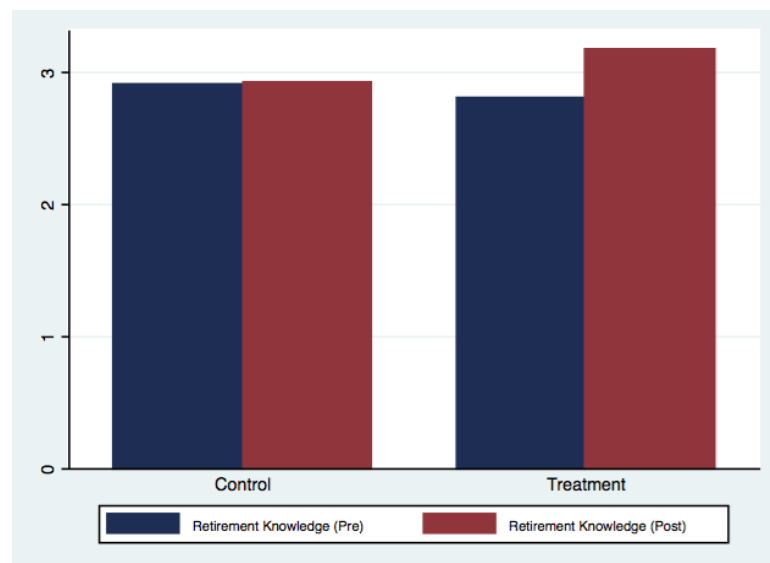


Fig. 3: Stock & Bond Knowledge (Self-Assessed)

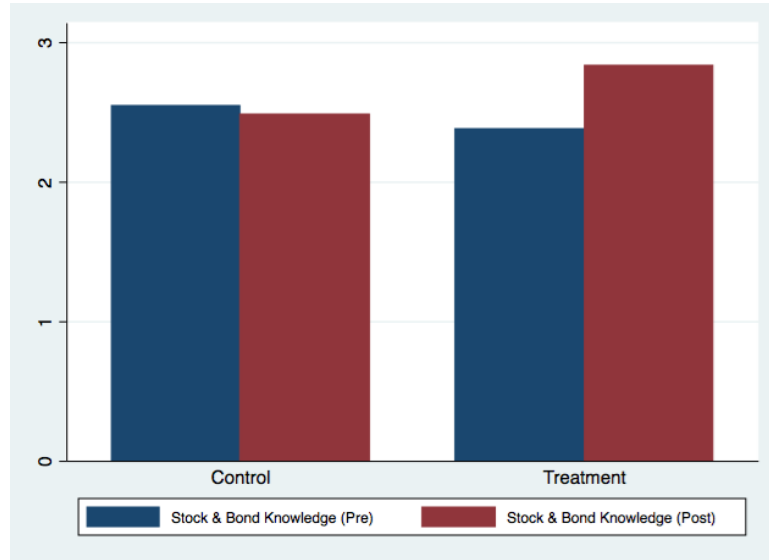


Fig. 4: Retirement Amount Changes Including Transfers (actual)

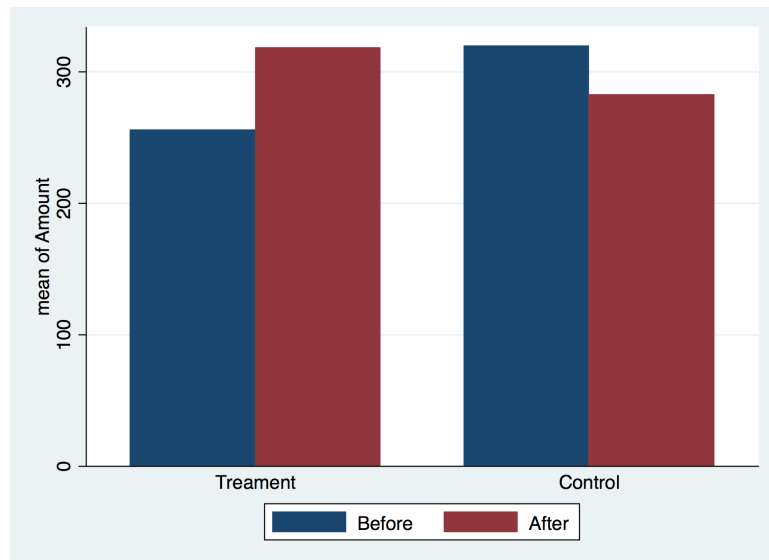


Fig. 5: Retirement Amount Changes: Only Cash Contributions (actual)

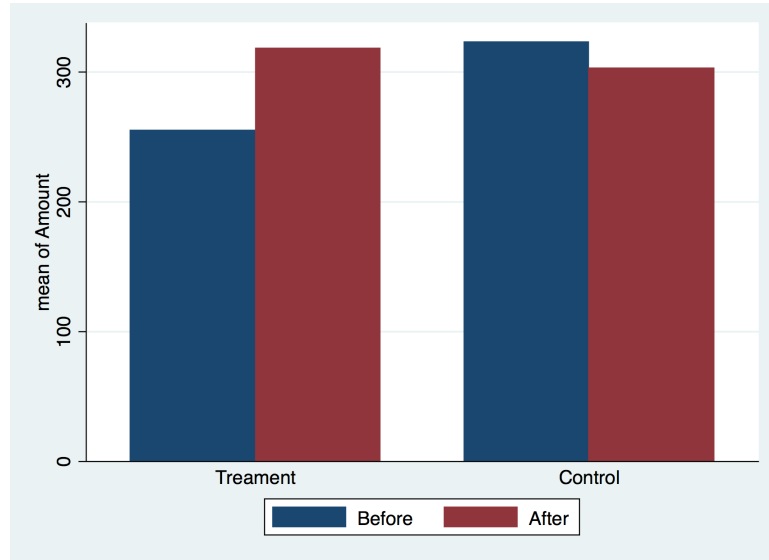


Fig. 6: Retirement Amount Changes: Cash Contributions Into Equity Funds

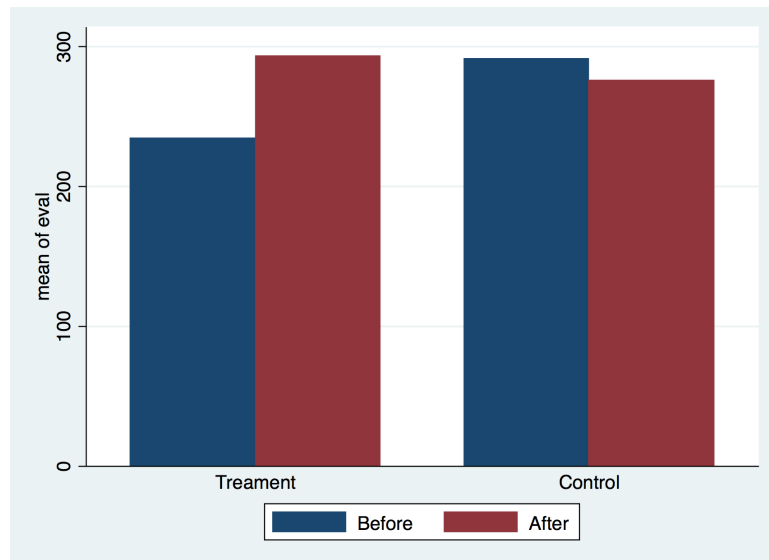


Fig. 7: Having IRA by Age and Wave

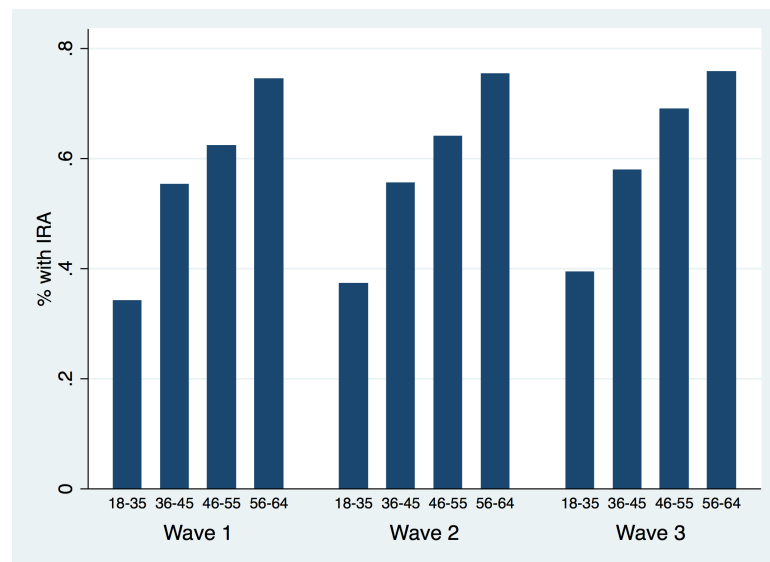


Fig. 8: Timeline

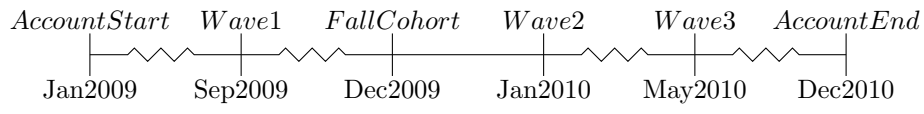


Table 1: Demographics by Treatment (Baseline)

	Control	Treatment	Total
Married	0.736* (0.441)	0.684 (0.466)	0.720 (0.449)
Child Dummy	0.703*** (0.457)	0.788 (0.410)	0.728 (0.445)
Own	0.819 (0.385)	0.801 (0.400)	0.814 (0.389)
College	0.324*** (0.468)	0.236 (0.425)	0.297 (0.457)
Minority	0.175 (0.738)	0.209 (0.773)	0.185 (0.749)
Female	0.803 (0.398)	0.832 (0.375)	0.812 (0.391)
Age 18-35	0.404* (0.491)	0.343 (0.476)	0.386 (0.487)
Age 36-45	0.230 (0.421)	0.246 (0.431)	0.235 (0.424)
Age 46-55	0.226 (0.419)	0.253 (0.435)	0.234 (0.424)
Age 56-64	0.125 (0.331)	0.131 (0.338)	0.127 (0.333)
Income	5.259*** (2.068)	4.795 (2.114)	5.119 (2.092)
Assets	8.106 (3.578)	7.673 (3.819)	7.976 (3.656)
Observations	700	301	1001

Standard deviations in parentheses. Differences in means reported at the * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$ reported. Child Dummy equals one if the individual has at least one dependent under the age of 18. Income is on an 8-point scale, where the average for the control group equates to about \$51,100 and \$45,540 for the treatment group. Assets are measured on a 12-point scale, where the mean for the control is approximately \$11,060 and the mean for the treatment group is approximately \$26,730.

Source: RP3 Surveys

Table 2: Baseline Financial Behaviors

	N	Mean	StDev
IRA	1079	0.516	0.500
Budget	1083	0.416	0.493
Insurance/benefits	1089	0.779	0.415
3 Months Savings	1089	0.479	0.500

Source: RP3 Surveys

Table 3: Knowledge Changes After Online Education

	Self-Assessed Knowledge Type (scaled between 0 and 1)			
	Credit Score	Interest Rate	Stock and Bond	Investment
	(1)	(2)	(3)	(4)
Wave 2	-0.0122 (0.0151)	-0.0179 (0.0144)	-0.0202 (0.0134)	0.00498 (0.0135)
Wave 3	0.0386** (0.0151)	0.0285* (0.0146)	0.147*** (0.0125)	0.144*** (0.0129)
Treatment	-0.0471** (0.0196)	-0.0438** (0.0192)	-0.0378** (0.0169)	-0.0231 (0.0174)
Treat \times Wave 2	0.0472* (0.0276)	0.0383 (0.0268)	0.168*** (0.0232)	0.120*** (0.0239)
Treat \times Wave 3	-0.00608 (0.0287)	0.00626 (0.0285)	0.00700 (0.0233)	0.00522 (0.0235)
Observations	2826	2826	2826	2826

Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Controls include income, assets, age, sex, minority, college, homeownership, test score, children.

Source: RP3 Surveys

Table 4: Behavior Changes After Online Education

	Dependent Variable equals one if individual has the following			
	(1)	(2)	(3)	(4)
	IRA	Budget	3 Mos Saving	Enrolled in Benefits
Wave 2	-0.00310 (0.0131)	-0.0162 (0.0154)	0.00549 (0.0154)	-0.0184 (0.0161)
Wave 3	0.0142 (0.0127)	0.0529*** (0.0163)	0.0647*** (0.0164)	0.0329** (0.0159)
Treatment	-0.0589* (0.0309)	0.0171 (0.0341)	-0.0576* (0.0305)	-0.0553** (0.0278)
Treat \times Wave 2	0.0743*** (0.0233)	0.0506* (0.0297)	0.0759*** (0.0274)	0.0820*** (0.0296)
Treat \times Wave 3	0.0536** (0.0251)	-0.0602* (0.0328)	0.00478 (0.0325)	-0.00612 (0.0346)
Constant	0.133* (0.0683)	0.314*** (0.0899)	0.307*** (0.0785)	0.420*** (0.0959)
Observations	2801	2812	2826	2826

Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Controls include income, assets, age, sex, minority, college, homeownership, test score, children.

Source: RP3 Surveys

Table 5: Behavior Changes After Online Education (only Waves 1 and 2)

	Dependent Variable equals one if individual has the following			
	IRA	Budget	Insurance	3 Months Saving
	(1)	(2)	(3)	(4)
Wave 2	0.000680 (0.0254)	-0.0161 (0.0264)	-0.0227 (0.0204)	0.0104 (0.0220)
Treatment	-0.0543* (0.0308)	0.0208 (0.0344)	-0.0582** (0.0273)	-0.0588** (0.0274)
Treat × Wave 2	0.0710 (0.0432)	0.0531 (0.0487)	0.0872** (0.0376)	0.0694* (0.0390)
Observations	1952	1961	1972	1972

Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.
 Controls include income, assets, age, sex, minority, college, homeownership,
 test score, children. This specification drops Wave 3 from the analysis.
 Source: RP3 Surveys

Table 6: Retirement Account Contributions After Online Education

	(1)	(2)	(3)
	Logged Amount	Logged Amount	Logged Amount
Treat1	-0.324** (0.132)	-0.285** (0.135)	
Post1	-0.0704 (0.0557)		-0.0651 (0.0551)
Treat1*Post1	0.565** (0.251)		0.474* (0.284)
Post2	-0.114*** (0.0397)	-0.172*** (0.0535)	-0.122*** (0.0396)
Treat1*Post2		0.575** (0.265)	0.140 (0.254)
Constant	5.488*** (0.0641)	5.473*** (0.0653)	5.488*** (0.0641)
Observations	3188	3188	3188

Robust standard errors in parentheses. 220 accounts at 10 credit unions (5 control) from January 2009 to December 2010 (24 months)

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Source: DC Plan Provider Account Records

Table 7: Treatment Effects for Non-Retirement Outcomes

	(1)	(2)	(3)
	EducationSaving	LateFee	AutoSaving
Wave 2	-0.0104 (0.00887)	-0.00540 (0.0126)	-0.00387 (0.0180)
Wave 3	0.00229 (0.00977)	-0.0354*** (0.0124)	0.0191 (0.0189)
Treatment	-0.00301 (0.0201)	0.0464* (0.0263)	0.0191 (0.0298)
Treat × Wave 2	0.00395 (0.0144)	0.00134 (0.0260)	-0.00571 (0.0327)
Treat × Wave 3	-0.0151 (0.0157)	-0.0183 (0.0280)	-0.0187 (0.0338)
Constant	0.0176 (0.0481)	0.152* (0.0892)	0.234** (0.0943)
Observations	2802	2809	2808

Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.
 Controls include income, assets, age, sex, minority, college, homeownership, test score, children.

Table 8: Heterogeneous Effects: IRA Use

	(1)	(2)	(3)	(4)	(5)	(6)
	All	No Coll	Female	Parent Fin	Lo Score	Under 46
Wave 2	-0.00214 (0.0132)	-0.00639 (0.0166)	0.00164 (0.0149)	0.0124 (0.0236)	-0.0239 (0.0288)	-0.00743 (0.0168)
Wave 3	0.0152 (0.0127)	0.0210 (0.0160)	0.0169 (0.0144)	0.0424* (0.0228)	-0.00410 (0.0276)	0.00548 (0.0162)
Treatment	-0.0572* (0.0316)	-0.101*** (0.0370)	-0.0609* (0.0348)	-0.0918 (0.0559)	-0.114** (0.0532)	-0.100** (0.0395)
Treat × Wave 2	0.0751*** (0.0232)	0.0839*** (0.0283)	0.0689*** (0.0263)	0.0561 (0.0364)	0.0744* (0.0418)	0.0847*** (0.0299)
Treat × Wave 3	0.0568** (0.0251)	0.0606* (0.0311)	0.0521* (0.0281)	0.0404 (0.0391)	0.0780* (0.0411)	0.0643** (0.0290)
Constant	0.188*** (0.0659)	0.143* (0.0768)	0.213*** (0.0618)	0.187** (0.0885)	0.150 (0.0984)	0.110 (0.0704)
Observations	2801	1948	2273	856	819	1714

Standard errors in parentheses

Source: RP3 Surveys

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Controls include income, assets, age, sex, minority, college, homeownership, test score, children.

Table 9: Heterogeneous Effects: Employer Benefits

	(1)	(2)	(3)	(4)	(5)	(6)
	All	No Coll	Female	Parent Fin	Lo Score	Under 46
Wave 2	-0.0184 (0.0161)	-0.0143 (0.0192)	-0.00631 (0.0185)	0.0116 (0.0305)	-0.0290 (0.0344)	-0.00140 (0.0209)
Wave 3	0.0329** (0.0159)	0.0414** (0.0196)	0.0461** (0.0179)	0.0381 (0.0328)	0.0511 (0.0351)	0.0396* (0.0217)
Treatment	-0.0553** (0.0278)	-0.0943*** (0.0350)	-0.0504 (0.0318)	-0.0558 (0.0544)	-0.0762 (0.0512)	-0.0317 (0.0380)
Treat × Wave 2	0.0820*** (0.0296)	0.0986*** (0.0363)	0.0739** (0.0335)	0.0904 (0.0563)	0.0945 (0.0577)	0.00551 (0.0388)
Treat × Wave 3	-0.00612 (0.0346)	0.0134 (0.0436)	-0.00631 (0.0397)	-0.0222 (0.0653)	0.00399 (0.0638)	-0.0157 (0.0462)
Constant	0.420*** (0.0959)	0.518*** (0.104)	0.387*** (0.101)	0.713*** (0.159)	0.304** (0.130)	0.431*** (0.103)
Observations	2826	1968	2296	864	830	1736

Standard errors in parentheses

Source: RP3 Surveys

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Controls include income, assets, age, sex, minority, college, homeownership, test score, children.

Appendix

Survey Questions

*Financial Knowledge:*⁵

1. How much do you know about credit scores and credit files?
2. How much do you know about investing for retirement?
3. How much do you know about interest rates and loans?
4. How much do you know about stocks and bonds?

Financial Behaviors:

1. Do you have an IRA retirement savings/investment account?
2. Do you have a weekly or monthly spending plan or budget?
3. I am taking advantage of all my retirement and insurance benefits at work. (1-5 agreement scale; rescaled disagree=0, agree=1)
4. I have at least three months expenses set aside in a readily accessible account (e.g. money market mutual fund). (1-5 agreement scale; rescaled disagree=0, agree=1)

⁵5-point scales, where 1=low and 5=high self-reported knowledge; re-scaled to be between 0 and 1.

Table 10: Dependent Variables by Treatment and Wave

	Control	Treatment	Total
Wave 1			
IRA	0.537 (0.499)	0.466 (0.500)	0.515 (0.500)
Budget	0.410 (0.492)	0.422 (0.495)	0.414 (0.493)
Benefits	0.798 (0.402)	0.739 (0.440)	0.780 (0.414)
3 Months Savings	0.501 (0.500)	0.441 (0.497)	0.483 (0.500)
Wave 2			
IRA	0.538 (0.499)	0.541 (0.499)	0.539 (0.499)
Budget	0.415 (0.493)	0.462 (0.499)	0.429 (0.495)
Benefits	0.806 (0.396)	0.789 (0.408)	0.801 (0.399)
3 Months Savings	0.515 (0.500)	0.513 (0.501)	0.515 (0.500)