Effects of mandatory financial education on low-income clients

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Public policies mandate financial education for financially distressed consumers in a variety of contexts, including bankruptcy and foreclosure, as well as for consumers faced with impending financial decisions. Financial education and counseling are provided in the workplace, in schools, by community groups, and as part of public programs. The impact of financial education on credit behavior is relatively untested. This article summarizes a randomized field study that evaluates a highly targeted mandatory financial education curriculum for very low-income clients in a housing voucher program.

Prior research

Several studies have documented the extent to which consumers in the United States and other countries fail to demonstrate financial literacy, numeracy, or both.[1] Financial knowledge measures tend to be higher for more-educated consumers and lower for lower-income consumers.[2] Consumers' understanding of interest and interest rates tend to be particular areas of weakness.[3]

One problem in financial literacy research is establishing accurate measures of financial knowledge. Many studies utilize self-reported knowledge scales ("how confident are you in your knowledge of…"). At least one study found that people tend to overestimate their financial knowledge relative to what they actually know.[4] Thus, studies that rely on self-reported data may yield ambiguous findings. Selection bias is an even more significant problem within existing financial education evaluations.[5] Unobserved characteristics including greater motivation and patience levels may drive certain individuals to seek out financial education or counseling. If these same characteristics also facilitate financial success, then selection effects and not financial education may be responsible for positive findings associated with financial literacy education.

The types of services examined in previous studies include short programs delivered in the context of a particular decision, more intensive one-to-one counseling, and longer-term formal education programs. The clients targeted are often moderate-income individuals faced with impending financial decisions, such as buying a home, investing for retirement, or correcting credit problems. Few evaluations have analyzed financial education programs targeted to very low-income families, and few have evaluated mandatory financial education programs delivered over several weeks. Furthermore, no evaluations have randomly assigned clients into treatment and control groups, so selection effects may have biased past evaluations.

Overall, the evaluation literature suggests that financial education can help individuals gain financial knowledge and that financial knowledge is linked to financial behavior. Possible outcomes from financial education include greater levels of savings, use of bank accounts, and improved credit behavior. Because of selection effects, however, further studies are needed for better estimates of the causal impacts of financial literacy education.

Modeling the effects of financial education

The literature on financial literacy education lacks a strong theoretical framework. Most studies rely on a "black box" model such that information or counseling is the input and the expected outcome is a measurable effect on knowledge and/or behavior. In general, theories of behavior change in the financial education field are derived from the health literature. These approaches all emphasize that behavior change results from a combination of attitudes, social norms, and intentions; knowledge gains alone are insufficient. The model of behavior change that underlies this study is based largely on Ajzen's Theory of Planned Behavior.[6] It is expected that housing voucher clients who complete a mandatory financial education program will exhibit greater improvements in three areas than a control group. First, consumers who complete a mandatory financial education program are expected to report greater increases in their self-assessed knowledge of financial issues. Second, they are expected to report greater improvements in their attitudes about saving and budgeting. Third, they are expected to exhibit greater improvements in objective measures of financial behavior including credit reports and bank statements. This model is admittedly simplistic, as it does not include social norms and instead assumes that social norms are similar across participants and are unaffected by the financial literacy program. This model recognizes that knowledge and behavior may interact through unobserved feedback mechanisms. For example, financial knowledge gained through past behavior may influence future behavior.

The Long Island Community Development Corporation study

I report here on a recent study that addresses some of the deficiencies in the financial education literature. Data for this study were provided by the Community Development Corporation of Long Island, New York (CDCLI). This nonprofit agency is the regional administrator of federal rental housing vouchers. Low-income families receive vouchers to subsidize rental payments made to private landlords. Recipients are also enrolled in the federal Family Self-Sufficiency (FSS) program. The FSS program allows families to earn additional income without losing their housing subsidies. All housing voucher clients in the FSS program are required to complete a financial education course, although clients have up to five years to complete the course. The CDCLI created a financial literacy program called "Financial Fitness" for these clients. Financial Fitness is delivered over five sessions and covers a range of topics including credit, savings, and budgeting. For this study, 144 very low-income housing voucher clients who needed to take the Financial Fitness course were randomly assigned to either a treatment group (which was required to take the course within one year of randomization) or a control group (which was prohibited from taking the course for one year). The majority of clients in the treatment group completed the five class sessions in one month or less.[7] Due to attrition, 17 of the 144 clients who initially agreed to participate in the study were dropped from the final sample. The final sample comprised 60 clients in the treatment group and 67 clients in the control group. Multiple statistical techniques were used to address the differential rate of attrition between the treatment and control groups.

Baseline characteristics

Table 1 shows that clients in both the treatment and control groups had little savings and poor credit ratings at baseline (FICO scores below 680 are considered "subprime" in this study). Average outstanding debt was higher for the treatment group than for the control group, but not at statistically significant levels. However, the treatment group's mean income was significantly higher than the control group's mean income at baseline. As a reference point, federal guidelines define very low-income as income below 30 percent of an area's median income, which equates to $24,000 for a family of four in this region (the mean family size for the entire sample is four). A higher percentage of the treatment group had subprime credit scores than the control group (83 percent compared to 73 percent), a difference that was statistically significant at the 10 percent level. The treatment group was also more likely to be employed full time (52 percent compared to 39 percent), which was significant at the 10 percent level. Although not reported in Table 1, about one-half of the clients in both groups were African American, one in ten were Latino or Hispanic, and the remaining one-third were white. Two composite indices aggregated questions concerning clients' self-reported financial knowledge and behavior. Table 1 displays clients' mean scores on both the knowledge and behavior indices at baseline. As might be expected from this relatively disadvantaged population, self-reported scores on both the knowledge and behavior indices tended to be low. In general, clients gave themselves higher marks for providing for their family and lower ratings for saving and investing. Aside from the income, subprime credit, and full-time employment variables, no other differences between the treatment and control groups were significantly different at baseline. This is expected given the randomization process.

Table 1
Selected Baseline Means for Treatment and Control Groups

	Treatment	Control
N	60	67
Savings balance	$363	$217
Subprime credit score (FICO<680)+	83%	73%
Outstanding debt	$8,463	$7,504
Income**	$23,239	$19,382
Welfare receipt	16%	17%
Less than high school education	16%	21%
Household size	3.9	4.0
Female client	96%	93%
Single headed household	73%	68%
Age (years)	39	39
Employed full time+	52%	39%
Years in the FSS program	3.7	3.6
Composite index of self-reported financial literacy[a]	1.77	1.73
Composite index of self-reported financial behavior[a]	1.13	1.29

Notes: The sample includes those that participated in both the baseline and follow-up surveys.
[a]Measured on a five-point scale where 0=poor and 4=excellent.
**Difference is statistically significant at the 1% level.
+Difference is statistically significant at the 10% level.

Estimated program effects

The statistical models indicate that financial education influences clients' self-reported financial knowledge and ultimately results in improvements in their financial behaviors. Although this study measured changes in clients' attitudes and perceptions, these findings were largely nonsignificant and are therefore not reported. Effects are estimated using difference-in-differences specifications across 35 measures. The measures include data from credit reports and bank accounts, as well as clients' responses to baseline and follow-up surveys. The surveys asked clients to rate their financial knowledge and behavior.[8]

Financial knowledge estimates

Based on prior studies, financial knowledge has a strong association with financial behavior. It is expected that clients who completed the financial education program would report greater increases in their understanding of a variety

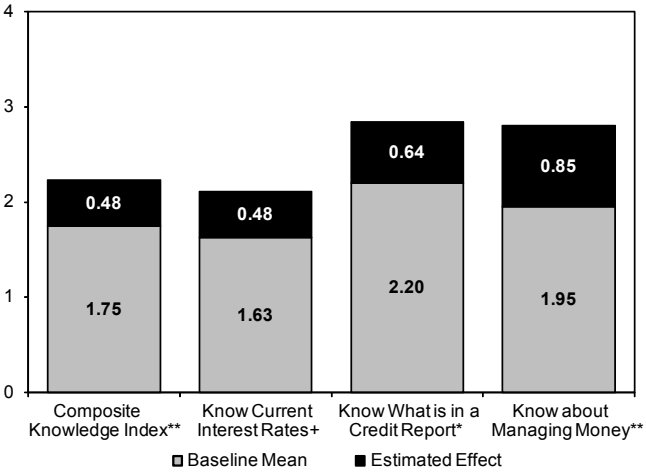

Figure 1: Estimated effect of financial education on self-reported knowledge (0=nothing, 4=a lot).

Notes: n=127; + significant at the 10% level; * significant at the 5% level; ** significant at the 1% level.

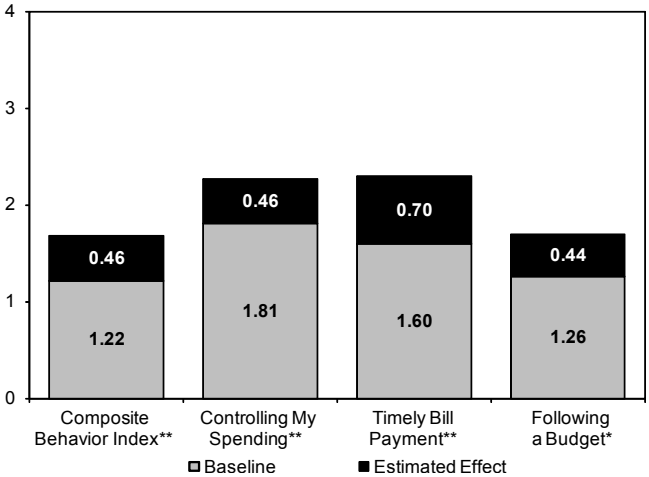

Figure 2: Estimated effect of financial education on self-reported behavior (0=poor, 4=excellent).

Notes: n=127; + significant at the 10% level; * significant at the 5% level; ** significant at the 1% level.

of financial topics compared to clients in the control group. Clients completed a series of questions about how much they understood interest rates, credit ratings, managing finances, investing, and what is on their credit reports. Responses ranged from "nothing" (0) to "a lot" (4). A composite index was created that aggregates clients' scores across the self-reported knowledge measures. Figure 1 shows the estimated effect of financial education on the aggregate index, as well as on three specific questions that were statistically significant. The baseline mean for the composite knowledge index was 1.75, and the difference-in-differences estimation indicates that the financial education program led to a 27 percent increase in this index at follow-up (to 2.23). The program was also associated with increases in clients' knowledge of money management, what is on their credit reports, and current interest rates. Consistent with the program's scope, Financial Fitness was not associated with improvements in clients' self-reported knowledge of investing. While these self-reported knowledge gains are promising, the program's ultimate goal was facilitating behavior change.

Financial behavior estimates

Clients answered a series of questions about their self-reported financial behaviors. Responses to these questions ranged from "poor" (0) to "excellent" (4). A composite index aggregates clients' responses to the self-reported behavior questions. Figure 2 shows the estimated impact of the Financial Fitness program on the self-reported behavior index, as well as on three specific behaviors that were statistically significant. The mean score on the composite index was 1.22 at baseline. The statistical analysis indicates that the financial education program led to a 38 percent increase in the composite score at follow-up (to 1.68). Clients' self-reported ability to control their spending, pay their bills on time, and budget were also significantly higher at follow-up.

Savings account and credit report data contain two objective measures of clients' financial behavior. The mean savings balance was $286 at baseline. The regression analysis indicates that the Financial Fitness program led to an increase of $362 in savings, an increase that was significant at the 1 percent level. Over one-third of the curriculum used in this study focused on managing credit and debt, a typical topic for courses provided to low-income families. Credit report data include a FICO score—named for the Fair Isaac Corporation, which developed the score. FICO scores range from 300 to 800 and are based on a proprietary formula using multiple variables contained in the credit report, including the number of accounts, amount and age of debt, and share of available credit in use by the individual. The statistical analysis indicates that the financial education program led to a statistically significant decrease in the percentage of clients with credit scores in the subprime range (again defined as 680 in this study). The marginal effect of the financial education program on the percentage of clients with subprime credit scores was estimated to be a decrease of 13 percent. Improvements in credit scores may allow clients to qualify for lower interest rates and help clients access additional credit.

Discussion

The Financial Fitness program was designed to help clients access basic banking services, learn budgeting skills, boost savings, and repair credit problems. This study shows that financial literacy education is indeed related to improved financial behavior among the program's very low-income clients. The primary evidence of behavior change is the significant increase in savings account balances (an additional $362), as well as the modest decrease in the percentage of clients whose FICO scores were below 680. Clients' self-reported knowledge gains were also greater for the treatment group than for the control group, especially in the areas of credit and money management. In contrast to the improvements in clients' financial knowledge and behavior, the find-

ings concerning financial attitudes were largely nonsignificant. In the end, many of the findings are surprisingly robust given the relatively small sample size and the weak impacts reported in past studies.

This study has several advantages over previous studies. It includes objective measures of behavior from bank accounts and credit reports, rather than relying solely on self-reported data. The financial education program was mandatory, which reduces the potential bias introduced when clients select into a program. Clients were randomly assigned to the treatment group or the waitlisted control group. This design minimizes concerns about withholding services, and randomization allows for better causal estimates than descriptive (e.g., pre-post) or quasi-experimental evaluations. Furthermore, the one-year follow-up period gave clients enough time to incorporate knowledge gains into their behavior. Behavior changes could then be documented in credit report and bank account data. Finally, because clients were enrolled in a housing voucher subsidy program, they were closely monitored and data were regularly available as part of the program's administrative process.

Despite these advantages, several caveats are worthy of discussion. Generalizing these results to other programs requires caution. Because clients' initial financial circumstances were particularly dire, they may have responded more strongly to financial education than consumers with more stable financial situations. On the other hand, administrative notes suggest that clients experienced a variety of obstacles including domestic violence, unstable employment, drug and alcohol abuse, and problems finding and maintaining adequate day care. Given the array of problems clients confronted, one may expect that the Financial Fitness course would have more limited impacts. This study is also specific to very low-income households in a housing subsidy program that included a financial self-sufficiency component, which raises further questions about the study's generalizability. Because clients were enrolled in other programming, they may respond differently to financial education than clients who are enrolled in housing subsidy programs that lack a self-sufficiency component, or clients who are not part of any type of housing subsidy program.

There are also problems related to the study's design. First, the sample is small and was reduced considerably by the consent process and attrition. The effects of consent and attrition are only partially observable. While an analysis of the consent process indicated that it did not bias the results, attrition was not random. Clients in the treatment group were more likely to leave the program. While the statistical models included observable characteristics in order to minimize attrition bias, the models cannot account for unobserved characteristics related to clients' decisions to leave the program. The second problem with the design is that members of the control group were aware of their participation in the study. The consent process alerted clients that they needed to complete the Financial Fitness course. Clients who were waitlisted and told they could not attend Financial Fitness classes for one year may have reacted to this information in ways that affected their survey responses and even their behavior. For example, clients in the control group may have initially intended to create a budget but upon being waitlisted decided to wait until they took the course. Program staff suggested that while some clients were excited about the program, most clients viewed it as just another requirement to remain eligible for their housing vouchers. Nonetheless, the design may have introduced some unobserved bias.

Directions for future research

This study has three primary implications. First, mandating financial education can have positive effects on savings and credit outcomes among very low-income individuals. Financial education can also lead to improvements in clients' self-reported understanding of financial issues. If increasing savings levels and improving credit outcomes are policy goals, then incorporating mandatory financial education courses into public programs may be a successful public policy.

Second, from a social welfare perspective, mandatory financial education programs may lead to improvements in savings levels and credit quality that are more valuable than the costs of service delivery. Additional benefits will be realized as improvements in clients' credit ratings yield lower borrowing costs and greater access to credit. To the extent that financial education can be delivered at a cost equal to or below its marginal benefit, financial education is a good investment of public and private resources if improving low-income families' financial status is a policy goal.

Third, this study indicates that if influencing clients' attitudes and perceptions is deemed important—and the literature suggests beliefs are a precursor to behavior change—then the content of financial literacy efforts should focus more on examining attitudes toward spending, saving, incurring debt, and taking financial risks. Providers of such courses should focus on the use of debt, planning for financial risks, and weighing the costs and benefits of taking on various types of debt versus paying off existing debt or saving. Teaching "values" is challenging, however, and may require innovative new approaches.

It may also be possible to complement educational efforts with longer-term "coaching" services. Using regular check-ins, a financial coach can help clients implement the skills and knowledge they gain from formal financial education programs, as well as monitor clients' progress over time. Coaches can help clients formulate and achieve financial goals and provide support for maintaining desired behaviors.[9] Programs could also use peer groups as a support structure to help clients adhere to financial goals and develop positive attitudes about money and savings. These approaches may help provide self-control and impose constraints on people who want to save and pay off debt, but who have difficulty putting their newfound knowledge and skills into action.

Future research on financial literacy education could expand on these findings by examining longer time periods. A longer study period would allow for further analysis of the impact of financial education on credit and savings outcomes. Given the increased risk of attrition as the study period is lengthened, however, such an approach would require a substantially larger initial sample to allow for more extensive modeling.■

[1]For a review, see A. Lusardi and O. Mitchell, "Financial Literacy and Retirement Preparedness: Evidence and Implications for Financial Education," *Business Economics*, 42, No. 1 (2007), 35–44.

[2]J. Agnew and L. R. Szykman, "Asset Allocation and Information Overload: The Influence of Information Display, Asset Choice and Investor Experience," *Journal of Behavioral Finance*, 6, No. 2 (2005): 57–70.

[3]D. Moore, *Survey of Financial Literacy in Washington State: Knowledge, Behavior, Attitudes, and Experiences*, Technical Report No. 03-39, Social and Economic Sciences Research Center, Washington State University, 2003.

[4]Agnew and Szykman, "Asset Allocation and Information Overload."

[5]S. Meier and C. Sprenger, *Selection into Financial Literacy Programs: Evidence from a Field Study*, Policy Discussion Papers, Boston: Federal Reserve Bank of Boston, 2007.

[6]I. Ajzen, "From Intentions to Actions: A Theory of Planned Behavior," in J. Kuhl and J. Beckmann (Eds.), *ActionControl: From Cognition to Behavior* (pp. 1 l–39) (Heidelberg:

Springer, 1985).

[7]Completing the course was mandatory. All clients were required to fill out baseline and follow-up surveys. The follow-up survey was administered 12 months after the baseline data collection for each client. The sample was completed in September 2007. Clients received a total of $60 dollars if they completed both surveys ($30 each survey).

[8]The original paper uses three difference-in-differences specifications, only one of which is reported in this article. The first specification is a traditional difference-in-differences experimental estimator. This approach estimates the difference in changes between the treatment and control groups from baseline to follow-up, using an indicator for assignment into the treatment group. The second specification uses propensity score matching to weight the traditional difference-in-differences experimental estimator. This specification attempts to balance the treatment and control groups due to the differential level of attrition. The third specification, reported here, includes control variables to account for differences in the baseline values for each group that may be associated with the intensity of other services received. In most cases the results become more robust using the weighted estimator with controls, as might be expected.

[9]See, for example, A. Minzner, .S. Hebert, A. St. George, and L. LoConte, *Evaluation of the CWF Coaching Pilot* (Cambridge, MA: Abt Associates, Inc., 2006).

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IRP named RIDGE Center for National Food and Nutrition Assistance Research

Officials from the Economic Research Service (ERS) of the U.S. Department of Agriculture have chosen the Institute for Research on Poverty (IRP) at the University of Wisconsin–Madison to be a center for national research on nutrition assistance programs. The primary mission of the new and unique center, called the IRP\RIDGE Center for National Food and Nutrition Assistance Research, will be to stimulate innovative research related to food assistance programs, enable training of researchers interested in food assistance issues, and provide timely and accessible information on new research findings.

ERS also created a second research hub, the RIDGE Center for Targeted Food and Nutrition Assistance Research, at the Southern Rural Development Center (SRDC), Mississippi State University. The IRP RIDGE Center will focus on food and nutrition issues that affect the nation as a whole, and SRDC will focus on issues as they affect specific populations, such as residents of rural areas, Native Americans, and immigrants.

As the new RIDGE (Research Innovation and Development Grants in Economics) Center, IRP serves as a nationwide hub for sponsoring new research related to such programs as the Supplemental Nutrition Assistance Program (Food Stamps); Special Supplemental Nutrition Program for Women, Infants, and Children (WIC); and the National School Lunch Program. Visit IRP's Web site at www.irp.wisc.edu for further information about the program, grant opportunities, and a new visiting scholar program for food assistance researchers. See page 34 for abstracts of the four 2010–2011 RIDGE projects.

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