

Effectiveness of Online “Early Intervention” Financial Education for Credit Cardholders

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Abstract

As part of the Saint Paul Foundation’s Credit Card Project, three credit card issuers conducted randomized tests of whether offering online credit card education to credit cardholders is effective in changing behavior. The targeted populations were either new cardholders or cardholders reaching the point of first delinquency, and two of the tests involved college students. Completion of online credit education correlates with more responsible³ credit card usage, but the experiments don’t prove that the education causes this behavior. Experiments with college student cardholders by Wells Fargo found much more responsible behavior by those who choose to complete the online education. Both Wells Fargo and U.S. Bank, however, found smaller overall differences between the control and experimental groups. Tests for a statistically significant effect on the full experimental group are negative. If the behavioral differences are taken as given, impacts on issuer profitability are mixed. Because group means imply the experimental group is more likely to pay on time and have lower revolving balances, the issuers lose interest and late and over-limit fee income on experiment group customers. This is not offset by lower charge-off losses. Still, the experiment group customers remain profitable in absolute terms now and may be more loyal and profitable in the long run. Target Financial Services’ and U.S. Bank’s tests offering online education to cardholders at about the time of their first delinquency did not achieve high rates of participation, despite some other positive results.

I. Introduction.

Although most consumers use credit cards and revolving credit responsibly, a significant minority has serious trouble managing credit card debt. For example, about 6 percent of credit card debt is written off each year as uncollectible; about 20 percent of credit card accounts are rated as subprime (for elevated risk of default); about a quarter of all cardholders pay only the required minimum payment on their outstanding balance; and 1.3 million cardholders declared bankruptcy in 2002.⁴ In a previous analysis of individuals experiencing problems with credit card debt,⁵ the Credit Card Project of the Saint Paul Foundation identified two vulnerable populations

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³ We use the term “responsible” as shorthand to designate behaviors that generally contribute to higher credit scores, such as paying on time, not exceeding limits, avoiding cash withdrawals, etc. We take no stand on whether the behaviors benefit the cardholder or exhibit greater rationality, prudence, or moral character.

⁴ From www.cardweb.com/cardlearn/stat.html, maintained by CardWeb.com Inc. (an online extension of RAM Research Group), a leading online publisher of information about payment cards.

⁵ See pp. 6-7 and 36-41 of “Credit Card Debt: Helping the Consumer Become a Better Financial Manager,” a Phase Two Report of the Committee Exploring Sensible Selling and Use of Credit Cards within Vulnerable Populations, St. Paul, Minnesota, February 2003, referred to hereafter as the Phase Two Report and available by request from the first author of this paper or at www.saintpaulfoundation.org/filerepository/downloads/CreditCardProjectPhaseIIReport.pdf

for further analysis – those new to the credit card market (especially young people) and those whose credit card usage and payment behaviors suggest that they are on the verge of experiencing financial difficulties. To oversee analysis of new online credit education programs for these target populations, the Credit Card Project established an Industry Practices Committee including representatives of three credit card issuers and VISA, along with credit counselors, Project representatives, and others.⁶ The Saint Paul Foundation hosts the project. The foundation is a local community foundation headquartered in St. Paul, Minnesota; it is dedicated to supporting a healthy and vital community in which all people have the opportunity to enhance the quality of their lives and the lives of others. This paper outlines how the analysis was conducted and summarizes the results to date.

The analysis was initially designed as three controlled experiments with randomized assignment of targeted populations to the experimental or control group. Each of the three card issuers identified a specific target population, ranging from college students receiving a new card (Wells Fargo) to existing cardholders just nearing (Target Financial Services — hereafter “Target” — as estimated by its internal model) or just past the point of becoming delinquent (U.S. Bank’s first experiment; this population was drawn from college student cardholders). Because of limited response by post-delinquency cardholders, however, U.S. Bank subsequently added experiments targeted at nondelinquent but higher risk (based on their account history) college student cardholders (U.S. Bank’s second experiments). In each case, members of the experimental group were provided information about credit education, including an offer to obtain further education online. In two cases, an incentive was offered for completing the online education. Individuals in the experimental group were free to accept or refuse the offer, and those who responded by at least viewing the online material then further decided whether or not to complete the education. Members of the control group did not receive any special offers, apart from those available to all cardholders of their type.

The issuers tracked the card usage and payment performance of both experimental and control group individuals. With the exception of U.S. Bank’s second experiments, they also tracked the experimental group’s response to the offer of online education. For individuals in the experimental group who completed the online education offered by Target or by U.S. Bank’s first experiment, VISA tracked how much their knowledge increased (as measured by pre- and post-tests). Wells Fargo tracked this information internally. Finally, the issuers also recorded the expenses incurred to conduct the experiments, so that costs can be compared to the issuers’ bottom-line benefits, as well as to less precise measures of benefit to the cardholders.

The results are an experiment for assessing the effects of adding the tested programs to the mix of resources already available and a data set on their effectiveness. We believe this is one of the first papers to assess mass-marketable consumer credit education by means of an experimental design with random assignment and tracking of key financial benefits and program costs. It is also one of the first papers to assess the behavioral effectiveness of programs offering online and other inexpensive credit education at an early stage of credit deterioration.

⁶ Institutional participants in the Industry Practices Committee include the Center for Ethical Business Cultures, Fair Isaac Corporation, Family Means, the Federal Reserve Bank of Minneapolis, Target Financial Services, University of St. Thomas School of Law, U.S. Bank, VISA, and Wells Fargo.

Preliminary results are mixed but informative. In the Target and U.S. Bank efforts that were aimed at incipiently or recently delinquent accounts, acceptance of the offer of online education was lower than expected and undercut our ability to assess the effects of offering online education. In addition, U.S. Bank's initial efforts to contact college student account holders by telephone were also often unsuccessful. The Credit Card Project has tentatively concluded (1) that offering online education to account holders nearing or beyond delinquency, without additional more-intensive outreach, may not be effective, and (2) that mailing may be superior to telephoning for reaching college student cardholders. Regarding mailed offers of online credit education to college student cardholders, there is both hopeful and disappointing news. Almost 7 percent of the college students in the Wells Fargo experimental group tried or completed the online education offered, which is considered to be a good response rate for a mailing. In addition, Wells Fargo found that those who complete online education exhibit much more responsible credit card usage than those who don't, and their behavior often helped make the entire experimental group's results be slightly more responsible than the control group's results. U.S. Bank found qualitatively similar results for the experimental group in its second experiments, in which an education brochure with references to credit education web sites was mailed but use of the online site was not tracked. However, based on data available to date, none of the differences we found in overall performance between the control and experimental groups satisfy a conventional test of statistical significance.⁷ Thus, we cannot say conclusively how much of the better performance of those completing the education is due to the education rather than these individuals' preexisting traits. (In retrospect, it would have been useful to add another layer of randomization, whereby those logging on to the online education would have randomly been assigned to either the actual educational course or a "placebo" course with little educational content.) As to the economic significance of the education initiatives, the numerically more responsible behavior of the test group overall tends to reduce card issuer interest and fee revenue without necessarily producing a sufficient offset through reductions in account charge-offs or increases in interest and interchange income. In other words, early provision of online credit education options to college students, though reasonably low cost and promising in the behavior observed by those completing the education, have not yet been proven profitable to the card issuers paying to provide the education.

The remainder of the paper consists of background and literature review, plan and implementation of the research, results, and concluding remarks.

II. Background and Literature Review

In 2002, project members reviewed both anecdotal evidence of egregious credit card debt problems and broader surveys and collections of data on the topic. They concluded that most consumers use credit cards wisely but that a significant minority has serious trouble, as indicated by delinquent payments, use of credit card debt counseling and debt restructuring, and bankruptcies involving significant credit card debt. Within this minority, project members "identified two especially vulnerable populations – those new to the credit card market (especially young people) and those whose credit card payment behaviors indicate that they are

⁷ At this point, data for a potentially interesting joint test of the significance of the various differences are not available to the authors.

‘on the edge’ of financial difficulty.”⁸ This section briefly reviews some of the evidence on card usage by these vulnerable populations and, in particular, on credit card usage by college students, who make up the majority of the experimental subjects in this study.

Most adults, including young adults and college students, have at least one credit card. The Federal Reserve’s Survey of Consumer Finances indicates that over 76 percent of U.S. families had at least one credit card in 2001 (Aizcorbe, Kennickell, and Moore, 2003, p. 25). No similar comprehensive survey of college students is available, but a variety of surveys and data suggest that something like 60 to 85 percent of college students also have at least one credit card (Lyons, 2003; O’Malley, undated; TERI-IHEP 1998; GAO, 2001; Lawrence et al., 2003). Most college students who have a credit card acquire it either while in high school or during their first year of college (Lyons, 2003; TERI-IHEP 1998; GAO, 2001; Lawrence, et al. 2003). Some of these college cardholders struggle with managing their credit card debt. As the project committee noted in its report (p. 6), “Almost everyone has heard media reports or knows of someone who has struggled with credit card debt.”

Data on college credit card debt problems in several studies confirm that some college students struggle to manage their credit card debt. A study of credit card accounts shows that, compared to the credit card accounts of older adults, college student card accounts are charged to more frequently, have balances equal to a greater percentage of their credit limits, are more likely to be paid late, and have a higher percentage of their outstanding balances charged off by issuers (Staten and Barron, 2002). Surveys of college students, which encompass their potential use of multiple credit cards, echo some of the findings of the previous study of accounts. For example, Lyons’ (2003) survey of students at 12 midwestern universities found that over 6 percent were delinquent on payments and over 15 percent had reached a credit limit on their cards. Lawrence et al. (2003, p. 9) report that 11 percent of students surveyed at Louisiana State University had a credit card balance over \$3000, and the percentage of college students applying for certain types of financial aid who carried high balances (\$3000-7000) increased from 14 percent in 1998 to 21 percent in 2001 (O’Malley, undated).

Some of these studies indicate that credit card debt problems are relatively prevalent among certain segments of the college population. Lyons’ (2003, pp. 34-35) survey of midwestern university students revealed that the following traits were correlated with experiencing an “at-risk behavior” (balance over \$1000, delinquent, at credit limit, or not paying balance in full):

- financially independent from parents;
- receiving financial aid;
- holding substantial balances on other types of debt;
- having a lower grade point average;
- working more hours or having higher earnings;
- having acquired their most used card from a campus table, over the phone, or online, rather than from their parents;
- being female, African American, or Hispanic; and
- being a junior or, especially, a senior.

⁸ Phase Two Report, pp. 6-7.

These points are generally corroborated by other studies not limited to midwestern universities. Munro (1997) fails to find gender differences but confirms Lyons' findings regarding minorities and juniors and seniors. She also finds that not paying in full each month is more than twice as common for those who acquired their first credit card while in college, as opposed to before. Harmel (1999) reports on a survey by Jamba-Joyner at the University of Florida that finds women, minorities, and students with lower incomes were less likely to pay off their credit cards. The TERI-IHEP (1998, p. 15) survey finds credit card financial difficulties to be especially high among "non-traditional undergraduates [who] tend to be older, financially independent, and part-time students, and are often married and have children." However, it should be stressed that the relationships cited here are correlations and do not in themselves imply that the listed traits cause credit card debt problems.

Some studies further note a possible relationship between credit card debt difficulties and difficulties in the classroom. In Lyons' (2003) survey, for example, students displaying credit card risk behaviors were more likely to experience physical and mental discomfort, to report difficulty concentrating on their studies, and to say that their financial situation was reducing the odds that they would complete their degree.

Notwithstanding the numerous difficulties reviewed above, most young and old consumers managed their credit card debt wisely. For the most widely held type of card – the general-purpose bank-issued card – about 55 percent of U.S. cardholders said they usually pay off their credit card bills in full each month, and the median monthly charge reported was \$200 (Aizcorbe, Kennickell, and Moore, 2003, p. 25). Typical college students are as prudent or more so in many ways. Looking first at the individual credit card accounts owned by college students, Staten and Barron find that, compared to accounts of older adults, college students' accounts:

- have far lower credit limits, on average, among active accounts (\$1395 versus \$7436), which tends to limit the amount of debt per account for students;
- have lower average balances (\$552 versus \$2342);
- are more likely to be paid in full in a given month (among accounts with positive balances);
- have substantially smaller charges and cash advances;
- are less likely to incur finance charges in a given month (but more likely to incur fees for being late or over their credit limit);
- have higher delinquency rates overall (but this difference is reduced or reversed for accounts with higher balances, over \$1000); and
- have a higher overall incidence of debts being charged off, but a markedly smaller incidence for accounts with balances over \$2000 (0.24 percent versus 1.19 percent) and substantially smaller amounts charged off on average over those accounts with charge-offs (\$1178 versus \$5196).

Although these data show that the debt management of credit cards owned by college students is generally sound, the Staten and Barron study cannot directly assess the situation of students who have multiple cards. However, surveys that ask students to report on their entire credit card debt paint a similar picture of generally prudent usage (Lyons, 2003; TERI-IHEP, 1998; GAO, 2001; Lawrence, et al. 2003).

Regarding the other vulnerable population the project identified – existing cardholders whose credit card debt problems were just beginning to emerge – there are fewer studies or even anecdotes. Elliehausen, Lundquist, and Staten (2003, p. 31) study borrowers with fully developed debt crises and find evidence that one-on-one credit counseling at that stage “has a positive impact on borrower behavior over an extended period.” The question addressed here is whether a similarly positive impact can be found when the counseling method used is less expensive but delivered earlier in the development of the problem.

An underlying premise of the research summarized below is that lack of knowledge contributes to the credit card debt problems of both vulnerable populations identified by the project. This premise is based in part on project members’ experience with student cardholder focus groups (Phase Two Report, p. 26). Among a diverse group of students, “few participants could express what terms were agreed to when they first acquired credit...There was a serious lack of understanding of the impact they might experience with non-payment or insufficient payment. Awareness of the real costs of products/services once they become part of monthly revolving debt is rarely found.” Several other studies also suggest a low level of understanding of personal finance and credit concepts among Americans in general and young Americans in particular, or recommend additional financial education. (For example, see Chen and Volpe, 1998; Baum and O’Malley, 2003; Lyons, 2003, p. 37; or Jump\$tart, 2004.) At the same time, relatively few studies carefully assess whether financial education can improve either the knowledge or credit management behavior of consumers (GAO, 2001, p. 41; Munro, 1997, p. 43; Braunstein and Welch, 2002; Todd, 2002). The research reported here helps fill that gap and is one of the first carefully controlled studies of the effectiveness of online credit education.

III. Methodology

For Phase Two of its work, the project committee (Phase Two Report, pp. 6-7) focused its recommendations on assisting the two vulnerable populations it had identified “with an overall goal of **helping consumers manage credit cards successfully.**” The first two of the project committee’s five recommendations, which led directly to the research reported here, were as follows:

- “1) **testing changes in industry practices** that might help the consumer better understand the responsibilities of a cardholder and **raising awareness within the industry** of measures that can both help consumers and reduce charge-off rates;
- 2) **providing earlier intervention** to help those on the verge of financial trouble rectify their situation before it worsens.”

To carry out key parts of these two recommendations, project management established a new Industry Practices Committee (IPC). The IPC is chaired and administered by project representatives and advised by credit counselors, a regulatory agency economist, an attorney, and others. However, its key working core consists of representatives of three bank credit card issuers (Target, U.S. Bank, and Wells Fargo) and VISA.

Each of the three issuers initiated and tracked controlled experiments in which a randomly selected experimental group was contacted and offered online credit education, possibly along with an incentive for completing the education. A randomly selected control group received only standard cardholder treatment. For the Target study and U.S. Bank's first study, VISA supplied the online education and tracked whether members of the experimental group log on to or complete the online course and how they perform on quizzes. For the Wells Fargo study, VISA's educational products informed the online offering and Wells Fargo tracked the performance. In U.S. Bank's second experiments, information about online credit education was provided, but usage was not tracked. The issuers monitor the credit card usage and payment performance of individuals in the control group and those in the experimental group as well as the costs incurred to operate the experiment.

Project organizers coordinated meetings that allowed the three issuers to adopt a common reporting framework for their experiments. All reported on experimental and control group experience with late fees, over-limit fees, delinquencies, charge-offs, spending, revolving balances, and payments as a percentage of balances. FICO scores were tracked at the beginning of the experiment and at least once again after performance results had accumulated. The issuers also tracked the costs of offering the education and key operational measures, such as number of right party connects (RPCs) or promises to pay (PTPs). Finally, each issuer periodically meets with the Industry Practices Committee to discuss results in an open-ended format. All three issuers have contributed considerable time, effort, and money to the experiments, and all three efforts have enhanced understanding of how online credit education can help prevent full-blown credit card debt problems. This paper will devote more attention to the experiments in which educational participation was high enough to support quantitative analysis of its impact, or primarily the Wells Fargo experiment and the second U.S. Bank experiments. However, we emphasize that all three issuers fully supported their experiments and that all the experiments yielded insights useful in designing effective online credit education. The following sections provide additional detail on the design and results of each experiment⁹.

IV. Wells Fargo Experiment and Results

Wells Fargo tested within a population of college students who had recently acquired a Wells Fargo credit card. Cardholders were randomly assigned to either the test or control group and were drawn primarily from the states in which Wells Fargo has a banking presence. From August through November 2003, almost 78,000 randomly selected new college credit cardholders were assigned to the experimental group, with 3000 randomly assigned as controls. Individuals in the experimental group were sent a direct mailing asking them to complete online credit education and quizzes that were customized by Wells Fargo, using the strengths of VISA's "Practical Money Skills for Life" curriculum. The recipient was given a special ID number and asked to use it when logging into the customized Wells Fargo site. The ID number allows Wells

⁹ As the Industry Practices Committee was developing the experiments discussed in this paper, committee members became aware of VISA's MoneyChoices Value Study. Because that study shares some of the objectives of the Industry Practices Committee, Target and U.S. Bank chose to incorporate MoneyChoices tools into their Industry Practices Committee experiments and to share data with the Value Study, which includes other issuers as well as Target and U.S. Bank. VISA will report separately on the MoneyChoices Value Study.

Fargo to track usage of the site by members of its experimental group; this site cannot be accessed without the special ID. The mailer explained that those completing the online course would be rewarded with a 60-minute phone card. The subsequent mailer containing the card also contained a letter providing additional credit education. The online education focused on key basic concepts and information, such as the responsibilities of a cardholder (e.g., paying on time), common credit card terms and definitions, how to build a good credit history, and “warning signs” that your credit history may be deteriorating and whom to contact if so.

Partly because Wells Fargo’s experiment yielded good participation rates from the beginning, its results are the most complete. On the positive side, Wells Fargo achieved substantial response to an inexpensive mailer offering online credit education. Credit card usage appears clearly more responsible for those completing the online education and at least slightly more responsible for the experimental group as a whole, compared to the control group. However, the slight differences between the experimental and control groups do not pass conventional tests of statistical significance (tests for the difference of two sample means). As a result, we lack decisive evidence that the strongly different behavior of those completing the online education was actually produced by the education. It may instead reflect, partly or in full, that students who are already predisposed to behave responsibly are also more likely to accept the offer of online credit education. In addition, the slight but positive differences between the experimental and control groups were not of the type and size to clearly establish that the experiment was profitable to Wells Fargo. We provide detail on these points below.

Almost 7 percent of the Wells Fargo experimental group responded to the direct mail offer to log into Practical Money Skills for Life with their special ID, with 6.65 percent of the experimental group actually completing the course (5,179 individuals) and another 0.17 percent (136 individuals) logging on to the site but not completing it. Among those who logged on, over 97 percent finished the course, indicating that it was not overly burdensome. All three issuers consider the educational participation rate in the Wells Fargo experiment to be excellent for a mailed offer with a small incentive (a 60-minute phone card for completion). Those logging on appear to be relatively financially knowledgeable, based on their scores on the pre-quiz. Nonetheless, they also learn from the course, as their scores on the final quiz are even higher.

Positive performance by those responding to the mailer and completing the online education is very clear. Using the November 2004 results from Table 1 and comparing with the control group individuals, those who completed the online education are more timely in paying what they owe. In particular, they are a third less likely to have ever been late with a payment or to have exceeded their credit limit, 43 percent less likely to have ever been 30 days delinquent, and 57 percent less likely to have ever been 60 days delinquent. Their total late payment, over-limit, and delinquency instances per account are roughly half that of the control group. As a result, they pay about half as much in late and over-limit fees, per account, as the control group. Given their more timely payments, it is not surprising that accounts of those completing the online education also are 66 percent less likely to be charged off. They achieve better payment performance despite using their cards more. Compared to the control group, they make about a third more merchandise purchases per month. Despite their higher spending, they are 12 percent less likely to have ever carried a revolving balance; they have lower revolving balances per account; and they pay a higher ratio of any revolving balances they have. In short, those

completing the online credit education offered in the Wells Fargo experiment use their cards more and far more responsibly than the control group. This is reflected in the higher credit score for the completed-education group as of November 2004. This is also true when they are compared to the 93.2 percent of the experimental group that did not log on to the educational site.

These positive results for experimental group members who voluntarily chose to participate in online credit education are striking and of independent interest. However, they do not determine the extent to which the online education caused the more responsible behavior. It is likely, for example, that those who choose to participate are predisposed to be more knowledgeable and responsible, so that their superior performance partly reflects this predisposition. In fact, this group's average credit score was already over 1 percent higher than the control group's when they applied for their Wells Fargo credit cards. Table 2 shows additional preexisting differences between those who completed the online education and those in the control or didn't-log-on groups. (In Table 2, differences from the control group of at least 3 percentage points or 3 FICO points can be regarded as statistically significant at the 5 percent level.) For example, compared to the control group at the beginning of the experiment, the completed-education group was more likely to be enrolled in a four-year school instead of a two-year or trade school, more likely to live in a dormitory and less likely to live with parents, more likely to receive grant or school-based income, and less likely to have salary income or income over \$1000 per month. Many of these differences are consistent with a somewhat more affluent or middle-class background for the completed-education group than the control group. We cannot directly observe to what extent the different behavior of the completed-education group results from what they learned in their online education as opposed to who they were to begin with.

One clear sign that offering education causes behavior to change would be for the experimental group as a whole to behave more responsibly than the control group. Table 1 shows that by November 2004 there were several small differences between the experimental group and control group and that most of them are in the direction of more responsible behavior. These differences include slightly fewer late and over-limit instances and slightly lower fees as a result, and slightly fewer past-due account instances and charge-offs, despite similar card usage and revolving balance behavior. Despite their modest size, the November results would be promising if they could be viewed as reliable.

However, we cannot say that the differences in performance between Wells Fargo's experimental and control groups are statistically valid. The figures for the control group reported in Table 1 are ratios of sample means and thus random variables. Wells Fargo has also provided the sample standard deviation of each sample mean, and we have used these to compute standard tests for the significance of the difference between the control group mean and the experimental group mean. None of these tests show a significant difference at the conventional 5 percent level. More plainly, we cannot present evidence at this time that the slight differences in favor of the experimental group in Table 1 can be relied on as real rather than random accidents.

If the overall differences in Table 1 could be shown to be valid, they might have encouraging implications about the profitability of the experiment. Wells Fargo spent about \$1

per experimental account to conduct the experiment. Wells Fargo benefited from the apparent reduction in charge-offs per experimental group account but lost revenue by collecting less in late and over-limit fees. (Among just the completed-education group, revenue was also down because of that group's lower revolving balances, although this was partly offset by higher interchange revenue on their higher volume of purchases with the card.) But there is more at stake than the immediate revenue impacts. Wells Fargo summarizes its overall perspective on the results as follows:

Almost 7 percent of the audience mailed went on to complete the education. We see that these customers have significant reductions in early delinquency and charge-offs against the experimental group, and the control group. Furthermore, the responders appear to be more responsible credit users. They revolve less of their balance, pay off more of the balance each month and pay less in over limit and late fees. At the same time, these customers have rewarded us with more purchase activity than the experimental and control groups. With reduced fees and finance charge income the short-term revenue is less, but well worth the trade off. Wells Fargo's success is built on cultivating long-term, sustainable relationships with responsible users of credit. In doing so, we hope to be the financial institution of choice as these customers' borrowing needs grow and mature.

V. Target Experiment and Results

Target tested within a broad population of its existing cardholders who were not yet delinquent but had early warning signs of delinquency, based on FICO scores, payment patterns, and Target's risk models. This broad population was further broken down into five sub-populations, each with a specific pattern of behavior indicating likely delinquency. During the months of June through September 2003, half of each of the five sub-populations was assigned to the experimental group and half to the control group. Target placed telephone calls to individuals in each experimental group, totaling almost 81,000 calls. For the 6400 calls that reached the cardholder (a "right party connect," or RPC), a further randomization occurred. A randomly selected portion of the experimental group was gently reminded about their upcoming payment's due date. While a request for payment was not formally made, the issuer did record a significant number of promises to pay (PTP) from this portion of the experimental group. The remainder of the experimental group received the same brief counseling plus a referral to the VISA online credit education web site "MoneyChoices.com." The referral includes a special ID number that the cardholder is requested to use when logging on to the MoneyChoices site. Target recorded whether the cardholders seemed happy, upset, or indifferent about receiving the call and whether they had promised to pay. If the cardholder subsequently logs on to MoneyChoices using their special ID number, VISA identifies the individual as part of Target's experimental population and tracks their usage of the site. However, since it is possible for individuals in the experimental group to log on to MoneyChoices without using their special ID number, the numbers tracked as entering in response to Target's referral may underestimate the true response.

Target's intervention at the point of incipient delinquency among a general population of cardholders yielded positive results generally but little information about online credit education, due to low participation. All contacts were by telephone, and 6,417 right party connects were attained out of 80,982 calls during the June-September 2003 period (a 7.9 percent connect rate,

similar to U.S. Bank's initial experience). Based on the caller's subjective assessment, 65 percent of those called were happy about the call, 34 percent were unhappy, and 1 were percent neutral. About 62 percent of those contacted, or 3,993 individuals, provided a promise to pay to the caller. Six hundred eighty-four individuals, or 10.7 percent of those contacted and 0.8 percent of those called, agreed to have an e-mail sent to them with their special ID and information on how to log on to the MoneyChoices.com education site. However, only 28 individuals, or 0.4 percent of those contacted, used their special ID to log on to the MoneyChoices site from the beginning of the program through six months after calling ceased. Target spent \$27,618, or \$1.22 per right party connect, to conduct the experiment. Viewed in isolation, the credit education component did not provide usable results, owing to the extremely low percentage of experimental group members logging on to the educational site. However, Target concluded that the practice of making telephone calls to risky cardholders at an earlier than normal stage of deterioration was itself effective, based on the improved payment performance of the experimental group. The improvements were concentrated among the 62 percent of those contacted who offered a promise to pay during the call.

VI. U.S. Bank Experiments and Results

U.S. Bank's first experiment tested early intervention on recently delinquent accounts within a population of college credit cardholders. This population was randomly split into an experimental and a control group based on the last digit of their Social Security number. Within the experimental group, attempts were made from June through fall 2003 to contact account holders who had recently become delinquent, first by telephone and in a later phase by mail. In this experiment, 42,000 accounts were assigned to the experimental group and 40,600 to the control. Those in the experimental group who were contacted were referred to a customized version of the VISA MoneyChoices web site for credit education. To encourage their participation, the issuer offered to waive one late fee once the customer completed the course. As in the other tests, the cardholder received a special ID number they were asked to use when accessing MoneyChoices, so that VISA could track their usage. As with Target's experiment, it was also possible for individuals to log on to the U.S. Bank MoneyChoices site without using their special ID.

U.S. Bank's initial program of calling college student cardholders who had recently become delinquent didn't generate significant trackable participation in online credit education. Calls to the 42,000 accounts in the experimental group yielded 3,170 right party connects, or approximately 7.5 percent of those called. Those contacted were referred to the MoneyChoices site and offered the incentive of having one late fee waived if they completed the training there. To reach additional account holders, U.S. Bank altered its experiment by sending experimental group members not already reached by phone a special mailer with the same referral to MoneyChoices and the same incentive. Response rates improved somewhat based on the mailer, but in the end only 384 cardholders completed the online education using the private ID assigned to them. This level of response was too low to trace meaningful impacts. U.S. Bank concluded that, at least for college students, calling programs may not work well, in part because it is more difficult to maintain accurate phone numbers than accurate postal addresses. They also tentatively concluded that offering only an online form of credit education, without a more

intensive supplement, may not be effective at the point when a cardholder is already delinquent. (This does not imply that other forms of education or counseling would not be effective, and others may find ways to enhance the effectiveness of online education in this context as well.)

Because of a low rate of right party connects in the telephone campaign and a low rate of participation in online education by the recently delinquent cardholders in its first experiment, U.S. Bank began a separate second set of experiments in the fall of 2003. The first experiment of the new set had two groups (each with its own control group). The first group included nondelinquent college students with elevated risk based on past account behavior using U.S. Bank's internal models (7,379 test and 811 control). These students received a direct mail postcard with an educational message and referral to the education web site. The second group included nondelinquent college students with an acceptable internal risk score (10,542 test and 1,144 control). These cardholders also received a direct mail postcard with an educational message along with a usage incentive (sweepstakes). U.S. Bank sent a two-part mailing, in mid-September and early October, to each of the new experimental groups.

The other of U.S. Bank's second set of experiments was conducted in April 2004. This group (37,422 test and 2,000 control) received a message that offered tips on developing a good credit history and directing them to the U. S. Bank student shopping mall web site to receive deals and discounts on special offers. This list was similar to the second group of students from the September-October 2003 campaign (only accounts with very low behavior scores were excluded). No special ID was needed to access the web sites in the second set of experiments, and therefore an individual's access could not be tracked.

Initial results from this set of experiments, shown in Table 3, show small and generally insignificant effects, similar to Well Fargo's experience. The April 2004 results, measured nine months later, show the most promise. Average monthly balances for the experimental group members in this case were close to 5 percent less than for the control group. Although this difference was not statistically significant at standard levels, it would be significant at a generous 20 percent level of probability. No other individual difference passed even that generous standard of statistical difference, and the fact that one item out the 15 in Table 3 was technically significant at a 1-chance-in-5 probability level suggests that the mailings had limited effects at most.

It is interesting that the contributions margin was lower for all three experimental groups. This margin equals interest plus noninterest income minus net losses (charge-offs). As a result, the control group's behavioral changes slightly reduced U.S. Bank's profits. Although the differences were also not statistically significant, they illustrate the possibility that issuer-provided credit education, even if or perhaps especially if it became more successful, could have the effect of reducing the issuer's short-term profits.

Overall Results

Target and U.S. Bank (in its first experiment) both experienced low rates of usage of the MoneyChoices curriculum, compared to the rates of usage and completion of the customized curriculum adapted from Practical Money Skills for Life in Wells Fargo's experiment. The

issuers discussed that one obvious candidate for an explanation is that MoneyChoices' more thorough content makes it more demanding and harder to navigate than Practical Money Skills for Life. In addition, the populations referred to MoneyChoices were different, consisting solely of individuals already showing high-risk of financial problems, as opposed to the broader population referred to Practical Money Skills for Life. Based on experience across the industry, VISA stated that responses to telephone and mail contacts are generally sensitive to the context of the message and the recipients' financial stress level. In that regard VISA noted that Target's practice of combining the educational offer with broader debt collection and counseling messages also may have reduced overall response rates to the educational component. Whatever the reasons for the low response by nearly or recently delinquent cardholders, U.S. Bank has tentatively concluded that offers of online education are more productive when offered preventively, before the cardholder approached delinquency. There is little in any of the results presented here to contradict that conclusion.

The Wells Fargo experiment demonstrated that mailed offers with modest incentives can elicit response rates (nearly 7 percent) from college students that are considered good by industry standards. However, these response rates are still low enough to make it hard to measure the impact of the educational content. With less than 7 percent of the experimental group electing to complete the education that was offered, the impact of the education content on their behavior needs to be very strong in order to significantly change the overall statistics for the full experimental group that received the offer of education. On the one hand, this in itself is important information—even highly effective mass-marketed credit education may not achieve large overall impact if less than 7 percent respond when it is offered. Our experimental design was effective in assessing this small overall impact of Wells Fargo's offer of education, since we based our conclusions solely on the aggregate response of the full experimental group. However, our experimental design was not well suited for judging the marginal effect of the educational content on the behavior of those who voluntarily chose to be educated, because we had no control for the selection effects that differentiated those who responded to the offer of education from those who failed to respond.

One solution in future research might be to offer two versions of the education to those who respond to the offer of education. One version would be similar to the one Wells Fargo used, in that it would have real educational content aimed at affecting behavior. The other would be a "placebo" version that would have the look and feel of an educational site but little real content. All those choosing to respond to the offer of education would be treated identically (same incentives, etc.) except in one way—some would be randomly assigned to the real education group and the rest would be assigned to the placebo education group. The subsequent behavior of those completing the real or placebo education would be tracked separately, as would the behaviors of the other groups (control, experimental but not responding, responding but not completing real education, responding but not completing placebo education). This design would allow more precise assessment of the specific impact of the educational content on subsequent behavior while preserving our existing ability to assess the overall impact of the offer of education on the behavior of the full experimental group.

Some additional lessons from the Wells Fargo experiment will be available in the near future. Well Fargo plans to track the long-term behavior of the accounts involved to assess

whether those in the experimental group in general, and especially those who completed the education, turn out to be more profitable customers over the long run than those in the control group. For example, the lower net revenue that Wells Fargo currently derives from the accounts of those who completed the education may be more than recouped if those individuals turn out to be more satisfied and thus more loyal customers who use more Wells Fargo services over time.

V. Concluding Remarks

This paper provides results from four experiments in using online credit education in preventive or early intervention programs aimed at affecting the behavior of new credit cardholders or credit cardholders showing signs of emerging credit problems. At least two of these experiments are still running, so the results here are preliminary. Key findings to date include the following:

- Cardholders who choose to complete the online education offered in these experiments behave more responsibly than those who don't and those in the control group.
- We cannot say how much of the more responsible behavior of those completing online credit education is caused by the education as opposed to preexisting factors. Tests showing that offering online education produces statistically significant differences in behavior between the overall experimental group and control group were either generally negative (Wells Fargo, U.S. Bank's second experiments) or cannot be done due to limited participation (Target's experiment and U.S. Bank's first experiment).
- Results on issuers' ability to profit from offering online credit education were mixed to negative. The Wells Fargo and U.S. Bank experiences appear to require further analysis and may be too close to call, given the slight and generally statistically insignificant differences between the control and experimental groups. Target achieved favorable results, but these were associated with calling cardholders as they approached delinquency rather than with the offer of online education.
- Questions of who should pay for credit education could arise from the possibility that providing print and online education can induce more responsible cardholder behavior while simultaneously lowering card issuers' profits.
- Incipiently or recently delinquent cardholders didn't respond much to offers of online education. Online education may not be appropriate to that stage in the evolution of debt problems, or it may be difficult to separate the offer of online education from other messages the card issuer is sending, or is perceived to be sending, at that stage.
- It may be more cost-effective to provide online education offers to college students through the mail instead of by telephone. Maintaining current telephone numbers for college students is difficult, especially over the summer.

We hope to continue working with the Saint Paul Foundation's Credit Card Project Industry Practices Committee to use additional results from the experiments described here to resolve these and other issues. The Industry Practices Committee continues to conduct earlier intervention experiments with the dual goals of promoting positive actions in the credit industry and helping consumers manage credit more successfully. The Credit Card Project also hopes to interest other members of the credit card industry in conducting additional early intervention tests, as well as tests of approaches to communicating credit terms and conditions, as part of its industry practices efforts.

**Table 1: Wells Fargo Results:
New College Student Accounts
After 13-16 Months (Nov. 2004)**

	Experimental Group, Percent Chg from Control		
	FULL EXP. GROUP	DIDN'T LOG ON	COMPLETED EDUC.
LATE FEES			
% Accts. w. 1+ Late Payments	-2.47%	-0.26%	-33.01%
Total Late Payments per Acct.	-2.12%	1.17%	-47.81%
\$ Late Fees per Acct.	-2.16%	1.16%	-48.02%
OVER-LIMIT EXPERIENCE			
% Accts. w. 1+ Over Limit Instances	-0.23%	2.20%	-33.70%
Total Over Limit Instances per Acct.	-0.89%	2.28%	-45.87%
\$ Over Limit Fees per Acct.	-0.85%	2.36%	-45.79%
DELINQUENCIES			
% Accts. Ever 30-Days Delinquent	-3.63%	-0.79%	-42.75%
30-Delinquent Instances per Acct.	-1.35%	2.03%	-48.25%
% Accts. Ever 60-Days Delinquent	-0.96%	3.02%	-55.86%
60-Delinquent Instances per Acct.	-1.93%	2.31%	-57.41%
CHARGE-OFFS			
% Accts. Charged Off	-6.31%	-2.02%	-65.88%
\$ Charged Off per Total Accts.	-7.12%	-2.89%	-65.62%
CREDIT SCORE			
	0.00%	-0.15%	1.90%
MONTHLY CARD USAGE			
Times Used to Buy Merchandise	3.02%	0.88%	32.46%
\$ Merchandise Bought per Acct.	2.10%	-0.13%	32.71%
Times Used Card to Get Cash	0.83%	3.23%	-32.16%
\$ Cash Obtained per Acct.	-2.17%	-0.21%	-28.82%
% Accts. w. 1+ Revolving Balances	0.76%	1.72%	-12.46%
Avg. Revolving Balance per Acct.	2.08%	4.26%	-27.76%
Avg. Payment/Balance Ratio	0.70%	-1.85%	35.84%

Table 2: Characteristics of Wells Fargo College Student Cardholders at Time of Application

Attribute	Control Group	Experimental Group			
		All	Didn't Log On	Completed	Logged On and Didn't Complete
Number of Individuals	3,000	77,512	72,197	5,179	136
Average Age	18	18	18	18	18
Year in School					
Freshman	55%	53%	53%	56%	64%
Sophomore	22%	23%	23%	20%	24%
Junior-Senior	17%	19%	19%	17%	7%
Graduate School	5%	5%	5%	7%	4%
Type of School					
Two-Year or Trade	19%	20%	20%	14%	17%
Four-Year	81%	80%	80%	86%	83%
Full-Time Student	95%	95%	95%	97%	98%
Residence					
Dormitory	13%	11%	11%	17%	16%
With Parents	56%	55%	55%	48%	55%
Other	31%	34%	34%	35%	29%
Monthly Income > \$1000	34%	35%	35%	31%	27%
Source of Income					
Grant/School	12%	12%	12%	15%	19%
Salary	31%	33%	33%	28%	24%
Other	57%	55%	55%	57%	57%
FICO Score					
% with FICO Score	36%	38%	38%	37%	26%
FICO Score at Approval	706	708	708	714	733

Table 3: U.S. Bank Results
(Second Experiment)

Percent Difference, Experimental Group versus Control

A. September 2003 College Education Program, 12 months after mailing
(At-risk college accounts with lower U.S. Bank behavior scores)

Metric	Percent Difference	Significant 0.20
Charge-Off Rate	2.56%	No
Contributions Margin	-6.17%	No
Payoff Rate	-4.70%	No
Balances	0.78%	No
Purchases	-2.02%	No

B. September 2003 College Education and Usage Program, 12 months after mailing
(At risk college accounts with somewhat higher U.S. Bank behavior scores)

Metric	Percent Difference	Significant 0.20
Charge-Off Rate	0.00%	No
Contributions Margin	-2.80%	No
Payoff Rate	-1.53%	No
Balances	-2.58%	No
Purchases	-1.73%	No

C. April 2004 College Education and Usage Program, 9 months after mailing
(Mixed college accounts, excluding very low U.S. Bank behavior scores)

Metric	Percent Difference	Significant 0.20
Charge-Off Rate	-6.67%	No
Contributions Margin	-3.21%	No
Payoff Rate	3.81%	No
Balances	-4.78%	Yes
Purchases	-6.95%	No

Contributions margin is interest plus noninterest income minus net losses (charge-offs). Payoff rate reflects the degree to which monthly balances are paid in full.

References

- Aizcorbe, Ana M., Arthur B. Kennickell, and Kevin B. Moore (2003), "Recent Changes in U.S. Family Finances: Evidence from the 1998 and 2001 Survey of Consumer Finances," *Federal Reserve Bulletin* (January).
- Baum, Sandy, and Marie O'Malley (2003), "College on Credit: How Borrowers Perceive Their Education Debt: Results of the 2002 National Student Loan Survey," Nellie Mae Corporation (February 6).
- Braunstein, Sandra, and Carolyn Welch (2002), "Financial Literacy: An Overview of Practice, Research, and Policy." *Federal Reserve Bulletin* (November).
- Chen, Haiyang, and Ronald P. Volpe (1998), "An Analysis of Personal Financial Literacy Among College Students," *Financial Services Review*, 7(2): pp. 107-128.
- Elliehausen, Gregory, E. Christopher Lundquist, and Michael E. Staten (2003), "The Impact of Credit Counseling on Subsequent Borrower Credit Usage and Payment Behavior," (January)
- Harmel, Kristin (1999), "UF Study Shows Many College Students Don't Manage Credit Cards Well," <http://www.napa.ufl.edu/99news/credit.htm> (October 7).
- Jump\$start Coalition (2004), "Financial Literacy Improves Among Nation's High School Students: Jump\$start Questionnaire for Seniors Reveals Moderate Gains," [http://www.jumpstart.org/fileuptemp/FINAL_PR_Jump\\$start_2004_Survey.doc](http://www.jumpstart.org/fileuptemp/FINAL_PR_Jump$start_2004_Survey.doc)
- Lawrence, Frances C., Rebecca C. Christofferson, Susan E. Nester, E. Barry Moser, Jeanette A. Tucker, and Angela C. Lyons (2003), "Credit Card Usage of College Students: Evidence from Louisiana State University," Louisiana State University Agricultural and Extension Research Center, Research Information Sheet #107 (September).
- Lyons, Angela C. (2003), "Credit Practices and Financial Education Needs of Midwest College Students," University of Illinois at Urbana-Champaign (December).
- Munro, Jennifer L. (1997), "An Examination of the Credit Card Payment Practices of College Students," Virginia Polytechnic Institute and State University, M.A. in Education thesis.
- O'Malley, Marie (undated), "Educating Undergraduates on using Credit Cards," http://www.nelliemae.com/library/cc_use.html.
- Staten, Michael E., and John M. Barron (2002), "College Student Credit Card Usage," Georgetown University, Credit Research Center Working Paper #65 (June).

TERI/IHEP (1998), "Credit Risk or Credit Worthy? College Students and Credit Cards: A National Survey," The Education Resources Institute and The Institute for Higher Education Policy (June).

Todd, Richard M. (2002), "Financial Literacy Education: A Potential Tool for Reducing Predatory Lending?" Federal Reserve Bank of Minneapolis, *Community Dividend* (No. 2, pp. 6-12).

United States General Accounting Office (2001), "Consumer Finance: College Students and Credit Cards," GAO-01-773.