

EVALUATING SAN FRANCISCO'S PAYDAY PLUS PROGRAM

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I. ABSTRACT

Payday loans have been widely criticized for charging excessive interest rates and trapping people in chronic borrowing in low-income communities. San Francisco's PayDay Plus program offers an alternative to traditional payday lending at more favorable rates, and with greater opportunities to build long-term financial health.

Our proposed program evaluation of PayDay Plus SF will provide insight on the effects of participation in this lower-cost alternative to conventional payday loans. We are principally interested in understanding how participation in PayDay Plus impacts the financial health of San Franciscans who are current or former payday loan borrowers. Understanding how participation in PayDay Plus may or may not help borrowers to break the cycle of dependency and reduce their reliance on short-term credit would have important implications for public policy.

This program evaluation proposal details both experimental and quasi-experimental designs for evaluating outcomes of San Francisco's PayDay Plus loan program. Under ideal conditions, we would use randomization of marginal cases—or those individuals who are at the margin of approval to receive a PayDay Plus loan—to establish experimental and control groups, then track the financial progress of both groups. If lenders resist randomization, then we propose to use propensity scores to match individual PayDay Plus participants with non-participants who receive regular payday loans that have similar characteristics, e.g. race, sex, income, and so forth. Both designs help us to identify if differential outcomes exist for participants of PayDay Plus, and if participation is correlated with improvements in credit scores, financial literacy, and other indicators of financial stability.

2. POLICY CONTEXT

Payday loans are an increasingly popular short-term borrowing solution for millions of low-income Americans. Under a typical payday loan, lenders advance the value of the borrower's salary, typically between \$100 to \$1000, for an interest rate that ranges between 400-600% APR, the equivalent of \$15 to \$30 dollars per \$100 borrowed. Loans mature on the date of the borrower's next paycheck two weeks or a month later. Borrowers write a post-dated check or allow the bank to electronically withdraw the principal and interest from the borrower's bank account. In some states, borrowers may also roll over the loan for an additional finance charge. Payday loans have very low qualifying standards, and typically only require valid identification, a source of income and a bank account.

Payday loans are criticized by policymakers and community organizations like the Center for Responsible Lending for trapping people in a cycle of chronic borrowing (Center for Responsible Lending, 2011). When repayment of the loan comes due, borrowers often lack the financial resources to both payback the loan and meet other expenses. As a result, many payday loan customers "rollover" the loan, by paying off their existing loan and initiating a new payday loan at the same time. This cycle of dependency dramatically increases the interest paid on the principal. For example, rolling over a \$300 loan twice—effectively delaying repayment for one month—would yield net interest charges of \$135 in California. In a 2007 study on payday lending in California, the Department of Corporations (DOC) found that 48% of payday loan

borrowers initiated at least one new payday loan each month. Of those surveyed, 52% used the loans to pay bills and 22% reported using the loans for groceries and other necessities.

Low qualifications and the willingness of lenders to underwrite all but the riskiest loans have intensified growth in payday lending since it first came into practice in the late 1990s as a spin-off of check cashing outlets. In 2010, California payday lenders made 12 million loans worth \$3.2 billion. Loans were made to 1.6 million Californians, indicating that on average, payday borrowers took out 7.5 loans each year (California Department of Corporations, 2010). Between 2006-2011, the payday loan market increased from \$2.5 to \$3.2 billion, an increase of 22%. But during the same time period, the number of individual borrowers increased from 1.4 million to 1.6 million, or only 15%. This evidence suggests a growing reliance among borrowers on payday loans to meet financial obligations (California Department of Corporations, 2010).

California's payday lenders are highly concentrated in low and moderate-income neighborhoods. These areas are also home to their borrowers, who are mostly women (59%), between the ages of 25-44 (51%), disproportionately black or Latino, live in households with incomes below \$50,000, and have lower levels of education compared to the general population (California Budget Project, 2007). In 2007, the City and County of San Francisco established an ordinance requiring all new payday loan outlets to be situated no closer than one-quarter mile of an existing outlet. The policy has curbed the growing concentration of payday lenders in relatively poor districts, such as the Mission, Fillmore and Chinatown neighborhoods.

Under current California law, the maximum allowable payday loan is capped at \$300 and fees cannot exceed 15% of the principal. On a short-term loan, charging 15% of the principal may be the equivalent of an APR above 400%. Legislation introduced in February 2011 by Charles Calderon in AB 1158 would raise the cap to \$500. This legislation, however, would not address the widespread practice of taking out simultaneous loans from different lenders—a practice reported by more than one-third of payday borrowers (Department of Corporations, 2007). Other reform efforts to reduce interest and fees have met with opposition from payday lenders who argue that high fees are necessary to maintain a profitable business in a financial sector that has high rates of default. Setting price ceilings on interest rates and fees below current levels may force some payday lenders to go out of business, and dry up credit lines that are a last resort for many borrowers.

The majority of payday loan customers perceive few alternative options. In its study, the Department of Corporations found that 37% of survey respondents considered no alternatives were considered before taking out a payday loan. Those who considered alternatives most commonly asked family members (28%), or attempted to get by until their next payday (10%), but ultimately initiated loans. Some borrowers reduce their reliance on payday loans by establishing a financial plan, negotiating lower interest rates and stretched-out repayment plans with creditors, ask for pay advances from their employers, or use local emergency assistance programs, like San Francisco's County Adult Assistance Program. Expanding community-based interventions and alternatives could help break the cycle of dependency.

The PayDay Plus SF program offers an alternative to expensive payday loans. These short-term loans through local credit unions have a similarly lenient set of underwriting criteria -- primarily

a valid identification and a verifiable source of income -- and a quick turnaround. But the loans also have much lower interest rates, at 18% APR, and longer repayment periods of six to twelve months. The lower rates and longer repayment period should prevent borrowers from falling into a long-term dependence on PayDay Plus loans while still allowing them to cover expenses in a short-term emergency. This should mitigate some of the potential ill effects of payday loans while preserving the benefits of having a short-term credit option.

3. LITERATURE REVIEW

Substantial research has been done on the impact of payday loans on the financial health of borrowers, though there have been few studies on the impact of *alternatives* to payday loans specifically (Carrell and Zinman 2008, California Department of Corporations 2007, Melzer 2011). Since programs like PayDay Plus are relatively new, there are a limited number of studies assessing their impact. This literature review covers relevant evaluations on payday loans as well as microfinance evaluations. Microfinance, which similarly involves extending expensive, small amounts of credit to borrowers not qualified for traditional loans, has a longer history of impact evaluation studies that we can draw upon in developing a rigorous program evaluation model.

A. PAYDAY LOAN STUDIES

Research into the effects of payday loans on financial health is relatively new and generally does not compare the welfare of payday loan borrowers to the welfare of accessing alternative products. It focuses instead on comparing those with access to payday loans to those who do not. In addition, most of the current research has used non-experimental, regression models to quantify the impacts of access to payday loans.

Melzer (2011) uses geographic differences in access to payday loans both because of regulatory constraints and lender location decisions to examine the effects of access on the financial health of low-income households. Drawing on cross-sectional, national data from a survey of low-income households, he finds that access to payday loans increases households' difficulty in paying mortgage, rent and utilities bills after controlling for a variety of individual and community demographics. Melzer's study suggests that payday lending may have negative impacts on financial health, but it does not look directly at payday loan usage. As a result, he can only indirectly estimate the size of the effects of payday loan borrowing on households' financial difficulties.

Other authors have also exploited differences in local laws to study the effects of payday loans. After Oregon imposed a cap of 150 percent APR on loans under \$50,000 in 2007, Zinman (2008) looked at how the cap changed short-term credit use by households in Oregon and then compared it to the use of short-credit by households in Washington using a difference-in-difference model. Using survey data drawn from a sample of households that had received payday loans close to the time of the initial survey, the study concluded that the interest rate cap dramatically reduced access to payday loans. This caused those in Oregon in need of short-term credit to rely more on late bills and bounced checks to compensate. They felt worse about their financial situations after the cap.

A few studies have begun to look at the impact of payday loan usage more directly. Skiba and Tobacman (2008) match administrative records on payday loans from a national payday lender to records on personal bankruptcy filings in Texas. They then use a regression discontinuity design to examine the impact of being eligible for a payday loan based on a having a credit score just above the lender's threshold compared to those not eligible for a payday loan because their credit score is just below the lender's threshold. Skiba and Tobacman conclude that first-time payday loan approval increases the likelihood of a personal bankruptcy filing within the next two years by 2.48 percentage points. Because they only track payday loans at a single lender, they likely underestimate the impact of payday loans on subsequent bankruptcy filings.

Bertrand and Morse (2009) conducted a survey of clients who visited a large payday lender during the summer of 2008 and then followed the clients for several months using transaction data from the lender. They used this data to study how the 2008 tax stimulus checks – an exogenous, near universal increase in clients' income – impacted clients' payday loan borrowing patterns in subsequent months. The rebate caused less frequent users of payday loans to retire 15 to 20 percent of outstanding payday loans, but had no impact on the payday loan usage of frequent users.

Wilson et al (2008) conducted an experimental study on access to payday loans' effects on household budgeting based on hypothetical scenarios. The study used a computer simulation to randomly assign individuals to a world with payday loan options and a world without payday loan options, tracking fixed monthly incomes against their expenditures. Individuals also suffered some unexpected bills in the simulation, such as medical appointments and traffic violations. The experiment showed that payday loans allowed individuals to better absorb expenditure shocks. Those that took out larger payday loans were at greater risk of declining financial survival, but the majority of individuals benefited from the existence of payday loans. One criticism of the design is that it may not accurately reflect the circumstances and choices that payday loan customers may actually face. Thus, this experimental design, which allows for a counterfactual, should be used in conjunction with other designs that use actual payday loan customers to best detect the effect of the program. Our team will try to correct that design flaw by presenting a design that uses actual PayDay Plus clients, thus allowing for a more realistic interpretation.

Finally, the PayDay Plus program recently hired a team of evaluators from Stanford University to conduct a preliminary analysis of the PayDay Plus program. Their design is focused around a pre- and post-test of PayDay Plus participants, focusing on their financial health, borrowing behavior, and their use of traditional payday loans. While this study is still in its preliminary stages, its design has a central limitation of having no concurrent comparison group against which to evaluate PayDay Plus participants. This could introduce significant bias into its findings since changes in the overall economic climate could significantly influence the observed changes before and after the program. A more rigorous evaluation would include a comparison group that closely resembles the treatment group and would follow both groups over the same time period so that exogenous factors influencing financial health can be isolated.

B. MICROFINANCE STUDIES

There is a wide body of evaluations on the impact of microfinance, which is similar in many ways to payday lending. Microfinance is designed as an alternative credit source for low-income individuals who otherwise have limited access to affordable credit especially in the developing world. While microfinance interest rates and terms vary considerably by program, much research has been done to evaluate the long-term impact of those loans on level of indebtedness, asset accumulation, and income of participants. The literature surveys both randomized control trials as well as quasi-experimental design. These studies serve as models for our proposed evaluation of PayDay Plus.

Randomized control trials (RCTs) have been widely cited as an effective approach to eliminating selection bias in evaluating microfinance, though there are problems with both the implementation and ethics of these approaches (Karlan and Goldberg 2007). One such study was conducted in the Philippines where four rural villages that were eligible to receive microfinance services were randomly assigned to the treatment and control groups. Three villages were considered to be ‘treated,’ and one was used as a control. In each treatment village, different forms of microfinance services were provided at different terms and rates. This allowed for comparison to villages that had no microfinance services at all as well as among different types and terms of microfinance loans (Gine and Karlan 2006). While this study provides a strong counterfactual, both to different types of loans and to no loans at all, it would be difficult to implement in the context of PayDay Plus as a result of the limited geographic scope of the program. Additionally, RCT designs such as this raise some ethical concerns about withholding the program from some villages when it has a clearly positive impact on the financial well being of participants.

Karlan and Zinman used an encouragement design that had a computer randomly encourage the loan officer to approve or reject microfinance clients in South Africa who were at the margin of being rejected (Karlan and Zinman, 2010). Among the “marginally rejected” loans that received random encouragement to have the loan officer re-review and approve the application, 53% were subsequently approved. The authors were particularly interested in using this design to disentangle the endogeneity from client self-selection into applying for loans and from changes in policy that increase the availability in response to changes in general economic conditions. This would allow them to draw causal linkages between the intervention and outcome, both for the intention-to-treat and treatment-on-the-treated effects. The study finds that overall borrower outcomes in economic self-sufficiency and food consumption improve due to the intervention.

The random assignment allows for strong internal validity. Random assignment helped the team identify a causal effect in liberalizing the screening criteria to allow for the loan officers to reconsider marginally rejected applicants on both lender and consumer outcomes. It also resolves selection bias, allowing the researcher to make a causal inference. Limitations of this study include that we cannot make inferences about individuals outside of the rejection margin, thus we cannot project the outcomes of the majority who would normally receive approval. Another limitation is that this study has limited external validity outside of South Africa as well as in markets with different structures or different kinds of consumers. Our experimental design hopes to capitalize on some of the positive features of this study by using random assignment to receipt of credit for marginal loan applicants.

When randomized control trials are not feasible due to implementation or ethical concerns, propensity scores can provide a viable alternative to limit the impact of selection bias (Islam 2009; Setboonsarng and Ziyodullo 2008). One study evaluating the impact of microfinance in rural Pakistan used propensity score matching (PSM) techniques and found significantly different results from previous evaluations that had used OLS or Logit estimation (Setboonsarng and Ziyodullo 2008). By matching microfinance participants with non-participants who are similar on important and significant observable characteristics, the authors mitigated the impacts of selection bias. Their study found a significant impact on income-generating activities but a more limited impact of microfinance on indicators of financial health such as savings and consumption. This may be a result of the timing of the study which focused on the months immediately after the loan rather than the long term, when impact may be more significant.

While a design using propensity score matching in San Francisco will have some significant differences to the studies conducted on microfinance internationally, these studies give us a strong model to inform our design.

4. RESEARCH QUESTIONS & OBJECTIVES

Our program evaluation of PayDay Plus SF is designed to provide insight on the effects of receiving a lower-cost alternative to conventional payday loans. We are principally interested in understanding how participation in PayDay Plus impacts the financial health of San Franciscans who are current or former payday loan borrowers. Current payday lending terms and practices engender chronic borrowing which often leads to a cycle of dependency for borrowers. PayDay Plus aims to end that practice.

Understanding how participation in PayDay Plus may or may not help borrowers to break that cycle of dependency and reduce their reliance on short-term credit would have important implications for public policy. Specifically, our conclusions could yield valuable evidence suggesting a need for reform of the existing program, providing a valuable justification for the program's expansion, or demonstrating the program is having little or no positive impact on participants' financial health. Since the evaluation considers the outcomes for participants separately from the profitability of the product for the lenders, it might also suggest whether the program should be subsidized or not if it proves unprofitable.

The proposed experimental and quasi-experimental research designs will allow us to answer the following important questions, to which no former research has sufficiently addressed for a payday loan alternative:

- Does PayDay Plus lead to a significant decrease in use of payday loan services in the subsequent twelve months?
- Do users to PayDay Plus default at lower rates than payday loan recipients?
- Does the use of PayDay Plus lead to a long-term decrease in reliance on short term loans?
- Do users of PayDay Plus develop higher FICO credit scores than payday loan recipients?

- Do users of PayDay Plus loans experience a decreased likelihood of difficulty paying their rent and utilities' bills compared to payday loan recipients?

5. DETAILED OVERVIEW OF PAYDAY PLUS LOAN PROGRAM

PayDay Plus SF is an alternative to payday loans established in 2009 at the behest of Mayor Gavin Newsom and his staff in the Office of Financial Empowerment. The program provides short-term loans of \$50 to \$500 with a maximum APR (annual percentage rate) of 18%. Loans have a longer repayment period—6 to 12 months—than conventional payday loans—typically 14 days. Clients can access credit through the PayDay Plus SF program by visiting one of six affiliated credit unions, each of which have branches within reasonable distance of the city's low-income neighborhoods where the largest share of brick and mortar payday lenders operate. The credit unions are Community Trust, Northeast Community Federal Credit Union, Redwood Credit Union, San Francisco Federal Credit Union, and Spectrum Federal Credit Union.

To qualify for a loan, clients must possess proof of San Francisco residency, a regular source of income, identification and a checking account. If the client does not possess a checking account at the time of application, they can establish one with the credit union on-site. Some credit unions require applicants to join the credit union by depositing funds or paying a small membership fee (\$5-10) before they can receive a loan. A borrower's ability to repay the loan is considered in the application process by verifying their source of income and checking their debt-to-income ratio to ensure it is not above a maximum threshold. The credit unions also screen out anyone with a history of check or bank fraud. Some credit unions pull credit reports to assess a client's debt-to-income ratio, but credit scores are never used to approve or deny the loan. Funds are disbursed within one to three business days, which differs from conventional payday loan outlets, where funds are provided immediately onsite.

The PayDay Plus SF program also poses restrictions on repeat customers' borrowing. Clients cannot receive another loan until the first is fully repaid and they cannot receive more than three loans in a calendar year. Additional financial literacy training and education may be required before additional loans are extended.

A. TREATMENT AND PROVIDER

In our two proposed research designs, the six affiliated credit unions are the treatment providers, who disburse the treatment—PayDay Plus loans. The treatment provider and the intervention work together in a hypothesized causal chain. Firstly, access to lower-cost credit provides borrowers with additional disposable income to spend or to save compared to other credit alternatives. Secondly, these cost savings, in tandem with access to a financial institution, reduce reliance on additional payday loans and expensive short-term credit. Households experience fewer difficulties in covering their bills as a result. In addition, since the credit unions reports repayment of PayDay Plus loans to the credit bureaus that create FICO credit scores, unlike traditional payday lenders, credit scores for participants improve. In sum, we hypothesize that PayDay Plus loans have the capacity to break the cycle of dependency inherent in payday lending, improving the financial health of participating households.

B. TARGET POPULATION

The target population for the program is households with payday loan recipients in San Francisco. As noted above, all payday loan recipients must have a source of income and a checking account. Clients are more likely to be low-income, female, and from a minority racial or ethnic group than the general population.

According to preliminary research conducted by the San Francisco Office of Financial Empowerment, the vast majority of early PayDay Plus participants are former payday loan borrowers. Still, PayDay Plus remains available to anyone who meets the requirements and so some people who access PayDay Plus loans may be different from typical payday loan clients. This is important given the relatively small size of the total number of administered PayDay Plus Loans. Since its establishment in 2009, roughly 450 loans have administered through the program. As loans are continuously being distributed, there are new streams of clients that grow the available target population. Both research designs will require comparing data collect on PayDay Plus clients to existing data on traditional payday loan recipients to ensure that the program is reaching its target population.

6. EXPERIMENTAL DESIGN: RANDOM ASSIGNMENT OF MARGINAL CASES

With the full cooperation of San Francisco's Office of Financial Empowerment and the partner credit unions, the proposed design would randomly assign candidates on the border of qualifying for PayDay Plus loans to either receipt or denial of their loan request. As noted above, to qualify for a PayDay Plus loan, applicants must have a verified source of an income, a bank account, and a debt-to-income ratio below a certain threshold. To be eligible for the experiment, applicants would still be required to demonstrate a verified source of income and a bank account, since those are both conditions for receiving a PayDay Plus loan and the traditional payday loan. The experiment would then randomize loan receipt for applicants who have a debt-to-income ratio that falls into a range around the threshold used by the credit unions to decide who receives PayDay Plus loans. Loan officers coming across an applicant who qualifies into the experiment by virtue of their debt-to-income ratio, rather than an automatic approval or denial, would select an envelope containing a random approval or denial decisions.

Participants thus fall into one of two categories: those receiving a loan and those not. Those denied a loan as part of the experiment would be excluded from the PayDay Plus loan program for two years to preserve randomness and ensure that they do not receive access to the same credit product through another credit union. Those who qualify initially would have decisions about subsequent PayDay Plus loans made according to the regular criteria used for the program. Applicants from the same household will be treated as a single participant for both randomization and observation purposes, since most individuals operate as a single financial unit with the other members of their household (spouse and children) for credit, tax, and income purposes.

By randomizing only for marginal cases, rather than the full pool of applicants, the design allows

those individuals who easily qualify to have access to the product, but exploits the limited pool of resources that credit unions have for making PayDay Plus loans to riskier clients to create an ethical experiment with random assignment. Allowing the safest clients to receive loans ensures that the PayDay Plus program has time to build buy-in with credit unions by ensuring that the least risky, most profitable recipients participate. At the same time, there is also hope that randomization for marginal cases may demonstrate to credit unions that more generous underwriting criteria are financially viable. If the marginal applicants, who the bank would otherwise have rejected, pay back their loans, then the credit union may loosen the criteria for underwriting the PayDay Plus loans. To protect credit unions from the risk that the marginal group is not financially viable, however, we will provide the credit unions with additional support for their loan loss reserves for participants in the experiment.

A. SAMPLE SIZE & POWER

The experimental design will require a sample size of 250 participants assigned to each condition. The sample size calculation is based on a power of 0.8, a statistical significance level of alpha equals .05, and a small effect size on the key variable of interest -- the outstanding value of payday or PayDay Plus loans after six months.

The effect size is drawn from Bertrand and Morse (2009), which looked at the impact of \$600 income tax rebates on the borrowing behavior of payday loan recipients. Bertrand and Morse (2009) found that the tax rebate led to a persistent \$25 decline in the average payday loan taken out by a prior recipient from \$325 before the tax rebate to \$300 several months after. Taking into account the standard deviations, this is a Cohen's *d* effect size of 0.25, which is small. The Bertrand and Morse (2009) result provides a reasonable comparison for our study because it looks at the same target population -- payday loan borrowers -- who received a similar intervention -- a small income increase -- facilitated by the tax rebate in the study and by lower interest rates with PayDay Plus. It is an imperfect comparison, however, because the tax rebate represented a one-time, lump sum increase in income whereas PayDay Plus is a less perceptible, more indirect increase in income. PayDay Plus saves the client at most a few hundred dollars a year, as well, so the impact is less than the tax rebate. Thus, it is appropriate to use a small effect size in designing the study.

To date, the PayDay Plus program has only done a relatively small volume of a few hundred loans. Therefore, implementing the experimental design for the program evaluation will require a much more aggressive promotion of the program to ensure that the required number of marginal participants (500) can be recruited within a reasonable time frame.

B. DATA COLLECTION

There will be three points of data collection: the initial loan application, a six-month follow-up when the PayDay Plus loan closes, and a final follow-up at 18 months to check for a longer-term impact of receiving or being denied a loan. To maximize participation, all participants will be paid for completion of each of the two surveys. During each survey, participants will provide information on the key outcome variables: debt-to-income ratio, number, type and amount of all outstanding loan balances, status of loan repayments, credit score, and whether they have had

difficulty paying their basic bills. Credit reports and FICO credit scores, which can be accessed for a fee for all participants, allow for outside verification of some of the information provided and for tracking of some results even for participants who cannot be reached to complete the survey in later stages of the experiment. Since payday loans are not reported to the credit bureaus or used in FICO credit scores, it will be critical to survey the participants at each point to gauge the frequency and amount of their use of payday loans for short-term credit after their initial PayDay Plus application. Follow-up surveys with the clients who do not receive loans will provide insight into what alternative they used once denied a PayDay Plus loan, including turning to family, asking for a cash advance from their employer, or receiving a payday loan. These questions will include a manipulation check to ensure that those in the control group did not somehow receive another loan functionally similar to a PayDay Plus loan in terms of amount, interest rate, and repayment period.

C. DATA ANALYSIS

The data will be analyzed using t-tests to compare mean debt-to-income ratios, number and amount of outstanding payday loan balances, and FICO credit scores between those receiving PayDay Plus loans and those not. We also use t-tests for differences between proportions of recipients experiencing difficulty in paying their bills and differences in default rates. Chi-square tests allow for comparisons on the type of loans used and the status of loan repayment, such as whether PayDay Plus recipients are less likely to have defaulted on any particular type of loan than those who did not receive the product. Finally, difference-in-difference estimates will compare the financial health of the two groups of participants before and after they receive loans.

D. INTERNAL AND EXTERNAL VALIDITY

By using an experimental design, the proposed evaluation has strong internal validity. Through random assignment to loan approval, the design has dealt with unobserved characteristics that might lead an individual to apply for a PayDay Plus loan or that might lead the credit union to award or not award a loan to a “marginal” customer. These potential sources of selection bias will not impact the outcome. By tracking applicants over the same time frame and in the same local context, the design also controls for economic conditions and credit market conditions in the local economy that might influence the outcomes of interest.

As the experiment proceeds, it will be important to guard against any potential bias caused by differential attrition within or between the two groups. For example, PayDay Plus borrowers that default on the loan may be less willing to respond to follow-up questionnaires or may misinterpret follow-up contact efforts as coming from a collection agency. This could bias estimates of the effect on credit scores and financial health upwards by excluding from the sample the participants in the most difficult financial circumstances. Similarly, contact information for participants who have an ongoing relationship with the credit union through their loan is likely to be more up-to-date than for participants who are denied a loan. It will therefore be easier to follow-up with those who received the treatment than those who do not. By offering a financial incentive for completing the follow-up surveys, we hope to maximize participation in the follow-up surveys from both groups of participants. Provided we mitigate these concerns about attrition, the results should be generalizable to all “marginal” PayDay Plus customers.

E. THREATS TO VALIDITY

Threats to external validity remain. Since randomization only occurs for marginal recipients, the results might not reflect the impact on those in the target population who exceed or fall below the thresholds used to define the marginal group. The results also might not hold outside of San Francisco or even within the city but outside of the neighborhoods currently participating in the program. Households not in San Francisco might have different opportunities to access credit than those in the city. Similarly, the findings might change under different economic conditions and particularly under a different credit environment. If new kinds of credit products become available to this population, the relative benefits of the PayDay Plus loan as an alternative will change. For example, if payday lenders lower their interest rates in response to PayDay Plus or credit cards extend additional credit to this population, then the effect might change. Additionally, if the PayDay Plus loan evolves and the credit unions offer it with different interest rates or repayment periods, the results might not hold.

Finally, the results might not hold for payday loan customers in the target population who are unaware of PayDay Plus. Since randomization occurs at the point of application, the evaluation does not shed light on those in the target population who never apply. “Non-applicants” might be different in both observable and unobservable ways from those aware of the program. An analysis of the data collected could compare the demographics of those in the experiment to existing information on payday loan users to determine whether they are significantly different on observable characteristics, such as demographic attributes, income and employment status. There might still be unobservable characteristics, however, that cause applicants to differ from non-applicants. In particular, those who apply for a PayDay Plus loan might already have connections to community organizations that promote the program and to credit unions that offer the product or, at the very least, the financial savvy to seek out an alternative to payday loans. This social capital or financial awareness might make them quite different from non-applicants and perhaps more able to overcome the cycle of dependency on payday loans. If the program increases in scale and reaches more of the “non-applicants” after the program evaluation, it might not have the same effects it has on those in the experiment.

7. QUASI-EXPERIMENTAL DESIGN: PROPENSITY SCORE APPROACH

Credit unions may not be able politically or legally to risk their funds by making loans to clients selected completely at random. If the situation arises where we do not have the full cooperation of the credit unions and that they are unwilling to let us randomize loan decisions for potential PayDay Plus borrowers that are on the margin of qualifying, then we would face a problem in identifying the impact of the PayDay Plus loans because of the lack of an appropriate comparison group. If we track only PayDay Plus recipients over time, we would not capture how the PayDay Plus loan operates differently from a traditional payday loan and we risk conflating the effects of the PayDay Plus loan with other factors about the participants or their environment that influence their financial well-being.

A propensity score matching technique could help correct for this bias. By matching PayDay

Plus clients to traditional payday loan borrowers with very similar observable characteristics, we can more accurately estimate the impact of the program on the participants' financial well-being. In this study, we would administer a similar pre- and post- survey as the experimental design to the PayDay Plus clients as well as their matched participants. The matched participants will come from a new dataset that we will create with the help of a survey team.

Propensity score matching (PSM) works well when the treatment and comparison groups have substantial overlap on observable variables. In other words, if there are unobservable differences between people who choose to use PayDay Plus and those who do not, propensity score matching may not be able to control for those differences. In our case, PSM is an appropriate technique since the requirements and accessibility of PayDay Plus loans are quite similar to traditional payday loans and therefore PayDay Plus competes with traditional payday loans for the same type of clients. PayDay Plus loans charge an 18% interest rate which is substantially better than traditional payday loans, but not competitive with other loans that may be accessible to borrowers with better credit scores. Therefore, it is likely that PayDay Plus clients are similar to traditional payday loan clients on a range of observable criteria. Additionally, early data from focus groups about the program suggest that all PayDay Plus clients had previously obtained a traditional payday loan.

A propensity score is essentially the predicted probability of being in either the treatment or comparison group; in this case, the treatment group consists of those clients who received PayDay Plus services while the comparison would be anyone who did not receive PayDay Plus services. We estimate the propensity score from a variety of covariates that are associated both with the decision to participate in PayDay Plus as well as the baseline values of outcomes we are interested in, such as credit scores, debt, and long-term financial well-being.

A. SAMPLE SIZE & POWER

This design will require a sample size of 250 PayDay Plus participants, as well as a pool of 300 individuals who can serve as matches. The sample size calculation is based on a power of 0.8, a statistical significance level of $\alpha = .05$, and a small effect size, similar to the sample and power calculation of our experimental design. The number in the matching pool is inflated slightly to reflect that the procedure for matching across the groups by propensity score may require dropping some observations with extremely high or low propensity scores. However, since this design looks at the entire PayDay Plus population instead of just marginal participants, we will have an easier time obtaining the appropriate sample size.

A. DATA COLLECTION

This method requires us to construct a dataset to match against the PayDay Plus clients. Based on the demographic knowledge of PayDay Plus clients, the most likely matches will be against traditional payday loan clients in the San Francisco area. We propose hiring a survey team to identify matches by interviewing people outside of traditional payday loan offices. This approach will reach a pool of potential matches that are likely to have strong similarities to PayDay Plus clients. In the event that we do not find sufficient appropriate matches to pair all PayDay Plus participants, we propose expanding to a larger survey area. This may include surveying people in

nearby cities like Richmond and Oakland that have a similar prevalence of payday loan businesses.

In choosing the appropriate variables to match PayDay Plus participants, it is important to choose variables that influence both the participation decision and the outcome variable. In this case the participation decision includes characteristics such as age, race, income, and employment status. The outcome includes variables such as debt-to-income ratio, credit score, and frequency and amount of payday loan use.

Table 1 represents a list of variables that would allow us to best match to PayDay Plus participants. This list includes more matching characteristics than we would ultimately use. Bryson et al (2002) cautions on over-parametering the variables since extraneous variables can at worse create biases, and at best create larger variances. However Rubin and Thomas (1996) note that unless there is consensus on the variable being extraneous, the variable should be left in the model.

TABLE 1: Propensity Matching Characteristics

Characteristics of Interest	
▪ Ethnicity	▪ Neighborhood
▪ Age	▪ Bank account holder
▪ Gender	▪ Frequency and loan amount of payday loan use
▪ Marital status	▪ Reason for payday loan
▪ Employment status	▪ Debt-to-income ratio
▪ Household size	▪ Credit score
▪ Income	

B. DATA ANALYSIS

In order to test the accuracy of our propensity score, we propose using the statistical significance method and the hit-or-miss method. The statistical significance method begins the specification with few variables and then slowly adds in variables. If the new variable is statistically significant, it is kept in the model. The hit-or-miss method categorizes the ability of the propensity score estimate selection into the treatment or comparison group. While this is not the main purpose of the propensity score, this method will help to balance out the covariates.

Having identified our key covariates, we estimate propensity scores by running a regression with the probability of participating in PayDay Plus on the left hand side, with the covariates we have selected on the right hand side. Once we have estimated propensity scores, we can stratify the data according to propensity scores, creating separate groups with similar scores (for example: low, medium and high). We would then match PayDay Plus clients with the same number of matching individuals from our comparison group. Once we have matched all of our treatment observations, we will discard the unwanted controls that did not closely match any of the treatment observations. If there are some remaining treatment observations that had no match among the control group, we would need to exclude those observations from our analysis.

Once we completed the matching process, we would then conduct multivariate analysis on our

matched samples to determine the effect of PayDay Plus alone, controlling for other observable characteristics. This technique is further described above in the experimental section.

C. THREATS TO VALIDITY

Since we are unable to perform random assignment, our study will be subject to selection bias. Propensity scores cannot correct for unobservable factors that determine whether or not an individual applies for and receives a PayDay Plus loan rather than a payday loan. Therefore, unobservable factors such as motivation, social capital, and financial savviness cannot be controlled for using this technique. Some observable characteristics included in the model serve as proxies for unobservables (for example, holding a bank account as a proxy for financial savviness), but selection biases likely remain.

An additional limitation is the possibility of finding treatment observations that do not have any similar match in the comparison group. We would need to exclude these observations from our analysis, though this could also introduce bias into our results. If a significant number of treatment observations do not have a match, we may need to use a more sophisticated method of matching (D'Agostino 1998).

The design has many of the same external validity concerns as the experimental design, as described in the experimental design section. This study will be difficult to generalize to other economic climates and geographic regions. This is because people may react differently due to the current high unemployment rates, and the population and services in San Francisco are significantly different from other places. Lastly, this design does not tell us about San Franciscans that are unaware of the PayDay Plus program, thus we cannot make a generalization from this study to that population.

8. CONCLUSION

Existing research demonstrates that short-term credit alternatives can sometimes enhance the financial well-being of low-income households by allowing them to survive financial shocks, but it can also trap them in debt and dependency on the lender. PayDay Plus SF provides a potentially viable alternative that is both profitable for financial institutions and better for consumers than traditional payday lending practices. The proposed program evaluation will provide insight into whether this cheaper, more responsible short-term loan can prevent borrowers from becoming dependent on payday loans, save them money, and, as a result, improve their financial health over the long-term. If the program demonstrates these benefits for its participants, it could encourage policymakers to work with credit unions to pursue the creation, expansion, and even subsidy of alternatives to payday loans as no-cost or low-cost way to lift the financial well-being of working families.

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