Online Payday and Installment Loans: Who Uses Them and Why?

A Demand-Side Analysis from Linked Administrative, Survey, and Qualitative Interview Data

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PREFACE

Although "small-dollar credit" has existed for centuries in various forms, the market has undergone a rapid evolution in the last 25 years. New products like payday loans, which target borrowers with subprime credit ratings, emerged in the early 1990s and were initially offered through check-cashing stores and pawn shops. As the market for these loans grew, however, stand-alone stores began to flourish. The number of stand-alone stores peaked at over 23,500 in 2007, and as of 2010 an estimated 19,000 payday loan stores were operating across the country. And these estimates do not account for the growing online lending component of the industry. The market for such loans quickly grew to encompass more than $48 billion by 2011.

Concern over the potential harmful effects of these new forms of small-dollar credit, including the high effective interest rates charged to borrowers, the financial vulnerability of the expected borrowers, and the risks that borrowers face of falling deeper into debt, has led to increasing calls for stronger regulation. The federal Consumer Financial Protection Bureau has proposed a set of rules for the industry that will, for the first time, provide a national regulatory framework.

Yet, solid data to explain why people use these products, how borrowers perceive them, and what alternatives might be viable is limited. MDRC's Subprime Lending Data Exploration Project is motivated by a desire to gain a deeper understanding of the people who use alternative credit instruments, such as online payday and installment loans. With an unusual data set that combines administrative records from subprime lenders and an online survey and in-depth interviews with borrowers, the study examines the needs, characteristics, and perceptions of borrowers and how they use these products, including patterns of default and loan payoff and rollover.

It is MDRC's hope that these findings will help shed light on the diversity of needs and challenges of the individuals who turn to subprime loans, and may inform the debate over regulation and the alternative loan products.

Gordon L. Berlin
President, MDRC

EXECUTIVE SUMMARY

This paper explores the use of an increasingly important and controversial component of the consumer financial system in America: online subprime small-dollar credit (also referred to as "payday lending"),[1] which is banned or heavily regulated in several states but is legal or only somewhat restricted in others. The paper uses an unusual combination of data sources — administrative data provided by subprime lenders combined with survey and in-depth interview data obtained from borrowers — to gain a better understanding of the range of backgrounds and experiences of people who use these loans and the needs that drive borrowing.

The research team was given access to an administrative data set provided by Clarity Services, Inc., which has lender-reported data on nearly 50 million individuals nationwide who have applied for or used subprime credit from hundreds of lenders operating in all 50 states. This reach results in an unusually large-scale data set, which covers borrower characteristics and loan outcomes on a national scale. While the file that Clarity shared with the research team contained over 8 million loan records for 3 million borrowers, the analysis focuses on two smaller samples of individuals who received loans in 2014. The *full sample* includes 881,512 borrowers and is used to analyze how borrowing varies by geographic location. The *analysis sample* includes 198,499 individuals and contains higher-quality loan repayment data.

In addition to looking at borrowers overall, this paper examines the variation in borrowers' circumstances by dividing them into user segments. Analyses of administrative, survey, and interview data revealed a great deal about the characteristics of this population and the "demand side" of small-dollar credit markets. In providing a rich description of the market, this research provides a basis for exploring potential avenues to improve outcomes among various segments of this population and for addressing the inherent challenges in developing effective strategies.

This work was funded by the MetLife Foundation and carried out by researchers at MDRC and The New School in New York City.

WHO ARE THE BORROWERS?

- **Online subprime borrowers are very diverse in terms of their socioeconomic characteristics.**

Many assume that payday loan users have very low income, few assets, and low levels of education. While many individuals who are reflected in the administrative data have low income, over 20 percent earned a net income above $40,000 a year at the time they applied for a loan (which translates into a gross income of nearly $53,000 per year). Similarly, while most individuals in the administrative

1. "Payday lending" is used here to refer to both traditional "lump sum" payday loans and installment loans; the term is used interchangeably with "subprime small-dollar credit" in this paper.

data rent their homes, about one-third of borrowers are home owners. And, the educational distribution of surveyed online subprime loan users is above the U.S. average: over 40 percent of survey respondents have a four-year college degree or higher.

WHAT IS TYPICAL LOAN BEHAVIOR?

- **Many online borrowers take out unconventional payday loans. Defaults are common.**

While payday loans are the most common type of product in the data set, many of the financial instruments in the Clarity system appear to have unconventional structures. Many of the "payday loans" appear to be high-interest online installment loans. Only 18 percent of borrowers took out at least one loan in 2013 or 2014 that had the characteristics of a traditional payday loan (a single-payment loan due in full within a month of disbursement). Approximately 42 percent of borrowers appeared to be current on all of their loan repayments, and nearly three-fourths of borrowers paid less than the scheduled amount at least once (suggesting a high level of rollover activity). Nearly half of the borrowers ever defaulted on a loan, though over two-thirds eventually paid at least one loan in full.

- **Most survey respondents had taken out two to three payday loans in the past year. Rollovers and having more than one payday loan at a time were common occurrences.**

Among survey respondents, small-dollar credit usage rates varied quite a bit, though the most common response was that individuals had used two to three payday loans in the past year. Rollovers were also common. Approximately one-fourth of respondents reported rolling over a loan six times or more in the previous year. These results are consistent with findings from the administrative data and with many other studies, which have shown that payday loans are often rolled over. Rollovers were more likely if respondents reported having emergency expenses or running out of money by the end of the month, among other predictive factors. Notably, 71 percent of respondents reported having had more than one payday loan open simultaneously at least once in their lives.

WHAT ARE THE KEY LOAN-USER POPULATION SEGMENTS?

- **There are three distinctive loan-user populations, or segments, who differ greatly in terms of the kinds of loans they use, the lenders they use, and their loan outcomes.**

The largest group, constituting over 40 percent of the sample, struggle to repay loans. However, a segmentation analysis made it clear that there is another relatively large segment of borrowers (roughly one-third) who pay back their loans on time and rarely default (that is, are rarely delinquent on their loan). A smaller, more distinctive group borrows mostly from tribal lenders. They fall somewhere in the middle in terms of default rates, are more likely to be in states where payday lending is restricted, and are more likely than other population segments to use subprime installment loans than payday loans.

ARE BORROWERS CONNECTED TO MAINSTREAM CREDIT MARKETS?

- **Most of the survey respondents have bad or very bad credit scores.**

Over 96 percent of survey respondents already have a credit score, and over 73 percent ever had a prime credit score. Most assess their scores as "bad" or "very bad." It may be much more difficult to repair credit than to establish credit for the first time for this group, but repairing credit is quite important for them, given the prevalence of credit checks in everyday life, including credit checks that are done as part of employment background screening.

Most survey respondents are not fully cut off from mainstream credit products, like credit cards. Over 73 percent of survey respondents had at least one major credit card in their household and about half had an available balance to spend at the time they were surveyed. The interviews suggest that those with credit cards may have low credit limits and, given the frequency of unexpected expenses, may reach those limits quickly. Nevertheless, those with an available balance were less likely to use payday loans to cover regular expenses; less likely to experience negative loan outcomes, like default or collections; and less likely to answer, "I would not pay my bills," when posed a hypothetical scenario in which payday loans were not available.

WHY DO THEY BORROW?

- **Most survey respondents who took out a payday loan used it to cover regular expenses.**

Almost 64 percent of respondents who took out a payday loan used their most recent payday loan to cover regular expenses. Though most had a stable income at the time the survey was conducted, it was insufficient to make ends meet. As a result of expenditures for debt obligations, rent, groceries, utilities, and other regular expenses, half of the sample said they were running out of money "often or always" by the end of the month.

Though most survey respondents do not borrow simply to handle unanticipated or emergency expenditures, almost 80 percent had recently experienced an emergency. Some of the regular expenses that necessitate a payday loan may have their origins in such emergencies. Individuals may have to borrow funds because they do not have health insurance (or they are underinsured) or emergency savings. While 90 percent of survey respondents have some form of health insurance, about half of the respondents carry medical debt, which has become one of the regular expenses that contribute to borrowers' chronic income shortfalls and use of small-dollar credit to cover ordinary expenses. Some of the individuals who were interviewed said they had incurred medical debts during periods when they did not have health insurance coverage (because, for example, they had relied on employer-provided coverage and were in-between jobs). Others were underinsured; having a high-deductible plan means that they have to take on medical debt to manage chronic conditions or pay for preventative care.

Consistent with research on other populations who struggle with their finances, the findings show that borrowers use networks of social support to help cover their needs, but that network resources

are limited. Many respondents had already borrowed as much as their friends and family could afford to give. And others could borrow more only at great social cost in shame and ostracism. These networks can also create obligations on the part of individuals that lead them to borrow. Some respondents used their loans to help parents, siblings, or children who had themselves fallen on hard times. Kinship networks are, therefore, not a substitute for or solution to reliance on small-dollar lending.

HOW DO STATE REGULATIONS AFFECT PAYDAY LENDING?

- **State-level regulations on storefront lending are associated with reduced usage of online loans.**

The findings are consistent with other research indicating that online payday lending rates are much lower in states where storefront payday lending is banned. Some states are more aggressive than others in enforcing bans on payday lending online, and in some states the presence of Native American tribal lenders — financial organizations that are affiliated with Native American tribes, which are not generally subject to state regulation — mitigates the effect somewhat, but generally it appears that bans on payday lending do diminish online borrowing.

FUTURE WORK

This project has laid the groundwork for possible explorations of how changes in public policy, loan terms, or other factors affect the dynamics of online subprime small-dollar loan use. The combination of administrative records, surveys, and in-depth interviews in a longitudinal study of borrower behavior appears to hold promise for identifying ways to improve the well-being of these borrowers.

Introduction

This paper explores the use of an increasingly important and controversial component of the consumer financial system in America: subprime small-dollar credit, which is banned or heavily regulated in several states but is legal or only somewhat restricted in others. While there is significant debate about whether small-dollar credit products like payday loans — short-term, single-payment loans with repayment due at the time of the borrower's next payday — are helpful or harmful to consumers, that question is not the focus of this research.[1] The emergence and rapid expansion of payday lending and associated short-term credit products speaks to the existence of serious financial hardship that is unsatisfied through other means.[2] This study uses an unusual combination of data sources — comprising administrative data provided by subprime lenders, and survey and in-depth interview data obtained from borrowers — to gain a better understanding of the range of backgrounds and experiences of the people who use these loans and the needs that drive their borrowing. In addition to looking at borrowers overall, this work examines the variation in borrowers' circumstances. Understanding that variation can help guide policy, regulatory, and lender response. This research will provide the field with a better understanding of the origin of the hardships that payday loan borrowers face and potentially enable the crafting of alternative solutions (as warranted).

This research was funded by the MetLife Foundation and carried out by researchers from MDRC and The New School in New York City. The findings from the first phase of this research, which are documented in this paper, are exploratory and descriptive. The study was designed to shed light on the diversity of the payday borrower population and to examine potential segments of that population that emerged as a result of the analysis. The research team hypothesized that a greater understanding of these segments, assuming they exist, could lead to more effective policy interventions and the creation of more appropriate loan products for vulnerable borrowers. These interventions and innovations could be tested more rigorously in future phases.

A glossary of select terms used in this paper appears in Appendix E.

1. For a good overview of this debate, see Caskey (2012).
2. The data set used includes traditional "lump sum" payday loans as well as installment loans. The term "payday loan" is used here to refer to both types of loans, which are explained in more detail in the next section.

Background on Subprime Small-Dollar Credit

Although small-dollar credit has existed for centuries in the form of, for example, pawn lending, the market has evolved rapidly since the late twentieth century. New products like payday loans, which target different subprime market segments, emerged in the early 1990s. The market for such loans grew quickly to a total loan volume of more than $44 billion by 2011.[3]

Payday loans get their name from their structure: they allow borrowers to receive an "advance" on their next paycheck. In contrast to a product like a pawn loan, which requires collateral in the form of a material good that is traded for funds, payday loans are unsecured. To receive a payday loan, a potential borrower must show evidence of regular income (typically by offering pay stubs or Social Security checks) and possession of a checking account. With these two elements a borrower can obtain a small ($50 to $300), short-term (two to four weeks) loan at a fee of $15 to $20 for every $100 borrowed. This fee translates into an annual rate (APR) of 200 percent to 400 percent. If at the end of this period the borrower does not have the necessary funds to cover the postdated check, lenders will typically allow the borrower to "roll over" the debt into the next pay period for an additional fee.

Subprime installment loans are closely related to payday loans. These products are usually offered by the same lenders, can be somewhat larger (potentially up to $5,000), and are structured so that the borrower pays off the loan over a longer period of time in regular installments rather than in a single "lump sum" payment as in a payday loan. As the industry has grown and responded to demand and to regulation (see below), lenders have developed additional "hybrid" products that combine the characteristics of both payday and installment loans.

Payday loans were initially offered through check-cashing stores and pawnshops, and marketed as a means of covering unexpected or emergency expenses like car or appliance repair. As the market for these loans grew, stand-alone stores began to flourish. The number of stand-alone stores peaked at over 23,500 in 2007, and as of 2010 an estimated 19,000 payday loan stores were operating across the country.[4] And these estimates do not account for the growing online lending component of the industry.

3. Miller (2012).
4. Montezemolo (2013).

Over time, large regional and national payday businesses, such as Ace Cash Express and CashNet USA, developed. Online payday (and related) lending emerged in the early 2000s, as some storefront lenders began experimenting with Internet-based products and online marketing as a cost-effective means of reaching consumers.[5] Online lending is now the fastest-growing component of the subprime small-dollar credit industry. Between 2006 and 2011, storefront payday loan volume decreased 7 percent in terms of volume and 6 percent in terms of revenue. During the same period of time, Internet lending increased 20 percent in terms of volume and 19 percent in terms of revenue. As of 2012, the number of online payday lenders was estimated to be somewhere between 150 and 215. Annual principal loan volume was estimated to be $11 billion in 2012, generating $2.9 billion in interest from fees.[6]

The growth of online lending has led to a need for underwriting and fraud detection processes; responding to this need is particularly important given the anonymity of online transactions. Credit agencies that specialize in subprime lending markets, such as Clarity Services, Inc., have, in recent years, emerged to provide these services. When applicants apply for subprime credit (mostly for online payday or installment loans), their application data are stored in a database. In return for providing underwriting and fraud detection services, the credit agencies ask lenders to report on loan outcomes such as payments, defaults (delinquency on a loan), rollovers (delayed repayment, for an additional fee), and charge-offs (when a creditor formally writes off a loan as nonpayable).

Concern over the potential harmful effects of payday loans (including the high effective interest rates charged to borrowers, the financial vulnerability of the expected borrower, and the borrower's risk of falling deeper into debt) has led to a renewed focus on regulation. With the exception of lending to military personnel and their families, payday lending is currently regulated entirely at the state level (although the Consumer Financial Protection Bureau, or CFPB, has proposed a set of rules for the industry that will provide a national regulatory framework). Individual states have vastly different rules surrounding payday lending. Storefront payday lending is explicitly or effectively illegal in 15 states (although residents of those states may be able to obtain online loans).[7] Interest rates, fees, and loan sizes also vary from state to state, as does the strictness of regulation. Some states have caps on the number of loans or loan rollovers an individual can take out, or set "cool-off" periods between loans, and some have outlawed "lump sum" loans but permit installment loans.[8]

5. Fox and Petrini (2004).
6. Hecht (2012).
7. The Pew Charitable Trusts (2012).
8. Kaufman (2013).

What Is Already Known About Subprime Small-Dollar Loan Borrowers

Most of the existing literature on the subprime small-dollar credit industry and its borrowers focuses on whether the loan products mitigate or exacerbate the financial hardship of borrowers. A more limited body of literature describes the range of borrower profiles. Although that research leaves many questions about those profiles unanswered, it provides some important insights.

Small-dollar credit is often marketed as a means of covering unexpected or emergency expenses. Some researchers have found that payday loans may be the only available means of financial support for some individuals in emergency situations. For example, one study investigated payday loan use in communities affected by natural disasters. It found that the presence of payday lenders in a zip code area was associated with reduced community-wide financial distress indicators, such as the number of foreclosures, in the aftermath of natural disasters.[9] Several other studies provide evidence that payday loans may be the only option available to people faced with sudden, unexpected expenditures, such as those necessitated by an emergency.[10] This situation may arise when individuals lack savings, do not have credit cards, or do not have a sufficient available balance on their credit cards to cover the expense.

Other research finds, however, that borrowers who use payday loans for unexpected expenses and emergencies are the exception rather than the norm. A 2012 study found that only 16 percent of first-time borrowers of payday loans used the loan to cover unexpected or emergency expenses. Most (69 percent) used the loan to cover other necessary expenses, such as a utility bill, a credit card bill, rent, or food.[11] In other words, most payday loan borrowers may be struggling to cover regular, anticipated expenses — which has implications for their eventual ability to repay the payday loan (or any loan) on time or at all.

The most relevant study that attempted to categorize borrowers based on loan usage was conducted by the Center for Financial Services Innovation (CFSI). CFSI surveyed 1,121 small-dollar credit users and conducted 31 interviews with consumers who had used small-dollar credit in the previous

9. Morse (2011).
10. Morgan and Strain (2008), Elliehausen (2009); Fusaro and Cirillo (2011).
11. The Pew Charitable Trusts (2012).

year. The CFSI study divided the borrower population according to why individuals took out payday loans. While borrowers were free to provide multiple reasons for taking out a loan, the researchers found that about two-thirds of borrowers took out loans to fill a single need. Of the six reasons given for taking out a loan, researchers selected four "need cases" for small-dollar credit use: (1) to pay for an unexpected expense, (2) to handle a misaligned cash flow (for example, when payments are due in the interim period between paychecks), (3) because the borrowers' expenses regularly exceeded their income, and (4) for a planned purchase. Those who borrowed because of a misaligned cash flow or because their expenses regularly exceeded their income were the most likely to have taken out multiple loans (six or more) in the year before the survey was conducted.[12]

Tim Ranney and Mike Cook of Clarity Services, Inc., a credit agency for the subprime lending market and the firm that supplied the administrative data for the current study, used their in-house data to investigate payday loan users' behavior and views about payday loans and to understand patterns of repayment and default. Ranney and Cook had longitudinal data that enabled them to look for patterns and changes over time. One interesting finding was that there was a substantial uptick in borrowing among consumers who had formerly had prime credit ratings, individuals who had high earnings and good credit behavior but who experienced a financial hardship and did not have the financial resources to weather it. Payday-loan borrowing among this category of consumers increased by more than 500 percent in just the year and a half between February 2010 and August 2011.[13]

Most previous research (unlike Clarity's in-house analysis) has relied mainly on survey data collected from subprime borrowers.[14] These studies encountered substantial challenges with respondent recall and accurate reporting, affecting the reliability of the findings. For example, in one phone survey that sampled individuals who were known to have received payday loans, a high proportion of respondents indicated that they had never received a payday loan.[15]

Fewer studies have used administrative data on borrower characteristics and loan amounts and dispositions maintained by credit bureaus such as Clarity Services, Inc.[16] Administrative data have

12. Bianchi and Levy (2013).
13. Ranney and Cook (2011).
14. See Stegman (2007) for an overview. Good examples include Elliehausen and Lawrence (2001) and Stegman and Faris (2003).
15. Applied Management and Planning Group (2007).
16. See, however, Bhutta (2013) and Bhutta, Skiba, and Tobacman (2015).

an advantage because they do not rely on reporting by individuals, who might misremember ("recall bias") or provide inaccurate information because of social pressure or a desire to please the survey administrator ("social desirability bias"). But administrative data are not without their own limitations. For example, they typically have substantial gaps in the outcomes they cover. Administrative data also cannot typically answer questions about *why* people use payday loans, and commercial administrative data only cover loan outcomes that are handled by the firm from which the data were obtained.

Because every data source has strengths and weaknesses, this study combines linked data from three sources: an administrative database, a survey of individuals within the database, and in-depth interviews of a subset of survey respondents. These combined data sources enable an "ensemble" analysis to learn more about the subprime borrower population.

Data Sources

Data for this project come from three sources: administrative records from Clarity Services, Inc.; an online survey of borrowers; and qualitative interviews with borrowers.

The research team was given access to an administrative data set provided by Clarity Services, Inc., which has data on nearly 50 million individuals who have applied for or used subprime credit. Most of the Clarity data focus on online loan use, a rapidly growing portion of the industry and one that has not been explored deeply in previous research. Clarity collects data from hundreds of lenders operating in all 50 states. This reach results in an unusually large-scale data set, which covers borrower characteristics and loan outcomes on a national scale.[17]

The research team identified a survey sample from the administrative data set and an interview pool from the survey sample.[18] Data from each source are therefore linked, allowing for a mixed-methods study, which enables novel insights into this population.

ADMINISTRATIVE DATA

The administrative data used in this study are lender-reported and include borrower demographic and employment information, loan types and terms, account types and balances, and borrowing and payment histories before the time of the loan application. After loans are disbursed, the database tracks loan repayment histories at the individual-loan level. While the file that Clarity Services, Inc., shared with the research team contained over 8 million loan records for 3 million borrowers, the analysis focuses on two smaller samples of individuals who received loans in 2014. (Loan use is tracked back through 2013 for these individuals.) The *full sample* includes 881,512 borrowers and is used for a spatial analysis (that is, an analysis of how borrowing varies by geographic location). The research team decided to focus on the year 2014 for two reasons: First, the quality of the lender-reported data in the Clarity system has improved over time, such that data on the years 2013 and 2014 are more complete and reliable than for earlier years. Second, the online lending market was affected by a regulatory action known as "Operation Checkpoint" in the summer of 2013, which likely

17. Cui (2015).

18. More information on sample selection appears in Appendix A.

makes loan data from that period less representative of typical market functioning. Focusing on the 2014 cohort, therefore, provides a more complete and representative portrait of the current subprime small-dollar credit market.[19] The *analysis sample* includes 198,499 individuals and contains higher-quality loan repayment data. Despite improvements in lender reporting over time, some lenders still have loan management systems that are incompatible with the Clarity system. This lapse can lead to incomplete data on tradelines (distinct loans or other financial products) after their initial entry. The analysis sample was chosen to select borrowers from lenders who reported on at least 75 percent of tradelines (and included all survey respondents who matched to the administrative data set).[20]

There are 318 unique lenders in the database (which suggests that an earlier estimate of online lenders, by Hecht, is too low[21]). While most are state-licensed lenders, around a quarter (27 percent) are "tribal lenders," financial organizations affiliated with Native American tribes. Because of tribal sovereignty, these lenders are often exempt from state regulation of the industry (with implications discussed below).

As mentioned previously, the administrative data have several benefits over the survey data, including capturing a more reliable history of loan activity, better coverage across a wider range of lenders and consumers, and a much larger scale, allowing for an analysis of variation of numerous characteristics. The main weaknesses of the administrative data are that they do not cover all loan behavior and do not provide much insight into who took out payday loans or why. The administrative data analysis has several goals:

- To provide an overall picture of online subprime loan borrowers in terms of their basic demographics
- To understand where borrowers live and what spatial patterns might explain why they use loans and the effects of state regulations
- To provide insight into the distinctive segments of borrowers who use small-dollar credit, particularly in terms of their loan usage patterns and outcomes

19. See Hackett and Fekrazad (2015b) for more details on Operation Checkpoint and how it affected the online lending industry.
20. These lenders are generally representative of the full sample except that they tend to underrepresent borrowers in restrictive states. This limitation prompted the use of the larger (full) sample for the spatial analysis, which only examined borrower "head counts" rather than loan outcomes. The sample definition process is discussed in Appendix A.
21. Hecht (2012).

SURVEY DATA

To help supplement the administrative data, an online survey was fielded to borrowers who took out a loan from a small group of lenders covered by the Clarity administrative data set who agreed to participate. Because these lenders are not representative of the full administrative data sample and because response rates were low, the survey results, though reweighted to better reflect the distribution of characteristics available in the administrative database, may not be representative and should be viewed with caution. The survey took about 20 minutes to complete and had several goals:

- To fill out the picture of loan-use behavior not seen in the administrative data
- To understand more about the demographics and financial situations of borrowers
- To understand why borrowers use payday and installment loans
- To perform a conjoint experiment to gain information about the drivers of small-dollar credit usage

IN-DEPTH INTERVIEW DATA

Recent studies, particularly by Professor Jonathan Morduch and his colleagues as part of the Financial Diaries Project, have underscored the challenges in collecting accurate financial data through surveys alone.[22] Therefore, after completing the survey, respondents were asked whether they would be interested in participating in in-depth interviews. The qualitative sample selected for in-depth interviews was drawn from this group. Ultimately, 10 interviews were conducted in Texas, 13 interviews were conducted in California, and 22 interviews were conducted by phone.

22. Morduch and Schneider (2016).

Research Questions

The bulk of existing research treats payday loan borrowers as a uniform group. A hypothesis going into this project was that there would be significant, meaningful differentiation — or "segmentation" — among borrowers. This hypothesis was explored in two different ways: First, this research sought to explore the different segments of payday loan borrowers that emerged from the administrative data. This effort was a data-driven process that was deliberately atheoretical, and is explained in more detail in the Methods section and Appendix B. Second, the researchers sought to examine specific segments of the borrower population that theory and past studies suggested might be important. The survey and in-depth interview data were used to provide a much more in-depth and nuanced description of these groups.

In addition to the basic questions of who uses payday loan products, how they use them, why they use them, and where they use them, this paper focuses on the following questions:

- What, if any, groups of borrowers emerge when analyzing a large administrative data set?
- What other sources of credit or support do borrowers rely on instead of or in addition to payday loans?
- How do borrowers view payday loans versus alternative products? What aspects of the products are most important to them?
- What did borrowers think about payday loans when comparing them with other sources of credit?

In addition to looking at borrowers overall, the paper examines the variation in borrowers' circumstances. The frequency with which different need profiles emerge can help guide policy, regulatory, and lender responses. This research will provide the field with a better understanding of the origin of the hardships that payday loan borrowers face, and can potentially enable the crafting of alternative solutions (as warranted).

Methods

In order to understand the range of borrower experiences, two segmentation strategies were used in this study. First, a K-means clustering analysis was implemented to assess the size and composition of loan user groups in the administrative data.[23] This analysis was a data-driven strategy and was intended to allow the groups (or "segments") to emerge based purely on the underlying correlations among variables in the data, rather than on theory or researcher expectations. Because the goal of this research was to understand subprime borrowers in general, the cluster analysis was conducted across the variety of subprime loan types that were present in the Clarity database. Future work with these data may examine loan segments within loan types (for example, within groups of individuals who use traditional payday loans, online installment loans, and the like).

Second, specific groups of borrowers were defined for special consideration in the survey and qualitative analyses based on theory and expectations. These groups included individuals who used payday loans frequently ("heavy users") versus infrequently ("light users"), individuals who had relatively high incomes (referred to as "higher-income" individuals in this paper), and individuals who were financially distressed.[24] These groups overlapped to some extent.[25]

In addition to the core segmentation analyses, several regression analyses were used. First, in order to understand how payday loan usage varies by place, while holding other characteristics of borrowers constant, a regression was conducted at the zip code level. Then, a series of regressions were

23. K-means clustering is one of several types of segmentation analyses, which reveal patterns in data by grouping similar observations. Here it is used to identify distinct groups of similar borrowers. For a detailed explanation of the segmentation analysis, see Appendix B.

24. Light users fell in the bottom twenty-fifth percentile on an index of loan usage derived from the survey and the Clarity data set. Heavy users fell in the top twenty-fifth percentile on an index of loan usage derived from the survey and the Clarity data set. Higher-income individuals earned at least $40,000 per year based on the Clarity administrative income. For individuals who were missing income in the administrative records, the outcome was imputed based on the survey. The survey threshold was higher ($80,000), partly because the administrative records measure was net income, while the survey measure of income was gross income. In addition, a higher threshold was used in the survey for the imputation in order to err on the side of including only higher-income individuals in the estimate (because survey data are subject to recall and reporting issues). Financially distressed borrowers reported that they had often or always run out of money before the end of the month in the past three months, were not in the higher-income group, and took out their most recent payday loan to pay for regular expenses.

25. Because only a limited number of lenders agreed to participate in the survey, it was difficult to reliably connect the administrative records segments with the survey data. This issue is discussed further in Appendix B.

conducted to understand the relative importance of different variables that were believed to drive loan usage. The research methods are described in more detail in Appendix B.

The interviews focused on three categories: higher-income borrowers, light users, and heavy users. Clusters of users were identified in different metropolitan areas in order to determine where in-person interviews could be conducted. The qualitative team ultimately traveled to Dallas-Fort Worth (in late October 2015) and the San Francisco Bay Area (in early December 2015) to conduct interviews. For borrowers who did not live in either of these areas, or who could not meet in person, telephone interviews were attempted.

Interviews typically lasted between 25 minutes and one hour. The interviews were semi-structured and asked borrowers about their experiences with banks, payday lenders, and other financial services providers; their history of borrowing; their broader financial situations (for example, credit scores, medical debt); borrowing strategies; the situation(s) that had led them to use payday loans; and their financial goals. The interview protocols appear in Appendix D.

Results

The results are discussed in two sections. The first section presents findings from the administrative data. Because of the size and national coverage of the Clarity data set, these findings are the most likely to be fairly representative of the "typical" online small-dollar credit borrower.[26] While the administrative data have more scale than the survey and interview data, they can answer only a limited set of questions. Therefore, the second section of results gleans insights from the survey and interview data. Although these data are not as representative of typical borrowers, they help to fill in the profile of payday loan users, as they are much better suited to answer questions about who is using the loans, how often, and why.

The following section describes findings from the Clarity administrative data. Statistical findings are illustrated by material from the in-depth interviews throughout the Results section. To protect confidentiality, all names used in the case studies and with the quotations by interviewees are pseudonyms.

FINDINGS FROM THE CLARITY ADMINISTRATIVE DATA

Who Are the Borrowers?

The first column of Table 1 shows demographic characteristics of payday loan borrowers from the administrative data analysis sample.[27] The average sample member is 41 years old. The bulk of the sample members are clustered in their 30s through 50s, with about 10 percent in their early 20s and an additional 10 percent age 60 years or older. Average annual net income is fairly heterogeneous. The average annual *net income* of borrowers is around $30,000. This amount translates into roughly $39,000 in gross income.[28] While over half of the sample has a net income in the $10,000 to $30,000 range, over 20 percent earned *net* over $40,000 a year at the time of their loan application (which translates into a gross income of nearly $53,000 per year).

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26. According to Clarity, about 10 percent of online lending activity goes through its system. See Clarity Small-Dollar Markets Research Team (2015).

27. As noted in Appendix A, the sample analysis focuses on individuals who borrowed from lenders who reported on 75 percent of their tradelines or more. This sample differs in some ways from the full sample, as discussed in the appendix. In particular, individuals in the analysis sample are more likely to live in states where payday lending is not restricted.

28. Net to Gross Paycheck Calculator (www.bankrate.com/calculators/tax-planning/net-to-gross-paycheck-tax-calculator.aspx). A similar estimate was derived from ADP's Gross Pay Calculator.

TABLE 1 Demographic Characteristics from the Clarity Database, by Cluster

CHARACTERISTIC (%)	ANALYSIS SAMPLE[a]	PRIMARY LOAN USER SEGMENTS		
		CLUSTER 1	CLUSTER 2	CLUSTER 3
Average age	41	41	41	39
18-24 years	9.8	9.7	6.4	12.4
25-34 years	27.7	26.3	25.9	30.4
35-44 years	27.1	25.3	30.2	26.5
45-59 years	26.2	27.2	29.0	23.3
60 years or more	9.2	11.4	8.5	7.4
Annual net income[b]	29,787	29,695	32,905	28,163
$1 - $10,000	4.6	5.8	1.1	6.1
$10,001 - $20,000	28.0	29.0	23.2	30.3
$20,001 - $30,000	30.0	28.2	30.4	30.6
$30,001 - $40,000	16.1	15.2	19.3	14.4
$40,001 - $60,000	16.0	15.8	19.2	14.5
$60,001 or more	5.3	6.0	6.7	4.1
Housing status				
Owns home	34.4	33.8	36.5	29.3
Rents apartment	59.6	57.4	62.2	56.5
More than 2 bank accounts on file	53.3	42.2	51.8	64.3
Ever changed zip codes	7.0	5.9	6.3	8.5
Lives in a restrictive state	2.9	0.5	9.6	0.2
Sample size	198,499	58,163	45,521	83,348
Proportion of analysis sample		29.3%	22.9%	42.0%

SOURCES: MDRC calculations from the Clarity database.

NOTES: A K-means cluster analysis was conducted on measures of loan usage, volume, and type, as well as lender type.

Sample sizes may vary because of missing values.

[a]The analysis sample includes individuals who received loans from lenders who reported on 75 percent of their tradelines or more and all survey respondents who matched to the Clarity database; 121 respondents did not match. Borrowers who took out "rent to own" loans and borrowers with missing values on key variables were also excluded from this sample.

[b]Clarity collects net income data, as it is more relevant to underwriting than is gross income. Estimates vary based on income level, but a common adjustment factor for net income in these income bands is between 1.3 and 1.5. The gross average annual income for the analysis sample is around $39,000.

Nearly two-thirds of the sample members rent an apartment, and slightly over a third are home owners. Roughly 7 percent have moved to a different zip code since they first entered the Clarity database.

Where Are the Borrowers?

As discussed in the Introduction, payday lending is (effectively) banned in many states. Most of the analysis sample members live in states where payday lending is not restricted (as shown in Table 1).[29] This characteristic is the main distinction between the analysis sample and the full sample. An additional spatial analysis, using the full sample, looked into how payday lending varies across states.

The full sample is dispersed geographically (as shown in Figure 1). The two most highly represented regions are the Pacific region and the East South Central region. The states with the highest concentration of payday lending applicants in the Clarity system are Nevada, Alabama, Tennessee, Mississippi, Ohio, and Texas. New England states, which is where the 15 states that ban payday lending are clustered, have the lowest usage rates. (See Figure 2.)

State-level enforcement of payday lending laws appears to vary among the states with more restrictive lending laws. It is easier to obtain an online payday loan in some states where loans are illegal than in others. For example, New York and West Virginia have very little payday loan activity, whereas New Jersey is more active. In West Virginia there has been rigorous enforcement of regulations against online lending.[30] Although about 29 percent of adults in the United States live in a restrictive state,[31] only 13 percent of Clarity borrowers reside in a restrictive state (as shown in Appendix Table A.1).[32] This distribution provides some evidence that borrowers do not completely circumvent regulations by seeking loans online.[33] As the map in Figure 2 shows, there is not much evidence that banning loans within a state leads to disproportionate online activity. In fact, a regression analysis of the geography of payday lending usage (shown in Table 2) found that living in a restrictive state is the

29. This and other analyses use The Pew Charitable Trusts' classification of states into permissive, hybrid, and restrictive regulatory categories. See The Pew Charitable Trusts (2014b).

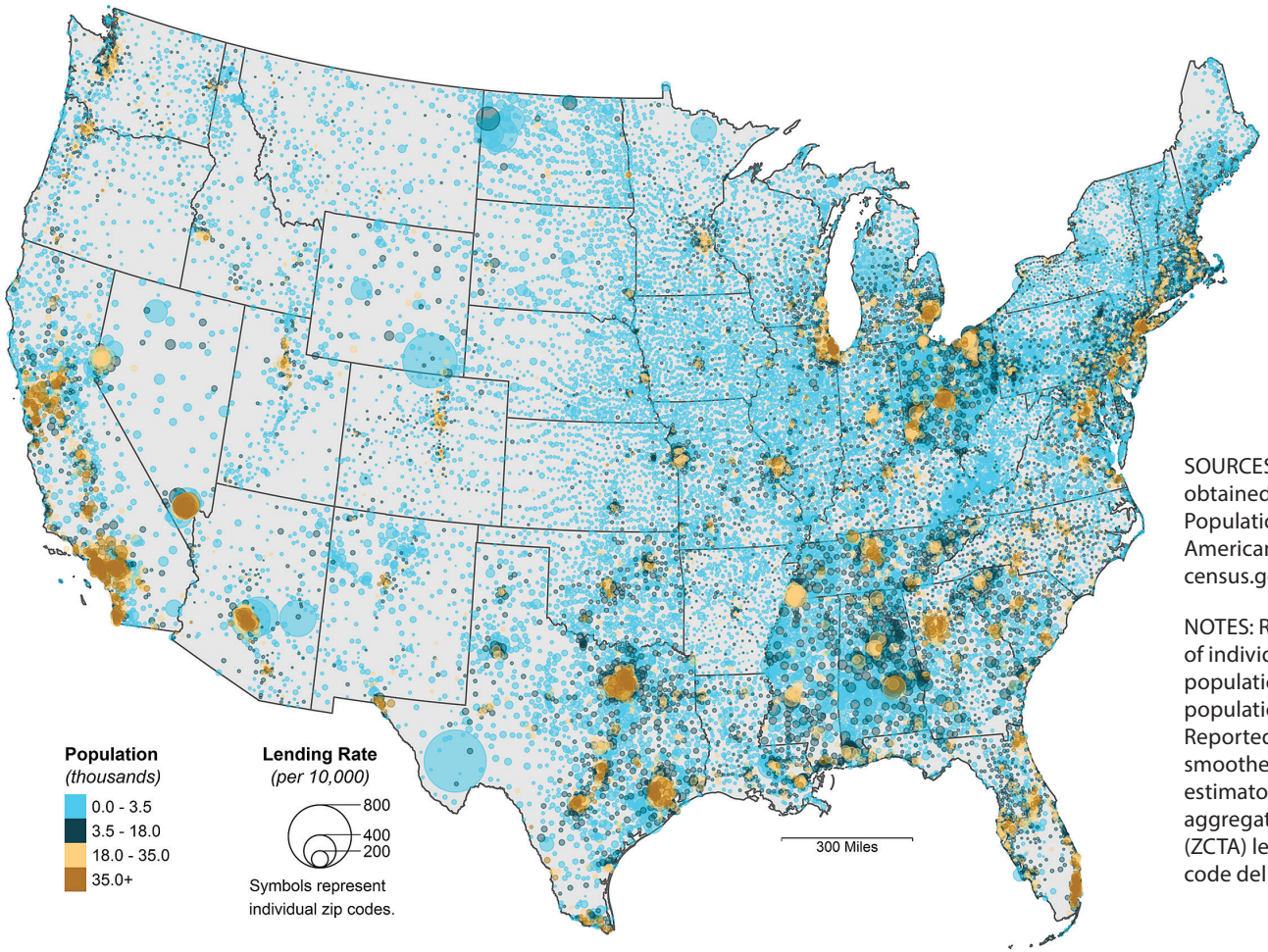
30. Hackett and Fekrazad (2015a).

31. The Pew Charitable Trusts (2012).

32. Interestingly, for reasons that are unclear, the analysis sample (which has lenders who report more frequently) has a much lower proportion of individuals living in a restrictive state.

33. However, Bhutta (2013) provides evidence that some individuals in states where payday lending is effectively outlawed but who live close to a state where such loans are available (typically within 25 miles) cross state lines to obtain loans.

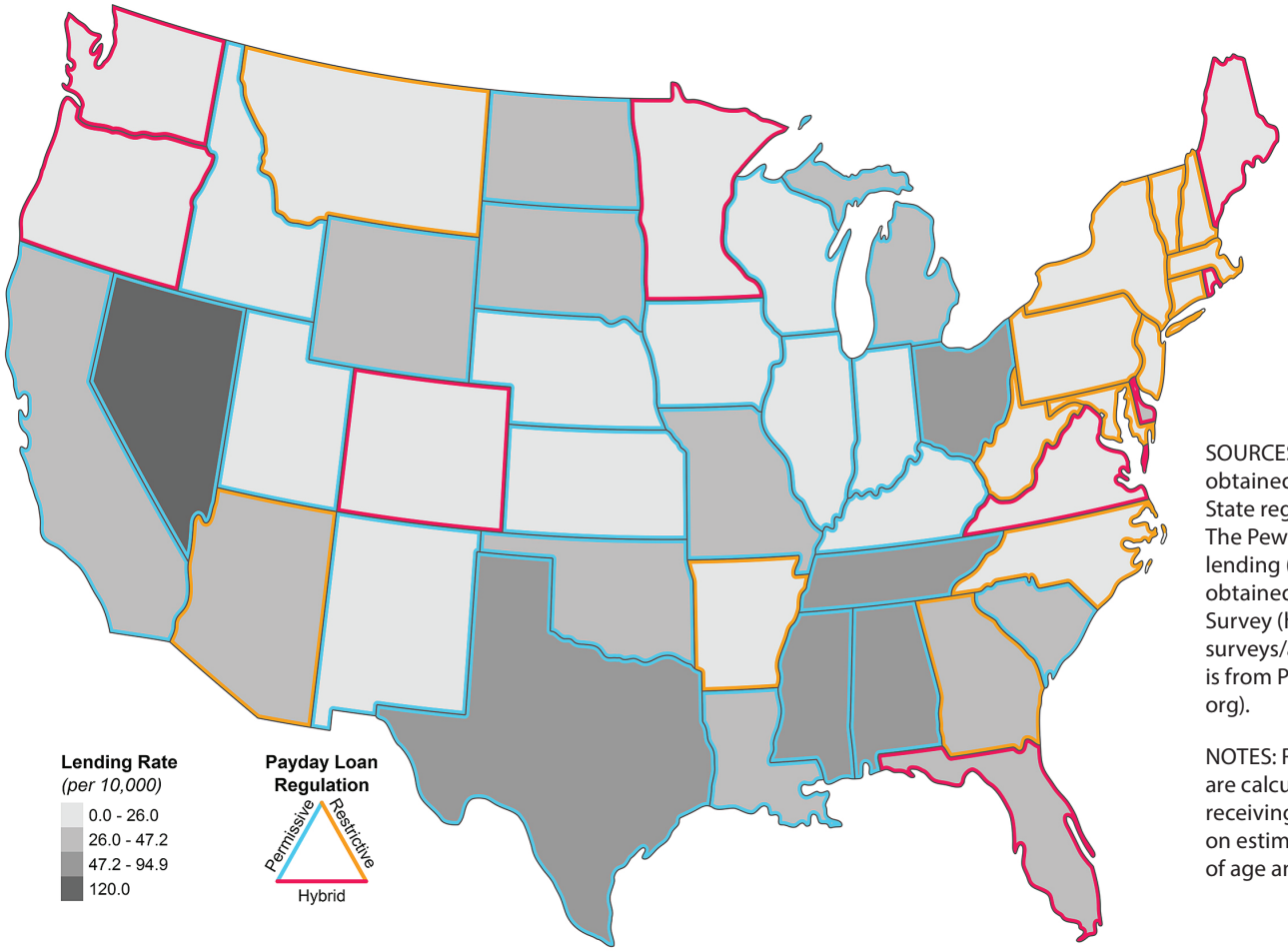
FIGURE 1 Online Payday Lending Rates Based on Clarity Database, United States, 2014



SOURCES: Data on payday lending were obtained from Clarity Services, Inc., for 2014. Population data were obtained from the 2013 American Community Survey (https://www.census.gov/program-surveys/acs).

NOTES: Rates are calculated using the number of individuals receiving at least one loan; population is based on estimates of the population that is 18 years of age and above. Reported rates per 10,000 individuals were smoothed using a local empirical Bayesian estimator. All data were acquired at or aggregated to the zip code tabulation area (ZCTA) level, which represent approximated zip code delineations.

FIGURE 2 Online Payday Lending Rates Based on the Clarity Database and Level of State Lending Policy Restrictions, United States, 2014



SOURCES: Data on payday lending were obtained from Clarity Services, Inc., for 2014. State regulatory definitions were obtained from The Pew Charitable Trusts' research on payday lending ([SOURCE TK]). Population data were obtained from the 2013 American Community Survey (https://www.census.gov/programsurveys/acs). The base map of the United States is from Project Linework (www.projectlinework.org).

NOTES: Reported rates per 10,000 individuals are calculated using the number of individuals receiving at least one loan; population is based on estimates of the population that is 18 years of age and above.

TABLE 2 Estimated Regression Coefficients for the Zip Code Level Rate per 10,000 to Obtain a Loan in the Clarity Database

CHARACTERISTIC	PARAMETER ESTIMATE	STANDARDIZED ESTIMATE	P-VALUE
Lives in restrictive state	-19.605	-0.283	< 0.0001***
Population with EITC income	0.727	0.235	< 0.0001***
Single-parent household	0.824	0.170	< 0.0001***
Population below poverty level	-0.476	-0.148	< 0.0001***
Population density of 1,000 people or more per square mile	9.892	0.143	< 0.0001***
Population with Social Security benefits income	-0.718	-0.128	< 0.0001***
Population with unemployment compensation income	-0.778	-0.112	< 0.0001***
Population with mortgage interest paid	0.239	0.092	< 0.0001***
Owner-occupied housing units	-0.151	-0.078	< 0.0001***
Farm tax returns	-0.355	-0.077	< 0.0001***
Population uninsured	-0.296	-0.074	< 0.0001***
Population 16 and over, and unemployed	0.748	0.070	< 0.0001***
Households with second mortgage, home equity loan, or both	-0.225	-0.052	< 0.0001***
Retirement income	0.215	0.050	< 0.0001***
Population with less than high school diploma	-0.163	-0.048	< 0.0001***
Population foreign-born	-0.124	-0.039	< 0.0001***
Cash assistance	-0.368	-0.033	< 0.0001***
Population with high school diploma/GED certificate	0.090	0.032	0.000***
Average salary and wages income	0.000	-0.020	0.014**
R-squared	0.315		
Sample size	23,254		

SOURCES: MDRC calculations from the Clarity database, the 2013 American Community Survey from the United States Census Bureau, and the 2012 Statistics of Income Data from the Internal Revenue Service.

NOTES: EITC = Earned Income Tax Credit; GED = General Educational Development.
Statistical significance levels are indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.
Unless otherwise indicated, all predictors are in percentage form. Results are shown in order of the effect size in predicting payday loan usage in a zip code.

TABLE 3 Loan Usage Characteristics from the Clarity Database, by Cluster, 2013 and 2014

CHARACTERISTIC (%)	ANALYSIS SAMPLE[a]	PRIMARY LOAN-USER SEGMENTS		
		CLUSTER 1	CLUSTER 2	CLUSTER 3
Number of loans				
1	37.7	33.1	48.7	31.5
2-3	28.4	22.0	37.4	27.9
4-5	10.7	11.3	9.2	11.8
6 or more	23.3	33.7	4.8	28.9
Ever took out				
Storefront loan	2.2	0.0	0.0	0.0
Installment loan	35.7	14.9	69.7	22.8
Payday loan	78.5	93.6	50.1	92.4
Strict definition payday loan	18.3	11.2	36.6	15.4
Line of credit loan	1.7	0.6	3.7	1.4
Ever took a loan, by type of loan establishment				
Auto finance	0.3	0.1	0.4	0.4
Offshore	2.3	1.1	3.5	2.9
State licensed lender	73.5	100.0	0.0	100.0
Tribal	36.5	6.9	99.7	17.6

(continued)

strongest predictor of a *reduced* likelihood of payday loan usage rate in a zip code area.[34] The second strongest predictor of the payday loan usage rate is living in a zip code area with a higher percentage of Earned Income Tax Credit (EITC) recipients. Other predictors of the payday loan usage rate at the zip code level include living in a zip code area with many single-parent families, living in a zip code area with a low poverty rate, and living in a densely populated zip code area.[35]

What Is Typical Loan Behavior?

Table 3 presents loan usage characteristics from the administrative data set. The largest group in the administrative records includes individuals who took out one loan in 2014.[36] However, many of these individuals probably took out loans elsewhere (such as at storefront venues), a finding confirmed by the survey and in-depth interview data. Almost one-fourth of borrowers in the analysis sample

34. This finding is consistent with findings from Pew Charitable Trusts' (2012) Safe Small-Dollar Loans Research Project survey and with Avery and Samolyk (2011).

35. This analysis was not adjusted for spatial autocorrelation because of resource constraints.

36. The analysis focuses on individuals who took out at least one loan in 2014, but contains data on loan use back through 2013. Individuals who took out loans in 2013 but not in 2014 are not included in the analysis sample.

TABLE 3 (continued)

CHARACTERISTIC (%)	ANALYSIS SAMPLE[a]	PRIMARY LOAN-USER SEGMENTS		
		CLUSTER 1	CLUSTER 2	CLUSTER 3
Loan payment status				
All payments current	41.5	94.8	43.0	0.0
Ever paid less than scheduled amount	72.2	28.6	100.0	92.6
Ever defaulted	46.5	5.2	51.3	75.2
Ever had a loan charged off	20.2	4.9	26.2	28.3
Ever paid a loan in full	69.2	90.5	50.5	67.3
Ever late	58.6	5.2	57.0	100.0
Total amount paid on loans in 2014				
$0	10.4	10.6	10.1	11.6
$1 - $500	30.8	24.5	27.0	37.9
$501 - $1,000	18.0	18.1	22.6	14.4
$1,001 - $2,500	24.9	24.3	30.3	20.5
$2,501 or more	15.8	22.5	9.9	15.7
In Clarity database in both 2013 and 2014	37.1	34.9	38.0	39.1
Had an active loan for 6 months or more in 2014	34.2	35.0	32.8	34.1
Sample size	198,499	58,163	45,521	83,348
Proportion of analysis sample		29.3%	22.9%	42.0%

SOURCE: MDRC calculations from the Clarity database.

NOTES: A K-means cluster analysis was conducted on measures of loan usage, volume, and type, as well as lender type. Sample sizes may vary because of missing values.

[a]The analysis sample includes individuals who received loans from lenders who reported on 75 percent of their tradelines or more and all survey respondents who matched to the Clarity database; 121 respondents did not match. Borrowers who took out "rent to own" loans and borrowers with missing values on key variables were also excluded from this sample.

took out six loans or more during 2013 to 2014. Over a third of individuals who were in the Clarity administrative database in 2014 were also in the system in 2013. Typical borrowers usually experience a financial shift before turning to payday loans. The case study in Box 1 presents an example of a working mother who reflects this type of borrower.

While payday loans are the most common type of product in the data set, many of the financial instruments in the Clarity system appear to have unconventional structures. Many of the "payday loans" appear to be high-interest online installment loans, which have become popular in the indus-

BOX 1

Case Study: A Borrower Who Experiences a Financial Shift

Terri was diagnosed with breast cancer for the second time in 2013. Though she had medical insurance, she had been out of work for seven months. She was able to "float" for a while using a short-term disability insurance plan and state disability benefits, but she found herself "robbing Peter to pay Paul." In addition to health concerns, Terri became involved in a bad relationship. She felt like she was "spiraling" and couldn't figure out where her money was going. She turned to payday loans for help. "You just go online and hit some buttons," she said, and the money is there.

Today Terri feels more financially secure and her income is steady. She has started saving money using an IRA and a money market account. She and a friend from work encourage each other to put a little bit of money aside each pay period. Her credit has improved substantially from five years ago.

Terri avoids using payday loans, but she doesn't believe they should be banned. For some people it could be a life or death situation, she explained. If "you need [money] to feed your family, who's to say you can't feed your family. Frankly, lots of people use them whether they're well-off or not well-off," she said. "It's hard to pay rent, support a child, pay your car note…After all that, there may not be much money left."

try in anticipation of the regulations recently proposed by the CFPB.[37] Only 18 percent of borrowers took out at least one loan in 2013 or 2014 that had the characteristics of a traditional payday loan (single-payment loans due in full within a month of disbursement).

Nearly three-fourths of borrowers in the analysis sample borrowed from state-licensed lenders at least once. However, over a third (36 percent) borrowed from a tribal lender. As noted, tribal lenders are not generally subject to state-level banking regulations.[38] Outcomes for those who borrowed from tribal lenders are discussed below.

A variety of loan payment statuses are recorded in the administrative database and, as is often the case with lender-provided loan disposition data, not all of them are recorded consistently.[39] Approximately 42 percent of borrowers appeared to be current in all of their loan repayments, and nearly three-fourths of borrowers ever paid less than the scheduled amount (suggesting a high level

37. Some of these loans may be automatically renewing payday loans, though it is hard to estimate the extent of this possibility. The Pew Charitable Trusts (2014a) has raised this concern. The evolving portfolio of online credit loan types in the Clarity system is discussed in Hackett and Fekrazad (2015c).

38. As states have moved to regulate state-licensed payday lending, tribes have moved into this market space. See Harlan (2015) for a journalistic investigation of one of the larger tribal lenders.

39. Some of the challenges in measuring defaults in general, with an application to the Clarity data in particular, are discussed in Toth (2015). Definitions of the various loan status codes appear in Appendix C of this paper.

BOX 2

Case Study: A Payday Loan User Who Owes More Than $2,500

Monica is a single mother with a 15-year-old son. She is employed as a social worker at the County Head Start office, a position she has held for several years. Because she works in the public sector, her job offers decent benefits. And her supervisors have given her some flexibility, like allowing her to leave work to pick up her son from school and bringing him back to the office for the last few hours of her workday. But the job doesn't pay enough for Monica to live the kind of life she wants.

Monica's financial situation has been up and down for some time. She had terrible credit a few years ago, but worked hard to repair it, with assistance from a financial counselor. But another setback caused her credit to plunge again. Monica subsequently reached the maximum amount on her credit cards, took out several payday loans, and eventually filed for bankruptcy. She first learned about payday loans from her coworkers, who often trade tips about how to get by.

At this point, Monica doesn't believe she could get a loan anywhere because of her poor credit. She's embarrassed by the position she's in. She has taken on a second job at a discount store to try and get out from under her situation.

of rollover activity). Nearly half of the borrowers ever defaulted on a loan, though over two-thirds eventually paid at least one loan in full.[40] Further analysis found that defaults represent a much smaller proportion of the total number of loans (because there are more loans than borrowers, since each borrower can take out more than one loan).[41]

The total amount borrowers paid toward loans is low, though this amount may also reflect under-reporting by lenders. Many borrowers paid $500 or less in payday loans in 2014 (in part possibly because borrowers took out loans recently that had not yet been repaid, and in part because some of this amount probably reflects high default rates). But about 16 percent of the sample paid more than $2,500 in payday loans. One example, presented in Box 2, is the case of Monica, from the Dallas, Texas, area.

40. In the analysis sample, 46 percent of borrowers never defaulted and ever paid a loan off in full; 23 percent of borrowers ever defaulted and never paid a loan off in full; 23 percent of borrowers ever defaulted and ever paid a loan off in full; and 7 percent of borrowers never defaulted and never paid a loan off in full. Future analyses will look at the dynamics of defaults, including identifying the predictors of defaults and looking at defaults from a loan portfolio perspective.

41. Among the full sample, the default rate at the loan level is 19 percent, around 21 percentage points less than the default rate at the borrower level (40 percent, as shown in Appendix Table A.2).

What Are the Key Loan User Segments?

As mentioned, the analysis sample was quite heterogeneous. In order to better understand this heterogeneity, a K-means cluster analysis was conducted. This analysis clustered the analysis sample based on borrowers' loan behavior (the volume of loans they took out, the lenders they used, and their loan outcomes). The resulting segments were then profiled on both loan behavior and demographics. Tables 1 and 3 show demographic and loan usage characteristics, respectively, for the three largest segments of borrowers (Clusters 1, 2, and 3) who were identified through the K-means cluster analysis.[42]

Cluster 1, which accounts for just under 30 percent of the analysis sample, includes individuals who borrowed payday loans from state-licensed lenders. The rate of defaulting on loans in this cluster is low, at 5 percent. Most borrowers in this segment (95 percent) were current on their payments toward all their loans.[43] These results provide some preliminary indication of a fairly large group of individuals who (at least based on the outcomes in the Clarity system) seem to repay their loans without falling into a debt spiral. About a third of these individuals took out only one loan in the Clarity system in 2013 and 2014, but another third took out six loans or more. Around one-fourth of these individuals paid more than $2,500 in loans in 2014. Interestingly, although this group is quite different from the analysis sample in terms of loan outcomes, they do not differ very much in terms of demographics. They have average income, are only slightly older, and have similar rates of home ownership compared with the analysis sample.[44] Borrowers in this group appear to be more stable in general, having fewer bank accounts and being less likely to have changed zip codes than borrowers in the other segments. Jane and her husband are examples of financially stable borrowers. Their lives have been fairly stable except for a minor medical emergency, as described in Box 3.

Borrowers in Cluster 2, which accounted for about 23 percent of the analysis sample, tended to borrow from tribal lenders and experienced much higher default rates (over half defaulted on at least one loan). Borrowers in this segment tended to be lighter users than in the other two segments, with nearly half taking out only one loan, as reported to the Clarity system in 2013 and 2014. This segment had lighter use because they were far more likely to take out installment loans than were the other two groups; installment loans are generally larger and paid off over a longer time period.

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42. The cluster analysis produced six segments, but three of them were quite small, accounting cumulatively for about 5 percent of the sample. The full solution with all six clusters is shown in Appendix B.

43. It is important to recall that these findings only pertain to loans that are captured in the Clarity system.

44. One interesting pattern in the segmentation analysis in general is that income is not very predictive of segment membership, even though net incomes vary widely across the Clarity borrowers.

BOX 3

Case Study: Financially Stable Payday Loan Users

Jane and her husband have two young children. She left the workforce for a few years following the birth of her second child. When she was ready to return to full-time employment, the financial crisis hit and the jobs that were available offered less income than she had been used to. Things have improved since then. Today, both she and her husband have good jobs and are earning a stable income. Jane says she has used payday loans a few times in the past, mainly to cover unexpected medical bills, instead of asking for help from family members.

"I think payday loans can be helpful if they're used properly. I took them out about two years ago. I used them maybe three times that year because we had some medical emergencies, and some unexpected costs. It allowed us to be able to maintain our everyday expenses and then cover those bills. That experience was actually pleasant. It was an in-store [loan], so I was able to actually speak with someone and kind of get to know the person. But I think it can be harmful if you have to rely on them and just [keep] repeating and repeating. The interest is so high that you can never get them paid off. It can be kind of a vicious cycle."

Table 1 shows that this segment had a higher average income than the other segments (with 26 percent having a net income of $40,001 or higher). This segment was also much more likely to live in states where payday lending is restricted compared with the other segments. On the one hand, tribal lenders may have more freedom to operate and offer payday loans in states where the industry is heavily restricted or outlawed. On the other hand, the relatively high use of installment loans in this segment may be indicative of efforts by state-licensed lenders to circumvent regulation by shifting from offering payday loans to offering installment loans, which may not be subject to the same degree of regulation.

Cluster 3 represents the largest portion of the analysis sample (42 percent). This segment mostly took out loans coded as "payday" from state-licensed lenders with usage rates that were slightly above average. Though these loans were coded as payday loans, only 15 percent of individuals in this segment took out a loan that has the markers of a traditional payday loan (consisting of total principle plus a fee due by the next payday). Many of these loans are likely auto-renewing "hybrid" payday loans.[45] This segment experienced very high default rates: 75 percent ever defaulted and no borrowers were current on all of their loan payments. Despite this high percentage of defaults, about two-thirds ever paid a loan in full. Of the three segments, this segment is the most at risk of ending up in a debt trap. Table 1 shows that this segment was younger than average (with around 43

45. These loan structures, which occur frequently in the Clarity data, are described in Clarity Small-Dollar Markets Research Team (2015).

BOX 4

Case Study: A Financially Unstable Payday Loan User

Bob's financial history is shaped by a series of challenges. He was laid off from his job following 9/11, and the subsequent financial strain contributed to divorce. He eventually landed a stable job as a government contractor at a greatly reduced wage. He just recently started earning as much as he made 15 years ago. More recently, Bob…struggled because of medical bills. Bob is diabetic and needs knee replacement. A few years ago, his second wife was diagnosed with cancer, which required surgery. His son-in-law became disabled and couldn't work, so he, his wife (Bob's daughter), and their children moved in with Bob and his wife. At the time, Bob was the only true income earner in the house. Providing for additional family members on one income was too much, so Bob turned to payday loans.

In Bob's words, "So many things happened. But there's just very limited options. I had to do it because of situations that came up…The problem is, if you have to go through nonstandard ways of getting the money, you pay such an exorbitant amount and you've probably made it more difficult for yourself to get caught back up."

percent age 34 or younger). Borrowers in this segment also had a somewhat lower net income than in the other two segments (though, interestingly, income is not an important factor in distinguishing across the three segments). This segment is the most unstable financially, with nearly two-thirds of borrowers having multiple bank accounts. Box 4 presents the case of Bob, an example of a borrower with an unstable financial situation who was interviewed in the Dallas area.

FINDINGS FROM THE SURVEY DATA

As explained above, a survey was conducted to allow investigation into questions that could not be answered with administrative data alone. To guide the inquiry, the study team created four user groups based on previous research:

- **Light users** fell in the bottom twenty-fifth percentile on an index of loan usage derived from the survey and the Clarity data set.
- **Heavy users** fell in the top twenty-fifth percentile on an index of loan usage derived from the survey and the Clarity data set.
- **Higher-income** individuals earned at least $40,000 per year in net income (which translates into roughly $53,000 in gross income).

- **Financially distressed** borrowers reported on the survey that they had often or always run out of money before the end of the month in the previous three months, had a net income below $40,000 per year, and took out their most recent payday loan to pay for regular expenses.

The light- and heavy-user categories are mutually exclusive of each other, as are the higher-income and financially distressed categories, but higher-income and financially distressed individuals may appear in the light- or heavy-user categories as well. The extent of overlap is discussed in Appendix B. Results from the analysis of the survey data are presented below.

Who Are the Survey Respondents?

Demographics. Table 4 presents a summary of the demographic characteristics of survey respondents overall and by membership in the four categories of borrowers defined by the research team. The survey sample is predominantly female (a characteristic not available in the administrative data).[46] The age distribution of survey respondents is similar to the distribution of the analysis sample in the administrative data. The bulk of respondents are between the ages of 25 and 59, with less than 2 percent under the age of 25 and 8 percent age 60 years or older. A little over half of the sample members are white, 28 percent are African-American, and almost 13 percent are Latino. Slightly over half of the respondents are married. Only about half of the sample members have minor children living in their households.[47] During the interviews, some borrowers reported that their adult children were living with them; the survey did not include any questions about adult children living in the household, but that question would be included if there is another iteration.

The sample is very well educated (more so than the U.S. population as a whole[48]). Nearly 43 percent have a four-year college degree or higher and very few are without a high school diploma or General Educational Development (GED) certificate. Other research has indicated that online payday loan users tend to be more educated than storefront users.[49]

46. Other studies have noted that payday loan users are more likely to be female, though not quite at this high a percentage; see Caskey (2001); Ellihausen and Lawrence (2001); and Bhutta, Skiba, and Tobacman (2015). The high percentage of female respondents may partly reflect survey nonresponse bias, but it is impossible to know since gender is not captured in the Clarity database.
47. Having minor children in the household is notable because EITC benefits for workers are far less generous for the childless. Therefore, to some extent this population may be falling through gaps in the social safety net.
48. Ryan and Bauman (2016).
49. The Pew Charitable Trusts (2014a). Compare, also, with the sample of storefront borrowers analyzed in Bertrand and Morse (2009).

TABLE 4 Selected Characteristics of Clarity Survey Respondents

CHARACTERISTIC (%)	FULL SAMPLE[a]	LIGHT USER[b]	HEAVY USER[c]	HIGHER INCOME[d]	FINANCIALLY DISTRESSED[e]
Female	71.2	68.3	69.1	56.6	83.8
Age					
18-24 years	1.6	1.8	0.5	0.4	3.1
25-34 years	20.1	21.9	15.4	10.3	14.6
35-44 years	34.9	30.8	35.4	36.8	20.8
45-59 years	35.1	38.0	37.7	43.6	46.9
60 years or more	8.2	7.6	11.2	9.0	14.6
Race/ethnicity					
Latino/Hispanic	12.8	10.2	9.0	11.0	7.4
White	52.2	54.3	60.4	55.7	60.4
Black/African-American	27.9	27.4	22.6	23.0	25.0
Other/multiracial	7.1	7.3	8.0	10.4	7.3
Married or living with spouse	54.2	51.6	55.9	61.2	49.0
Highest level of educational attainment					
Less than GED certificate/high school diploma	1.0	1.3	0.0	0.0	0.0
GED certificate/high school diploma	11.6	16.5	8.3	9.0	14.1
Some college or vocational training	31.2	31.7	26.7	24.8	36.4
Associate's degree/2-year college	14.0	11.2	17.1	13.7	18.2
4-year college degree	29.2	26.3	31.3	34.6	17.2
Master's degree or higher	13.0	13.0	16.6	18.0	14.1
Number of children under 19 living with respondent					
0	48.7	51.1	53.0	49.8	51.5
1	21.1	19.3	20.7	25.5	23.2
2	17.0	17.9	15.7	16.6	12.1
3 or more	13.2	11.7	10.6	8.1	13.1
Sample size	889	226	218	235	99

SOURCE: MDRC calculations from responses to the 2015 Clarity Survey.

NOTES: GED = General Educational Development.
Sample sizes may vary because of missing values.
[a]Results were weighted by the inverse probability of having characteristics similar to the Clarity borrower. Weighting did not remove all differences. See Appendix A for more details.

(continued)

TABLE 4 (continued)

[b]Light users fell in the bottom 25th percentile on an index of loan usage derived from the survey and the Clarity data set.

[c]Heavy users fell in the top 25th percentile on an index of loan usage derived from the survey and the Clarity data set.

[d]High-income individuals earned at least $40,000 per year based on the Clarity administrative income. For individuals who were missing income in the administrative records, the outcome was imputed based on the survey. The survey threshold was higher ($80,000) partly because the administrative records measure was net income, while the survey measure of income was gross income. In addition, a higher threshold was used in the survey for the imputation in order to err on the side of including only high-income individuals in the estimate (because survey data are subject to recall and reporting issues).

[e]Financially distressed borrowers reported that they often or always ran out of money before the end of the month in the past 3 months, were not in the high-income group, and took out their most recent payday loan to pay for regular expenses.

There is some variation in demographics by borrower category. Heavy users are somewhat older, somewhat better educated, more likely to be white, and more likely to be childless than the overall respondent sample.[50] Higher-income users are, like the heavy users, somewhat older and better educated than average, though they are more likely to have minor children present than any other group. Financially distressed users are older and more heavily female than the respondent sample overall. They also have lower average educational attainment.

Employment, Income, and Material Hardship. Table 5 presents descriptive statistics for the survey sample based on employment, income, and material hardship. Most respondents are employed. This finding is expected, as payday and installment loans generally require proof of regular income through employment or a pension.

Income levels for the survey sample suggest that about half fall into working-class or lower-middle-class categories. The other half of the survey respondents have before-tax (gross) income above $40,000 per year and might be thought of as solidly middle class.[51] Very few respondents (around 7 percent) reported that their income varied greatly from month to month. This finding suggests that income instability (for example, through work schedules in which employees' hours vary from week to week, which is common among low-wage workers) and the inability to plan for income variation are not major factors in explaining reliance on payday loans. On the other hand, nearly

50. The research team interviewed several borrowers of all kinds who had taken out payday loans to help their adult children and their grandchildren. Asking only about minor children, as most research does, conceals the larger networks of family and friends with whom many people share financial resources.

51. The survey collected information about gross income and, therefore, income amounts are higher than measured in the administrative records, which collected information about net income.

TABLE 5 Employment, Income, and Material Hardship Among Clarity Survey Respondents

CHARACTERISTIC (%)	FULL SAMPLE[a]	LIGHT USER[b]	HEAVY USER[c]	HIGHER INCOME[d]	FINANCIALLY DISTRESSED[e]
Currently employed	85.6	80.1	83.3	83.9	78.4
Total hours worked per week					
0	16.9	21.4	18.4	17.2	21.2
1-30	7.4	10.9	6.0	2.6	12.1
31-40	48.6	44.6	48.9	40.5	50.5
41-50	19.8	16.4	17.5	26.7	13.1
More than 50	7.3	6.8	9.2	12.9	3.0
Annual gross income					
$10,000 or less	4.9	9.2	2.5	2.4	8.1
$10,001 - $20,000	9.5	12.8	8.6	2.4	15.2
$20,001 - $30,000	20.4	18.9	16.2	5.8	33.3
$30,001 - $40,000	13.5	13.3	15.7	11.7	12.1
$40,001 - $60,000	32.8	28.6	33.3	35.4	27.3
$60,001 or more	18.9	17.4	23.7	42.2	4.0
Household income varies a lot month to month	7.2	7.9	6.1	5.7	7.3
Experienced 3 months or more with unusually low income	18.2	22.2	15.8	17.0	35.1
In past 3 months, often or always ran out of money before end of month	46.9	33.6	60.3	38.3	100.0
Had unexpected emergency expenses in past 3 months	79.5	70.1	87.4	77.6	94.9
Receives food stamps/SNAP	9.4	13.2	6.6	6.9	18.1
Receives welfare/TANF	0.6	1.4	0.0	0.4	0.0
Sample size	889	226	218	235	99

SOURCE: MDRC calculations from responses to the 2015 Clarity Survey.

NOTES: SNAP = Supplemental Nutrition Assistance Program; TANF = Temporary Assistance for Needy Families.

Sample sizes may vary because of missing values.

[a]Results were weighted by the inverse probability of having characteristics similar to the Clarity borrower. Weighting did not remove all differences. See Appendix A for more details.

[b]Light users fell in the bottom 25th percentile on an index of loan usage derived from the survey and the Clarity data set.

[c]Heavy users fell in the top 25th percentile on an index of loan usage derived from the survey and the Clarity data set.

[d]High-income individuals earned at least $40,000 per year based on the Clarity administrative income. For individuals who were missing income in the administrative records, the outcome was imputed based on the survey. The survey threshold was higher ($80,000) partly because the administrative records measure was net income, while the survey measure of income was gross income. In addition, a higher threshold was used in the survey for the imputation in order to err on the side of including only high-income individuals in the estimate (because survey data are subject to recall and reporting issues).

[e]Financially distressed borrowers reported that they often or always ran out of money before the end of the month in the past 3 months, were not in the high-income group, and took out their most recent payday loan to pay for regular expenses.

BOX 5

Case Study: A Light User of Payday Loans

Megan is in her mid-40s and works as a computer programmer. She and her husband have four children; three are in high school and one is in elementary school. Megan's husband was laid off unexpectedly from his job as a manager at a car dealership about a year and a half ago. They haven't had to change much except to cut out "extravagant things."

Megan took out a payday loan to cope with the sudden loss of income. She took out the loan online and felt that the fees were much too high. In her words, "It's like you kind of do what you have to do when you have to do it… The fees are absurd, what you're paying to borrow that money. But at the time it was super-unexpected; I didn't really have much of a choice..."

Megan paid off the loan in full when it came due; she did not roll it over or pay in installments. "[I] had to borrow $500. You're going to pay them $250 or whatever it comes out to in the end…I'm not paying them another dime to keep doing that. So to me, that was the only option. It's just getting paid off. It was set up, automated. The day that I got paid there was a withdrawal for X amount of dollars straight out."

half of the survey respondents reported that in the previous three months they often or always ran out of money by the end of the month.

Compared with respondents as a whole, light users have lower incomes, as described in Box 5. However, they were less likely to have run out of money before the end of the month in the preceding three months.

Heavy users have higher incomes than average, but were more likely to report that they always or often ran out of money by the end of the month. Higher-income users, who are profiled in Box 6, are considerably more likely to have an income that might be classified as solidly middle class. About 42 percent of users in this category have a before-tax (gross) income above $60,000 per year. This group was less likely to report that they regularly ran out of money before the end of the month or that they experienced extended periods with unusually low income.

Financially distressed users, profiled in Box 7, have lower, less stable incomes than average. By definition, all such users always or often ran out of money by the end of the month in the preceding three months.

BOX 6

Case Study: A High-Income Payday Loan User

As a financial advisor, David's earnings are based on commission. The business of financial advising has taken two substantial hits in the past 15 years; first, the dot-com bubble burst in the early 2000s and then the financial crisis hit around 2008. David's earnings dipped both times. He used a payday loan to manage some expenses following the 2008 financial crisis. He needed the loan to cover some bills that were due before he was paid.

"I was in stretches of time where — because I have an income that can be a little bit inconsistent, I needed to cover an expense. That's what lent itself to that [payday loan use]." David says he was able to pay the loan off in full and hasn't used a payday loan since.

"The experience itself was efficient enough," David said. "I would acknowledge that it was a little bit humbling because it's not necessarily something that I would want to have to do on a regular basis. And also it was egregious in terms of the rate that you pay and the fee structure, but I also understand completely the place that that type of a product has in our society."

Given the working-class status of most respondents, low rates of public cash assistance (TANF) but fairly high levels of food stamp receipt (SNAP) might be expected.[52] While TANF receipt was indeed low, SNAP usage was also low.[53] This finding may be related to the high proportion of individuals without minor children in the survey sample,[54] and (along with limited EITC support) may help explain the chronic income insufficiency that may contribute to payday loan usage in this population.[55]

In addition to persistent problems making ends meet, survey respondents were often subject to emergencies. About 80 percent reported that they had an unexpected emergency expense in the past three months. Matt in Dallas described a series of events that led him to take out a payday loan:

> I was hospitalized last year. I also had a dental emergency with a root canal. [I] had problems…. [I] had some extra fees when I moved into my new apartment. So there was just a

52. TANF (Temporary Assistance for Needy Families) is the federal public assistance program. SNAP (the Supplemental Nutrition Assistance Program) became the new name of the federal Food Stamp Program in 2008.
53. According to the U.S. Census Bureau, 13.5 percent of U.S. households received SNAP benefits in 2013. See Loveless (2015).
54. There are time limits and work requirements in the SNAP system for able-bodied adults without dependents, and grant amounts are lower for this group, which may depress receipt rates as well. For more information, see Schroeder (2015).
55. Recent work comparing survey responses and administrative records sources on public benefits receipt suggests that survey respondents significantly underreport public benefits receipt, so this finding should be interpreted with caution. See Meyer and Mittag (2015).

> lot of back-to-back. And then I had some job trouble with my prior job. And so sometimes the payments kind of stack up. Payday is like a week away, but these people want their money now.

Heavy users and the financially distressed users were more likely to report recent unexpected or emergency expenses. Light users were somewhat less likely to report such expenses. Perhaps surprisingly, like the sample overall, over three-fourths of higher-income users had experienced recent unexpected emergency expenses.

BOX 7

Case Study: A Financially Distressed Payday Loan User

Nicolette is a licensed attorney, single, and in her early 40s, who relies on payday loans. She moved to Dallas after her former employer, a public college, failed to offer her a tenure-track job as a member of the law faculty. Since moving to Dallas, she has found the law practice landscape limiting because of the high need for Spanish-speaking attorneys (Nicolette does not speak Spanish) and the much lower number of clients filing for appeals, which is her area of specialty.

Since moving to Dallas, Nicolette has taken on subcontract jobs and is an adjunct instructor at a local college. Her income from that job is consistent (about $2,400 per month), but the income from her subcontracting work is not, which makes it hard to plan financially. She is also paying for her own health insurance for the first time in almost 15 years. She did not expect her monthly payment of about $300 to the insurance company to be so high, and has had trouble factoring it into her budget.

Since moving to Dallas, she has taken out at least 10 payday loans. She prefers managing the loans online for the convenience, but likes storefronts because they put the cash into her hands immediately. She has paid off about half of her loans, but the others "are still hovering around" her. Some of the difficulty for her has been that she needs to borrow only $500 at a time but is consistently approved for $1,000, which she then takes. She feels that the contract terms are clear; if there is an arbitration clause, she will try to avoid signing it. She has rolled over loans, because "they are not a priority" and payday lenders do not report to credit bureaus. She has found that if she defaults, the lender will stop calling after three months. Sometimes the loan accounts go into collections, which does affect credit, but often they do not. This situation is new for her, since payday loans are not legal in the state where she lived before she moved to Texas. She wishes that her bank offered unsecured personal loans that would lessen her dependence on payday loans. Before she moved, Nicolette belonged to a credit union that offered unsecured personal loans of up to $500. She has found that her credit score (around 550) is too low to get a credit card, and she does not know of other alternatives to payday loans that are available to her.

Nicolette feels trapped: her expenses are consistently too high and her earnings are never enough to catch her up. Nicolette uses loans as a consistent income supplement, and cannot imagine getting by without them. It is this kind of dependency that makes users particularly vulnerable to a long-term debt trap. Unlike light users, for heavy users there is no end of use in sight, given their current options and circumstances.

Overall, these findings suggest a chronically cash-strapped population with stable incomes that are, nonetheless, insufficient to cover regular or emergency expenses.

Debt, Credit, and Assets. Table 6 presents descriptive statistics on debt, credit, and assets. Most survey respondents (about 54 percent) have no non-retirement savings to use in an emergency. Among those who do have savings, most have less than $500. Still, despite using high-interest, small-dollar credit, about 16 percent reported having savings of more than $1,000.

Not surprisingly, the sample members are saddled with a variety of types of debt. About a third of the respondent sample members have a mortgage or home equity loan. Student loan debt is also common. Half of respondents are paying off medical bills even though 91 percent have health care coverage — a theme that emerged in the qualitative interviews. Some of the individuals who were interviewed carry medical debt from periods during which they lacked coverage. Sometimes this debt involved substantial medical expense incurred during an interim period between jobs.

Jessica, a woman in her late 20s, used a payday loan to cover the bill from an emergency room visit. Her medical emergency came during a brief period between jobs when she was without health insurance. Not knowing that she could request a payment plan from the hospital, she used a payday loan:

> Since my credit at the time [I took out the loan] wasn't really that great, all my cards were all very-low-balance cards. And…since I didn't know I could work out a payment plan with the hospital [to pay off the debt for an ER expense]... I mean, I could have easily, definitely put it on a credit card [had she known that she could work out a payment plan].

Given that most adults in the United States receive health insurance coverage through their employers and that COBRA (a temporary health insurance extension to cover a period after leaving an employer) can be prohibitively expensive, this problem may be a common one for this population. Others may carry medical debt because they are underinsured. High-deductible plans may require significant personal expenditures for routine medical care. Miriam, a mother of three children, described her experience with health insurance for her family:

> At one point when I worked for the phone company, [health insurance] was free.... Now I pay, with the dental, the vision, and the mental health, $400 a month [to cover herself, her husband, and two of her children].... Usually there are no major health issues with the kids,

TABLE 6 Assests, Debt, and Credit Among Clarity Survey Respondents

CHARACTERISTIC (%)	FULL SAMPLE[a]	LIGHT USER[b]	HEAVY USER[c]	HIGHER INCOME[d]	FINANCIALLY DISTRESSED[e]
ASSETS					
Total nonretirement savings					
$0	53.9	46.6	64.4	49.1	73.4
$1 - $500	25.1	24.3	23.9	22.1	19.2
$501 - $1,000	5.3	6.3	3.9	8.1	1.1
$1,001 or more	15.6	22.8	7.8	20.7	6.4
Has checking account	94.4	89.9	97.6	96.1	94.8
DEBT					
Has a mortgage or home equity loan	35.5	32.0	40.4	46.3	40.2
Has student loan debt	59.5	56.6	59.5	58.1	57.6
Currently paying off medical bills	50.0	44.9	50.0	45.7	59.4
Has health care coverage	90.8	88.3	90.7	93.8	89.9
Total debt[f]					
$0	2.9	4.6	2.4	0.9	1.1
$1 - $5,000	22.9	26.9	18.0	14.2	19.0
$5,001 - $10,000	13.0	11.7	14.1	14.2	17.9
$10,001 - $20,000	14.0	13.7	15.5	16.9	17.9
$20,001 - $50,000	27.0	23.4	25.2	26.0	28.4
$50,001 or more	20.2	19.8	24.8	27.9	15.8
Considering outstanding loans and bills, owes a lot more now than last year	21.9	22.1	26.1	21.2	24.5
CREDIT CHARACTERISTICS					
Has credit score	96.1	95.7	95.8	95.9	94.8
Does not have credit score, but used to	0.8	0.5	0.5	1.4	2.1
Never had credit score	0.6	0.5	0.9	0.9	0.0
Doesn't know if has credit score	2.6	3.3	2.8	1.8	3.1
Self-reported quality of credit score, among those with a credit score					
Very bad	*18.7*	*12.5*	*27.3*	*15.9*	*28.9*
Bad	*53.4*	*44.6*	*57.4*	*56.7*	*57.7*
Average	*20.3*	*28.1*	*12.5*	*18.9*	*11.3*
Good	*4.9*	*11.2*	*1.9*	*6.4*	*2.1*
Very good	*0.6*	*0.9*	*0.0*	*0.9*	*0.0*
Don't know	*2.2*	*2.7*	*0.9*	*1.3*	*0.0*
Denied credit in past year due to low or no credit score	78.6	68.4	87.2	78.0	88.5

(continued)

TABLE 6 (continued)

CHARACTERISTIC (%)	FULL SAMPLE[a]	LIGHT USER[b]	HEAVY USER[c]	HIGHER INCOME[d]	FINANCIALLY DISTRESSED[e]
Ever had prime credit score (650 or higher)	73.6	74.8	74.8	79.6	73.5
Credit score dropped below prime					
Within the past year	*28.7*	*33.6*	*33.8*	*30.3*	*33.3*
More than a year ago	*63.2*	*52.6*	*62.3*	*61.7*	*62.3*
Reason credit score dropped, among those whose score dropped					
Decrease in income	*20.7*	*23.6*	*18.7*	*16.8*	*20.8*
Changes in rules (limits) on credit cards	*3.6*	*5.6*	*1.9*	*3.3*	*2.1*
Failure/default on a loan/mortgage	*11.4*	*12.8*	*12.9*	*10.3*	*18.8*
Late payment of bills	*49.8*	*40.0*	*54.1*	*52.8*	*51.0*
Don't know	*6.7*	*8.2*	*4.3*	*7.5*	*1.0*
None of the above	*8.0*	*9.7*	*8.1*	*9.4*	*6.3*
Household has major credit cards	73.5	71.7	71.6	78.3	62.6
Has available credit on credit cards	50.1	56.6	38.8	51.1	25.8
Received financial help from family or friends in past 12 months	47.2	44.2	54.5	41.7	62.6
Sample size	889	226	218	235	99

SOURCE: MDRC calculations from responses to the 2015 Clarity Survey.

NOTES: Sample sizes may vary because of missing values.

Italic type indicates that the measure is not out of the full sample.

[a]Results were weighted by the inverse probability of having characteristics similar to the Clarity borrower. Weighting did not remove all differences. See Appendix A for more details.

[b]Light users fell in the bottom 25th percentile on an index of loan usage derived from the survey and the Clarity data set.

[c]Heavy users fell in the top 25th percentile on an index of loan usage derived from the survey and the Clarity data set.

[d]High-income individuals earned at least $40,000 per year based on the Clarity administrative income. For individuals who were missing income in the administrative records, the outcome was imputed based on the survey. The survey threshold was higher ($80,000) partly because the administrative records measure was net income, while the survey measure of income was gross income. In addition, a higher threshold was used in the survey for the imputation in order to err on the side of including only high-income individuals in the estimate (because survey data are subject to recall and reporting issues).

[e]Financially distressed borrowers reported that they often or always ran out of money before the end of the month in the past 3 months, were not in the high-income group, and took out their most recent payday loan to pay for regular expenses.

[f]Does not include debt from mortgages or home equity loans.

> but with one of my sons, it's a monthly [expense].... A lot of the therapists, counseling, and a lot of the mental wellness [is not covered].

Overall, debt loads are high, with 47 percent of the survey sample owing more than $20,000 (not counting mortgages), though nearly 26 percent owe $5,000 or less. This debt burden could account, in part, for the chronic inability to make ends meet that was reported by about half the sample, as regular payments on student loans, medical fees, and other debts may strip whatever slack borrowers have after paying for food, rent and utilities, and other necessities.

The lower half of Table 6 presents descriptive statistics on credit characteristics, including credit score status. Almost all respondents (96 percent) report having a credit score. This finding is similar to the findings of recent research using Equifax credit records.[56] Most of the survey sample members were also able to assess their credit scores, and more than 70 percent of those with a credit score answered that the score was "bad" or "very bad." In fact, 79 percent reported that they had been denied credit in the past year because they had no credit or a poor credit score. The qualitative interviews revealed that some individuals also had trouble finding higher-paying jobs because of their credit score. This issue came up more than once in the interviews. Mavis, a woman in her 70s, described having to drive an hour and a half each way to her current job, after being turned down for a position at a furniture store much closer to home:

> I have not gotten jobs because of it [credit score]. Furniture Mart here, they feel that if your credit score isn't A1, ipsy pipsy, over 650…and I got this from a personnel person, you're gonna steal. And I would have loved to work there, instead of fighting downtown traffic every day. Yes, it has held me back.

Miriam, in her late 50s, experienced something similar when she was seeking work following a divorce from her first husband:

> I applied for a [job] with a shipping company…. They ran your credit. That was the first time I ever heard of a company doing that. Later they told me the reason why I didn't get the job is because I didn't pass, because of a low credit score.

56. Bhutta (2013); Bhutta, Skiba, and Tobacman (2015).

Perhaps the most interesting finding in this table is that over 70 percent of respondents had prime (650 or higher) credit at some point, with more than 28 percent of those having lost their prime score within the prior 12 months. About half of respondents whose credit score dropped cite late payment of their bills as a reason for this fall, but other common reasons include a reduction in income (21 percent) and defaulting on a mortgage (11 percent). About 75 percent of respondents had at least one major credit card in their households and approximately half reported that they had available credit on their cards. Here the findings differ somewhat from those of a 2015 study, which found that only about 20 percent of their sample had credit cards with available credit.[57] That sample, however, comprised individuals who were about to apply for a storefront payday loan, whereas this sample includes individuals who received a payday loan from an online lender within the prior 12 months.

Why do these individuals use payday loans instead of their credit cards? The interviews suggest some answers. For those dealing with emergencies, their available credit may be too low to cover the associated costs. Most also have bad or very bad credit, suggesting fairly low credit limits. Jasmine and her husband are an example: "We have a credit card that has, like, $400 on it," she said. "That's the limit. Of course, I owe about $300 on it."

Box 8 provides more information on survey respondents' connections to the mainstream credit system and health insurance.

There are some notable differences among the survey user categories. Light users are more likely to have savings, more likely to have a credit card with available credit, and less likely to report very bad credit. Heavy users are less likely to report savings or available credit on their credit cards. Debt levels are relatively high for this group. They are also more likely to report having very bad credit scores. Higher-income users are more likely to be home owners (almost half are) and are more likely to have ever had a prime credit score. Financially distressed users are much less likely to have savings. While their overall debt levels are similar to the sample average, they are more likely to be carrying medical debt. They are also more likely to report very bad credit.

Overall, the respondent sample does not appear to be a population that simply needs help establishing a credit score to gain access to prime credit alternatives. In fact, several interviewees had a good sense of their credit scores, and mentioned that they actively monitor them. Jacob and Jessica are

57. Bhutta, Skiba, and Tobacman (2015).

BOX 8

Survey Respondents' Connections to Mainstream Credit and Health Insurance

The survey respondents in this study are not, as might be expected, entirely cut off from mainstream credit. Most have credit cards and almost all have credit scores, though the scores tend to be poor. Strikingly, almost three-fourths had prime credit scores at one point, and more than one-fourth fell into subprime territory within the 12 months before taking the survey. Similarly, survey respondents are covered by health insurance at a rate that is comparable to the rate among the general U.S. adult population. Nonetheless, a considerable number of them have accrued medical debt.

In summary:

- 96 percent of the survey respondents have a credit score, though 72 percent of those characterize it as "bad" or "very bad."
- 74 percent of survey respondents had a credit score of 650 or higher at some point, and, of these, 29 percent dropped below prime within the 12 months preceding the survey.
- 50 percent of those whose credit score dropped below prime cite late payment of bills for this drop, though 11 percent cite defaulting on a loan or mortgage.
- 74 percent of survey respondents have a major credit card and 50 percent have available credit on a card.
- 91 percent of survey respondents have health insurance, but 50 percent report having medical debt.

two examples; Jacob knows his credit score and tracks it through the annual credit report that his credit card company offers:

> Yeah, now they offer it once a year on the credit card. And when you sign up for a credit card, they give you your credit score. But that was only recently, maybe last year? But before that I never knew it.

Jessica's credit card company is more proactive. In her words:

> One of the credit cards that I have now, they actually send me my credit score every month. If anything happens, if there's, like, a new inquiry on it or anything like that, then they send me an e-mail. So…I definitely am very aware of what it is.

Instead, they have extant but poor credit history and have fallen into this market after losing prime status. Most maintain a tentative connection to mainstream credit markets through major credit

cards, but perhaps cannot rely on those cards alone — or at all — to deal with their emergency or regular expenses, given low credit limits.

Social Support. As noted above, the research team sought to investigate how borrowers felt about relying on friends and family for financial support. A little less than half of the respondents reported that they had received help from family or friends during the 12 months preceding the survey (Table 6). Heavy users and financially distressed users were somewhat more likely to report that they had received such assistance. Other survey measures (see below), as well as the in-depth interviews with borrowers, suggest that many borrowers have relied heavily on family and friends to handle financial strain in the past, but that they have exhausted this source of support. Often the support waned because those in their kinship networks could no longer afford to give, but also because the social costs of further borrowing were too high to bear. These themes emerged frequently in several cases during the qualitative interviews. Bob, for example, considered borrowing from his family before taking out a payday loan, but most of his family members were not in a position to help:

> I thought about that but I really didn't want to — you don't want to put your family out. I know family is there to help, but at the same time, my dad just recently passed away so my mom's income is limited. My sister is going through a divorce.

Bob also didn't want to strain his relationship with others who might be able to help:

> My older brother is probably in a financial place to help, but I don't want to put him in that position. You support family, but you don't want to burden family. And I feel like if I did [borrow] and I wasn't able to pay him back timely, then I'd put something between us. We should be able to do things together without having those type[s] of barriers in place.

Jane, a mother of two, has a similar situation, but her experience also highlights several interviewees' preference for self-reliance:

> I was making over $45,000 when I took out the loan. For me personally, I didn't want to ask someone for the money. I wanted to just do it myself. I could easily have asked a family member for the money. But I just preferred to do it myself. It wasn't a big loan, I think it was $500, so I could easily pay that back with my next paycheck…. I have borrowed from family in the past. Only if I had to, and only if it was for something major. If I'm going to borrow from a family member, it would be for something major and for a substantial amount. I would say that's a back-up.

Others didn't have networks they could tap, like Fiona, a woman in her 30s who lives near Dallas, Texas:

> I don't have a financial network. My parents aren't rich. My dad's in jail. I don't ask friends for money and I never would. There's only so much you can make, there's only so many hours in a day.

Jasmine, who had borrowed money from her mother, explained that she was reluctant to ask her family for help because the emotional cost of borrowing was too high and she didn't like the feeling of being indebted:

> My mom is a big person who's into if you borrow money from her, you owe her. I borrowed money one time for my books, for my first semester of school because I hadn't gotten my financial aid yet. I gave her the website and I put my books in the cart so all she had to do was check out. It's almost like I owe that semester of my education to her because she made it possible…. Sometimes it can be a bit much.

How Often Do Survey Respondents Use These Loans?

Table 7 presents information about the use of alternative credit instruments, like payday and installment loans, among survey respondents. Most respondents indicated that they had received a payday loan, but many also indicated they had received an installment loan. (The qualitative interviews revealed that individuals often refer to installment loans as payday loans.) Small-dollar credit usage rates vary quite a bit, though the most common response was that individuals had used two to three payday loans in the past year (which was higher than the estimate from the Clarity administrative data, as expected). Rollovers were also common. Approximately one-fourth of respondents reported rolling over a loan six times or more in the previous year.[58] Notably, 71 percent of respondents reported ever having more than one payday loan open at a time. The case of one respondent who exemplifies such a borrower is described in Box 9.

Recall that the light- and heavy-user categories represent, respectively, the bottom and top 25 percent of survey respondents in terms of loan frequency. About 55 percent of light users took out at least one payday loan in the year before the survey was conducted, and only 24 percent reported an incidence of rollover.[59] In contrast, almost all heavy users (99.5 percent) took out at least one payday

58. Past research casts some doubt on the ability of borrowers to recall rollover rates correctly. See Caskey (2001).

59. Based on the survey responses, light users took out a maximum of two to three loans.

TABLE 7 Use of Alternative Financial Services Among Clarity Survey Respondents

CHARACTERISTIC (%)	FULL SAMPLE[a]	LIGHT USER[b]	HEAVY USER[c]	HIGHER INCOME[d]	FINANCIALLY DISTRESSED[e]
In the past year, received small-dollar credit from[f]					
Payday loan or payday advance due at the next payday	71.9	38.9	97.3	76.2	85.9
Salary advance or direct-deposit advance from a bank or credit union	4.4	2.2	6.0	6.4	4.0
Advance loan from an employer	5.7	4.9	6.4	6.0	5.1
Internet installment loan	44.5	36.3	53.2	52.3	46.5
Storefront installment loan	11.6	4.9	17.9	12.3	12.1
Auto title loan	11.5	7.1	16.1	11.5	15.2
Pawn loan	13.8	11.1	16.5	13.6	15.2
None of the above	9.5	25.7	0.9	7.2	5.1
Number of payday loans in past year					
0	14.4	45.3	0.5	11.8	6.2
1	13.3	31.6	0.9	8.8	6.2
2-3	33.1	23.1	14.0	32.9	29.9
4-5	16.3	0.0	17.3	17.5	18.6
6-10	15.0	0.0	32.7	16.2	23.7
11 or more	7.9	0.0	34.6	12.7	15.5
Number of payday rollovers in past year					
0	33.4	75.6	4.4	27.1	15.1
1	8.3	13.6	2.9	7.9	6.5
2-3	18.7	10.3	7.3	18.3	18.3
4-5	11.6	0.5	12.1	13.1	12.9
6-10	14.5	0.0	25.1	17.5	19.4
11 or more	13.5	0.0	48.3	16.2	28.0
Frequency of payday loan use in a typical year					
Never	12.6	37.2	1.0	9.4	4.1
Once	18.6	38.2	3.8	15.7	5.2
2-5 times	43.1	22.2	26.3	39.9	45.4
6-11 times	14.4	1.9	24.9	18.4	18.6
12 times or more	11.3	0.5	44.0	16.6	26.8
Ever had more than one payday loan at the same time	70.9	39.6	92.9	79.0	79.4
Ever sought payday loan from storefront	55.1	34.3	72.9	55.8	66.7
Sample size	889	226	218	235	99

(continued)

TABLE 7 (continued)

SOURCE: MDRC calculations from responses to the 2015 Clarity Survey.

NOTES: Sample sizes may vary because of missing values.
[a]Results were weighted by the inverse probability of having characteristics similar to the Clarity borrower. Weighting did not remove all differences. See Appendix A for more details.
[b]Light users fell in the bottom 25th percentile on an index of loan usage derived from the survey and the Clarity data set.
[c]Heavy users fell in the top 25th percentile on an index of loan usage derived from the survey and the Clarity data set.
[d]High-income individuals earned at least $40,000 per year based on the Clarity administrative income. For individuals who were missing income in the administrative records, the outcome was imputed based on the survey. The survey threshold was higher ($80,000) partly because the administrative records measure was net income, while the survey measure of income was gross income. In addition, a higher threshold was used in the survey for the imputation in order to err on the side of including only high-income individuals in the estimate (because survey data are subject to recall and reporting issues).
[e]Financially distressed borrowers reported that they often or always ran out of money before the end of the month in the past 3 months, were not in the high-income group, and took out their most recent payday loan to pay for regular expenses.
[f]Small-dollar credit is defined as credit under $5,000.

loan in the year before the survey, and 35 percent reported taking out 11 loans or more during that period. Rollovers were also quite common among heavy users, with 96 percent reporting at least one rollover and 48 percent reporting 11 rollovers or more in the year before the survey.

Appendix Table C.1 presents findings from a linear model predicting the number of payday loans (not including rollovers of existing loans) that survey respondents took out in the previous 12 months. This outcome variable is derived from survey responses rather than from administrative records. In general, these findings align with expectations. Those with no savings, those who had recently had an unexpected expense, and those who always or often had run out of money by the end of the month used more payday loans. Those who responded that they would or could turn to family or friends to help deal with an emergency expense took out fewer loans. Support from kinship networks reduced, but did not eliminate, reliance on payday loans for this population of survey respondents. Overall, the strongest predictor of payday loan usage was residence in a restrictive state.

On the other hand, there are some surprising results. Household income has a weak, though statistically significant relationship with borrowing activity in the previous year (which is consistent with the segmentation results presented above). Having a credit card with an available balance is not a statistically significant predictor of borrowing in the last year. The results shown in Table 6 indicate that over 28 percent of borrowers in the survey sample who had prime credit scores in the past

BOX 9

Case Study: Rolling Over a Payday Loan — A Cycle of Dependency

Fiona, a licensed attorney who had relied on payday loans since losing her job 18 months before, asserts that payday loans are "kind of predatory" and that they "perpetuate poverty," but at the same time, they are "kind of good" because when you really need money, you can get your hands on it. Without payday loans, Fiona feels she would have no other options. Her credit rating is not strong enough to open a line of credit and she doesn't have anything she could pawn. Fiona basically lives off payday loans, using them to pay her regular expenses and putting them toward her most urgent debts. She has taken out more than 10 loans in the past year and continues to roll over each of them every month, well aware that she will not be able to pay them off at the due date.

dropped below prime within the prior 12 months. Based on this result, it was hypothesized that these individuals might be more likely to be light users. However, no correlation was found between recent prime status and the number of loans taken in the past year. This finding suggests that those who recently had a prime credit score do not differ significantly from other users in their loan frequency.

Given that "last year" may not be typical for borrowers and, thus, may produce unreliable results, individuals were also asked about their use of payday loans in a typical year. Appendix Table C.2 presents the estimated regression coefficients for predicting the number of loans in a typical year.[60] Results for this model are broadly similar to those on payday loan usage in the past year (though statistical significance levels are stronger), with some exceptions. Here, household income has a parabolic effect on payday loan usage: those with relatively low or relatively high incomes use payday loans less often; it is those in the middle who use the product the most. This finding is intuitive, as those with relatively low incomes may have trouble qualifying for (additional) loans and those with higher incomes may have less need. The effect is, however, very small. Here, the recently prime borrowers appear to use payday loans less often. Recall, however, that the recently prime are those who have dropped from prime credit status in the previous 12 months. That time period was likely not typical for such borrowers, even if it may represent a "new normal."

60. The dependent variable here is categorical. Coefficients on independent variables in this model, therefore, represent a shift in categories (for example, from the 2-5 loans category to the 6-11 loans category), rather than in the number of loans.

BOX 10

Case Study: Using a Payday Loan to Cover Regular Expenses

Tony spent much of his career as a high school administrator, where he earned enough to cover his expenses and even accrued a small retirement fund. After he retired, Tony found another job as a security guard, minding the gatehouse of a private community. Tony worked in the same position as a security guard for seven years, and during that time his superiors regularly complimented him on his performance. But he was abruptly terminated when the security company decided to replace him with three part-time workers. The sudden drop in income left Tony unable to keep up with his regular bills, so he took out a payday loan to manage. He had no other options.

The predictors of payday loan rollovers were also investigated to determine whether the same set of factors that predicted loan usage predicted inability to repay loans within the allotted time and whether there were other factors at play. Appendix Table C.3 presents the results of a linear model predicting frequency of rollovers. In general, the results are similar to those presented above.

Why Do Survey Respondents Borrow?

Among those who took out a payday loan, 29 percent used the loan to cover an unexpected or emergency expense (and, as already noted, 80 percent of all respondents reported that they had an unexpected or emergency expense in the prior three months). The most common reason for using payday loans (64 percent of those who took out a payday loan) was to cover regular expenses such as utilities and bills, food and groceries, or rent/mortgage payments. That was true for Tony, a retired man in his 60s, whose case is presented in Box 10. See Table 8 for other results on why individuals sought their most recent payday loans.

This result — the use of payday loans for regular expenses — is consistent with previous findings on storefront payday loan borrowers, as discussed above.[61] Such unexpected events or emergency expenses can strip resources and leave individuals unable to pay for regular expenses (which was certainly the case for Tony). Thus, the loans that some respondents said they took out for "regular expenses" may, nevertheless, have had their origins in recent emergency expenditures. Moreover, regular expenses can include credit card and medical debt, such that the debt incurred as a result of previous emergency expenses can contribute to current regular expenses.

61. The Pew Charitable Trusts (2012).

TABLE 8 Reasons for Using Alternative Financial Services Among Clarity Survey Respondents

CHARACTERISTIC (%)	FULL SAMPLE[a]	LIGHT USER[b]	HEAVY USER[c]	HIGHER INCOME[d]	FINANCIALLY DISTRESSED[e]
Why needed most recent payday loan, among those who received them					
Unexpected expense or emergency	*29.3*	*43.2*	*21.3*	*30.4*	*0.0*
Regular expenses such as utilities, car payment, credit card bill, or prescriptions	*36.6*	*27.8*	*49.1*	*39.7*	*100.0*
Food and groceries	*12.3*	*8.6*	*13.4*	*11.2*	*0.0*
Special expenses, such as vacation, entertainment, or gifts	*4.2*	*4.3*	*2.3*	*3.7*	*0.0*
Rent or mortgage	*15.1*	*14.2*	*11.1*	*11.7*	*0.0*
Other	*2.5*	*1.9*	*2.8*	*3.3*	*0.0*
Why needed to roll over a payday loan, among those who rolled over a payday loan					
After paid expenses, not enough money left over	*58.4*	*41.8*	*69.1*	*56.9*	*70.3*
Had money for repayment, but had an unexpected expense	*24.1*	*34.7*	*13.0*	*21.6*	*14.3*
Had money for repayment, but made a nonemergency purchase	*4.2*	*2.0*	*6.8*	*7.7*	*1.1*
Income was less than anticipated	*8.6*	*15.3*	*4.8*	*6.1*	*12.1*
Other	*4.8*	*6.1*	*6.3*	*7.7*	*2.2*
Sources tapped before receiving payday loan, among those who received a payday loan					
Borrowed from family or friends	*61.7*	*66.7*	*65.5*	*55.4*	*63.4*
Borrowed from employer	*5.7*	*6.5*	*5.8*	*6.6*	*2.8*
Used a credit card	*38.2*	*33.3*	*47.5*	*46.3*	*43.7*
Used an informal money lender	*9.8*	*6.5*	*13.7*	*14.1*	*8.5*
Negotiated payment with creditor	*24.2*	*22.2*	*25.9*	*23.1*	*29.6*
Why sought payday loan online, among those who sought out an online payday loan					
Storefront not available in residency state	*4.2*	*2.8*	*4.3*	*5.9*	*3.3*
More convenient	*67.5*	*73.9*	*63.9*	*63.1*	*62.0*
Not approved for storefront	*2.7*	*4.2*	*1.4*	*2.0*	*4.4*
Privacy	*13.7*	*14.1*	*9.6*	*14.8*	*10.9*
Had storefront loan, needed another	*8.2*	*1.4*	*17.8*	*11.8*	*16.3*
Other	*3.7*	*3.5*	*2.9*	*2.5*	*3.3*
Sample size	889	226	218	235	99

(continued)

TABLE 8 (continued)

SOURCE: MDRC calculations from responses to the 2015 Clarity Survey.

NOTES: Sample sizes may vary because of missing values.
Italic type indicates that the measure is not out of the full sample.
[a]Results were weighted by the inverse probability of having characteristics similar to the Clarity borrower. Weighting did not remove all differences. See Appendix A for more details.
[b]Light users fell in the bottom 25th percentile on an index of loan usage derived from the survey and the Clarity data set.
[c]Heavy users fell in the top 25th percentile on an index of loan usage derived from the survey and the Clarity data set.
[d]High-income individuals earned at least $40,000 per year based on the Clarity administrative income. For individuals who were missing income in the administrative records, the outcome was imputed based on the survey. The survey threshold was higher ($80,000) partly because the administrative records measure was net income, while the survey measure of income was gross income. In addition, a higher threshold was used in the survey for the imputation in order to err on the side of including only high-income individuals in the estimate (because survey data are subject to recall and reporting issues).
[e]Financially distressed borrowers reported that they often or always ran out of money before the end of the month in the past 3 months, were not in the high-income group, and took out their most recent payday loan to pay for regular expenses.

While respondents in each category were most likely to state that they took out their most recent payday loan to cover regular expenses, the proportion varies. Light users who took out a payday loan were more likely than average to have taken out a loan to deal with an emergency or unexpected expense. Heavy users who took out a payday loan were, perhaps intuitively, more likely to report loans for regular expenses. This finding is consistent with earlier findings on storefront lending.[62] By definition, the financially distressed all took out their loans to cover regular expenses. Surprisingly, the higher-income group averages do not differ significantly from the overall average, suggesting that income itself does not predict the type of need the borrower experiences.

Table 8 also shows that borrowers often roll over a payday loan because they do not have enough money left over to repay the loan after other expenses are paid. This finding is perhaps not surprising, given that half the survey sample always or often ran out of money before the end of the month in the prior three months. It is also troubling because it calls into question the feasibility of developing other loan products for the population, given their limited ability to pay.

See Box 11 for a summary of why survey respondents use payday loans.

62. Bertrand and Morse (2009).

BOX 11

Why Do Survey Respondents Use Payday Loans?

Although payday and subprime installment lenders typically present their products as means to deal with unexpected or emergency expenses, like car repair, most survey respondents reported that they took out their most recent loan to cover regular expenses. This finding is in line with findings from previous studies on storefront borrowers. Relatedly, income instability is fairly uncommon for this population; instead, about half of respondents regularly run out of money each month.

- 64 percent of survey respondents took out their most recent payday loan for regular expenses like utilities, groceries, or rent/mortgage.
- Only 29 percent of survey respondents took out their most recent payday loan to deal with emergency expenses, even though 80 percent had an emergency expense in the prior three months.
- Only about 7 percent of survey respondents regularly experience income instability, but 47 percent regularly run out of money before the end of the month.
- Among those who had to roll over a loan, 58 percent did not have money to pay off a loan after covering their regular expenses.

Alternatives to Loans. Before taking out a payday loan, most borrowers attempted to raise money in other ways, as shown in Table 8. Among those who took out a payday loan, common sources that were tapped before seeking a payday loan were friends or family (62 percent), followed by credit cards (38 percent). Also, about one-fourth of those who took out payday loans first attempted to negotiate with creditors. Taken together, these findings suggest that payday borrowers have already exhausted their other options and view payday loans as a last resort. It is also further evidence that working-class and lower-middle-class households may make ends meet by tapping a variety of mainstream, alternative, and informal credit sources, rather than relying chiefly on one strategy. This finding is consistent with earlier findings,[63] including the hypothesized "pecking order" of coping sources proposed in another study.[64]

Predictors. Appendix Table C.4 presents results from an analysis of the predictors of reasons for loan usage. Those who always or often ran out of money before the end of the month in the previous three months were more likely to have taken out their most recent payday loan to cover ordinary expenses. Those who had health insurance and those with credit cards with an available balance were

63. Bhutta, Skiba, and Tobacman (2015).

64. Lusardi, Schneider, and Tufano (2011).

less likely to do so. This finding speaks to the dual role of health insurance in preventing material hardship. Without health insurance, individuals may handle emergency medical expenses through credit options that leave them burdened with regular loan payments and force them to borrow further to make ends meet on a regular basis. Controlling for medical debt, health insurance is still a predictor of payday loan use for regular expenses. Those with chronic medical conditions or those who use preventative care (for example, children's checkups and vaccinations) rely regularly on health insurance to cover ordinary, anticipated expenses as well. The finding on credit cards is consistent with what was found in the interviews with respondents. A credit card can help reduce the need to use payday loans to cover regular expenses, but payday loan borrowers generally have bad credit scores and, therefore, low credit limits. Some had had bad credit and were using cards carefully to rebuild their credit. That limits the frequency with which credit cards can be used to handle income shortfalls and the capacity to use the card to deal with larger emergency expenditures.

What Are the Outcomes of Borrowing for Survey Respondents?

Those who use payday loans, even frequently, may be able to eventually pay off the loans successfully, but, as found in the administrative segmentation analysis, many borrowers default or their loan ends up in collections. Fiona, for example, explained,

> One of them [payday loans] is in default. They've started sending me letters from the collections agency, so I guess they've stopped on the percentages and they're saying if you can just pay this amount we'll leave you alone.

Some interviewees mentioned that allowing an outstanding loan to go to collections can be a better option than continuing to accrue interest and fees. In Marcy's words, "Some people don't know that if you let your account go into collections, that's when they work with you."

In Nicolette's case, when money was tight she approached lenders to ask for flexibility around repayment: "Sometimes they'll work with you. Sometimes they won't. It really depends on which one you get." And in some cases she did default: "If you default and maybe three months go by, they stop calling you, period."

While defaulting does not further damage borrowers' credit scores (because payday loan activity is not reported to the major credit bureaus), it does mark them as a credit risk to lenders who use the Clarity database and may cut them off from further loans. That may leave them with few options.

Appendix Table C.5 presents a model predicting the likelihood of risk (as defined by the administrative data), including ever making a late payment on a loan and ever having a loan charged off. The factor that predicts this outcome is having a credit card with an available balance.

How Do Survey Respondents Perceive Payday Loans?

Table 9 explores payday loan borrowers' perceptions of payday loans and potential alternatives. Despite high usage rates and awareness of the fees, most individuals who took out a payday loan disagreed that the fee for their last payday loan was fair, but around 39 percent of all respondents would recommend payday loans to friends and family with an immediate need. Still, without payday loans, over 40 percent indicated that they would not pay their bills, would have to sell or pawn something, or would have to borrow from family or friends. Over one-fourth would have to overdraw their bank accounts.

Views on payday lending were pursued in more depth in the qualitative interviews. Many of the people who were interviewed reported that they had used the loans wisely, but were concerned about "other people" who might be more susceptible to falling into debt or who might not understand how the loans work. When asked whether he thought payday loans were helpful or harmful, Marcus responded:

> [Payday loans] are harmful if you don't have any discipline....You have to budget your money. You got the loan for a reason. Don't go out there and do things — stupid things. Then you have to take baby steps paying it back…. Pretty soon you're…back where you started from, and you're good.

Taken together with the results presented in Table 8, it appears that payday loan borrowers are quite aware that they are relying on a "bad" option, but despite their efforts to cover expenses using other sources, they find themselves with no other choice. These results suggest that banning payday loans without putting an alternative in place could lead to substantial financial hardship for at least some respondents.

Appendix Table C.6 presents the results from a model predicting the response, "I would not pay my bills," to the question, "What would you do if payday loans were not available?" Not surprisingly, those who had recently faced unexpected emergency expenses and those who always or often run out of money were more likely to respond in this manner. Those with credit cards with an available

TABLE 9 Perceptions of Payday Loans Among Clarity Survey Respondents

CHARACTERISTIC (%)	FULL SAMPLE[a]	LIGHT USER[b]	HEAVY USER[c]	HIGHER INCOME[d]	FINANCIALLY DISTRESSED[e]
Knows the fee of last payday loan taken out	65.3	46.8	85.1	76.6	71.4
Fee for most recent payday loan was fair, among those who received one					
Disagree completely	*52.7*	*49.4*	*50.9*	*54.8*	*56.7*
Disagree somewhat	*19.3*	*19.6*	*17.9*	*18.4*	*16.5*
Neither agree nor disagree	*11.2*	*10.7*	*14.2*	*9.7*	*12.4*
Agree somewhat	*13.3*	*13.7*	*13.2*	*12.0*	*9.3*
Agree completely	*2.3*	*2.4*	*3.8*	*4.2*	*4.1*
Not sure of the fee paid	*1.3*	*4.2*	*0.0*	*0.9*	*1.0*
Would recommend a payday loan to family or friends with immediate need	38.7	37.5	37.7	33.7	40.5
If payday loans were not available, would					
Use savings	14.1	22.1	7.3	10.2	6.1
Use credit card	21.2	28.8	14.7	17.9	13.1
Borrow from family or friends	40.8	39.8	40.4	34.5	30.3
Sell or pawn something	40.4	32.7	43.1	37.9	45.5
Borrow from bank or credit union	9.0	13.7	4.1	8.1	6.1
Borrow from someone in the community who lends money and charges interest	7.5	5.3	6.9	5.5	6.1
Overdraw banking account	25.9	14.6	36.2	27.7	30.3
Not pay bills	41.0	29.2	54.6	46.8	65.7
Sample size	889	226	218	235	99

SOURCE: MDRC calculations from responses to the 2015 Clarity Survey.

NOTES: Sample sizes may vary because of missing values.

Italic type indicates the measure is not out of the full sample.

[a]Results were weighted by the inverse probability of having characteristics similar to the Clarity borrower. Weighting did not remove all differences. See Appendix A for more details.

[b]Light users fell in the bottom 25th percentile on an index of loan usage derived from the survey and the Clarity data set.

[c]Heavy users fell in the top 25th percentile on an index of loan usage derived from the survey and the Clarity data set.

[d]High-income individuals earned at least $40,000 per year based on the Clarity administrative income. For individuals who were missing income in the administrative records, the outcome was imputed based on the survey. The survey threshold was higher ($80,000) partly because the administrative records measure was net income, while the survey measure of income was gross income. In addition, a higher threshold was used in the survey for the imputation in order to err on the side of including only high-income individuals in the estimate (because survey data are subject to recall and reporting issues).

[e]Financially distressed borrowers reported that they often or always ran out of money before the end of the month in the past 3 months, were not in the high-income group, and took out their most recent payday loan to pay for regular expenses.

balance were less likely to do so, suggesting that some payday loan borrowers could shift part of their expense burden onto their credit cards, if necessary.

What Product Attributes Are Most Important to Survey Respondents?

In order to understand the potential for new or modified loan products, it is necessary to understand which product attributes are most important to customers. To shed light on this question, a conjoint analysis (a technique commonly used in market research) was conducted. For this analysis, survey respondents were asked how likely they were to use four randomly selected loan products (out of 16 total products). Each product was defined by a set of four attributes (location, fee per pay period, time to approval, and payoff length) with two levels each.

TABLE 10 Part-Worth Utilities and Importance Values of Product Attributes

ATTRIBUTE	PART-WORTH UTILITY[a]	IMPORTANCE VALUE[b]
Location		13.255
Online	0.237	
Storefront	-0.237	
Fee per pay period		26.188
$10	0.468	
$20	-0.468	
Time to approval		35.965
Same day	0.643	
1 week	-0.643	
Payoff length		24.592
2 months	0.439	
By next payday	-0.439	

SOURCE: MDRC calculations from responses to the 2015 Clarity Survey.

NOTES: Respondents were asked how likely they were to use a loan product (defined by a set of four attributes with two levels each) the next time they need a loan. Each respondent rated four randomly selected products.

[a]Part-worth utilities are measures of respondents' preference scores. Attribute levels with positive part-worth utilities are preferred over attribute levels with negative part-worth utilities.

[b]Importance values are measures of each attribute's relative importance; these values sum to 100 percent. The larger the importance value, the more important the attribute is in determining product preference.

Table 10 shows that the most important attribute in determining product preference is the time to approval (the attribute with the largest "Importance Value" in the table). This finding may make it difficult for other loan products, which invariably require some underwriting, to displace payday loans. However, the CFPB has proposed a rule that would require payday lenders to determine a potential borrower's "ability to repay" before making a loan;[65] presumably, the process of determining ability to pay will add time to the transaction, and borrowers may soon not have a choice about how quickly they can get a loan. Whether the product was an online or a storefront loan was the least important attribute. Within each attribute, respondents preferred

65. One rule proposed by the CFPB is that borrowers must be able to make loan repayments and cover their other financial obligations and living expenses without the need to reborrow within 30 days.

TABLE 11 Mean Preference Ratings, by Product

LOCATION	FEE PER PAY PERIOD	TIME TO APPROVAL	PAYOFF LENGTH	N	MEAN RATING[a]
Storefront	$20	1 week	By next payday	242	2.94
Online	$20	1 week	By next payday	205	3.06
Storefront	$20	1 week	2 months	206	3.14
Storefront	$10	1 week	By next payday	223	3.37
Storefront	$20	Same day	By next payday	229	3.62
Online	$10	1 week	By next payday	199	3.83
Online	$20	1 week	2 months	227	3.97
Online	$20	Same day	By next payday	217	4.02
Storefront	$10	1 week	2 months	211	4.20
Storefront	$20	Same day	2 months	244	4.66
Online	$10	1 week	2 months	252	4.73
Storefront	$10	Same day	By next payday	195	4.91
Online	$10	Same day	By next payday	219	5.16
Online	$20	Same day	2 months	216	5.24
Storefront	$10	Same day	2 months	217	5.68
Online	$10	Same day	2 months	229	6.32

SOURCE: MDRC calculations from responses to 2015 Clarity Survey.

NOTES: Respondents were asked how likely they were to use a loan product (defined by a set of four attributes with two levels each; for example, the attribute location has levels of storefront and online) the next time they need a loan. Each respondent rated four randomly selected products.

[a]Products are ordered from least preferred to most preferred. The rating scale is as follows: 1 = Not at all; 2 = Very unlikely; 3 = Unlikely; 4 = Slightly unlikely; 5 = Neutral; 6 = Slightly likely; 7 = Likely; 8 = Very likely.

online loans over storefront loans, loans with fees of $10 over fees of $20, having loans approved the same day over having to wait a week, and having two months to pay off a loan over having to pay by their next payday (indicated in each case by a positive "Part-Worth Utility" in Table 10[66]).

Table 11 shows the mean preference ratings, by product. The table is arranged from least preferred to most preferred product (with a higher rating indicating that respondents are more likely to use that product). The most preferred loan product is available online, has a $10 fee, can be approved on the same day, and has a payoff period of two months. Respondents in each user category displayed

66. Part-worth utilities are measures of the level of preference for an attribute. Larger part-worth utilities indicate a greater preference for an attribute, while smaller part-worth utilities indicate less of a preference.

the same product preferences and attribute ranking. However, the relative importance of some attributes did vary according to user category (not shown in table). The financially distressed and heavy-user categories placed even greater priority on speed of approval than average. The financially distressed placed a much lower emphasis on the fee associated with the loan. The greater need for quick approval, even at potentially greater expense, speaks to the precarious situation of respondents in this category. Ease of use also came up in the interviews. In Terri's words, "You just go online and hit some buttons and the money is there." Fiona had a similar view: "I like online better [than storefront loans] because you don't have to go in and see anyone. It's real easy and your approval is pretty quick. It's…usually within five minutes."

Discussion and Policy Implications

Analysis of administrative, survey, and interview data has revealed a great deal about the characteristics of the vulnerable population that relies on subprime small-dollar credit. The research described here provides a better sense of the potential avenues for improving outcomes for different segments of this population and of the challenges that are inherent in developing effective strategies.

- **Online subprime borrowers are very diverse in terms of their socioeconomic characteristics.**

A key goal of the first phase of this project was to understand who uses these products. Many people assume that payday loan users have very low incomes and low levels of education. While many individuals who are reflected in the administrative data have low incomes, a substantial proportion of the sample members have relatively high incomes. Over 20 percent earned a *net income* of more than $40,000 a year (which translates into a gross income of nearly $53,000 per year) when they applied for a loan. Many borrowers are also highly educated. The educational distribution of surveyed online subprime loan users in the Clarity system is above the U.S. average.[67] The qualitative interviews that were conducted for this project also highlighted the diversity of participants. Some individuals were clearly living on low incomes, including several highly educated professionals who were experiencing financial distress.

So the picture here is mixed. The zip code–level analysis showed that payday lending usage is highest in zip code areas where many individuals receive the EITC, and where single-parent households are concentrated. These characteristics are all markers of poverty. But the analysis also makes it clear that many individuals who are not poor also use payday loans.

- **State-level regulations on storefront lending appear to reduce usage of online loans.**

Online payday lending rates are much lower in states where storefront payday lending is banned. Some states are more aggressive than others in enforcing bans on payday lending online, and in some states the presence of Native American tribal lenders, who are unaffected by regulation of state-licensed lenders, mitigates the effect somewhat, but it appears that bans on payday lending

67. Ryan and Bauman (2016).

do generally diminish online borrowing. Beyond regulatory enforcement, this finding might be explained in part by lower salience of payday lending in restricted states — that is, individuals may be aware of such loan types but are not reminded of them on a regular basis, and so do not automatically think of them as an option. The survey showed that many individuals who use online loans also take out storefront loans. The lack of storefront establishments in restricted states may reduce the usage of loans online because the storefronts might provide a source of advertising for payday loans in general. Also, some states enforce payday loan restrictions beyond storefronts to include online borrowing, and some online lenders prohibit borrowing by applicants who are from states where payday lending is banned.[68]

- **There are three distinctive loan use segments of the population that differ greatly in terms of the kinds of loans they use, the lenders they use, and their loan outcomes. The largest segment struggles to repay loans. But another segment has high repayment and low default rates.**

A segmentation analysis found that most payday borrowers fall into three very distinct groups. The largest group of borrowers (constituting over 40 percent of the sample) struggle to repay their loans and have very high default rates. This group is the one that most people think of when they raise concerns about payday loans, and it is a matter of concern that this group makes up the largest segment. However, the segmentation analysis made it clear that there is another relatively large segment (roughly a third of borrowers) who pay back their loans on time and rarely default. A smaller, more distinctive group of individuals borrow mostly from tribal lenders. They fall somewhere in the middle in terms of default rates, are more likely to be in states where payday lending is restricted than other groups, and are more likely to use subprime installment loans than payday loans.

- **Survey respondents already have credit scores. Most respondents lost prime status and now have bad or very bad credit scores.**

Over 96 percent of survey respondents already had credit scores and, surprisingly, over 73 percent ever had prime credit scores. And these rates did not differ significantly across user categories. These individuals make up, as other researchers have recently found,[69] a sample with established but mostly bad or very bad credit scores. However, as prior research has shown, the use of payday loans

68. Bhutta (2013).

69. Bhutta, Skiba, and Tobacman (2015).

has little to no effect on credit scores.[70] (Payday and subprime installment lenders do not report loan repayment to the major credit bureaus, but traditional credit scores may be affected indirectly through borrowers' inability to make payments on their other financial obligations.) Repairing credit is quite important, however, given the prevalence of credit checks, including credit checks that are done as part of employment background screening, and because of the importance of having a credit card, as described next.

- **Most survey respondents are not, perhaps because of their former prime status, fully cut off from mainstream credit products like credit cards. Their connection, though limited, appears to have implications for well-being.**

Over 73 percent of survey respondents had at least one major credit card in their household, and about half had an available balance to spend. The interviews suggest that those with credit cards may have low credit limits and, given the frequency of unexpected expenses, may reach those limits quickly. Even those with an available balance may not have sufficient credit to handle larger emergency expenses (as discussed below). Nevertheless, those with an available balance were less likely to use payday loans to cover their regular expenses, less likely to experience negative loan outcomes like default or collections, and less likely to answer, "I would not pay my bills," when posed a hypothetical scenario wherein payday loans were not available. Though the evidence is weaker, they may also be less likely to have to roll over their payday loans, which limits the cost of using this product. Of course, though credit card interest rates are generally lower, it is quite possible for an individual to fall behind on credit card payments and get into financial trouble as well.

- **Most survey respondents have health insurance, but the continuity and quality of that insurance may be inadequate.**

Over 90 percent of the respondents have health insurance coverage. However, despite that high coverage rate, about half of the respondents carry medical debt, which has become one of the regular expenses that contribute to a borrower's chronic income shortfall and use of small-dollar credit to cover ordinary expenses. Some of the individuals who were interviewed incurred medical debts during periods when they were between jobs and did not have health insurance coverage, a side effect of the United States' largely employer-based health insurance system. Others are underinsured; high-deductible plans mean that they have to take on medical debt to handle chronic conditions or preventative care.

70. Bhutta (2013); Bhutta, Skiba, and Tobacman (2015).

The expansion of Medicaid may be especially important for this segment of the population in limiting further accrual of medical debt, but many may already carry a significant amount. For those who obtain health insurance through their employers, the availability of affordable transitional coverage for the period in-between jobs (for example, COBRA) may be particularly important.

- **Most survey respondents who took out a payday loan used it to cover regular expenses. Some of those expenses may result from lack of insurance or underinsurance against previous emergencies and lack of emergency savings, but some may reflect the high cost of living as well as other trends such as declining wages and increased costs of child care, health care, and education.**

Almost 64 percent of respondents who took out a payday loan used their most recent payday loan to cover regular expenses. Though most have stable incomes, those incomes are insufficient to make ends meet. As noted, many respondents carry medical debt. Most also carry student debt. Over 35 percent have mortgages, and overall nonmortgage debt burden is high. Half of the sample run out of money often or always by the end of the month because of debt obligations, rent, groceries, utilities, and other regular expenses. And the high rate of unexpected and emergency expenses across all user categories only adds to this strain. SNAP benefit receipt rates in this sample appear quite low, which may be related to the large number of borrowers who do not have minor children. Those without minor children in the household may also benefit from an "EITC expansion," which increases the value of benefits to childless single and joint filers.[71] However, many respondents chronically run out of money before the end of the month (and strongly prefer to receive their loan payouts immediately), potentially limiting the effectiveness of the "lump sum" EITC program as a source of aid throughout the year.

- **Survey respondents rely on friends and family, in part, to make ends meet, but the financial hardships of their friends and family, coupled with the high social cost of borrowing, may lead borrowers to take out payday loans as well.**

Though survey respondents cannot be compared with a more general population of working-class and lower-middle-class individuals, borrowers in the survey sample do not appear to be especially

71. Using the Clarity data set, Cui (2015) looked at cross-state variation in EITC generosity to find that a $100 increase in EITC benefits leads to an 8.3 percent reduction in payday loan applications. Relatedly, Bertrand and Morse (2009) and Skiba (2014) find evidence that tax rebates can temporarily reduce payday loan usage and loan amounts.

socially isolated. Consistent with research on other working-class populations, they use networks of social support to help cover their needs, but network resources are limited. Many respondents have already borrowed as much as their friends and family can afford to give. And others could borrow more only at great social cost in shame and ostracism. These networks can also create obligations on the part of individuals that lead them to borrow. Some respondents used their loans to help parents, siblings, or children who had themselves fallen on hard times. Kinship networks are therefore not a substitute for or solution to reliance on payday lending.

- **This sample of borrowers, even those who borrow to deal with chronic income shortfalls, regularly deal with unanticipated emergency expenses. Some of these expenses may be large.**

Though most respondents do not borrow simply to handle unanticipated/emergency expenditures, almost 80 percent have recently experienced an emergency. A significant minority of those who rolled over their loans did so because of an emergency expenditure. Efforts to improve borrowers' credit and subsequently their access to higher credit limits on credit cards could help somewhat, but the frequency of these unanticipated expenditures could quickly bring them to their credit maximum regardless (and, as noted above, overreliance on credit cards can also lead to financial hardship). Some of these expenses may also be larger than what could be handled with a "high" credit limit for borrowers in this income range. Increased income through benefit expansion may allow households to increase their emergency savings. (Most have none.) Better insurance — automotive, renter's/homeowner's, and supplemental insurance (for example, to cover lost wages or other expenses during personal or a family member's illness) — may help as well.

- **Survey respondents have high debt loads, little or no savings, poor credit histories, and often a chronic inability to cover regular expenses. This situation may make it very difficult to develop alternative credit products for this population that can enable the lender to turn a profit or even break even.**

The survey sample members, overall, are financially vulnerable. Furthermore, default rates are quite high in two of the three major borrower segments (which also suggests that efforts to help borrowers build credit through, for example, payday lender reporting to major credit bureaus might backfire). Therefore, it may be especially difficult to design alternative credit products that can turn a profit for a lender. If they can be identified, individuals who are similar to those in Cluster 1 — who de-

faulted or fell behind on their loans infrequently — could serve as a customer base for such products. And lower-cost loans might very well make default less likely in general, but most borrowers are still quite financially vulnerable, given other debt and expenses. Results from the conjoint analysis also suggest that borrowers of all types strongly prefer immediate loan approval, which could make loan products that require extensive underwriting less appealing. Recent work by CFSI recommends that credit products marketed to this population be bundled with other services and used as a way of establishing a relationship.[72] They suggest that lenders should not expect to make a profit off of the credit product but should treat it instead as a way to introduce borrowers to other services and products that could generate a profit.

72. Garland and Brockland (2015).

Future Work

The first phase of this project has laid the groundwork for possible future explorations. Some of these possibilities are detailed here.

PRODUCT DIFFERENTIATION

The database includes traditional lump-sum payday loans, installment loans, and other forms of short-term, small-dollar credit. As noted, in this research phase a segmentation analysis was performed across all loan types rather than segmenting within loan type. Exploring the segments that emerge among borrowers of different loan types could enhance understanding of the differences between loan types. This is particularly important given that some well-respected voices in the field, such as The Pew Charitable Trusts, have advocated for installment loans over traditional lump-sum loans. It is important to understand whether the markets for the two types of loans differ and whether borrower outcomes differ.

RAPID TURNAROUND EXPERIMENTS

Because of the scale, coverage, and outcomes included in the Clarity data set, the administrative database holds great promise for future research on small-dollar credit borrowers and their outcomes. One possibility would be to use the Clarity database to launch a series of low-cost, rapid turnaround experiments on interventions such as alternative credit products, credit counseling or coaching, or other behavioral messaging tests. These experiments would require the cooperation of lenders, and care would need to be taken that the participating lenders report outcomes to Clarity in a reliable way.

CAUSAL MODELS THAT EXPLOIT THE LONGITUDINAL AND SPATIALLY CODED DATABASE BUILT IN PHASE 1

Because the administrative database is cross-sectional and longitudinal (that is, it tracks individuals and their loans over time), it could be used to construct "event histories" to explore borrowers'

trajectories and to answer questions about determinants of the average time to repayment (including the number of loan rollovers) and of eventual default. Future research might exploit the data set's national coverage by identifying variations in laws and regulations by administrative unit (for example, across state lines) and over time (for example, before and after the introduction of the recently proposed CFPB regulations) to set up "natural experiments" that would provide insight into how patterns of aggregate behavior are influenced by the legal and regulatory environment. For example, because the Medicaid expansion has been decided on a state-by-state level, with different states deciding to opt in at different times, the database could also allow investigation into whether the increase in health insurance coverage for working-class adults (who make up the majority of payday loan users) reduces reliance on payday lending. Similar experiments could examine how variation in state or local minimum-wage policies affects payday loan usage.

EXPLORING THE ORIGINS OF FINANCIAL HARDSHIP

That the administrative data can also be linked to survey and interview analysis opens additional research possibilities. For example, as noted above, it is difficult to discern from a survey alone whether loans to cover "regular expenses" originated in a previous emergency expense in some meaningful way — such as the emergency-generated debt that becomes an onerous regular expense, leading to chronic income shortfall; or the emergency that consumes the income for the month and leaves no money for regular expenses later in the month. A longitudinal analysis of borrower behavior that tracks the use of loan products based on administrative data, surveys, and regular interviews or financial diaries could address this question by allowing the creation of "event timelines" for borrowers that illustrate the relationship between events and their lives and their patterns of borrowing. These timelines have the potential to be a powerful visual tool to accompany the analysis and help explain how and why people develop a need for payday loans and how and why such borrowers often remain indebted.

ANOTHER ITERATION OF THE SURVEY

Only six lenders participated in the study survey, leading the research team to be careful about generalizing too broadly from the findings. A second survey wave could focus on recruiting a larger group of lenders to participate in a new survey, and more intensive fielding methods could be used

to enhance response rates. The survey and qualitative efforts could also oversample segments that emerged as interesting in this first phase, such as parents who are helping their adult children or people who borrow from tribal lenders. For example, 37 percent of the borrowers in the analysis sample have taken out tribal loans, and yet no one has studied this subset of the market. Future research could focus on this emerging segment.

FINANCIAL JUSTICE

What role do gender and race play in the small-dollar credit issue? Blacks and Latinos were disproportionately affected by the financial crisis that began in 2007-2008, and are less likely than whites to have access to adequate banking services, or any banking services at all. Future mixed-methods research could explore financial justice issues using the lens of small-dollar credit to understand what difference gender and race make, if any, when considering products and policy.

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The goal of this initial, exploratory work is to provide a broad understanding of payday loan users and to enable a deeper examination of questions that have the potential to shape the policy landscape that affects those borrowers. By gaining a richer and more nuanced understanding of the individuals who use these types of products, practitioners and policymakers will be in a stronger position to develop better-informed interventions and policies that can help this struggling population achieve financial security.

APPENDIX

A

Data Sources

Data for this project come from three sources: administrative records from Clarity Services, Inc.; an online survey; and qualitative interviews (discussed in the main report only).

ADMINISTRATIVE DATA

Clarity Services, Inc., administers a very large and rapidly growing database of financial data for over 50 million individuals.[1] The data are reported by lenders and include demographic and employment information, loan types and terms, account types and balances, and borrowing and payment histories collected at the time of loan application. After loans are disbursed, the database tracks loan repayment histories at the individual loan level. The database is growing rapidly in terms of the number of individuals and the data elements included. The data are longitudinal and contain zip codes (allowing for geocoding and spatial analyses, as described later in this appendix).

MDRC initially received a data file from Clarity Services, Inc., with "snapshot" records at the tradeline level.[2] After an in-depth check of the data, the research team determined that data were needed at the repayment, rather than the tradeline, level in order to truly understand loan dynamics.[3] Ultimately, MDRC received data on 8,176,945 tradelines for 3,054,740 borrowers reported by 318 lenders. An additional 18,343,594 archive records were received, containing historical data on loan repayments. These records covered tradelines opened between 2010 and 2014. As is typically the case with analyses of commercial data repositories, several fields and records needed to be dropped because the data were incomplete.

Ultimately, the analysis focused on individuals who opened a tradeline in 2014 (N = 881,512). For these individuals, loan history was tracked back through 2013. This sample was used for the spatial analysis because it provides the best geographic coverage.[4] However, this sample was not deemed reliable for reporting loan *outcome levels* and was refined further.[5] Though the quality of the report-

1. See Clarity's home page (accessed 12/21/2015): https://www.clarityservices.com.
2. A tradeline represents a distinct loan or other financial instrument.
3. A payment represents a distinct repayment toward a loan or other financial instrument. There are multiple payments per tradeline.
4. Records were dropped from the full sample for a few other reasons as well. Borrowers who had a record with a negative payment (likely a data entry error) toward a loan amount and loans purchased by organizations that seek to locate individuals for loan repayment — known as "skip trace lenders" — were excluded.
5. Loan outcomes were created among all open tradelines, including loans that had not yet reached their payment due date. This censoring problem in analyzing loan data is discussed in Caskey (2001).

ing data has improved appreciably over time, there was still important variation in reporting quality by lenders. Some lenders report loan activity more frequently than do others (often because of incompatibility of loan management systems). It is also likely that there is some underreporting even among compliant lenders. Therefore, in order to improve the quality of the outcome information, an analysis was conducted to determine which lenders had the highest reporting rates. Based on this analysis, the research team defined the analysis sample to consist of individuals who borrowed from lenders that reported repayments on 75 percent of their tradelines or more. The final analysis sample (used for Clarity outcome reporting and the segmentation analysis) consists of 198,499 records.[6]

Recoding of Variables

The following raw variables in the Clarity administrative data set were set to "missing" because of issues with data quality:[7]

- Age — reported ages of younger than 18 years and older than 100 years
- Income — reported monthly incomes of $0 and reported monthly incomes over $10,000
- Total payments toward a loan in 2014 — total payment amounts less than $0 and total payment amounts greater than $100,000

SURVEY DATA

Clarity Services, Inc., administered the survey online through its SurveyMonkey account. It was necessary to field the survey through Clarity because regulations did not allow the research team to work with any personally identifiable data on borrowers.[8] Clarity matched the individuals who responded to the survey back to its administrative data set, removed the personally identifiable information, and sent the survey responses to MDRC.[9] The survey took about 20 minutes to complete

6. Other records were dropped from the analysis sample, including records marked as rent-to-own loans and records for borrowers who were missing three key variables or more (number of historical bank accounts, monthly income, debt-to-income ratio, and weekly pay). Additionally, only the 25 most recently reported loans per borrower were included. The maximum number of loans per borrower was 99; fewer than 1.5 percent of borrowers had more than 25 loans.
7. Most recoding decisions were based on the recoding done in the NonPrime101 reports. NonPrime101 is a project of Clarity Services, Inc., that "provides research studies and articles about non-prime consumer behavior to help the public and researchers better understand them" (https://www.nonprime101.com).
8. This limitation did not apply to those who opted in to the in-depth interviews, as described in the text.
9. Data agreements were set up to ensure that neither Clarity Services, Inc., nor the lenders could see the actual survey responses.

and was constructed using several questions that had been field-tested in past surveys. Sources for the survey questions included MDRC's SaveUSA survey, the Annie E. Casey Foundation's "Making Connections Cross-Site Survey," the 2015 American Community Survey (ACS), the 2012 Center for Financial Services Innovation (CFSI) "Small-Dollar Credit Study," and The Pew Charitable Trusts' "Safe Small-Dollar Loans Research Project Survey."[10]

In order to address a host of compliance and human subject concerns, the survey was conducted only among individuals and lenders who opted to participate in the research. Very few lenders volunteered to participate (N = 6).[11] Lender participation was so low that it was necessary to include lenders whose reporting to the Clarity system was less consistent than desired. In addition, although the lenders that participated in the survey were large, they were not representative of the full Clarity database sample. Because of this sampling bias, the survey data required weighting, which is the main reason that the clusters from the administrative records could not be connected for the main survey segmentation analysis. In the future, the team may try to use statistical imputation techniques to enable a connection between the administrative records and the survey.

Survey respondents received incentives of $20 each as compensation for their time and to try to encourage high response rates. However, numerous issues arose during survey administration. Notably, many survey invitations (sent by e-mail) were not opened by potential respondents and there were problems with e-mails being flagged as "spam." It is difficult to estimate how many participants actually saw the survey invitation, because so many survey invitations ended up in spam filters.[12] During the first wave of e-mails, roughly 1,000 messages were sent and only 148 were opened within three days of being sent. In the second wave, an additional 10,000 e-mails were sent and a total of 1,420 were opened within two days. Thus, the e-mail open rate was probably around 15 percent, which is rather low. For these reasons, survey response rates were very low, which is another reason that weighting was necessary.

It is difficult to compute a response rate given that only a fraction of individuals opened the e-mail. By a very conservative definition, the response rate (based simply on the roughly 41,000 e-mails sent

10. The sources for these studies and surveys are, respectively, www.mdrc.org/project/saveusa; http://mcstudy.norc.org/documentation; https://www.census.gov/program-surveys/acs; CFSI, personal communication; and The Pew Charitable Trusts (2012).

11. The administrative data set comprised 318 lenders, although Clarity did not ask all lenders to participate in the survey.

12. At least three different e-mail providers needed to be used because of issues with spam filters.

and 891 respondents) was roughly 2 percent. Among those who opened the invitation, the rate was much higher. It is not uncommon for e-mail as well as phone surveys conducted by organizations such as Pew Research or political tracking polls to have response rates in the single digits.[13] The weighting process (described below) should help reduce bias created by nonresponse, or "response bias." Further analysis suggested that the bias due to sampling bias was more severe than the response bias. In addition, several papers have noted that response rates are not a very reliable measure of survey data quality.[14] Regardless, because very few lenders agreed to participate (and because their samples differ from the full data set), and given the very low response rates, the survey results should be considered preliminary.

Survey Weighting Process

Appendix Tables A.1 and A.2 show demographics and loan outcomes, respectively, from the Clarity data for three samples: (1) the full data sample, (2) the fielded sample pool,[15] and (3) the respondent sample. Both the weighted and unweighted results are shown for the respondent sample. These tables show that some of the differences in characteristics across samples reflect (1) differences between the lenders who agreed to participate and the full pool of lenders, and (2) differences between the characteristics of respondents and the characteristics of borrowers in the fielded sample pool. However, differences in the loan outcomes (shown in Appendix Table A.2) are smaller between the fielded sample and the respondent sample (in the unweighted column) than the differences between the full sample and the fielded sample.

Appendix Table A.2 shows that one difference between the respondent sample and the full sample is in payday loan usage: individuals in the respondent sample were less likely to have taken out a payday loan than were individuals in the full sample. In order to make the results more representative of the full sample, an inverse probability weight was constructed. A logistic regression model was used to regress the outcomes in the Clarity data set on whether an individual responded to the survey. The weight was produced by taking the inverse of the probability of responding to the survey. The weight was normalized by dividing the overall response rate by the inverse of the probability of responding. Weights were truncated to fit into a range of 0.5 to 3.5 to avoid undue influence. The rates were then renormalized, such that the average weight was 1.0. Only the overall sample survey

13. Kohut et al. (2012); Silver (2014).

14. Groves (2006); Groves and Peytcheva (2008).

15. Borrowers from six lenders in the Clarity database were eligible for survey fielding, which is the sample shown in the tables. However, the survey was only actually sent (fielded) to approximately 41,000 individuals in this sample.

APPENDIX TABLE A.1 Demographic Characteristics from the Clarity Database, by Sample and Weighting

CHARACTERISTIC (%)	RESPONDENT SAMPLE[a] UNWEIGHTED	RESPONDENT SAMPLE[a] WEIGHTED	FIELDED SAMPLE POOL[b]	FULL SAMPLE
Age				
18-24 years	2.4	2.5	3.5	8.0
25-34 years	17.1	22.1	21.8	26.9
35-44 years	33.6	35.1	30.2	28.3
45-59 years	36.5	31.4	33.3	28.2
60 years or more	10.4	8.9	11.2	8.7
Annual net income[c]				
$1 - $10,000	3.0	2.7	3.7	3.0
$10,001 - $20,000	18.4	17.5	20.8	20.9
$20,001 - $30,000	30.0	33.4	30.4	30.1
$30,001 - $40,000	19.3	19.6	18.9	17.4
$40,001 - $60,000	22.6	20.3	19.2	20.6
$60,001 or more	6.7	6.5	6.9	8.0
Housing status				
Owns home	39.5	37.7	38.5	35.4
Rents apartment	58.3	61.0	59.4	58.6
More than 2 bank accounts on file	63.9	55.3	47.4	42.9
Ever changed zip codes	12.3	8.9	7.0	4.5
Lives in a restrictive state	10.8	11.4	12.0	13.3
Sample size	768	768	147,999	881,512

SOURCES: MDRC calculations from responses to the 2015 Clarity Survey and from the Clarity database.

NOTES: Sample sizes may vary because of missing values.

[a]The respondent sample columns only include respondents who could be matched to the Clarity administrative records data; 121 survey respondents were excluded.

[b]The fielded sample pool is the number of individuals who were eligible for survey fielding. The survey was actually fielded to approximately 40,000 individuals.

[c]Clarity collects net income data, as it is more relevant to underwriting than is gross income. Estimates vary based on income level, but a common adjustment factor in these income bands is between 1.3 and 1.5.

APPENDIX TABLE A.2 Loan Usage Characteristics from the Clarity Database, by Sample and Weighting, 2013 and 2014

CHARACTERISTIC (%)	RESPONDENT SAMPLE[a] UNWEIGHTED	RESPONDENT SAMPLE[a] WEIGHTED	FIELDED SAMPLE POOL[b]	FULL SAMPLE
Number of loans				
1	32.2	44.8	47.7	60.2
2-3	39.3	35.1	35.3	25.5
4-5	13.7	9.3	9.3	5.6
6 or more	14.8	10.7	7.7	8.7
Ever took out				
Storefront loan	1.7	2.4	1.0	5.7
Installment loan	67.6	46.2	61.8	26.8
Payday loan	62.6	69.2	55.3	68.8
Strict definition payday loan	16.4	22.1	18.0	13.5
Line of credit loan	13.5	12.7	15.2	2.4
Ever took a loan, by type of loan establishment				
Auto finance	1.1	0.8	0.4	0.3
Offshore	5.3	4.3	2.9	2.0
State licensed lender	37.0	42.4	30.0	57.5
Tribal	74.6	60.4	72.6	35.4
Loan payment status				
All payments current	49.5	47.5	44.7	50.2
Ever paid less than scheduled amount	91.0	84.1	89.4	63.7
Ever past due	37.3	36.2	45.5	19.5
Ever defaulted	42.1	46.0	49.2	40.0
Ever had a loan charged off	37.8	40.3	39.3	27.4
Ever paid a loan in full	73.4	62.9	55.9	55.3
Ever late	50.8	52.8	55.3	50.4
Total amount paid on loans in 2014				
$0	5.9	8.4	6.2	19.4
$1 - $500	19.5	23.8	20.7	32.9
$501 - $1,000	20.2	22.2	22.3	19.2
$1,001 - $2,500	36.0	30.4	36.7	19.6
$2,501 or more	18.4	15.2	14.1	9.0
In Clarity database in both 2013 and 2014	56.3	43.1	39.1	24.6
Had an active loan for 6 months or more in 2014	53.4	46.5	38.7	28.1
Sample size	768	768	147,999	881,512

(continued)

APPENDIX TABLE A.2 (continued)

SOURCES: MDRC calculations from responses to the 2015 Clarity Survey and from the Clarity database.

NOTES: Sample sizes may vary because of missing values.
[a]The respondent sample columns only include respondents who could be matched to the Clarity administrative records data; 121 survey respondents were excluded.
[b]The fielded sample pool is the number of individuals who were eligible for survey fielding. The survey was actually fielded to approximately 40,000 individuals.

results were weighted because the different groups of borrowers shown in each survey table in the main report are already selected based on specific criteria.

Both Appendix Tables A.1 and A.2 show that the distance between the full sample and the fielded and respondent samples is greatly diminished (though not eliminated) through the weighting. For example, before weighting, the difference in the incidence of ever having taken out a payday loan between the respondent and full samples was 6.2 percentage points. After weighting, the difference shrank to 0.4 percentage point. Large differences between the survey respondent sample and the full sample in terms of the number and types of loans used are reduced (though not eliminated) after weights are applied. For example, usage of installment loans was much more common among the lenders who agreed to participate in the survey, resulting in a 41 percentage point difference between the respondent and full samples in usage of that type of loan. After weights were applied, this difference reduced to around 19 percentage points.

Because weighting could only be done based on measured characteristics and because of the low survey response rate, the survey results should be viewed with considerable caution. One future extension of this work may be to recruit more lenders into the survey and use more focused fielding methods to test whether the results are similar for a more reliable survey sample.

APPENDIX

B

Methods

The research team used five distinct quantitative analyses to address the key research questions of the project. Because of the data issues noted above and because this research uses an observational study research design, all analyses should be viewed as exploratory and as providing preliminary evidence for future analysis. The five analyses and their goals are (1) a segmentation analysis to understand the size and composition of loan user groups; (2) a descriptive survey analysis to understand the range of borrower characteristics, attitudes, and behaviors according to predefined survey segments; (3) a conjoint analysis to understand loan product preferences; (4) predictive models to understand the drivers of loan usage; and (5) a spatial analysis to understand where borrowers are located and what the spatial distribution might explain about loan usage. The segmentation analysis was central to this first phase of research. Therefore, the next section describes the segmentation analysis in more detail than some of the other analyses.

SEGMENTATION ANALYSIS

MDRC conducted a segmentation analysis to uncover groups of borrowers within the data who have similar characteristics. The idea was to allow segments to emerge from the data, rather than defining groups of borrowers that other studies had analyzed or that the research team viewed as important. This approach enables an objective analysis that is not influenced by preconceptions and that validates (or invalidates) hypotheses about what types of individuals usually use payday loan products. For the segmentation analysis, K-means clustering was used to divide borrowers in the analysis sample into segments.

Variable Selection

The first step in the segmentation analysis was to understand the underlying dimensions of the data. One common problem in "big data" analysis is known as "the curse of dimensionality," in which the number of items from which to choose in a data set far outnumbers the actual number of dimensions. The research team selected a range of administrative data variables to explore that are related to loan usage, loan volume, loan type, and lender type. Administrative data variables related to borrower demographics were excluded from this list (for example, age and income) because the goal was to segment based on loan behavior and then see how demographics varied by segment. After this list of potential variables was finalized, two exploratory analyses were conducted to further consolidate the number of variables.

Method 1

The first variable reduction method was a variable clustering algorithm called "VarClus," which identifies correlated variables using principal components.[1] The method works by identifying clusters of variables that contain variables that are as correlated as possible with each other and as uncorrelated as possible with variables in other clusters.[2] This process resulted in the creation of eight variable clusters. However, the research team decided to keep only the first six clusters, as the variables associated with clusters 7 and 8 did not seem relevant (for example, ever taken out a loan from an auto finance lender — a loan type that accounts for only a small proportion of loans in the Clarity database) or were redundant with variables that were captured in a previous cluster (for example, loan volume). Appendix Table B.1 shows the proportion of variance explained by the clusters at each level. Almost 57 percent of the variation is explained by the six-cluster solution.

APPENDIX TABLE B.1
Proportion of Variance Explained by Clusters, by Number of Clusters

NUMBER OF CLUSTERS	PROPORTION OF VARIATION EXPLAINED BY CLUSTERS
1	0.1788
2	0.3317
3	0.4196
4	0.4857
5	0.5308
6	0.5696
7	0.6030
8	0.6386

One variable from each of the first six clusters was selected to represent that cluster. The variables were chosen based on researcher discretion and having the lowest 1-R**2 ratio within that cluster of variables. This ratio is 1 minus the variable's correlation with its own cluster to 1 minus the variable's correlation with the next closest cluster. The final variables selected through this process were:

- Ever made a late payment on a tradeline
- Ever had an open tradeline in 2013
- Ever took out a loan from a state-licensed lender

1. This analysis was conducted using PROC VARCLUS in SAS.
2. In the first iteration, all variables are placed in one cluster. If the second eigenvalue of that cluster (or in subsequent runs, of any of the clusters) is higher than the specified threshold (in this case 1), then the cluster is selected to be split into two clusters. The new clusters are created by finding the first two principal components and reassigning variables to the new cluster with which it is most highly correlated. The cluster component is updated each time a new variable is added. The reassignment of variables to clusters ends when a solution with the highest possible explained variance is identified. The clustering process ends when the second eigenvalue of all clusters is below the specified threshold. See Nelson (2001).

- Ever took out a storefront loan
- Ever paid less than the scheduled amount on a loan
- Had more than two bank accounts open before taking out the first Clarity-reported tradeline

Method 2

The next variable reduction method was also based on principal components, but instead of selecting individual variables, the principal components themselves were saved as variables. (The same set of variables was entered into the principal components method that was entered into the first variable reduction method.)[3] One benefit to using the principal components as variables is that the variables are orthogonal — that is, they are completely uncorrelated with each other. (The statistics that are used to evaluate K-means clustering solutions are valid only if variables are uncorrelated.)

The research team ultimately decided to use six principal components, after examining both the scree plot (showing the eigenvalues associated with each number of principal components) and the variance explained plot (showing the proportion of variance explained with each number of principal components), shown in Appendix Figures B.1 and B.2. The plots show the eigenvalues and proportion of variance explained; both start to even out after six principal components. This solution explains 63 percent of the variance.

Standardization

The K-means algorithm is notoriously sensitive to outliers and units of measurements. Variables that have larger variances exert more influence in determining the clusters, and the validity of the statistics associated with evaluating cluster solutions (discussed in the next section) can be threatened if outliers are included. To avoid having the results swayed by variables with high variances, both the variables selected from the variable clustering process and the principal components were standardized to z-scores with a mean of 0 and a standard deviation of 1.[4]

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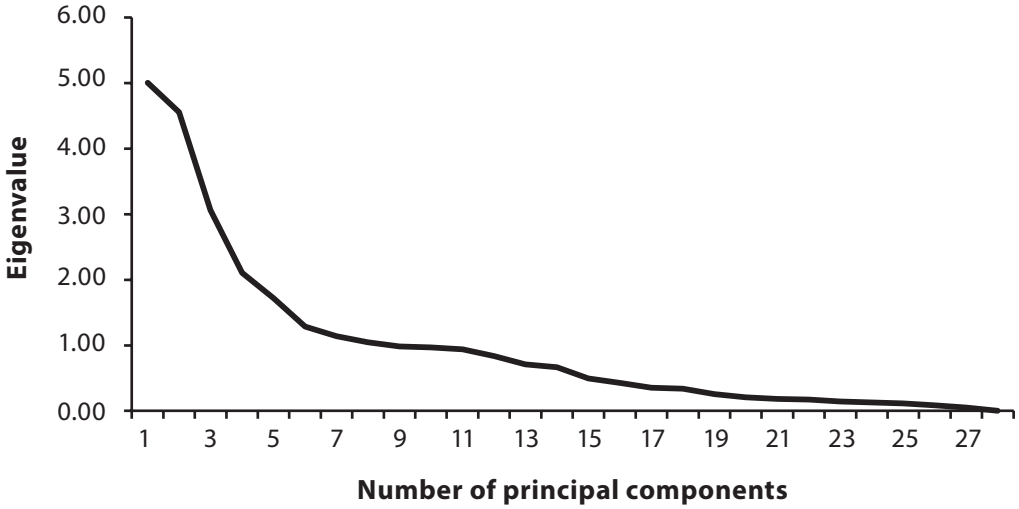
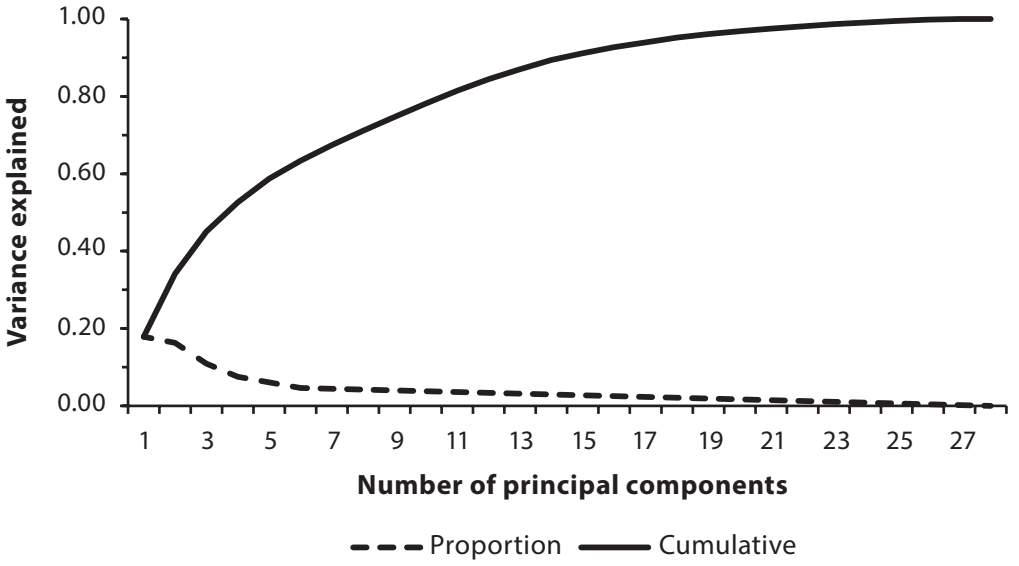
3. This analysis was conducted using PROC PRINCOMP in SAS. Each principal component is the linear combination of the original variables.
4. Standardizing variables to z-scores does not always take care of extreme outliers. In the principal components analysis, three extreme negative outliers were identified in principal component 6. These outliers were influencing the K-means cluster analysis and were, therefore, coded to the fourth lowest value. It was thought that this minimal change would not have much influence on the ultimate solution.

APPENDIX FIGURE B.1 Scree Plot, by Number of Principal Components



SOURCES: MDRC calculations from the 2015 Clarity Survey and the Clarity database.

APPENDIX FIGURE B.2 Amount of Variance Explained, by Number of Principal Components



SOURCES: MDRC calculations from the 2015 Clarity Survey and the Clarity database.

Clustering

Both sets of variables — from method 1 and method 2 — were analyzed in the clustering process. As mentioned, the research team decided to use K-means for the clustering analysis,[5] as the K-means algorithm is effective with large data sets.[6]

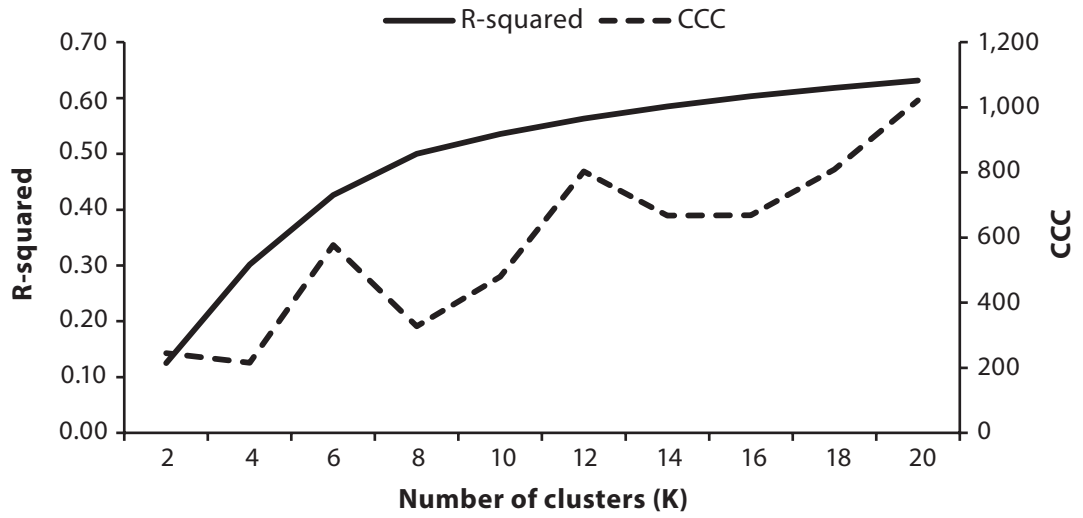
The first step in the K-means clustering process is to choose the number of clusters (or K) to include. In this study, cluster solutions were evaluated from K = 2 to K = 20 in intervals of two. This range was selected to ensure that the data were allowed to drive the solution. It was thought that solutions with a higher number of K (greater than 20) would result in clusters with sample sizes that were too small.

The cluster solutions were then evaluated using several statistics, including the cubic clustering criterion (CCC) and the approximate expected overall R-squared (R2).[7] The CCC is a measure of the deviation of the observed R2 from the approximate expected R2 if the data were from a uniform distribution. CCC values above 2 to 3 indicated a good cluster solution. The approximate expected overall R2 is the expected value of the overall R2 under the null hypothesis that the variables are uncorrelated. Higher values of the R2 indicate better solutions. Appendix Figures B.3 and B.4 show the values of the CCC and R2 for each value of K tested, first for the segmentation using the variables selected from the clusters of correlated variables (method 1) and then from the segmentation using principal components (method 2).

The figures show very similar patterns for the value of the R2. In both cases, the R2 increases over time and begins to level off around the six- or eight-cluster solution. On the other hand, the CCC pattern varies across the two figures: method 1 produced relatively larger and more volatile CCC

5. The K-means clustering process works in a few steps. After choosing the number of clusters (or K), K observations are randomly selected from the data set and serve as seeds (the initial values of the algorithm). For each remaining observation, the nearest seed is determined (based on Euclidian distances) and the observation is assigned to the corresponding cluster. Once a cluster has two observations, the initial seed is replaced by the mean (or centroid) value of the cluster. This process continues until all observations have been assigned to a cluster. Each time an observation is assigned to a cluster, the centroid value is updated. After all observations have been assigned to a cluster, the observations are reevaluated to determine whether they are now closer to the centroid of another cluster. The K-means algorithm has converged when the reassignment of any observations would result in an inferior solution. See Poulsen (2013).
6. Other clustering approaches such as latent class analysis, self-organizing maps, and ensemble clustering were considered, but resource constraints did not enable the testing of those approaches during this phase of the project.
7. The Pseudo F-statistic can also be used to assess cluster solutions. The Pseudo F-statistic is a measure of the ratio of the between-cluster variation and the within-cluster variation. Larger values of the Pseudo F-statistic indicate a better cluster solution.

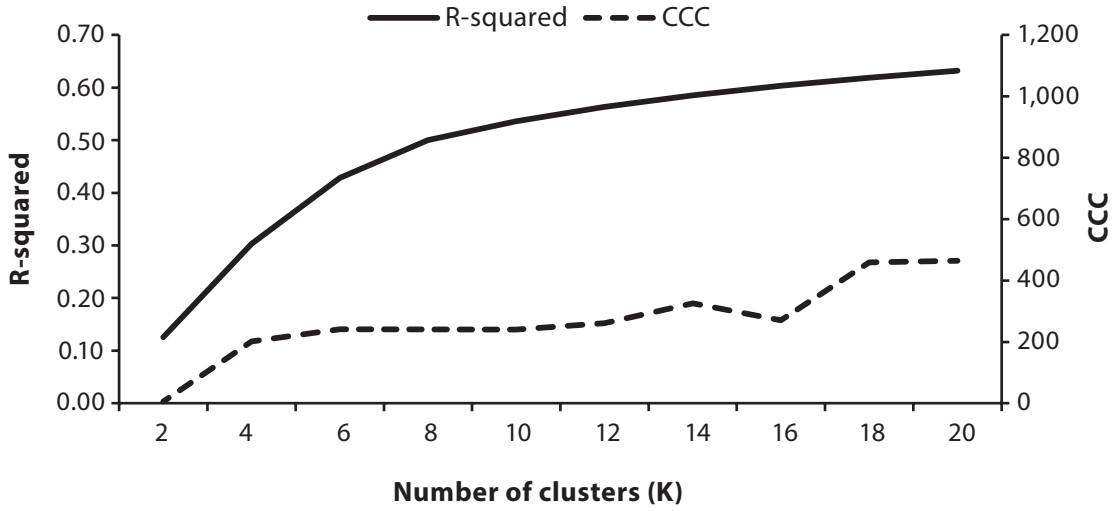
APPENDIX FIGURE B.3 Value of R-Squared and Cubic Clustering Criterion from VarClus Algorithm, by Number of Clusters



SOURCES: MDRC calculations from the 2015 Clarity Survey and the Clarity database.

NOTE: CCC = cubic clustering criterion.

APPENDIX FIGURE B.4 Value of R-Squared and Cubic Clustering Criterion from Principal Components, by Number of Clusters



SOURCES: MDRC calculations from the 2015 Clarity Survey and the Clarity database.

NOTE: CCC = cubic clustering criterion.

values compared with method 2. However, the CCC values for both methods are well above the threshold (of 2 to 3), signifying good cluster solutions.

The elbow method is often used to help determine the optimal number of K. This method looks for the "elbow," or inflection point, of the line graphing the values of the R2 at various values of K. This is the point at which the proportion of variance explained by increasing the number of clusters does not increase more than expected. In both figures, the "elbow" appears at the eight-cluster solution.

Ultimate Solution

The ultimate cluster solution chosen by the research team included the variables from the VarClus clustering algorithm (method 1) and had six clusters. This solution was chosen based on the values of the CCC and approximate expected overall R2, as well as researcher judgment about interpretability. The CCC for this solution is 577, indicating it is a good solution. The approximate expected overall R2 is 0.43.

Even though the elbow method pointed to an optimal solution containing eight clusters, the sample sizes associated with some of these clusters are quite small (around 1,000 borrowers). Additionally, conceiving of and implementing different policies for that many groups of borrowers is likely not feasible. While the eight-cluster solution may have been preferable statistically, it does not make sense from a policy perspective.

Differences Across Segments

Tests for statistical significance in outcomes across the different segments were not performed for a couple of reasons. First, sample sizes are so large in the administrative records analysis that even trivial differences between segments are likely to be statistically significant. Second, because the results of this analysis come from an observational research design, they are purely descriptive and no causality can be ascribed. Tests of statistical significance could provide overconfidence that the results are causal in nature.

CONJOINT ANALYSIS

One of the key goals of the project was to determine whether alternative loan products could be identified that are aligned with user preferences and might have better terms than do currently available products. In order to understand the preferences of users, a conjoint experiment was incorporated into the survey design. (Conjoint experiments are often used in marketing research to measure user preferences of product features and to learn how likely products are to be purchased. Products are made up of various attributes to mimic how they are actually offered, and preferences toward the attributes are measured relative to one another.) In this conjoint experiment, respondents were asked to rate the likelihood that they would purchase different hypothetical loan products. Four stimuli were tested in varying combinations: the loan fee, the amount of time until loan determination was made, whether the loan was obtained online or at a storefront, and whether collateral was necessary to obtain a loan.

In order to minimize respondent burden, each respondent was asked to rate only 4 randomly selected products out of a total of 16 possible products. Because respondents were not asked to rate all 16 products, a fractional instead of full profile conjoint analysis was performed.[8] The results were aggregated and analyzed by product and part worth utilities, and importance values were derived. A sensitivity check of the results was performed by comparing the mean preference rating for each of the 16 products. The results are similar across the two analyses, and both showed that respondents preferred the same set of stimuli.

DESCRIPTIVE SURVEY ANALYSIS

The descriptive survey analysis and definitions of the researcher-defined survey segments were discussed in the main report. Not all borrowers, however, were included in any of the segments and some borrowers were included in more than one segment. Appendix Table B.2 shows the frequencies of membership in each survey segment and the overlaps between segments.

8. In full profile conjoint analyses, respondents are asked to rate all possible products. (In this case, respondents would have been asked about all 16 products.) Because this approach would have made the survey much longer and it was not built into the budget, the research team decided to perform a fractional conjoint analysis instead.

PREDICTIVE MODELS

Another key goal of the project was to understand why consumers are using these loan products, why they roll over loans, and the underlying economic and social factors that lead to payday loan use. The research team developed a series of predictive models in order to answer these questions. These models consisted of a series of control variables — such as demographic characteristics, income, and several attitudinal variables — to try to understand payday loan use. This analysis was conducted using both the survey and administrative data. The research team used multiple imputation to handle missing data for independent variables as a result of both item nonresponse in the survey data and because over 100 survey respondents (or roughly 14 percent of respondents) could not be linked back to the administrative data.[9] Dependent variables were not imputed, and respondents with missing values for these variables were excluded from the models. The survey data were also weighted for the purposes of the regression analyses.

APPENDIX TABLE B.2
Frequencies of Membership to Survey Segments

SEGMENTS	FREQUENCY
No segments	274
Light user only	172
Heavy user only	109
High income only	125
Financially distressed only	46
Light user and financially distressed	12
Light user and high income	42
Heavy user and high income	68
Heavy user and financially distressed	41
Total survey respondent sample	889

The functional form of the regression models differed by dependent variable type. Logistic models were used for binary dependent variables (uses payday loans for ordinary expenses and would not pay bills if payday loans were not available); an ordered logistic model was used for the categorical variable (number of payday loans in a typical year); and Poisson models were used for count variables (number of payday loans in last year, number of payday loan rollovers, and negative loan outcomes index). To deal with heteroscedasticity, robust standard errors (computed using the "Huber-White Sandwich estimator") were used in most models.[10]

9. Clarity Services, Inc., matched the administrative records back to the survey records by e-mail address; 121 respondents did not match back to the administrative data.

10. The ordered logistic regression model did not use the robust standard error because of computational issues with combining the imputed data sets.

Regression analysis in cross-sectional data is highly susceptible to endogeneity bias.[11] It is very difficult to sort out patterns of causality in these models. As an example, one researcher notes that in the Clarity data, living in a zip code area with a higher rate of Earned Income Tax Credit (EITC) use predicts higher rates of loan use.[12] This correlation does not mean, however, that the EITC causes individuals to use more loans. In fact, this researcher found via a causal analysis (using state-level variation in the EITC top-off rate) that increases in use of the EITC reduced loan usage.

SPATIAL ANALYSIS

A spatial analysis was conducted in order to understand the spatial distribution of payday loan usage and the spatial correlates with usage. Before conducting the spatial analysis, payday lending usage had to first be calculated as a rate. Unlike counts, rates inherently allow for better comparison across units. The numerator of each rate was calculated by counting, per zip code, the number of distinct individuals receiving at least one loan in the administrative data set. Next, this count was divided by the population of individuals 18 years of age and older in the zip code area and then multiplied by 10,000 for a resulting raw rate per 10,000. The raw rates were then matched by zip code to the corresponding zip code tabulation areas (ZCTAs), which are zip code geographies approximated by the U.S. Census Bureau. Finally, for mapping purposes, a local Empirical Bayesian Smoothing (EBS) algorithm was used in order to adjust for instability in the raw rates that is introduced by small populations. Because of this uncertainty, EBS uses a shrinkage factor that is calculated by comparing the population of a zip code area with the populations of its neighboring zip code areas; the result is a new, adjusted rate. Neighborhoods were assigned via a common method used in spatial statistics known as a first-order queen adjacency definition.[13]

A spatially supplemented regression was then carried out using the lending rates and socioeconomic and demographic data. These data were obtained at the zip code (and ZCTA) level from both the Internal Revenue Service's public use Summary of Income file and the U.S. Census Bureau's 2013 American Community Survey five-year estimates file.[14] A regression was performed to predict raw

11. Endogeneity bias results when the errors in a regression model are correlated with the independent variables, often because key variables are omitted. This correlation can result in incorrect (biased) parameter estimates.
12. Cui (2015).
13. For a discussion, see Fischer and Getis (2009).
14. https://www.irs.gov/uac/SOI-Tax-Stats-Individual-Income-Tax-Statistics-ZIP-Code-Data-(SOI); https://www.census.gov/program-surveys/acs.

payday lending rates based on the different socioeconomic and demographic characteristics of a ZCTA. Computational processing and budget constraints precluded the completion of a spatial regression (that is, a regression that adjusts for spatial autocorrelation).

A shaded proportional symbols map (Figure 1 in the main text) was produced in order to highlight the geographies with the highest payday lending rates. In this proportional-symbol map, the radius of each circle is equivalent to the rates of each ZCTA; thus, larger circles represent higher rates and smaller circles represent lower rates. The shading of the proportional symbols shows the underlying population at risk. Rural areas appear bluer, while urban areas appear more gold in color.[15] Other maps overlaid information, such as payday loan regulation in a state and poverty and income in a state, in order to help visually explain patterns of spatial covariation.

15. In black and white renditions of this map, rural areas appear lighter, while urban areas appear darker.

APPENDIX

C

Supplemental Exhibits for Regression Analyses

APPENDIX TABLE C.1 Estimated Regression Coefficients for the Probability of the Number of Payday Loans Taken Out in the Last Year

CHARACTERISTIC	PARAMETER ESTIMATE	T STATISTIC	P-VALUE
Age	-0.001	-0.25	0.802
Latino	-0.040	-0.29	0.776
Black	-0.195	-2.02	0.044**
Married or living with a spouse	0.075	0.82	0.415
Female	-0.050	-0.54	0.586
Has no children	0.023	0.25	0.800
Receives SNAP benefits	-0.305	-2.07	0.039**
Has a college degree or higher	0.141	1.59	0.111
Currently working	0.019	0.17	0.865
Income squared[a]	0.000	-1.15	0.251
Annual income[a]	0.000	1.74	0.084*
Recently prime	-0.084	-0.82	0.410
Household income varies a lot month to month	-0.503	-2.36	0.020**
Had unexpected emergency expenses in the past 3 months	0.316	2.53	0.011**
In the past 3 months, ran out of money often by the end of the month	0.299	2.97	0.003***
Has no savings	0.211	2.15	0.032**
Has available credit on credit cards	-0.123	-0.97	0.341
Ever took out a payday loan (strict definition)	0.041	0.36	0.722
Ever took out a loan from a tribal lender	0.051	0.48	0.634
Has a mortgage or home equity loan	0.141	1.27	0.212
Has student loan debt	0.041	0.41	0.686
Has health care coverage	0.037	0.27	0.789
Currently paying off medical bills	-0.135	-1.48	0.140
Would handle emergency expenses by borrowing from family/friend	-0.147	-1.77	0.077*
Lives in a state with Medicaid expansion under ACA	0.055	0.28	0.786
Lives in restrictive state	-0.729	-3.41	0.001***
Lives in hybrid state	-0.192	-1.08	0.282
Lives in New England region	-0.374	-0.81	0.430
Lives in Mid-Atlantic region	0.004	0.01	0.991
Lives in East North Central region	-0.130	-0.61	0.550
Lives in West North Central region	-0.083	-0.47	0.637
Lives in South Atlantic region	-0.004	-0.02	0.985
Lives in West South Central region	-0.117	-0.59	0.558
Lives in Mountain region	0.309	1.07	0.288
Lives in Pacific region	0.040	0.18	0.855
Sample size	859		

SOURCES: MDRC calculations from the 2015 Clarity Survey and from the Clarity database.

NOTES: SNAP = Supplemental Assistance Nutrition Program; ACA = Affordable Care Act.

Statistical significance levels are indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

[a]Annual income is from the administrative data, where available. If not, annual income is from the survey and is multiplied by 0.51. This approach was used because the administrative records measured net income, while the survey measured gross income.

APPENDIX TABLE C.2 Estimated Regression Coefficients for the Probability of the Number of Payday Loans Taken Out in a Typical Year

CHARACTERISTIC	PARAMETER ESTIMATE	T STATISTIC	P-VALUE
Age	0.012	1.73	0.084*
Latino	0.388	1.77	0.077*
Black	-0.106	-0.66	0.512
Married or living with a spouse	0.080	0.54	0.590
Female	0.048	0.31	0.755
Has no children	-0.225	-1.53	0.125
Receives SNAP benefits	-0.545	-2.12	0.035**
Has a college degree or higher	0.113	0.80	0.422
Risk indicator index	0.073	0.27	0.787
Currently working	0.003	0.01	0.989
Income squared[a]	0.000	-2.13	0.033**
Annual income[a]	0.000	3.68	0.000***
Recently prime	-0.496	-2.89	0.004***
Household income varies a lot month to month	-0.961	-3.65	0.000***
Had unexpected emergency expenses in the past 3 months	0.944	5.31	0.000***
In the past 3 months, ran out of money often by the end of the month	0.552	3.52	0.000***
Has no savings	0.575	3.84	0.000***
Has available credit on credit cards	-0.344	-2.31	0.021**
Ever took out a payday loan (strict definition)	-0.079	-0.42	0.672
Ever took out a loan from a tribal lender	0.095	0.58	0.560
Has a mortgage or home equity loan	0.182	1.18	0.239
Has student loan debt	0.082	0.54	0.589
Has health care coverage	-0.376	-1.61	0.107
Currently paying off medical bills	0.199	1.39	0.164
Would handle emergency expenses by borrowing from family/friend	-0.078	-0.57	0.571
Lives in a state with Medicaid expansion under ACA	-0.040	-0.14	0.890
Lives in restrictive state	-0.784	-2.00	0.047**
Lives in hybrid state	-0.041	-0.14	0.886
Lives in New England region	-1.959	-2.87	0.005***
Lives in Mid-Atlantic region	-0.931	-1.59	0.115
Lives in East North Central region	-0.532	-1.53	0.127
Lives in West North Central region	-0.955	-2.54	0.012**
Lives in South Atlantic region	-0.875	-2.37	0.018**
Lives in West South Central region	-0.998	-2.98	0.003***
Lives in Mountain region	-0.053	-0.11	0.909
Lives in Pacific region	-0.750	-1.87	0.063*
Sample size	843		

(continued)

APPENDIX TABLE C.2 (continued)

SOURCES: MDRC calculations from responses to the 2015 Clarity Survey and from the Clarity database.

NOTES: SNAP = Supplemental Assistance Nutrition Program; ACA = Affordable Care Act.

Statistical significance levels are indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

The dependent variable is categorical. Coefficients on independent variables in this model represent a shift in categories (for example, from the 2-5 loans category to the 6-11 loans category), rather than in the number of loans.

[a]Annual income is from the administrative data, where available. If not, annual income is from the survey and is multiplied by 0.51. This approach was used because the administrative records measured net income, while the survey measured gross income.

APPENDIX TABLE C.3 Estimated Regression Coefficients for the Probability of the Number of Payday Loan Rollovers in the Last Year

CHARACTERISTIC	PARAMETER ESTIMATE	T STATISTIC	P-VALUE
Age	0.004	0.67	0.501
Latino	0.364	1.28	0.202
Black	0.006	0.04	0.972
Married or living with a spouse	0.202	1.47	0.143
Female	0.022	0.17	0.865
Has no children	-0.146	-1.10	0.272
Receives SNAP benefits	-0.468	-2.25	0.025**
Has a college degree or higher	0.037	0.26	0.797
Risk indicator index	-0.066	-0.27	0.785
Currently working	-0.001	0.00	0.997
Income squared[a]	0.000	-0.23	0.821
Annual income[a]	0.000	0.79	0.428
Recently prime	0.091	0.42	0.671
Household income varies a lot month to month	0.082	0.24	0.812
Had unexpected emergency expenses in the past 3 months	0.536	2.52	0.012**
In the past 3 months, ran out of money often by the end of the month	0.433	3.60	0.000***
Has no savings	0.117	0.93	0.352
Has available credit on credit cards	-0.169	-1.37	0.172
Ever took out a payday loan (strict definition)	-0.178	-1.19	0.235
Ever took out a loan from a tribal lender	-0.040	-0.27	0.786
Has a mortgage or home equity loan	-0.008	-0.06	0.952
Has student loan debt	0.032	0.23	0.816
Has health care coverage	0.201	0.91	0.362
Currently paying off medical bills	-0.035	-0.25	0.801
Would handle emergency expenses by borrowing from family/friend	-0.172	-1.44	0.151
Lives in a state with Medicaid expansion under ACA	0.026	0.12	0.906
Lives in restrictive state	-0.371	-1.18	0.241
Lives in hybrid state	0.028	0.11	0.913
Lives in New England region	-0.825	-1.47	0.142
Lives in Mid-Atlantic region	-1.198	-2.21	0.030**
Lives in East North Central region	-0.783	-2.60	0.009***
Lives in West North Central region	-0.694	-2.30	0.022**
Lives in South Atlantic region	-0.805	-2.38	0.017**
Lives in West South Central region	-0.612	-2.10	0.036**
Lives in Mountain region	-0.374	-1.01	0.315
Lives in Pacific region	-0.732	-2.04	0.041**
Sample size	841		

(continued)

APPENDIX TABLE C.3 (continued)

SOURCES: MDRC calculations from responses to the 2015 Clarity Survey and from the Clarity database.

NOTES: SNAP = Supplemental Assistance Nutrition Program; ACA = Affordable Care Act.

Statistical significance levels are indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

[a]Annual income is from the administrative data, where available. If not, annual income is from the survey and is multiplied by 0.51. This approach was used because the administrative records measured net income, while the survey measured gross income.

APPENDIX TABLE C.4 Estimated Regression Coefficients for the Probability of Using Most Recent Payday Loan to Pay for Ordinary Expenses

CHARACTERISTIC	PARAMETER ESTIMATE	T STATISTIC	P-VALUE
Age	-0.030	-3.26	0.001***
Latino	-0.010	-0.03	0.973
Black	0.022	0.10	0.923
Married or living with a spouse	-0.202	-1.05	0.294
Female	0.106	0.51	0.612
Has no children	-0.112	-0.58	0.561
Receives SNAP benefits	-0.342	-1.05	0.292
Has a college degree or higher	-0.163	-0.87	0.384
Risk indicator index	-0.442	-1.18	0.241
Currently working	-0.041	-0.15	0.879
Income squared[a]	0.000	-0.93	0.352
Annual income[a]	0.000	0.95	0.343
Recently prime	-0.277	-1.21	0.227
Household income varies a lot month to month	0.061	0.14	0.890
Had unexpected emergency expenses in the past 3 months	-0.578	-2.59	0.010***
In the past 3 months, ran out of money often by the end of the month	0.926	4.73	0.000***
Has no savings	0.236	1.24	0.215
Has available credit on credit cards	-0.754	-3.96	0.000***
Ever took out a payday loan (strict definition)	-0.014	-0.05	0.961
Ever took out a loan from a tribal lender	0.353	1.47	0.150
Has a mortgage or home equity loan	0.082	0.41	0.685
Has student loan debt	0.287	1.46	0.145
Has health care coverage	-0.581	-1.69	0.092*
Currently paying off medical bills	0.311	1.59	0.112
Would handle emergency expenses by borrowing from family/friend	-0.074	-0.38	0.701
Lives in a state with Medicaid expansion under ACA	0.377	1.00	0.321
Lives in restrictive state	0.208	0.40	0.692
Lives in hybrid state	0.393	0.92	0.357
Lives in New England region	0.224	0.26	0.794
Lives in Mid-Atlantic region	-0.725	-0.92	0.356
Lives in East North Central region	-1.236	-2.60	0.009***
Lives in West North Central region	-1.369	-2.70	0.008***
Lives in South Atlantic region	-1.068	-1.94	0.056*
Lives in West South Central region	-0.773	-1.71	0.088*
Lives in Mountain region	-1.060	-1.55	0.124
Lives in Pacific region	-0.921	-1.77	0.076*
Sample size	884		

(continued)

APPENDIX TABLE C.4 (continued)

SOURCES: MDRC calculations from responses to the 2015 Clarity Survey and from the Clarity database.

NOTES: SNAP = Supplemental Assistance Nutrition Program; ACA = Affordable Care Act.

Statistical significance levels are indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

[a]Annual income is from the administrative data, where available. If not, annual income is from the survey and is multiplied by 0.51. This approach was used because the administrative records measured net income, while the survey measured gross income.

APPENDIX TABLE C.5 Estimated Regression Coefficients for the Probability of the Likelihood of Risk

CHARACTERISTIC	PARAMETER ESTIMATE	T STATISTIC	P-VALUE
Age	0.002	0.33	0.743
Latino	-0.022	-0.13	0.900
Black	0.124	0.97	0.332
Married or living with a spouse	-0.018	-0.15	0.881
Female	0.060	0.47	0.636
Has no children	-0.007	-0.06	0.951
Receives SNAP benefits	0.012	0.06	0.952
Has a college degree or higher	0.037	0.33	0.738
Currently working	-0.081	-0.48	0.633
Income squared[a]	0.000	0.49	0.623
Annual income[a]	0.000	-0.21	0.837
Recently prime	0.093	0.67	0.504
Household income varies a lot month to month	-0.040	-0.18	0.854
Had unexpected emergency expenses in the past 3 months	0.110	0.75	0.451
In the past 3 months, ran out of money often by the end of the month	0.008	0.06	0.950
Has no savings	-0.074	-0.64	0.524
Has available credit on credit cards	-0.220	-1.87	0.062*
Ever took out a payday loan (strict definition)	0.083	0.57	0.566
Ever took out a loan from a tribal lender	0.080	0.64	0.525
Has a mortgage or home equity loan	-0.046	-0.37	0.711
Has health care coverage	-0.143	-0.78	0.436
Currently paying off medical bills	0.046	0.40	0.691
Would handle emergency expenses by borrowing from family/friend	0.016	0.14	0.890
Lives in a state with Medicaid expansion under ACA	-0.121	-0.57	0.567
Lives in restrictive state	-0.096	-0.33	0.745
Lives in hybrid state	-0.132	-0.56	0.574
Lives in New England region	0.142	0.29	0.772
Lives in Mid-Atlantic region	-0.220	-0.49	0.626
Lives in East North Central region	0.116	0.42	0.673
Lives in West North Central region	-0.065	-0.22	0.823
Lives in South Atlantic region	-0.111	-0.37	0.714
Lives in West South Central region	-0.124	-0.50	0.619
Lives in Mountain region	0.192	0.55	0.583
Lives in Pacific region	0.142	0.47	0.641
Sample size	768		

(continued)

APPENDIX TABLE C.5 (continued)

SOURCES: MDRC calculations from responses to the 2015 Clarity Survey and from the Clarity database.

NOTES: SNAP = Supplemental Assistance Nutrition Program; ACA = Affordable Care Act.

The likelihood of risk is a scale that includes ever making a late payment, ever changing zip codes, ever having more than two bank accounts, ever charging off a loan, and ever paying less than the scheduled amount. This measure was created using the administrative records and therefore does not include the 121 survey respondents who did not match back to the Clarity database.

Statistical significance levels are indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

[a]Annual income is from the administrative data, where available. If not, annual income is from the survey and is multiplied by 0.51. This approach was used because the administrative records measured net income, while the survey measured gross income.

APPENDIX TABLE C.6 Estimated Regression Coefficients for the Probability of Not Paying Bills If Payday Loans Were Not Available

CHARACTERISTIC	PARAMETER ESTIMATE	T STATISTIC	P-VALUE
Age	0.003	0.37	0.709
Latino	-0.900	-2.94	0.003***
Black	-0.827	-3.82	0.000***
Married or living with a spouse	-0.195	-0.99	0.320
Female	-0.088	-0.44	0.663
Has no children	-0.133	-0.68	0.496
Receives SNAP benefits	0.041	0.12	0.903
Has a college degree or higher	0.137	0.73	0.463
Risk indicator index	0.148	0.38	0.704
Currently working	0.154	0.57	0.571
Income squared[a]	0.000	-0.38	0.702
Annual income[a]	0.000	1.19	0.235
Recently prime	0.015	0.07	0.946
Household income varies a lot month to month	0.198	0.51	0.612
Had unexpected emergency expenses in the past 3 months	0.629	2.47	0.013**
In the past 3 months, ran out of money often by the end of the month	0.773	3.90	0.000***
Has no savings	-0.038	-0.19	0.849
Has available credit on credit cards	-0.501	-2.62	0.009***
Ever took out a payday loan (strict definition)	-0.499	-1.82	0.068*
Ever took out a loan from a tribal lender	-0.109	-0.52	0.602
Has a mortgage or home equity loan	-0.121	-0.60	0.548
Has student loan debt	0.214	1.05	0.292
Has health care coverage	0.137	0.45	0.652
Currently paying off medical bills	0.025	0.13	0.900
Would handle emergency expenses by borrowing from family/friend	0.061	0.33	0.743
Lives in a state with Medicaid expansion under ACA	-0.293	-0.85	0.396
Lives in restrictive state	0.054	0.09	0.926
Lives in hybrid state	0.249	0.58	0.566
Lives in New England region	0.354	0.46	0.644
Lives in Mid-Atlantic region	0.474	0.60	0.551
Lives in East North Central region	0.525	1.13	0.259
Lives in West North Central region	0.017	0.04	0.972
Lives in South Atlantic region	-0.018	-0.03	0.973
Lives in West South Central region	0.411	0.93	0.356
Lives in Mountain region	0.331	0.52	0.606
Lives in Pacific region	0.314	0.63	0.532
Sample size	889		

(continued)

APPENDIX TABLE C.6 (continued)

SOURCES: MDRC calculations from responses to the 2015 Clarity Survey and from the Clarity database.

NOTES: SNAP = Supplemental Assistance Nutrition Program; ACA = Affordable Care Act.

Statistical significance levels are indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

[a]Annual income is from the administrative data, where available. If not, annual income is from the survey and is multiplied by 0.51. This approach was used because the administrative records measured net income, while the survey measured gross income.

APPENDIX

D

Interview Protocols for Higher-Income Borrowers

The qualitative interview protocol below, for borrowers who were identified as higher-income, resembles the interview protocols for the other two categories of borrowers that are discussed in this paper (light users and heavy users), but the latter contained a few additional or reworded questions that applied specifically to each of those groups.

Thank you so much for talking to me today to follow up on the survey you took a month or so ago.

My name is _____ and I am a researcher at The New School in New York City. We're doing a study to try to get a better understanding of how people use financial services — banks, payday loans, credit unions, and so forth.

We are doing this research in order to try and make financial institutions work better for people like you. Your participation is for a good cause!

I'm not affiliated with a bank, lender, or collection agency. I'm also not trying to sell you anything.

I expect this interview to last about 30 minutes. Once we've finished talking, I will send you a Visa/MasterCard gift card for $35 through your e-mail.

We realize that money can be a sensitive topic, and you don't need to answer any questions that you're not comfortable with. We also want to reassure you that everything you say will be kept strictly confidential. We will not share your name or other information with anyone else. We also tape the interviews and have them transcribed, but we will not label your transcript with your name or with any other information that would identify you. Are you okay with that?

Do you have any questions before we begin?

CURRENT FINANCIAL SITUATION

How are you feeling about your financial situation in general these days? [PROBE: stable, unstable, somewhere in-between?]

Is it better, worse, or about the same as it was one year ago? Five years ago?

How do you explain the changes in your situation? [PROBE for specifics.]

Is your financial situation today what you expected it would be at this age and stage of your life?

- If NO, how do you account for the difference between your expectations and the reality of where you are now?

Let's talk a bit about banks.

Whether you have a bank account now or you had one in the past, how satisfied are you (or were you) with your bank? [PROBE for service, cost, transparency, and so on.]

Would you recommend your bank to a friend or colleague? Why or why not?

If you could change anything to make your bank work better for you, what would it be?

PAYDAY LOAN USE

You've taken out at least one payday loan in the past year, correct? How satisfied were you or are you with your payday lender? [ASK if they have used more than one lender and, if they have, get them to talk about the differences.]

Would you use the lender(s) again?

- If YES, why?
- If NO, what would you do instead?

People seem to have different opinions about whether payday loans are helpful or harmful. What do you think?

Some people think the only people who use payday loans are low-income, but we learned from our survey that a lot of people who take out these loans make over $45,000 per year. Are you in that category? [This group should say YES.]

Why do you think so many people who are not low-income are taking out these loans? [Try to get them to talk about their own situation.]

OTHER SOURCES OF CREDIT

Have you taken out loans for small amounts of money (under $500) in other ways (besides payday loans)? [PROBE: Borrow from family and friends, pawnshop, auto title lender, line of credit?]

How would you describe the tradeoffs between these different ways of borrowing — which one or ones do you prefer? How do you decide to use one instead of another?

Have you borrowed from friends/family?

- If YES, has the borrowing had an effect on your relationships with those people/that person? [PROBE for details.]

Almost half of all people living in the United States recently reported that they could not come up with $2,000 in case of an emergency. Could you? How about $500?

What would you do if you absolutely needed to get that money? Where would you get it from? Or where do you go when you are short on cash? [PROBE for the pluses and minuses of each source: credit cards, family and friends, payday loans, etc.]

We want to know how people rank various sources of financial help (borrowing from family or friends, using a credit card, using a payday loan, or something else), whether they see each as an option, and why they make the choices they do. Can you talk about that? [This question is somewhat repetitive of the preceding question about sources of credit they've used, but sometimes it helps to pose the same question in a different way.]

DEBT

Have you ever felt like you were stuck in debt that you could not get out of?

- If YES, how did that situation happen?
- If YES, if you were able to get out of it eventually, how did you do it?

If you're still in that situation, how are you dealing with it now?

INCOME AND EXPENSES

How predictable is the money that comes into your household? Do you have a good sense of how much money you will make each week?

- If NO, why not?
- If NO, is that unpredictability something new? Or has it been part of your financial situation for a long time?
- If NO, how does unpredictability affect you? [PROBE: ability to budget and plan, save? Need for short term small dollar credit? Stress and anxiety?]

CREDIT SCORE

Financial institutions like banks and payday lenders often use your credit score to decide whether you qualify for a loan or a credit card. Do you know what your credit score is?

- If YES, has it gone up, gone down, or stayed the same over time? What about within the past year?
    - If it has gone up or down, do you know why it has changed? [PROBE: haven't paid bills on time, lost job, etc.]
- If YES, (or if they have a general idea), is your score considered "good" or "bad"?
- Do you think your credit score is a fair representation of your ability to pay back a loan? Why or why not?
- Has your credit score ever kept you from doing anything? [PROBE: getting a job, renting an apartment, taking out a loan, getting a credit card, etc.?]

FUTURE FINANCIAL GOALS

When you think about your financial situation in the future, what are you hopeful about?

What are you most worried about?

Lots of people think of the American dream as the ability to get a good job and have enough money to support a family, buy a home, save for retirement, and send your kids to college.

- Is that version of the American dream attainable to you? Do those goals seem realistic to you?
- Do you define the American dream differently?

What are your financial goals?

Are your goals attainable if things stay the same for you as they are now?

What would have to change for you to be able to attain your goals?

Is there anything I didn't ask that you think I should know? Anything related to your financial situation?

Do you have suggestions on ways banks or policymakers can make it easier to improve credit options? Help you achieve your financial goals?

Do you have any final thoughts or questions before we wrap up?

Thank you very much for your time.

[CONFIRM EMAIL ADDRESS FOR SENDING GIFT CARD.]

APPENDIX

E

Glossary of Terms Used in This Paper

Auto finance lender. Lenders who offer loans to purchase motor vehicles.

Current. When a borrower has made all payments toward a loan on time.

Charge off. When a loan is written off by a lender because the lender believes that the money the borrower owed is unlikely to be collected. Charged-off loans are sometimes given over to collections agencies. Borrowers are still responsible for the amount owed even after a loan is charged off.

Default. When a borrower is delinquent on a loan (that is, is late on a payment, has a loan in collections, or has a loan that was charged off).

Hybrid state. States that "have relatively more exacting requirements, with at least one of the following three forms of regulation: (1) rate caps, usually around 10 percent of the borrowed principal, which are lower than most states but still permit loans to be issued with triple-digit APRs; (2) restrictions on the number of loans per borrower, such as a maximum of eight loans per borrower per year; or (3) allowing borrowers multiple pay periods to repay loans." (This definition comes from The Pew Charitable Trusts' categorization of states based on the level of payday loan regulation and usage.)[1]

Installment loan. Loans that are paid back over time with multiple payments (often made over several months) that range in amounts from hundreds to thousands of dollars.[2]

Late payment. When a borrower fails to make one or more payments toward a loan on time.

Offshore lender. Lenders outside of the United States who offer payday loans to borrowers within the country.

Payday loan. Short-term, high-interest, single-payment loans with repayment due at the time of the borrower's next payday.[3] Offered both online and at storefronts.

Permissive state. States that "are the least regulated and allow initial fees of 15 percent of the borrowed principal or higher." (This definition comes from The Pew Charitable Trusts' categorization of states based on the level of payday loan regulation and usage.)[4]

Rent-to-own lenders. Lenders who offer loans where borrowers make regular payments to lease property (for example, a car or a house), with the option to purchase the property at some point.[5]

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1 The Pew Charitable Trusts (2014b).

2 Consumer Financial Protection Bureau (2015).

3 Consumer Financial Protection Bureau (2015).

4 The Pew Charitable Trusts (2014b).

5 Richardson (2010).

Restrictive state. States that "either do not permit payday lending or have price caps low enough to eliminate payday lending in the state." (This definition comes from The Pew Charitable Trusts' categorization of states based on the level of payday loan regulation and usage.)[6]

Rollover (also called a renewal). The payment of a fee to delay repayment of the loan.

Skip trace lender. Organizations that purchase debt from lenders and seek to locate individuals for loan repayment.

Small-dollar credit. Payday, pawn, deposit advance, auto title, and installment loans that are typically under $5,000.[7]

State-licensed lender. Payday lenders who are licensed with the state to do business in that state. This license applies to both storefront and online payday lenders. These lenders must abide by the rules and offer the protections guaranteed by the state in which they are licensed.[8]

Strict-definition payday loan. Loans in the Clarity database that (1) were coded as "Internet payday loans" or "storefront payday loans"; (2) had an original loan term indicating only one payment; (3) had an original scheduled payment amount greater than the loan amount; and (4) had a due date less than 31 days after the loan was taken out.

Subprime borrowers. Borrowers who have weak credit histories and reduced repayment capabilities. These borrowers may have a history of payment delinquencies (including charge offs), low credit scores (usually below prime, or below 650), or high debt-to-income ratios, among other characteristics.[9]

Tradeline. A distinct loan or other financial product, as defined in the Clarity administrative records.

Tribal lender. Lenders affiliated with Native American tribes who offer payday loans. Tribal lenders are not subject to the same regulations as traditional payday lenders.

6 The Pew Charitable Trusts (2014b).

7 Center for Financial Services Innovation (n.d.).

8 Consumer Financial Protection Bureau (n.d.).

9 Federal Deposit Insurance Corporation (2015).

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ABOUT MDRC

MDRC IS A NONPROFIT, NONPARTISAN SOCIAL AND EDUCATION POLICY RESEARCH ORGANIZATION DEDICATED TO learning what works to improve the well-being of low-income people. Through its research and the active communication of its findings, MDRC seeks to enhance the effectiveness of social and education policies and programs.

Founded in 1974 and located in New York City and Oakland, California, MDRC is best known for mounting rigorous, large-scale, real-world tests of new and existing policies and programs. Its projects are a mix of demonstrations (field tests of promising new program approaches) and evaluations of ongoing government and community initiatives. MDRC's staff bring an unusual combination of research and organizational experience to their work, providing expertise on the latest in qualitative and quantitative methods and on program design, development, implementation, and management. MDRC seeks to learn not just whether a program is effective but also how and why the program's effects occur. In addition, it tries to place each project's findings in the broader context of related research — in order to build knowledge about what works across the social and education policy fields. MDRC's findings, lessons, and best practices are proactively shared with a broad audience in the policy and practitioner community as well as with the general public and the media.

Over the years, MDRC has brought its unique approach to an ever-growing range of policy areas and target populations. Once known primarily for evaluations of state welfare-to-work programs, today MDRC is also studying public school reforms, employment programs for ex-offenders and people with disabilities, and programs to help low-income students succeed in college. MDRC's projects are organized into five areas:

- Promoting Family Well-Being and Children's Development
- Improving Public Education
- Raising Academic Achievement and Persistence in College
- Supporting Low-Wage Workers and Communities
- Overcoming Barriers to Employment

Working in almost every state, all of the nation's largest cities, and Canada and the United Kingdom, MDRC conducts its projects in partnership with national, state, and local governments, public school systems, community organizations, and numerous private philanthropies.