

# Consumer Borrowing After Payday Loan Bans

Neil Bhutta, Jacob Goldin, Tatiana Homonoff\*

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## Abstract

High-interest “payday” loans have proliferated in recent years. Using new data from the Current Population Survey and the Federal Reserve Bank of New York’s Consumer Credit Panel, we exploit state-time variation in payday lending laws to study the effect of payday loan restrictions on consumer borrowing. We find that although such policies are effective at reducing payday lending, consumers respond by shifting to other forms of high-interest short-term credit such as pawn shop loans. We find no effects on the usage of traditional forms of credit, such as credit card debt. Our results shed light on the mechanisms by which payday loan access affects borrowers’ financial well-being and suggests that legislative efforts to address payday lending in isolation may not reduce the extent to which consumers rely on short-term high-interest credit products.

## Introduction

The payday lending industry has received widespread attention and intense scrutiny in recent years. Payday loans – so-called because the loan is generally due on the date of the borrower’s next paycheck – are typically quite expensive. The APR associated with such loans commonly reaches triple digits. Despite their costs, payday loans have skyrocketed in popularity since the 1990s, with the number of payday loan stores more than doubling between 2000 and 2004. As of 2010, there were more payday

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\*Bhutta: Federal Reserve Board. Goldin: Department of Economics, Princeton University, Industrial Relations Section, Firestone Library, Princeton, NJ 08544-2098 (email: jgoldin@princeton.edu). Homonoff: Department of Policy Analysis and Management, Cornell University. We gratefully acknowledge Will Dobbie, Henry Farber, David Lee, Alex Mas, Paige Skiba, Jeremy Tobacman, and participants in the Industrial Relations Sections Seminar at Princeton University, for conversations and suggestions that have greatly improved the quality of this project. All errors are our own.

loan stores in the United States than there were Starbucks and McDonald's combined (Skiba and Tobacman, 2009).

Because of their high interest rates, many criticize payday loans as predatory lending. Payday lenders, critics allege, target low-income borrowers who are so desperate for funds that they are willing to pay exorbitant interest rates. Critics also argue that the structure of the loans exploits consumer by masking the true cost of borrowing. Those on the other side of the debate defend the high interest rates by pointing out the cost of lending to high-risk borrowers and by emphasizing the value to low-income households of having access to (even expensive) credit. Advocates of payday lending also claim that restricting access to payday loans would simply shift consumer borrowing to other even more expensive forms of credit, such as bounced checks and late fees on bills.

Despite the attention paid to payday lending in recent years, the policy discussion has been hampered by a lack of empirical research on many of the most basic questions about demand for payday loans. Few datasets measure payday loan use and those that do are typically too small in sample size or too limited in question scope to answer many of the important questions for policy. Moreover, it is difficult to find plausibly exogenous variation in payday loan usage – those who use payday loans are likely to be different in unobservable ways from those who do not. Consequently, important basic questions about payday lending remain unanswered.

In this paper, we attempt to shed light on one of the most basic but unknown questions concerning payday loan usage and regulation: how does consumer borrowing behavior change when consumers lose access to payday loans? Understanding the effect of payday loan bans on borrowing behavior is important for several (related) reasons. On a practical level, knowing the answer to this question is crucial for policymakers considering whether and how to regulate payday lending. If payday lending bans simply shift borrowing to other expensive forms of credit, attempts to deal with payday loans in isolation may be ineffective or even counterproductive. Second, understanding how borrowing behavior changes after payday loan bans sheds light on the nature of demand for payday loans in areas where such loans are available. For example, if payday loans are substitutes for other expensive credit sources, it suggests that the underlying cause of payday borrowing is a general desire (whether rational or not) for short-term credit, rather than some feature unique to the design or marketing of payday loans. Finally, understanding the effects of payday loan bans on a proximate outcome (i.e. borrowing behavior) sheds light on the large body of research linking

payday loan access to other outcomes (e.g. credit scores, bankruptcies). Along the same lines, simply measuring the extent to which payday lending restrictions affect the amount of payday lending that occurs is currently an important unknown. Consumers in states that prohibit payday lending may borrow from stores in other states, may borrow online, or may find lenders willing to skirt the law. Understanding the change in payday lending associated with such bans is crucial for assessing and interpreting much of the existing payday lending literature that link payday loan laws to other financial outcomes.

In this paper, we take advantage of two recent developments to study this question. The first is the availability of a new data set: the Federal Deposit Insurance Corporation's National Survey of Unbanked and Underbanked Households, a supplement of the Current Population Survey (CPS). The survey is large, nationally-representative, and contains detailed information about consumer borrowing behavior. We supplement this survey with data on traditional credit product usage from the Federal Reserve Board of New York. The second development we take advantage of is the fact that a number of states have prohibited the use of payday loans in recent years. Through a simple difference-in-difference design, we exploit this policy variation to study the effect of changes in consumer access to payday loans between states over time.

We find that payday loan bans do not reduce the number of individuals who take out alternative financial services (AFS) loans. Although payday loan use declines following the bans, that reduction is offset by an increase in the amount of borrowing from pawn shops. We also document that payday loan bans are associated with an increase in involuntary closures of consumers' checking accounts, a pattern that suggests consumers may substitute from payday loans to other forms of high interest credit such as bank overdrafts and bounced checks. In contrast, payday loan bans have no effect on the use of traditional forms of credit, such as credit card and consumer finance loan use. Finally, our results suggest that those who turn to pawnshop loans following payday loan bans do so because they lack access to small loans from traditional banks.

The paper is structured as follows. Section I provides background on various forms of alternative financial services. Section II reviews state regulations of these credit products. Section III reviews the literature on the relationship between payday loan access, financial well-being and the use of alternative financial services. Section IV describes the data sources used in the empirical analysis and Section V presents the results. Section VI concludes.

# I. Background on Alternative Financial Service Credit Products

## A. Alternative Financial Service Credit Products

Alternative financial service (AFS) is a term used to describe credit products and other financial services operating outside the traditional banking systems. Many AFS credit products are high-interest loans that are taken out for short time periods. AFS credit products include payday loans, pawnshops loans, rent-to-own loans, and overdraft services.<sup>1</sup> The following section briefly describes these products.<sup>2</sup>

### 1. Payday Loans

Payday loans are unsecured small-dollar short-term consumer loans. To obtain a loan, customers provide lenders a post-dated check (or authorize a delayed debit) for the loan's principal plus a fee that depends on the amount borrowed. The date of the loan maturity is pre-determined with a standard loan length of two or four weeks, often corresponding with the customer's next "payday." The majority of loans range from \$100 to \$500 with an average loan amount of \$375 (Stephens (2011)). Typical loans carry a financing charge of \$15 for each \$100 borrowed over a two-week period, which translates to an APR of just under 400 percent. If a customer is unable to pay back the loan at the agreed-upon date, she may rollover the loan for an additional fee, take out a new loan to cover the previous loan, or default on the loan. While payday loans are marketed as short-term credit, the average customer holds a payday loan for five months (Pew (2012)).

To obtain a loan, customers must provide the lender with income verification and verification of a current checking account. However, payday lenders typically do not take customers' credit scores into account when making lending decisions. Instead, lenders typically consider potential borrowers' Teletrack scores, which measure whether the potential customer has a history of writing bad checks Skiba and Tobacman (2009). As a result, payday loans may be an attractive credit product for individuals whose credit history disqualifies them from other credit sources.<sup>3</sup>

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<sup>1</sup>The term also encompasses other loan types, such as auto title loans and income tax refund anticipation loans.

<sup>2</sup>More detailed descriptions of the industry are available in Caskey (1994) and Drysdale and Keest (2000).

<sup>3</sup>Interestingly, despite being unsecured, Dobbie and Skiba (2013) find that payday loan borrowers are *less* likely to default on larger loans.

## 2. Pawnshop Loans

Pawnshops have been a source of credit for centuries, but have seen a steady increase in recent decades. The number of pawnshops in the United States increased from around 5,000 in 1985 to 9,000 in 1992 (Caskey (1994)) and is currently estimated at just over 12,000 storefronts (Carter (2012)).

Pawn loans are also small-dollar short-term loans, but unlike payday loans, pawn loans are secured by physical collateral. Customers provide the lender with tangible personal property, such as electronics or jewelry, and, in return, receive a cash loan based on the value of the collateral. The size of the pawn loan is typically only a fraction of the assessed value of the collateral, ensuring that the loan is more than fully secured.<sup>4</sup> Because pawnshop borrowers are not required to demonstrate a bank account or a regular source of income, they are accessible to a wider population than payday loans.

The average pawn loan is around \$100, much smaller than the average loan received from a payday lender. Pawn loans usually have a term of one month and an average fee of \$20 for each \$100 borrowed, which translates to an APR of about 250 percent (Avery and Samolyk (2011); Drysdale and Keest (2000)).<sup>5</sup> If a pawnshop customer is not able to repay his loan, he forfeits the pawned item to the lender who can resell it.

## 3. Rent-to-Own Loans

Unlike payday or pawn loans, rent-to-own stores do not provide cash loans; instead, they allow customers to purchase items on credit. The customer receives the item – typically durable goods such as electronics, furniture, or appliances – for immediate use from one of the 8,000 stores around the country (Czerwonko (2013)). The cost of purchasing the item on credit is substantially greater than the cost of similar items purchased directly. The implied APR varies by good and by store, but have been estimated to be as low as 57 percent (Czerwonko (2013)) and as high as 230 percent (Zikmund-Fisher and Parker (1999)). Like pawn loans, rent-to-own loans are secured: if a customer misses a payment, the lender has the right to repossess the purchased item.

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<sup>4</sup>Prager (2009) reports that the loan amount offered ranges between 25 and 65 percent of the estimated resale value of the collateral provided by the customer.

<sup>5</sup>However, the interest rates on pawnshop loans can be much lower depending on state regulations (Prager (2009)).

#### **4. Overdraft Protections**

In addition to turning to one of the AFS lenders described above, many traditional banks offer overdraft services to their checking account customers. When an account-holder writes a check or authorizes a debit for an amount that exceeds her account balance, the bank may allow an overdraft to occur. In that case, the bank allows the payment to proceed (as if the customer had sufficient funds), but charges an overdraft fee in addition to requiring repayment of the overdrafted amount. Overdraft protection is quite expensive, even when compared to other AFS credit products. The implied interest rates and fees associated with overdraft loans typically exceed the interest charged by payday lenders for small loans.

#### **5. Other Forms of Non-Traditional Credit**

In addition to the formal types of credit products described above, individuals may borrow against the future by delaying payments that come due. For example, consumers may delay paying utility bills or write checks that they expect to bounce. Of course, borrowing in such forms is far from costless: paying utility bills behind schedule typically triggers expensive late fees, may adversely affect the borrowers' credit score if the debt is sold to a collection agency, and banks may fine consumers who write checks that bounce. Additionally, banks will generally close the accounts of borrowers who engage in too many overdrafts or non-sufficient funds activity Campbell, Martinez-Jerez and Tufano (2012).

### **B. Traditional Credit Products**

We define traditional credit as products such as credit cards and small personal loans issued by mainstream banks, finance companies and retailers that participate in national credit reporting systems. Bank-issued general-purpose credit cards are the most common form of such credit, and allow individuals with existing credit lines to quickly borrow small amounts. According to data from the Federal Reserve, the average annual interest rate on card accounts assessed interest has been in the range of 13 to 14 percent in recent years, but for riskier individuals, posted rates are often as high as 20 to 30 percent. In addition, for certain transactions such as cash advances there may be additional fees (e.g., three percent of the amount advanced). Individuals with very low

credit scores (e.g. a FICO score in the low 500s or lower) due to a recent default may have trouble obtaining new card accounts, but still would be able to access existing revolving accounts that were opened when their financial standing was better.

### **C. Substitution Among Credit Products**

Because of the differences in their designs, various credit products may or may not be substitutes for one another for non-regulatory reasons. First, some borrowers may be willing to pay the interest required to take out certain types of loans, but not others. For example, pawn shops require borrowers to risk losing ownership of a valuable possession – some borrowers may be unwilling to do so. Second, some borrowers may not be eligible for all types of loans. Traditional bank loans and credit cards have credit score eligibility cut-offs, which some borrowers cannot meet. Likewise, using overdraft protection services requires a bank account and taking out a payday loan requires both a bank account and a relatively steady income source. Finally, even for borrowers who enjoy access to more than one type of loan, the net effects of restricting that access on consumer demand may be ambiguous. For example, as discussed below, borrowers who are denied payday loans may turn to pawn shop loans as an alternative source of short-term credit. On the other hand, borrowers who do use payday loans may end up taking out pawn shop loans to help meet their payday loan payments.

## **II. The Regulation of Payday Loans and Other High-Interest Credit Products**

State regulation of payday lenders has evolved dramatically in recent years. Although most states have strict usury laws that limit the allowable APR of cash loans to well below the amount typically charged for payday loans, many of those states have special carve-outs for payday loans. In addition, until 2005, payday lenders were able to exploit a loophole in national banking law that allowed them to operate in even those states that did prohibit payday loans.<sup>6</sup> Today, state regulations of payday

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<sup>6</sup>Specifically, payday lenders could take advantage of the Supreme Court's 1978 Marquette decision, which held that banks were governed by the usury law of the state in which they were chartered, rather than the laws of the states in which they operated (Schiltz 2004). Payday lender partnered with banks chartered in states with permissive usury laws to serve as the "loan originator" in states in which payday lending would otherwise be prohibited. This loophole was closed by the Office of the Comptroller of the Currency, which regulates federally-chartered banks, in

lenders take on a variety of forms. While some states explicitly ban payday loans through usury laws or racketeering violations, other states have adopted regulations that effectively ban payday loans by limiting interest below the rate at which payday lenders are willing to operate Skiba (2012).<sup>7</sup> As of January 2006, the start of the period covered by our data, 11 states and the District of Columbia prohibited the use of payday loans (either directly, through bans, or indirectly, through regulation).<sup>8</sup>

Between 2006 and 2012, five jurisdictions changed their policies regarding the regulation of payday loans. In January 2008, the District of Columbia effectively banned payday loans by prohibiting lenders from charging interest rates in excess of 24 percent APR. In November 2008, the Arkansas Supreme Court ruled that the Check Cashers Act of 1999, which originally allowed payday lenders to charge high fees for loans in place of interest, violated the state constitution’s interest rate cap of 17 percent. In March 2009, New Hampshire passed a law limiting rates on payday loans to 36 percent APR. Arizona originally exempted payday lending from the state’s 36 percent APR interest rate cap; however, this law was allowed to sunset, making payday loans illegal as of July 2010. Finally, in November 2010, voters in Montana approved a ballot initiative that capped interest rates on payday loans at 36 percent APR.<sup>9,10</sup> Figure 1 provides a map of payday lending laws by state.

Other AFS credit products are subject to state regulation. In particular, states may regulate both the loan length and the interest that can be charged on a pawn loan. Many states have no fee limits, while other states have limits as low as \$2 per \$100 for a two-week loan; however, unlike payday lenders, pawn shops continue to operate in states with even the most restrictive policies. In contrast, rent-to-own stores are often able to avoid state regulations on APR disclosure requirements

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2001, and the Federal Deposit Insurance Corporation, which regulates state-chartered banks, followed suit in 2005. See Hawkins and Mann (2007) and Hynes (2012).

<sup>7</sup>For example, after Oregon passed a law limiting the fees associated with loans under \$50,000 to \$10 per \$100, less than a quarter of the payday lending outlets in the state remained a year later (Zinman (2010)).

<sup>8</sup>These states include Connecticut, Georgia, Massachusetts, Maryland, Maine, North Carolina, New Jersey, New York, Pennsylvania, Vermont, and West Virginia.

<sup>9</sup>States that allow payday lenders differ in the extent to which payday loans are regulated. In particular, 25 states limit the number of times that borrowers may “roll-over” their loans (Carter (2012)). The Federal Truth in Lending Act imposes additional disclosure requirements, such as requiring payday lenders to disclose the interest rate as an APR.

<sup>10</sup>In addition to the policy changes that we classify as payday lending bans (listed in this paragraph), several other states changed their rules regarding payday lending during our sample period. Both Oregon and Colorado tightened their restrictions on payday lenders – Oregon in 2008 and Colorado in 2010 – but continued to allow payday lenders to operate and to charge relatively high interest rates. In 2008 Ohio passed legislation prohibiting payday loans but various reports suggest that the ban was not actually enforced (Pew (2012)). To isolate the effects of payday loan bans, we drop these three states from the analysis. Our classification of state policies matches the states identified by Pew (2012) as moving from “permissive” to “restrictive” in their treatment of payday lending during our sample period.

or interest rate caps on the grounds that the contracts signed by customers are terminable-at-will. Several states have passed legislation regulating disclosure on rent-to-own merchandise including the cash price and the total cost to own (Czerwonko (2013)). There were no major changes in pawn or rent-to-own loan regulations at the state level during our sample period.

### **III. Prior Literature**

This section briefly reviews the rapidly growing literature on payday lending. Although data availability has limited the types of questions that can be investigated, prior research has yielded a number of important insights into payday loan usage.

#### **A. The Effect of Payday Loan Regulations on Payday Loan Use**

While data on the use of payday loans is limited, a small number of papers estimate the effect of payday loan restrictions on usage rates. Chanani (2011) and Pew (2012) investigate cross-state variation in interest rate caps and finds that these restrictions reduce payday loan usage. Carter (2012) documents a similar pattern with respect to laws limiting payday loan rollovers. Zinman (2010) uses a difference-in-differences design to investigate changes in borrowing behavior in Oregon following that state's prohibition of payday lending.<sup>11</sup> Using a neighboring state as a control, Zinman finds that Oregon residents were approximately 30 percent less likely to use a payday loan in the immediate aftermath of the prohibition.

#### **B. The Effect of Payday Loan Regulations on Financial Well-being**

From a theoretical perspective, the effect of payday loan access on economic well-being is ambiguous. Neoclassical models suggest that consumers use payday loans when they are preferable to the available alternatives. Such models imply that restricting access would make consumers worse off. On the other hand, behavioral models of payday loan use imply that present-bias, over-optimism, or other cognitive biases induce consumers to take out payday loans when doing so is sub-optimal, as judged by their own preferences. If such models accurately describe behavior, restricting access to payday loans could actually make consumers better off.

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<sup>11</sup>The law considered in Zinman (2010) is the interest rate cap in Oregon mentioned in Section II. Classifying the Oregon policy change as a ban generates nearly identical estimates to those presented in this paper.

The empirical literature on the link between payday loan access and financial well-being comes to mixed conclusions. A number of papers find evidence that payday loan access improves financial outcomes. For example, Morgan, Strain and Seblani (2012) find that payday loan access is associated with lower rates of bankruptcy. Similarly, Morse (2011) suggests that individuals are less likely to foreclose on their homes if they have access to payday loans.

In contrast, several papers find that access to payday loans exacerbates borrowers' financial difficulties. Skiba and Tobacman (2009) exploit a discontinuity in payday loan eligibility and find that payday loan access increases the likelihood of declaring bankruptcy. Carrell and Zinman (2014) find that a law that restricted access to payday loans among military personnel led to an increase in job performance among Air Force members. Melzer (2011) identifies the effect of payday loan access by comparing individuals living in states that prohibit payday loans but differ in their proximity to a neighboring jurisdiction where payday lending is legal. Melzer finds that access to payday loans is associated with worse outcomes along a variety of measures of economic hardship, such as difficulty paying bills, food security, and postponing medical care due to costs. Hynes (2012) investigates the relationship between payday loan legality and bankruptcy and reports mixed evidence, with the results varying by identification strategy. Lefgren and McIntyre (2009) find that state variation in payday loan legality does not explain much of the state-by-state variation in bankruptcy filing rates. Finally, two recent papers, Bhutta (2013) and Bhutta, Skiba and Tobacman (2014) find that access to payday loans (at either the individual or state level) appears to have little to no long-term effect on consumers' credit scores.

## **C. The Effect of Payday Loan Regulations on Usage of Other Credit Products**

### **1. Alternative Financial Services**

A number of papers have studied the interaction between payday loan access and the usage of other high interest products. Skiba and Tobacman (2007) presents mixed evidence concerning the substitutability between payday and pawnshop loans. They find that individuals who are barely denied payday loans due to low credit scores are more likely to take out a pawn loan within the next two days. However, such individuals do not appear any more likely to use pawn loans in the future. Turning to borrowers who do use payday loans, Carter (2012) finds that such borrowers

are more likely to also use pawnshops when their state does not limit payday loan roll-overs. She interprets this pattern as evidence that payday borrowers use pawn loans to pay off the interest on their payday loans in order to roll the loan over, rather than default. Carter and Skiba (2011) provide further support for this theory by presenting evidence that payday loan customers who take out a pawn loan within one day of their payday loan due date are more likely to rollover their payday loan. Although these studies help explain patterns of use in states where both payday and pawn loans are legal, they do not address the question of how pawnshop borrowing responds when access to payday loans is restricted statewide.

Evidence on the relationship between payday loan and overdraft use is similarly mixed. Zinman (2010) finds that residents of states that restricted payday loans were more likely to bounce checks after the ban. Morgan, Strain and Seblani (2012) and Melzer and Morgan (2009) find similar results for overdraft fee income at banks. However, Campbell, Martinez-Jerez and Tufano (2012) finds that a payday loan ban in Georgia led to a reduction in involuntary checking account closures, an outcome that is closely associated with bouncing too many checks.

Thus the current literature yields a somewhat conflicting view of the relationship between payday loans and other AFS credit products. Particularly for pawn loans, evidence exists that consumers turn to pawn loans as complements to payday loans (at least in states that allow rollovers). On the other hand, some studies suggest that consumers turn to other forms of high interest credit (e.g. overdrafts and bounced checks) when they lose access to payday loans, while other research suggests the opposite.

Our paper builds on this literature by drawing on a nationally-representative dataset that includes information about multiple forms of borrowing behavior that may plausibly be important substitutes for payday loans. In particular, our data captures AFS credit usage at the individual level, even when the loans are taken out from multiple lenders. Additionally, as described in the next section, a useful feature of the CPS data is that it contains information on consumers' motivations for using AFS credit products, which will help provide a more nuanced view of the ways in which payday loan regulations shape consumer borrowing behavior.

## 2. Traditional Credit

Traditional credit products have considerably lower interest rates than payday loans and other AFS products, however, they often have stricter requirements and loan size limits. Therefore, standard economic models would predict that consumers would only use payday loans if they had exhausted the limits of or were never eligible for these cheaper traditional loans. However, survey data indicate that some payday loans users might switch to bank loans or credit cards if payday loans did not exist (Pew (2012)). A preference for payday loans over traditional credit sources could reflect some perceived non-price advantage of payday loans. For example, payday lenders may be more convenient or comfortable for certain populations. Additionally, payday loan use is not reported on credit reports, which could appeal to some customers. Alternatively, choosing a payday loan over a credit card could reflect confusion or a lack of awareness about relative prices. For example, payday loan prices are typically quoted as a two-week rate (e.g., 15 percent) whereas credit card interest rates are quoted as an annual rate that is numerically similar, and thus consumers may believe that the prices for these products are comparable (Agarwal et al. (2006); Pew (2012)).

In spite of the survey evidence suggesting that payday loans may, in fact, be substitutes for traditional credit products rather than a strictly inferior alternative, few studies have analyzed whether payday loan customers shift toward the use of credit cards or other traditional credit products when access to payday loans is limited. Agarwal, Skiba and Tobacman (2009) find that payday loan users have significant liquidity remaining in their credit card accounts on the day of the loan, suggesting that payday loan users have option of switching to traditional credit sources if payday loan access was suddenly limited. However, Bhutta, Skiba and Tobacman (2014) find, using different data, that most customers exhaust their credit supply at the time of their first payday loan application. Our paper adds to this literature by measuring whether the use of three traditional credit products – credit card debt, retail card debt, and consumer finance loans – increases after a state bans payday loans.

## IV. Data

Our primary data source for this paper comes from the FDIC’s National Survey of Unbanked and Underbanked Households.<sup>12</sup> This survey was conducted by the U.S. Census Bureau as a supplement to the Current Population Survey (CPS). To date, two rounds of the survey have been collected, one in January 2009 and one in June 2011.<sup>13</sup> The supplement contains a nationally-representative sample of 46,547 households in the 2009 survey and 45,171 households in the 2011 survey.

The supplement questionnaire contains questions regarding a household’s connection to traditional banking systems, use of alternative financial services, and reasons for being unbanked or underbanked. Survey participants were asked whether anyone in the household had used a payday loan, sold items at a pawn shop, or leased merchandise from a rent-to-own store in the past year.<sup>14</sup> For the 2009 supplement, we categorize a household as having used a payday loan in the past year if they responded to the question “How many times in the last 12 months did you or anyone in your household use payday loan or payday advance services?” with a non-zero answer. Similarly, we categorize a household as having used a pawnshop or rent-to-own in the past year if the response to the question “How often do you or anyone in your household sell items at pawn shops/[do business at a rent-to-own store]?” was “At least a few times a year” or “Once or twice a year”. In the 2011 supplement, a household is recorded as having used one of these alternative financial services products if they responded affirmatively to the question “In the past 12 months, did (you/or anyone in your household) have a payday loan/[pawn an item because cash was needed]/[have a rent-to-own agreement]?”

Unlike many other data sets that have been used to report patterns of borrowing behavior, the CPS supplement asks participants not only about use of high-interest credit, but also about their reasons for using these alternative financial services. Participants who reported using payday loans in the past year were asked why they chose to use these loans rather than a traditional bank loan; a similar question was asked of pawnshop users. In addition, customers who reported using any alternative financial service credit product in the past year were asked about the purpose of the

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<sup>12</sup>Unbanked households are defined as households without a checking or savings account. Underbanked households are those with a traditional bank account that also use alternative financial services.

<sup>13</sup>The CPS interviews each sample household for four consecutive months, waits eight months then interviews the household for a final four months. Because of this structure, no individual household appears in both supplements.

<sup>14</sup>Additionally, participants were asked about their use of refund anticipation loans; however the time period referenced in the survey question was not consistent across years, so cannot be used in our main analysis.

loan.

To investigate the impact of payday loan bans on traditional forms of credit, we use data from the Federal Reserve Bank of New York’s Consumer Credit Panel/Equifax (CCP). The CCP is a nationally-representative longitudinal database with detailed information on consumer debt at a quarterly frequency derived from consumer credit records maintained by Equifax, one of the nation’s three major credit bureaus. The data used in this paper is a two percent sample of the CCP data, implying a 0.1 percent sample of the population. Quarterly data on individual credit card, retail card, and consumer finance loan balances are available from 2006-2012, yielding a sample of six million person-quarters. The sampling approach is designed to generate the same entry and exit behavior as present in the population, such that each snapshot continues to be nationally representative while, at the same time, changes in debt use for a given individual over time can be tracked.<sup>15</sup>

Both the CPS and CCP data includes information on the demographic characteristics of the sample individuals. The demographic data in the CPS data pertains to the household’s interview reference person and includes the individual’s gender, race, education, marital status, income, and employment. These demographic variables are used as controls in the regression analysis. While the CCP only contains information on the participant’s age, we are able to control for individual level fixed effects. These data sets also contain information on the location of each individual’s place of residence which can be used to link to data on local economic conditions. Data on real state income per capita comes from the Bureau of Economic Analysis and data on unemployment rates comes from the Bureau of Labor Statistics.

## V. Empirical Analysis

The following section examines the effect of the recent payday loan regulations described in Section III. Using data collected before and after the policy changes, we compare borrowing behavior in states that changed their payday loan regulations with borrowing behavior in states that did not.

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<sup>15</sup>For more information on the CCP, see Lee and van der Klaauw (2010). It is important to note that all individuals in the data are anonymous: names, street addresses and social security numbers have been suppressed. Individuals are distinguished and can be linked over time through a unique, anonymous consumer identification number assigned by Equifax. For information about Equifax, one of the three national consumer credit reporting agencies, see [www.equifax.com/home/en\\_us](http://www.equifax.com/home/en_us).

Because our analysis includes state fixed effects, our estimated coefficients are identified from changes in borrowing behavior between the two groups of states.

## A. Summary Statistics

### 1. Use of Alternative Financial Services

Table 1 reports descriptive statistics on the use of alternative financial services from the CPS supplement data. Column 1 reports lifetime usage rates: 4.1 percent used a payday loan, 6.8 percent used a pawnshop, and 4.3 percent purchased merchandise at a rent-to-own store. Overall, 11.7 percent used at least one of these three AFS products. Column 2 reports statistics on the use of the same credit products during the past 12 months. The table shows that an estimated 2.5 percent of the population used a payday loan in the past year. Comparing this quantity to Column 1 suggests that over half of the individuals who had ever used a payday loan in their lives used a payday loan at some point during the past year. A similar proportion of participants used either pawnshops or rent-to-own in the past year – 2.5 and 1.7 percent, respectively. Overall, 5.7 percent of participants used one of the AFS products in the past year.

Table 2 compares the characteristics of individuals who used AFS credit products during the previous year to other survey participants. Relative to the general population, users of AFS credit are more likely to be female, single, black, and young. These demographic patterns appear broadly similar across users of different types of AFS products. AFS users are also more likely to be socioeconomically disadvantaged in terms of income, education, and employment status; however, these characteristics do vary across the type of product used. Payday loan users, while still economically disadvantaged when compared to individuals who do not use AFS products, have more education than pawnshop or rent-to-own users and are less likely to be unemployed. This is likely due to the fact that payday loan customers are required to show proof of employment to obtain a loan.<sup>16</sup> Additionally, while the highest income individuals are less likely to use payday loans, payday loan usage is not concentrated among the lowest income individuals as with pawnshop and rent-to-own usage. Again, this is likely due to the differences in income requirements across the different products.

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<sup>16</sup>Note however that since the survey asks about payday loan use in the previous year, we may observe some currently unemployed participants reporting use of payday loans.

## 2. Use of Traditional Credit Sources

Table 3 provides summary statistics for three types of consumer debt: general purpose bank-issued credit card debt, retail store credit card debt, and consumer finance loans. Across all consumers and quarters, the average credit card balance is nearly \$3,691, with about 57 percent of observations having a positive credit card balance.<sup>17</sup> Because payday loan borrowers are most likely to be in the bottom end of the credit risk score distribution (see Bhutta, Skiba and Tobacman (2014)), we also restrict our analysis to the subset of consumers with an initial credit risk score below 600 since payday loan bans most directly affect this subgroup.<sup>18</sup> The average balance in this low score sample is \$1,667, and only 44 percent have a positive balance.

Retail card balances are much smaller, on average, than credit card balances, and far fewer individuals appear to use such cards. Interestingly, unlike with general purpose bank-issued credit cards, the usage statistics for the low-score sample are fairly similar to those for the broader sample of consumers – about a quarter of both groups use these cards with an average balance of about \$300 among those who do use them. Finally, consumer loans are relatively infrequent – 15 percent of customers in the full sample and 21 percent of customers in the low score sample use this type of loan – though the average balance among consumer loan users is significantly larger than with retail cards. Overall, two-thirds of the sample used at least one of the three types of traditional credit for an average balance of \$4,573. The fraction of individuals in the low-credit sample using at least one form of credit was almost as high as in the full sample (58 percent), though the average balance was only about half the size.

## 3. Motivations for AFS Credit Product Use

**i. Expenditures Financed with AFS Loans** Alternative financial service credit products are often marketed to be used as short-term solutions for emergency cash needs among liquidity-constrained individuals. Table 4 presents the reasons why AFS users report using these credit products. The most common reason cited for using an AFS loan was not to meet an emergency

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<sup>17</sup>Reported balances include both transaction or convenience-use balances and revolving balances.

<sup>18</sup>Credit risk scores for each individual are based on the Equifax 3.0 model, which is similar conceptually and numerically to the FICO score. The Equifax score ranges from 280 to 850, with higher scores associated with a lower expected likelihood of default. Initial score is defined as an individual's credit score as of the first quarter of 2006 or their first observed score.

need: almost half of AFS users (44 percent) reported using the loan to cover basic living expenses. An additional 5 percent reported using the loan to purchase luxury goods. Nineteen percent of customers used the loans to make up for lost income, 13 percent of customers used the loan for auto or home repairs, and 2 percent used the loan to pay for medical expenses.<sup>19</sup>

**ii. Motivation for Choosing AFS Loan Instead of Traditional Bank Loan** Traditional banks offer much lower interest rates on consumer loans than either payday lenders or pawnshops. However, payday lenders and pawnshops typically serve a low-income, high-risk population that may not be eligible for traditional bank loans and are, therefore, forced to use these high-interest loans due to lack of alternative forms of credit. Alternatively, these customers may have access to cheaper forms of credit, but find using payday lenders or pawnshops more appealing due to other factors such as convenience or ease of use. Column 1 of Table 5 presents the main reasons that payday loan customers report using a payday loan instead of a traditional bank loan.<sup>20</sup> Over half of customers report using a payday loan because the loan was easier or faster to obtain or because the storefronts had more convenient hours or location than traditional banks. Only 16 percent of customers reported that they did not qualify for a bank loan and 21 percent of customers used a payday loan because banks do not give small dollar loans. Column 2 shows that pawnshop customers report similar reasons for using a pawn loan rather than a traditional bank loan.

## **B. Econometric Analysis**

This section investigates the effect of recent changes in the regulation of payday loans on the use of payday loans and on the use of other forms of AFS credit. Our approach employs a difference-in-difference framework: we compare changes in states that change the legality of payday loans with changes in borrowing behavior in states that do not. Relative to much of the prior literature, this approach has the advantage of identifying the effect of payday loan regulation without relying exclusively on state variation in regulation at a single point in time, which may confound differences

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<sup>19</sup>These estimates are very similar to those found in the Pew Charitable Trust Small Dollar Loans data. That study found that 16 percent of payday loan customers used their first loan to cover unexpected expenses (such as car repair or medical expenses), while 69 percent used the loan to cover recurring expenses, including rent, groceries, utilities, car payments, and credit card debt (Pew (2012)).

<sup>20</sup>This table includes data from 2011 only, since the available categories for reasons a customer used a payday loan rather than a traditional bank changed across waves. The categories were consistent across waves for a similar question regarding reasons for using pawnshops; including data from 2009 yields qualitatively similar results.

in state by state borrowing behavior with differences in payday loan legality. The treatment effect we identify comes from comparing the four states who changed their payday loan regulations during our sample period; as discussed above, these states are quite demographically and geographically diverse. Like other difference-in-difference analyses, our identifying assumption is that absent the regulatory change, borrowing behavior would have evolved similarly in states that changed their law and in states that did not. By considering changes from multiple states, we are able to control for characteristics other than payday loan laws that could plausibly affect borrowing behavior and that vary across states over time, such as local economic conditions.

Our empirical specification takes the following form:

$$y_{ist} = \beta Ban_{st} + \phi Post_t + \delta_s + \gamma X_{ist} + \pi Z_{st} + \varepsilon_{ist}$$

The unit of observation is an individual  $i$  in state  $s$  in time period  $t$ . The dependent variable,  $y$ , is an indicator variable for having used a certain type of credit product in the last year,  $Ban$  is an indicator variable which takes a value of one if the individual lives in a state where payday loans were effectively illegal in the period at the time of the survey,  $Post$  is an indicator variable for being interviewed in the second wave of the survey,  $\delta$  is a set of state fixed effects,  $X$  is a set of individual-level covariates, and  $Z$  is a set of state-level controls.

## 1. The Effect of Payday Loan Bans on Payday Loan Use

As a first step in our analysis, we measure how stricter payday loan regulations affect payday loan use in the states where they are enacted. Although one would expect the effect to be negative, media reports and other authors have noted that compliance with the rules may be imperfect and that consumers may still be able to borrow online. Additionally, understanding the magnitude of the change in payday loan use is important for assessing and interpreting other results (both those reported here and elsewhere) concerning the effect of payday loan access on other outcome measures.

Table 6 presents the results of the analysis investigating the effect of the regulations on payday loan use.<sup>21</sup> Column 1 presents a bare-bones specification with controls for state, time-period, and whether the individual's state prohibits the use of payday loans. Using these limited controls,

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<sup>21</sup>We estimate demand for payday loans using a linear probability model; however, a probit model yields qualitatively similar results. For all specifications, we report standard errors clustered by state.

the model shows that payday loan usage is 2.4 percentage points lower in states that ban payday loans, a 74 percent reduction from the usage levels in states where the loans are legal. Column 2 adds individual-level demographic characteristics to the model, specifically: gender, race, marital status, education, age, income, and employment status. After controlling for these demographics, the size of the ban coefficient remains at 2.4 percentage points. Finally, because payday loan use may be correlated with the business cycle, it is important to control for local economic conditions. Column 3 (our preferred specification) adds controls for state unemployment and personal income per capita, as well as state population; with these additional controls the estimated effect of the ban is a 2.1 percentage point reduction in payday loan use. Across specifications, our model confirm the presence of a large reduction in payday loan usage following the adoption of restrictive state laws.

## **2. The Effect of Payday Loan Bans on Other AFS Credit Products**

The following section investigates how payday loan restrictions affect the use of other types of AFS credit products. If these other forms of high-interest credit are substitutes for payday loans, we would expect that individuals who previously used payday loans would switch to using one of the other AFS products after payday loans were banned. However, if these other forms of credit are complements to payday loans, for example, if payday loan customers take out a pawn loan to avoid defaulting on the original loan as suggested in Carter (2012), then we would expect to see a reduction in the use of pawn shops and rent-to-own. Additionally, differences between the credit products (e.g., that payday loans require a checking account or that pawn shop loans require collateral) may limit substitution between otherwise-similar types of loans.

Table 7 presents the results of these analyses. Column 1 presents estimates of the effect of payday loan regulations on usage of any AFS credit product (defined here as a payday loan, pawn shop loan, or a rent-to-own loan). The estimated point estimate is close to zero and statistically insignificant. Because we find that payday loan regulations are associated with a reduction in one type of AFS product (i.e. payday loans), this result suggests that usage of a different AFS product must have increased in an offsetting way. Indeed, as Columns 2 reveals, payday loan restrictions are associated with a positive and statistically significant effect on pawn shop loan usage – the estimated effect is 1.4 percentage points, a 51 percent increase from the mean usage rate in states where payday loans are legal. This finding suggests that consumers turn to pawn shop loans as

a substitute form of borrowing when payday loans are no longer available. In contrast, Column 3 shows that there is no such evidence of a shift to rent-to-own loans following the payday loan bans. The difference in substitutability between payday loans and these two alternative forms of credit may not be surprising since payday lenders and pawnshops both offer customers cash loans while rent-to-own outlets only offer credit for the purchase of very specific items. If payday customers use their loan for reasons other than the purchase of electronics, appliances, or furniture, then a rent-to-own agreement will be an unlikely substitute.

Although the CPS survey contains relatively direct data on the types of AFS products listed above, it also contains some information that can be used to study whether consumers substitute from payday loans to another form of high-interest credit: bank overdrafts. In particular, the survey asks respondents whether a bank has decided to close their checking account (involuntarily) during the prior 12 months. Because such closures are almost always triggered by the excessive use of bounced checks and overdrafts (Campbell, Martinez-Jerez and Tufano (2012)), we can investigate whether the payday loan bans are associated with increases in such activities. Table 8 documents that this is indeed the case. Involuntary checking account closures increase by 0.2 percentage points following payday loan bans. While small in terms of population size, this coefficient is quite large economically considering that just over 0.4 percent of our sample report ever experiencing an involuntary bank closure. Although banks may close consumers' checking accounts for reasons other than failure to pay overdrafts or too many bounced checks, the positive coefficient is consistent with consumers substituting to these high-interest credit devices when payday loans are no longer available.

### **3. The Effect of Payday Loan Bans on the Reasons for Using AFS Credit**

The results in the previous section suggested that although payday loan regulations reduced the usage of payday loans, many consumers turned to other forms of high interest credit. Despite the fact that the bans did not significantly reduce the overall proportion of individuals using AFS credit, those who shifted from payday loans to other AFS products may use the new loans to cover different types of expenses. For example, if customers are hesitant to risk losing personal items to a pawnshop, they may only use pawn loans to finance emergency expenses, rather than day-to-day consumption. Additionally, the average pawnshop loan is much smaller (only a quarter of the size)

of the average payday loan, so it may only be useful for covering small expenses.

Table 9 looks at consumers who use AFS credit products; it investigates whether payday loan bans change the types of expenditures such consumers finance with the AFS loan. The dependent variable in each regression is a binary indicator for whether an individual reports taking out an AFS loan to finance a particular type of expense. Each column shows the effect for a distinct category of expense. For most columns, the estimated effect of the ban is close to zero and statistically insignificant. However, the estimated treatment effect in Column 4 (probability of taking out an AFS loan for medical expenses) is positive and statistically significant. This result suggests that although payday loan bans may not affect the total number of individuals taking out AFS loans, those who continue to use AFS loans after a ban are more likely to use them for emergency expenses, such as medical bills.

Finally, we can gain some insights into the type of borrowers who substitute to pawn shops after payday loans are no longer available. Table 10 reports the effects of the payday loan ban on the number of pawn shop borrowers, broken down by the reason they report for using a pawn shop loan (as opposed to a traditional bank loan). The results show that the increase in pawnshop loan usage is driven by consumers who report turning to AFS credit because they are unable to take out a small loan from a traditional bank and those who do not qualify for traditional bank loans. Importantly, we see no change in the number of individuals who use a pawn shop loan because it is faster, more comfortable, or more convenient than a traditional bank loan.

#### **4. The Effect of Payday Loan Bans on Traditional Credit Use**

In this section, we test whether payday lending bans result in greater usage of credit cards and consumer loans using data from the FRBNY Consumer Credit Panel/Equifax (CCP). The econometric model is similar to the difference-in-differences model discussed above with a few key changes. First, the CCP data includes a very limited set of demographic characteristics, so  $X_{ist}$  now includes only age and age-squared. However, the panel structure of the CCP data allows us to follow the same individual over time; therefore, our model now includes individual fixed effects which capture all time-invariant individual characteristics. Additionally, while the CPS data used in the previous section provides annual credit use data at two points in time (2008 and 2011), the CCP data includes quarterly snapshots of credit use from 2006-2012 during which time four states and the District of

Columbia banned payday lending.<sup>22</sup> All regressions include quarter fixed effects. Lastly, we consider two outcome variables for each of the three credit types considered: an indicator variable for having a non-zero debt balance (extensive margin) and the log debt balance among users (intensive margin).

Table 11 provides estimates of the effect of payday loan bans on the use of credit card, retail card, and consumer loan debt. For each debt category, the outcome in the first column is credit use on the extensive margin while the second column refers to credit use on the intensive margin. For each of the three types of debt, on both margins, the point estimates are close to zero and insignificant. Similarly, when we look at the intensive margin in the bottom panel, the estimates are insignificant and close to zero, although we cannot rule out somewhat substantive intensive margin effects on retail card and consumer loan debt. Table 12 is analogous to Table 11, but uses the low-score sample, a population that more likely represents the typical payday loan user. As noted above, to the extent that payday loan demand is much higher within this population, substitution into credit cards and consumer loans as a result of payday loan bans may show up more clearly in these regressions. However, as in Table 11, the estimates both on the extensive and intensive margins are close to zero and insignificant.<sup>23</sup>

Overall, there is no evidence in these data that payday loan bans result in substitution into more traditional (and generally cheaper) forms of credit. We cannot determine if this is due to a lack of access to these traditional credit products among payday loan users or a distaste for credit card or consumer finance debt compared to payday loan use. However, the findings from Table 10 showed that a large fraction of the increase in pawnshop use was driven by individuals who did not have access to traditional bank loans, suggesting that payday loan customers may have exhausted or never had access to these traditional forms of credit.

## VI. Conclusion

This paper analyzes the effect of state-level payday loan restrictions on the use of payday loans and on borrowing behavior more generally. Our results suggest that these restrictions are effective at

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<sup>22</sup>The CPS data spans four of these policy changes: Arizona, Arkansas, New Hampshire, and Montana, but not the District of Columbia.

<sup>23</sup>Results are very similar if we limit the time period to 2008-2011, as in the analysis of the CPS data.

curbing the use of payday loans; on average, approximately three percent of residents used payday loans before the restriction, compared with less than one percent after the policy change. However, we also found that this reduction in payday loan use was accompanied by an offsetting increase in the use of pawnshop loans with no effect on the use of credit card debt or consumer finance loans. Additionally, we document an increase in involuntary checking account closures following payday loan bans, which suggests that some consumers become more likely to bounce checks and overdraft their bank accounts when payday loans become unavailable. Overall, we find that the adoption of payday loan restrictions do not appear to meaningfully reduce the fraction of the population that utilizes alternative financial services; borrowers who previously used payday loans substitute to other forms of AFS credit.

Although payday loan bans do not appear to affect the overall proportion of individuals using AFS loans, we do find that such bans shape the way that individuals use such loans. In particular, we find that consumers become more likely to take out AFS loans to finance one-time emergency expenses (as opposed to basic living expenses) following such bans. Similarly, we show that the individuals who increase their usage of pawn loans following payday loan bans tend to be the type of AFS borrowers who turn to AFS loans because traditional banks do not offer them small loans, or any loans at all. In contrast, we find no increase in pawn loan borrowing among AFS borrowers who use AFS loans because of convenience or comfort. This finding, in conjunction with result that payday loan bans do not increase traditional credit use, suggests that payday loan users have limited access to low-cost credit options.

It is important to note several limitations of our study before concluding. First, our analysis examines the effect of policy changes in only four states. While these states are quite diverse, both demographically and geographically, regulations in other states may have a different impact on borrowing behavior. Second, like other difference-in-difference designs, our results are only valid to the extent that the treatment and control states are not characterized by preexisting trends. In particular, we cannot rule out the possibility that the states that chose to ban payday lending during our sample period would have experienced unrelated increases in pawn lending and involuntary bank accounts, even were they to have allowed payday lending to remain legal. Finally, our analysis is limited by the types of borrowing that are covered in our data set. These customers may increase their use of other forms of credit, such as borrowing from family members or loan sharks. Our

results should be interpreted with these caveats in mind.

Despite these caveats, our results provide new evidence on important questions of payday loan policy. Most importantly, they suggest that the issue of payday loans cannot be addressed in isolation, without considering the availability and desirability of other forms of high-interest credit. Whether payday loans are good or bad, our analysis shows that it is important to determine whether they are better or worse than the available alternatives. If policymakers conclude that payday loans are better than the available alternatives, restricting access to them (while not regulating other potential substitutes) may end up being counter-productive.

Apart from helping to predict the likely effects of payday loan bans, our results shed light on the nature of consumer demand for payday loans. In particular, the fact that consumers switch to other forms of high interest credit once payday loans become unavailable suggests that demand for such loans is fueled by a general desire for short-term credit (rather than a decision-making bias that is unique to the design of payday loans).

Finally, our results shed light on the mechanisms by which access to payday loans may affect consumers' financial well-being. That is, our results suggest that the ultimate effects of payday loan bans on financial outcomes are not being mediated through changes in the overall amount of high-interest borrowing undertaken by consumers. Along these lines, two recent papers<sup>24</sup> find that payday loan access has little if any long-term effect (whether positive or negative) on borrowers' credit scores. This lack of an effect on borrower's financial health can be readily explained by our finding that payday loan bans do not stop borrowers from taking out high-interest loans, but merely shift the type of the credit product to which they turn.

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<sup>24</sup>Bhutta (2013) and Bhutta, Skiba and Tobacman (2014)

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Figure 1: Payday Loan Regulations by State, 2006-2012

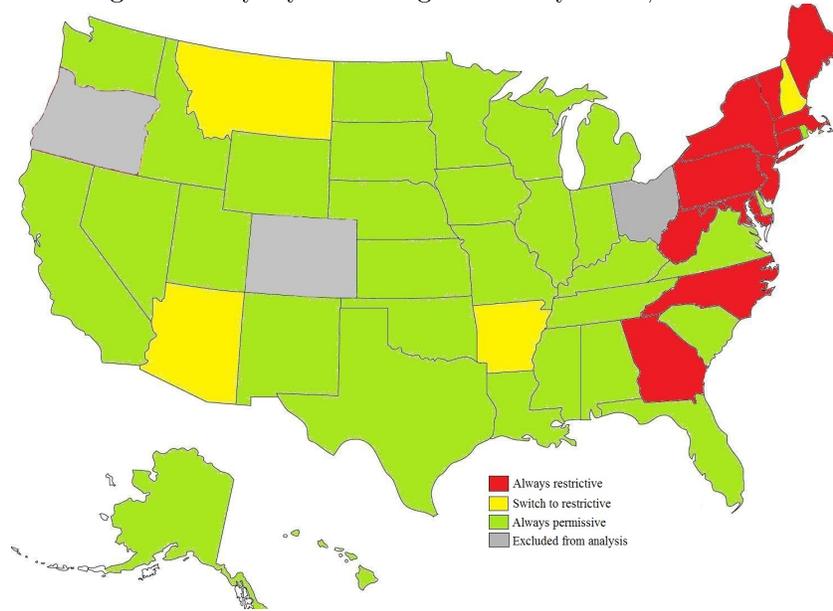


Table 1: Use of Alternative Financial Services Credit Products

	Ever Used (%)	Used in Past Year (%)
Payday Loan	4.07	2.46
Pawn Shop Loan	6.81	2.49
Rent-to-Own Loan	4.28	1.67
Any AFS Loan	11.73	5.68
N	82,489	82,320

Table 2: Demographic Characteristics by Use of Alternative Financial Services

	Full Sample	Any AFS	Payday	Pawnshop	Rent-to-Own
Male	50.4	44.9	45.7	45.8	41.9
Married	50.8	37.2	39.3	35.0	37.8
White	80.8	68.1	66.6	68.6	66.0
Age	50.0	41.0	41.7	41.1	39.5
Income	50,087	33,119	38,831	28,476	30,979
Less than HS	12.2	20.1	14.1	22.6	26.6
Unemployed	5.5	14.1	10.6	18.5	12.8
N	82,320	4,425	1,920	1,947	1,324

Individuals are classified as using a credit product if they report use in prior 12 months

Table 3: Use of Traditional Credit Services

	Full Sample			Low Credit Sample		
	Ever Used	Balance	Balance for Users	Ever Used	Balance	Balance for Users
Credit Card	57.32	3,691	6,439	43.68	1,667	3,816
Retail Card	25.08	300	1,198	23.23	289	1,232
Consumer Finance Loan	15.05	582	3,869	20.77	793	3,818
Any Traditional Credit	65.25	4,573	7,009	57.61	2,746	4,766
N	5,996,548			3,912,701		

The low credit sample includes only individuals with credit scores below 600.

“Ever Used” is percent ever using loan type, “Balance” is average balance for each loan type,

“Balance For Users” is average balance among users for each loan type.

Table 4: Reported Reason for Use of AFS Credit

	All AFS Loans	Payday	Pawn	Rent-to-Own
Make Up for Lost Income	18.95	18.97	22.91	15.05
Basic Living Expenses	43.95	46.54	51.79	29.48
House/Car Repairs or Buy Appliance	12.92	12.27	6.15	25.02
Medical Expenses	2.35	3.01	2.36	1.08
School or Childcare Expenses	1.74	1.75	1.67	1.05
Special Gifts or Luxuries	4.88	3.65	3.20	8.31
Other Expenses	14.17	12.61	10.83	18.88
N	4,371	1,891	1,925	1,319

Table 5: Reason for Using Payday Lender or Pawnshop versus Traditional Bank

	Payday	Pawnshop
Banks Don't Give Small Dollar Loans	20.76	15.87
More Convenient Hours or Location	12.30	9.62
Easier or Faster to Qualify	42.48	40.21
Feels More Comfortable	1.69	2.79
Doesn't Qualify for a Bank Loan	15.81	21.73
Other	6.96	9.77
N	679	1,165

Includes data from 2011 FDIC survey only.

Table 6: The Effect of Payday Loan Bans on Payday Loan Use

	Payday Loans (1)	Payday Loans (2)	Payday Loans (3)
Payday Ban	-0.0238* (0.0129)	-0.0236* (0.0128)	-0.0210* (0.0114)
Post-Ban	-0.0139*** (0.0019)	-0.0162*** (0.0023)	-0.0239** (0.0110)
Male		-0.0027*** (0.0010)	-0.0027*** (0.0010)
Married		-0.0052*** (0.0013)	-0.0051*** (0.0013)
White		-0.0194*** (0.0030)	-0.0194*** (0.0030)
HS Only		0.0026 (0.0026)	0.0026 (0.0026)
College		-0.0139*** (0.0028)	-0.0139*** (0.0028)
Age		0.0003 (0.0002)	0.0003 (0.0002)
Age <sup>2</sup>		-0.0000*** (0.0000)	-0.0000*** (0.0000)
Unemployed		0.0135*** (0.0040)	0.0136*** (0.0040)
Income 15-50k		0.0067*** (0.0021)	0.0067*** (0.0021)
Income 50-75k		-0.0029 (0.0030)	-0.0029 (0.0029)
Income gt75k		-0.0092*** (0.0029)	-0.0093*** (0.0029)
Log Income PC			0.1156 (0.1120)
Log Unemp Rate			0.0133 (0.0213)
Dep Var Mean	0.032	0.032	0.032
N	82,806	82,806	82,806

Standard errors clustered at the state level in parentheses.

All specifications include state fixed effects and year fixed effects.

\*  $p < .10$  , \*\*  $p < .05$ , \*\*\*  $p < .01$

Table 7: The Effect of Payday Loan Bans on Other AFS Credit Use

	Any AFS Loan (1)	Payday Loans (2)	Pawn Shop (3)	Rent-to-Own (4)
Payday Ban	-0.0005 (0.0053)	-0.0210* (0.0114)	0.0136** (0.0059)	0.0026 (0.0037)
Post-Ban	-0.0208 (0.0142)	-0.0239** (0.0110)	0.0041 (0.0070)	-0.0018 (0.0051)
Dep Var Mean	0.065	0.032	0.027	0.017
N	82,320	82,806	82,824	82,900

Standard errors clustered at the state level in parentheses.

All specifications include individual demographic characteristics, state and year fixed effects, and state-level economic conditions.

“Any AFS Loan” is defined as Payday, Pawn Shop, or Rent-to-Own.

\*  $p < .10$ , \*\*  $p < .05$ , \*\*\*  $p < .01$

Table 8: The Effect of Payday Loan Bans on Involuntary Bank Closures

	Bank Closure (1)
Payday Ban	0.0018** (0.0008)
Post-Ban	-0.0045** (0.0019)
Dep Var Mean	0.0015
N	85,079

Standard errors clustered at the state level in parentheses.

All specifications include individual demographic characteristics, state and year fixed effects, and state-level economic conditions.

\*  $p < .10$ , \*\*  $p < .05$ , \*\*\*  $p < .01$

Table 9: The Effect of Payday Loan Bans on Reported Use of Alternative Financial Services Credit

	Lost Income (1)	Basic (2)	Repairs (3)	Medical (4)	Child Care (5)	Luxury (6)	Other (7)
Payday Ban	0.0060 (0.0070)	-0.0051 (0.0044)	0.0018 (0.0012)	0.0010** (0.0005)	-0.0003 (0.0023)	-0.0004 (0.0015)	-0.0012 (0.0042)
Post-Ban	-0.0075** (0.0036)	-0.0069 (0.0077)	-0.0016 (0.0038)	0.0001 (0.0015)	0.0016* (0.0009)	-0.0021 (0.0015)	-0.0086** (0.0036)
Dep Var Mean	0.012	0.028	0.008	0.001	0.001	0.003	0.009
N	85,224	85,224	85,224	85,224	85,224	85,224	85,224

Outcome: probability of using AFS credit for specified reason.

Standard errors clustered at the state level in parentheses.

All specifications include individual demographic characteristics, state and year fixed effects, and state-level economic conditions.

\*  $p < .10$ , \*\*  $p < .05$ , \*\*\*  $p < .01$

Table 10: The Effect of Payday Loan Bans on the Reason for Choosing Pawn Shops Over Banks

	No Small Loan (1)	Convenient (2)	Faster (3)	Comfort (4)	Don't Qualify (5)	Other (6)
Payday Ban	0.0101* (0.0053)	-0.0031 (0.0021)	-0.0034 (0.0094)	-0.0001 (0.0008)	0.0041* (0.0021)	0.0014 (0.0031)
Post-Ban	0.0111** (0.0050)	-0.0110** (0.0044)	0.0012 (0.0077)	-0.0015 (0.0019)	0.0062 (0.0043)	-0.0158 (0.0097)
Dep Var Mean	0.009	0.011	0.027	0.002	0.010	0.011
N	85,326	85,326	85,326	85,326	85,326	85,326

Outcome variables: probability of using a pawn shop loan over a bank for specified reason.

Standard errors clustered at the state level in parentheses.

All specifications include individual demographic characteristics, state and year fixed effects, and state-level economic conditions.

\*  $p < .10$ , \*\*  $p < .05$ , \*\*\*  $p < .01$

Table 11: The Effect of Payday Loan Bans on Traditional Credit Use

	Any Credit		Credit Card		Retail Card		Consumer Finance	
	Ever Use (1)	Balance (2)	Ever Use (3)	Balance (4)	Ever Use (5)	Balance (6)	Ever Use (7)	Balance (8)
Payday Ban	-0.0104 (0.0067)	-0.0035 (0.0168)	-0.0070 (0.0067)	0.0042 (0.0215)	-0.0009 (0.0052)	0.0100 (0.0254)	-0.0030 (0.0036)	-0.0279 (0.0401)
Quarter FE	x	x	x	x	x	x	x	x
N	5,996,548	3,912,701	5,996,548	3,436,941	5,996,548	1,503,780	5,996,548	902,199

Standard errors clustered at the state level in parentheses.

All specifications include individual fixed effects, age, age squared, and county-level economic conditions.

Outcome variables: ever used a specific credit type; log credit balance among users.

\*  $p < .10$ , \*\*  $p < .05$ , \*\*\*  $p < .01$

Table 12: The Effect of Payday Loan Bans on Traditional Credit Use, Low Credit Sample

	Any Credit		Credit Card		Retail Card		Consumer Finance	
	Ever Use (1)	Balance (2)	Ever Use (3)	Balance (4)	Ever Use (5)	Balance (6)	Ever Use (7)	Balance (8)
Payday Ban	-0.0066 (0.0113)	-0.0246 (0.0254)	-0.0013 (0.0106)	-0.0234 (0.0251)	0.0050 (0.0077)	-0.0030 (0.0355)	0.0016 (0.0063)	-0.0334 (0.0428)
Quarter FE	x	x	x	x	x	x	x	x
N	1,264,591	728,577	1,264,591	552,367	1,264,591	293,714	1,264,591	262,681

Standard errors clustered at the state level in parentheses.

Sample includes individuals with credit scores below 600.

All specifications include individual fixed effects, age, age squared, and county-level economic conditions.

Outcome variables: ever used a specific credit type; log credit balance among users.

\*  $p < .10$ , \*\*  $p < .05$ , \*\*\*  $p < .01$