Consumer Borrowing after Payday Loan Bans

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Abstract

High-interest payday loans have proliferated in recent years; so too have efforts to regulate them. Yet how borrowers respond to such regulations remains largely unknown. Drawing on both administrative and survey data, we exploit 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 credit (for example, pawnshop loans) rather than traditional credit instruments (for example, credit cards). Such shifting is present, but less pronounced, for the lowest-income payday loan users. Our results suggest that policies that target payday lending in isolation may be ineffective at reducing consumers' reliance on high-interest credit.

1. Introduction

The payday-lending industry has received widespread attention and intense scrutiny in recent years. Payday loans—so called because a loan is generally due on the date of the borrower's next paycheck—are typically quite expensive. The annual percentage rate (APR) associated with such loans commonly reaches triple digits. Despite their cost, 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 loan stores in the United States than there were Starbucks and McDonald's locations combined (Skiba and Tobacman 2009).

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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 consumers by masking the true cost of borrowing. Those on the other side of the debate defend the high interest rates by pointing to the cost of lending to high-risk borrowers and by emphasizing the value to low-income households of having of 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 or late fees on bills.

Concerns about payday lending have led policy makers at both the state and federal levels to implement significant restrictions on the industry. As of 2006, 11 states prohibited or severely restricted payday lending, and by 2012 another six states and the District of Columbia did so. At the federal level, the Department of Defense issued regulations in 2007 banning payday loans to members of the military. More recently, the Consumer Financial Protection Bureau announced that it too is considering adopting new regulations in this area (Zibel 2015).

Despite the attention given 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 data sets measure payday loan use, and those that do are typically too small in sample size or too limited in scope to answer many of the questions important to 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 yet largely unknown questions concerning payday loan usage and regulation: how does borrowing behavior change when a state prohibits 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 policy makers 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-lending bans are implemented sheds light on the nature of demand for payday loans. 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 (namely, borrowing behavior) sheds light on the large body of research linking access to payday loans to other outcomes (for example, credit scores and bankruptcies). Along the same lines, simply measuring the extent to which payday-lending restrictions affect the

amount of payday lending that occurs sheds light on what 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 changes in payday lending associated with such bans is crucial for assessing and interpreting much of the existing payday-lending literature that links 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 (FDIC's) National Survey of Unbanked and Underbanked Households, a supplement to the Current Population Survey (CPS). The survey is large and nationally representative and contains detailed information about consumers' borrowing behavior. We augment this survey with data on traditional credit product usage from the Federal Reserve Bank of New York and Equifax. Second, a number of states have prohibited the use of payday loans in recent years. Through a simple difference-in-differences design, we exploit this policy variation to study the effect of changes in consumers' access to payday loans between states over time.

We find that payday-lending bans do not reduce the number of individuals who take out alternative financial services (AFS) loans. Although far fewer individuals take out payday loans following the bans, that reduction is offset by an increase in the number of consumers who borrow from pawnshops. We also document that payday loan bans are associated with an increase in involuntary closures of consumers' checking accounts, a pattern that suggests that consumers may substitute from payday loans to other forms of high-interest credit such as bank overdrafts and bounced checks. In contrast, payday-lending bans have no effect on the use of traditional forms of credit, such as credit cards and consumer finance loans. Finally, among the lowest-income consumers, we observe a lesser degree of substitution between payday and pawnshop loans, which results in a net reduction in AFS credit product usage for this group following payday-lending bans.

The paper is structured as follows. Section 2 provides background on various forms of AFS credit. Section 3 reviews state regulations of those credit products. Section 4 reviews the literature on the relationship among payday loan access, financial well-being, and the use of AFS credit products. Section 5 describes our data. Section 6 describes our empirical analysis and presents the results. Section 7 concludes.

2. Credit Products

2.1. Alternative Financial Services Credit Products

Alternative financial services 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. These AFS credit products include payday loans, pawnshop loans, rent-to-

own loans, and overdraft services.[1] The following sections briefly describe these products (for more detailed descriptions, see Caskey 1994; Drysdale and Keest 2000).

2.1.1. Payday Loans

Payday loans are unsecured small-dollar short-term consumer loans. To obtain a loan, a customer provides a lender with a postdated check (or authorizes a delayed debit) for the loan's principal plus a fee that depends on the amount borrowed. The date of the loan's maturity is predetermined with a standard loan length of 2 or 4 weeks, often corresponding to the customer's next payday. The majority of loans range from $100 to $500, with an average loan amount of $375 (Burtzlaff and Groce 2011). Typical loans carry a financing charge of $15 for each $100 borrowed over a 2-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-on date, she may roll over the loan for an additional fee, take out a new loan to cover the previous loan, or default on the loan. Although payday loans are marketed as short-term credit, the average customer holds a payday loan for 5 months (Pew Safe Small-Dollar Loans Research Project 2012).

To obtain a loan, a customer must provide the lender with verification of income and have a current checking account. Notably, payday lenders typically do not take a customer's credit scores into account when making lending decisions. Instead, lenders consider the potential borrower's Teletrack score, which measures whether the potential borrower 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 using other credit products.[2]

2.1.2. Pawnshop Loans

Pawnshops have been a source of credit for centuries but have steadily gained popularity 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 2015).

Pawnshop loans are also small-dollar short-term loans, but unlike payday loans, pawnshop loans are secured by physical collateral. A customer provides the lender with tangible personal property, such as electronics or jewelry, and in return receives a cash loan based on the value of the collateral. The size of the pawnshop loan is typically only a fraction of the assessed value of the collateral, which ensures that the loan is more than fully secured.[3] Because a pawnshop bor-

[1] The term also encompasses other loan types, such as auto title loans and income tax refund anticipation loans.

[2] Interestingly, Dobbie and Skiba (2013) find that payday loan borrowers are less likely to default on larger loans, despite the loans being unsecured.

[3] Prager (2009) reports that the loan amount offered ranges from 25 to 65 percent of the estimated resale value of the collateral provided by the customer.

rower is not required to demonstrate ownership of a bank account or a regular source of income, these loans are more accessible to a wider population than payday loans.

The average pawnshop loan is around $100, much smaller than the average loan received from a payday lender. Pawnshop loans usually have a term of 1 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).[4] If a pawnshop customer is unable to repay her loan, she forfeits the pawned item to the lender, who may resell it.

2.1.3. Rent-to-Own Loans

Unlike payday loan outlets or pawnshops, 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 rent-to-own stores around the country (Czerwonko 2012). The cost of purchasing an item from a rent-to-own store on credit is substantially greater than the cost of similar items purchased directly. The implied APR varies by good and by store, but rates have been estimated to be as low as 57 percent (Czerwonko 2012) and as high as 230 percent (Zikmund-Fisher and Parker 1999). Like pawnshop loans, rent-to-own loans are secured: if a customer misses a payment, the lender has the right to repossess the purchased item.

2.1.4. Overdraft Protections

In addition to 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 the account to be overdrawn. In that case, the bank processes the payment (as if the customer had sufficient funds) but charges her an overdraft fee in addition to requiring repayment of the overdrafted amount. Overdraft protection is quite expensive, even when compared with 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.

2.1.5. Other Forms of Nontraditional Credit

In addition to the formal types of credit products described above, individuals may borrow against the future by delaying various payments past their due dates. 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 free: paying utility bills behind schedule typically triggers expensive late fees and may adversely

[4] However, the interest rates on pawn loans can be much lower, depending on state regulations (Prager 2009).

affect a borrower's credit score if the debt is sold to a collection agency, and banks may fine consumers who write checks that bounce. In addition, banks generally close the accounts of borrowers who engage in too many overdrafts or too much nonsufficient-funds activity (Campbell, Martinez-Jerez, and Tufano 2012).

2.2. Traditional Credit Products

By traditional credit we mean credit 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 traditional 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 13–14 percent in recent years, but for riskier borrowers, posted rates are often as high as 20–30 percent. In addition, for certain transactions such as cash advances there may be additional fees (for example, 3 percent of the amount advanced). Individuals with very low credit scores (for example, a FICO score in the low 500s or below) due to a recent default may have trouble obtaining new card accounts but are still able to access existing revolving accounts that were opened when their financial standing was better.

2.3. Substitution among Credit Products

Because of the differences in their designs, various credit products may or may not be substitutes for one another for nonregulatory reasons. First, some borrowers may be willing to pay the interest required to take out certain types of loans but not others. For example, pawnshops require borrowers to risk losing ownership of valuable possessions—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 cutoffs that 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 have access to more than one type of loan, the net effects on consumer demand of restricting that access may be ambiguous. For example, as discussed below, borrowers who are denied payday loans may turn to pawnshop loans as an alternative source of short-term credit. On the other hand, borrowers who use payday loans may end up taking out pawnshop loans to help meet their payday loan interest obligations.

3. The Regulation of Payday Loans and Other High-Interest Credit Products

State regulation of payday lenders has changed dramatically in recent years. Although most states have strict usury laws that limit the allowable APR of cash loans to well below the amount that is 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 even in those states that prohibited payday loans.[5] Today, state regulation of payday lenders takes a variety of forms. While some states explicitly ban payday lending through usury laws or racketeering statutes, others have adopted regulations that effectively ban payday loans by limiting interest to below the rate at which payday lenders are willing to operate (Skiba 2012).[6] 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).[7]

Between 2006 and 2012, four jurisdictions banned payday loans. In January 2008, the District of Columbia effectively banned payday loans by prohibiting lenders from charging APRs in excess of 24 percent. In March 2009, New Hampshire passed a law limiting APRs on payday loans to 36 percent. Arizona originally exempted payday lending from the state's 36 percent APR interest rate cap; however, this law was allowed to "sunset," which made 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.[8] Figure 1 provides a map of payday-lending laws by state.

Other AFS credit products are subject to state regulation. In particular, states

[5] Payday lenders could take advantage of the Supreme Court's decision in *Marquette National Bank of Minneapolis v. First of Omaha Service Corp.* (439 U.S. 299 [1978]), which held that banks are governed by the usury law of the state in which they are chartered rather than the state in which they operate (Schiltz 2003). By partnering with banks chartered in states that have permissive usury laws, payday lenders could do business as the loan originator for the bank in states in which payday lending would otherwise be prohibited. This loophole was closed in 2001 by the Office of the Comptroller of the Currency, which regulates federally chartered banks. The Federal Deposit Insurance Corporation, which regulates state-chartered banks, followed suit in 2005. See Mann and Hawkins (2007) and Hynes (2012).

[6] 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). In addition, states that allow payday lending 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 2015). The federal Truth in Lending Act imposes additional disclosure requirements, such as requiring payday lenders to disclose the interest rate as an annual percentage rate.

[7] These states are Connecticut, Georgia, Maine, Maryland, Massachusetts, New Jersey, New York, North Carolina, Pennsylvania, Vermont, and West Virginia.

[8] Apart from the policy changes that we classify as implementing a new payday-lending ban, 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 addition, Ohio passed legislation in 2008 that prohibited payday loans, but various reports suggest that the ban was not enforced (Pew Safe Small-Dollar Loans Research Project 2012). Arkansas presents a complicated case for our analysis. The Arkansas Supreme Court ruled in November 2008 that the law that authorized payday lending was unconstitutional, but the effective legality of payday lending was already in question as early as 2001, with the state attorney general and the payday-lending industry disagreeing as to whether the state's usury limit applied to payday lenders (Bodeker 2010). Another complication is that the Arkansas usury limit varied substantially over the first wave of our sample, as it was pegged to the market interest rate. To avoid miscoding the effective legality of payday lending in Arkansas during our sample pre-period, we exclude the state from our analysis. We are grateful to an anonymous referee for bringing this issue to our attention.

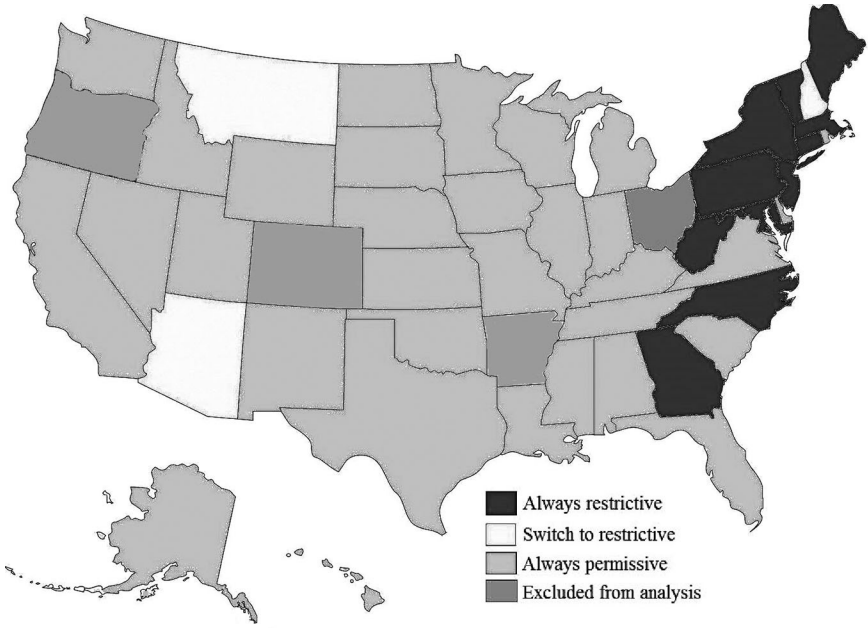


Figure 1. Payday loan regulations by state, 2006–12

may regulate both the loan length and the interest that can be charged on a pawnshop loan. Many states have no fee limits, while other states have limits as low as $2 per $100 for a 2-week loan; however, unlike payday lenders, pawnshops 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 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 2012). There were no major changes in pawnshop or rent-to-own loan regulations at the state level during our sample period.

4. Prior Literature

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

4.1. The Effect of Payday Loan Regulations on Payday Loan Use

While data on the use of payday loans are limited, a small number of papers estimate the effect of payday loan restrictions on usage rates. Chanani (2011) and Pew Safe Small-Dollar Loans Research Project (2012) investigate cross-state

variation in interest rate caps and find that these restrictions reduce payday loan usage. Carter (2015) 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.[9] Using a neighboring state as a control, Zinman finds that Oregon residents were approximately 30 percent less likely to use a payday loan immediately after the prohibition.

4.2. The Effect of Payday Loan Regulations on Financial Well-Being

From a theoretical perspective, the effect of access to payday loans 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 necessarily make consumers worse off. On the other hand, behavioral models of payday loan usage imply that present bias, overoptimism, or other cognitive biases can induce consumers to take out payday loans even when doing so is suboptimal, as judged by their own preferences. If such models accurately describe behavior, restricting access to payday loans could make consumers better off.

The empirical literature on the link between access to payday loans and financial well-being comes to mixed conclusions. A number of papers find evidence that access to payday loans improves financial outcomes. For example, Zinman (2010) finds evidence of deterioration in the financial health of Oregonians after the state restricted payday lending. Similarly, Morse (2011) suggests that individuals are less likely to lose their homes to foreclosure if they have access to payday loans.

In contrast, others find that access to payday loans exacerbates borrowers' financial difficulties. Skiba and Tobacman (2009) exploit a discontinuity in payday loan eligibility and find that access to payday loans increases the likelihood of declaring bankruptcy. Carrell and Zinman (2014) find that payday loan access leads to declines in job performance, which could occur if payday loan use exacerbates financial difficulties and stress. Melzer (2011, 2013) identifies the effect of access to payday loans by comparing individuals living in states that prohibit payday loans but differ in their proximity to a neighboring jurisdiction where payday lending is legal. He finds that access to payday loans is associated with worse outcomes along a variety of measures of economic hardship, such as difficulty paying bills, lack of food security, and postponing medical care because of costs. Hynes (2012) investigates the relationship between payday loans' legality and bankruptcy and reports mixed evidence, with the results varying by identification strategy. Lefgren and McIntyre (2009) find that state variation in payday loans' legality does not explain much of the state-by-state variation in bankruptcy

[9] The law considered in Zinman (2010) is the interest rate cap in Oregon (Or. Rev. Stat. Ann. 725A.064). Classifying Oregon's policy change as a ban generates nearly identical estimates to those presented here.

filing rates. Finally, Bhutta (2014) and Bhutta, Skiba, and Tobacman (2015) find that access to payday loans (at either the individual or the state level) appears to have little to no long-term effect on consumers' credit scores.

4.3. The Effect of Payday Loan Regulations on the Use of Other Credit Products

4.3.1. Alternative Financial Services

A number of papers examine the interaction between access to payday loans and the usage of other high-interest products. Skiba and Tobacman (2007) present mixed evidence concerning the substitutability of payday and pawnshop loans. They find that individuals who are barely denied payday loans because of low credit scores are more likely to take out a pawnshop loan within the next 2 days. However, such individuals do not appear any more likely to use pawnshop loans in the future. Carter (2015) finds that borrowers who use payday loans are more likely to also use pawnshops when their states do not limit payday loan rollovers. She interprets this pattern as evidence that payday borrowers use pawnshop loans to pay off the interest on their payday loans 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 pawnshop loan within 1 day of their payday loan's due date are more likely to roll over their payday loan. Although these studies help explain patterns of use in states where both payday and pawnshop 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 moved to restrict payday loans were more likely to bounce checks after the ban. Melzer and Morgan (2009) find similar results for overdraft fee income at banks, and Morgan, Strain, and Seblani (2012) find that payday loan bans lead to increased overdraft fee income and more returned checks. However, Campbell, Martinez-Jerez, and Tufano (2012) find 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. Galperin and Weaver (2014) find a similar result for the use of refund anticipation loans (RALs)—bans on payday loans lead to a decrease in the use of RALs, which suggests that the two products are complements.

Thus, the current literature provides a somewhat conflicting view of the relationship between payday loans and other AFS credit products. In particular, evidence exists that consumers turn to pawnshop loans as complements to payday loans (at least in states that allow rollovers). On the other hand, some studies suggest, however, that consumers turn to other forms of high-interest credit (for example, 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

data set that includes information about multiple forms of borrowing behavior that may plausibly be important substitutes for taking out payday loans. In particular, our data capture AFS credit usage at the individual level, even when the loans are received from multiple lenders. In addition, as described in Section 5, a useful feature of the CPS data is that they contain information on consumers' motivations for using AFS credit products, which helps provide a more nuanced view of the ways in which payday loan regulations shape consumers' borrowing behavior.

4.3.2. Traditional Credit

Traditional credit products have considerably lower interest rates than payday loans and other AFS credit products; however, they often have stricter requirements and loan size limits. Therefore, standard economic models predict that consumers will use payday loans only if they have exhausted the limits of, or were never eligible for, traditional credit products. However, survey data indicate that some payday loan users might switch to bank loans or credit cards if payday loans did not exist (Pew Safe Small-Dollar Loans Research Project 2012). A preference for payday loans over traditional credit sources could reflect some perceived nonprice advantage of payday loans. For example, payday lenders may be more convenient for some borrowers. In addition, payday loan use is not indicated on credit reports, which could appeal to some customers. Alternatively, choosing a payday loan over a credit card could reflect borrowers' confusion or a lack of awareness about relative prices. For example, payday loan prices are typically quoted as a 2-week rate (for example, 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. 2015; Pew Safe Small-Dollar Loans Research Project 2012).

In spite of the survey evidence suggesting that payday loans may in fact be substitutes for traditional credit products rather than strictly inferior alternatives, 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, which suggests that payday loan users have the option of switching to traditional credit sources if access to payday loans were suddenly limited. However, Bhutta, Skiba, and Tobacman (2015) find, using different data, that most customers have exhausted 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.

5. Data

Our primary data source is the FDIC's National Survey of Unbanked and Underbanked Households (US Census Bureau 2009, 2011, 2013). This survey is conducted by the US Census Bureau as a supplement to the CPS. To date, three rounds of the survey have been collected, in January 2009, June 2011, and June 2013. Since no state changed its policy regarding the legality of payday lending between the second and third waves, our primary analysis uses the first two waves of data. We utilize the third wave to investigate longer-term effects of the bans. The survey contains a nationally representative sample of 46,547 households in 2009, 45,171 households in 2011, and 41,297 households in 2013.

The survey questionnaire includes questions about a household's connection to traditional banking systems, use of AFS, and respondents' reasons for being unbanked or underbanked. Survey participants were asked whether anyone in the household had used a payday loan, sold items at a pawnshop, or leased merchandise from a rent-to-own store in the past year.[10] For the 2009 survey, we categorize a household as having used a payday loan in the past year if the respondent provided a nonzero answer 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?" Similarly, we categorize a household as having used a pawnshop or rent-to-own loan in the past year if the respondent answered the question "How often do you or anyone in your household sell items at pawnshops [do business at a rent-to-own store]?" with "at least a few times a year" or "once or twice a year." In the 2011 survey, a household is recorded as having used one of these AFS credit products if the respondent provided an affirmative answer to one the following questions: "In the past 12 months, did you or anyone in your household have a payday loan?" "In the past 12 months, have you or anyone in your household pawned an item because cash was needed?" "In the past 12 months, did you or anyone in your household have a rent-to-own agreement?"

Unlike many other data sets used to report patterns of borrowing behavior, the CPS asks participants not only about use of AFS but also about their reasons for using these forms of credit. 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 AFS credit product in the past year were asked about the purpose of the 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).[11] The CCP is a nationally representative longitudinal database with detailed information about consumer debt, obtained quarterly and derived from consumers' credit records maintained by Equifax, one of the nation's three

[10] In addition, participants were asked about their use of income tax refund anticipation loans; however, the reference period for this survey question varied across survey waves.

[11] Federal Reserve Bank of New York, Center for Microeconomic Data, Data and Reports: FRBNY Consumer Credit Panel (https://www.newyorkfed.org/microeconomics/data.html), 2006–12.

major credit bureaus. We use a 5 percent sample of the CCP data, corresponding to a .25 percent sample of the population. Quarterly data on individual credit card, retail card, and consumer finance loan balances are available from 2006 to 2012, yielding a sample of 6 million person-quarters.[12]

Both the CPS and the CCP data include information about respondents' demographic characteristics. The demographic data in the CPS correspond to the household's interview reference person and include his or her gender, race, education, marital status, income, and employment. While the CCP only contains information about the consumer's age, individuals in that data set can be linked over time, which permits the use of individual fixed effects. Both data sets contain information about individuals' location of residence, which can be used to link them with data about local economic conditions. Data on real state income per capita are from the Bureau of Economic Analysis, and data on unemployment rates are from the Bureau of Labor Statistics.

The first two waves of the CPS data span three payday loan bans: Arizona, Montana, and New Hampshire. No new bans were introduced between the second and third waves of the CPS. The CCP data span four payday loan bans: the three covered by the CPS plus the ban adopted by Washington, DC.

6. Empirical Analysis

We examine the effect of the recent payday loan regulations described in Section 4 using data collected before and after the policy changes to compare borrowing behavior in states that changed their payday loan regulations and in states that did not. Because our analysis includes state fixed effects, our estimated coefficients are identified from differences in changes in borrowing behavior between the two groups of states.

6.1. Summary Statistics

6.1.1. Use of Alternative Financial Services

Table 1 reports descriptive statistics on the use of alternative financial services from the CPS data. Overall, 11.7 percent used at least one of the three AFS credit products, and an estimated 4.1 percent of the population ever used a payday loan. Comparing the latter quantity to the fraction of the population who report using a payday loan in the last year suggests that over half of the individuals who had used a payday loan did so at some point during the previous year. A similar proportion of participants used either pawnshops or rent-to-own services in the past year. Overall, 5.7 percent of participants used one of the AFS credit products in the past year.

Table 2 compares the characteristics of individuals who used AFS credit prod-

[12] For more information on the Consumer Credit Panel, see Lee and van der Klaauw (2010). All individuals in the data are anonymous: names, street addresses, and social security numbers are suppressed. Individuals are distinguished and can be linked over time through a unique anonymous consumer identification number assigned by Equifax.

Table 1
Use of Alternative Financial Services (AFS) Credit Products

Loan Type	Ever Used	Used in Past Year
Payday	4.08	2.47
Pawnshop	6.75	2.48
Rent to own	4.23	1.65
Any AFS	11.66	5.66
N	82,271	82,269

Data source. US Census Bureau (2009, 2011).
Note. Values are percentages.

Table 2
Demographic Characteristics by Use of Alternative Financial Services (AFS) Credit Products

	Full Sample	Any AFS	Payday	Pawnshop	Rent to Own
Male (%)	50.4	44.8	45.7	45.6	41.9
Married (%)	50.8	37.0	39.3	34.6	37.8
White (%)	80.8	67.9	66.5	68.4	65.9
Age (years)	50.0	41.0	41.6	41.0	39.5
Income ($)	50,199	33,129	38,823	28,363	31,070
High school only (%)	56.7	69.8	73.6	67.5	68.7
Unemployed (%)	5.5	14.2	10.9	18.7	12.9
N	81,326	4,348	1,904	1,906	1,291

Data source. US Census Bureau (2009, 2011).
Note. Individuals are classified as using a credit product if they reported use in the prior year.

ucts 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 are broadly similar across users of different types of AFS credit products. Users of AFS products are also more likely to be socioeconomically disadvantaged in terms of income, education, and employment status; however, these characteristics vary across the type of product used. Payday loan users, while still economically disadvantaged when compared with individuals who do not use AFS credit products, have higher incomes 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.[13]

6.1.2. 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 $3,651, with about 57 percent of observations having a positive credit card bal-

[13] 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.

Table 3
Use of Traditional Credit Services

	Full Sample ($N = 14{,}952{,}512$)			Low-Credit Sample ($N = 3{,}093{,}477$)		
	Ever Used (%)	Average Balance ($)	Average Balance among Users ($)	Ever Used (%)	Average Balance ($)	Average Balance among Users ($)
Credit card	57.0	3,651	6,401	43.6	1,630	3,741
Retail card	24.9	298	1,196	22.8	282	1,237
Consumer finance loan	14.8	573	3,858	20.6	804	3,912
Any	64.9	4,522	6,966	57.3	2,716	4,736

Data source. Federal Reserve Bank of New York, Center for Microeconomic Data, Data and Reports: FRBNY Consumer Credit Panel (https://www.newyorkfed.org/microeconomics/data.html), 2006–12.
Note. The low-credit sample includes only individuals with credit scores below 600.

ance.[14] Because payday loan borrowers are most likely to be in the bottom end of the credit-risk-score distribution (see Bhutta, Skiba, and Tobacman 2015), 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.[15] The average balance in this low-score sample is $1,630, 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 and have an average balance of about $300. 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—although the average balance among users of consumer loans is significantly larger than for retail cards. Overall, two-thirds of the sample used at least one of the three types of traditional credit and had an average balance of $4,522. 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 (57 percent), although the average balance was only about half the size.

6.1.3. Motivations for Alternative Financial Services Credit Product Use

Expenditures Financed with Alternative Financial Services Loans. Alternative financial services credit products are often marketed as short-term solutions for emergency cash needs among liquidity-constrained individuals. Table 4 presents

[14] Reported balances include both transaction or convenience-use balances and revolving balances.

[15] 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. The initial score is defined as an individual's credit score as of the first quarter of 2006 or his or her first observed score.

Table 4
Reasons for Use of Alternative Financial Services (AFS) Credit Products

	All AFS	Payday	Pawnshop	Rent to Own
Make up for lost income	19.0	19.0	23.0	15.3
Basic living expenses	44.0	46.5	51.9	29.4
House or car repairs or appliance purchase	12.8	12.2	5.9	25.0
Medical expenses	2.4	3.0	2.4	1.1
School or child-care expenses	1.7	1.7	1.6	1.1
Special gifts or luxuries	4.8	3.6	3.2	8.2
Other expenses	14.1	12.7	10.9	18.7
N	4,294	1,875	1,884	1,286

Data source. US Census Bureau (2009, 2011).
Note. Values are percentages. Individuals are classified as using a credit product if they reported use in the prior year. Totals do not add to 100 percent because of rounding.

the reasons that AFS users report for using these credit products. The most common reason cited for using an AFS loan was not to meet an emergency need: almost half of AFS users (44 percent) reported using the loan to cover basic living expenses. Almost 5 percent reported using the loan to purchase luxury goods. Nineteen percent of customers used the loans to make up for lost income, almost 13 percent of customers used the loan for auto or home repairs, and more than 2 percent used the loan to pay for medical expenses.[16]

Motivation for Choosing an Alternative Financial Services Loan. Traditional banks offer much lower interest rates for 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. Alternatively, these customers may have access to cheaper forms of credit but find using payday lenders or pawnshops more appealing because of other factors such as convenience or ease of use. Table 5 presents the main reasons that customers report using a payday loan instead of a traditional bank loan.[17] 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 locations 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. Pawnshop customers report similar reasons for using a pawnshop loan rather than a traditional bank loan. Since only a minority of respondents cite lack of access to bank loans, it is possible that payday loan bans might result in increased usage of more traditional forms of credit.

[16] These estimates are very similar to those found in Pew Safe Small-Dollar Loans Research Project (2012). 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.

[17] Table 5 includes data from 2011 only, since the available categories for reasons a customer used a payday loan rather than a traditional bank changed across survey waves.

Table 5
Reasons for Using Payday Lender or Pawnshop instead of a Bank

	Payday	Pawnshop
Banks do not give small-dollar loans	20.7	15.3
More convenient hours or location	12.4	9.7
Easier or faster to qualify	42.6	40.7
Feels more comfortable	1.7	2.8
Respondent does not qualify for bank loan	15.8	21.5
Other	7.0	9.9
N	676	1,143

Data source. US Census Bureau (2011).
Note. Values are percentages. Totals do not add to 100 percent because of rounding.

6.2. Econometric Analysis

This section investigates the effect of recent changes in the regulation of payday loans on their use and on the use of other forms of AFS credit. Our approach employs a difference-in-differences framework: we compare changes in borrowing behavior in states that change regulation affecting payday loans with 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 cross-sectional variation in state regulation, which may conflate differences in borrowing behavior with differences in the legality of payday loans. The treatment effect we identify comes from comparing the jurisdictions that changed their payday loan regulations during our sample period. Like other difference-in-differences analyses, our identifying assumption is that, absent the regulatory change, borrowing behavior would have evolved similarly in states that changed their laws 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:

$$y_{ist} = \beta \text{Ban}_{st} + \phi \text{Post}_t + \boldsymbol{\delta}_s + \gamma \boldsymbol{X}_i + \pi \boldsymbol{Z}_{st} + \varepsilon_{ist}.$$

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 that takes a value of one if the individual lives in a state where payday loans were effectively illegal in the period covered by the survey, Post is an indicator variable for being interviewed in the second wave of the survey, $\boldsymbol{\delta}$ is a set of state fixed effects, $\boldsymbol{X}$ is a set of individual-level covariates, and $\boldsymbol{Z}$ is a set of state-level controls. Because the CPS oversamples certain groups, analyses using those data are weighted to provide nationally representative estimates.

6.2.1. Trends in Treatment and Control States

Before presenting our main results, we assess the comparability of the treatment and control states. State policy toward payday loans is not determined randomly; the decisions of legislatures or courts to allow or ban payday loans may depend on factors that are correlated with the behavior of borrowers in the state. For example, growing anti-AFS loan sentiment in a state may simultaneously cause borrowers to stop using such loans and politicians to pass legislation against them.[18]

One way to investigate this issue is by looking at preperiod trends in the two groups of states. If we observe that demand for AFS borrowing in prior years increases or decreases in the treatment states relative to the control states, it might suggest that the changes in policy are confounded by secular trends in AFS usage. Although we cannot directly assess the parallel-trends assumption on which our difference-in-differences design relies, observing important differences in the pretreatment trends might suggest that the trends differed in the treatment period as well.

Ideally, we would undertake this analysis with each of the outcome variables in our analysis. This is possible with the variables for traditional credit product use, as the CCP data begin in 2006, 2 years before the first state policy changes. Unfortunately, there is only one wave of CPS data prior to the state policy changes we consider here; hence, we cannot use those data to identify preperiod trends in the AFS credit product variables. We supplement the analysis by comparing macroeconomic trends among the two groups of states.

The results are presented in Figures 2 and 3. In both figures, treatment and control means are weighted by population. The treatment group contains consumers residing in one of the jurisdictions that changed regulations on payday loans during our window, while control states are those classified as always permissive or always restrictive in Figure 1. Dashed vertical lines indicate the time range in which these policies were implemented. Figure 2*A* plots the fraction of consumers holding any credit card debt, the most common type of traditional credit debt in our data, and Figure 2*B* plots the fraction holding credit card, retail card, or consumer finance loan debt. While consumers in control states are slightly more likely to hold traditional credit debt than those in treatment states, the trends in credit use are quite similar. We also observe similar movements across treatment and control states in unemployment rates (Figure 3*A*) and state income per capita (Figure 3*B*).

6.2.2. 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 in which the regulations are enacted. Although one would expect the effect to be negative, media reports and other au-

[18] Note though that although this story could explain our finding that payday loan bans reduce payday loan usage, it does not predict the associated rise in pawnshop loan usage that we find.

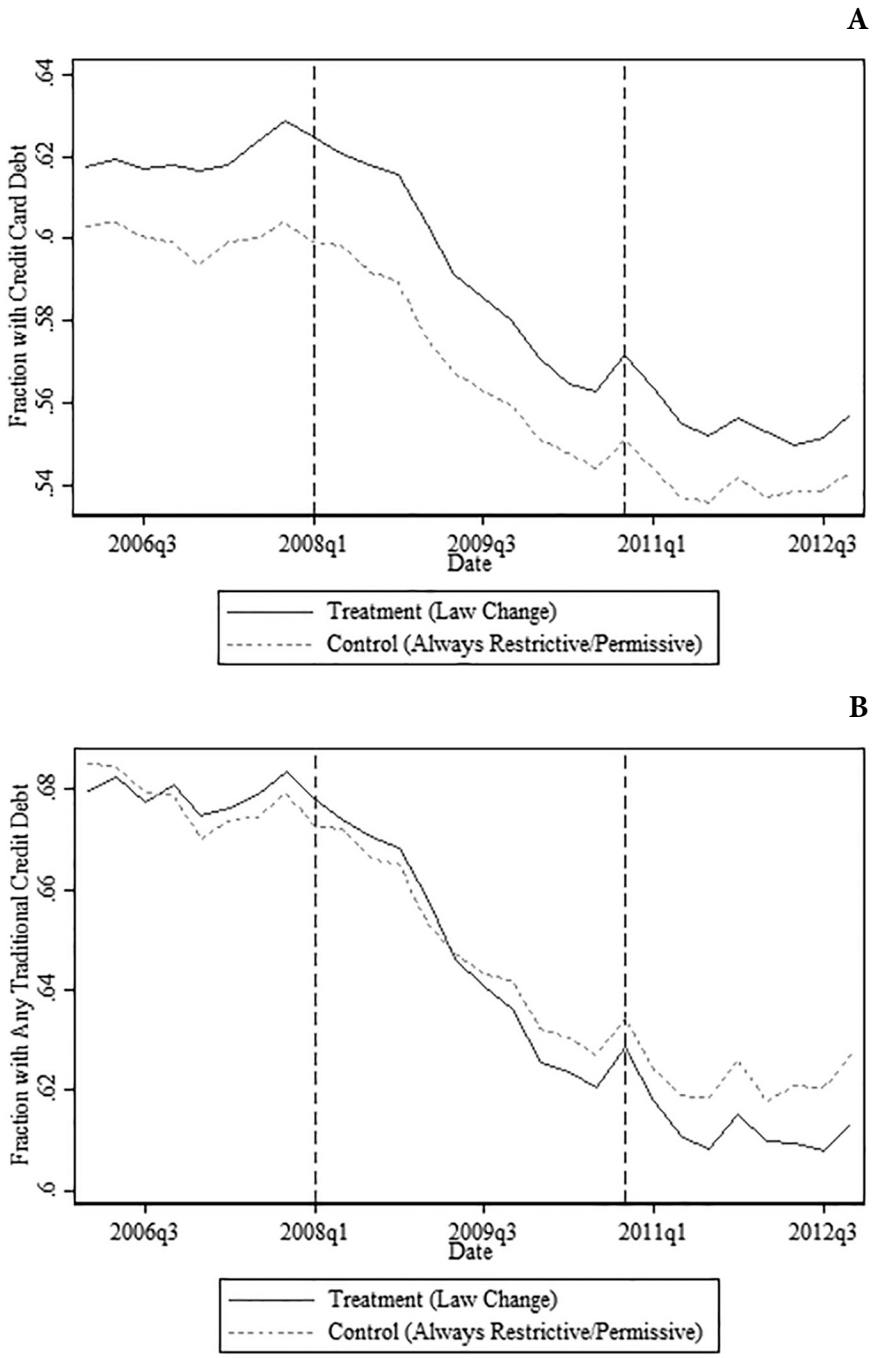


Figure 2. Trends in traditional credit use by state policy, 2006–12

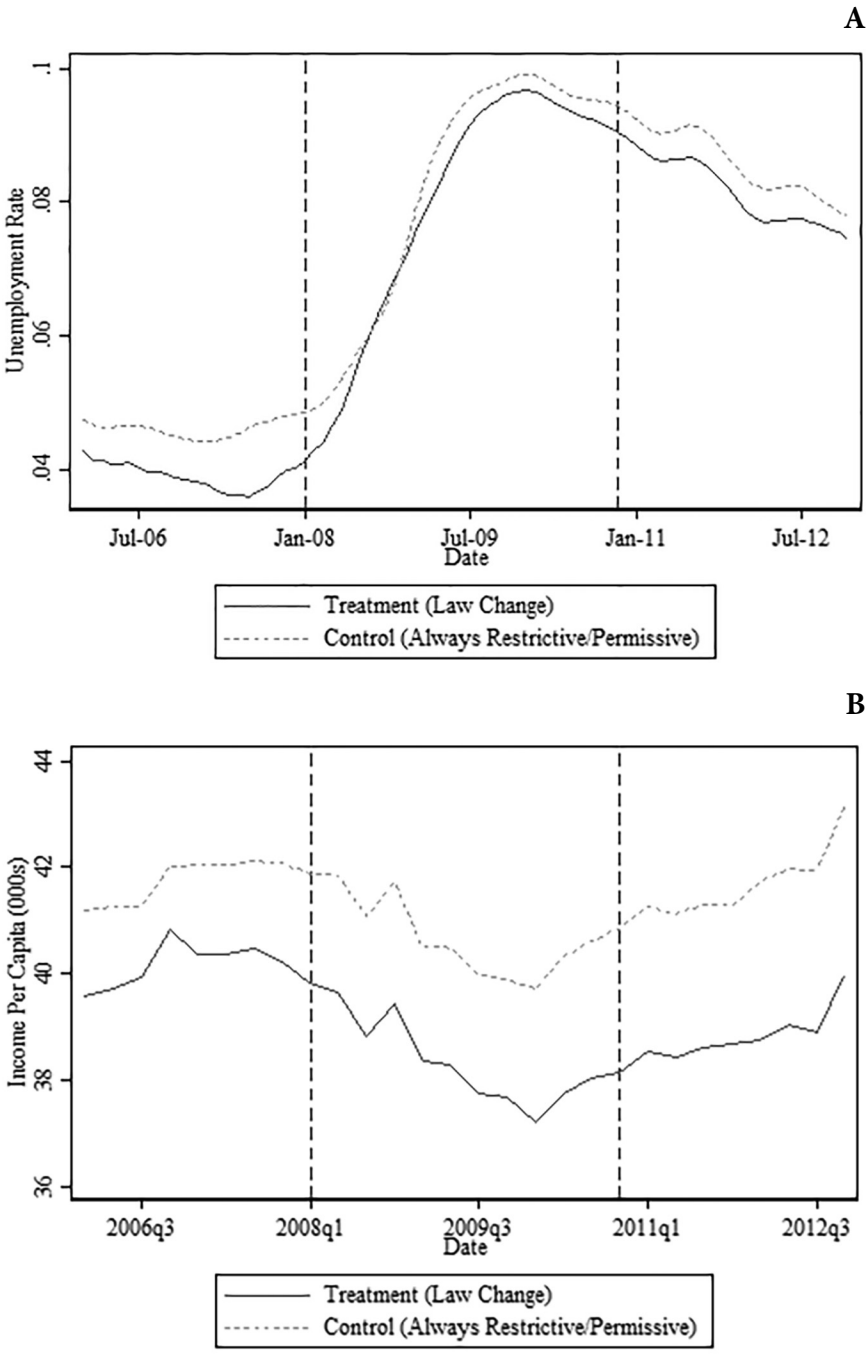


Figure 3. Trends in macroeconomic conditions by state policy, 2006–12

thors note that compliance with the rules may be imperfect and that consumers may still be able to borrow online. In addition, 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 access to payday loans on other outcome measures.

Table 6 presents the results of the analysis investigating the effect of the regulations on payday loan use.[19] Column 1 presents a bare-bones specification with controls for time period and whether the individual's state prohibits the use of payday loans. Using these limited controls, the model shows that payday loan usage is 2.4 percentage points lower in states that ban payday loans. Column 2 adds region fixed effects, and the estimate decreases slightly. The difference-in-differences model in column 3 includes state fixed effects rather than region fixed effects. This model estimates a decrease in payday loan use of 3.2 percentage points. Column 4 adds individual-level demographic characteristics to the model, and the size of the ban coefficient decreases slightly. Finally, because payday loan use may be correlated with the business cycle, it is important to control for local economic conditions.[20] Column 5 (our preferred specification) adds controls for state unemployment and personal income per capita and for state population; with these additional controls, the estimated effect of the ban is a 2.8-percentage-point reduction in payday loan use, an 88 percent reduction from the usage levels in states where the loans are legal. Across specifications, our model suggests a large reduction in payday loan usage following the adoption of restrictive state laws.[21]

6.2.3. The Effect of Payday Loan Bans on Other Alternative Financial Services Credit Products

If other AFS credit products are substitutes for payday loans, we would expect that individuals who previously used payday loans would switch to using one of them after payday loans are banned. However, if these other forms of high-interest credit are complements to payday loans—for example, if payday loan customers take out a pawnshop loan to avoid defaulting on the original loan as suggested in Carter (2015)—then we would expect to see a reduction in the use of pawnshops and rent-to-own services. In addition, differences between the credit products (for example, payday loans require a checking account and pawnshop

[19] We estimate demand for payday loans using a linear probability model; a probit model yields qualitatively similar results. For all specifications, we report standard errors clustered by state.

[20] Indeed, we document a positive correlation between individual income and whether a state has adopted a payday loan ban. Conceptually, changes in income may represent either a confounding trend or an outcome of bans on payday loans. Because we believe the former to be more likely, our preferred approach is to control for it in the regressions that follow. However, as indicated by Table 6, the effect of controlling for income on the estimated effect of payday loan bans is quite modest.

[21] Although the analysis in this section and in Sections 6.2.3 and 6.2.4 is identified by policy changes in three states, the results appear to be largely driven by Arizona, the largest of the treated states. Excluding Arizona from the analysis yields estimated coefficients that are statistically indistinguishable from 0.

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

	(1)	(2)	(3)	(4)	(5)
Ban	−.0242***	−.0206***	−.0317**	−.0312**	−.0282**
	(.0025)	(.0017)	(.0104)	(.0104)	(.0101)
Post	−.0141***	−.0142***	−.0139***	−.0162***	−.0205*
	(.0019)	(.0019)	(.0019)	(.0023)	(.0097)
Male				−.0028**	−.0028**
				(.0010)	(.0010)
Married				−.0051***	−.0051***
				(.0014)	(.0014)
White				−.0199***	−.0199***
				(.0030)	(.0030)
High school only				.0026	.0026
				(.0028)	(.0028)
College				−.0133***	−.0133***
				(.0031)	(.0031)
Age				.0003	.0003
				(.0002)	(.0002)
Age^2				−.0000***	−.0000***
				(.0000)	(.0000)
Unemployed				.0143**	.0143**
				(.0041)	(.0041)
Log income per capita					.0965
					(.1118)
Log unemployment rate					.0121
					(.0215)
Region fixed effects	No	Yes	No	No	No
State fixed effects	No	No	Yes	Yes	Yes
Dependent variable mean	.032	.032	.032	.032	.032

Data source. US Census Bureau (2009, 2011).
Note. Each outcome variable is an indicator for ever using a payday loan in the prior year. Demographic controls also include indicator variables for 16 income categories. Standard errors clustered at the state level are in parentheses. $N = 81{,}806$.
* $p < .05$.
** $p < .01$.
*** $p < .001$.

loans require collateral) may limit substitution between otherwise similar types of loans.

Table 7 presents the results of these analyses. The point estimate for usage of any AFS credit product is close to 0 and statistically insignificant. Because we find that payday loan regulations are associated with a reduction in one type of AFS product (that is, payday loans), this result suggests that usage of a different AFS product must have increased in an offsetting way. Indeed, the table reveals that payday loan restrictions are associated with a positive and statistically significant effect on the use of pawnshop loans—the estimated effect is 1.6 percentage points, a 60 percent increase from the mean usage rate in states where payday loans are legal. This finding suggests that consumers turn to pawnshop loans as a substitute form of borrowing when payday loans are no longer available. In contrast,

Table 7
The Effect of Payday Loan Bans on Use of Alternative Financial Services (AFS) Credit Products

	Any AFS	Payday	Pawnshop	Rent to Own
Ban	−.0036	−.0282**	.0160*	−.0011
	(.0056)	(.0101)	(.0064)	(.0029)
Post	−.0189	−.0205*	.0029	−.0014
	(.0126)	(.0097)	(.0062)	(.0044)
Dependent variable mean	.064	.032	.027	.017
N	81,326	81,806	81,822	81,901

Data source. US Census Bureau (2009, 2011).
Note. Each outcome variable is an indicator for ever using the specified loan type in the prior year. All specifications include individual demographic characteristics, state-level economic conditions, and state fixed effects. Standard errors clustered at the state level are in parentheses.
* $p < .05$.
** $p < .01$.

there is no such evidence of a shift to rent-to-own loans following payday loan bans. The difference may not be surprising since payday lenders and pawnshops both offer customers cash loans while rent-to-own outlets offer credit only for the purchase of specific items. If payday loan customers use their loans 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 contains relatively direct data on the types of AFS credit products listed above, it also contains some information that can be used to examine whether consumers substitute from payday loans to another form of high-interest credit: bank overdrafts. In particular, the survey asks respondents if a bank decided to close their checking accounts (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 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 .2 percentage points following payday loan bans. While small in terms of population size and statistically significant only at the 10 percent level, this coefficient is quite large economically considering that just over .1 percent of our sample report ever experiencing an involuntary checking-account 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.

6.2.4. The Effect of Payday Loan Bans on the Reasons for Using Alternative Financial Services Credit

The results in Section 6.2.3 suggest that although payday loan regulations reduce the usage of payday loans, many consumers turn to other forms of high-

Table 8
The Effect of Payday Loan Bans on Checking-Account Closures

	Checking-Account Closure
Ban	.0018
	(.0009)
Post	−.0039*
	(.0017)
Log income positive credit	.0230
	(.0130)
Log unemployment rate	.0060
	(.0036)
Dependent variable mean	.0015
N	84,057

Data source. US Census Bureau (2009, 2011).
Note. Each outcome variable is an indicator for experiencing an involuntary bank closure in the prior year. All specifications include individual demographic characteristics, state-level economic conditions, and state fixed effects. Standard errors clustered at the state level are in parentheses.
* $p < .05$.

interest credit. Despite the fact that the bans do not significantly reduce the overall proportion of individuals using AFS credit, those who shift 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 use pawnshop loans to finance only emergency expenses rather than day-to-day consumption. In addition, the average pawnshop loan is much smaller (only a quarter of the size) of the average payday loan, so it may be useful for covering only small expenses.

Table 9 presents data on 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 variable that takes a value of one if the respondent used an AFS loan and reported that the main reason for taking out the loan was to finance the specified type of expense. Each column shows the effect of payday loan bans on the likelihood of using an AFS loan for a distinct category of expense. The estimated treatment effect for taking out an AFS loan to make up for job loss or a decrease in income is positive and statistically significant. Since the total use of AFS loans did not change as a result of the ban, this increase is offset by a decrease in the probability of using AFS loans for other reasons including luxuries, other expenses, and child care. This result suggests that although payday loan bans may not affect the 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 a shock to the household's income, rather than for special gifts or recurring expenses.

Table 9

The Effect of Payday Loan Bans on Reported Use of Alternative Financial Services (AFS) Credit Products

	Make Up for Lost Income	Basic Living Expenses	House or Car Repairs	Medical	School or Child Care	Luxuries or Gifts	Other
Ban	.0112*	−.0049	.0019	.0007	−.0026***	−.0020***	−.0055**
	(.0053)	(.0057)	(.0014)	(.0005)	(.0007)	(.0005)	(.0017)
Post	−.0094**	−.0044	−.0021	.0004	.0012	−.0020	−.0069*
	(.0029)	(.0067)	(.0035)	(.0014)	(.0007)	(.0013)	(.0032)
Dependent variable mean	.012	.028	.008	.001	.001	.003	.009

Data source. US Census Bureau (2009, 2011).

Note. Each outcome variable is an indicator for using AFS credit for the specified reason. All specifications include individual demographic characteristics, state-level economic conditions, and state fixed effects. Standard errors clustered at the state level are in parentheses. $N = 84{,}201$.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

6.2.5. The Effect of Payday Loan Bans on the Use of Traditional Credit

In this section, we use data from the CCP to test whether payday-lending bans result in greater usage of credit cards and consumer loans. The econometric model is similar to the difference-in-differences model discussed above, with a few key changes. First, the CCP data include a very limited set of demographic characteristics. 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 that capture all time-invariant individual characteristics ($\boldsymbol{\eta}_i$). Our new econometric model is given by

$$y_{icst} = \beta \text{Ban}_{st} + \boldsymbol{\lambda}_t + \boldsymbol{\eta}_i + \boldsymbol{\delta}_s + \gamma \boldsymbol{X}_{it} + \boldsymbol{Z}_{cst} + \varepsilon_{icst}.$$

The unit of observation is an individual i in county c, state s, and time period t, where t is a quarter (instead of survey wave). As before, Ban indicates living in a state where payday loans were effectively illegal in the quarter considered, $\boldsymbol{\delta}$ is a set of state fixed effects, $\boldsymbol{X}$ includes the limited set of time-varying individual-level covariates (age and age-squared), and $\boldsymbol{Z}$ is a set of county-level macroeconomic controls (unemployment and per capita income). In place of Post, we include time fixed effects at the quarter level, $\boldsymbol{\lambda}$.

While the CPS data include annual credit use data at two points in time (2008 and 2011), the CCP data include quarterly snapshots of credit use from 2006 to 2012, during which time three states and the District of Columbia banned payday lending. Finally, we consider two outcome variables for each of the three credit types: an indicator variable for having a nonzero debt balance (extensive margin) and the log debt balance among users (intensive margin).

Table 10 provides estimates of the effect of payday loan bans on the use of credit card, retail card, and consumer loan debt. For each of the three types of debt, on both margins, the point estimates are close to 0 and insignificant. Table 11 is analogous to Table 10 but uses the low-credit sample, a population that more likely represents the typical user of payday loans. As noted above, to the extent that demand for payday loans is much higher in this population, substitution into credit cards and consumer loans as a result of payday loan bans may show up more clearly in these regressions. As in Table 10, the results provide no evidence that payday loan bans result in substitution toward traditional (and generally cheaper) forms of credit. Interestingly, we do observe a reduction in traditional credit use associated with payday loan bans among the low-credit population. One mechanism by which such a decline might occur is that people who lose checking accounts as a result of payday loan bans might also lose their credit card accounts associated with those checking accounts. Alternatively, payday loans may be complements to other forms of credit if payday loan borrowers turn to other forms of credit to help pay down their payday loan fees (Carter 2015).

Table 10

The Effect of Payday Loan Bans on Use of Traditional Credit

	Any AFS		Credit Card		Retail Card		Consumer Finance Loan	
	Ever Used	Balance among Users	Ever Used	Balance among Users	Ever Used	Balance among Users	Ever Used	Balance among Users
Ban	−.0100	−.0046	−.0066	.0059	−.0061	−.0191	.0044	−.0224
	(.0079)	(.0127)	(.0065)	(.0083)	(.0079)	(.0218)	(.0030)	(.0287)
Dependent variable mean	.645	6,962	.563	6,404	.245	1,219	.152	3,860
N	14,949,143	9,693,069	14,949,143	8,517,210	14,949,143	3,694,933	14,949,143	2,193,538

Data source. Federal Reserve Bank of New York, Center for Microeconomic Data, Data and Reports: FRBNY Consumer Credit Panel (https://www.newyorkfed.org/microeconomics/data.html), 2006-12.

Note. The extensive margin outcome is an indicator for ever using the specified credit type in that quarter. The intensive margin outcome is the log credit balance. The dependent variable means for balances are given in levels. All specifications include quarter fixed effects, individual fixed effects, age, age squared, and county-level economic conditions. Standard errors clustered at the state level are in parentheses. AFS = alternative financial services.

Table 11

The Effect of Payday Loan Bans on Traditional Credit Use among Low-Credit Users

	Any AFS		Credit Card		Retail Card		Consumer Finance Loan	
	Ever Used	Balance among Users	Ever Used	Balance among Users	Ever Used	Balance among Users	Ever Used	Balance among Users
Ban	−.0284***	−.0215*	−.0243***	.0127	−.0038	.0355	.0067	−.0460
	(.0061)	(.0082)	(.0039)	(.0107)	(.0085)	(.0258)	(.0039)	(.0397)
Dependent variable mean	.573	4,657	.428	3,687	.225	1,257	.215	3,759
N	3,092,796	1,770,781	3,092,796	1,344,612	3,092,796	701,560	3,092,796	631,584

Data source. Consumer Credit Panel, 2006–12.

Note. The sample includes individuals with credit scores below 600. The extensive margin outcome is an indicator for ever using the specified credit type in that quarter. The intensive margin outcome is the log credit balance. The dependent variable means for balances are given in levels. All specifications include quarter fixed effects, individual fixed effects, age, age squared, and county-level economic conditions. Standard errors clustered at the state level are in parentheses. AFS = alternative financial services.

* $p < .05$.

*** $p < .001$.

6.2.6. Income Differences in Responses to Payday Loan Bans

In this section we investigate differences in the effect of payday loan bans by borrowers' income. If low-income borrowers are less elastic in their demand for credit, they may be more likely to switch to pawnshops in response to a ban on payday borrowing. On the other hand, middle-income borrowers who take out payday loans may also be inelastic in their demand for credit (as evidenced by their willingness to take out payday loans in the first place).

Table 12 investigates these possibilities by interacting the effect of the ban with borrowers' incomes. The econometric specification is otherwise the same as in the main AFS analysis:

$$y_{ist} = \beta_1 \text{Ban}_{st} + \beta_2 \text{Ban}_{st} \times \text{Low Income}_i + \phi_1 \text{Post}_t + \phi_2 \text{Post}_t \times \text{Low Income}_i + \boldsymbol{\delta}_s + \gamma \boldsymbol{X}_i + \pi \boldsymbol{Z}_{st} + \varepsilon_{ist},$$

where Low Income_i is an indicator for whether the borrower's income is below $50,000 (approximately the mean income in our sample). The results suggest that both high- and low-income individuals reduce their usage of payday loans following a ban but that the reduction in usage among those with lower incomes is greater in magnitude. Similarly, we observe increases in borrowing rates at pawnshops among high- and low-income individuals following a ban, but here the magnitude of the estimated effects appears similar. Interestingly, the table suggests that payday loan bans are associated with a modest reduction in the overall rate of AFS borrowing but only once the analysis is restricted to low-income borrowers. Overall, Table 12 is consistent with the possibility that even higher-income users of payday loans are inelastic in their demand for credit and, as a result, are willing to substitute to pawnshops when payday loans become unavailable.

6.2.7. Longer-Term Effects of Payday Loan Bans

In this section we investigate whether the effects of payday loan bans on AFS credit use differ several years after a ban is implemented. For example, demand for credit may be relatively inelastic over the short run but more elastic over the long run. If so, removing the option of taking out a payday loan might have caused borrowers to switch to other types of AFS credit immediately following a ban, but these substitution patterns may dissipate after the ban has been in place for a few years.

To study this possibility, we use data from the third wave of the CPS, which includes borrowing behavior between June 2012 and June 2013. Because our focus is on the longer-term effect of the ban, the specification includes data from the first and third survey waves only. The results of the analysis are presented in Table 13. The point estimates for the various types of AFS use are largely similar to those obtained from the main analysis, although the estimate for involuntary checking-account closures is smaller and no longer significant. This suggests that

Table 12

The Effect of Payday Loan Bans on Use of Alternative Financial Services (AFS) Credit Products by Income Level

	Any AFS	Payday	Pawnshop	Rent to Own	Checking-Account Closure
Ban	.0055	−.0186	.0193**	−.0025	.0021*
	(.0058)	(.0100)	(.0058)	(.0036)	(.0010)
Low Income × Ban	−.0163**	−.0173***	−.0058	.0025	−.0004
	(.0054)	(.0022)	(.0057)	(.0029)	(.0004)
Post	−.0134	−.0111	−.0024	.0042	−.0023
	(.0131)	(.0089)	(.0067)	(.0047)	(.0014)
Low Income × Post	−.0088	−.0153***	.0094**	−.0097***	−.0026***
	(.0051)	(.0037)	(.0030)	(.0023)	(.0006)
Dependent variable mean	.064	.032	.027	.017	.001
N	81,326	81,806	81,822	81,901	84,057

Data source. US Census Bureau (2009, 2011).

Note. Each outcome variable is an indicator for ever using the specified loan type in the prior year. Low-income refers to households with incomes under $50,000. All specifications include individual demographic characteristics, state-level economic conditions, and state fixed effects. Standard errors clustered at the state level are in parentheses.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Table 13

Longer-Term Effects of Payday Loan Bans

	Any AFS	Payday	Pawnshop	Rent to Own	Checking-Account Closure
Ban	−.0003	−.0213**	.0182*	.0022	−.0007
	(.0051)	(.0066)	(.0089)	(.0040)	(.0005)
Post	−.0098	−.0181***	.0094*	−.0019	−.0032**
	(.0072)	(.0051)	(.0041)	(.0024)	(.0012)
Dependent variable mean	.065	.033	.027	.017	.001
N	76,881	77,332	77,384	77,410	80,446

Data source. US Census Bureau (2009, 2013).

Note. Each outcome variable is an indicator either for ever using the specified loan type or experiencing an involuntary bank closure in the prior year. All specifications include individual demographic characteristics, state-level economic conditions, and state fixed effects. Standard errors clustered at the state level are in parentheses.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

the immediate effects of a ban on borrowers' behavior are not substantially different than the effects a few years after the ban has been in place.

7. 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 curbing the use of payday loans; on average, approximately 3 percent of borrowers use payday loans before a restriction, compared with less than 1 percent who do so after a ban. However, we also found that this reduction in payday loan use is accompanied by an increase in the use of pawnshop loans, with no effect on the use of credit card debt or consumer finance loans. In addition, we document an increase in involuntary checking-account closures following payday loan bans, which suggests that some consumers are more likely to bounce checks and overdraw their bank accounts when payday loans are unavailable. Overall, we find that the adoption of payday loan restrictions does not appear to meaningfully reduce the fraction of the population that utilizes alternative financial services; borrowers who previously used payday loans substitute other forms of AFS credit. The exception are the lowest-income borrowers; although such borrowers increase their use of pawnshop loans following payday-lending bans, the magnitude of the substitution is attenuated. As a result, although payday-lending bans may be ineffective in reducing the total use of high-interest credit products, our findings suggest that such policies may nonetheless reduce high-interest borrowing among the lowest-income users of such products.

It is important to note several limitations of our study. First, our analysis examines the effect of policy changes in only four jurisdictions. While these jurisdictions are quite diverse, both demographically and geographically, regulations in other states may have a different impact on borrowing behavior. In particular, our results appear to be largely driven by Arizona, the largest state that implemented a ban during our sample period. Second, like other difference-in-differences designs, our results are valid only to the extent that the treatment and control states are not characterized by preexisting trends; states that chose to ban payday lending during our sample period could have experienced unrelated increases in pawnshop lending and involuntary closure of checking accounts, even were they to have allowed payday lending to remain legal. Third, our analysis is limited by the types of borrowing that are covered in our data set. Customers may increase their use of other forms of credit that we cannot observe, such as borrowing from family members or loan sharks. Relatedly, our AFS results pertain only to the extensive margin of borrowing behavior. That is, although we find that the fraction of individuals taking out AFS loans remains largely unchanged following a ban, we cannot rule out changes in the number of loans a borrower takes out, the interest charged, or the total dollar amount borrowed. 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 policy makers conclude that payday loans are better than the available alternatives, restricting access to them (while not regulating other potential substitutes) may be counterproductive.

Apart from helping to predict the likely effects of payday loan bans, our results shed light on the nature of consumers' demand for payday loans. In particular, the fact that consumers switch to other forms of high-interest credit when 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, they suggest that the ultimate effects of payday loan bans on financial outcomes are not mediated through changes in the overall amount of high-interest borrowing undertaken by consumers. Along these lines, Bhutta (2014) and Bhutta, Skiba, and Tobacman (2015) find that access to payday loans has little if any long-term effect (positive or negative) on borrowers' credit scores. This lack of an effect on borrowers' financial health could 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 credit to which they turn.

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