Payday Loans versus Pawnshops: The Effects of Loan Fee Limits on Household Use

Robert B. Avery*
Board of Governors of the Federal Reserve System

May 13, 2011

Presented at
2011 Federal Reserve System Research Conference
Arlington Virginia
April 28, 2011

---

* The views expressed are those of the author and do not necessarily represent those of the Board of Governors of the Federal Reserve System or its Staff. Very special thanks are due Katherine Samolyk who did much of the work on this paper. This is really her paper.
**Contact information: 202-452-2906, Robert.b.avery@frb.gov

Payday Loans versus Pawn Shops: The Effect of Loan Fee Limits on Household Use

Abstract

This paper uses data from the January 2009 Unbanked/Underbanked Supplement to the Current Population Survey File to examine how household use of payday loans and pawnshops as reported in the supplement in related to limits on loan fees set by some states. We use information in the basic CPS to measure household demand as related to the economic and demographic characteristics of households and use this information to construct demand-adjusted measures of payday loan and pawn shop use in geographic areas where states laws permit payday loan stores to operate. We examine how demand-adjusted payday loan and pawnshop use is related to effective fee ceilings on these products. We find little relationship between levels of fee ceilings in their current range and adjusted payday loan usage. Results for pawnshop indicate somewhat more variation in demand-adjusted usage over the current range of pawnshop fee ceilings. The results are generally consistent with conjectures that payday stores can adjust their scale of operations to maintain profit margins and thus can continue to lend. As such, the finding suggest that lowering loan fee ceilings up to some point can benefit borrowers; many of whom report using these loan to meet basic living expense or to make up for lost income

Introduction

There are a number of ways that households can obtain small amounts of short-term credit—ranging from credit card advances to informal loans from friends or family or by delaying bill payments. During the past decade, there has been an increasing policy focus on sources of credit from alternative financial services (AFS) providers, including payday lenders and pawn shops.[1] These sources of small dollar loans tend to be used by people of modest means or those having impaired credit histories; with repeat business accounting for a majority of loan activity in both the pawn shop and payday loan industries.[2] Policy concerns about credit provided by the AFS sector focus on the high cost of these products relative to consumer credit obtained from mainstream financial firms. Small denomination loans extended by payday lenders and pawn shops have very short maturities, thus fees expressed as a percent of loan amount translate into high "annual percentage rates" (APR)s. Both industries justify the size of the fees charged as necessary to cover the costs of these small loans—including costs associated with default.

The regulation and supervision of AFS credit providers takes place largely at the state or local level and can vary widely across municipalities. Many states set limits on the maximum fees that can be charged on these types of loans. While there are no specific national regulations pertaining to specific AFS products, lenders are required to comply with federal consumer protection laws that apply to credit extensions, including the Truth in Lending Act (TILA), the

[1] For example, see BusinessWeek (May 21, 2007).

[2] As summarized in Caskey (2005), the data collected by state governments indicate that a majority of customers have used the product more than 6 times a year and roughly a fourth had 14 or more loans during the year. Data compiled directly from two large monoline venders indicates that 40 percent of loans were consecutive transactions and the roughly one half of loans was to accounts that had taken out more than six loans during the twelve month period, Flannery and Samolyk (2007). Regarding repeat use of pawn shop loans, according to Pawnshopstoday.com, "Around 80 percent of pawn loans tend to be repaid and that repeat customers account for much of the loan volume; often borrowing against the same item repeatedly."

Equal Credit Opportunity Act (ECOA), and the Fair Debt Collections Act.[3] In 2006, because of concerns that military personnel are vulnerable to repeat use of high-cost loans, federal legislation was passed that broadly limits the APRs on loans to military personnel nationwide to no more than 36 percent.[4]

The recent creation of a national Consumer Financial Protection Bureau raises prospects for federal regulation of AFS credit products. As such, it has become even more important to understand the effects of specific regulatory provisions. There are relatively few academic studies of any type to inform the policy debate and, to our knowledge, there have been no comprehensive studies of how state regulations affect customer use of payday or pawn shop loans. Studies by the industries themselves indicate that regulations affect the profitability of supplying AFS credit products. Related research indicates that lower fee ceilings are associated with fewer stores on a per-capita basis (Shackman and Tenney, 2006, Prager, 2009, and Caskey, 1991). However, the effects on the actual quantity of loans supplied are less straightforward since stores can adjust loan volume to maintain profit margins (Flannery and Samolyk, 2007).

In this paper, we use a large new dataset drawn from the January 2009 Unbanked/Underbanked Supplement to the Current Population Survey File (hereafter referred to as the CPS Supplement) to examine how state regulations—specifically fee ceilings--affect households' use of payday loans and pawn loans, often viewed as substitute sources of smaller dollar credit. The Federal Deposit Insurance Corporation sponsored the supplement because it recognized that there was no comprehensive household-level data on household use of financial

[3] In 2000, the Federal Reserve decided that payday lenders, even if not considered banks under state laws, are subject to the Truth in Lending Act, enforced under Regulation Z. Lenders are, therefore, required to fully disclose all costs and details of loans to customers, including what fees amount to as annual percentage rates (Mahon 2004).
[4] The Talent-Nelson amendment to the John Warner National Defense Authorization Act for Fiscal Year 2007.

services provided outside of the financial mainstream.[5] The CPS Supplement was designed to generate reliable estimates of AFS use at the state level; a prerequisite for a study of the effects of state regulations. Paired with the rich data on household economic and demographic characteristics in the standard portion of the CPS, the CPS Supplement data provide an unprecedented opportunity for researchers to study household use of AFS products. A descriptive analysis of the data was released as FDIC (2010); the work reported in this paper builds on this analysis, with specific attention paid to evaluating the effects of state regulation.

There are notable differences in the regulation of payday and pawn shop loans across states. Indeed, while pawnshops operate in all states, regulations effectively prevent payday stores from operating in 13 states and the District of Columbia. These variations represent a natural experiment with which to evaluate the impact of regulations on consumer outcomes. In this paper, we focus specifically on fee ceilings which are the most common form of state regulation. We classify states by regulated fee ceilings and examine how the use of payday and pawnshop loans varies with these ceilings. We use the rich demographic data in the CPS to control for differences in household characteristics that also affect the use of payday loans and pawnshops. The CPS demographic and usage data allow us to examine whether certain groups of households are affected by changes in fee ceiling more than others. They also allow us to control for demand associated with local household characteristics, in examining how payday and pawnshop stores per-capita are affected by state fee ceilings.

The results of the analysis provide support for conjectures that stores, particularly payday loan store, can adjust loan volumes to maintain profit margins. Adjusted for use associated with

[5] The FDIC-sponsored CPS Supplement was designed to collect data on U.S. households that are unbanked and underbanked, including the number of these households, their demographic characteristics, and their reasons for being unbanked and underbanked. It was undertaken as part of the FDIC's efforts to comply with a statutory mandate that requires the FDIC to conduct ongoing surveys of bank efforts to serve the unbanked by providing important data about underserved households. A similar supplement is planned for 2011.

demographic characteristics, we do not find that payday loan usage in a geographic area varies systemically with effective fee ceilings; except for in areas subject to the very lowest fee limits that permit payday stores to operate. Pawnshop usage, adjusted for household demographics, does tend to be higher in areas that have fee ceilings at the higher end of the distribution. Household demand for payday and pawnshop loans seems to be relatively price inelastic. The CPS Supplement data indicate that a majority of households using payday or pawnshop loans do so to meet basic living expenses or to make up for lost income. Consistent with other evidence, we find that stores per-capita in a state tend be positively related to fee ceilings; controlling for loan usage associated with the demographic characteristics of households in each state.

The next section provides background on payday lending and pawn shop industries. Subsequent sections: discuss the data used in our tests; describe our empirical tests; and present empirical results. A final section concludes.

2. Background

Both the payday lending and pawn industries tailor the features of their loans to mitigate the greater credit risk of their customers. But how they mitigate risks reflects differences in the characteristics of the two products.

2.1 Payday Lending

Payday lenders make loans of several hundred dollars, usually for two weeks, in exchange for a post-dated check. Fees are set as a percentage of the loan amount or the face value of the post-dated check, most often ranging from 15 to 20 percent, which translates into APRs of 390 percent or more. To obtain a payday loan, an individual is supposed to have a

documented source of income, an address, and a bank account in good standing.[6] If the loan is not repaid or renewed, the lender can deposit the borrower's check, before initiating other action to secure repayment. Incentives to maintain a deposit account in good standing and short maturities explain why many borrowers choose to rollover or take out consecutive loans rather than defaulting.[7] Using data for a large payday lender in Texas, Skiba and Tobacman (2008) find that half of the firm's payday borrowers default on a payday loan within one year of their initial loan; but these borrowers have on average already repaid or serviced five payday loans before they default. The interest payments that they have made prior to default averaged 90 percent of the original loan's principal. Available data suggest that only 4 to 6 percent of payday loans default; thus given that lenders generally earn fee revenue equal to 15 to 20 percent of the loans they extend, it is not surprising that payday lending has proven to be quite profitable.

Deferred presentment lending—payday lending in its modern form—emerged in the early 1990s when check-cashing firms realized they could earn additional fee income by advancing funds to their customers in exchange for postdated checks to tide them over until payday (hence

[6] As discussed in Samolyk (2007), some payday lenders substitute an agreement allowing them to automatically debit a borrower's checking account for the postdated check. Many payday lenders use subprime credit-checking services, such as Teletrak, to check if a prospective borrower has a history of bouncing checks or not paying creditors. In exchange for the advance, the borrower provides the lender with a personal check for the amount of the loan plus the finance charge, which is postdated to reflect the date the loan must be repaid (its maturity date). On or before the loan maturity date, the borrower is supposed to redeem the check by paying off the loan. Depending on state regulations, a borrower may be able to roll over the loan by paying the stipulated fee upfront to defer the payment of the original loan plus the fee for another two-week period. For example, if someone borrows $300 by writing a postdated check for $345, that person would pay $45 in cash to extend the due date of the original $345 check for another two weeks. If loan rollovers are prohibited, a borrower who still needs funds will have to come up with the entire $345 payment that is due, whereupon he or she can write a new postdated check (for $345) to obtain the next $300 loan. This type of transaction is referred to in the industry as a consecutive transaction.

[7] Payday loans are often called unsecured loans, but they are better thought of as quasi-secured since the lender has a claim on the customer's checking account. (The term "quasi-secured" refers to the fact that although a checking account is a financial asset; a claim on an empty account may not have value). If the borrower does not repay or renew the loan, the lender can deposit the check for collection. If the check is honored, the lender has been made whole. If the check does not clear, the lender (as well as the customer's bank) may impose NSF fees or other fees and the lender can begin collections procedures. All of these considerations encourage a customer to remain in good standing and, therefore, represent an important part of a payday lender's loss mitigation strategy.

the name).[8] Given the small and very short-term nature of the advances, the effective APRs on these loans exceeded the maximums allowed by most state small-loan laws and usury ceilings; thus these loans were illegal in most states. Pressure from the check-cashing industry led some states to enact enabling legislation that permitted payday lending.[9] Robust payday industry growth during the 1990s through the mid-2000s reflected to a large extent the increasing number of states that passed enabling legislation.[10] Moreover, in some states where enabling legislation was not passed, and usury ceilings prohibited payday lenders from making loans directly, the industry was able to find ways to lend indirectly.[11] The number of states where payday lenders operated stores peaked in the mid 2000s. Subsequently, the regulatory trend has shifted in the other direction toward more restrictive limits, forcing payday lenders to cease storefront operations in a number of states.

In 2008, payday stores operated in 37 states. Among these states, 31 had fee ceilings that, as we discuss below, can translate into APRs ranging from 156 to 1955 percent. Fee ceilings are the most common form of regulation but other regulations exist including limits on: loan amount, loan maturity, the total number or amount of outstanding loans, loan rollovers, and consecutive loans. Because of uneven reporting at the state level, it is difficult to generate estimates of the size and structure of AFS credit industries. Stevens Inc (2009) estimated that there were 22,300 payday stores operating in 2008, down from a peak of more than 24,000 in

[8] See Gary Rivlin (2010) and Mann and Hawkins (2006).

[9] By 1998, 19 states had specific laws permitting payday lending ; 13 other states allowed payday lending under their existing small-loan laws (Fox, 1998). In the remaining 18 states, existing small-loan laws or usury ceilings and the absence of explicit enabling legislation effectively prohibited payday lending. Stand-alone monoline payday loan stores—where the only line of business was making payday loans--emerged rather quickly; however many existing AFS providers—mainly check cashers and pawn shops—also began to offer payday loans.

[10] Samolyk (2007) discusses the evolution of the payday loan industry. Fox (1998), Fox and Mierzwinski (2002, 2001), NCLC (2009) report information about states regulations of the payday lending industry at different point in time.

[11] For example, by forming a partnership with a bank and operating stores “as an agent" of the banks for a share of payday loan fees, which were generally quite substantial.

2006. However, internet payday lending has been growing and was estimated to account for $7.1 billion in loans during 2008. The number and size of payday loan firms are indicative of the bifurcated scale of firm operations; including many small local shops and a small number of large multistate companies. According to Stevens Inc (2009), 16 major payday loan companies controlled more than one half (11,200 stores) of the stores operating at the end of 2008.

The fragmentation of the payday loan industry reflects the relative ease of entry into the business. The operation of a payday loan storefront requires a relatively modest amount of financial capital. The large number of very small payday lenders also makes it harder for states to monitor AFS credit providers and enforce regulations.

2.2 Pawnshop Loans

Pawnshops also extend small amounts of credit; however these loans are collateralized by the items being pawned. Trade groups estimate that the typical pawn loan is for about $80, with a contract maturity of 30 days and loan fee of 20 percent of the loan amount. These terms translate into an APR of 240 percent. Pawn loans do not involve the standard type of default risk. Pawn lenders take physical possession of the item that is being pawned and give the borrower a small fraction of what the item is worth—generally from 40 to 60 percent (Caskey and Zigmund, 1990). If the borrower does not repay the loan, the pawn shop can sell the item, generally for more than the value of the loan. To obtain a pawn loan, an individual must have something worth pawning; but unlike a payday loan, they do not need a bank account, a regular source of income, or a credit check.

Like payday lenders, the modern pawn shop industry is subject to regulations administered by states or municipalities. Two important contract features that are regulated in

most states are the monthly fee (as a percent of loan amount, regulated in 37 states and the District of Columbia) and whether sale proceeds in excess of loan amounts and fees must be returned to borrowers. Some states also regulate the types of items that can be pawned. In Delaware, for instance, it is illegal for a broker to accept false teeth or artificial limbs as collateral for a loan. States can also regulate the amount of time before a loan is considered in default (usually 1 to 3 months) or have a requirement that when collateral is sold, it must be sold at a public auction (Caskey, 1991). Because of concerns about stolen goods, pawn shops are often required to submit transaction data to law enforcements agencies. States generally require pawnbrokers to file daily or weekly police reports listing items pawned and identifying the individuals pawning the goods (Caskey and Zikmund, 1990).[12]

Unlike payday lenders, there are pawnshops in every state (Shackman and Tenney, 2006). Annual estimates on listed pawnshops indicate that there was strong growth in the number of pawn shops through the mid-1990s which leveled off as the payday lending industry grew (Caskey, 2005). To deal with competition from the payday product, some pawnshop companies began to offer payday loans at their stores. Meanwhile, as Caskey (2005) notes, some technological innovations have been beneficial to the pawn shop industry; for example, eBay, which has allowed pawnshops to market their goods to a geographically diverse customer base.

The National Pawnbrokers Association (NPA) estimates that there are currently more than 13,500 pawn/retail businesses in the U.S. The pawn shop industry appears to be less concentrated than the payday loan industry with a largest share of stores being operated by smaller pawn loan companies that operate one to three stores (Prager, 2009). The four largest companies operated less than 1000 stores, which represents less than 10 percent of the number of

[12] According to the NPA, pawn transactions are the only type of consumer credit that requires reporting to local law enforcement agencies. In many states this reporting is required daily, and must include extremely sensitive personal information about the consumer (i.e. ethnicity, gender, address).

pawn shops in operation. The largest pawn shop operators also conduct payday lending.[13] As in the payday lending industry, entry into the industry involves relatively low costs and the large numbers of small pawn operators makes it difficult to enforce regulations.

2.3 Regulations and AFS Credit Market Dynamics

The structure of these AFS credit industries plays an important role in determining the affects of regulatory policies. Given their business model, payday lenders have to charge high fees (as a percent of the loan) to operate. Available evidence suggests that payday lenders generally charge the maximum rates allowed by a state's enabling legislation rather than engaging in price competition.[14] Payday stores also appear to have largely fixed operating costs (other than funds), implying that a minimum amount of fee income is needed to cover these costs and generate a given level of store profits (Flannery and Samolyk, 2007). Store-level economies of scale imply that higher fee limits allow stores to be profitable with a lower loan volume, thus allowing more stores to operate, all else being equal. Symmetrically, store-level scale economies imply that payday lenders can increase per-store loan activity (making more loans or larger loans) to maintain profit margins in the face of lower fee limits. Less is known about the cost structure of the pawn shop industry. However, Shackman and Tenney (2006) do find that in states with lower pawn loan fee ceilings, pawn shops made fewer small loans.

[13] For example, see the Securities and Exchange Commission (SEC) 10-Q report for Advance America Cash Advance Centers, Inc. for the quarterly period ended June 30, 2006; pp. 43–46.

[14] DeYoung and Phillips (2006) present evidence consistent with focal point pricing by payday lenders; they find that payday lenders in Colorado tended to adjust prices to ceiling rates implemented by enabling legislation in 2000. Focal point pricing implies that lenders charge similar prices and compete on other margins such as location or customer service. They also discuss evidence suggesting exploitative relationship pricing; prices were lower for initial loans than for refinanced loans, particularly when there was less local competition. Flannery and Samolyk (2007), find that stores operated by two large monoline lenders almost always charged the maximum fee allowed in the states where they were operated; and that store profitability depended on generating sufficient loan activity to cover relatively fixed operating costs.

In the absence of data measuring the volume of AFS credit extended, a number of studies have examined how fee ceilings are related to the number of payday lenders or pawns that operate in a market. Caskey (1991) and Shackman and Tenney (2006) both find that fee ceilings are positively related to the number of pawnshops per capita. Prager (2009) finds that lower fee limits reduce the number of stores per capita in both the payday and pawn shop industries.[15]

What is important for our analysis is that limits on fees per-transaction do not necessarily translate into a proportional change in the supply of AFS credit. AFS stores may adjust the scale of their activities in response to fee limits to maintain profit margins. If borrower demand is relatively price inelastic (for example because the funds are a "necessity" and there is lack of credit alternatives), a higher fee ceiling may not significantly reduce demand but could lead to an increase in the number of stores as higher profit margins per-borrower support smaller scale stores. Indeed borrowing may actually go up as customers respond to greater convenience. Conversely a lower fee ceiling may also not significantly affect customer demand, but it may reduce the number of stores that a market can profitably support. If economies of scale allow firms to continue to supply loans--albeit from fewer locations—then fee ceilings can reduce borrower costs without much of an effect on the availability of the credit product. Of course, at some point, fee ceilings can make storefront AFS credit activities unviable. Indeed relatively recently, Stevens Inc (2009) increased the population count used to estimate the number of

[15] There has also been interest in how the provision of AFS credit is related to the availability of bank branches in local markets. Some view the growth of AFS credit providers stems from a lack of bank branches in lower-income neighborhoods. An alternative view is that the presence of bank branches is not as important as whether or not banks offer the small closed-end loan products sought by AFS customers. In addition, competitive pressures are viewed as causing the pricing of banking services for people of modest financial means to shift more of a fee-per-service basis; a controversial example being bank overdraft fees. These types of bank fees are often cited as examples of what the use of AFS credit services can be a cost effective decision for consumers. For example, see the Advance America's 2004 S-1 filing with the SEC, Advance America form S-1 Registration Statement Under the Securities Act of 1933 as filed August, 13, 2004; p. 5. Available at http://yahoo.brand.edgar.gov. The existing empirical studies are more consistent with the latter view as studies have tended to find a positive relationship between the number of payday lenders or pawnshops and the number of bank branches (Prager, 2009).

payday stores that a market could support; citing regulatory pressures and maturing industry conditions.

Because of a lack of publicly available data, there has been little research about how state regulation of AFS credit products directly affects customer use. In 2007, for the first time, the Federal Reserve Survey of Consumer Finance (SCF) asked a nationally-representative sample of households about payday loan use during the previous year. Using the SCF data, Logan and Weller (2009) compared the characteristics of households that used payday loans with those that did not. Payday loan customers tended to be younger, to have children under 18, to rent rather than own their homes, and to be headed by someone that is in a racial or ethnic minority.[16] Consistent with the prerequisites that payday borrowers have jobs and bank accounts, their income and education tend to be neither exceptionally low nor exceptionally high. An important feature of payday loan borrowers is their financial situation. Logan and Weller (2009) report that their median wealth is notably lower than that of non-payday borrowers and that payday borrowers were more likely than non-borrowers to have been denied for a loan during the previous five years.[17] The SCF data however, do not include information about the use of other AFS products. And while these data are nationally representative, the state-level sample sizes are too small to reliably support the cross-state statistical tests employed in the current paper.[18] Prior to the availability of the CPS Supplement data, there was no source of nationally-representative data on pawn shop loan use.

[16] Ellihausen and Laurence (2001) present univariate statistics describing payday loan customers that responded to a survey sponsored by the CFSA. Subsequent industry-sponsored studies have reported similar univariate results (Iota, 2002, Cypress Research Group, 2004). Also see Caskey (2005) and Chessin (2005), who analyze payday customer characteristics in Wisconsin and Colorado, respectively. Stegman and Faris (2003) conduct a multivariate analysis of payday loan use by lower income households in North Carolina.

[17] Ellihausen and Laurence (2001) report finding that payday borrowers are more likely to have outstanding credit card balances near their limits and to not pay their credit card bills in full. Also see Iota (2004).

[18] The public release dataset of the SCF does not contain the state of the respondent, only the Census region.

3. Data and Empirical Approach

This study uses the new household-level data on the use of payday loan and pawnshop loans drawn from the January 2009 CPS Supplement. The January 2009 Unbanked/Underbanked Supplement Questionnaire was designed to gather household-level information about bank account ownership and the use of ASF services, including the reasons for the household's choices. The CPS samples are designed to generate reliable estimates of household behavior at the state level. The January 2009 wave surveyed approximately 54,000 households; about 47,000 (86 percent) of which participated in the CPS Supplement survey (the other 14 percent declined to participate).[19]

3.1 The CPS Unbanked/Underbanked Supplement

One goal of the supplement was to obtain information about the use of AFS products by both banked and unbanked households. Respondents [20] were asked: (1) Have you or anyone in your household ever used payday loan or payday advance services? and 2) Have you or anyone in your household ever sold items at a pawn shop?[21] Respondents that reported household use of payday loans were then asked: How many times in the last 12 months did you or anyone in your household use a payday loan or payday advance services? Respondents that reported household use of pawn shops were asked: How often do you or anyone in your household sell items at pawn shops? Categorical responses included: At least a few times a year, once or twice a year, or almost never. Respondents indicating household use of an AFS

[19] About 875 households were interviewed in the average state where payday lending is allowed, resulting in about 40 payday loan and 18 pawn shop reported users per-state in the sample. Additional information about the Survey is available at www.fdic.gov/hosueholdssurvey/Full_Report.pdf and at http://www.census.gov/apsd/techdoc/cps/cpsjan09.pdf.

[20] The survey respondent was the "householder." That is, the person in the household who owned the house or whose name was on the lease or the spouse of such person.

[21] Interviewer instructions stated that the purpose of the questions was to determine whether the household uses the pawn shop to obtain a loan; not whether the household bought items at a pawn shop.

credit product were asked why they used a particular loan product rather than obtaining a loan from a bank. Finally, respondents indicating the use of one or more AFS credit products were asked a single question as to why the funds were needed.

The dependent variables of interest here are: whether or not the household used a payday or pawn shop loan during the last 12 months (the 2008 calendar year).[22] For payday loans this was asked directly. However, for pawnshop loans it had to be inferred by the respondent saying that someone in the household sold items in a pawnshop "once or twice a year" or more than "once or twice a year." Those saying they used it rarely or never were deemed to have not used it during the preceding 12 months.[23]

In our analysis, CPS Supplement data on payday loan and pawn shop use are coupled with the standard data collected by the CPS to classify households in terms of economic and demographic characteristics including household income, labor force status, educational attainment, race/ethnicity, age, family type, marital status, homeownership status, and nativity.[24] As discussed more below, we also utilize geographic information that is available for each CPS respondent, including the state and, for many respondents, the MSA and sometimes the county where the household resides or whether the location is in a nonmetropolitan area.[25] All calculations presented in this study use CPS supplement weights that reflect adjustments for non-response to the basic January 2009 CPS and for non-response to the January 2009 CPS

[22] Ideally one would like to know usage at the individual level; however, only the information on the overall household usage was provided by the respondent.
[23] If the household indicated that it had used pawn shops, but the frequency of use is missing; the observation was classified as not having used pawn shops during 2008.
[24] Household classification of an economic or demographic variable that is defined at the person level (e.g., race, education, or employment status) is based on the economic or demographic classification of the householder/reference person.
[25] To ensure compliance with OMB rules, the public-use CPS data file redacts geographic detail for some respondents.

supplement. In addition, all calculations exclude observations for which the use of payday loans or pawnshop loans cannot be ascertained because of missing data.

3.2 State Fee ceilings

We measure state payday loan fee limits using information reported in Fox (2004) updated with information from the Consumer Federation of America (CFA) website. Data on state pawn shop fee limits is drawn from Shackman and Tenney (2006). While there does not seem to be a source that comprehensively tracks pawn shop regulations, web searches have yielded no indication of changes in fee limits since 2006.

We classify states in terms of their regulatory fee limits for both payday loans and pawn shop loans. State payday loan fee limits have been relatively stable since the mid-2000s. Where fee limits have been reduced, they have tended to be set at levels that effectively prohibit payday lending. However, the nature of the payday loan product and state limits on loan fees do not allow for a straightforward comparison of fee limits. Payday loan fee limits are most commonly stipulated as a percentage of the loan amount or the face value of the post-dated check. However, free limits can vary incrementally with the amount borrowed or there may be ancillary fees that lenders can charge. To compare fee limits across states, Fox (2004) computes the "effective" maximum APR on a two-week $100 loan. Fees in the range of 15 to 20 percent of the loan amount translate into APRs in the 390 to 520 percent range on a loan that is repaid in two weeks. Here we used 2008 payday loan fee ceilings to classify states where payday lending is allowed into five fee limit categories based on the effective APR associated with their fee

limits.[26] We classify states into four pawn shop fee limit groups based on the data reported in Shackman and Tenney (2006).[27]

Since payday regulations effectively prohibit payday stores from operating in some states, we restrict most of our analysis to those 37 states where payday lenders operated. Since the survey asks about AFS use during 2008, the laws that prevailed during that year are particularly relevant for our analysis. We use estimates of payday stores by state from Stevens Inc (2009) to identify states where payday stores were able to operate in 2008. Table 1 reports how we classify states in terms of the payday loan and pawnshop loan fee ceiling groups used in our analysis.

[Insert Table 1]

3.3 Empirical Strategy

The objective of this paper is to isolate the impact of fee ceiling regulations on the use of payday and pawnshop loans, controlling for demographic and economic factors that differ across states. We also want to determine if particular groups of households are affected differently by fee limits. Our approach follows a standard methodology for dealing with grouped-cross-sectional-micro data. First, observations (households) are grouped into the smallest geographic units identified in the CPS data. The state of residence is identified for all respondents; and most observations (all but those in four states) can be further classified as residing in a metropolitan or

[26] As reported in Fox (2004) and the CFA website.

[27] One could construct effective APRs associated with limits on pawn shop fees to allow comparison with the effective APR payday loan limits constructed by CFA. Here we use the monthly effective interest rates on pawn shop loans reported by Shakemen and Tenney (2006). These effective interest rate limits are based on the cost of a 2-month $80 pawn loan, and include any ancillary fees, such as storage costs, that may be charged in addition to fees stipulated as interest charges.

a nonmetropolitan location. Within urban areas, the specific MSA is identified for a large share of respondents and, for some the specific county of residence is also reported.

The first stage of the analysis uses within-geographic variation to estimate the effects of demographic characteristics on the likelihood that a household would have used a payday loan or a pawn shop loan at least once during the past year. This analysis is equivalent to running a fixed-effects model that includes a dummy for each geographic area in the regression of AFS credit use on household demographic characteristics. The fitted equations reflect the relationship between demographic characteristics and demand (usage) for an average geographic area. As noted, we restrict our analysis for both payday and pawnshop usage to geographies in states where regulations permitted payday loan stores to operate in 2008.

The coefficients from the first stage are used to construct two sets of variables used in the second stage regressions. The results from the first stage are used to estimate the predicted likelihood that an observation would use a given loan product based solely on their own demographic characteristics. These estimates are normalized so that the overall mean predicted use for respondents in the 37 states where payday stores operate is equal to the actual overall usage in these states. We also construct a residual for each respondent which equals the difference between actual use (0 or 1) of a particular loan product and the predicted probability of use based on household characteristics (excluding geography). By construction, the overall mean residuals will be zero for households residing in the 37 states.

These two estimated variables, constructed at the household level, are aggregated to the level of a geographic unit. The mean demographic estimate for a geographic area represents the estimated share of households in the area that would have used payday loans or pawnshops based purely on the demographic characteristics of the population: We refer to these variables as the

estimated demographic demand in a geographic area. The mean residual variable, measured for each geographic area represents the component of use in the area that is not explained by local demographics. For geographic units in the 37 states where payday lenders operate, the mean residuals are identical to the fixed effects that would result from fitting a fixed effects model.

A way of interpreting these mean residuals is as the average usage incidence in an area adjusted for the estimated demographic component of demand. A negative adjusted usage variable for a geographic area can be interpreted as indicating that there is less usage in the area than would be predicted based on the demographic characteristics of households residing in that area. A positive adjusted usage variable indicates greater usage than would be predicted by local household characteristics. Although households residing in areas where payday lending stores cannot operate are not included in the estimation of demographic usage patterns, comparable variables can be computed and can be interpreted in the same manner as for geographies that were included.

In the second stage of the analysis, the adjusted measures of usage for each geographic area are used as dependent variables that are regressed against payday-loan and pawn-shop fee limit categories, along with market-level characteristics. The second stage analysis is conducted for the 365 unique geographic areas identified in the CPS data where state regulations allow payday loan stores to operate and are the key regressions in the paper (the pawn shop regressions are also run using all geographic areas in the full sample). They measure the relationships between the effective payday-loan or pawn-shop fee ceilings in an area and the incidence of household AFS credit use in the area net of the demand component due to demographics.

We also examine the interactive effects between fee ceilings and AFS credit use by specific demographic groups in the third stage of our analysis. For parsimony, we group states

into the broad payday and pawn-shop fee ceiling groups reported in Table 1. The mean residuals from the first stage (relating usage to household characteristics) are calculated as described above for each demographic group crossed with the state fee-ceiling groupings described in Table 1. By construction, the mean residuals for each demographic group over all areas where payday lending is permitted will be zero. Thus, again, a negative (positive) residual for a particular group of households in a particular state grouping can be interpreted as saying that these households have a higher (lower) incidence of use than would be predicted by their household characteristics alone. The mean residuals for each demographic/fee ceiling group are made up of two components: a market effect and an interactive effect. The interactive effect reflects the fact that members of that demographic group may differentially react to ceiling effects than the "average" respondent does. The market effect reflects the fact that members of that demographic group may tend to live in areas that have above (or below) average market effects (as calculated in the second stage of the analysis).

4. Results

In this section we present the results of our analysis.

4.1 Descriptive Results

Table 2 presents the basic distributional (weighted) characteristics of our sample. We present distributions for households in the all states and, because it is the sample used for all of our estimation, the sample characteristics of households living in the 37 states where state regulations permitted payday loan stores to operate in 2008. As can be seen there is relatively little difference in the demographic characteristics of the two populations

[Insert Table 2]

Table 3 describes the use of payday loans and the reasons for their use for households located in the 37 states that permit payday lending. Unbanked, black, Native American, and unemployed households are all significantly more likely to have used payday lending in 2008 than other households. Of borrowers, about two-thirds borrowed two or more times.[28] Between one-quarter and one-third of borrowers cited convenience are the major reason for choosing a payday lender while approximately 60 percent said that they could not borrow elsewhere. Basic living expenses was cited as the major use of the money for payday loan borrowers although significant percentages cited lost income or a specific expense as the main reason that the money was needed. These patterns suggest that household demand for payday and pawnshop loans is relatively price inelastic; that is, households will use the product even if the cost is high.

[Insert Table 3]

Table 4 provides parallel information about pawn shop use by household in payday states. Overall, households were one-half as likely to have used a pawnshop loan in the previous 12 months (as we have defined it) than to have used a payday loan. Moreover, households that did use pawnshops were less likely to use them more than two times or more a year than payday borrowers. Like payday loans, the unbanked and unemployed were particularly likely to have used pawnshops but there is less distinction among racial groups than for payday loans. The reasons cited for pawnshop usage are very similar to those cited by payday loan borrowers. Similarly the reasons why the funds were needed parallel those of payday borrowers. Overall, the univariate patterns in tables 3 and 4 suggest that at least on the surface payday and pawnshop

[28] Respondents who "rolled over" over loans were asked to treat these as separate loans. It is not clear, however, that this was reported in a consistent manner. The CPS Supplement estimates of the number of borrowers who borrowed multiple times during the year are substantially below those of other studies. Consequently we felt caution should be exercised in using the "times used" variable and relied on the classification of households into households who used an AFS loan product in 2008 and those that didn't as our empirical measure of usage.

loans are attracting fairly similar clients for similar reasons and that the loan money is being used for similar purposes. We will see if these similarities holdup in a multivariate framework in the next section.

[Insert Table 4]

4.2 Demographic Regressions Results

Table 5 reports the results of linear probability regressions that examine how payday loan and pawn shop loan use are related to household economic and demographic characteristics. We use categorical measures (0/1 dummy variables) of each household characteristic to allow for nonlinear relationships. The base group for this specification is households: that have household income below $15,000; that own their own home; and where the householder is: a non-Hispanic white that is under 24 years old, employed, married with no children, US born, and has less than a high school education. The dependent variable in each equation is coded 1 if any member of the household used payday lending (or pawnshops as we have defined use) in the previous 12 months and is coded 0 otherwise. [29]

[Insert Table 5]

The results of the regression relating household characteristics to the use of payday loans indicate that, compared to households in the base group, the likelihood of using payday loans during the previous 12 months is notably higher for households where: the householder rents, is black or Native American, is unemployed, is married but divorced or separated, has a high school diploma or some college; or is a single female head of household. Compared to the base

[29] Because the dependent variable is categorical we could have used and logistic or probit model form (which implies a different underlying error structure than the linear probability model). However, the variance composition we employ has a more straightforward interpretation with a linear probability model and we have no basis to choose one error assumption over another. Because the independent variables are categorical there is little difference among the model forms in practice.

group, the likelihood of having used a payday loan is notably lower for households where the householder has a college degree or is foreign born. There is evidence of nonlinear relationships between payday loan use and household income, householder age, and householder education. For example, payday loan use is higher among households having income of more than $15,000 but less than $50,000; and where the householder is between 25 and 45 years old.

The results for the regression relating household characteristics to pawnshop use indicate that, compared to the base group, pawnshop use in higher among households: where the household is unbanked, rents, or where the householders is Native American or Black or unmarried. Lower pawnshop use is evident for households where the householder has a college degree or is foreign born. Pawn shop use is inversely related to household income; and is higher when the householder is between 25 and 45 years old. It should be noted, however, that the overall explanatory power of these regressions is modest.

4.3 The Effects of Fee Ceilings on AFS Credit Use

This section presents regressions that relate payday loan or pawnshop use in a geographic area to the effective payday loan and pawnshop fee ceilings in the area. As discussed above, AFS credit usage for the geography is measured net of the use predicted by the characteristics of households that reside in the locality. Tables 6A and 6B present the regression results for both payday loan use and pawn shop use. In addition to the variables indicating fee ceiling groups, we also include variables measuring the relative fee-ceiling restrictions on the alternative product (pawn for payday and payday for pawn). Specifically, dummy variables indicate whether pawn shop fee limits are generally lower or higher than payday fee ceilings in the state. (The base group is geographic areas with similar fee ceilings on both products.) The regressions also

include dummy variables indicating the broad region where a geography is located (North or West; South is the omitted group), whether the geographic area is not in an MSA; and the median income level of the MSA where the area is located.[30]

[Insert Table 6]

As reported in Table 6, for ceilings set at $15 per $100 or higher, payday loan use adjusted for household demographics does not appear to be systematically related to the level of the ceiling (the base group is areas with a ceiling of $15 or $16 per $100). Payday loan usage adjusted for demographics does however, appear to be lower in the four states with fee ceilings of $10-$12 (group 1). This result is unaffected by controls for pawn shop fee ceilings, which appear to have little impact on payday loan usage. Payday loan usage is somewhat higher in geographic areas located in the Western region; but adjusted usage is not related to the level of median income as measured for the market where the area is located.

Pawnshop usage adjusted for household demographic characteristics does appear to be higher in areas with fee ceiling levels above $20 per $100 although the statistical estimate is imprecise. The relative levels of payday and pawn fee ceilings does not appear to effect usage. Pawnshop usage adjusted for household characteristics also tends to vary across regions; being higher in areas located in Western states and lower in areas in the North, compared to geographic areas in the South. It does not however, appear to vary systematically with median market income.

These findings are generally consistent with conjectures that, at least above the lowest ceiling levels, household demand for these loans is relatively price inelastic and thus stores can

[30] For identified MSAs, median income is equal to MSA median income. For metropolitan areas where the MSA is not identified, median income is measured as the population weighted median income of all MSAs in the state that are not identified in the CPS data. For non-metropolitan areas, median income is equal to the median income for the nonmetropolitan part of the state. For the four states where responses are not identified as metropolitan or nonmetropolitan, median income is measured using median income for the state.

adjust scale and per-store loan volumes to maintain profit margins; albeit more so for paydays than for pawn shops.

4.4 Determinants of Stores Per Capita

The focus of the empirical tests thus far have been on how state fee limits are related to household use of payday loans and pawnshops controlling for use that would be predicted by household characteristics within a locality. A finding that AFS credit use, adjusted for demographics, does not vary significantly across the range of fee limits that permit payday lenders to operate is suggestive of inelastic demand and a supply side that can adjust to some degree to maintain profit margins. To further investigate this conjecture, we examine how the number of payday stores (and pawn shops) per-capita in a state varies with the state's fee limits, controlling for demographic demand measured using the relationships reported in table 5.

As noted, estimates of payday stores by state in 2008 were obtained from Stevens Inc (2009). Data on the number of pawn shops by state were obtained from a trade group website and compared to estimates used in Shackman and Tenney (2006). This comparison suggests that the number of pawn stores has not changed notably during the past few years. State population data were used with these state-level store counts to measure payday-loan stores and pawn shops on a per-capita basis by state.

Because per-capita store estimates are only available at the state level, we fit our equations at the state level. Table 7 presents the results of these tests. Controlling for estimated demand based on household demographics (as estimated in table 5 and aggregated to the state level), we find a general pattern of a positive relationship between stores per-capita and payday fee ceilings. Interestingly, adjusting for demographic demand, stores per capita to not appear to

be the highest in states where there are no limits on the fees that payday lenders or pawn shops can charge. Although the data used here is limited in what it can says about loan pricing in the absence of fee ceilings; these results are generally consistent with focal point pricing and scale adjustments as determinants of store profitability.

[Insert Table 7]

4.6 Interactive Effects between Fee Ceilings and Demographics

One objective of the paper was to examine the potentially interactive effects between payday or pawn loan fee ceiling limits and demographic groups—that is, if ceilings were lowered (or raised) would certain groups be affected differently. To examine this issue we grouped households into the five payday and four pawnshop groups based on the effective fee ceilings in the states where they are located.[31] Mean residuals for specific demographic groups were calculated from our baseline models (tables 6A and 6B) as described earlier. Results are presented in tables 8 and 9. The best way to interpret the numbers in these tables is to compare the residual means for each group with the overall group means shown in the bottom row under "total." A residual that is larger (more positive) than the overall group mean should be interpreted as a positive interaction effect—that is, the demographic group in the indicated fee ceiling group is more likely to use the product than is predicted by the sum of the overall market and demographic effects for that group. A residual smaller (more negative) than the overall group mean should be similarly interpreted as indicating a negative interaction effect.

[Insert Tables 8 and 9]

[31] We combine areas with very high fee ceiling limits (above $20 per $100) with those areas that have no ceiling limit for payday loans as usage patterns in the two groups is similar.

Both black and Native American households appear to have significant interactive effects with payday loan fee ceilings; but they go in opposite directions. Black households show positive interactive effects for payday (but not pawnshop) loans for states with no (or very high) fee ceilings (group 4) but negative interaction effects for states with low ceilings (group 1). Female-headed household show a similar pattern. This means that as payday loan fee ceilings rise, black or female-headed household usage disproportionately rises (or fails to fall); symmetrically, usage by these groups disproportionately falls in states with lower fee ceilings. Native Americans show the opposite pattern. One possible (speculative) explanation for this is that as the number of stores rises with higher ceilings, the stores tend to locate in certain areas which stimulates usage.

4.7 Further Evidence on the relationship between Pawn Shop loans ceilings and Payday Usage

The regression results presented in tables 6A and 6B suggest that pawn shop fee ceilings have little impact on payday loan usage. This is a somewhat surprising result. Although pawn shops obviously offer a range of services, for persons with collateral, they do provide a close substitute to a payday loan often at cheaper rates. Our regression results, however, are limited to states in which payday lending is permitted and reflect an overall relationship. To further tease out the relationship between the two products, we computed adjusted usage estimates for the payday fee ceiling geographic groups employed in the previous sub-section. The groups were further subdivided into areas where pawn shop ceilings were lower, the same, or higher than payday loan fee ceilings. Results are presented in table 10.

[Insert Table 10]

The more granular analysis evident in table 10 suggests that there is some substitutability between payday and pawn shop lending. The adjusted incidence of payday loan lending is lower in areas in which pawn shops can charge higher fees (column 3 versus column 2) and pawn shop lending is lower in areas where payday lenders can charge higher fees than pawn shops (column 4 versus column 5). Since all else equal, consumers would be expected to go to the lower-cost provider, these effects presumably stem from the impact of fee ceilings on the number of providers in an area.

These results also suggest that pawn shop lenders are picking up some of the AFS loan demand in states where payday loans are prohibited. The incidence of pawn shop usage is a full percentage point higher in areas prohibiting payday loans when pawn shops are subject to ceiling fees above the minimum than in areas where they are not (row 1). The reverse relationship does not hold. Payday lending is actually higher in areas where both payday and pawn lenders face no ceiling restrictions than in areas where pawn shop lenders are constrained and payday lenders are not.

5. Policy Implications and Conclusions

Our analysis to date suggests that above a minimum threshold, AFS credit usage in the form of payday loans is relatively inelastic to variations in state fee limits. Below the minimum threshold, however, there does appear to be less usage. For payday loans in their current form, this "minimum threshold" appears to be a fee ceiling between $12 per $100 and $15 per $100; for pawn shop loans it is in the $10 to $19 per $100 range. Fee ceilings set at levels below the thresholds appear to result in fewer loans, although product usage does not disappear.

With few exceptions, particular types of households tend to use these AFS credit products to the same extent in states with high fee ceilings and in those with lower ceilings. Black and female-headed households appear to be exceptions to this pattern as usage by these groups disproportionately rises in states with higher payday loan (but not pawn shop) fee ceilings.

The Flannery-Samolyk conjecture that inelastic usage responses to fee ceilings can be explained by variation in the number of AFS stores per-capita and offsetting variations in the scale of store operations seems to have some support in the data. There is a significant positive relationship between fee ceilings and the number of stores per-capita even after variation in demographic characteristics are controlled for. However, more stores does not tend to translate into greater usage by households; hence stores may simply be originating fewer loans per store. As noted, these results are consistent with focal point pricing and scale adjustments that determine store profitability. For pawn shops, the same patterns do not seem to be as evident. Both the number of pawn shops and pawnshop usage are higher in states with the highest fee ceiling.

If these findings holds up, it suggests that laws to lower fee limits up to some point would be beneficial to consumers, whose demand for these loans is price inelastic and who are using the loans to make ends meet. In the payday loan industry, lower costs to consumers would be provided by lower fixed industry costs (fewer stores per loan); thus the industry could remain profitable. Consumers may have fewer stores to choose from, but they would still have access to lenders.

Another lesson from the CPS Unbanked/Underbanked Supplement data is that demographic characteristics matter. Stores per-capita are an imperfect proxy for usage and are

driven as much by demographically-driven demand as by fee ceilings. Areas with higher innate demand can support a higher number of stores for a given fee ceiling than other areas. Analysis of fee ceiling effects that fails to take demographic characteristics into account could clearly be potentially misleading.

References

Caldor, Lendol. 1999. *Financing the American Dream: A Cultural History of Consumer Credit.* Princeton University Press, Princeton, NJ.

Caskey, John P. 1991. "Pawnbroking in America: The Economics of a Forgotten Credit Market," *Journal of Money, Credit and Banking* 23(1), 1991, pp. 85-99.

_____1996. *Fringe Banking: Check-Cashing Outlets, Pawnshops, and the Poor*, Russell Sage Foundation, New York.

———. 2005. "Fringe Banking and the Rise of Payday Lending. in Credit Markets for the Poor." Ed. Patrick Bolton and Howard Rosenthal. Russell Sage Foundation, New York, NY, 17–45.

———. and Brian Zikmund. 1990."Pawnshops: The Consumer's Lender of Last Resort," Federal Reserve Bank of Kansas City Economic Review, March/April 1990.

Chessin, Paul. 2005. "Borrowing from Peter to Pay Paul: A Statistical Analysis of Colorado's Deferred Deposit Loan Act, University of Denver Law Review, 83:2, 387-423.

DeYoung, Robert, and Ronnie J. Phillips. 2006. "Strategic Pricing of Payday Loans: Evidence from Colorado, 2001-2005." Unpublished research paper.

Elliehausen, Gregory, and Edward C. Lawrence. 2001. "Payday Advance Credit in America: An Analysis of Customer Demand." Monograph no. 35, Credit Research Center, Georgetown University.

Federal Deposit Insurance Corporation, 2009. FDIC Survey of Unbanked and Underbanked Households. December. http://www.fdic.gov/householdsurvey/Full_Report.pdf

Federal Deposit Insurance Corporation, 2010. Addendum to the 2009 FDIC Survey of Unbanked and Underbanked Households: Use of Alternative Financial Services. September. http://www.economicinclusion.gov/pdfs/AFS_use_report.pdf

Flannery, Mark, and Katherine Samolyk. 2007. "Scale Economies at Payday Loan Stores," Proceedings of the Federal Reserve Bank of Chicago's 43rd Annual Conference on Bank Structure and Competition (May 2007) Chicago, Illinois.

Fox, Jean Ann. 1998. "The Growth of Legal Loan Sharking: A Report on the Payday Loan Industry." Consumer Federation of America, Washington, DC,. November.

———. 2001. "Rent-A-Bank Payday Lending: How Banks Help Payday Lenders Evade State Consumer Protections." Consumer Federation of America and the U.S. Public Interest Research Group, Washington, DC, November.

———. 2004. "Unsafe and Unsound: Payday Lenders Hide behind FDIC Bank Charters to Peddle Usury." Consumer Federation of America, Washington, DC, March.

_____. and Edmund Mierzwinski. 2000. "Show Me the Money! A Survey of Payday Lenders and Review of Payday Lender Lobbying in State Legislatures." U.S. PIRG and Consumer Federation of America. February.

Mann, Ronald, and J. Hawkins. 2006. "Just Until Payday." Berkeley Electronic Press Express Preprint Series. Draft Paper no. 1863, 2006. Released November 2006.

Logan, Amanda and Christian E. Weller, 2009. Who Borrows From Payday Lenders? An Analysis of Newly Available Data. March 2009. http://www.americanprogress.org/issues/2009/03/payday_lending.html

National Consumer Law Center (NCLC). 2010. Small Dollar Loan Products Scorecard—Updated, May 2010. http://www.nclc.org/reports/content/cu-small-dollar-scorecard-2010.pdf

Paige Marta Skiba and Jeremy Tobacman. 2008, Payday Loans, Uncertainty, and Discounting: Explaining Patterns of Borrowing, Repayment, and Default.

Prager, Robin A., 2009. Determinants of the Locations of Payday Lenders, Pawnshops and Check-Cashing Outlets. Federal Reserve Board of Governors Finance and economic Discussion Working paper 2009-33.

Rivlin, Gary. 2010. Broke, USA: From Pawnshops to Poverty Inc. HarperBusiness; June, 2010.

Samolyk, Katherine. 2007, "Payday Lending: Evolution, Issues, and Evidence," Household Credit Usage: Personal Debt and Mortgages, edited by Sumit Agarwal and Brent W. Ambrose, New York: Palgrave/MacMillian, Oct 2007.

Shackman, Joshua D. and Tenney, Glen. 2006. "The Effects of Government Regulations on the Supply of Pawn Loans: Evidence from 51 Jurisdictions in the U.S." *Journal of Financial Services Research*, 30(1), 2006, pp. 69-91.

Stegman, Michael A., and Robert Faris. 2003. "Payday Lending: A Business Model That Encourages Chronic Borrowing." *Economic Development Quarterly* (February) 17 (1): 8–32.

Stephens, Inc. 2009. Payday Loan Industry Annual Industry Update, 2009.

———. 2007. "Industry Report: Payday Loan Industry." Little Rock, AR, March 27

———. 2006. "Consumer Finance Industry Note: Recent Payday Loan Regulatory Activities." Little Rock, AR, April 21

Table 1 Classification of Payday States by Payday and Pawnshop Fee Limits

	Payday Loan Fee Limit Groups [1]			Pawnshop Fee Limit Groups [1]	
State	Four Groupings	Effective APR as reported by CFA	Flat Fee per 100$	Four Groupings	Fee limit reported by Shackman and Tenney (2006)
RI	1	260	$10	1	$5
ME	1	261	$10	3	$25
TX	1	309	$12	3	$20
MN	1	312	$12	4	No fee limit
OH	2	391	$15	1	$3
MI	2	391	$15	1	$4
KS	2	391	$15	2	$10
WA	2	391	$15	2	$10
VA	2	391	$15	2	$15
OK	2	391	$15	3	$20
IN	2	391	$15	3	$22
FL	2	391	$15	3	$25
IL	2	404	$16	3	$20
NM	2	409	$16	1	$7
IA	3	435	$17	4	No fee limit
AK	3	443	$17	3	$20
AL	3	455	$18	3	$25
AZ	3	460	$18	2	$11
CA	3	460	$18	2	$12
HI	3	460	$18	3	$20
KY	3	460	$18	3	$22
TN	3	460	$18	3	$22
SC	3	460	$18	3	$23
NE	3	460	$18	4	No fee limit
ND	3	520	$20	4	No fee limit
LA	3	521	$20	2	$15
CO	3	521	$20	2	$16
MS	4	572	$22	3	$25
MT	4	662	$25	3	$25
WY	4	780	$30	3	$20
MO	4	1955	$75	4	No fee limit
DE	5	No fee limit		1	$3
WI	5	No fee limit		1	$3
NV	5	No fee limit		2	$13
ID	5	No fee limit		4	No fee limit
SD	5	No fee limit		4	No fee limit
UT	5	No fee limit		4	No fee limit
CT	0	Not Allowed		1	$2
DC	0	Not Allowed		1	$2
NJ	0	Not Allowed		1	$4
PA	0	Not Allowed		1	$4
VT	0	Not Allowed		1	$4
NY	0	Not Allowed		1	$9
OR	0	Not Allowed		2	$11
NC	0	Not Allowed		3	$22
GA	0	Not Allowed		3	$25
AR	0	Not Allowed		4	No fee limit
MA	0	Not Allowed		4	No fee limit
MD	0	Not Allowed		4	No fee limit
NH	0	Not Allowed		4	No fee limit
WV	0	Not Allowed		4	No fee limit

1 Store fee ceiling groups indicate similar ceilings; including states having no fee limits.
Payday fee-ceiling group 0 indicates state where regulations effectively prohibit payday lenders from operating stores.

Table 2: Demographic Distribution of Full Sample and States Where Payday Allowed

Variables	Percent of households Full Sample	Payday Allowed
Use Banks		
Unbanked	7.2	7.2
Banked	92.8	92.8
Tenure Status		
Homeowner	67.9	68.6
Renter	32.1	31.4
Non-House/Apt	5.3	5.7
Race		
Black	12.8	11.3
Hispanic	10.9	12.5
Asian	3.9	4.0
Native American	1.2	1.3
Other race	0.2	0.2
NonHispanic White	71.0	70.7
Parentage		
Not a parent	33.7	33.5
Children 18+	36.4	36.4
Children <18	29.9	30.1
Labor Force Status		
Unemployed	5.5	5.6
Retired	19.7	19.5
Disabled	5.4	5.2
Other LF	8.1	8.1
Employed	61.3	61.5
Household Income		
HH income<$15K	13.1	13.1
HH income$15-30K	14.7	15.2
HH income 30-50	18.2	18.7
HH income $50-75K	16.1	16.4
HH income>$75K	23.7	23.2
HH income missing	14.2	13.3
Householder Age		
Age 15-24	5.4	5.8
Age 25-34	16.6	16.6
Age 35-44	18.9	19.1
Age 45-54	20.9	20.6
Age 55-64	17.1	17.1
Age >64	21.0	20.8
Marital Status		
Widowed	10.0	9.8
Divorced/separated	17.5	18.1
Single	20.6	19.8
Married	51.9	52.3
Education		
No high school diploma	12.4	12.4
High school diploma	29.1	28.7
Some college/AA	28.1	29.6
College degree	14.4	14.0
Post graduate	16.0	15.3
In armed Forces	0.6	0.7
Female head of household	11.7	11.3
Foreign-born	13.1	13.0
US born	86.9	87.0
Total Households	**100.0**	**100.0**

Table 3: Household Payday Loan Usage

Percent	Times used in 2008 [1]				Reason Use Payday loan [2]					Use Money For [2]			
Variables	none	1	2	2Plus	Convenient	Can't Borrow Comfortable elsewhere	Other	Lost Income	Luxury item	Specific Exp.	Basic Living	Other
Use Banks												
Unbanked	91.1	4.1	1.2	3.6	27.7	2.8	63.1	6.4	22.9	2.9	7.1	56.1	11.0
Banked	95.8	1.6	0.7	1.8	26.1	2.4	58.2	13.2	18.4	4.3	15.6	42.6	19.2
Tenure Status													
Homeowner	97.4	0.9	0.5	1.1	28.8	1.7	56.8	12.6	19.9	4.3	13.2	40.4	22.2
Renter	91.3	3.7	1.3	3.7	24.8	3.0	60.2	12.0	18.5	3.9	15.1	47.1	15.4
Non-House/Apt	93.5	2.2	1.7	2.6	27.3	0.6	59.0	13.0	18.6	2.1	14.6	48.5	16.1
Race													
Black	88.7	4.4	1.9	5.0	27.4	2.5	58.2	12.0	19.1	4.3	13.5	47.2	15.8
Hispanic	95.3	2.2	0.8	1.7	24.1	5.4	61.3	9.2	14.4	4.3	17.2	50.6	13.5
Asian	98.7	0.7	0.2	0.3	40.4	0.0	35.7	23.9	43.4	15.5	11.3	3.4	26.4
Native American	91.4	2.4	1.5	4.6	33.8	0.0	62.8	3.5	21.5	4.3	4.5	50.3	19.3
Other race	96.8	0.5	0.3	2.4	56.8	0.0	24.4	18.8	7.9	0.0	10.9	65.2	16.0
NonHispanic White	96.5	1.4	0.6	1.6	25.7	2.0	59.1	13.3	19.5	3.7	14.6	42.2	20.0
Parentage													
Not a parent	96.1	1.7	0.6	1.6	30.1	4.3	53.3	12.3	21.1	3.4	16.1	40.6	18.9
Children 18+	96.8	1.2	0.6	1.4	27.0	1.1	59.4	12.6	18.2	5.3	12.6	44.3	19.5
Children <18	93.3	2.6	1.1	3.0	23.6	2.2	62.2	12.1	18.2	3.8	14.3	47.1	16.7
Labor Force Status													
Unemployed	91.2	4.1	1.1	3.6	23.3	4.0	59.0	13.7	25.9	0.3	9.5	53.0	11.3
Retired	98.9	0.4	0.1	0.6	32.9	3.5	54.2	9.4	13.2	4.1	17.2	40.0	25.6
Disabled	92.2	2.7	1.6	3.4	26.1	3.5	67.7	2.7	17.2	2.8	15.0	47.6	17.4
Other LF	95.7	1.9	0.7	1.7	27.9	1.9	53.7	16.5	19.1	3.6	13.4	45.1	18.9
Employed	95.1	1.9	0.9	2.2	26.2	2.1	58.6	13.0	18.6	4.9	15.0	42.9	18.6
Household Income													
HH income<$15K	93.4	2.8	1.0	2.8	30.9	2.3	56.2	10.6	20.5	2.0	10.9	51.2	15.4
HH income$15-30K	93.6	2.4	1.1	2.9	20.0	2.5	67.0	10.5	20.1	3.9	15.3	44.5	16.2
HH income 30-50	93.7	2.3	1.2	2.8	21.3	2.3	62.5	14.0	18.2	3.9	18.1	43.0	16.7
HH income $50-75K	95.7	1.7	0.7	1.9	32.8	1.9	56.1	9.2	22.5	6.7	13.7	39.5	17.6
HH income>$75K	98.0	0.8	0.3	0.9	33.6	2.1	49.8	14.5	11.9	7.2	13.1	39.7	28.1
HH income missing	97.7	1.1	0.3	0.8	27.6	6.1	47.0	19.4	17.3	0.4	10.2	49.7	22.3
Householder Age													
Age 15-24	94.1	3.1	0.5	2.3	22.0	6.8	57.1	14.0	13.2	5.5	18.7	45.3	17.3
Age 25-34	92.5	3.2	1.1	3.2	27.9	1.6	59.1	11.5	18.5	4.0	13.1	48.4	16.0
Age 35-44	93.9	2.4	1.1	2.7	22.8	0.7	63.2	13.3	23.7	2.7	14.5	43.9	15.1
Age 45-54	95.5	1.7	1.0	1.9	29.2	3.4	55.0	12.4	16.0	4.5	14.0	43.5	21.9
Age 55-64	96.8	1.0	0.8	1.4	25.5	2.8	58.8	12.9	22.3	4.2	15.1	38.5	20.0
Age >64	98.8	0.4	0.1	0.8	32.6	5.5	55.2	6.8	11.8	7.0	13.7	43.4	24.2
Marital Status													
Widowed	97.6	1.0	0.3	1.1	21.2	3.1	64.8	10.9	18.1	11.3	12.0	42.1	16.4
Divorced/separated	93.0	2.6	1.6	2.8	25.7	3.4	59.4	11.5	17.4	1.8	15.0	47.0	18.8
Single	93.7	2.8	0.8	2.7	27.2	3.6	55.9	13.3	17.9	4.9	14.5	47.2	15.4
Married	96.6	1.3	0.5	1.6	27.0	1.0	59.8	12.2	21.1	4.2	14.1	41.1	19.6
Education													
No high school diplon	95.0	1.7	0.9	2.3	23.7	2.1	63.7	10.5	21.2	2.4	10.4	51.4	14.7
High school diploma	94.6	2.1	0.9	2.4	28.4	3.2	57.3	11.1	18.0	3.6	16.5	45.2	16.8
Some college/AA	93.8	2.6	1.1	2.5	24.1	2.3	60.8	12.8	19.1	4.3	13.9	43.9	18.8
College degree	97.9	0.8	0.2	1.1	31.3	2.1	47.6	18.9	18.8	10.1	12.5	30.7	28.0
Post graduate	98.6	0.6	0.3	0.6	31.8	0.8	55.5	11.9	20.4	2.7	16.7	43.4	16.8
In armed Forces	95.7	2.0	0.1	2.2	48.8	0.0	9.5	41.7	11.5	4.8	12.4	21.6	49.7
Female head of household	89.5	3.7	2.1	4.6	19.8	2.3	64.8	13.0	15.6	4.9	13.7	49.3	16.5
Foreign-born	97.6	0.7	0.4	1.3	19.3	1.3	65.7	13.7	18.0	3.9	6.7	54.9	16.5
US born	95.2	1.9	0.8	2.1	26.9	2.6	58.4	12.2	19.1	4.1	14.9	43.7	18.2
Total Households	95.5	1.8	0.8	2.0	26.4	2.5	58.9	12.3	19.0	4.1	14.4	44.5	18.0

1 Percentage Distribution among all members if the group

2 Percentage distribution among all members of the group that used Payday Lending in 2008

Table 4:Household Pawnshop Usage

Percent

	Times used in 2008 [1]			Reason Use Pawnshop				Use Money For [2]				
Variables	None	1 or 2	2 Plus	Convenient	Comfortable	Can't Borrow elsewhere	Other	Lost Income	Luxury item	Specific Exp.	Basic Living	Other
Use Banks												
Unbanked	90.9	5.7	3.4	19.7	6.1	68.0	6.2	29.0	1.7	7.2	54.8	7.2
Banked	98.4	1.1	0.5	22.1	2.5	57.3	18.1	20.3	6.5	8.9	47.2	17.2
Tenure Status												
Homeowner	98.7	0.9	0.4	21.5	4.2	55.6	18.6	24.6	6.4	7.9	42.4	18.7
Renter	96.0	2.8	1.3	21.3	3.1	63.9	11.7	21.8	4.1	8.8	54.3	11.0
Non-House/Apt	95.9	2.7	1.4	18.9	9.1	57.6	14.4	28.2	5.8	8.3	41.1	16.5
Race												
Black	95.5	3.3	1.2	23.3	3.8	67.2	5.7	28.0	1.8	6.6	54.3	9.4
Hispanic	97.0	1.5	1.5	17.0	6.8	66.0	10.3	23.2	5.6	7.1	53.7	10.4
Asian	99.7	0.3	0.0	15.2	0.0	58.3	26.6	11.5	0.0	0.0	61.9	26.6
Native American	94.2	3.3	2.5	37.1	13.0	35.5	14.3	25.6	2.3	0.0	63.5	8.6
Other race	96.9	3.1	0.0	84.4	0.0	15.6	0.0	87.7	0.0	0.0	0.0	12.3
NonHispanic White	98.4	1.2	0.5	20.6	1.9	57.8	19.7	20.2	6.5	10.3	45.3	17.7
Parentage												
Not a parent	98.0	1.4	0.6	22.0	3.9	57.5	16.5	22.1	3.4	8.6	47.1	18.9
Children 18+	98.6	0.9	0.5	20.4	3.4	60.1	16.0	23.3	8.7	10.3	43.7	14.0
Children <18	96.8	2.2	1.0	21.4	3.4	62.9	12.3	23.3	4.2	7.3	54.3	10.9
Labor Force Status												
Unemployed	92.2	5.1	2.7	25.2	0.0	65.1	9.7	22.1	3.2	11.5	54.4	8.8
Retired	99.6	0.3	0.1	43.9	0.0	45.7	10.4	25.8	19.9	2.4	26.4	25.4
Disabled	96.3	2.1	1.6	24.5	3.4	68.7	3.4	21.1	2.5	12.9	55.9	7.6
Other LF	96.5	2.2	1.2	22.0	10.1	53.1	14.9	27.3	3.3	6.0	51.0	12.4
Employed	98.2	1.3	0.5	17.7	3.6	60.2	18.4	22.3	5.6	7.4	47.7	17.0
Household Income												
HH income<$15K	94.5	3.6	1.9	21.0	3.9	67.3	7.8	23.6	2.4	5.6	59.9	8.5
HH income$15-30K	96.8	2.3	0.9	25.6	5.0	55.4	14.0	26.7	4.6	8.1	47.8	12.8
HH income 30-50	97.6	1.6	0.7	17.1	2.3	65.0	15.6	19.0	6.9	13.1	45.2	15.9
HH income $50-75K	98.9	0.8	0.3	15.5	1.9	58.1	24.6	25.8	11.4	7.0	30.0	25.7
HH income>$75K	99.4	0.5	0.1	24.4	3.4	32.0	40.2	9.7	6.4	7.3	40.0	36.6
HH income missing	98.9	0.6	0.5	25.8	3.4	62.0	8.7	27.9	4.7	11.7	50.3	5.4
Householder Age												
Age 15-24	96.4	2.5	1.1	14.8	2.7	64.5	18.0	17.9	11.0	16.4	44.5	10.2
Age 25-34	96.5	2.3	1.1	21.5	3.8	60.7	14.0	18.8	3.3	10.7	53.8	13.4
Age 35-44	96.9	2.1	1.0	21.3	4.0	59.2	15.5	29.8	4.0	6.6	45.7	13.9
Age 45-54	97.7	1.7	0.7	21.4	4.4	61.5	12.7	22.7	3.3	6.7	52.9	14.4
Age 55-64	99.0	0.7	0.3	21.3	2.6	64.4	11.7	23.3	6.5	4.8	53.1	12.3
Age >64	99.5	0.3	0.2	34.1	0.0	48.4	17.5	17.8	14.0	3.7	35.8	28.6
Marital Status												
Widowed	99.0	0.6	0.4	28.1	8.4	43.5	20.0	25.2	4.7	0.0	54.3	15.8
Divorced/separated	96.6	2.5	0.9	16.7	2.9	65.8	14.6	20.5	4.2	4.8	55.9	14.6
Single	96.8	2.1	1.1	22.9	3.8	61.5	11.8	18.9	4.6	11.2	50.4	14.9
Married	98.5	1.0	0.5	23.0	3.3	57.7	16.0	28.0	6.1	10.1	42.8	12.9
Education												
No high school diplon	96.2	2.5	1.3	21.2	1.1	67.2	10.4	24.3	4.3	7.0	47.0	17.4
High school diploma	97.3	1.9	0.8	20.0	7.5	58.8	13.8	25.6	3.0	8.2	53.7	9.6
Some college/AA	97.7	1.6	0.7	21.3	0.8	60.2	17.6	19.1	8.0	10.2	48.2	14.5
College degree	99.4	0.4	0.2	28.8	7.9	44.6	18.7	35.6	0.8	13.3	34.5	15.7
Post graduate	99.2	0.5	0.3	25.8	0.0	59.5	14.7	12.2	7.8	1.2	50.7	28.1
In armed Forces	98.9	0.9	0.1	48.9	33.8	17.3	0.0	0.0	10.6	0.0	82.7	6.7
Female head of household	95.3	3.2	1.5	18.4	4.6	68.1	8.9	15.1	3.7	7.0	64.7	9.6
Foreign-born	98.6	0.8	0.5	19.0	3.7	66.4	10.9	30.9	0.3	3.3	51.7	13.8
US born	97.8	1.5	0.7	21.6	3.6	60.0	14.8	22.2	5.5	8.9	49.3	14.2
Total Households	97.9	1.5	0.7	21.4	3.6	60.6	14.5	22.9	5.0	8.4	49.5	14.1

1 Percentage Distribution among all members if the group

2 Percentage distribution among all members of the group that used Pawn Shop loans in 2008

Table 5: Multivariate Analysis of Household Demographics and AFS Credit Use

	A: Use payday loan [1]			B: Used Pawnshop [2]		
Independent Variable	Coefficient	Std. Error		Coefficient	Std. Error	
Unbanked	-0.0051	0.0049		0.0469	0.0034	***
Renter	0.0486	0.0030	***	0.0091	0.0021	***
Non-House/Apt	0.0141	0.0051	**	0.0057	0.0036	
Race						
Black	0.0586	0.0040	***	0.0084	0.0028	***
Hispanic	0.0049	0.0044		-0.0039	0.0031	
Asian	-0.0019	0.0067		-0.0053	0.0047	
Native American	0.0253	0.0104	*	0.0262	0.0073	***
Other race	-0.0215	0.0229		0.0043	0.0161	
Parentage						
Children 18+	0.0204	0.0052	***	0.0173	0.0036	***
Children <18	0.0320	0.0055	***	0.0174	0.0039	***
Labor Force Status						
Unemployed	0.0192	0.0050	***	0.0434	0.0035	***
Retired	-0.0105	0.0045	*	-0.0041	0.0031	
Disabled	0.0140	0.0055	*	-0.0013	0.0039	
Other LF	-0.0180	0.0044	***	0.0031	0.0031	
Household Income						
HH income$15-30K	0.0102	0.0044	*	-0.0122	0.0031	***
HH income 30-50	0.0138	0.0045	**	-0.0175	0.0031	***
HH income $50-75K	0.0027	0.0049		-0.0263	0.0034	***
HH income>$75K	-0.0075	0.0050		-0.0289	0.0035	***
HH income missing	-0.0128	0.0048	**	-0.0242	0.0034	***
Householder Age						
Age 25-34	0.0260	0.0056	***	0.0107	0.0040	**
Age 35-44	0.0227	0.0058	***	0.0113	0.0041	**
Age 45-54	0.0137	0.0059		0.0043	0.0041	
Age 55-64	0.0068	0.0063		-0.0057	0.0044	
Age >64	-0.0040	0.0071		-0.0094	0.0050	
Marital Status						
Widowed	0.0132	0.0063	*	0.0097	0.0044	*
Divorced/separated	0.0199	0.0053	***	0.0165	0.0037	***
Single	0.0039	0.0054		0.0085	0.0038	*
Education						
High school diploma	0.0070	0.0040		-0.0014	0.0028	
Some college/AA	0.0151	0.0042	***	-0.0022	0.0029	
College degree	-0.0117	0.0049	*	-0.0109	0.0035	**
Post graduate	-0.0116	0.0049	*	-0.0051	0.0034	
In armed Forces	-0.0134	0.0144		-0.0185	0.0101	
Female head of household	0.0213	0.0057	***	-0.0044	0.0040	
Foreign-born	-0.0273	0.0043	***	-0.0161	0.0030	***
Dependent Variable Mean	0			0		
n (respondents)	32,359			32,359		
r squared	0.0506			0.0379		

* * *** Significant at the 5%, 1%, and .1% levels

1 equals 1 if someone in the household used payday loans in 2008 and 0 otherwise

2 equals 1 if someone in the household uses pawnshop loans 1 or 2 times a year or more and 0 otherwise

Table 6: Multivariate Analysis of Fee Ceilings and Adjusted AFS Credit Usage

	A: Incidence of Payday borrowing adjusted [1]				B: Incidence of Pawnshop borrowing adjusted [1]			
	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error	Coefficier	Std. Error
Intercept	0.0050	0.0067	0.0042	0.0069	-0.0171	0.0128	-0.0061	0.0042
Payday fee ceiling group [3]								
Group 1 (lowest ceilings)	-0.0271	0.0060 ***	-0.0286	0.0066 ***				
Group 3	-0.0103	0.0046 *	-0.0094	0.0047 *				
Group 4	0.0054	0.0084	0.0051	0.0084				
Group 5 (no ceilings)	-0.0063	0.0071	-0.0065	0.0071				
Pawn shop see ceiling group [4]								
Group 2 (next to lowest ceilings)					-0.0092	0.0050	-0.0034	0.0039
Group 3					0.0238	0.0127	0.0129	0.0032 ***
Group 4 (no ceilings)					0.0137	0.0138	0.0048	0.0042
Relative pawn shop fee ceiling								
Lower			-0.0041	0.0043	0.0222	0.0121	0.0074	0.0043
Higher			-0.0073	0.0083	0.0018	0.0067	-0.0006	0.0032
Region: North	-0.0013	0.0055	0.0002	0.0058	-0.0129	0.0041 **	-0.0099	0.0035 **
Region: West	0.0112	0.0047 *	0.0135	0.0052	0.0069	0.0028 *	0.0068	0.0025 **
Rural	-0.0010	0.0055	-0.0001	0.0057	-0.0047	0.0035	-0.0063	0.0030 *
Market income group 2	0.0003	0.0061	0.0016	0.0063	-0.0005	0.0038	-0.0008	0.0033
Market income group 3	-0.0003	0.0068	0.0015	0.0070	-0.0027	0.0044	-0.0031	0.0037
Market income group 4 (highest)	-0.0125	0.0076	-0.0106	0.0078	-0.0030	0.0050	-0.0047	0.0040
Dependent Variable Mean	0		0		0		0	
Number of geographic areas [2]	365		365		365		516	
r squared	0.0765		0.0799		0.1416		0.1310	

* * *** Significant at the 5%, 1%, and .1% levels

1 The dependent variables are the mean residuals for each geographic unit as calculated from the equations in table 5.

2 First three regressions only use geographic areas in states where payday lending is permitted. The Fourth regression uses all areas.

3 Base group is states with $15-$16 fee caps

4 Base group is states with the lowest fee caps

Table 7: Multivariate Analysis if AFS Credit Fee Ceilings and Stores per Capita

Panel A: Number of payday stores per-capita

	Coefficient	Std. Error	
Intercept	-2.4352	0.6319	***
Payday fee ceiling group [2]			
Group 1 (lowest ceilings)	-0.4631	0.2071	*
Group 3	0.3321	0.1527	*
Group 4	0.9400	0.3251	**
Group 5 (no ceilings)	0.5290	0.2779	
Estimated demand from Demographics	74.0100	14.1603	***
Dependent Variable Mean	1.0331		
n	37.0000		
r squared	0.6599		

Panel B: Number of pawnshop stores per-capita

	Coefficient	Std. Error		Coefficient	Std. Error	
Intercept	-0.7320	0.2794	*	-0.7754	0.1957	***
Pawn shop see ceiling group [3]						
Group 2 (next to lowest ceilings)	0.2674	0.1202	*	0.2438	0.0822	**
Group 3	0.4473	0.1069	***	0.4238	0.0769	***
Group 4 (no ceilings)	0.3429	0.1458	*	0.3425	0.0957	***
Estimated demand from Demographics	40.2732	11.6707	**	43.1111	9.0218	***
Dependent Variable Mean	0.4373			0.3993		
n (states) [1]	37			51		
r squared	0.5516			0.6450		

*, *, *** : Significant at the 5%, 1%, and .1% levels

1 First column regressions only use geographic areas in states where payday lending is permitted. The second uses all areas.

2 Base group is states with $15-$16 fee caps

3 Base group is states with the lowest fee caps

Table 8: Payday Residuals by State Fee Ceilings

Variables	Payday Not Allowed	$10-$12 Group	$15-$16 Group	$17-$20 Group	Highest Group
Use Banks					
Unbanked	-0.072	0.003	-0.009	0.012	0.012
Banked	-0.030	-0.001	0.002	-0.001	0.002
Tenure Status					
Homeowner	-0.017	-0.001	0.004	-0.005	0.002
Renter	-0.065	-0.001	-0.004	0.012	0.001
Non-House/Apt	-0.035	0.012	-0.015	0.014	0.010
Race					
Black	-0.089	-0.015	0.010	0.006	0.032
Hispanic	-0.051	-0.007	0.002	-0.024	0.003
Asian	-0.010	-0.003	-0.004	-0.027	-0.014
Native American	-0.014	0.030	-0.019	-0.016	-0.036
Other race	0.054	-0.008	0.012	-0.048	-0.023
NonHispanic White	-0.020	0.002	0.000	0.001	0.001
Parentage					
Not a parent	-0.030	0.003	-0.006	-0.007	0.016
Children 18+	-0.024	-0.002	0.003	0.004	-0.001
Children <18	-0.048	-0.004	0.007	0.002	-0.008
Labor Force Status					
Unemployed	-0.067	0.003	0.004	-0.012	-0.009
Retired	-0.011	0.001	0.001	-0.009	-0.002
Disabled	-0.070	0.006	-0.004	-0.020	0.029
Other LF	-0.022	-0.004	0.002	0.005	0.001
Employed	-0.036	-0.002	0.001	0.005	0.003
Household Income					
HH income<$15K	-0.049	0.005	-0.010	0.004	0.015
HH income$15-30K	-0.049	-0.001	-0.003	0.014	0.003
HH income 30-50	-0.045	-0.003	0.008	-0.002	0.004
HH income $50-75K	-0.031	-0.001	0.008	-0.004	-0.009
HH income>$75K	-0.017	-0.001	0.000	-0.008	-0.005
HH income missing	-0.022	-0.003	-0.001	-0.003	0.020
Householder Age					
Age 15-24	-0.043	-0.009	0.009	0.021	0.003
Age 25-34	-0.049	0.002	-0.004	0.013	-0.010
Age 35-44	-0.047	-0.003	0.003	-0.011	0.022
Age 45-54	-0.034	-0.002	0.002	0.004	-0.008
Age 55-64	-0.027	0.001	0.001	-0.005	0.008
Age >64	-0.011	0.002	0.000	-0.008	0.000
Marital Status					
Widowed	-0.019	0.005	-0.006	-0.017	0.006
Divorced/separated	-0.054	0.000	-0.004	-0.003	0.025
Single	-0.048	0.000	-0.002	0.002	-0.004
Married	-0.023	-0.003	0.005	0.004	-0.004
Education					
No high school diploma	-0.037	0.004	-0.006	-0.003	0.012
High school diploma	-0.040	-0.001	0.003	0.008	0.000
Some college/AA	-0.046	-0.001	0.004	-0.002	0.001
College degree	-0.018	-0.002	0.001	0.003	-0.007
Post graduate	-0.015	-0.002	-0.001	-0.015	0.009
In armed Forces	-0.044	0.001	-0.001	-0.022	-0.014
Female head of household	-0.081	-0.002	-0.004	0.007	0.011
Foreign-born	-0.027	-0.005	-0.006	-0.022	0.015
US born	-0.034	0.000	0.003	0.001	0.001
Total Households	-0.033	-0.001	0.001	0.000	0.002

Table 9: Pawnshop Residuals by State Fee Ceilings

Variables	<$10 Group	$10-$19 Group	$20-$25 Group	No Ceiling Group
Use Banks				
Unbanked	-0.048	-0.010	0.015	-0.012
Banked	-0.009	-0.001	0.003	-0.003
Tenure Status				
Homeowner	-0.007	-0.002	0.002	-0.003
Renter	-0.020	0.000	0.007	-0.004
Non-House/Apt	-0.029	-0.003	0.006	0.012
Race				
Black	-0.025	0.003	0.002	-0.014
Hispanic	-0.008	-0.005	0.010	-0.010
Asian	-0.003	0.003	0.000	-0.002
Native American	-0.048	-0.001	0.020	-0.017
Other race	-0.011	0.005	-0.008	-0.024
NonHispanic White	-0.010	-0.002	0.003	-0.001
Parentage				
Not a parent	-0.010	-0.002	0.003	0.000
Children 18+	-0.006	-0.003	0.003	-0.004
Children <18	-0.021	0.002	0.006	-0.007
Labor Force Status				
Unemployed	-0.050	-0.009	0.013	-0.027
Retired	-0.003	0.001	-0.001	-0.001
Disabled	-0.012	0.011	0.002	0.000
Other LF	-0.025	-0.005	0.009	-0.009
Employed	-0.010	-0.002	0.004	-0.002
Household Income				
HH income<$15K	-0.033	0.003	0.009	-0.015
HH income$15-30K	-0.015	-0.002	0.003	0.005
HH income 30-50	-0.014	-0.005	0.008	-0.003
HH income $50-75K	-0.005	-0.001	0.005	-0.005
HH income>$75K	-0.004	0.000	0.001	-0.003
HH income missing	-0.009	-0.005	-0.002	0.000
Householder Age				
Age 15-24	-0.021	-0.009	0.011	0.005
Age 25-34	-0.025	0.003	0.003	-0.003
Age 35-44	-0.022	-0.005	0.010	-0.010
Age 45-54	-0.008	-0.002	0.004	-0.006
Age 55-64	-0.002	-0.001	-0.001	0.000
Age >64	-0.003	0.001	0.000	0.000
Marital Status				
Widowed	-0.005	-0.001	0.001	0.001
Divorced/separated	-0.018	0.000	0.005	-0.009
Single	-0.020	-0.003	0.005	-0.005
Married	-0.008	-0.001	0.003	-0.002
Education				
No high school diploma	-0.021	0.002	0.005	-0.005
High school diploma	-0.016	-0.002	0.004	-0.003
Some college/AA	-0.012	-0.004	0.005	-0.003
College degree	-0.005	-0.002	0.005	-0.001
Post graduate	-0.004	0.002	-0.003	-0.005
In armed Forces	-0.004	-0.006	0.007	-0.006
Female head of household	-0.029	0.004	0.001	-0.016
Foreign-born	-0.002	0.001	-0.003	-0.005
US born	-0.013	-0.002	0.005	-0.003
Total Households	-0.012	-0.001	0.004	-0.003

Table 10: Interactions between Payday and Pawn Shop Fee Ceilings

Average Incidence of product usage by group adjusted for demographics

Payday loan Fee Ceiling	*Pawn Shop Loan Fee Ceiling*		
	Lower	Same	Higher
No Payday		1.20	1.14
$10-$12	1.62	3.37	2.40
$15-$16	5.22	4.59	
$17-$20	4.31	4.66	4.39
High or No ceiling	4.15	5.90	

Payday loan Fee Ceiling	*Pawn Shop Loan Fee Ceiling*		
	Lower	Same	Higher
No Payday		1.11	1.92
$10-$12	0.85	3.65	2.18
$15-$16	1.65	1.89	
$17-$20	1.97	2.48	2.39
High or No ceiling	1.86	1.77	