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

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Abstract

This paper uses data from the January 2009 FDIC Unbanked/Underbanked Supplement to the Current Population Survey (CPS) to examine how household use of payday loans and pawn shops is related to limits on loan fees set by states. We use information in the CPS to measure the relationship between household characteristics and payday loan and pawn shop usage and to control for these factors in examining the relationship between usage and state fee ceilings. We find little relationship between levels of fee ceilings in their current range and payday loan usage. Results for pawn shops indicate somewhat more variation in usage over the current range of pawn-shop fee ceilings. The results are generally consistent with conjectures that because of scale economies at the store level, payday lenders can adjust the scale of store operations to maintain profit margins and thus continue to lend over a range of fee ceilings. This finding suggests that lowering loan fee ceilings up to some point can benefit borrowers, many of whom report using these loan to meet basic living expenses or to make up for lost income.

I. 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" (APRs). Both industries justify the size of the fees charged as necessary to cover the transaction costs of extending these small loans as well as 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 that roughly one half of loans were to persons that had taken out more than six loans during the twelve month period (Flannery and Samolyk, (2007). 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 varying 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 FDIC 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 shop 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

[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.

financial 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 data also 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 the number of payday stores and of pawn shops per-capita are affected by state fee ceilings.

[5] The FDIC-sponsored CPS Supplement was designed to collect data on U.S. households that are unbanked and underbanked, including their reasons for being not using banks. Unbanked households are households that do not have an account at a bank or credit union. Underbanked households are households that have a bank account but use AFS products more than rarely, as defined by the FDIC. This data collection 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. A similar supplement is being conducted in 2011.

By way of preview, the CPS Supplement data indicate that a majority of households using payday or pawn shop loans do so to meet basic living expenses or to make up for lost income. This suggests that household demand for payday and pawnshop loans is relatively price inelastic. Except for areas subject to the very lowest fee limits, payday loan usage within a given geographic area does not vary systemically with the effective payday loan fee ceiling in the area. Pawnshop usage (adjusted for household demographics) does however tend to be somewhat higher in areas that have fee ceilings at the higher end of the fee range. Consistent with other evidence, we find that both payday loan stores and pawn shops per-capita within a state tend be positively related to fee ceilings (controlling for loan usage associated with the demographic characteristics of households in the state). In tandem, our findings suggest that, at levels which allow firms to operate, fee ceilings cause AFS credit providers, particularly payday lenders, to adjust the number of stores and the scale of store operations to meet the relatively price insensitive local loan demand.

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.[7] Incentives to maintain a deposit account in good standing and the short loan maturities explain why many borrowers choose to rollover or take out consecutive loans rather than defaulting. Using data for a large payday lender in Texas, Skiba and Tobacman (2008) find that half of the firm's payday borrowers ultimately default on a payday loan within one year of their initial loan. They further find that these borrowers have on average already repaid or serviced five payday loans before they default with their cumulative paid interest payments averaging 90 percent of the original loan's principal. Other available data suggest that only 4 to 6 percent of payday loans default.

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

[6]As discussed in Samolyk (2007) 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 rollover 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. Some payday lenders substitute an agreement allowing them to automatically debit a borrower's checking account for the postdated check.

[7] 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.

funds to their customers in exchange for post-dated checks to tide them over until payday (hence 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; and thus the 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 percent to more than 1,900 percent on a 2-week loan. Fee ceilings are the most common form of regulation; but states often enact other regulations including limits on: loan amount, loan maturity, the total number or amount of outstanding loans, loan rollovers, or consecutive loans. Because of uneven reporting at the state level, it is difficult to generate estimates of the size and structure of AFS credit

[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 during the mid 1990s; 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 (usually a substantial share) of payday loan fees.

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 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 multi-state 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 which are collateralized by items which are "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. However, unlike a payday loan, they do not need a bank account, a regular source of income, or a credit check to borrow.

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, limited in 37 states and the District of Columbia) and whether sale proceeds in excess of the loan amount and fees must be returned to a borrower. 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 one to three 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 of 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. EBay, for example, 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

[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).

smaller pawn loan companies that operate one to three stores. The four largest companies have been estimated to operate less than 1000 stores, representing less than 10 percent of the total number of pawn shops (Prager, 2009). 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 AFS credit industries plays an important role in determining the affects of regulatory policies. Available evidence indicates that payday lenders generally charge the maximum rates allowed by a state's enabling legislation rather than engaging in price competition.[14] Evidence also suggests that payday stores 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 tended to make larger loans.

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[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 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 operating .

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 pawn shops operating in a market. Caskey (1991) and Shackman and Tenney (2006) find that fee ceilings are positively related to the number of pawn shops per capita. Prager (2009) finds that lower fee limits reduce the number of stores per capita in both the payday loan and pawn shop industries.[15]

What is important for our analysis is that a change in the limit on fees per-transaction does not necessarily translate into a proportional change in the supply of AFS credit. AFS stores may adjust the scale of their activities 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 can support stores that operate on a smaller scale.[16] 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

[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).

[16] Borrowing could actually go up if customers respond to greater convenience.

estimate the number of 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 Finances (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.[17] Consistent with the prerequisites that payday borrowers have jobs and bank accounts, their income and education tends 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.[18] 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 research presented here.[19] Prior to the availability of the CPS Supplement data, there was no source of nationally-representative data on pawn shop loan use.

[17]Ellihausen and Laurence (2001), Iota (2002), and Cypress Research Group (2004) present univariate statistics describing payday loan customers that responded to a survey sponsored by the CFSA. 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.
[18]Ellihausen and Laurence (2001) report 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).
[19]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 pawn shop 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).[20]

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 [21] 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?[22] 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 credit product were asked why

[20] 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.

[21] 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.

[22] 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.

they used the 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).[23] For payday loans this was asked directly.[24] 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.[25]

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.[26] 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.[27] All calculations presented in this study use CPS Supplement weights that reflect adjustments for

[23] 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.
[24] Respondents indicating that they had not used the product but that they didn't know about others in the households were classified as not having used the product during the past 12 months. Responses that indicated use of payday loans but information about the number of times used was missing (don't know/refused) are classified as having used the product during the previous twelve months.
[25] Respondents indicating that they had not ever used a pawn shop but that they didn't know about others in the households were classified as not having used the product during the past 12 months. If a household indicated that it at some time sold an item at a pawn shop, but the frequency of pawn shop use is missing; the observation was classified as not having used pawn shops during 2008.
[26] 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.
[27] To ensure compliance with OMB rules, the public-use CPS data file redacts geographic detail for some respondents.

non-response to the basic January 2009 CPS and for non-response to the Supplement. In addition, all calculations exclude observations for which the use of payday loans or pawn shop 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.[28] We classify states into four pawn shop fee limit groups based on the data reported in Shackman and Tenney (2006).[29]

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 pawn shop 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 pawn shop 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. In the January 2009 CPS, 516 geographic areas were uniquely defined in terms of state, MSA, or county; 365 of these were located in states where payday lenders operated in 2008.

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

[29] 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 Shackman 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.

The first stage of the analysis exploits 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 pawn shop usage to geographies in states where regulations permitted payday loan stores to operate in 2008.

The coefficients from the first stage are then used to construct two sets of variables for the second stage regressions. Coefficients from the first stage are used to estimate the predicted likelihood that each household would use a given loan product based solely on its demographic characteristics (but not its location). These estimates are normalized so that the predicted incidence of household use in each of the 37 states where payday stores operated is equal to the actual incidence of usage in the state. We then construct a residual for each observation 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 then aggregated to the level of a geographic unit. The mean predicted use for a geographic area represents the estimated share of households in the area that would have used payday loans or pawn shops based purely on the demographic characteristics of the population.[30] We refer to these variables as the estimated demographic demand in a geographic area. Mean residual usage measured for

[30]Although households residing in areas where payday lending stores cannot operate are not included in the estimation of demographic usage patterns, predicted levels of usage could be predicted for these geographies based on the demographic characteristics of local households.

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, these mean residuals are identical to the fixed effects that would result from fitting a fixed effects model.

We interpret the mean residuals as representing the average incidence of use in an area adjusted for the estimated demographic component of demand ("adjusted usage"). A negative level of adjusted usage 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 level of adjusted usage indicates greater use than would be predicted by local household characteristics.

In the second stage of our analysis, the measures of adjusted usage for each geographic area are used as dependent variables that are regressed against payday-loan and pawn-shop fee limit categories to measure the effects of fee limits on use. 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. These are the key regressions in the paper. 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. Because pawn shops operate in all states, estimates of pawn shop adjusted usage are also constructed for households in all 516 uniquely-identified geographic areas, and parallel regressions are estimated to examine the relationship between pawn shop use and effective fee ceilings in all geographic areas that can be identified using the CPS data.

The third stage of our analysis examines the relationship between fee ceilings and AFS credit use by specific demographic groups. Based on their geographic location, we classify households into the same payday and pawn-shop fee ceiling groups reported in table 1. We then

measure the mean adjusted usage (the difference between actual usage and usage predicted by the household's demographic characteristics) for a particular cohort of households (for example homeowners versus renters) in each of the fee ceiling groups. By construction, the mean adjusted usage residuals for a given demographic group of households in 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 fee limit group can be viewed indicating that these households have a lower (higher) incidence of use than would be predicted by their household characteristics alone. Adjusted usage as measured for a given demographic group of households that are subject to a given fee ceiling is made up of two components; an interactive effect and a market location effect. The interactive effect reflects the fact that members of that demographic group may react differentially to the fee ceiling than the "average" respondent does. The market effect reflects the fact that members of the demographic group may tend to be disproportionately located in the areas subject to the fee ceiling (and thus are subject to the "average market affects" as indicated by the second stage of the analysis (lower or higher use than what is predicted by local demographics).

4. Results

In this section we present the results of our analysis.

4.1 *Descriptive Results*

Table 2 summarizes the demographic (weighted) characteristics of our sample. We present distributions for households in all states and, because it is the sample used for most of our estimation, the characteristics of households living in the 37 states where state regulations

permitted payday loan stores to operate in 2008. As can be seen, the basic demographic characteristics of the two populations are comparatively similar.

[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.[31] Somewhat surprisingly, given that a bank account and a job are standard prerequisites for obtaining a payday loan, unbanked and unemployed households are significantly more likely to have used payday lending in 2008 than other households. Households where the householder is black or Hispanic are more likely to have used payday loans in 2008 than other households. Of borrowers, about two-thirds borrowed two or more times.[32] Between one-quarter and one-third of borrowers cited convenience as the major reason for choosing a payday lender while approximately 60 percent said that they could not borrow elsewhere. For most payday loan borrowers, basic living expenses are identified as the major reason why AFS credit was needed, although significant percentages cite lost income or a specific expense as the main reason why AFS credit was needed. These patterns suggest that household demand for payday loans is relatively price inelastic; that is, households will use the product even if the cost is high.

[Insert table 3]

[31] The sample of households only reflects data for household that did not have missing responses about whether they had ever used a payday loan. Respondents that indicated that they did not use payday loans but that they did not know if others in the household did are classified as not having used a payday loan during the past year.

[32] 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 primary empirical measure of usage.

Table 4 provides parallel information about pawn shop use by households in payday states.[33] Overall, households were one half as likely to have used a pawn shop loan in the previous 12 months (as we have defined use) than to have used a payday loan. Most households that did use pawn shops used them once or twice a year. Not surprisingly, unbanked and unemployed households were particularly likely to have used pawn shops. There is less distinction in use among racial groups than is evident for payday loan borrowers. The reasons cited for pawn shop use are very similar to those cited by payday loan borrowers. Similarly, the reasons why AFS credit was needed parallel those reported by payday borrowers. Overall the univariate patterns in tables 3 and 4 suggest that at least on the surface, payday lenders and pawn shops are attracting fairly similar clients for similar reasons and that the loan proceeds are being used for similar purposes. We test if these similarities hold up 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 use 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 includes households: that have household income below $15,000; that own their own home; and where the householder is a non-Hispanic white who 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

[33] The sample of households only reflects data for household that did not have missing responses about whether they had ever used pawnshops.

member of the household used the loan product during in the previous 12 months (as we have defined use) and is coded 0 otherwise.[34]

[Insert table 5]

The results of the regression relating household characteristics to the use of payday loans indicate that, compared controlling for other characteristics, 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, has children, is unemployed, is married but divorced or separated, or is a single female head of household. Compared to the base group, the likelihood of using a payday loan is notably lower for households where the householder 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 or where the householder is between 25 and 45 years old. Payday loan use is also higher among households where the householder has a high school degree or some college than for households having other levels of education.

Results for the regression relating household characteristics to pawn shop use indicate that, controlling for other characteristics, pawn shop use in higher among households: where the household is unbanked, rents, or where the householders is Native American or Black, has children, is unemployed, or unmarried. Lower pawn shop 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. Unlike

[34] Because the dependent variable is categorical we could have used a logistic or probit model form (which implies a different underlying error structure than the linear probability model). However, the variance decomposition methodology that 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.

payday loan use, pawn shop use is higher among single householders but not higher among female-headed households.

Importantly, these multivariate results about household use of payday loans and pawn shops measure differences in use attributable to a given characteristic, holding other factors constant. It should be noted, however, that the overall explanatory power of the regressions is modest.

4.3 *The Effects of Fee Ceilings on AFS Credit Use*

This section presents regressions that relate payday loan or pawn shop use in a geographic area to the effective payday-loan and pawn-shop 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. Table 6 presents the regression results for both payday loan use and pawn shop use. In addition to the categorical variables measuring effective fee ceilings, we also include variables that indicate how the fee ceiling on the product compares to the fee ceiling on the substitute product (pawn shops for payday loans and payday loans for pawn shops). 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 (or non-MSA part of the state) where the area is located.[35]

[Insert Table 6]

[35] 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.

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 payday-loan fee ceilings (the base group includes areas with ceiling of $15 to $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 the inclusion of controls measuring the relative level of 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 West, but adjusted usage is not related to the level of median income as measured for the market where the area is located.

Pawn shop usage adjusted for household demographic characteristics does appear to be higher in areas with fee ceilings of $20 per $80 or higher although the statistical estimate is imprecise. Pawn shop usage is not significantly related to the measures of relative payday-loan fee ceilings. Pawn shop usage adjusted for household characteristics does tend to be higher in areas located in the West and lower in areas in the North (compared to geographic areas in the South). Usage does not, however, appear to vary systematically with the level of median income in the market where the geographic area is located. Comparatively, the findings for payday loan use appear to be more consistent with the conjecture that (at least above the lowest ceiling levels), household demand for AFS credit is relatively price inelastic and thus stores adjust scale and per-store loan volumes to maintain profit margins in supplying this credit.

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 pawn shops, controlling for use that would be predicted by

household characteristics within a locality. As noted, a finding that AFS credit use, adjusted for demographics, does not vary significantly across the range of fee limits that permit lenders to operate is suggestive of supply-side adjustments in the scale of store operations and the number of stores in the market. To further investigate this conjecture, we examine how the number of payday loan 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 equations using data measured at the state level. Specifically, we use the regression results reported in Table 5 to construct state-level estimates of mean payday loan and pawn shop usage based on household characteristics. We include these estimates of demographic demand for the loan product in examining the relationship between fee ceilings and stores per capita. Table 7 presents the results of these tests. Controlling for estimated demand based on household demographics, we find a general pattern of a positive relationship between stores per-capita and fee ceilings. Interestingly, the number of stores per-capita does not appear to be the highest in states where there are no limits on the fees that payday lenders or pawn shops can charge. In tandem with the evidence about customer use, these results are broadly consistent with focal-

point pricing and adjustments in the scale of store operations as determinants of payday loan store profitability.

[Insert table 7]

4.6 *Interactive Effects between Fee Ceilings and Demographics*

One objective of this paper is to examine whether the effects of payday or pawn loan fee ceiling limits on loan usage varies across demographic groups—that is, if ceilings were lowered (or raised) would certain groups be affected differently. As discussed above, we use the household-level estimates of adjusted usage (actual use minus use predicted by household characteristics) to measure mean adjusted use of a product for a specific demographic cohort (for example homeowners) in each of the fee ceiling groups.[36] Tables 8 presents the cohort-level tabulations of adjusted payday loan usage across the payday loan fee ceiling groups. Table 9 presents parallel tabulations of cohort-level adjusted pawn shop usage across the pawn shop fee ceiling groups. The best way to interpret the numbers in these tables is to compare adjusted use for a cohort with adjusted use for all households in a given fee ceiling group (as reported in the bottom row of each table). A level of mean adjusted use that is larger (more positive) than the level for all households in the fee ceiling group should be interpreted as a positive interaction effect—that is, adjusted usage by the demographic group in the indicated fee ceiling group is greater than what would be predicted for an average household located in a similar fee ceiling area. A residual smaller (more negative) than the overall group mean should be similarly interpreted as indicating a negative interaction effect.

[36] 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.

The analysis of payday loan usage in this paper has focused on use in the 37 states where payday lenders operated in 2008. The CPS Supplement did however ask all households about their use of the payday loan product. In states where payday lenders did not operate in 2008, households reported using payday loans although at a lower incidence than in payday states (FDIC 2010). Using the demographic relationships estimated for households in payday loan states (in stage one), we estimated adjusted usage for a household located in a non-payday state as the difference between their actual payday loan usage (0,1) and the predicted likelihood of use based on the household's demographic characteristics (and being located in a payday state). The first column of table 8 reports mean adjusted payday loan use for households located in nonpayday states. The negative levels of adjusted usage measure the average effect of being located in a nonpayday state.

[Insert tables 8 and 9]

There appear to be significant interactive effects between payday-loan fee ceilings and adjusted use for both black and Native American households; but they go in opposite directions. For blacks located in areas with no (or very high) fee ceilings there is a positive interactive effect while for blacks located in areas having low ceilings the interactive effect is negative. In other words, all else being equal, adjusted payday loan use among black households appears to respond more to fee ceilings than does use by the typical household. As payday loan fee ceilings rise, black-household usage disproportionately rises (or fails to fall); symmetrically, usage falls disproportionately in states with lower fee ceilings. Female-headed households show a similar pattern, while Native Americans exhibit the opposite pattern. A possible (speculative) explanation for a greater responsiveness of use to fee ceilings could be that as the number of stores increases in response to higher ceilings, the stores tend to locate in areas having certain

demographic concentrations thus increasing use (for example because stores become more convenient).

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

The regression results presented in table 6 suggest that pawn shop fee ceilings have little impact on payday loan usage. This is a somewhat surprising result. For persons possessing items to pawn, pawn shop loans represent an alternative to payday loans, often at lower rates. Our regression results, however, are limited to states where payday lending is permitted and reflect average relationships. To further examine the relationship between the two products, we used household-level estimates of adjusted credit usage to compute mean adjusted usage in a given payday-loan fee ceiling group for different [relative] levels of effective pawn-shop fee ceilings (lower, same, higher). The estimates of mean adjusted payday loan usage and mean adjusted pawn shop usage presented in table 10 indicate how usage varies with the relative cost of the substitute product.

[Insert table 10]

The more granular analysis reported in table 10 reveals mixed evidence regarding the substitutability between payday and pawn shop lending. For some fee ceiling groups, the adjusted incidence of payday loan usage is *lower* in areas in where pawn shops can charge higher fees and mean adjusted pawn shop usage 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. The results do suggest that pawn shops are picking up some AFS loan demand in states where payday loans are prohibited. However,

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. **Conclusions**

Our analysis 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. Given the current business model, for payday lending 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 $80 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 (2007) conjecture that in the face of inelastic demand, fee ceilings will affect AFS stores per capita as firms adjust the scale of operations to maintain profit margins has 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 pawn shop usage are higher in states with the highest fee ceiling.

These findings suggest that laws to lower fee limits up to some point would be beneficial to consumers, whose demand for these loans is price inelastic. 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.

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Table 1	Classification of Payday States by Payday and Pawnshop Fee Limits				
	Payday Loan Fee Limit Groups [1]			Pawnshop Fee Limit Groups [1]	
State	Five 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 groups indicate similar ceilings, including states with no ceilings.

Payday group 0 includes states where ceilings are so low that they effectively prohibit payday lending.

Fox (2004) computes the "effective" maximum APR on a two-week $100 loan based maximum fee schedules which may include ancillary per-loan fees. Shackman and Tenney (2006) reports the effective monthly interest rate on a typical 2-month $80 loan that include any storage fees, one-time setup charges, or any other fees in addition to charges that identified as interest.

Table 2: Demographic Distribution of Households in the CPS Supplement and of Households in States Where Payday Lending Allowed in 2008

	Percent of households	
Demographic categories	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
All households	100.0	100.0

Authors' calculations using January 2009 CPS data are weighted using 2009 CPS Supplement weights.

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: Interactions Between Household Demographic Characteristics and Payday Loan Fee Ceilings

Mean adjusted payday loan usage (incidence) by households in the cohort

Variables	Payday not allowed	$10-$12 ceiling	$15-$16 ceiling	$17-$20 ceiling	No ceiling
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
All households	**-0.033**	**-0.001**	**0.001**	**0.000**	**0.002**

Adjusted usage for a household equals actual use (0,1) minus the predicted likelihood of use for the household based on its demographic characteristics

Table 9: Interactions Between Household Demographic Characteristics and Pawn Shop Fee Ceilings

Mean adjusted pawn shop usage (incidence) by households in the cohort

Variables	<$10 ceiling	$10-$19 ceiling	$20-$25 ceiling	No ceiling
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
All Households	**-0.012**	**-0.001**	**0.004**	**-0.003**

Adjusted usage for a household equals actual use (0,1) minus the predicted likelihood of use for the household based on its demographic characteristics

Table 10: Interactions Between Payday and Pawn Shop Fee Ceilings

Mean adjusted usage incidence by households in the cohort

Payday loan use

	Pawnshop loan fee ceiling			
Payday 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	

Pawn shop use

	Pawnshop loan fee ceiling			
Payday 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	

Adjusted usage for a household equals actual use (0,1) minus the predicted likelihood of use for the household based on its demographic characteristics