

Regulation and the Payday Lending Industry

Preliminary Results

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Abstract

The operation of payday lenders is of concern to researchers, state and federal regulators for the seemingly predatory nature of firm practices. This paper seeks to determine, after controlling for a market's demographic and competitive characteristics, how regulation affects the number of branches to open and operate in a market. To do so, I assembled a unique panel data set that contains exact payday lending branch locations, demographic data, traditional bank locations, and the regulatory environment for multiple states spanning a decade, from 2001 to 2010. These years of observation are of vast importance to this industry as during this time, both the industry and regulatory environment went through dramatic changes. From this, a commentary can be made regarding the effectiveness of different policy changes with respect to this industry by examining the effects of changes in the fee/rate cap, loan amount and licensing fees of branches. Initial results indicate that the number of branches to open is negatively associated with new-branch licensing fees and operating branches is negatively associated with renewal licensing fees, though these results are insignificant. The maximum fee allowed is positively related to the number of branches to open and operate, as expected, however, the maximum amount loaned to a consumer is negative in both specifications. Further, the average number of branches to operate and to open in a market is increasing in the presence of particular aspects of regulation, such as a limitation on the amount to be loaned, suggesting that explicit payday lending regulation encourages the growth of the industry.

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1 Introduction

The economic effects of regulation is an important topic both in academia as well politics, especially in recent times and with regard to the financial industry. Regulations are established to increase the transparency of a given industry, protect consumers, and establish guidelines for practice. A major concern with increased regulation of a given industry is that it hinders natural economic progress, decreasing total welfare in the market. Typically, in terms of licensing requirements, competition is decreased, incumbents gain market power, and consumer choice is decreased. However, it could also be argued that remaining firms increase the quality as a whole, therefore the welfare loss is minimal.

The financial industry, in terms of traditional banks and mortgage lending, has been highly regulated for an extremely long period of time. However, the alternative financial industry, composed of check cashers, payday lenders and pawnbrokers, has only been gaining attention in the last decade, corresponding to the country's tumultuous economic status and an increased demand for these alternative services. Research, discussed below, has been conducted regarding the behavior of these firms in order to determine if these firms are predatory in nature. Regulators have taken action with regard to these firms, however, the welfare effects of payday lenders remain unclear.

The focus of this study is to investigate the effects of different regulatory environments on the opening and operation of payday lending branches in a market. This study examines not only how the presence of regulation affects these branches, but how different aspects of regulation affect the structure of this industry, exploiting the variation that exists in payday lending regulation across states and across time. Branch-level data have been collected from multiple states, for multiple years, and aggregated to the zip-code level. Combining this information with demographic data from the Census, traditional bank counts, and historical regulatory information, I empirically test how changes in licensing fees and regulations on the terms of a payday loan change entry and operation behavior of payday lending branches. The number of branches to open and the number of branches to operate are the focus of this study because it can be determined if state regulations not only slow the growth of this industry, but also if the industry contracts

as a result of these regulations. It is important to note that this paper does not test the welfare effects of payday lenders in a particular market. However, the conclusions made in this paper will be able to contribute to the dialogue of how to improve the total welfare of all actors within this industry.

2 The Payday Lending Industry

2.1 The Product and Industry

The development of a short-term lending market, such as the payday lending market, increases the availability of loans to those consumers with limited access to revolving credit or other means of financing. Further, payday loans offer loans that are short-term and small, different than typical loans offered by traditional banks, to all consumers that need extremely short-term financing.

A payday loan is a small, short-term loan in which the borrower writes a post-dated check for the amount of the loan to the lender in return for a loan in the amount of the check minus any fees. In order to borrow, an individual must be employed and have an active bank account, although no minimum credit score typically is required. On average, payday loans are less than \$500, with the majority of loans ranging from \$200 to \$300. Fees on loans also vary. Typically a borrower is charged 15 to 30 percent for every \$100 borrowed. While the fee may appear to be small, the standard payday loan term lasts only two weeks, therefore this fee translates into an annualized interest rate that can exceed 400%. For a consumer who uses a two-week, \$300 loan with \$60 in fees, this is equivalent to being charged an annual percentage rate (APR) of 521.43%. Comparing this to state usury limits, which range from 5 to 24 percent per year, and typical credit card interest rates that range from 10 to 23 percent per year, payday loans are extremely costly to borrowers relative to other forms of credit.

High annualized interest rates and the incredible growth the industry has experienced over the last two decades have garnered the industry an increased amount of attention by consumer advocates, state and federal regulators and researchers. In 1996 there were an

estimated 2,000 payday lending branches operating in the United States. In 2007 branch locations increased to an estimated 24,000 branches (Prager 2009). Further, in 2004, payday loan volume was estimated to be as high as \$50 million (Stegmen 2007). However, increased regulation of payday lenders has caused a contraction in the industry and a reduction in the number of branches operating in the United States. In March 2008 the number of branches operating nationally slightly decreased to 23,600 (Advance America 2008). Even as the number of traditional brick-and-mortar establishments has decreased, the emergence of online payday lending has made it even easier for consumers to utilize payday loans. Given the increase in economic uncertainty, demand for these short-term loans and attention from financial regulators has increased (Epstein 2010).

2.2 Literature and Motivation

The licensing of payday lenders is analogous to licensing occupations. Occupational licensing is a process in which the entry of an agent, be it a firm or individual, requires the approval of the regulating entity after demonstrating that minimum quality standards have been met. Proponents of licensing argue that licensing serves as a signal of and will increase the quality of service for market customers. On the supply side, licensing restricts entry into the market and incumbents, such as licensed dentists and lawyers, enjoy higher wages and are able to charge higher prices as a result. In an industrial organization context, this is equivalent to an increase in profits, due to restricted entry and the ability to increase prices as well (Kleiner 2000).

However, the potential effects of increased licensing requirements on payday lenders are not the same as occupational licensing. Unlike the licensing of occupations, existing operating branches of payday lenders are not "grandfathered" into such regulations, thus new requirements apply to new entrants as well as incumbents. Any advantages that would have existed due to a market presence are gone due to the applicability of the regulation to all branches. Further, any price effects of licensing are partially mitigated due to the price-ceilings that many states impose on payday lenders. The specifics of payday lending regulation and hypothesis of potential changes will be discussed further

later in the paper.

There have been numerous studies regarding the determinants of location for payday lenders. They explore what demographic characteristics or competitive characteristics are important for concentration. Burkey and Simkins (2004) analyzed the locations of payday lenders operating in North Carolina. Using Zip Code Tabulation Areas (ZCTA) as determined by the United States Census, the authors determined that payday lenders located in markets with higher concentrations of black citizens, lower levels of household income, and with a lower educated population. Graves and Peterson (2005) determined that payday lenders were potentially targeting military personnel, prompting legislative action.

More recent research has shown a shift in the location choice in terms of a market's demographics and the competitive nature of the market. Prager (2009) determined that payday lenders (along with pawnshops and check cashers) tended to avoid areas with a high concentration of Hispanics and a high share of households living at poverty or below but still finds that payday lenders locate in areas with high concentrations of blacks and lower education levels. With regard to the regulatory environment, she found that there existed fewer payday lenders per capita in states with price restrictions, i.e. a fee ceiling. Further, Damar (2008) showed that in Oregon, payday lenders were beginning to enter markets serviced by traditional banks. Therefore, the market for payday lenders and the competitive structure of the lending market is changing as payday lenders enter markets in which one would not have predicted their entry.

Regarding users of payday loans, in 2001 Elliehausen and Lawrence conducted a survey regarding the behavior of payday loan borrowers. The typical borrower had family incomes between \$25,000 and \$49,000, with just over 56% of respondents having access to bank cards and 29% having access to revolving credit. These values are significantly less than for the adult population, of which 72.5% and 56.8% had access to bank cards and revolving credit respectively. Most importantly, 65.7% of respondents used payday loans for emergency expenses while 47.2% used loans for unplanned expenses (Elliehausen and Lawrence 2008). In the 2010 annual report, Advance America gave a profile of a typical

customer utilizing cash advance services. In the report, the typical user was slightly older than the national average (46 years old compared to 36) with a higher median household income than the national average (approximately \$48,000 compared to \$41,000). Their customers were on par with the national average of home ownership and have a higher rate of individuals with a high school degree (Advance America 2010). This profile implies that payday lending consumers are not "fringe" consumers as one might expect. These individuals do have access to traditional banks and must be employed in order to meet the requirements of utilizing a payday loan, thus payday lending demand is driven due to fact that these consumers are credit constrained and in need of some form of short-term financing.

On the supply side there are numerous factors that determine where a payday lending branch will open. As stated in their 1998 SEC filing, Check into Cash, a major company in the payday loan industry, situated themselves in markets to be as close to consumers as possible. Though the filing is older, this mentality was held right as the industry was growing exponentially, therefore, profit maximization was definitely determined by location choice for these firms. In recent filings from Advance America, a state's regulatory environment is of utmost importance in a company's decision to maintain operations or expand in a market. Companies in this industry, of course, will seek regulatory environments that are as nonbinding and favorable to the industry as possible (Advance America 2010). Further, Flannery and Samolyk (2005) examine the profitability of payday lenders, comparing newer locations to older, more established locations. Their findings indicate that for younger stores, per loan costs are, on average, higher than those of more mature stores. Additionally, because payday loans are short-term, small, and have a high rate of default, per loan costs are higher than more traditional means of borrowing to the point that younger stores actually lose money on loans. Further, greater loan volume has a higher effect on profitability for younger stores than for more mature establishments. Therefore, for a firm that is considering opening a payday lending branch in a market, consideration is given to proximity to customers as well as the likelihood that loans are utilized. Regarding payday lending pricing and regulation, DeYoung and Phillips exam-

ine the payday lending industry in Colorado from 2000 to 2006 to determine the pricing behaviors of payday lenders in response to changing regulations. Before binding price ceilings were imposed, the authors found that branches were competing with respect to price, pricing below established rate caps. However, after binding ceilings were imposed, they found that prices across a number of branches began approaching the regulated limit and firms were abandoning price competition. According to their data, the number of loans that had a fee as high as the regulated maximum increased from 69 percent to 97 percent. Further, results showed that these businesses engaged in price discrimination, charging higher prices in predicted inelastic neighborhoods and for repeat borrowers. These two studies indicate that the fees associated with payday loans, while high, are not predatory in nature. These firms, particularly new branches, are susceptible to extremely high per-loan costs (including the probability of default), therefore they must compensate with higher fees.

A segment of literature has been produced in this industry examining the regulatory environment with respect to welfare and there also have been an increasing number of studies that examine the welfare of consumers that have access to these loans. In Zinman 2009, the number of bank overdrafts and late-bill payments were measured prior to and after the state of Oregon effectively banned payday lending through usury interest-rate limits. He found that, relative to areas where payday lending was not restricted, that consumers that once used payday loans in order to smooth consumption were forced into substitutes such as the options listed above. Further, consumers that were unable to utilize payday loans due to the restriction also had negative feelings about employment prospects and their future financial situation. Morse (2011) also looked at the effect of payday loan availability after the occurrence of natural disasters in the state of California. Her study uses these occurrences as a natural experiment to simulate the emergency need of consumers mentioned above. She finds that foreclosures in areas with payday loans available were significantly lower than in areas where branches were not located. Further, her results indicated that small-property crimes were smaller in areas with payday lending available. However, Melzer (2011) found opposite results when analyzing the ability of

consumers to pay bills and the effect of borrowing on overall health. In his study, he found that consumers living in areas with increased access to payday lending experience a higher rate of difficulty meeting financial obligations, such as paying rent and utility bills, and a higher rate of deferred medical care. Lastly, Skiba and Tobacman (2009) find that consumers that utilize payday loans are more likely to file for personal bankruptcy than those that do not.

Once again, the purpose of this paper is not to analyze the welfare effects of access to payday loans. However, regulations do have an impact on the decision to operate in markets. Therefore, after analyzing how particular aspects of payday lending regulation affect the market structure of this industry, there can certainly be a commentary on the potential welfare effects on consumers due to this structural change.

2.3 Regulatory Environment

The purpose of regulations targeted at non-bank financial institutions is to diminish or completely eliminate market inefficiencies caused by information asymmetries, anti-competitive behavior, market misconduct, and instability. Regulations regarding payday lenders are primarily at the state level, however there has been growing attention by regulators in the last few years. States and federal regulators have adopted common practices, though the specifics are heterogeneous, in order to maximum efficiency and maximum welfare for consumers (Carmichael and Pomerleano 2002).

In order to reduce information asymmetries between the consumer and the lenders, states and federal regulators require that any fees on loans be written in monetary terms as well as an APR. States have typically adopted this practice at the inception of any payday regulation and federal regulators, starting in 2000, extended applicability of the Truth in Lending Act's Regulation Z to payday lenders, requiring both displays of loan fees (Smale 2005). Further, to decrease information asymmetries, states will typically require branches to display in a highly visible font the typical terms of a loan within the branch, so that upon entering the establishment, the consumer will be aware of loan fees.

In order ensure that a branch is financially capable to providing loans to consumers,

states typically regulate a minimum bond requirement for each branch a firm wishes to open. Further, some states also require that a firm maintain liquid assets for a period of time after a branch has closed to ensure that any potential unfinished business of the branch can be financially met even after the branch no longer exists. Licensing requirements are also a way to ensure that only capable, legitimate firms operate as payday lenders, increasing the stability of the market and the quality of the firms operating in a market. Lastly, firms, as well as the individuals managing the branches, must not have been involved in any criminal activities prior to applying for a license and for the duration of the license. This too ensures the quality of the firms operating in the market.

Regulating market misconduct, for both states and federal regulators, is the most important aspect of payday lending regulation as exemplified by the number of regulations pertaining to the specific practices of lenders. As stated previously, there is a large concern that these firms are predatory in nature and welfare reducing. Therefore, regulators have seen fit to limit, sometimes explicitly prohibit certain actions, in order to protect consumers. The amount of the loans, the duration of the loan, and the fees which can be collected on a loan are the most regulated by the states. In 2011, 13 states prohibited the practice of payday lending, either through explicit regulation or through the implementation of binding fee caps. Of the states that do allow payday lending, only four do not explicitly regulate the fees on loans (NCSL 2011). Further, some states have begun to limit who payday loans can be provided for. States have been requiring firms and branches to adopt technology that allows for the tracking of individuals with outstanding loans. If an individual has an outstanding loan, or within a certain period after a loan has been repaid, states prohibit branches from ganging in business with this particular consumer. On the federal level, in 2007, Congress passed the Military Lending Act, which capped the allowable interest to be charged on loans to members of the military to 36 percent APR, essentially making it unprofitable to lend to members of the military or their families. Lawmakers and military officials deemed that payday lenders were targeting military members and such financial transactions affected readiness and security clearances for those on active duty (Center for Responsible Lending 2007).

See the Appendix for specific requirements and changes to particular state regulations.

3 Data

3.1 Branch Level Data

The empirical methodology of this paper follows previous studies, however the contribution of this study is the data set being utilized, which previous research has not utilized before. At the market level, using branch-level payday lender data, I constructed a panel data set containing the following: the number of payday lending branches to open, operate, and exit a market, demographic characteristics of the market, the competitive environment of the market, and most important, the regulatory environment of the state in which the branch is located for the years 2001 to 2010 for multiple states. For the industry as a whole, as stated previously, this decade represents the era of exponential growth and the decline of the industry in many states. Linked with this expansion and contraction is the regulatory attention being paid to this industry both at the state level and the federal level. For some states, regulations were established at the beginning of the decade regulating these particular firms apart of traditional banking and lending institutions. As the decade progressed, the number of states to adopt regulation increased while other states changed aspects of the regulation in the interest of consumer protection. By the end of the decade, some states allowed regulations to expire, thus payday lenders were regulated the same as traditional lenders. At their inception, payday lending regulation favors these firms, allowing them to operate under special guidelines. However, as the regulation is changed, it is changed in the interest of the consumer, protecting them from extremely high fees and in the event they cannot repay the loan within the specified time.

Branch level data were collected from the department that regulates the payday lending industry, typically a state's Department of Financial Institutions. Eight states are being examined in this study: Idaho, Iowa, Kansas, Montana, Nevada, Oregon, South Dakota, and South Carolina, with more states to be added for further analysis. From these states, the license number, company name, branch address, initial licensing date, and status date

(the date at which the branch ceased operations as a payday lender or when the license is set to expire) was collected in order to analyze the stock and the flow of payday lending branches in a market. A panel of data was constructed and consists of market-year level observations. The market is defined as the zip code in which the payday lending branch enters, operates or exits in a given year with 3,463 unique zip codes for each year. For a given year, the branch has entered the market if the license to operate has been issued in the year of observation. The branch exits the market if the operating license is canceled or expired during the year of observation. Lastly, a branch exists within a market if it has opened during or prior to the year of observation and exits during or later than the year of operation. For this analysis, an address can only be licensed once in a given year. Therefore, in order not to double count observations, if an address was licensed more than once in the span of 12 months, it is treated as a single license for the address.

Table 1 displays summary statistics for market-year, state-year and year level activity of the payday lending branches observed. In the first third of the table, statistics for the market-year show that, on average, there are a very small amount of branches that open, operate and close in the sample. However, the standard deviation of the sample suggests that in the majority of the sample, there are multiple branches operating in a given zip-code year, confirming that these branches do tend to cluster in a given market. When expanding the sample to examine the stock and flow in a given year, a given state will host hundreds of operating branches in any given year. Further, entry and exit activity is also very dynamic, suggesting that the structure of this industry, at the state level, went through serious changes as well. A note at the minimum values in this particular segment, the state of Montana in the year 2009 passed legislation capping allowable fees to 36 per annum, however, these change would not take effect until 2011. By the end of the observation period, all operating branches ceased operation in the state due to this change, giving support to examining particular aspects of regulation rather than simply the existence of regulation. Lastly, examining structure at the year level, as it was in the case of the state-year level, the structure of the industry is especially dynamic. The number of operating branches peaked in 2007 with over 3,600 operating branches in

observed states. Important to note as well is that the number of operating branches in the observed sample more than doubled from 2001 to the peak in 2007. Given the states observed in the sample and their relatively low populations when compared to other states in the country, this dramatic growth in the number of branches operating is impressive. Further, the peak in operating branches occurred after all of the states in the sample adopted some form of payday lending regulation, this will be discussed further below.

3.2 Regulatory Data

Regulatory data for each state consists of initial branch licensing fees, branch renewal fees, maximum fees allowable, maximum loan amount, maximum loan duration, maximum number of rollovers/renewals and the maximum number of loans per customer. Referring to the previous discussion of AFS regulation, these particular characteristics were chosen because they are direct ways in which regulators can influence the market practice of lenders. For the purposes of this study, if the state does not dictate that an APR be calculated, this term is the APR for a \$300 loan assuming the maximum fees are charge. This information represents price controls and operating costs that these branches face in their decision to operate in a given market. Table 2 shows, over the course of the sample period, how many states adopted some form of payday lending regulation. At the beginning of the sample period, only five states explicitly regulated payday lenders and required branches to be licensed with the state. Payday lending regulation was not adopted by all of the states in the sample until 2005; however, this is not when the number of operating payday lending branches reached their peak. As discussed previously, for the observed sample, the highest number of operating branches occurred in 2007 with 3,613 branches. This implies that, even with a regulatory environment existing in all of the states observed, the growth of the industry continued and perhaps measuring the existence of regulation alone is no longer sufficient to understand how the regulatory environment affects industry dynamics.

Tables 3 displays the summary statistics for the regulation data collected over all observations, conditional on that regulation existing in the state of observation. First,

licensing fees on average are approximately \$460 for new licenses and \$430 for renewal licenses. These fees, because they are relatively low in magnitude, do not necessarily represent a barrier to entry. However, these fees are an annual cost of operation for payday lending firms, therefore must be examined when examining industry activity. The maximum calculated APR across the entire sample has a significant range. Once again, states have different limitations regarding the maximum fee allowed to be charged, sometimes making it a flat fee versus a percentage of a loan. For the purposes of this study, the maximum APR was calculated assuming the maximum fee charged on a 14-day, \$300 loan. The mean APR for the sample is approximately 367 percent, this translates to roughly a \$15 fee for every \$100 borrowed. The mean maximum loan amount is just large than \$8,100, however, this statistic is misleadingly high due to the maximum of \$50,000. Upon further investigation, the median of the sample is \$500. This indicates that payday lending regulations favor smaller loans rather than loans that are comparable to traditional personal loans or revolving credit lines. The mean maximum duration of a loan is approximately one month. Once again, this shows that regulation favors a short-term duration for payday loans. Regarding the maximum number of rollovers and renewals, this is a point of contention for consumer advocates. It is this aspect, along with the number of loans per customer, which creates the image of the "loan trap." That being said, it is interesting to note how few states actually regulate this particular characteristic of the loan, as exemplified by the extremely low observation count. The mean rollover/renewal limitation is 3 per consumer, just under the standard practice of 4 per consumer (Advance America, 2007). Lastly, the number of loans per consumer is, on average, limited to under to per consumer.

Table 4 displays the trend in the means of the regulatory variables on interest as well as the number of states for which the information is available due to the existence of a regulatory environment. With relation to the licensing fees that firms must pay to enter, it can be seen that as more states adopt payday lending regulations, the average cost of operation increases. Regarding the loan terms, it is important to notice, that while all states regulated payday lending firms by the year 2005, regulations are not

equal across states by that time. In 2001, of the five states regulating lenders, only four of them regulated the maximum number of fees that could be collected by firms. These fees calculate to an average maximum APR of just below 380 percent. Further, it appears that as states begin to adopt a fee regulation, these regulations are similar across states. All states regulated loan amount and loan duration, while only one regulated the maximum number of rollovers or renewals and only one state regulated the maximum number of loans per borrower. By 2004, 7 states adopted payday regulation and, again, there are differences within regulations between states. Of the states to adopt, none of the states adopted any limitation on fees, and during this period, only one additional state adopted limitations on the number of rollovers per customer. In 2007, by the period that all states adopted regulation, once again, not all states adopted particular aspects of regulation. One additional state adopted fee regulation and one additional state adopted a regulation on the number of loans per consumer, both of which favored a limitation lower in magnitude due to the decrease in means. Further, one additional state adopted regulations limiting loan amount and limiting the duration of a loan, and again, these limitations have decreased the sample mean implying that the newly adopted regulations are more restricting than existing regulations in the sample. In 2010, no states adopted any new aspects of regulation. With the exception of loan amount, which slightly increased, there were no changes in existing regulations either. It is important to note, however, that operating costs, in terms of licensing fees, increased over the entire period. Again, while licensing fees may not be a large barrier, this is an increase in operating costs for each branch. Therefore, while the regulatory environment settled somewhat, firms operating in this market did experience more stringent regulations due to this increase in the cost of licensing.

Demographic data was collected from the United States Census Bureau. Information regarding gender composition, total population, ethnic composition, education levels, employment statistics, and information on income was collected at the zip-code level using the 2000. Measures of total market population and median household income have been scaled to represent population and median income per 10,000 people. This scaling is re-

flected in the regression results. Information regarding traditional banks entering a market was collected from the Federal Deposit Insurance Corporation from their annual Summary of Deposit Reports. If a bank branch is operational during the year, it will exist in the report. The number of banking branches in a market is important to control for as, due to the nature of a payday loan and the necessity of a checking account in order to borrow, traditional banks and payday lending branches are complementary in nature. Further, the relationship between traditional banks and payday lenders changed over the decade of observation. Table 5 displays the summary statistics for the three states observed for the demographic and competitive controls.

4 Model

Table 6 lists and defines all independent variables used in this study. The variables of interest in this study are the licensing fees for both new branches and existing branches and the different components of regulation in order to determine how regulations change the predicted number of branches to open and operate in a market.

To determine how regulations affect payday lenders, I am employing Pooled Ordinary Least Squares regression and fixed effects Poisson regression approaches to predict the effect of different regulations on the predicted number of payday lending branches to open in a market or operate in the market. The empirical model is as follows:

$$Y_{mt} = \alpha_0 + \alpha_1 Reg_{st} + \alpha_2 RegInd_{st} + \alpha_3 X_{mt} + \alpha_4 \xi_s + \alpha_5 \eta_t + \varepsilon_{mt} \quad (1)$$

As stated before, the method in which firms maximize profit in this industry is through location choice. Therefore, market characteristics, such as demographics, population, and the competitive nature of the market will most certainly determine how many branches will open and how many branches will operate in the said market. By examining both the number of branches to open and the number of branches to operate, it can be determined if state regulations not only slow the growth of this industry, but also if the industry contracts as a result of the regulations. The above specification includes both marginal

effects and average effects, therefore, the effect of a particular regulation as well as how binding the regulation is can be measured on the effect of both aforementioned dependent variables (Hotz and Xiao 2005).

The level of observation is market-period, defined as a zip code year. Y_{mt} is either the number of branches to open or the number of branches to have ever operated in market m in a given year t . Reg_{st} are state-level variables controlling for the value of the particular regulatory control and measuring the marginal effects of payday lending regulation. Initial licensing fee, branch renewal fee, and maximum loan amount have been scaled to be a measure per 10,000 and maximum loan amount and maximum APR have been scaled to be a measure per 1,000. In accordance with theory, I expect negative coefficients (or coefficients less than 1 for Poisson specifications) for both initial licensing fees and renewal licensing fees as these are costs of operating in a market. I expect the coefficient on all regulated maximum terms (APR, loan amount, etc.) to be positive, as increasing the maximum amount will decrease the binding effect the regulation will have on the industry. I expect the coefficient on "Term Minimum" to be negative, as increasing the minimum time a loan is outstanding increases the binding effect of the regulation. In terms of significance, I expect maximum APR and maximum loan amount to be the most significant of the regulatory controls in how many more branches enter or operate in a market. With respect to the product, this is simply the price and the quantity that the firm can charge and output, respectively. Payday lending branches depend upon fees to cover costs and make profit and these fees, in turn, depend upon the face amount of the loan as is regulated in many states. Therefore, any regulations binding the loan amount implicitly regulate how much the firm can make off of each loan.

The aforementioned controls are only measured *conditional on the regulation existing*. Given the scope of the data, it can also be measured on how switching from no regulation to existing regulation affects the industry. Therefore, for each regulatory control included to measure marginal effects, average effects are measured by $RegInd_{st}$, where the particular indicator is equal to 1 if the regulation exists and 0 if it does not. Including these particular controls also controls for the heterogeneous regulatory environment across the different

states. In accordance with theory, I expect that the coefficients of these controls to be negative. While it can be stated that explicit regulations can be a safe haven for payday lenders, the existence of these regulations impose restrictions on practices nonetheless, thus the expected negative coefficient.

X_{mt} is a set of demographic variables and the number of traditional banking branches in the market. For this particular regression, both total population and median household income have been scaled to be a measure per 10,000.

ξ_s represents the fixed effect of the state that the particular zip code is in, controlling for unobserved market effects. There is the slight possibility of an endogeneity issue regarding the regulatory variables due to the efforts of the industry to affect regulatory outcomes. Through lobbying efforts, it is possible that the firms operating branches in the market will affect changes in licensing fees and most certainly, the fees allowed to be charged. Further, there is the likely possibility that not only a state's existing regulatory environment affects the decision to enter and operate, but also the potential regulatory environment as well.

η_t represents the year fixed effects. Including year fixed effects will control for regulatory actions taken by the federal government, both enacted and potential. Further, the effects Great Recession, which began in 2007, are also somewhat mitigated with the inclusion of both state and year fixed effects in both regression specifications. ε_{mt} is the market-year level error term, which is assumed to satisfy the standard assumptions of OLS.

5 Preliminary Results

Tables 7 through 10 display the regression results for both OLS and Poisson methods. Tables 7 and 9 are results for the number of branches to operate and tables 8 and 10 display the results for the number of branches to open. All columns in each table include the aforementioned demographic variables and standard errors for the OLS regression results are clustered at the state-year level. For each column in each table, column one includes no fixed effects, column two includes only year fixed effects, column three includes

only state fixed effects, and column four includes both state and year fixed effects.

Starting with Table 7, column one, coefficients on licensing fees, the measured maximum number of rollovers, maximum APR indicator, and term minimum indicator are the only ones with the predicted signs. Further, significance only lies with the coefficients on the value of term minimum, the number of rollovers, APR indicator, maximum loan indicator and term minimum indicator. When including year fixed effects, significance is extended to the value of the maximum APR and the indicator for loan duration minimum. If examining effects within states, as displayed in column three, a number of results change. First, with respect to the value of the regulatory controls, maximum APR and term maximum both increase in significance and become positive, as was expected. However, maximum loan amount becomes increasingly negative and significant, opposed to the predicted outcome. Term maximum has a positive and significant marginal effect, though small. Regarding the regulatory indicators, many of them are dropped due to multicollinearity issues. This suggests that within the sample, even though some states do switch from no regulation to some regulation, when a state does adopt regulation, it doesn't change within the time frame of the sample. When examining the full specification in column four, significance is lost for the marginal effect of the maximum APR. Loan amount remains negative, however decreases in magnitude. Term maximum also remains significant and positive; however the marginal effect also decreases. Starting with renewal fees, if a state increases renewal fees by \$10,000, the predicted number of branches to operate in a market decreases by just over 2 branches, however, this effect is not significant and highly unlikely. An increase in the licensing fee in the magnitude of \$10,000 is extremely large relative to the actual licensing fees observed in the data, which range from \$100 to \$1,200. Though no longer significant, maximum APR does still maintain a positive coefficient. For instance, if a state increases the APR ceiling by 10,000 percent, it will increase the number of branches by 0.9. While this may seem like an odd example, it can be applied to states that regulate fees on the basis of income or at extremely high values of the face of the loan (although not observed, Missouri has a fee maximum of no higher than 75 percent of the face value of the loan, which can translate into a fee

of over 1,000 percent). Third, increasing the maximum amount to be loaned by \$1,000 will actually decrease the number of branches by approximately the mean of the sample. Though many states regulate loans to be no higher than \$500, states can regulate loans to be a percentage of income or a couple of thousands of dollars as well. This result, though not expected, can possibly be explained by how payday lending fits in with other forms of credit. As stated earlier, payday loans are short-term, small denomination loans. If states increase the maximum loan ceiling, this possibly open loan companies to riskier consumers that demand higher loan amounts or it could align these firms more with existing credit products that over higher loan amounts and longer periods of repayment. However, even though the ceiling is increased, it does not mean that these loans will necessarily be made. Lastly, the full specification shows that, on average, an existing regulation of loan amount will increase the number of operating branches by just over two branches, *ceteris paribus*. This is completely counterintuitive and lends credence to the "safe haven" argument for payday lenders. Perhaps, payday lending firms do seek states with regulatory explicit environments.

When examining the full specification in Table 8, the specification is weaker in predicting how regulation affects the number of branches to open in a market. Once again, the coefficient on the licensing fee is of the correct sign, though insignificant. Maximum APR has been dropped due to multicollinearity along with all of the indicator variables, with the exception of the loan maximum indicator. With respect to maximum loan amount, the coefficient is again negative and significant. In these particular results, if a state increases the loan ceiling by \$10,000, this will decrease the number of branches to open in a market by approximately 6 branches. The same possible justification holds for these regressions, increasing the loan ceiling, while decreasing the binding effect of the regulation, increases the potential for riskier customers and the likelihood of competition from other forms of credit. Again, the coefficient on the existence of regulation on loan amount is positive and significant, implying that the number of branches to open will be higher in markets with regulations present. This result also supports the possibility that payday lending firms would rather be regulated explicitly instead of the possibility of falling under typical state

usury laws.

Tables 9 and 10 present regression results using a fixed-effects Poisson specification. The coefficients are presented as incidence rate ratios, thus should be interpreted as the scale by which the dependent variable will change as a result of the measured effect. When examining the full specification on the number of branches to operate in the market, the results tend to follow the predictions made earlier in the paper with respect to the marginal effects of regulation, however not to the average effects of regulation. Beginning with the marginal effects, though not significant, an increase in the renewal fee by \$10,000 will decrease the number of operating branches by approximately 5 percent. In this specification, increasing the price ceiling payday lenders face by 1,000 percent will increase the number of predicted operating branches by over 50 percent. This translates to an extremely lax environment with respect to the maximum fees allowed to be collected, which does exist, while not in the sample, in the scope of the country. Once again, increasing the ceiling on the actual loan amount will significantly decrease the number of branches to operating in a market, by an extreme factor of nearly 90 percent. Further, decreasing the binding nature of the term maximum, term minimum and number of loans will also increase the number of branches to operate by large factors as well. With the exception of the indicators for the number of loans, the number of rollovers, and the maximum duration, the coefficients once again defy predictions by indicating an increase in the average of predicted number of branches to operate in an environment where regulations exist. Not only that, these coefficients are of an extremely high magnitude, thus are examined with caution. What is important to note is that these coefficients do imply increases in the average number of branches with a regulatory environment present. Once again, perhaps payday lending firms prefer states with explicit regulations with regard to the industry so as not to fall under traditional lending laws.

When examining the effects on the number of branches to open in a market, it seems that firms are particularly sensitive to licensing fees and the ceiling placed on the loan amount when deciding not to open a branch within a market. With respect to the coefficient on the maximum APR, even the slightest increase in the price ceiling will lead to

a large increase in the number of branches to open in a market, suggesting that, when making the decision to enter, the maximum APR is extremely important to that decision. Counterintuitive are the results regarding term minimum and the maximum number of rollovers as these coefficients imply an increase and a decrease, respectively, in the number of branches to open with an increase in each of these measures. Regarding the average effects of regulation, the indicators for maximum APR and term maximum do follow, in direction, with predictions. However, once again, the indicator for loan maximum is extremely significant and extremely large in magnitude. Ignoring the extreme magnitude for now, the direction is against prediction and lends credence to the theory that payday lenders seek states with specific regulatory environments. Once again, caution is taken with interpreting the coefficients of these results due to the extreme nature of the results.

6 Conclusion and Extensions

6.1 Conclusions

As more states adopt explicit payday lending regulations, it is important to shift the research focus from examining the effects of a regulatory environment to examining the effects to the types of regulations a state adopts when empirically researching the structure of the payday lending industry. Initial results show that different characteristics of payday lending regulation do have very different effects on the number of branches to operate and open in a market, both in a linear and nonlinear econometric specification. As expected, the less binding a price ceiling, the more concentrated a market will be in the number of payday lending branches and the market will become even more concentrated as more branches are likely to enter. Conversely, and surprisingly, the less binding a regulation is with respect to the size of the loan, the market is predicted to be less concentrated and decreasingly concentrated as well. According to initial results, this appears to be the aspect of regulation that firms are most sensitive to as well given the constant significance in both specifications.

With respect to the presence of regulations in general, once again, initial results are

surprising. For states that explicitly regulate and allow for the practice of payday lending, not only will branches remain in the market, the number of branches in the market is predicted to increase as well. Results indicate that, perhaps, payday lenders do seek states that offer a safe haven in the form of explicit regulation. This could be that explicit regulation allows for the firms to be excluded from typical usury laws that would cripple this industry's ability to cover costs and profitability. Further, perhaps these firms seek these states to increase the transparency of the industry in order to decrease the negative perception of the payday lending process. The more transparency in the payday lending process, the less likely regulators, consumers, consumer advocates, etc. can accuse these firms of being predatory in nature, if these firms are abiding by existing regulations. Therefore, the presence of a regulatory environment, it seems, is good for both sides of the market in this case.

There are definite welfare implications to these results. If, in fact, consumers are better off with access to payday loans, states can adopt regulations that are conducive to sustaining the industry by altering aspects of regulation that favor concentration, such as increasing the price ceiling or even establishing a non-binding price ceiling. Allowing access to short-term financing to aid consumers in any instances of financial distress can have significant economic implications. For instance, in the recent financial crisis, in the instance of natural disasters, having access to emergency short-term financing can reduce to impact of such disasters and allow for consumers to recover more rapidly than if consumers had no access to funds. However, it is found that access to payday loans is detrimental to the wellbeing of consumers, then regulators can act accordingly as well. By altering aspects of regulations, states can control the concentration of this industry.

6.2 Extensions and Ongoing Work

The importance of these results hinges upon the heterogeneity in the markets observed as well as heterogeneity in state regulations. Therefore, including more states in the analysis is imperative in order to make any significant conclusions and contributions to the literature. Further, given the detailed nature of the data set created, analysis of

structural change can be extended to examine regulatory changes and the effects on the number of firms in the market at various geographic levels, the lifespan of a branch in an operating market, the exit rate, and other locational patterns of branches with respect to market demographics.

Given the nature of the legislative process, not only does the existing regulatory environment matter to the structure of this industry, but also the potential regulatory environment can affect the decisions of these firms. It can be investigate as to whether or not the level of attention paid to this industry, in terms of legislative discussion, has any impact on the practices and structure of this industry. If firms cannot prevent the passage of legislation or the discussion of more restrictions, how does this industry react? Further, for legislation that is already passed but not yet enforced, how are in advance to firms react to these regulations? With more information regarding the potential legislative environment, these questions can be answered.

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Table 1: Summary Statistics - Payday Lending Branch Data

	N	Mean	Std. Dev.	Min	Max
Market-Year					
Branches to Open	36430	0.10	0.45	0	10
Branches to Close	36430	0.07	0.37	0	14
Branches to Operate	36430	0.76	2.43	0	39
State-Year					
Branches to Open	80	43.73	49.56	0	276
Branches to Close	80	33.31	41.81	0	242
Branches to Operate	80	359.26	263.66	0	1221
Year					
Branches to Open	10	347	181.91	64	559
Branches to Close	10	253.2	115.57	90	482
Branches to Operate	10	2754.8	729.53	1465	3613

Table 2: State Adoption of Payday Lending Regulation

Year	Number of States that Regulate
2001	5
2002	5
2003	6
2004	7
2005	8
2006	8
2007	8
2008	8
2009	8
2010	8

8 Appendix: Tables

Table 3: Summary Statistics - Regulation Data

Licensing Req.	N	Mean	Std. Dev.	Min	Max
Original Licensing Fee	50	459.7	355.0832	100	1200
Renewal Licensing Fee	60	428.960	318.116	100	1200
Loan Terms					
Maximum APR	45	366.5778	185.5648	36	652
Maximum Loan Amount	65	8145.231	17987.2	300	50000
Maximum Duration	54	36.48148	11.37813	30	60
Maximum Number of Rollovers/Renewals	17	3.117	0.857	2	4
Maximum Number of Loans	34	1.529	0.563	1	3

Table 4: Trend in Means of Regulatory Controls

	2001 Mean	Number of States	2004 Mean	Number of States	2007 Mean	Number of States	2010 Mean	Number of States
Licensing Requirements								
Original Licensing Fee	200	3	418.75	4	411.667	6	578.571	7
Renewal Licensing Fee	168.75	4	350	5	452.857	7	576.700	8
Loan Terms								
Maximum APR	379.25	4	379.25	4	348.8	5	348.8	5
Maximum Loan Amount	10392	5	7637.143	7	7585.714	7	7621.429	7
Maximum Duration	36.6	5	36.6	5	36.333	6	36.333	6
Maximum Rollovers/Renwals	3	1	3.5	2	3	2	3	2
Maximum Number of Loans	1.333	3	2	3	1.5	4	1.5	4

Table 5: Summary Statistics for Demographic Variables

Variable	N	Mean	Std. Dev.	Min	Max
Total Population	3599	4998.568	9131.047	0	81,839
Median Household Income	3599	36052.03	10916.98	0	132,982
Share of Black Population	3599	0.045	0.134	0	0.950
Share of Hispanic Population	3599	0.0328	0.060	0	0.629
Share of Male Population	3599	0.332	0.233	0	0.732
Share of Pop. with at least a High School Diploma	3599	0.115	0.277	0	0.946
Share of Labor Force in the Military	3599	0.004	0.035	0	0.986
Share of Population in Poverty	3599	0.003	0.007	0	0.0125
Unemployment Rate	3599	0.044	0.055	0	1
Market Bank Count	3599	1.989442	3.552966	0	35

Table 6: Variables

Reg_{st}	Regulatory Controls - Values
Licensing Fee, New Branch	Fee required to open a new payday lending branch
Licensing Fee, Renewal	Fee required to renew and existing payday lending branch
Maximum APR	Calculated APR for a \$300, two-week loan with the highest allowable fee charged
Loan Maximum	Maximum amount allowed to be loaned
Term Minimum	Minimum number of days a loan can be outstanding
Term Maximum	Maximum number of days a loan can be outstanding
Maximum Rollovers/Renewals	Maximum number of times a loan can be renewed
Maximum Number of Loans	Maximum number of outstanding loans per customer
$RegInd_{st}$	Regulatory Controls - Indicators
APR Indicator	1 if the state regulates maximum fees per loan, 0 otherwise
Loan Maximum Indicator	1 if state regulates maximum loan amount, 0 otherwise
Term Maximum Indicator	1 if state regulates duration maximum, 0 otherwise
Term Minimum Indicator	1 if state regulates duration minimum, 0 otherwise
Rollover Indicator	1 if state regulates the number of renewals/rollovers, 0 otherwise
Loan Number Indicator	1 if state regulates the number of loans per customer, 0 otherwise
X_{mt}	Demographic Controls
Total Population	Total Population of a Market, Scaled by 10,000
Median Household Income	Median Household Income in 1999 Dollars, Scaled by 10,000
Percentage Military	Percentage of the labor for that is in the military
Percentage Black	Percentage of the population that is black
Percentage Hispanic	Percentage of the population that is Hispanic
Unemployment Rate	Percentage of individuals that are unemployed
Percentage in Poverty	Percentage of the population, 17 and older, in poverty
Percentage Male	Percentage of the population, 16 and older, that is male
Percentage High School Diploma	Percentage of the Population, 18 and older, with at least a high school diploma
Traditional Banks	The number of depository institutions operating
ξ_s	State fixed effect, excluding Idaho
η_t	Year fixed effect, excluding 2001

Table 7: OLS Regression Results - Dependent Variable: Number of Branches to Operate in a Market

	(1)	(2)	(3)	(4)
Renewal Fee Scaled	-2.1874 (3.1437)	-5.9156 (3.0187)	1.9238 (1.0915)	-2.6745 (1.5627)
Maximum APR Scaled	-0.4105 (0.2675)	-0.5307* (0.2417)	0.1112*** (0.0170)	0.0954 (0.0814)
Maximum Loan Amount Scaled	-0.0271 (0.0194)	-0.0118 (0.0204)	-2.8201* (1.1353)	-2.5142** (0.8425)
Term Maximum	-0.0303 (0.0384)	-0.0587 (0.0378)	0.0403*** (0.0049)	0.0391*** (0.0048)
Term Minimum	0.0766*** (0.0108)	0.0775*** (0.0113)	-0.0039 (0.0057)	0.0045 (0.0066)
Maximum Number of Rollovers	0.1547* (0.0701)	0.2412*** (0.0695)	-0.2813 (0.1486)	-0.1393 (0.1253)
Maximum Number of Loans	-0.0664 (0.1315)	-0.0537 (0.1168)	-0.0543 (0.0440)	-0.1160 (0.0870)
APR Indicator	-1.1321*** (0.2369)	-0.9338*** (0.2078)	.	.
Maximum Loan Indicator	0.8673*** (0.0787)	0.4516*** (0.0996)	139.8780* (57.2072)	124.0837** (42.5091)
Term Maximum Indicator	2.4930 (1.2628)	3.4580** (1.2235)	.	.
Term Minimum Indicator	-0.7304*** (0.1080)	-0.7711*** (0.1058)	.	.
Rollover Indicator	.	.	.	.
Loan Number Indicator	-0.1078 (0.2739)	-0.2272 (0.2462)	.	.
Constant	-0.7175*** (0.1614)	-0.7268*** (0.1499)	-137.0481* (56.0990)	-121.9500** (41.6565)
Including:				
Year Fixed Effects	No	Yes	No	Yes
State Fixed Effects	No	No	Yes	Yes
N	27368	27368	27368	27368
R^2	0.607	0.609	0.608	0.610

All regressions include demographic controls
Standard errors in parentheses
Standard errors are clustered at the state-year level
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 8: OLS Regression Results - Dependent Variable: Number of Branches to Open in a Market

	(1)	(2)	(3)	(4)
New Fee Scaled	-3.6238*** (0.6818)	-2.8268*** (0.7355)	-2.6070** (0.8612)	-1.7302 (1.0197)
Maximum APR Scaled	.	.	.	.
Maximum Loan Amount Scaled	0.0006 (0.0105)	-0.0016 (0.0114)	-0.6705* (0.2789)	-0.6554* (0.3053)
Term Maximum	-0.0042 (0.0168)	-0.0032 (0.0180)	0.0013 (0.0065)	0.0027 (0.0064)
Term Minimum	0.0034 (0.0094)	0.0056 (0.0088)	-0.0025 (0.0028)	-0.0019 (0.0033)
Maximum Number of Rollovers	0.0704*** (0.0130)	0.0518*** (0.0122)	-0.0298 (0.0468)	-0.0475 (0.0527)
Maximum Number of Loans	-0.0934*** (0.0245)	-0.0827*** (0.0226)	-0.2074 (0.1167)	-0.2309 (0.1248)
APR Indicator	0.0648 (0.2331)	-0.0142 (0.2310)	.	.
Loan Maximum Indicator	0.1099** (0.0352)	0.1222*** (0.0300)	33.9275* (14.1386)	33.0923* (15.4436)
Term Maximum Indicator	0.1972 (0.5895)	0.2140 (0.6080)	.	.
Term Minimum Indicator	-0.1036 (0.0724)	-0.0717 (0.0671)	.	.
Rollover Indicator	.	.	.	.
Loan Number Indicator	.	.	.	.
Constant	0.0424 (0.0356)	0.0191 (0.0394)	-33.1404* (13.8902)	-32.3334* (15.1753)
Including:				
Year Fixed Effects	No	Yes	No	Yes
State Fixed Effects	No	No	Yes	Yes
N	23878	23878	23878	23878
R^2	0.256	0.261	0.258	0.263

All regressions include demographic controls
Standard errors in parentheses
Standard errors are clustered at the state-year level
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 9: Poisson Regression Results - Dependent Variable: Number of Branches to Operate in a Market

	(1)	(2)	(3)	(4)
Renewal Fee Scaled	0.1188*** (0.0486)	0.0101*** (0.0054)	8.0964*** (4.9676)	0.9472 (0.6405)
Maximum APR Scaled	1.2874 (0.2045)	1.2223 (0.1987)	1.4701* (0.2375)	1.5766** (0.2612)
Maximum Loan Amount Scaled	0.9728 (0.0290)	0.9770 (0.0294)	0.2021*** (0.0347)	0.1329*** (0.0245)
Term Maximum	0.9657 (0.0562)	0.9609 (0.0564)	21.8086*** (7.4263)	50.3295*** (18.3941)
Term Minimum	1.0597*** (0.0124)	1.0585*** (0.0125)	0.5613*** (0.0389)	0.4735*** (0.0351)
Maximum Number of Rollovers	1.1049 (0.0712)	1.1678* (0.0764)	0.8721* (0.0587)	0.8751 (0.0599)
Maximum Number of Loans	2.0761*** (0.3536)	2.2918*** (0.3927)	1.5427 (0.3778)	1.9066** (0.4701)
APR Indicator	0.1618*** (0.0417)	0.1956*** (0.0509)	34261.1802*** (43790.4966)	9.060e+05*** (1.241e+06)
Loan Maximum Indicator	7.4327*** (1.9178)	4.8125*** (1.2581)	29.1283*** (8.4205)	27.1742*** (8.0584)
Term Maximum Indicator	6.1644 (12.5332)	7.2139 (14.7937)	0.0000*** (0.0000)	0.0000*** (0.0000)
Term Minimum Indicator	1.5948 (0.3847)	1.5109 (0.3661)	1765.1565*** (1547.4068)	12894.2287*** (12007.9387)
Rollover Indicator	.	.	.	.
Loan Number Indicator	0.5220** (0.1086)	0.4113*** (0.0866)	0.6348 (0.1798)	0.4405** (0.1261)
Including:				
Year Fixed Effects	No	Yes	No	Yes
State Fixed Effects	No	No	Yes	Yes
<i>N</i>	27368	27368	27368	27368

All regressions include demographic controls

Exponentiated coefficients; Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 10: Poisson Regression Results - Dependent Variable: Number of Branches to Open in a Market

	(1)	(2)	(3)	(4)
New Fee Scaled	0.0000*** (0.0000)	0.0001*** (0.0001)	0.0000*** (0.0000)	0.0035* (0.0084)
Maximum APR Scaled	0.0062* (0.0141)	29.5696 (71.1043)	9.96e+103*** (4.83e+105)	5.531e+72** (2.816e+74)
Maximum Loan Amount Scaled	0.9499* (0.0228)	0.9272** (0.0226)	0.0011*** (0.0014)	0.0095** (0.0134)
Term Maximum	1.0697 (0.0468)	1.0686 (0.0473)	5.385e+05*** (1.396e+06)	7469.7510** (20429.4634)
Term Minimum	0.9316** (0.0242)	1.0678* (0.0296)	2.4849*** (0.4928)	2.0563*** (0.4249)
Maximum Number of Rollovers	1.8723*** (0.1111)	1.1923** (0.0779)	0.7065 (0.1349)	0.6291* (0.1278)
Maximum Number of Loans	0.3984*** (0.0454)	0.6043*** (0.0710)	847.5260*** (1288.3101)	103.6909** (165.6448)
APR Indicator	13.9890** (12.3592)	0.1238* (0.1172)	0.0000*** (0.0000)	0.0000*** (0.0000)
Loan Maximum Indicator	3.4643*** (0.7606)	5.4182*** (1.2368)	2711.8021*** (3648.5526)	492.6244*** (698.4144)
Term Maximum Indicator	0.1078 (0.1621)	0.3202 (0.4868)	0.0000*** (0.0000)	0.0000** (0.0000)
Term Minimum Indicator	.	.	.	.
Rollover Indicator	.	.	.	.
Loan Number Indicator	.	.	.	.
Including:				
Year Fixed Effects	No	Yes	No	Yes
State Fixed Effects	No	No	Yes	Yes
<i>N</i>	23878	23878	23878	23878

All regressions include demographic controls
 Exponentiated coefficients; Standard errors in parentheses
 * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

9 Appendix: State Regulations

9.1 Idaho

The Idaho Department of Finance regulates payday lenders along with consumer finance companies and traditional banks. Payday lenders are explicitly regulated in the state of Idaho under Title 28, Chapter 46, Part 4 of the Idaho State Statutes. Approved in 2003, the regulation outlines licensing requirements and approved practices for branches operating in the state. In the original legislation, firms operating payday lending branches were required to hold assets valuing \$30,000, with additional assets of \$5,000 for each additional operating branch in the state, with maximum required assets of \$75,000. Original and renewal licensing and investigation fees were required to be paid by the state as determined by the regulating department. With regards to the terms of the loan, the original act states that the maximum amount to be loaned to any one consumer at one time be no more than \$1,000, excluding financing fees. Further, no consumer could roll-over or renew a loan more than three times. At its inception, there were no fee limitations, term-length limitations, or limitations on the number of outstanding loans a customer could have.

The regulations were updated in 2006 to modify the requirements for licensure. Instead of being decided by the regulatory agency, licensing fees for original and renewed licenses were explicitly stated. Original license fees were set at \$350 while renewal fees were set at \$150. Branches were no longer required to pay an additional investigation fee in addition to licensing fees. No changes were made to the terms and limitations of payday loans themselves. In 2009, the regulation was updated to its current form, adding language that protects consumers from lenders that violate the terms of the loan and the regulations set forth. If a lender is in violation of the regulation, the consumer has no obligation to repay the loan and the regulating body may send a cease and desist letter to the violating party. Again, no changes to loan terms were made under this amendment to the act.

During the decade of analysis, only one amendment to the regulation was introduced that was not passed. In 2008, the House introduced legislation that would have established guidelines for customers who could not pay back the loan in a timely manner according

to the contract by providing financial counseling. Most recently, in 2012, legislation has been introduced to limit the fees collected on loans to an APR of 36 percent.

9.2 Iowa

In 1995, Iowa introduced laws to explicitly regulate payday lending services. In the initial regulation, the state required that payday lenders register with the state as an official delayed deposit service provider and that each operating branch be registered as well. Further, it was required that a branch be located within the same county as the principle office of the lending company. Licenses lasted, and continue to last, for one year, then lenders must renew licenses for each operating branch. Initially to be licensed, a lender was required to pay a fee of \$150 for each new branch authorized by the state and \$100 for each branch renewal. Further, if lenders wished to change the location of the principle office, a fee of \$100 was to be paid. Payment of additional application fees were required as determined by the state's superintendent. Fee restrictions were also introduced in this regulation. Initially, lenders were restricted to charging no more than \$15 for the first \$100 loaned to a consumer and no more than \$10 on the subsequent \$100 loaned. The maximum loan amount, including fees, could not exceed \$500 for any single customer. Customers were limited to two outstanding loans at one time, with a loan-term limit of 30 days, and lenders could not use the funds from any other payday loan to fulfill the financial obligation of any outstanding loan. Finally, when completing a transaction, lenders were required to disclose to the borrower the total amount of fees to be charged, the annual percentage rate (APR) of the \$15 fee for the first \$100 loaned, the APR of the \$10 on any subsequent \$100 loaned, and the date of deposit.

In 2006, legislators updated regulations by changing the application and renewal fees and the manner in which fees are disclosed to the borrower. The fees to register new branches and renew existing branches increased to \$250, with an additional application fee of \$100 to be paid. Change of location fees were reduced from \$100 to \$25 and a new fee of \$25 per license was introduced if lenders wished to change the contact name of the business. With regard to disclosure, lenders were now required to display fees on a loan

as an APR as calculated according to federal Truth in Lending Act guidelines rather than as separate APRs for incremental fees incurred.

In 2008, the regulations were updated with respect to who could operate a payday lending branch or business, they specifically stated that an individual listed on an operating license must be physically located within the state in order to register or renew a payday lending operating license. This effectively prohibited the operation of online payday lending services in the state of Iowa.

9.3 Kansas

Kansas enacted explicit payday lending regulation in 1993 with the passing of HB 2197. Under this act, which was passed as a supplement to the Kansas UCCC, loans were restricted to no more than \$680 and to a duration of no longer than 30 days. Fees collected on these loans included restrictions on fees and additional administrative fees. For loans less than \$50, finance charges could not exceed \$5.50. For loans between \$50 and \$100, finance charges could not exceed 10 percent of the loan and additional administrative fees in the amount of \$5 could also be applied. For loan amounts between \$100 and \$250, finance charges could not exceed 7 percent of the face value of the loan plus an additional administrative fee of \$5. For loans greater than \$250 up to the regulated maximum, fees could not exceed 6 percent of the face of the loan with a \$5 administrative fee. The regulation was updated in 2004. In this bill, the state established a minimum term of 7 days for payday loans, limited the number of loans to 3 per borrower per month. In 2005, the statutes were updated once again to its current status. Loan amounts were reduced from \$680 to \$500 and fees were restricted to \$15 per \$100 borrowed.

Though the regulations have been updated only a few times, there have been many changes introduced throughout the decade that never passed. Beginning in 2001, decreasing the number of loans per consumer from 3 to 2 loans per month was introduced, but eventually these amendments were dropped. In 2002, the first amendments to finance charges were reduced. Administrative fees would have been reduced from \$5 to \$4 and finance charges would have been reduced to 8 percent and 5 percent on loans less than

\$100 and \$250, respectively. Finance charges for loans greater than \$250 would have been reduced to 4 percent as well.

In 2007, once again amendments were introduced reducing the number of payday loans per customer per month. Also, the state introduced legislation that would have established a statewide database of all payday loan borrowers to ensure compliance with this particular regulation. This bill did not pass. In 2008, a similar bill was introduced, absent the establishment of the database, however this legislation was also not passed. In 2010, legislation was introduced that would have established a surcharge of \$1 paid by the borrower to the lender that would have been collected by the Office of the State Bank Commissioner. This surcharge would be deposited into a fund that would have established programs pertaining to personal financial literacy of the general public. This bill died in committee later that year.

9.4 Oregon

Prior to 2003 payday lenders were regulated under statutes that regulated consumer finance and lending institutions in general. Under these provisions, lenders were required to annually register each operating branch with the state for a fee as determined by the state's Department of Commerce. When the initial regulations were introduced, the licensing fee (both for new applications and renewals) was \$200. However, the fee changed often. In 2004, the licensing fee increased to \$275. It increased again to \$520 in 2005 and \$1,200 in 2008. Finally, in 2010 the fee decreased to \$725.

In 2003, the state introduced regulations explicitly regulating payday lenders within a state statute that regulates title lenders. Initial regulations stated that the period of the loan could not exceed 60 days, lenders could not operate within a business where lottery tickets were sold or alcohol was served. They could not renew a payday loan more than three times, and the lender had to wait 24 hours before engaging in a new transaction with a customer who just paid off a loan. Because payday lenders were regulated under the same statute as title lenders, payday loans could not exceed the amount of \$50,000. It is important to note that in the initial regulation there were no explicit restrictions on

the amount that lenders could charge borrowers for funds loaned other than what was originally regulated for consumer loans in general.

In 2006, the state updated regulations pertaining to payday lenders, this time including provisions that explicitly regulated the fees to be charged for a loan. First, the interest rate charged on a new or renewed loan could not exceed 36 per cent per annum. Additional origination fees on a loan could not exceed \$10 per \$100 loaned. Further, loan terms were restricted to a minimum of 31 days. In 2007, the state updated regulations once again. Provisions in this update now pertained to any lender conducting business with an individual within the state of Oregon. Unlike Iowa, this does not eliminate internet lending. However, lenders conducting business online, over the phone, or through the mail with a resident of Oregon must comply with the outlined regulations. Fee restrictions were updated once again. With the new regulation, origination fees changed from \$10 for every \$100 loaned to the lesser of \$10 per \$100 or \$30. Further, lenders could now only renew existing loans two times rather than three.

9.5 Montana

Payday lenders operating in the state of Montana are regulated by the Division of Banking and Financial Institutions under the Montana Deferred Deposit Loan Act. The Act was established in 1999 which provided for the regulation of operation, licensing and examination of payday lending branches. At its inception, the act required that payday lending firms license each operating branch, including branches that were previously in operation before the passage of the act, which were required to be renewed on an annual basis. New branch fees and renewal fees were \$375 and firms were required to post bond in the amount of \$10,000 for each location and \$25,000 in assets as well. Each branch operated by the state was examined by the department on an annual basis, at a cost of \$300 per branch to ensure the compliance to the regulations. Regarding the transactions themselves, the maximum loan amount was set at \$300 and regulated to be a minimum of \$50. Loans could not be for more than 30 days. Permitted fees for a loan were limited to 25% of the face value of the loan and charges for insufficient funds could not exceed

\$15.

In 2001, the legislature changed the renewal fees for branches, decreasing the fees to \$125 per branch renewal. Further, the annotated code was updated to include provisions in which funds from the loan were collected electronically versus manually by the firm. In 2003, the code was updated to increase the penalty fee branches were able to collect due to insufficient funds from the consumer. Rather than \$15, firms were able to collect up to \$30 in penalty fees. The code was further updated in order to limit consumer usage of these loans, stating that lenders could not accept fund from a separate payday loan transaction in order to pay the obligations of another. Also, a licensee could not extend more than two loans to the same consumer at one time, no matter if the total of those loans was less than the \$300 loan limit.

In 2005, the code was update in its scope of application. Traditional banks and depository institutions that were making deferred deposit loans were no longer exempt from this particular act, while retailers, such as Wal-Mart, that cashed checks for a fee were now exempt from this act. In 2007, the state increase the licensing fee for new branches and renewal fees to \$500 for each branch. Lastly, the state imposed fees of \$1,000 per violation if a lender was found to be in violation of the imposed practices of the regulation. Penalty fees could not exceed \$5,000 per branch. Further, the regulations now stated explicitly that deferred deposit lenders could not engage in more than one transaction per customer, as extensions and renewals were prohibited.

Lastly, in November 2010, voters in the state overwhelmingly approved Initiative No. 164, capping allowable fees to a 36% APR (this bill applied to the fees charged for title loans and retail lenders as well). This measure, updated in the 2009 annotated code, took effect on January 1, 2011. This initiative was first introduced in 2008, however did not make the state ballot for voting due to the insufficient number of signatures as of the final deadline.

9.6 Nevada

Payday lenders in the state of Nevada are regulated by the Department of Business and Industry, Division of Financial Institutions. Payday lenders were explicitly regulated by the state starting in 2005 with the adoption of Chapter 604A of the Nevada Revised Statutes. Referred to as deferred deposit lenders, the scope of this chapter applies to payday lenders if the fees charged on a loan result in a calculated annual percentage rate of higher than 40 percent. To become licensed as a payday lender, a firm is required to pay a licensing fee that is determined by the state Commissioner, a fee that will range from \$100 to \$500. Licenses are renewed annually for a fee of no more than \$500, with an additional fee of no more than \$100 per branch of operation. Additionally, licensees are required to post bond in the amount of \$50,000 plus an addition \$5,000 per operating branch.

Regarding the terms of the loan, there is no stated limitation on the fees that can be charged on a high-interest loan. Due to the scope of regulation though, it can be inferred that interest on payday loans is higher than 40 percent APR. The amount of the loan cannot exceed 25 percent of an individual's gross annual income and the loan cannot extend past 35 days. When the act was first established, there was no term limit for payday loans; this change was adopted in 2007. If a borrower must enter into an extended payment plan, the length of the loan can be extended to no more than 90 days. If a the proceeds of a loan cannot be paid to insufficient funds, licensees can charge insufficient fund/default fees of no more than \$50 in addition to the fees associated with taking out the loan.

9.7 South Dakota

Payday lenders in South Dakota are regulated by the Department of Labor and Regulation, Division of Banking. Payday lenders are classified as Money Lenders and are regulated under Chapter 54-4 of the South Dakota Codified Laws. The original chapter regarding money lenders was established in 1998, however it wasn't until 2004 that payday lenders were explicitly regulated and added to the chapter. Firms operating as

payday lenders must license each branch extending payday loans at a fee not to exceed \$1,000. Firms must also renew branches annually at a fee not to exceed \$1,000. Bond requirements for payday lenders are dependent upon the number of operating branches. Firms must post \$10,000 for the first operating branch and \$2,500 for each additional branch operating as a payday lender.

Upon addition of payday lenders, payday loan limits were established at \$500 per customer. Lenders are allowed to roll-over or extend loans for borrowers; however this was limited to four times per borrower. In 2007, the chapter was updated for payday loans to state that any outstanding loan, original or rolled over, could not exceed \$500. No fee or interest rate maximum was established with this addition and currently there exists no ceiling on prices and fees for these loans.

In 2006, a bill was introduced by the legislator to prevent the rolling over of payday loans in any case, however the bill was never adopted. In 2007, a bill was introduced, though not passed, that limited the transactions between a borrower and lender. If adopted, lenders could not enter into a new transaction with a customer, until at least three business days had elapsed since the fulfillment of the previous loan contract. In 2008, the state house of representatives passed a bill to limit the fees, direct and indirect, allowed on a payday loan. If adopted, the fees on a payday loan could not exceed an APR of 36 percent. In 2009, the house once again introduced legislation restricting the number of transactions between a lender and borrower. If adopted, this act would have limited the number of outstanding loans per customer, no matter who the lender, to only one transaction and require a "cooling off" period of 24 hours. Further, the amendment would have required the adoption of technology that tracks all payday loan borrowers to ensure that no one borrower had more than one outstanding loan. Lastly, in 2010, another attempt was made to cap interest rate fees on payday loans. If adopted, finance charges on a payday loan could not exceed an APR of 72 percent.

9.8 South Carolina

In South Carolina, payday lenders are referred to as deferred presentment service providers and are regulated by the State Board of Financial Institutions. Established in 1998, the South Carolina Deferred Presentment Act (SCDPA) established was established by the board to explicitly regulate payday lenders and check cashers outside of typical financial institutions such as banks and thrift institutions. In the initial version of the act, firms operating in the state were required to license each operating branch at a cost of \$250 for each initial branch application, \$250 for each branch renewal, and an annual fee of \$500 for an investigation fee. The term of the loan was limited to 31 days, for an amount not to exceed \$300 excluding fees. Direct and indirect fees per transaction could not exceed 15 percent of the face value of the loan. Lenders were prohibited from extending or renewing loans past the agreed term written in the loan contract.

The act has been amended only once, in 2009, to alter specifics regarding loan transactions and licensing requirements. The state required the establishment and use of an electronic database in order to verify if an individual was an existing customer of that particular business or of any other payday lending outlet in the state. Further, engaging in loan transactions with individuals with an outstanding loan or if the consumer was ever required to enter in an extended payment plan to ever repay an outstanding loan became prohibited. The amount that a lender could extend to a consumer increased to \$550. Licensing fees for both new branches and existing branches increased. New branches were required to pay licensing fees of \$1,000 per branch plus an additional \$500 investigation fee. Renewal fees increased to \$1,000 for the first location and \$250 for each additional location a company operates within the state.

Though the SCDPA has been amended only once, numerous attempts have been made to change the bill, with 37 separate Senate and House bills introduced aiming to change the act. Amendments range from increasing the licensing fee paid by firms for branches, geographic restrictions, decreasing the interest rate allowed to 36 percent APR, limiting the number of loans a consumer can have at any one time, to even criminalizing the act of payday lending. Between 2007 and 2010, 6 bills criminalizing payday lending with

associated fees and jail-time as penalties.