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Payday Lending: Do the Costs Justify the Price?

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ABSTRACT

The payday advance industry makes small, very short-term consumer loans through an extensive network of storefront shops. Customer demand for this product appears to be very strong, and the industry has grown dramatically over the past decade. Yet many observers view the industry with suspicion. The fees charged on payday advances convert to very high annualized rates of interest (APRs). And the media (and others) circulate anecdotes about payday borrowers who renew their loans frequently and become burdened by the high associated fees. Some analysts claim that the industry could not survive without these chronic troubled borrowers. Yet it is difficult to understand the determinants of the industry's profitability because researchers have had very limited access to micro level data about payday advance firms. Using proprietary store-level data provided by two large payday lenders, we study store costs and profitability. We examine how profitability is related to the borrowing patterns of payday advance customers, default losses, and store characteristics. We also ask how profitability varies with local economic and demographic conditions. We find that fixed operating costs and loan loss rates do justify a large part of the high APRs charged on payday advance loans, and that a store's loan volume is a key determinant of its profitability. However, we do not find that loan renewals or loans from frequent borrowers are more profitable than other loans per se, although they certainly contribute to a store's loan volume. Finally, controlling for loan volume, we also do not find that economic and demographic conditions in the neighborhoods where stores are located have much of an effect on profitability, although they do slightly influence default losses.

Key Words: consumer finance, consumer credit, payday lending, predatory lending

JEL Classification: G21, G23, G28

CFR Research Programs: policy and regulation

I. <u>Introduction</u>

The past decade has seen a significant growth in the provision of ***alternative financial services*** (AFS) through check-cashing outlets, pawn shops, rent-to-own firms, and payday lenders.[1] Many individuals of modest means have turned away from the financial mainstream to obtain financial services from AFS outlets. At the same time, some policy makers and consumer advocates suspect that, partly because of weak consumer regulatory protections, AFS providers sometimes sell overpriced financial services to the people who can least afford them. Press stories often highlight the consequences of allegedly abusive practices.

Payday advance lending is perhaps the most notorious example of a nonbank credit product: small short-term loans intended to carry a borrower through a temporary cash deficiency. The typical payday loan is a two-week loan for around $250–$300, and the typical fees on these loans range from $15 to $20 per $100 borrowed. These fees translate into very high annualized rates of interest (APRs well over 300%), suggesting to some that the payday advance is an inherently abusive or unfair product. Moreover, a subset of payday loan customers obtain many loans per year, raising concerns that payday loans are too often used to deal with chronic financial difficulties. The payday industry argues that these loans are not intended to provide long-term credit but rather to provide a cost-effective way of funding an unexpected short-run cash deficiency.[2] The industry's main trade organization has established a code of conduct designed to promote "best practices," which include a limit on consecutive advances.

As of 2004, 36 states and the District of Columbia had legislation permitting and regulating the operation of payday loan companies. (See Table 1.) The industry is growing very rapidly. Stephens Inc. (2004) estimates that the number of stores rose from 10,000 in 2000 to 22,000 in 2004. The industry's estimated loan volume during calendar year 2003 was roughly $40 billion. With a typical advance remaining outstanding for about two weeks, this implies an average stock of outstanding loans equal to about $1.5 billion. The industry has been consolidating, as is evidenced by the growth of large companies; 5 of the 13 largest payday lenders now have publicly traded stock, of which 2 had their IPOs in 2004.[3]

Given the demonstrated market success of payday lenders, it is important to have an accurate understanding of their costs and profitability. Although profit margins are believed to be high, there is relatively little evidence about the costs, default losses, and operating performance of payday advance firms—largely because there are few publicly available data

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[1] The AFS sector is generally viewed as a distinct segment of the financial services sector, separate from the financial service firms (including banks, thrifts, brokerage firms, and mutual funds) that serve clients with large financial resources. Finance companies are increasingly viewed as a mainstream nonbank credit alternative, although historically they seem to have been viewed as more akin to AFS providers.

[2] Elliehausen and Laurence (2001) observe that today's (respectable) finance companies have their roots in the illegal, but much-needed, small loan companies of the late nineteenth century.

[3] Based on its evaluation of payday loan stores per unit of state population (see Figure 1), the Stephens Group (2004) predicts that the industry will continue to expand rapidly for at least another three to five years.

on these firms. Here we analyze proprietary store-level data provided by two monoline payday advance firms. This new data set permits us to provide some basic evidence about the inherent viability of the payday advance product. For our data set of payday lending stores operating in 22 states, we present tabular and regression information to characterize the industry.

Our univariate results are presented in Tables 2–6. Although some of our results confirm facts that have been previously documented in the literature, many are new. We find a relatively high average cost of originating payday loans. Default rates substantially exceed the customary credit losses at mainstream financial institutions. We also find that new stores generate negative or low profits for a few years before becoming fully profitable. Thus a firm's rate of new-store formation substantially affects its overall profitability. (Throughout our analysis, we control for a store's age when assessing its profits and viability.) We confirm that some of the typical store's customers borrow often: on average, for stores that have been open at least four years, more than one-fourth of their customers each obtained more than 12 payday advances during the year.

Our multivariate tests relate store performance to store and customer characteristics, state regulatory constraints, and demographic and economic conditions in the local area. To determine if "chronic" borrowing is crucial to the industry's profitability, we pay special attention to the effect of frequent borrowers on a store's costs and profitability.

We find that fixed operating costs and high loan loss rates justify a large part of the high APR charged on payday advance loans. The business relies heavily on maximizing the number of loans made from each store, all of which operate with relatively fixed costs. Tautologically, we find that high-frequency borrowers account for a disproportionate share of a payday store's loans and profits. However, we find no evidence that loan rollovers and repeat borrowers affect store profits beyond their proportional contribution to total loan volume. In other words, the industry's profitability does not depend on the presence of repeat ("trapped"?) borrowers per se. At the same time, the current size of the payday loan industry and its prospects for future growth do reflect the activity of the frequent borrower.

II. The Payday Loan Industry

Payday advance loans are small short-term single-payment loans intended to carry the borrower through a temporary cash deficiency. In exchange for the advance, the lender receives a personal check, dated for the borrower's next payday, for the amount of the loan and the finance charge. The borrower may redeem his or her check by paying off the loan by the agreed-upon day, or the lender may deposit the forward-dated check for collection after the loan maturity date. Payday advances are supplied through a variety of enterprises. Initially, payday loans were made through AFS entities that had been established to operate pawn, check-cashing, or title loan businesses.[4] According to Elliehausen and Lawrence (2001), payday lending emerged during the 1990s "to serve a void created by the withdrawal

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[4] See Caskey (2002) for a more detailed description of the payday loan practices.

of traditional lenders from the very small loan market (p.2)." As the industry has matured, monoline payday advance firms have been the primary driver of the industry's growth, in part because their focus on one product tends to yield lower loss rates (Stephens Inc. [2004]).

Absent specific enabling legislation, state usury ceilings on consumer loans generally prevent payday lending. Individual states may permit payday lending, generally under statutes different from those governing banks and other mainstream lenders.[5] States can regulate numerous dimensions of payday lending, including maximum fees, loan amounts, term to maturity, rollovers, and legal recourse in the event of default. Table 1 summarizes the evolution of state limits on payday loan fee maximums. The rightmost three columns of Table 1 demonstrate that the maximum fees (per $100 borrowed) imply unusually high APRs on account of the loans' small principal amounts and short maturities.[6] These APRs substantially exceed the rates associated with mainstream consumer credit products, although some mainstream services (e.g., overdraft protection fees or credit card late payment fees) might translate into similar APRs if providers were required to report such information.

In states with no enabling legislation for payday lending, some payday stores operate as agents for banks that are located in states without restrictive usury limits. Under this arrangement, the bank is said to be "renting its charter" and "exporting its usury ceiling." Both the National Bank Act and the Federal Deposit Insurance Act permit banks to charge all customers in the nation an interest rate permitted in their home state.[7] Payday loan companies frequently partner with banks located in South Dakota or Delaware, which impose no interest-rate ceilings on their banks. Some banks make payday loans directly to their own customers (for example, Wells Fargo). Finally, of course, one can obtain a payday loan over the Internet.

No federal regulation deals explicitly with payday lending, although payday advance companies must comply with the Truth in Lending Act (Brown et al. [2004]). The payday loan industry also attempts to self-regulate through a national trade organization, the Community Financial Services Association (CFSA). The CFSA "best practices" include "warnings" that the product is not intended for long-term use, limits on excessive rollovers, and the provision of information to customers about financial planning and debt management.

III. The Policy Debate

Consumer groups criticize payday lenders for selling overpriced loans to people who are already experiencing financial difficulties. Critics further contend that payday borrowers are not well informed about the true cost of their borrowing and that lenders engage in deceptive and unfair practices, particularly practices designed to encourage repeated loan

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[5] Elliehausen and Lawrence (2001), Fox and Mierzwinski (2000, 2001), and Fox (2004) summarize state and federal regulations for recent years.

[6] The maximum effective APRs are based on the fee per $100 assuming a 14-day loan duration.

[7] According to Brown et al. (2004, p. 21), only Georgia and Maryland "explicitly prohibit payday lending in every form."

rollovers.[8] The industry has been accused of strategically locating near populations of vulnerable borrowers, such as military bases and low-income neighborhoods. The press tends to highlight examples of allegedly abusive practices, which are often associated with repeated rollover loans. It seems likely that a substantial proportion of this criticism reflects a feeling of outrage over the high interest rates implied by payday loan fees.

The CFSA claims that payday lenders provide a valued service to underserved consumers. Low profitability has driven many mainstream financial institutions from the market for small short-term credit (except through credit cards). Customers can obtain a payday advance quickly from a nearby storefront location with convenient hours. Payday lenders do little credit investigation; an applicant with a bank account, a pay stub, a telephone, and an adequate (albeit subprime) credit history can usually get a payday loan. Hence when someone needs to raise cash quickly (and for a short period of time), a payday loan can be the most cost-effective alternative compared with late-payment fees, overdraft-protection charges, and the costs associated with bounced checks.

The CFSA also argues that payday loan fees cannot fall dramatically while covering the operating costs of payday advance firms. But relatively little is known about these costs. Certainly, the fixed costs of originating small short-term loans *might* translate into high required APRs. Payday advance loans are also thought to entail relatively large default losses compared with rates on other consumer loan products. However, data on payday loan costs and profitability have been hard to find, particularly because these firms have tended to be privately held. In a presentation to FDIC staff in September 2004, CFSA staff stated that a "typical" store's fixed operating costs and loan default losses make it impossible to break even with fees below approximately $15 per hundred borrowed. Alternatively, a recent private analysis for potential investors (Stephens, Inc. [2004]) asserts that a store set up for $30,000 will generate more than $258,000 in operating cash flow over its first five years of operation, which implies an extraordinary average annual pretax rate of return—around 170 percent—on the initial investment.[9] Without access to the underlying store-level data, it is difficult to assess these claims.

Here we examine whether payday lenders' costs justify the fees charged, using detailed store-level data. We construct a profile of the average payday advance store; we quantify how much variation from this profile there is among our sample of stores; and we provide empirical evidence about the determinants of store performance.

The second and perhaps more troubling dimension of consumer complaints is the accusation that the payday loan industry encourages or at least relies on customers who use the product frequently.[10] Stegman and Feris (2003, p. 25) conclude from their regression

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[8] Critics also characterize some clauses of the payday loan agreement as acutely self-serving, such as mandatory arbitration clauses, or agreements not to participate in class action lawsuits.

[9] Note that this measure of profitability does not net out costs incurred at the firm level for the firm to operate its stores.

[10] Technically, borrowers may either "roll over" or "renew" their loans. A rollover involves payment only of additional fees; the renewal requires repayment of the loan in full before a new loan is extended. In our discussion we generally do not distinguish between these two types of transactions.

analysis that the financial performance of the payday loan industry, at least in North Carolina, is "significantly enhanced by the successful conversion of more and more occasional users into chronic borrowers." Skillern (2002, p. 4) asserts that "payday lenders' profits come disproportionately from high frequency borrowers," and anecdotes abound about financially fragile borrowers who cannot escape continuing indebtedness when loans have short maturities and no principal amortization.

Of course, people will differ in how they define "infrequent" versus "excessive" payday loan use. But the available data indicate that while many customers do go to their payday lender only once in a while, a substantial subset of borrowers appear to use the product chronically. According to the Office of the Commissioner of Banks, North Carolina (2001), 73 percent of payday customers in 1999 used the product once a month or less (12 or fewer times per year), but only 48 percent had 6 or fewer payday advances during that year. Similarly, survey data used by Ellihausen and Lawrence (2001) report that 52 percent of respondents had 6 or fewer payday advances during the previous 12 months, and 77.5 percent used the product 13 times or less. Our numbers confirm the prevalence of repeated use by a subset of customers: we find that fewer than half of a typical store's customers take out 6 or fewer loans per year.

IV. Existing Evidence about Payday Lending

Most of the available data about the payday loan industry describe broad market characteristics: the number of payday advance firms and their offices ("stores"), aggregate loan volume, gross revenues, and the number of customers. These data also include limited information about loan size, fees, rollover lending, and default losses. Much of the data are derived from the state government agencies that oversee local financial institutions (for example, see State of Illinois [1999], Indiana [2001], Wisconsin [2001], State of Tennessee [1999], and the already cited Office of the Commissioner of Banks, North Carolina [2001]). While these data allow one to document the industry's growth and customers' use of the products, they are insufficient to allow one to say much about the factors driving demand or supply in this market.

Several one-time-customer surveys of selected market segments have provided richer information about payday loan customers' demographics, use of, and perceptions about the product. Because of these surveys, research has tended to focus on payday advance customers—i.e., the demand side of the market—rather than on the firms that supply the loans. For example, Ellihausen and Laurence (2001) profile the customer demographics of CFSA member firms, using data obtained through the CFSA. The sample of respondents was fairly small, but the data indicated that payday advance customers are relatively educated (74.4% had a high school diploma or some college) and have incomes that most would describe as middle class (51.5% had incomes in the $25,000 to $49,999 range). By way of comparison, the 2000 Census reported median household income in the U.S. of $41,486. The Ellihausen and Laurence study reports that payday loan customers generally recall the fees paid on their advances, but not the implied APRs. Regarding the reasons that customers

choose payday advances over other sources of credit, the study finds that the easy process, fast approvals, and convenience of store locations were most important. However, the study also indicates that payday advance customers often use consumer credit from mainstream sources and that the difficulty in obtaining additional credit—i.e., existing credit problems—is a common factor driving their demand for payday loans.[11]

Using survey data collected by the North Carolina Department of Health and Human Services, Stegman and Feris (2003) draw a very different picture of payday advance customers, at least in North Carolina. Their analysis concludes that the incidence of payday borrowing is higher among Blacks and among individuals recently involved in the welfare system. Consistent with the Ellihausen and Lawrence results, the Stegman-Ferris evidence also indicates that individuals with impaired credit histories are more likely to use payday loan as a source of funds.

As noted above, consumer advocates question whether payday advance firms could remain profitable in the absence of frequent loan renewals and chronic borrowers. Unfortunately, the evidence on this question is quite limited. As noted, Skillern (2002) contends that the industry's profitability depends on these customers, who account for a disproportionate share of payday lending activity. However, this conclusion is somewhat tautological since, by construction, high-frequency borrowers must account for a disproportionate share of total loans extended by a given store or firm.

Stegman and Feris (2003) also study this question, using data collected by the Office of the Commissioner of Banks in North Carolina. They analyze the determinants of store contributions to firm profits (total loan fees plus returned-check fees less loan losses less credit-monitoring costs). They report finding a positive and significant relationship between the percentage of customers who borrow at least monthly and store-level contributions to firm profits. They conclude that "the financial performance of the payday loan industry, at least in North Carolina, is significantly enhanced by the successful conversion of more and more occasional users into chronic borrowers" (p.8). Given the lack of comprehensive data on firm/store costs, their conclusions about profit margins are necessarily limited. More critically, however, their regression models do not include store-level loan volume as a factor affecting profitability. Therefore the variables measuring a store's total number of customers and the share that borrow frequently are capturing the effect of greater loan volume on net store revenues (holding other factors constant). In other words, this evidence does not necessarily imply that high-frequency borrowers per se are more profitable than other borrowers, but only that more lending adds to store profits. Our multivariate regressions (below) do not indicate that repeat borrowers are more profitable on a per loan basis than infrequent borrowers, although high-frequency borrowers do generate store profits by contributing to loan volume.

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[11] Importantly, a critical dimension of the customer's decision that is less understood is the cost of the alternatives to using the payday advance product and the extent to which the use of alternatives—such as overdraft protection—result in the repeat use, high effective interest rates, or other pernicious effects.

Assessing claims about industry performance and profitability—and the relationship between these factors and repeat borrowing—has been difficult. Most payday advance firms are privately held, so their data are proprietary. As noted, the industry is consolidating, and five of the largest firms now trade on public exchanges; this development has increased the amount of firm-level information available and has induced private researchers to analyze the industry (Stephens [2004]). Still, the number of firms providing detailed financial information is small, and much of the available research appears to be bound up with advocacy positions for or against the industry. As noted by Caskey (2002, p. 9), "While several [studies] are high quality, they are almost all by groups that take strong advocacy positions either in favor of the industry or in opposition."

V. Our Study

As just noted, data limitations have permitted relatively little research about the performance and profitability of the payday lending industry—i.e., about whether the price is justified by the costs. Likewise, allegations that payday lenders *cause* financial problems by inducing repeated loan rollovers assume that it is profitable for lenders to do this. Yet without detailed information on lending activity, costs, and revenues, it seems impossible to establish either whether the product is properly priced or whether high-frequency borrowers or loan rollovers are unusually profitable. These are the research questions to which we can make the greatest contribution with our new data set.

We have obtained proprietary *store-level* cost and revenue data from two payday loan companies—data describing operations during the calendar years 2002, 2003, and 2004.[12] Although the companies' identities have been withheld from us, we do know which stores belong to the same company. Despite the fact that two firms may not represent the entire industry, these data permit an unprecedented academic study of the performance, costs, and profitability of the payday advance business. We proceed in two steps. First, because the industry is not widely studied, in Tables 2–6 we present summary statistics on a variety of store-level characteristics. Second, Tables 7–8 present our multivariate regression analysis of payday loan store profits and loan losses. Additional results are presented in Appendix B.

VI. Data

Our store-level data were provided in response to the questionnaire summarized in Appendix A. To maintain the firms' anonymity, we asked for a random sample of 300 stores from each firm for the calendar years 2002, 2003, and 2004. If a store that existed in 2004 did not exist at the end of an earlier year, we received no data for that store for the earlier year.

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[12] Initially, five monoline advance companies had agreed to provide data. We anticipate extending this initial study when we receive the other three firms' data.

We matched these store-year data with other data collected from three public sources: state regulations, local economic variables, and local demographics.

State Regulations. To examine how state laws affect store performance and pricing, we used information published between 2001 and 2004 to construct dummy variables for each state indicating whether it permitted payday lending and whether it limited fees or imposed a maximum loan size in the indicated year. We also constructed continuous variables that quantify these limits. In addition, we included a measure of the number of stores in a state per 10,000 inhabitants (using estimates reported in Stephens Inc. [2004]) as a crude measure of market saturation.

Local Economic Variables. To examine how store performance is related to local economic conditions, we compiled data on unemployment rates, population growth, and per capita real income growth for the county in which the store is located. Besides values for recent years, we also included measures of longer-term population and per capita income growth rates to control for longer-term local economic trends.

Local Demographics. We constructed a set of variables using information from the 2000 Census to measure the demographic characteristics of the population residing in the zip code where each store is located. These data characteristics include median income (relative to income in the broader MSA or non-MSA area where the zip code is located), median age, the poverty rate, and the proportions of Black and of Hispanic residents among the zip code's population.[13]

The data for the two monoline firms indicate that they have been expanding their number of stores quite rapidly, in line with the industry's trend. To see the importance of this effect, note that we received data for 600 stores that were operating at the end of 2004. If all 600 stores for which we have 2004 information were at least three years old, we would have data for 1,800 store-year observations. Instead, we received 1,348 store-level observations (74.9% of the theoretical maximum possible number of observations). In addition, because of missing or inaccurate data, the number of observations included in the analysis we present below was reduced to just over 1,000 observations.

Stores with different operating histories differed substantially in many aspects of their performance data. These differences were greatest for "new" stores, which we defined as stores that had been operating for less than a full year.[14] We divided the remaining payday stores into two groups: "young" stores—those that had been open between 1 and 4 years by the end of a given calendar year; and "mature" stores—those that had been operating at least 4

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[13] The mapping between zip code and census tract is not perfect, but the Census Bureau provides approximations of zip code–level Census data.

[14] Technically, we calculated store age in terms of the number of years that the store had been operated by the firm in the indicated year. Roughly one-fifth of the stores whose data we received were classified as "new stores." Of course, one might conjecture that the age profile for acquired stores should vary from that for stores that were established by the firm—particularly in terms of the level of lending activity. We conducted separate analyses of acquired stores and established stores within each age cohort and did not find systematic differences between the characteristics of these groups (in fact, young acquired stores tended to have less loan activity than young established stores). Almost no new stores (those operating for less than a year) were acquired.

years. Tables 2–6 and Table B.2 present univariate statistics that describe store and portfolio characteristics, costs and profitability, and neighborhood demographic characteristics for each age cohort of our sample of payday advance stores.[15] To save space, we generally focus on the results for young and mature stores, leaving the interested reader to examine the information about new stores. In addition, we generally concentrate on a variable's mean value unless it differs substantially from the median.

VII. Univariate Analysis of Store and Customer Characteristics

Table 2 summarizes some important dimensions of payday loan store operations. Payday advance stores are generally small. Even mature stores have an average outstanding loan portfolio of only $85,169 (Table 2, line 7). To maintain these outstandings, the average mature store incurs total costs of $193,605 annually (Table 2, line 8), but on average collects total revenues of more than $348,950 (Table 2, line 9). The typical mature store is run by three full-time-equivalent (FTE) employees, who earn an average annual salary (with benefits) of roughly $30,000 each. It would appear that these are not complex financial organizations.

As payday stores age, their lending volume rises sharply. New stores in our sample made an average of only 960 advances (Table 2, line 5) in the fraction of the year they had been open. (The median number, 718, is substantially lower.) Among young stores, the mean number of advances was 5,668 per year, compared with the average of 8,743 advances extended by mature stores. As we demonstrate below, the volume of lending is a very important determinant of store profitability.

The average advance fee charged by a store also tends to rise with age, although here the progression is much less dramatic (Table 2, line 10). Mature stores charge an average of $18.30 per $100 advanced, while young stores charge $16.77 and new stores $14.32. Note, however, that the *median* fees charged by young and mature stores are much closer together: $17.24 versus $17.59.

Maximum payday advance fees are specified in most states' enabling legislation and generally amount to $15 or $20 per $100 borrowed.[16] Consistent with Stegman and Faris (2003), we find that payday advance stores tend to charge an effective APR near the applicable statutory limit (Table 2, line 11). Stores operating as bank agents have no statutory limit on fees, but unreported data indicate fees in the same range ($17–$20 per $100) as

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[15] Even for the 1,025 records deemed to be generally accurate, readers will note that for some items in the age profile tables the number of observations used in calculating certain summary statistics is less than the total number of observations used in calculating others. While stores seemed to have no problem reporting basic data on costs, revenues, and loan activity; some other details appeared to be more difficult and some fields were simply left blank. We ran many edit checks to determine which items a store had reported accurately. Once we identified the set of observations that could not be included in our statistical tests (because of missing or misreported items), we conducted additional analyses using "good" data items to ensure that the subsample of stores used in our tests was representative of the broader sample of data we received.

[16] State regulatory limits were obtained from Fox and Mierzwinski (2000, 2001) and Fox (2004).

shown in Table 2. We think it important that competition does not appear to affect fees charged in the way one normally thinks that competition will affect loan market interest rates.[17] As we discuss below, in the absence of customer price sensitivity, firms appear to be competing in terms of the convenience of store locations and the provision of customer service.

For our firms, the proportion of stores operating as bank agents seems to be declining. While 6 percent of mature stores in our sample operate as bank agents, only 2 percent of the young stores—and effectively none of the new stores—are bank agents. Stores also seem to be migrating into rural areas: Table 2 (line 3) reports that 20 percent of the new stores and 17 percent of our young stores operated in nonurban areas, compared with only 8 percent of the mature stores.

Table 3 presents summary information about store operating costs, standardized in three alternative ways: as a proportion of total (store-level) operating costs, as a dollar cost per loan, and as a percentage of the average volume of outstanding advances.

Wages and occupancy costs (rent, maintenance, utilities, and taxes) tend to account for roughly half of the average store's operating costs—more for mature stores—with local advertising (by the store) accounting for another 5 percent (notably more for new stores). Not surprisingly, loan losses are a prominent dimension of payday store costs, constituting an average of 24.8 percent of operating expenses for young stores and 21.1 percent for mature stores (Table 3, line 10). This aspect of store costs differs quite substantially from those incurred by mainstream lenders.

It is enlightening to examine store operating costs on a per loan basis because the distribution of average loan amount across stores is relatively tight and so is the distribution of the average loan duration for our sample of stores. (The average loan amount across stores [see Table 5, line 3] is roughly $260 and $230 for young and mature stores, respectively; the typical maturity of payday advance loans is 10 to 30 days, and the distribution of the average loan duration for our sample of stores is tightly centered on 14–15 days [Table 5, line 4].) Store operations (wages, occupancy, advertising, other) average $26.94 ($19.08) per loan for young (mature) stores. Default losses and loan collection expenses add another $9.17 ($6.02) per loan, for total store operating costs of $36.10 ($25.10) per loan at young (mature) stores.[18] This amounts to costs of around $14 ($11) on a cost-per-hundred basis, before recognition of the effect of allocated general and administrative (G&A) expenses incurred by the firm. These operating costs are not that out of line with the size of advance fees, a finding that suggests payday loans may not necessarily yield extraordinary profits. Of course, the variation in costs across stores (as measured by the standard deviation of the cost ratios) illustrates that not all stores fit a profile. Hence we use multivariate analysis in the next section to learn more about the determinants of these costs.

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[17] We return to this issue below in the context of our discussion of public policy.

[18] By comparison, aggregate net loan losses measured relative to outstanding credit card debt have been in the 4 to 8 percent range during the past five years (see http://www2.fdic.gov/qbp/2005mar/grbook/QBPGR.pdf; p.41).

Table 4 provides descriptive information about store profitability.[19] We start with store-level revenue and then subtract out the cost information provided in Table 3 to obtain store operating income. We then remove each store's allocated portion of the firm's G&A and interest expenses to get a profitability measure called "pretax store income." We report store-level revenue and expense information in three ways: as dollars per store, as a proportion of average outstanding loans (dollars), and as dollars per loan. As above, we limit our discussion to the young and mature stores.

The first three rows in Table 4 report store-level data on total revenue, which is basically the product of fees per dollar lent and the volume of dollars lent during the year. We know that total loan volume varies positively with store age, and it is therefore unsurprising that the average total revenue of the mature stores ($349 thousand) exceeds that of the young stores ($253 thousand) by more than 38 percent. Average total revenue measured on a per loan basis is consistent with an average fee of $17 ($18) per $100 advanced and a mean loan size of around $260 ($230) for young (mature) stores. Rows 4–6 report store operating income, which is the difference between total revenue and total store operating costs in Table 3. Mean store operating income per loan is $9.84 for young stores, compared with almost $18.75 for mature stores.

Some store-level services are provided by the firm's central administration; firms allocate these expenses across stores to come up with per store profitability measures. Firms also allocate their interest expenses across stores. These additional expenses reduce profitability measures and heighten the age (and loan-activity related) profile of payday store contributions to firm revenues. For our sample of young stores, mean pretax store income is negative; equaling –$3.01 on a per loan basis; although median pretax store income is positive ($1.38 on a per loan basis). Greater loan activity is reflected in higher income for mature stores: their mean pretax store income exceeds $98,000, or $11.26 per loan. Pretax store income measured relative to average outstanding loans averages 109.3 percent for mature stores.

To facilitate comparison with mainline financial firms, we can express this profitability measure as a rough (!) upper bound on the return on assets (ROA). Assuming that all productive equipment is rented, the amount of equity devoted to each store cannot exceed the average outstanding loan balance; this implies a very high ROA (109%) for mature stores. Our firms, however, have more new and young stores than mature stores, and these younger, smaller operations are less profitable on average. We must therefore know more about the dynamics of store openings and closings in order to estimate a firm's long-run ROA on the basis of store-level data. Only if the firm's steady state involves exclusively mature stores will its pretax ROA actually equal 109 percent of loan balances.[20] Of course, if the

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[19] Profitability assessment is complicated by the firm's need to allocate various central costs to the individual stores.

[20] The best way to evaluate a *firm's* profitability is to examine its aggregate numbers. Here we wish to make the point that the aggregate in a dynamic firm can be quite different from that firm's long-run equilibrium profitability. Moreover, if the profits are extraordinary, economists normally expect that entry will limit them. This is another important factor in evaluating the long-run profitability of payday advance firms.

structure of the industry supports a sufficient number of firms, competition should bring down profits that are truly excessive over the long term with free entry.

In our sample, allocated G&A and interest charges were substantial: $50,000–$60,000 per store. Even for mature stores, this constitutes roughly one-sixth of total revenue. Accordingly, the algorithm used to allocate these joint expenses can notably affect a store's apparent profitability—particularly to the extent that these costs are insensitive to loan volume and that the prorated cost allocation can be made at the firm's discretion.[21] Therefore in our multivariate analysis (below), we focus on the locally incurred operating costs, which omit corporate taxes, G&A expenses, and funding expenses incurred by the firm. The reader must keep in mind that the profitability numbers implied when one looks only at store operating costs quite substantially overstate true store profitability.

Tables 5 and 6 shed light on some of the most controversial elements of payday loan operations, including the importance of renewed (rollovers and consecutive) loans, borrower frequency of use, and the demographic characteristics of the neighborhoods where payday advance stores are located. The first two rows of Table 5 repeat information from Table 2 about the number and dollar volume of total advances made during the year, while lines 3 and 4 describe the average loan extended in terms of size and duration (as discussed above). Lines 5 and 6 describe the importance of loan renewals, which we define to include both outstanding loans that are extended (rolled over for an additional fee) and new loans that are made immediately upon repayment of an existing loan (consecutive transactions). Again concentrating on the young and mature stores, we see that on average, 46 percent of a store's advances were renewals/rollovers. These loans accounted for an average of 33.9 percent (39.5 percent) of the total dollar volume of loans extended by young (mature) stores, a proportion indicating that renewals tend to be smaller than the average advance. Table 5 further shows that older stores tend to have more customers and to extend somewhat more loans per customer. The average number of customers for young (mature) stores was 787 (1,113) per year, and the number of loans per customer averages 7.28 (7.91) at young (mature) stores. The data on the frequency of customer use (row 9) indicate that only 16.7 percent (13.7 percent) of customers borrow once per year at the average young (mature) store. At the typical young (mature) store, roughly 45 (50) percent of customers borrow more than 6 times annually. And row 12 indicates that on average, 24.3 percent of customers at young stores and 30.4 percent of customers at mature stores borrow more than 12 times per year— that is, they have payday loans outstanding more than 24 weeks during the year (the medians are somewhat lower, however).

Figure 2 summarizes the distribution of customer-use patterns, which resemble the patterns reported in other studies. The new information derived from our data concerns how customers' use varies with store age. Not surprisingly, new stores tend to have fewer high-frequency borrowers because (by our definition) they have not been open a full year. And mature stores tend to have more high-frequency borrowers than young stores. For whatever reason(s), payday advance customers tend to borrow more frequently from more established stores.

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[21] For consistency, we allocated the total G&A expenses reported by a firm in a given year evenly across the firm's stores.

Figure 2: Percent of Customers Obtaining
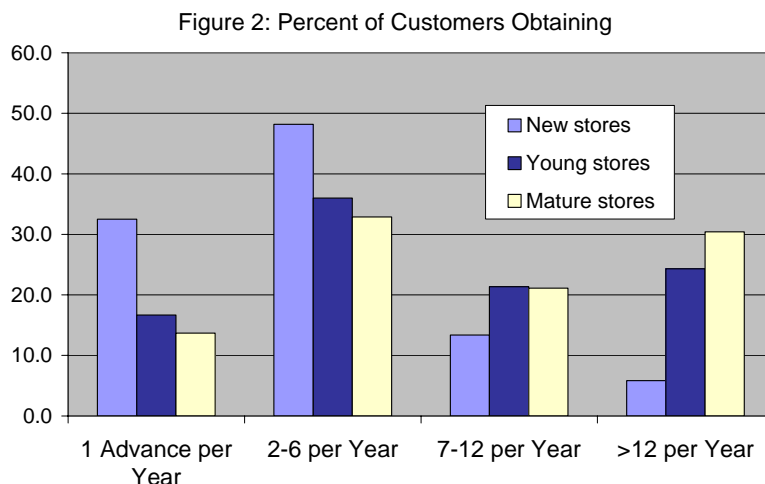
Note: Mean percent for the indicated store age group

Table 6 describes the neighborhood characteristics of the zip codes in which our sample stores are located. In terms of relative income, the average store (in all age groups) is located in a zip code that has median income somewhat below (94–98% of) the median income of its broader MSA (or non-MSA region). This is in the range generally considered "middle income." How about the incidence of poverty near payday loan stores? Nationwide, 9.71 percent of families had incomes below the poverty line in the 2000 Census data. In the zip codes where our sample stores are located, the mean poverty rate is above the nation's rate, regardless of the store's age. The mean poverty rate is 10.6 percent in new store locations, 11.2 percent in young store locations, and 10.6 percent in mature store locations.

Now we turn to the racial composition of the zip codes where our sample payday stores are located.[22] The average percentage of the population that is Black in the zip codes where our stores are located is 15.0 percent for young stores and 13.1 percent for mature stores. By comparison, the overall share of the U.S. population identified as Black in the 2000 Census was 12.26 percent. New stores tend to be located in zip codes with slightly lower proportions of Blacks (11.9%), a finding that is probably correlated with new stores' greater representation outside MSAs.[23] Compared with the national population, which is 13.7 percent Hispanic, the average share of the population that was Hispanic in the zip codes where our stores are located was 14.8 percent for young stores and 14.3 percent for mature stores. The mean share of the zip code population that is any minority in our young and mature store locations also exceeds the national proportion (31.78%). However, new stores in our sample are locating in zip codes with minority shares slightly lower than the national proportion.

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[22] We used the zip code approximations of Census data to come up with "consistent" aggregate ratios measuring Blacks, Hispanics, all minorities, and people below the poverty rates as shares of the U.S. population. For the U.S., the population share that is Black is 12.26%, the share that is Hispanic is 13.7%, the share that is any minority is 31.78%, and the overall poverty rate is 9.71%.

[23] King et al. (2005) reported that payday loan stores in North Carolina are disproportionately located in census tracts that are heavily populated by Blacks, but not in census tracts that are heavily populated by Hispanics. In future research, we plan to do a more rigorous analysis of the demographics of payday store location.

VIII. Regression Analysis

We estimated multivariate regressions explaining loan losses, total operating costs, and two measures of a store's financial surplus. We have standardized these dependent variables using three alternative deflators: (1) total revenues, (2) the number of loans, and (3) the average dollar volume of outstanding loans. Payday industry analyses seem to express store costs and profits as proportions of revenue, but deflating by average outstanding loans yields statistics that are more readily comparable to familiar performance measures for banks and other financial institutions.

We estimated all regressions using the pooled sample of data for young and mature stores for both firms, controlling for corporate ownership with a simple dummy (shift) variable.[24] Again, we exclude new firms from the study sample. Table 7 briefly defines the variables and presents summary statistics for the study sample of stores used in the multivariate tests. As noted, data problems limited the number of usable observations in our study sample to 835 of the 1,090 total observations we received for young and mature stores.[25]

Our general regression specifications take the form

$$PERF_{i,t} = \alpha_0 + \alpha_1 D\text{-}Firm_i + \alpha_2 Young_{it} + \sum_k \alpha_k STORE_{ki} + \sum_j \alpha_j PORT_{jit} + \sum_h \alpha_h CUST_{hit}$$
$$+ \sum_m \alpha_m DEMO_{mz} + \sum_n \alpha_n ECON_{nct} + \sum_p \alpha_p REGUL_{pst} + \varepsilon_i$$

for store *i* located in zip code *z*, county *c*, and state *s* in year *t*, where

> ***D-Firm*** is a dummy equal to unity for one of the firms
> ***Young*** is a dummy variable equal to unity for a firm that has been operating for less than four years (in year *t*)
> ***STORE*** is a vector of store-specific features
> ***PORT*** is a vector of variables describing the store's loan portfolio
> ***CUST*** is a vector of variables describing the store's customers
> ***DEMO*** is a vector of variables describing the demographic composition of the zip code area in which the store is located
> ***ECON*** is a vector of variables describing the economic conditions in the county in which the store is located
> ***REGUL*** is a vector of variables describing state payday lending regulatory limits.

Suppressed in this very general equation are interaction terms between ***Young*** and some of the key explanatory variables. (***Young*** is a dummy variable equal to unity for a store

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[24] Because the two companies appear to differ in some important aspects of their business practices, we also estimated separate regressions for each company's stores. We had the data for only a relatively short time and therefore consider the reported regressions to be largely exploratory.
[25] See footnote 15.

that had been operating for fewer than four full years as of year *t*.) The coefficients on these interacted variables indicate whether mature and young stores are affected differently by the associated variable.[26] We also included calendar-year dummies to control for aggregate payday loan industry trends over time.

Our measures of *store characteristics and fee structure* include dummy variables indicating rural stores, acquired stores, stores acting as agents for banks (bank model), and **Young** stores. Thus the omitted group serving as the basis for comparison in assessing these intercept shifts consists of established (not acquired) mature urban stores conducting direct lending, We measure labor inputs and average labor costs using the number of FTE employees and compensation per employee, respectively.

A store's fee structure is captured by three variables: (1) fee per $100 lent, (2) a dummy indicating whether the store gave discounts for referrals, and (3) the ratio of this store's implied APR (assuming a 14-day advance) to the maximum APR permitted by the state. In states with no explicit maximum, this variable equals zero, and a dummy variable indicating whether there is any state maximum also equals zero.

We measure a store's lending scale by the log of the number of its payday advances in year *t*. Other variables measuring loan portfolio characteristics include the average size of loans originated during the year ($100s), the average duration (days) of all loans originated during the year, and the share of the store's total loan originations that were renewals. Loan renewals are a portfolio characteristic—but they also represent a measure of borrower activity (since, by definition, a renewal goes to a given customer). To explore questions about how chronic use is related to store performance, we also include a variable measuring the share of a store's customers who were high-frequency borrowers—here defined as borrowers who had obtained more than 12 loans in that calendar year.[27]

We also include variables measuring the constraints imposed by state law on payday lending in a given year. States imposed a fee limit on 87.9 percent of our sample stores and limited the maximum loan size for 92.1 percent of stores. Competition is proxied by he numbers of stores in the state per 10,000 people in 2004. Variables measuring local demographic characteristics of the zip codes where study sample stores are located are discussed above. Finally, since local economic conditions might affect payday store performance, we include measures of recent real per capita income growth, population growth, the unemployment rate; and longer-term income and population growth for the county where a given store's zip code is located.

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[26] We ran parallel sets of regressions that tested whether the coefficients for young firms and for mature firms were significantly different from zero.

[27] The distinction between new loans and renewals is actually quite difficult to draw in this industry (in our data or in anyone else's). Technically, a new advance (not a consecutive transaction or rollover) can be made a day after a previous loan was repaid. Nonetheless, we believe that with variables measuring both the incidence of loan renewals and the incidence of high-frequency borrowers, we have good proxies to examine the relationship between portfolio activity associated with customers who are likely to be chronic users and store losses, costs, and profitability. We include both of these variables when analyzing all performance ratios.

Table 8 reports regression results for each of our payday store performance measures calculated as a ratio to the store's average outstanding loans. Analogous regressions based on the two alternate deflators are presented in Tables B.3 and B.4. Note again that although we present results for net pretax store income (which nets G&A expenses and funding costs out of store operating income), we prefer to evaluate store profitability in terms of net operating income, thus avoiding the direct effects of G&A expense allocations. We focus on these performance ratios but also try to note similarities and differences in results for performance ratios measured on a per loan basis (Table B.3) and as a proportion of revenues (Table B.4).[28]

A. Loss Rates

Because the high cost of payday loans is often justified by high loss rates, we are particularly interested in understanding the determinants of payday loan losses. As indicated in Table 7, the mean ratio of annual loan losses to average outstanding loans for our study sample is 66.6 percent; the mean dollar amount of losses per loan equals $7.00; and the mean ratio of loan losses to total revenue in our sample is 15.1 percent.

Firm B had higher losses than firm A, ceteris paribus—40.5 percent higher, according to the coefficient on Firm Dummy. Acquired stores also had higher losses. Loans made as a bank agent incurred substantially lower default losses, and this effect is significantly more pronounced for young stores. The significant negative coefficient on *log_ntotlns* indicates that stores with greater loan volume tend to have lower losses, all else equal. However, the effect of scale on losses for young stores is significantly smaller in magnitude, but still significantly negative.

Stores having an effective APR closer to the state maximum have significantly higher loss rates, and this effect is not significantly different for young stores. (Note that variables measuring state regulation of fees are insignificant in our loss regressions.) Given a store's effective APR ratio, however, the level of fees is not significantly related to losses. (Table B.4 reveals that the fee level is negatively related to losses measured as a share of total revenues, a relationship suggesting that higher fees increase revenues by more than they increase loan losses.)

Average loan size is positively related to loss rates for mature stores but not for young stores. Controlling for average loan size, the effects of regulatory loan size limits on losses depend on the deflator used to measures loss rates. When losses are is measured relative to average outstanding loans, there is no significant relationship between losses and state loan size limits. In terms of customer use variables, the proportion of frequent borrowers has a sizable and significant negative effect on loan losses, presumably because borrowers must repay their prior loan before another will be issued. However, we find a significant positive coefficient on the proportion of all loans that are renewed or rolled over, and this finding suggests that renewals may be an indicator of accruing credit problems.

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[28] Here we report the results of ordinary least square regressions. We also estimated all regressions with robust standard errors. These regressions did not yield evidence of heteroskadasticity as a feature of payday store data, and given that these stores are fairly homogenous, the lack of such evidence is not surprising.

The neighborhood demographic and local economic variables provide some interesting effects, but perhaps less than one would expect. The poverty rate in the zip code where a store is located is positively related to losses (having a p value of .038). Controlling for store and portfolio characteristics, the only significant effect of the minority population variables indicates lower losses in neighborhoods with more Hispanic residents (p = 0.081). There is only modest evidence of a relationship between losses and county unemployment rates, and some evidence that higher long-term per capita personal income growth is associated with higher losses, for a given level of recent per capita income growth. The year dummies indicated that payday store loss ratios were significantly higher in the first two years of our study period (compared with 2004).

The picture that emerges from the loan loss rate regressions indicates that average loan size and the share of renewals are generally associated with higher loan loss rates. Lower loss rates are associated with overall loan activity (the number of loans), the share of high frequency borrowers, store age, and operating as an agent for a bank.

B. Operating Costs

The next three columns of Table 8 describe a regression explaining the mean ratio of costs to average outstanding loans. The dependent variable averages 293 percent. Acquired stores and (especially) young stores had higher costs. The effect of being a bank-model store (acting as an agent for a bank) on costs was less clear: mature bank-model stores had higher costs but young bank-model stores did not (for young stores, the measured negative effect of being a bank-model store on costs was not statistically significant).

Cost ratios decline with higher loan volume of a store's loan activity, particularly for young stores. Salaries, as measured by the number of FTE employees and their average wage, have a predictably positive effect on store operating costs. The estimated coefficients are larger at young stores, again reflecting the importance to a store's profitability of building up a large loan volume. We find a less robust link between store fees and costs. Higher fees (higher both absolutely and relative to the statewide ceiling) raise operating costs at mature stores. But at young stores fees are negatively related to costs, and there is no significant association between the ratio of fees to statewide ceiling and total store costs measured relative to average outstanding loans.[29]

Turning to loan and customer characteristics, we find that average loan size reduces costs, no doubt partly because it raises the dependent variable's denominator (ceteris paribus). Loan duration likewise reduces operating costs. High-frequency borrowers appear to be served with more cheaply; a store's share of high-frequency borrowers is significantly negatively related to costs. Renewals (as a share of total loans) are positively related to all of our cost ratios. As with loss ratios, the positive effect of renewals on overall costs is less evident for new stores.

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[29] Note however, that for both young and mature stores, higher fees are associated with lower costs per dollar of revenue, a relationship suggesting that fees affect revenue more than costs.

Again, neighborhood demographic and local economic variables have surprisingly little effect on cost ratios; and the significant variables largely coinciding with those that affect the loan loss ratio.

C. *Profitability*

A firm's bottom line is its profitability, but profitability is less well defined for individual stores than it is for a firm. Because stores have little control over firm-level G&A expenses, to assess the determinants of store profitability we focus on store operating profits. The next three columns in Table 8 present regression results for a store's operating income (as a proportion of average loans outstanding). We know from Table 7 that the mean ratio of operating income to average outstanding loans for our study sample is 150 percent; mean operating income per loan is $15.15; and the mean ratio of operating income to total revenue is 33.2 percent.

Greater loan volume increases profitability, and the effect is larger for young stores. Our estimated coefficients indicate that greater loan size increases store profitability while higher average loan duration reduces it. Older stores are generally more profitable, but young rural stores have higher operating incomes than their urban counterparts. Employment costs tend to reduce profitability, particularly at young stores, while stores with higher loan fees have higher operating income ratios—particularly young ones. Bank-model stores are less profitable, measured as a ratio to average outstanding loans (Table 8) or on a per loan basis (Table B.3).

But somewhat surprisingly, high-frequency borrowers do not uniformly increase a store's profitability. Measured as a ratio to average outstanding loans or on a per loan basis, we do not find a significant relationship between a store's proportion of high frequency borrowers and its profitability. However, operating income as a share of total revenue is higher for stores having more high-frequency borrowers. We also do not find a significant relationship between the proportion of a store's loans that are renewals and its profitability measured as a ratio to average outstanding loans. Among young stores, we do find that loan renewals are positively associated with operating income measured as a share of revenue or on a per-loan basis; however among mature stores, renewals are negatively related to the ratio of operating income to revenue. Neighborhood demographics and local economic conditions play almost no systematic role in explaining store operating income ratios for our study sample of stores.

The last three columns of Table 8 present regression results for store pretax profitability (which nets out firm G&A expenses) measured relative to average outstanding loans. (Comparable results for pretax income on a per loan basis and as a share of total revenue are presented in the last three columns of Tables B.3 and B.4). As reported in Table 7, the mean of this pretax income ratio is 50.8 percent; mean pretax income per loan is $5.54; and the mean ratio of pretax income to total revenue in our sample is 11.2 percent.

Not surprisingly since pretax profits reflect a fixed deduction in net income for all stores of a given firm, these results mirror those evident for store operating income ratios, with several exceptions. First, the coefficient on the firm dummy variable indicates that the

two sample firms had significantly different fixed G&A. Second, not surprisingly, netting out these fixed expenses from store profits amplifies the positive effect of operating scale measured in terms of loan volume and store probability, since loan volume diminishes these costs on a per loan basis.

Regarding the effects of borrower use, given a store loan volume, we find no significant link between the high-frequency borrowers per se and pretax store profitability ratios. Loan renewals, however, do remain positively related to store income measured net of G&A expenses—for young stores but not for mature stores. Controlling for store and portfolio characteristics, neighborhood demographics and local economic conditions continue to play little systematic role in explaining store income ratios that net out fixed firm-level costs.

D. Regression Results Summary

From these regression results we can infer several things about the determinants of payday loan profitability. First, loan losses are large by mainstream standards, but not terribly unpredictable; our very reduced-form regressions explain roughly two-thirds of the variation in loan loss ratios across stores. Second, when store and portfolio characteristics and borrower use are controlled for, neighborhood race and income demographics seem to have little effect of profitability, although they do slightly influence default losses. Finally and most importantly, a store's loan volume is a key determinant of its profits. Given a store's volume, however, renewals and loans to frequent borrowers do not seem to be more profitable than other loans. In other words, a store's profitability depends on its number of loans but not its number of customers. This is not too surprising, given the scant credit analysis undertaken in connection with these loans. Most of the origination cost comes from the fixed costs of having a store location open for many hours per week. By the same token, it is not hard to imagine that inducing a store's existing customers to borrow again would be the most effective way of increasing loan volume.

IX. Policy Implications

Our analysis implies that payday loan APRs must be high to cover the stores' fixed operating costs and, to a lesser extent, to compensate for an unusually high rate of default losses. That said, mature stores appear to earn quite healthy operating profits—on average $18.73 per loan made, or approximately $1.89 per average dollar of loans outstanding. These profit levels sound high, but are they? As we have emphasized, part of the answer to this question depends on a firm's allocation of G&A expenses across its stores, since this large number has an important effect on measures of store profitability. Allocating these expenses equally across stores brings down the average mature store's net pretax profits per loan to $11.26, or $1.09 per average loan dollar outstanding. Is this level of profitability "high" or

"reasonable"? To answer this question, we plan to undertake a firm-level analysis of costs and profitability.[30]

As we have shown, an important reason for high advance fees is that the loans are short term and nonamortizing. Perhaps other loan products could be produced with lower costs and could therefore be provided at a lower price.

Unlike occasional users, chronic payday advance borrowers seem problematic for policy makers and consumer advocates. The stores in our sample reported that more than half of their payday loan customers borrowed more than six times per year, a rate that is broadly consistent with that reported in other studies. At the same time, the number of advances from a specific payday loan store almost surely underestimates customer payday advance use, since customers can and do borrow from more than one store in a given year. An industry source, Tele-Trak, maintains records of individuals' payday advance activities, although we do not know how comprehensively it tracks borrowers.

A recent policy change by the FDIC requires FDIC-supervised banks that make payday loans through agency relationships to ensure that their borrowers have not had payday advances outstanding—from any payday lender—for more than 3 months over the past 12-month period. Assuming a two-week loan duration, this translates into six payday advances per year. Our sample of stores reported (on average) that more than half of their customers were obtaining payday advances more than six times per year from them alone. This use presumably accounts for much of the fall in payday advance firms' stock prices on the day the new policy was announced.[31] Tele-Trak is the obvious source of such information regarding overall customer use, and the policy debate would benefit from obtaining Tele-Trak information about the distribution of payday advance customers across all reporting firms and stores.

Stepping back from the store-level data, we now consider how equilibrium is likely to be established in this industry. Given competition and free entry, a "usual" industry expands until the average production cost is minimized. This result depends on customers seeking the lowest price for industry output. In the payday loan industry, however, geographic convenience seems to be quite important. Price may not be the only—or even the most important—aspect of payday advances, therefore, and the industry will be competing on the basis of geographic locations. Hotelling evaluates this environment as one of monopolistic

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[30] One thing our analysis probably rules out is the possibility that extreme uncertainty about the level of loan losses could justify high equity returns. Table 3 indicates that per store loan losses are distributed reasonably symmetrically around the mean, with standard deviations implying that only 5 percent of young (mature) stores have loss rates in excess of the $20 ($15) range on a per loan basis.

[31] According to an update posted on the Reuter's news service ("Payday loan guidelines continue to hit stocks," March 3, 2005), "The revised guidelines sent stocks of several companies in the sector down 10 percent or more on Wednesday as investors tried to assess the extent of the possible damage. The declines continued Thursday morning. Dollar Financial followed an 18 percent decline Wednesday by falling an additional $1.00, or nearly 10 percent, to $10.74, while Ace Cash Express lost 85 cents, or 3.55 percent, to $23.10. Cash America International fell 37 cents, or 1.5 percent, to $25.01, First Cash Financial lost $1.36, or 6.27 percent, to $20.30, and Advanced America, Cash Advance Centers Inc. lost 75 cents, or 4.6 percent, to $15.60."

competition in which producers' average costs are not minimized. Rather, the number of locations expands until the marginal store earns zero expected abnormal returns.

Today's payday loan industry does not appear to be in equilibrium. As we have said above, the number of stores is growing rapidly. Our regressions also indicate that store profitability is very sensitive to the fees charged on advances, but at the same time we observe a relatively tight range of fees charged, concentrated at or slightly below the maximum fee permitted by the state in which the payday loan company is operated. In the absence of customer price sensitivity, the state-mandated maximum advance fees will determine the equilibrium number of stores and the equilibrium advance fee. However, customers are likely to have at least some price sensitivity, so the actual situation is more likely to lie somewhere between the perfectly competitive and the Hotelling solutions.

X. Summary and Implications for Future Research

To a great extent, the "high" APRs implied by payday loan fees can be justified by the fixed costs of keeping stores open and the relatively high default losses suffered on these loans. The industry's profitability is very sensitive to the volume of advances outstanding at any time, but not specifically to the proportion of those advances that are rollovers. The two companies supplying data for our analysis have enjoyed healthy returns on assets during our 2002–2004 study period, and the industry's rapid growth testifies to the perceived profitability of adding new store locations.

For many observers, the main consumer concern about payday lending is the high price of chronic use. This raises the question of whether the payday advance industry would remain viable if there were fewer high-frequency borrowers. In other words, can this industry survive if it provides only "occasional" credit?

Our results suggest that the industry could survive with fewer high-frequency borrowers, but of course its long-term scale would be smaller. But without more specific detail on the frequency distribution of customer use, it is difficult to come up with precise estimates of how reduced use would affect the volume of lending activity for the stores in our sample. And even with this information, it would be difficult to project the effects of limits on a customer's total borrowing (from any payday lender). However, the effect is likely to be large. Centralized information, such as that available through Tele-Trak, could play an important role not only as a source of solid information on which to base policy decisions but also as a mechanism for tracking consumer behavior.

Consumers could possibly benefit if the range of providers of payday-type services was expanded. Banks have many branches in place already, and a small number of them have entered the business. Another possibility would be to reengineer the product. A short-term nonamortizing product can satisfy only a limited type of need. Perhaps the cycle-of-debt concerns could be addressed if payday loans were amortized over several pay periods, to permit the borrower to restore equilibrium in his or her financial situation. This innovation would begin to address the perceived problem that many customers seek many payday

advance loans in the course of a year. Although as economists we find it hard to define what level of use is excessive, there seems little doubt that the payday advance as presently structured is unlikely to help people regain control of their finances if they start with serious problems.[32] Still, to those who would simply outlaw payday loans, we ask, "Where will the people who use the product as intended go to fulfill their financial needs?"

We plan to use the data we have collected to examine other dimensions of the payday advance industry. First, we plan to study more about the decision where to locate stores. Using data from North Carolina, King et al. (2005) allege that payday lenders tend to be located disproportionately in Afro-American neighborhoods, implying that this tendency is socially inappropriate. This phenomenon is not apparent in our data, but we have not yet looked carefully at the issues of the demographics of store location. By combining store location information with Census tract data on local racial and economic conditions, hope to determine whether the results reported by King et al. generalize. We also plan to study the extent to which payday loan stores substitute for local bank branches—and whether they may be filling a gap in areas which are underserved by banks.

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[32] Economists do agree that departures from the competitive paradigm—such as imperfect information—are "bad" when firms' actions to maximize profits reduce society's net benefit. Indeed, much consumer regulation in the financial service industries is aimed at providing customers with better information.

Appendix A: Data Variables Solicited

Through the CFSA's attorney, two monoline payday advance firms whose identities we do not know provided us with three years of annual store-level data for a random sample of 300 of each firm's stores.[33] Firms were asked to choose their samples from the population of stores in existence at year-end 2004 and to provide earlier years of data for these stores. So, for example, if a store opened in mid-2003, we have only one year of complete data for it. Firms were asked to provide an explanation of how their sample of stores was chosen. Although we do not know the identities of the two firms, store data for each firm were grouped so that we can identify which stores are operated by the same firm.

We sent participating firms a detailed data request for store-level data describing the following broad areas:
  a. Location and age
  b. Fees charged and discounts offered on payday loans
  c. Scale of operation: number of loans, customers, and rollovers; dollars lent
  d. Size and duration (maturity) distribution for all loans and (separately) for rolled-over loans; distribution of customer activity—loans per year
  e. Repayment, delinquency, and default information on loans by number and dollars and by size of advances
  f. Operating expenses, cost of capital, labor input measures.

The store's zip code was used to identify its county, state, and (to a close approximation) Census tract. We could then match each store-year with the relevant state's legal environment (summarized in Table 1). We also obtained demographic and economic information about the local area (zip code) in which the store is located.

A. Store Indicators

  1. Store location: zip code and state
  2. Firm association indicator: identifies which stores are owned by the same company.
  3 MM\DD\YYYY if opened as a new store by the company.
  4 MM\DD\YYYY if the store was acquired from another payday advance company.

Definitions of Terms: In describing the variables we use to measure loan and customer activity, loan performance and losses, revenues, and costs, we use the following terminology:
1. *Advance principal amount*: The dollar amount actually received by the customer when obtaining the cash advance.

2. *Fees and interest*: Total dollar payments by a customer to the cash advance store less the principal received by the customer.

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[33] Multiple years per office will allow us to study the effect of local economic conditions on the costs and profitability of payday advance stores. The time series of data on the same stores will also help us understand the maturation process for individual offices.

3. *Total [payday] advances:* new advances (not consecutive transactions) + rollovers + consecutive transactions.

4. *Rollover*: An extension of an existing payday advance agreement subject to the payment of some applicable fees.

5. *Consecutive transaction*: A new advance that is issued at the expiration of an existing advance to a given customer.

6. *Paid late*: Payday advances that are not repaid or rolled over by the due date.

7. *Paid early*: Payday advances that are repaid prior to the due date.

B. Reporting Period Information and Fee Structure

1. The end of the annual period to which the store-level data apply: MM/DD/YYYY. This store reported data for the full 12-month period indicated: Y (yes); N (No).

2. This store operated primarily as an agent originating and servicing payday advances made and funded by a bank during the indicated year. Y (yes); N (No).

3. This store operated as a direct branch of a payday advance company during the year indicated in B_1. Y (yes); N (No).

4. Fee/Interest charge per 100$ borrowed.

5. Application fee, if any ($'s).

6. Does the store offer a discount for referrals? (Y if yes; N if no; S if discounts offered sometimes but not as standard policy.)

7. Does the store offer a discount for early repayment? (Y if yes; N if no; S if discounts offered sometimes but not as standard policy.)

8. Does the store offer rollovers of existing payday advances? (Y if yes; N if no; S if rollovers offered sometimes but not as standard policy.)

9. Applicable fees/interest charge for rollover per 100$ borrowed ($'s).

C. Measures of Store-level Revenues and Gross Activity (for the indicated year)

1. Gross *fees and interest* collected during the indicated year ($'s).

2. The *total number of [payday] advances* provided/processed during the indicated year.

3. The number of *consecutive transactions* extended/processed during the year (#).

4. The number of *rollovers* extended/processed during the year (#).

5. The total dollar [principal] amount of *total [payday] advances* provided or processed during the indicated year.

6. The total dollar [principal] amount of *consecutive transactions* provided or processed during the indicated year.

7. The total dollar [principal] amount of *rollovers* provided or processed during the indicated year.

8. The total number of *customers* served during the year (#).

9. The average [*principal*] amount of *total [payday] advances* provided or processed during the indicated year ($).

10. The average charge (*fees and interest*) to a customer for providing or processing a payday advance during the indicated year ($).

D. Loan Portfolio Duration and Customer Activity

Duration of Advances
    1. The *average duration* of loans extended or processed during the year.
    2. The distribution of the *total number of advances* (C_2) measured in terms of the actual
    duration of the advance (days), referring to the number of days until the advance is paid
    off, rolled over, or written off (< 7days; 7–14 days; 14–30; >30 days).

Customer Activity
    3. The distribution of customer activity in terms of the number of loans: the number of
    customers and the dollar volume of loans classified by the level of customer activity, i.e.,
    the number of customers who received 1 advance, 2–6 advances, 7–12 advances, more than
    12 advances.

E. Payday Advance Loan Activity, Performance, and Losses

> Size ranges to classify the size distribution of payday loan activity and their performance were
> as follows: loans <$100, $100.01–$200.00, $200.01–$300.00, $300.01–500.00, $500.01–
> $750.00, $750.01–$1,000.00, >$1,000.00

    1. Size of Payday Advances: The size distribution of *the total number of advances* (C_2),
    classified in terms of the original *principal* amount ($) of the advance.
    2. Size of Consecutive Transactions: The size distribution of consecutive transactions
    (C_3), classified in terms of the original *principal* amount ($) of the advance.
    3. Size of Rollovers: The size distribution of *rollovers* (C_4), classified in terms of the
    original *principal* amount ($) of the advance.
    4. Advances repaid within contractual terms on or before the due date: The *total number of
    advances* repaid on or before their due date during the indicated year, classified by the
    original principal amount.
    5. Advances repaid late but within 14 days after their due date: The *total number of
    advances repaid late but within 14 days* of their due date during the indicated year,
    classified by the original principal amount.
    6. Number of *checks cashed* (deposited) by size of payday advance: The total number of
    customer checks deposited in the indicated year, classified by the original principal
    amount.
    7. Number of *cleared/collected* checks by size of payday advance: The number of customer
    checks that cleared or were collected on for payday advances provided/processed during
    the indicated year, classified by the original principal amount.
    8. Losses charged off net of recoveries: The *net dollar losses* charged off on total [payday]
    advances provided/processed during the indicated year, classified by the original principal
    amount.
    9. Nonpayment policy indicator: Policy regarding advances not paid as contracted; Code
    this field with the numeric indicator variable that best describes the "usual" actions taken:
        = 1 if check cashed immediately when loan not paid as contracted

= 2   if check cashed immediately for new customer (or no track record), but repeat customers are called/contacted before check is cashed

= 3   All customers are called/contacted before check is cashed.

F. Annual Operating Income, Expense, and Cost Items for the Indicated Year ($ amounts)

1. Total store revenue ($)
2a. Provision for doubtful account ($)
2b. Provision for agency bank losses (if applicable) ($) (Answer only if B_3 = Y)

3. Total store expenses ($)
4. Payroll expenses (hourly wages, overtime, salaries, payroll taxes, medical insurance, other benefits) ($)
5. Rent ($)
6. Maintenance, utilities, and property taxes ($)
7. Advertising expense paid by the store (for example, media ads; billboards, etc) ($)
8. Loan losses ($)
9. Expenses associated with late loan collection ($)
10. Other store/office expenses (supplies, legal [services and licenses], equipment leasing, bank charges, etc.) ($)
11. Store depreciation expenses ($)
12. Other store expenses not classified elsewhere ($)
13. Total store operating income ($)

14a. General and administrative expenses: store's prorated share of the parent company's expense ($)
14b. Store's prorated share of the parent company's interest expense ($)
14c. Effective annual rate of interest on store's share of debt funds (%)
14d. Store's payment to parent company for equity capital provided ($)
14e. Effective annual cost of the provided equity capital (%).

15a. Wage rates for teller (dollars per hour, at year-end) ($)
15b. Salary for manager/franchise owner (dollars per year, at year-end) ($)
15c. Number of full-time-equivalent (FTE) employees: number of employees used to run the store (at year-end) ($)
15d. Total number of individuals employed during the year ($).

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Figure 1

Number of Payday Stores by State

Population Per Store
(in thousands of people)

- 0 - 5
- 5 - 11
- 11 - 33
- 33 - 215
- Not Selected
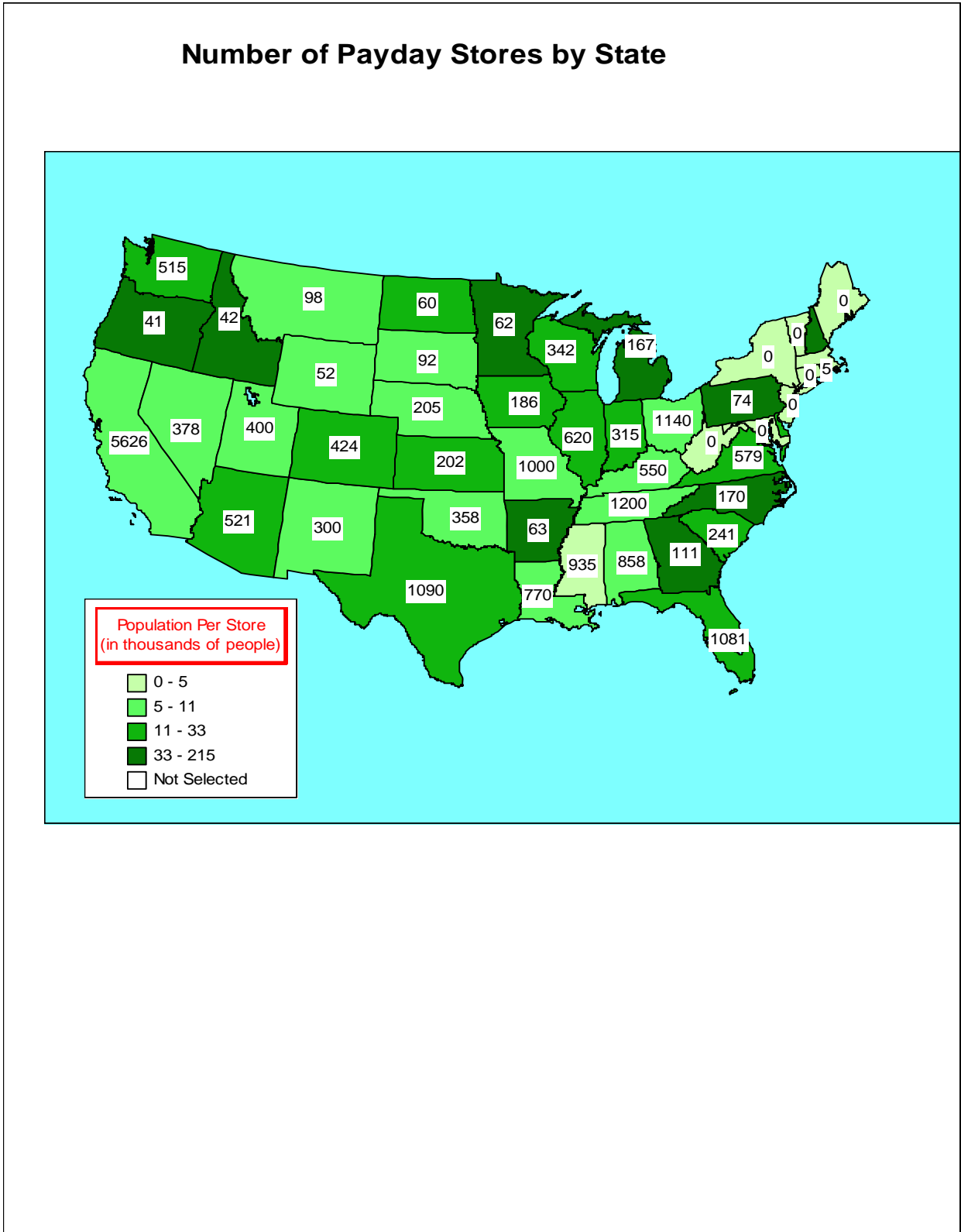
Table 1: Changes in State Laws Affecting Payday Lending									
State	**Payday lending permitted**			**Any maximum fee**			**Effective maximum APR on 14-day 100$ loan**		
	1998	2001	2004	1998	2001	2004	1998	2001	2004
Alabama	No	No	Yes			Yes			455
Alaska	No	No	No						
Arizona	No	Yes	Yes		Yes	Yes		459	459
Arkansas	No	Yes	Yes		Yes	Yes		579	579
California	Yes	Yes	Yes	Yes	Yes	Yes	391	459	459
Colorado	Yes	Yes	Yes	Yes	Yes	Yes	625	520	520
Connecticut	No	No	No						
Delaware	No	Yes	Yes		No	No			
DC	Yes	Yes	Yes	Yes	Yes	Yes	391	419	419
Florida	Yes	Yes	Yes	Yes	Yes	Yes	261	390	390
Georgia	No	No	No						
Hawaii	No	Yes	Yes		Yes	Yes		459	459
Idaho	No	Yes	Yes		No	No			
Illinois	No	Yes	Yes		No	No			
Indiana	No	No	Yes			Yes			390
Iowa	Yes	Yes	Yes	Yes	Yes	Yes	391	435	435
Kansas	Yes	Yes	Yes	Yes	Yes	Yes	391	390	390
Kentucky	Yes	Yes	Yes	Yes	Yes	Yes	391	459	459
Louisiana	Yes	Yes	Yes		Yes	Yes	261	520	520
Maine	No	No	No						
Maryland	No	No	No						
Massachusetts	No	No	No						
Michigan	No	No	No						
Minnesota	Yes	Yes	Yes	Yes	Yes	Yes	391	390	390
Mississippi	Yes	Yes	Yes	Yes	Yes	Yes	469	572	572
Missouri	Yes	Yes	Yes	Yes	Yes	Yes	391		1980
Montana	No	Yes	Yes		Yes	Yes		650	650
Nebraska	Yes	Yes	Yes	Yes	Yes	Yes	391	459	459
Nevada	Yes	Yes	Yes	Yes	No	No			
NH	No	Yes	Yes		No	No			
NJ	No	No	No						
NM	No	Yes	Yes		No	No			
NY	No	No	No						
NC	Yes	No	No	Yes			391		
ND	No	Yes	Yes		Yes	Yes		520	520
Ohio	Yes	Yes	Yes	Yes	Yes	Yes	391	390	390
Oklahoma	Yes	Yes	Yes	Yes	Yes	Yes	521	240	390
Oregon	No	Yes	Yes		No	No			
Pennsylvania	No	No	No						
RI	No	No	No						
SC	Yes	Yes	Yes	Yes	Yes	Yes	391	459	459
SD	No	Yes	Yes		No	No			
Tennessee	Yes	Yes	Yes	Yes	Yes	Yes	391	459	459
Texas	No	Yes	Yes		Yes	Yes		309	309
Utah	No	Yes	Yes		No	No			
Vermont	No	No	No						
Virginia	No	No	Yes			Yes			390
Washington	Yes	Yes	Yes	Yes	Yes	Yes	391	390	390
WV	No	No	No						
Wisconsin	No	Yes	Yes		No	No			
Wyoming	Yes	Yes	Yes	Yes	Yes	Yes	521	780	780

Source: Fox & Mierzwinski (2000, 2001, 2004)

Table 2: Store Characteristics

		New Stores <1 year old						Young Stores 1-4 years old						Mature Stores >4 years old					
		N	Mean	Std Dev	Bottom Quartile	Median	Top Quartile	N	Mean	Std Dev	Bottom Quartile	Median	Top Quartile	N	Mean	Std Dev	Bottom Quartile	Median	Top Quartile
1	Years Store Operated by Company	179	0.41	0.24	0.20	0.30	0.60	338	2.32	0.93	1.50	2.20	3.10	508	6.11	1.63	4.90	5.80	6.90
2	=1 if Store Acquired (not new)	179	0.01	0.07	0.00	0.00	0.00	338	0.09	0.28	0.00	0.00	0.00	508	0.15	0.35	0.00	0.00	0.00
3	=1 if Store not in MSA	179	0.20	0.40	0.00	0.00	0.00	338	0.17	0.37	0.00	0.00	0.00	508	0.08	0.28	0.00	0.00	0.00
4	=1 if Agent for Bank	179	0.00	0.00	0.00	0.00	0.00	338	0.02	0.13	0.00	0.00	0.00	508	0.06	0.24	0.00	0.00	0.00
5	Total Advances (#)	179	960	900	271	718	1,359	338	5,668	2,715	3,718	5,185	7,192	508	8,743	3,657	6,122	8,454	10,627
6	Total Advances ($)	179	254,034	266,068	65,875	178,775	327,950	338	1,532,979	850,440	947,450	1,352,869	1,979,640	508	2,059,654	889,142	1,402,124	1,990,478	2,483,737
7	Avg Outstanding Loans ($)	179	10,695	11,437	2,704	7,076	14,731	338	61,664	35,105	37,456	54,273	77,167	508	85,169	39,862	55,679	79,458	104,890
8	Total Costs ($)	179	72,384	40,311	42,222	63,918	96,775	338	177,298	58,959	135,726	163,368	202,650	508	193,605	63,552	147,865	179,970	224,539
9	Total Revenue ($)	179	33,870	35,796	8,208	24,154	44,809	338	252,918	124,882	164,371	224,474	331,349	508	348,950	125,098	258,182	331,994	412,765
10	Fee per $100 Borrowed ($)	179	14.32	3.10	12.59	14.89	17.50	338	16.77	2.76	15.00	17.24	17.65	508	18.30	6.88	14.98	17.59	17.65
11	Eff APR/State Max APR	166	0.86	0.24	0.74	0.94	1.00	323	0.95	0.09	0.90	1.00	1.00	415	0.93	0.14	0.87	1.00	1.00
12	=1 if Discount for Referral	179	0.73	0.45	0.00	1.00	1.00	338	0.68	0.47	0.00	1.00	1.00	508	0.81	0.40	1.00	1.00	1.00
13	Wage/Benefits per Employee (1,000s)	179	11.89	8.14	6.56	10.41	15.33	338	28.85	12.06	21.45	25.14	31.56	508	31.76	13.59	23.11	28.23	35.66
14	FTE employees (#)	176	1.86	0.74	1.50	2.00	2.00	338	2.35	1.16	2.00	2.00	3.00	508	2.67	1.26	2.00	3.00	3.00

Table 3: Store Cost Information

		New Stores <1 year old					Young Stores 1-4 years old					Mature Stores >4 years old				
		N	Mean	Std Dev	Bottom Quartile	Median	Top Quartile	N	Mean	Std Dev	Bottom Quartile	Median	Top Quartile	N	Mean	Std Dev	Bottom Quartile	Median	Top Quartile
	Wages & Salaries																		
1	% of operating costs	179	28.3	8.3	23.0	29.7	33.5	338	34.99	6.38	30.26	34.76	39.40	508	39.80	7.75	34.31	39.83	45.76
2	$ per loan	179	37.13	31.05	17.69	27.47	43.89	338	12.48	5.82	8.75	11.02	14.13	508	9.56	3.70	7.40	8.79	10.39
3	% of avg loans outstanding	179	384.9	358.0	170.8	263.9	463.7	338	120.7	61.7	79.4	107.3	146.5	508	100.2	37.9	74.4	94.2	116.5
	Rent, Mainten, Util, Taxes																		
4	% of operating costs	179	21.3	7.4	16.9	21.3	25.8	338	18.9	5.6	15.0	19.1	22.8	508	17.3	5.0	13.5	17.5	20.6
5	$ per loan	179	31.81	37.56	12.39	20.09	33.70	338	6.94	3.90	4.19	6.20	8.61	508	4.38	2.52	2.75	3.76	5.22
6	% of avg loans outstanding	179	339.0	442.2	112.4	180.1	340.0	338	66.8	39.4	39.4	57.3	81.8	508	44.9	23.9	29.3	38.5	55.6
	Advertising																		
7	% of operating costs	179	12.7	8.6	6.0	12.8	17.2	338	4.9	4.0	1.7	4.4	7.0	508	5.6	3.7	3.1	5.3	7.8
8	$ per loan	179	20.19	37.11	4.93	10.86	21.16	338	1.88	2.16	0.51	1.19	2.49	508	1.43	1.37	0.61	1.05	1.79
9	% of avg loans outstanding	179	218.7	444.6	45.6	107.8	204.6	338	17.4	22.1	4.6	11.0	22.2	508	13.9	11.4	6.2	10.8	17.7
	Loan Losses																		
10	% of operating costs	179	8.9	10.8	1.1	4.6	13.5	338	24.8	11.8	15.4	24.2	32.4	508	21.1	9.6	14.2	19.6	25.9
11	$ per loan	179	7.54	10.10	1.32	4.42	9.07	338	8.88	5.27	4.91	8.06	11.69	508	5.72	4.89	2.74	4.28	6.89
12	% of avg loans outstanding	179	68.2	83.0	12.5	43.1	85.7	338	82.5	50.7	46.6	70.7	108.3	508	55.6	44.3	31.3	44.1	63.4
	Loan Collection Expenses																		
13	% of operating costs	179	0.2	0.2	0.0	0.1	0.2	338	0.9	0.8	0.4	0.7	1.2	508	1.3	1.1	0.6	1.0	1.6
14	$ per loan	179	0.16	0.23	0.02	0.08	0.20	338	0.29	0.24	0.12	0.23	0.39	508	0.30	0.25	0.14	0.23	0.36
15	% of avg loans outstanding	179	1.7	2.7	0.2	0.8	2.0	338	2.9	2.5	1.1	2.4	3.8	508	3.0	2.1	1.4	2.6	3.9
	Other Store Expenses NEC																		
16	% of operating costs	179	28.6	9.1	21.8	26.4	33.5	338	15.5	4.2	12.8	14.7	16.9	508	14.8	5.2	11.1	13.7	17.0
17	$ per loan	179	47.60	65.58	13.81	25.49	52.47	338	5.64	3.17	3.63	4.79	6.56	508	3.71	2.12	2.28	3.18	4.36
18	% of avg loans outstanding	179	514.1	767.8	135.5	239.9	585.8	338	55.5	38.4	33.6	44.8	65.3	508	39.2	23.6	23.1	31.7	46.8
	Total Store Operating Cost																		
19	Total costs	179	72,384	40,311	42,222	63,918	96,775	338	177,298	58,959	135,726	163,368	202,650	508	193,605	63,552	147,865	179,970	224,539
20	$ per loan	179	144.44	147.79	62.18	96.20	165.06	338	36.10	15.22	25.87	32.15	41.33	508	25.10	11.61	17.89	22.16	28.19
21	% of avg loans outstanding	179	1,526.4	1,727.2	621.1	894.9	1,764.4	338	345.8	156.3	235.7	311.6	416.2	508	256.8	104.7	190.5	231.8	296.7
									100.0						100.00				

Table 4: Store Profitability Ratios

		New Stores <1 year old					Young Stores 1-4 years old					Mature Stores >4 years old				
		N	Mean	Std Dev	Bottom Quartile	Median	Top Quartile	N	Mean	Std Dev	Bottom Quartile	Median	Top Quartile	N	Mean	Std Dev	Bottom Quartile	Median	Top Quartile
	Total Revenue																		
1	dollars	179	33,870	35,796	8,208	24,154	44,809	338	252,918	124,882	164,371	224,474	331,349	508	348,950	125,098	258,182	331,994	412,765
2	% of avg outstanding loans	179	320.4	103.9	254.5	313.3	377.8	338	437.0	135.0	342.5	416.9	494.7	508	445.7	151.9	357.0	431.3	493.1
3	$ per loan	179	32.99	11.12	25.90	33.68	39.22	338	45.94	13.78	38.30	42.57	49.81	508	43.82	18.15	34.13	39.89	47.37
	Store Operating Income																		
4	dollars	179	-38,514	20,308	-47,744	-35,681	-25,715	338	75,620	85,596	13,325	63,409	128,344	508	155,345	83,413	98,814	143,596	196,605
5	% of avg outstanding loans	179	-1,206.0	1,719.4	-1,374.6	-550.4	-307.3	338	91.2	139.3	27.2	109.0	171.5	508	189.0	86.8	137.8	182.6	231.3
6	$ per loan	179	-111.45	149.31	-132.65	-64.97	-26.11	338	9.84	14.20	2.87	11.60	18.38	508	18.73	10.65	12.79	17.20	21.76
	General & Admin Expenses																		
7	% of total revenues	179	1,433.6	8,075.8	102.9	232.0	693.3	338	28.0	18.5	17.2	23.1	33.4	508	16.5	7.4	11.6	14.7	19.8
8	% of avg outstanding loans	179	2,272.3	4,802.9	327.5	682.1	2,172.3	338	123.0	93.9	68.2	100.2	148.5	508	76.0	49.1	44.4	60.6	92.3
9	$ per loan	179	204.87	393.08	34.59	78.73	179.62	338	12.36	7.65	7.56	10.53	15.17	508	7.12	4.23	4.40	5.76	8.33
	Interest Expenses																		
10	% of total revenues	179	29.83	172.38	0.21	4.69	16.44	338	1.08	0.67	0.62	0.99	1.31	508	0.80	0.32	0.58	0.73	0.95
11	% of avg outstanding loans	179	55.61	155.57	0.82	15.63	40.06	338	4.65	3.12	2.48	4.10	6.07	508	3.69	2.52	2.23	3.01	4.25
12	$ per loan	179	5.00	12.24	0.06	1.54	4.19	338	0.48	0.30	0.27	0.43	0.60	508	0.35	0.21	0.22	0.29	0.40
	Pretax Store Income																		
13	dollars	176	-308,579	480,826	-91,386	-107,727	-80,898	334	-17,048	53,643	-40,834	7,129	67,496	493	98,484	39,429	36,426	91,795	167,652
14	% of total revenues	179	-2,020.6	9,886.3	-1,187.2	-428.6	-193.9	338	-9.4	47.0	-26.2	3.4	20.6	508	25.0	18.5	16.5	27.4	37.9
15	% of avg outstanding loans	179	-3,533.9	6,454.0	-3,598.9	-1,323.3	-672.2	338	-36.5	206.9	-109.9	13.0	87.3	508	109.3	91.1	66.7	114.4	156.6
16	$ per loan	179	-321.32	534.28	-337.22	-150.04	-59.53	338	-3.01	19.76	-10.98	1.38	9.38	508	11.26	10.78	5.95	10.86	15.78

Table 5: Portfolio Characteristics

	New Stores <1 year old						Young Stores 1-4 years old						Mature Stores >4 years old					
	N	Mean	Std Dev	Bottom Quartile	Median	Top Quartile	N	Mean	Std Dev	Bottom Quartile	Median	Top Quartile	N	Mean	Std Dev	Bottom Quartile	Median	Top Quartile
1 Total Advances (#)	179	960	900	271	718	1,359	338	5,668	2,715	3,718	5,185	7,192	508	8,743	3,657	6,122	8,454	10,627
2 Total Advances ($)	179	254,034	266,068	65,875	178,775	327,950	338	1,532,979	850,440	947,450	1,352,869	1,979,640	508	2,059,654	889,142	1,402,124	1,990,478	2,483,737
3 Avg Loan Size ($)	179	255.33	48.17	224.56	248.13	283.81	338	257.72	50.60	221.82	245.03	294.63	508	227.54	47.17	208.44	225.02	243.53
4 Average Loan Duration (days)	179	14.63	1.99	13.00	14.57	15.93	338	14.74	1.86	13.32	14.00	15.84	508	15.28	3.40	13.87	14.25	15.57
5 Rollovers/Renewals, as % of total #	179	42.2	18.7	27.3	41.3	55.2	338	45.9	25.1	25.5	38.5	70.6	508	46.2	24.0	25.6	52.0	64.6
6 Rollovers/Renewals, as % of total $	179	37.1	22.6	12.3	39.5	54.5	338	33.9	29.4	8.5	22.2	63.3	508	39.5	26.3	10.3	43.2	62.2
7 Customers (#)	179	237	166	117	205	317	338	787	374	511	693	990	508	1113	434	807	1037	1349
8 Loans per Customer (#)	179	4.51	13.10	2.20	3.04	4.56	338	7.28	1.44	6.38	7.17	8.23	508	7.91	1.82	6.90	7.90	8.78
Percent of Customers with:																		
9 1 Advance per Year	179	32.5	19.9	19.0	28.5	41.0	338	16.7	6.5	12.2	16.9	20.8	508	13.7	5.9	8.6	13.8	17.5
10 2-6 per Year	179	48.2	13.2	40.1	50.5	56.8	338	36.0	6.2	31.8	36.9	40.5	508	32.9	7.0	28.2	32.8	37.1
11 7-12 per Year	179	13.4	10.6	1.3	13.2	22.5	338	21.4	3.6	18.8	21.3	23.4	508	21.1	4.3	18.0	21.3	23.8
12 >12 per Year	179	5.8	10.3	0.0	0.0	6.6	338	24.3	12.3	16.2	20.8	29.0	508	30.4	14.0	20.3	26.6	41.8

Table 6: Neighborhood Characteristics

	New Stores <1 year old						Young Stores 1-4 years old						Mature Stores >4 years old					
	N	Mean	Std Dev	Bottom Quartile	Median	Top Quartile	N	Mean	Std Dev	Bottom Quartile	Median	Top Quartile	N	Mean	Std Dev	Bottom Quartile	Median	Top Quartile
Age																		
1 Median Age (years)	177	34.6	5.4	31.4	35.0	37.2	331	34.3	4.6	31.5	35.2	37.1	505	33.9	4.3	31.5	34.5	36.7
2 Percent of Population over 65	177	12.7	6.2	9.3	12.2	15.1	331	12.1	4.4	9.1	12.3	14.4	505	11.9	3.9	9.4	11.8	14.1
Income																		
3 Median Family Income ($1000s)	177	45.5	10.1	38.3	45.1	51.4	331	45.0	10.1	37.6	44.8	50.6	505	47.3	11.3	40.0	46.2	54.2
4 as % of MSA Med. Family Income	177	98.2	18.3	86.6	98.7	109.0	331	94.5	18.6	82.1	93.3	107.8	505	94.4	20.7	80.9	94.6	108.1
5 Median MSA Family Income ($1000s)	177	46.6	7.1	41.7	46.5	49.6	331	48.0	8.2	42.3	47.4	52.0	505	50.8	9.4	45.7	49.3	55.7
6 Poverty Rate (%)	177	10.6	6.1	6.5	9.2	13.6	331	11.2	6.9	6.7	9.1	13.7	505	10.6	6.5	6.1	9.2	13.5
Housing																		
8 Median House Value ($1000s)	177	103.0	39.3	76.1	92.7	126.1	331	109.3	47.9	79.4	97.1	128.8	505	121.3	73.6	81.3	100.3	138.2
9 Percent of Units Vacant	177	7.5	4.7	4.8	6.4	8.9	331	6.8	3.4	4.7	6.3	8.4	505	6.8	5.7	3.9	5.8	7.8
Race/Ethnicity																		
10 Percent of Population: Black	177	11.9	14.7	1.5	5.2	16.4	331	15.0	19.5	2.0	7.6	20.0	505	13.1	17.7	2.5	5.6	15.8
11 Percent of Population: Hispanic	177	13.8	20.3	1.6	4.1	15.1	331	14.8	21.4	1.3	4.3	19.3	505	14.3	19.0	2.0	4.9	18.9
12 Percent of Population: Other Minority	177	5.1	4.8	1.9	3.6	6.5	331	5.0	4.9	1.9	3.6	6.3	505	6.8	7.5	2.3	4.1	7.5
13 Percent of Population: Any Minority	177	30.9	23.3	12.8	24.5	44.3	331	34.9	26.2	13.7	27.7	50.1	505	34.1	25.2	13.7	26.8	50.4

Table 7: Regression Variable Summary Statistics

Variable	Description	Mean	Std Dev	Median
Loanloss_avglns	Loan losses: ratio to average outstanding loans ($)	0.666	0.489	0.524
Totcost_avglns	Total store expenses: ratio to average outstanding loans ($)	2.927	1.356	2.594
Operinc_avglns	Store operating income: ratio to average outstanding loans ($)	1.497	1.211	1.566
Pretax_inc_avglns	Operating income less share of firm G&A expenses and funding costs: ratio to average outstanding loans ($)	0.508	1.656	0.853
Loanloss_lns	Loan losses: ratio to total # of loans	7.003	5.299	5.564
Totcost_lns	Total store expenses: ratio to total # of loans	29.518	14.304	25.940
Operinc_lns	Store operating income: ratio to total # of loans	15.151	13.002	15.499
Pretax_inc_lns	Operating income less share of firm G&A expenses and funding costs: ratio to total # of loans	5.540	16.645	8.273
Loanloss_rev	Loan losses: ratio to total store revenue	0.151	0.092	0.128
Totcost_rev	Total store expenses: ratio to total store revenue	0.668	0.244	0.608
Operinc_rev	Store operating income: ratio to total store revenue	0.332	0.244	0.392
Pretax_inc_rev	Operating income less share of firm G&A expenses and funding costs: ratio to total store revenue	0.112	0.372	0.212
Firm dummy	=1 If observation is from payday lending company B	0.299	0.458	0.000
Young	=1 If store is 1-4 years old	0.396	0.489	0.000
Age_years	Years store operated by company	4.616	2.325	4.650
Rural	=1 If store not in a MSA	0.116	0.320	0.000
Acquired	=1 If store acquired (not establish by operating firm)	0.123	0.329	0.000
Bank_model	=1 If agent for bank	0.043	0.203	0.000
Log_ntotlns	Log of total number of loans	8.802	0.522	8.867
FTE employees #	# Full-time-equivalent employees	2.548	1.232	2.000
Sal_per_employee	Wage/salary/benefits per employee	30.512	13.041	26.807
Fee_new	Fee/interest charge per $100 borrowed	0.177	0.057	0.175
Store_APR/st_max_APR	Ratio of APR charged by store to max. APR permitted	0.819	0.335	0.995
Discount_refer	=1 If store offers a discount for referrals	0.756	0.430	1.000
Avgloan_size (100s)	Average loan size ($100s)	2.393	0.506	2.284
Sh_highfreq_bor	Share of customers w/ >12 advances per year	0.280	0.137	0.244
Nrenew_ntot	Rollovers/renewals: share of total # advances	0.460	0.245	0.480
Avg_duration	Average loan duration (days)	15.065	2.900	14.211
Any_maxloan	=1 If any state maximum loan limit exists	0.921	0.270	1.000
MaxLoan	Maximum loan size permitted in state	407.89	179.74	500.00
Any_maxfee	=1 If any state maximum fee limit exists	0.879	0.326	1.000
MaxAPR	Effective max. APR permitted on a 14-day $100 loan	413.11	251.15	459.00
Stores_p10,000 people	Stores per 10,000 people in state	1.212	0.670	0.997
Median_age	Median age in zip code (head of household)	34.048	4.435	34.700
Med_MSA_inc (1000s)	Average MSA median family income ($1000s)	49.695	9.030	47.440
Med_income/MSA_medinc	Median family income in zip code: ratio to MSA median family income	0.944	0.199	0.940
Sh_in_pov	Poverty rate in zip code	10.853	6.651	9.080
Med_house_val (1000s)	Median house value ($1000s) in zip code	116.58	64.87	99.25
Sh_black	Share of zip code population that is Black	0.139	0.185	0.065
Sh_hispanic	Share of zip code population that is Hispanic	0.145	0.200	0.045
Real pers inc grL1	Real per capita personal income growth, lagged 1 year	0.004	0.019	0.006
Avg_pers_inc_gr	Real per capita income growth rate, 10-yr avg.	0.023	0.007	0.022
UemprtL1	Unemployment rate, lagged 1 year	0.059	0.026	0.055
Pop_grl1	Annual population growth, lagged 1 year	0.010	0.012	0.009
Avg_pop_gr	Population growth, 10-yr avg.	0.013	0.011	0.011

Table 8: Multivariate Analysis of Losses and Profitability, measured as % of average loans outstanding											
	Loanloss_avglns			Totcost_avglns			Operinc_avglns			Pretax_inc_avglns		
	coeff	*std error*	*p-value*	*coeff*	*std error*	*p-value*	*coeff*	*std error*	*p-value*	*coeff*	*std error*	*p-value*
Intercept	1.732	0.601	0.004	18.543	1.086	<.0001	-3.741	1.423	0.009	-14.204	1.638	<.0001
Firm dummy	0.405	0.061	<.0001	0.304	0.111	0.006	-0.004	0.145	0.977	-0.578	0.167	0.001
Acquired	0.196	0.053	0.000	0.392	0.095	<.0001	-0.169	0.125	0.176	-0.022	0.144	0.881
Young	-0.254	0.693	0.714	11.134	1.252	<.0001	-17.702	1.640	<.0001	-24.005	1.889	<.0001
Age_years	-0.006	0.010	0.595	-0.024	0.019	0.203	0.083	0.025	0.001	0.091	0.028	0.002
Rural	-0.059	0.058	0.308	-0.123	0.105	0.242	-0.167	0.138	0.226	-0.113	0.158	0.476
Young*rural	-0.084	0.076	0.264	-0.223	0.137	0.103	0.787	0.179	<.0001	0.819	0.206	<.0001
Bank_model	-0.299	0.099	0.003	0.399	0.178	0.026	-0.605	0.234	0.010	-0.992	0.269	0.000
Young*bank_model	-0.402	0.192	0.036	-0.786	0.347	0.024	-0.394	0.455	0.387	-0.400	0.523	0.445
Log_ntotlns	-0.241	0.057	<.0001	-1.799	0.104	<.0001	0.642	0.136	<.0001	1.633	0.157	<.0001
Young*log_ntotlns	0.146	0.076	0.055	-0.966	0.137	<.0001	1.777	0.180	<.0001	2.284	0.207	<.0001
FTE employees #	0.060	0.021	0.004	0.307	0.038	<.0001	-0.071	0.049	0.148	-0.134	0.057	0.018
Young*FTE emp #	0.017	0.036	0.636	0.337	0.065	<.0001	-0.465	0.085	<.0001	-0.465	0.097	<.0001
Sal_per_employee	0.003	0.002	0.049	0.019	0.003	<.0001	-0.006	0.004	0.113	-0.011	0.004	0.014
Young*sal_per_empl	-0.003	0.003	0.350	0.024	0.005	<.0001	-0.029	0.007	<.0001	-0.031	0.008	<.0001
Fee_new	-0.878	0.976	0.369	4.229	1.764	0.017	13.055	2.312	<.0001	10.243	2.662	0.000
Young*fee_new	0.551	0.963	0.567	-8.101	1.740	<.0001	9.319	2.280	<.0001	13.354	2.625	<.0001
Store_APR/st_max_APR	0.289	0.121	0.017	1.002	0.218	<.0001	0.167	0.286	0.559	-0.050	0.329	0.880
Young*APR/max_APR	-0.177	0.148	0.231	-0.721	0.267	0.007	-0.015	0.350	0.965	0.122	0.402	0.761
Discount_refer	0.093	0.071	0.188	0.026	0.128	0.842	-0.316	0.168	0.061	-0.318	0.193	0.100
Young*discount_refer	0.108	0.072	0.134	-0.148	0.130	0.257	0.446	0.171	0.009	0.731	0.197	0.000
Avgloan_size (100s)	0.182	0.042	<.0001	-0.738	0.076	<.0001	0.115	0.099	0.247	0.543	0.114	<.0001
Young*Avgloan_size	-0.192	0.057	0.001	-0.688	0.103	<.0001	0.816	0.135	<.0001	1.268	0.156	<.0001
Avg_duration	0.008	0.011	0.436	-0.134	0.019	<.0001	-0.182	0.025	<.0001	-0.111	0.029	0.000
Young*avg_duration	-0.020	0.016	0.216	0.000	0.030	0.995	-0.025	0.039	0.522	-0.039	0.045	0.385
Sh_highfreq_bor	-1.292	0.160	<.0001	-1.903	0.288	<.0001	-0.593	0.378	0.117	-0.706	0.435	0.105
Young*sh_highfreq_bor	-0.532	0.232	0.022	-0.520	0.420	0.216	0.220	0.550	0.690	0.243	0.634	0.701
Nrenew_ntot	0.296	0.082	0.000	0.638	0.148	<.0001	-0.162	0.194	0.404	-0.191	0.223	0.392
Young*nrenew_ntot	-0.104	0.121	0.389	-0.507	0.219	0.021	0.502	0.286	0.080	0.664	0.330	0.044
Any_maxloan	-0.104	0.246	0.673	-0.826	0.445	0.064	-0.516	0.583	0.377	-0.082	0.671	0.903
MaxLoan	0.000	0.000	0.409	0.001	0.000	0.000	0.000	0.000	0.124	-0.001	0.000	0.009
Any_maxfee	-0.121	0.299	0.685	0.330	0.540	0.541	0.311	0.707	0.660	-0.240	0.814	0.768
MaxAPR	0.000	0.000	0.464	0.000	0.000	0.097	0.000	0.000	0.943	0.000	0.000	0.728
Median_age	-0.001	0.004	0.767	-0.005	0.006	0.448	0.017	0.008	0.048	0.022	0.010	0.025
Med_MSA_inc (1000s)	0.005	0.003	0.116	0.015	0.005	0.004	-0.004	0.007	0.566	-0.009	0.008	0.279
Med_inc/MSA_medinc	0.010	0.113	0.928	0.307	0.205	0.135	-0.093	0.269	0.728	-0.226	0.309	0.466
Sh_in_pov	0.008	0.004	0.039	0.011	0.007	0.092	-0.005	0.009	0.544	-0.007	0.010	0.526
Med_house_val (1000s)	0.000	0.000	0.283	-0.001	0.001	0.211	-0.001	0.001	0.201	-0.001	0.001	0.465
Sh_black	-0.074	0.095	0.438	0.260	0.171	0.129	0.233	0.224	0.300	0.045	0.258	0.860
Sh_hispanic	-0.182	0.104	0.081	-0.235	0.188	0.212	0.229	0.246	0.354	0.441	0.284	0.120
Stores_p10,000 people	-0.021	0.030	0.481	-0.101	0.055	0.065	0.164	0.071	0.022	0.256	0.082	0.002
Real pers inc grL1	-0.144	0.707	0.839	0.269	1.277	0.834	-1.883	1.674	0.261	-1.912	1.927	0.322
Avg_pers_inc_gr	3.877	2.125	0.069	9.088	3.840	0.018	5.526	5.033	0.273	8.138	5.795	0.161
UemprtL1	0.571	0.515	0.268	1.357	0.930	0.145	-0.066	1.219	0.957	0.137	1.403	0.922
Pop_grl1	2.830	1.939	0.145	5.489	3.505	0.118	1.340	4.593	0.771	2.512	5.289	0.635
Avg_pop_gr	-1.503	2.054	0.465	-2.507	3.712	0.500	3.374	4.865	0.488	3.884	5.602	0.488
2002	0.163	0.042	0.000	0.121	0.076	0.113	0.454	0.100	<.0001	0.580	0.115	<.0001
2003	0.303	0.035	<.0001	0.300	0.064	<.0001	0.285	0.084	0.001	0.426	0.096	<.0001
R-squared	0.620			0.838			0.652			0.753		
Mean dep variable	0.666			2.927			1.497			0.508		

Appendix B: Additional Tabulations

Table B.1: Payday Loan Stores by State			
State	**Pop. (thousands) per Store**	**Number of Stores**	**Population (millions)**
Alabama	5.2	858	4.5
Alaska	-	0	0.6
Arizona	10.7	521	5.6
Arkansas	43.3	63	2.7
California	6.3	5,626	35.5
Colorado	10.7	424	4.6
Connecticut	-	0	3.5
Delaware	26.8	21	0.6
DC	27.2	30	0.8
Florida	15.7	1081	17.0
Georgia	78.2	111	8.7
Hawaii	-	0	1.3
Idaho	32.5	42	1.4
Illinois	20.4	620	12.7
Indiana	19.7	315	6.2
Iowa	15.8	186	2.9
Kansas	13.5	202	2.7
Kentucky	7.5	550	4.1
Louisiana	5.8	770	4.5
Maine	-	0	1.3
Maryland	-	0	5.5
Massachusetts	-	0	6.4
Michigan	60.4	167	10.1
Minnesota	81.6	62	5.1
Mississippi	3.1	935	2.9
Missouri	5.7	1,000	5.7
Montana	9.4	98	0.9
Nebraska	8.5	205	1.7
Nevada	5.9	378	2.2
NH	64.4	20	1.3
NJ	-	0	8.6
NM	6.2	300	1.9
NY	-	0	19.2
NC	49.5	170	8.4
ND	10.6	60	0.6
Ohio	10.0	1,140	11.4
Oklahoma	9.8	358	3.5
Oregon	86.8	41	3.6
Pennsylvania	167.1	74	12.4
RI	215.2	5	1.1
SC	17.2	241	4.1
SD	8.3	92	0.8
Tennessee	4.9	1,200	5.8
Texas	20.3	1,090	22.1
Utah	5.9	400	2.4
Vermont	-	0	0.6
Virginia	12.8	579	7.4
Washington	11.9	515	6.1
WV	-	0	1.8
Wisconsin	16.0	342	5.5
Wyoming	9.6	52	0.5

Notes: These data are from Stephens Inc (2004). Population are mid-year 2003 estimates. Number of stores estimates using data from state web sites, company web sites and documents.

Table B.2: Store Portfolio Characteristics: Further Details

		New Stores <1 year old						Young Stores 1-4 years old						Mature Stores >4 years old					
		N	Mean	Std Dev	Bottom Quartile	Median	Top Quartile	N	Mean	Std Dev	Bottom Quartile	Median	Top Quartile	N	Mean	Std Dev	Bottom Quartile	Median	Top Quartile
1	Percent of Total # <$100	176	12.4	12.6	7.5	10.3	14.0	334	10.4	8.3	6.8	8.9	12.0	493	14.3	19.8	6.5	9.1	12.9
2	Percent of Total #: $100-200	176	28.9	11.9	22.7	28.2	34.4	334	28.3	13.8	20.4	25.4	32.2	493	32.8	21.8	21.1	27.6	36.8
3	Percent of Total # : $200-300	176	36.7	19.4	24.2	29.3	53.4	334	41.0	20.9	25.9	31.5	63.1	493	43.0	25.1	28.0	41.8	66.9
4	Percent of Total # : $300-500	176	21.9	18.3	0.0	23.1	33.6	334	20.4	20.6	0.0	17.0	37.6	493	9.9	14.8	0.0	0.0	17.5
5	Percent # Renewed <$100	119	31.2	14.9	20.7	34.0	41.5	198	33.5	19.5	15.6	36.6	50.3	395	33.5	19.4	18.3	33.3	48.8
6	Percent # Renewed: $100-200	119	44.4	15.3	33.3	46.3	54.6	198	47.5	26.0	22.6	57.7	69.1	395	47.3	24.1	25.1	50.5	66.9
7	Percent # Renewed: $200-300	116	50.4	17.8	38.1	51.6	64.1	187	53.8	30.0	23.9	66.3	77.6	348	52.7	28.1	25.3	62.1	70.8
8	Percent Renewed: $300-500	94	54.5	16.3	47.2	56.2	66.9	136	61.5	30.3	47.6	73.7	81.3	191	57.7	31.6	38.8	67.3	75.7
	Percent of Loans with a Duration of																		
9	<7 days	55	2.6	2.4	0.8	1.8	3.4	133	1.7	1.7	0.6	1.0	2.1	116	2.0	2.9	0.7	1.2	1.7
10	7-14 days	55	66.7	27.2	55.9	69.7	87.5	133	79.3	17.5	61.6	82.2	96.6	116	78.2	19.3	70.1	83.1	91.1
11	14-30 days	55	30.9	25.6	12.5	27.1	39.5	133	18.7	15.3	3.5	16.6	33.8	116	18.8	13.7	8.3	16.9	25.8
12	>30 days	55	1.5	2.4	0.0	0.0	3.2	133	1.7	2.8	0.0	0.1	3.0	116	2.2	8.8	0.0	0.0	0.7
13	Percent paid w/in 14 Days of Due Date by size of original loan balance	119	78.8	16.7	72.3	83.9	89.3	198	81.9	15.9	72.8	90.3	93.1	395	80.0	15.2	70.2	86.8	91.3
14	% Pd w/in 14d: <$100	119	75.1	16.7	64.8	83.1	87.1	198	77.8	19.4	59.5	89.0	91.4	395	76.5	18.5	61.4	85.6	90.1
15	% Pd w/in 14d: $200-300	119	72.4	15.8	62.5	77.6	84.5	198	75.3	21.4	53.2	87.6	90.2	395	75.0	20.8	65.6	84.8	89.7
16	% Pd w/in 14d: $300-400	116	69.6	14.6	60.3	75.8	81.5	187	79.3	15.8	80.6	86.7	89.0	348	76.1	16.3	63.7	83.4	88.4
17	% Pd w/in 14d: $400-500	94	33.5	47.3	0.0	0.0	100.0	136	41.4	49.3	0.0	0.0	100.0	191	22.2	41.6	0.0	0.0	0.0

Table B.3: Multivariate Analysis of Losses and Profitability, measured per loan made during the year

	Loanloss_lns			Totcost_lns			Operinc_lns			Pretax_inc_lns		
	coeff	std error	p-value	coeff	std error	p-value	coeff	std error	p-value	coeff	std error	p-value
Intercept	4.787	5.933	0.420	145.093	9.916	<.0001	-72.601	14.759	<.0001	-160.79	15.982	<.0001
Firm dummy	3.615	0.605	<.0001	1.467	1.011	0.147	0.474	1.505	0.753	-5.042	1.629	0.002
Acquired	2.160	0.521	<.0001	4.757	0.870	<.0001	-2.864	1.295	0.027	-1.516	1.402	0.280
Young	-5.894	6.839	0.389	77.582	11.432	<.0001	-156.00	17.014	<.0001	-199.84	18.425	<.0001
Age_years	-0.173	0.103	0.093	-0.262	0.172	0.129	0.846	0.256	0.001	0.731	0.278	0.009
Rural	-0.583	0.574	0.310	-0.725	0.959	0.450	-1.753	1.427	0.220	-1.575	1.546	0.309
Young*rural	-0.879	0.747	0.240	-2.640	1.248	0.035	7.596	1.858	<.0001	8.032	2.012	<.0001
Bank_model	-4.771	0.974	<.0001	-2.881	1.629	0.077	-6.349	2.424	0.009	-7.195	2.625	0.006
Young*bank_model	-3.859	1.895	0.042	-10.466	3.168	0.001	-3.408	4.715	0.470	-3.139	5.105	0.539
Log_ntotlns	-2.596	0.568	<.0001	-18.651	0.949	<.0001	6.124	1.412	<.0001	15.465	1.529	<.0001
Young*log_ntotlns	1.659	0.750	0.027	-9.640	1.254	<.0001	18.382	1.866	<.0001	23.853	2.021	<.0001
FTE employees #	0.610	0.205	0.003	3.127	0.343	<.0001	-0.256	0.511	0.617	-0.837	0.553	0.131
Young*FTE emp #	0.200	0.353	0.570	3.384	0.590	<.0001	-5.023	0.878	<.0001	-5.145	0.951	<.0001
Sal_per_employee	0.036	0.016	0.024	0.183	0.027	<.0001	-0.029	0.040	0.462	-0.064	0.043	0.137
Young*sal_per_empl	-0.006	0.028	0.839	0.278	0.046	<.0001	-0.289	0.069	<.0001	-0.308	0.074	<.0001
Fee_new	-6.746	9.640	0.484	37.876	16.114	0.019	187.226	23.983	<.0001	175.955	25.971	<.0001
Young*fee_new	10.832	9.506	0.255	5.572	15.889	0.726	80.613	23.648	0.001	76.888	25.609	0.003
Store_APR/st_max_APR	2.045	1.190	0.086	2.339	1.990	0.240	-4.804	2.961	0.105	-4.262	3.207	0.184
Young*APR/max_APR	-2.368	1.457	0.105	-8.970	2.436	0.000	4.308	3.626	0.235	6.110	3.926	0.120
Discount_refer	0.990	0.700	0.158	0.667	1.170	0.569	-2.663	1.742	0.127	-3.089	1.886	0.102
Young*discount_refer	1.340	0.712	0.060	1.107	1.190	0.352	4.236	1.771	0.017	5.486	1.917	0.004
Avgloan_size (100s)	4.863	0.413	<.0001	4.748	0.691	<.0001	8.576	1.028	<.0001	8.268	1.113	<.0001
Young*Avgloan_size	-1.459	0.564	0.010	-0.657	0.943	0.486	3.559	1.403	0.011	4.259	1.519	0.005
Avg_duration	0.589	0.104	<.0001	0.330	0.174	0.058	-0.933	0.259	0.000	-0.702	0.280	0.013
Young*avg_duration	-0.260	0.162	0.109	0.158	0.271	0.560	-1.326	0.403	0.001	-1.812	0.436	<.0001
Sh_highfreq_bor	-11.433	1.576	<.0001	-18.183	2.634	<.0001	-1.710	3.920	0.663	-0.990	4.245	0.816
Young*sh_highfreq_bor	-6.197	2.295	0.007	-3.614	3.836	0.347	-1.216	5.709	0.831	-3.762	6.183	0.543
Nrenew_ntot	3.242	0.808	<.0001	7.498	1.350	<.0001	-0.173	2.010	0.931	-1.586	2.176	0.466
Young*nrenew_ntot	-1.222	1.194	0.307	-6.353	1.997	0.002	9.095	2.972	0.002	12.647	3.218	<.0001
Any_maxloan	-4.030	2.429	0.098	-5.512	4.060	0.175	-9.929	6.043	0.101	-12.436	6.544	0.058
MaxLoan	0.002	0.001	0.071	0.007	0.002	0.003	-0.006	0.003	0.083	-0.003	0.004	0.358
Any_maxfee	-0.308	2.949	0.917	1.673	4.930	0.734	13.104	7.337	0.075	11.947	7.945	0.133
MaxAPR	0.000	0.001	0.919	0.000	0.001	0.711	-0.001	0.002	0.573	-0.001	0.002	0.652
Median_age	0.022	0.035	0.536	0.095	0.058	0.104	0.162	0.087	0.061	0.175	0.094	0.063
Med_MSA_inc (1000s)	0.041	0.029	0.162	0.055	0.049	0.264	-0.054	0.073	0.459	-0.026	0.079	0.744
Med_inc/MSA_medinc	-0.601	1.120	0.592	-0.479	1.873	0.798	-2.880	2.787	0.302	-2.661	3.018	0.378
Sh_in_pov	0.043	0.037	0.248	0.032	0.062	0.608	-0.015	0.092	0.872	-0.009	0.100	0.926
Med_house_val (1000s)	-0.004	0.004	0.265	-0.005	0.006	0.415	-0.014	0.009	0.109	-0.014	0.010	0.141
Sh_black	-0.319	0.936	0.734	2.278	1.564	0.146	-2.884	2.327	0.216	-3.563	2.520	0.158
Sh_hispanic	-0.342	1.027	0.740	3.313	1.717	0.054	0.244	2.556	0.924	0.986	2.768	0.722
Stores_p10,000 people	-0.024	0.298	0.937	-0.916	0.498	0.066	0.334	0.741	0.652	0.876	0.803	0.276
Real pers inc grL1	0.571	6.979	0.935	2.934	11.666	0.802	-14.860	17.362	0.392	-13.889	18.801	0.460
Avg_pers_inc_gr	49.273	20.985	0.019	140.421	35.077	<.0001	49.495	52.206	0.343	42.469	56.533	0.453
UemprtL1	9.654	5.082	0.058	24.253	8.494	0.004	-2.208	12.642	0.861	2.036	13.690	0.882
Pop_grl1	20.812	19.152	0.278	30.855	32.013	0.335	-37.283	47.645	0.434	-21.814	51.594	0.673
Avg_pop_gr	-2.124	20.285	0.917	28.507	33.907	0.401	67.362	50.464	0.182	52.464	54.647	0.337
2002	1.836	0.416	<.0001	2.058	0.695	0.003	3.498	1.034	0.001	3.473	1.120	0.002
2003	2.901	0.349	<.0001	3.694	0.584	<.0001	1.825	0.869	0.036	2.252	0.941	0.017
R-squared	0.684			0.879			0.675			0.767		
Mean dep variable	7.003			29.518			15.151			5.540		

Table B.4: Multivariate Analysis of Losses and Profitability, measured as % of store rev. from payday lending											
	Loanloss_rev			**Totcost_rev**			**Operinc_rev**			**Pretax_inc_rev**		
	coeff	*std error*	*p-value*	*coeff*	*std error*	*p-value*	*coeff*	*std error*	*p-value*	*coeff*	*std error*	*p-value*
Intercept	-0.078	0.112	0.488	2.924	0.219	<.0001	-1.924	0.219	<.0001	-3.801	0.301	<.0001
Firm dummy	0.077	0.011	<.0001	-0.006	0.022	0.782	0.006	0.022	0.782	-0.101	0.031	0.001
Acquired	0.032	0.010	0.001	0.066	0.019	0.001	-0.066	0.019	0.001	-0.021	0.026	0.423
Young	0.195	0.129	0.132	3.459	0.252	<.0001	-3.459	0.252	<.0001	-5.180	0.346	<.0001
Age_years	-0.005	0.002	0.009	-0.014	0.004	0.000	0.014	0.004	0.000	0.017	0.005	0.001
Rural	-0.008	0.011	0.484	0.028	0.021	0.193	-0.028	0.021	0.193	-0.049	0.029	0.094
Young*rural	-0.034	0.014	0.017	-0.151	0.028	<.0001	0.151	0.028	<.0001	0.205	0.038	<.0001
Bank_model	-0.093	0.018	<.0001	0.025	0.036	0.478	-0.025	0.036	0.478	-0.079	0.049	0.109
Young*bank_model	-0.060	0.036	0.095	0.050	0.070	0.475	-0.050	0.070	0.475	-0.152	0.096	0.114
Log_ntotlns	-0.007	0.011	0.494	-0.239	0.021	<.0001	0.239	0.021	<.0001	0.395	0.029	<.0001
Young*log_ntotlns	-0.001	0.014	0.944	-0.364	0.028	<.0001	0.364	0.028	<.0001	0.537	0.038	<.0001
FTE employees #	0.003	0.004	0.485	0.034	0.008	<.0001	-0.034	0.008	<.0001	-0.035	0.010	0.001
Young*FTE emp #	0.008	0.007	0.254	0.096	0.013	<.0001	-0.096	0.013	<.0001	-0.105	0.018	<.0001
Sal_per_employee	0.000	0.000	0.665	0.002	0.001	<.0001	-0.002	0.001	<.0001	-0.003	0.001	0.001
Young*sal_per_empl	0.000	0.001	0.608	0.006	0.001	<.0001	-0.006	0.001	<.0001	-0.007	0.001	<.0001
Fee_new	-0.460	0.182	0.012	-2.150	0.355	<.0001	2.150	0.355	<.0001	2.695	0.488	<.0001
Young*fee_new	-0.247	0.180	0.169	-3.129	0.350	<.0001	3.129	0.350	<.0001	4.561	0.482	<.0001
Store_APR/st_max_APR	0.042	0.023	0.064	0.070	0.044	0.112	-0.070	0.044	0.112	-0.060	0.060	0.316
Young*APR/max_APR	-0.034	0.028	0.224	-0.073	0.054	0.177	0.073	0.054	0.177	0.066	0.074	0.373
Discount_refer	0.033	0.013	0.014	0.023	0.026	0.367	-0.023	0.026	0.367	-0.031	0.035	0.384
Young*discount_refer	0.005	0.013	0.705	-0.080	0.026	0.003	0.080	0.026	0.003	0.155	0.036	<.0001
Avgloan_size (100s)	0.068	0.008	<.0001	-0.076	0.015	<.0001	0.076	0.015	<.0001	0.140	0.021	<.0001
Young*Avgloan_size	-0.047	0.011	<.0001	-0.139	0.021	<.0001	0.139	0.021	<.0001	0.216	0.029	<.0001
Avg_duration	0.011	0.002	<.0001	0.014	0.004	0.000	-0.014	0.004	0.000	-0.014	0.005	0.010
Young*avg_duration	0.004	0.003	0.231	0.028	0.006	<.0001	-0.028	0.006	<.0001	-0.044	0.008	<.0001
Sh_highfreq_bor	-0.169	0.030	<.0001	-0.173	0.058	0.003	0.173	0.058	0.003	0.100	0.080	0.211
Young*sh_highfreq_bor	-0.122	0.043	0.005	0.040	0.085	0.638	-0.040	0.085	0.638	-0.123	0.116	0.291
Nrenew_ntot	0.048	0.015	0.002	0.058	0.030	0.052	-0.058	0.030	0.052	-0.032	0.041	0.433
Young*nrenew_ntot	-0.036	0.023	0.107	-0.140	0.044	0.002	0.140	0.044	0.002	0.198	0.061	0.001
Any_maxloan	-0.062	0.046	0.176	0.137	0.089	0.126	-0.137	0.089	0.126	-0.198	0.123	0.108
MaxLoan	0.000	0.000	0.072	0.000	0.000	0.017	0.000	0.000	0.017	0.000	0.000	0.089
Any_maxfee	-0.018	0.056	0.747	-0.232	0.109	0.033	0.232	0.109	0.033	0.229	0.149	0.126
MaxAPR	0.000	0.000	0.754	0.000	0.000	0.767	0.000	0.000	0.768	0.000	0.000	0.941
Median_age	-0.001	0.001	0.291	-0.002	0.001	0.121	0.002	0.001	0.121	0.003	0.002	0.075
Med_MSA_inc (1000s)	0.001	0.001	0.081	0.001	0.001	0.182	-0.001	0.001	0.182	-0.001	0.001	0.386
Med_inc/MSA_medinc	0.008	0.021	0.723	0.027	0.041	0.509	-0.027	0.041	0.509	-0.025	0.057	0.660
Sh_in_pov	0.001	0.001	0.059	0.001	0.001	0.341	-0.001	0.001	0.341	-0.001	0.002	0.647
Med_house_val (1000s)	0.000	0.000	0.945	0.000	0.000	0.377	0.000	0.000	0.377	0.000	0.000	0.352
Sh_black	0.001	0.018	0.937	0.027	0.034	0.432	-0.027	0.034	0.432	-0.025	0.047	0.592
Sh_hispanic	-0.021	0.019	0.286	-0.028	0.038	0.459	0.028	0.038	0.459	0.071	0.052	0.172
Stores_p10,000 people	-0.008	0.006	0.174	-0.004	0.011	0.685	0.004	0.011	0.685	0.017	0.015	0.263
Real pers inc grL1	0.086	0.132	0.517	0.329	0.257	0.201	-0.329	0.257	0.201	-0.390	0.354	0.270
Avg_pers_inc_gr	-0.074	0.397	0.853	-0.708	0.773	0.360	0.708	0.773	0.360	2.021	1.063	0.058
UemprtL1	0.159	0.096	0.098	0.086	0.187	0.646	-0.086	0.187	0.646	0.129	0.257	0.615
Pop_grl1	0.420	0.362	0.246	0.042	0.705	0.952	-0.042	0.705	0.952	0.530	0.970	0.585
Avg_pop_gr	-0.335	0.384	0.383	0.289	0.747	0.699	-0.289	0.747	0.699	-0.515	1.028	0.616
2002	0.017	0.008	0.032	-0.045	0.015	0.003	0.045	0.015	0.003	0.083	0.021	<.0001
2003	0.035	0.007	<.0001	0.007	0.013	0.601	-0.007	0.013	0.601	0.030	0.018	0.086
R-squared	0.627			0.798			0.798			0.835		
Mean dep variable	0.151			0.668			0.332			0.112		