Adverse Consequences of the Binding Constitutional Interest Rate Cap in the State of Arkansas

Onyumbe Enumbe Ben Lukongo
Thomas W. Miller Jr.

MERCATUS WORKING PAPER

MERCATUS CENTER
George Mason University

3434 Washington Blvd., 4th Floor, Arlington, Virginia 22201
www.mercatus.org

Onyumbe Enumbe Ben Lukongo and Thomas W. Miller Jr. "Adverse Consequences of the Binding Constitutional Interest Rate Cap in the State of Arkansas." Mercatus Working Paper, Mercatus Center at George Mason University, Arlington, VA, 2017.

Abstract

In the United States, the lowest interest rate cap on small-dollar installment loans—17 percent—is in Arkansas. No small-dollar installment lenders operate within Arkansas, while they do in all six states bordering Arkansas—providing a natural experiment to examine the effects of a binding interest rate cap. Arkansas residents obtain installment loans from lenders in other states. Arkansas residents in the perimeter counties hold 96.8 percent of these loans. We document an installment loan "credit desert" in the interior counties of Arkansas. Overall, Arkansas residents borrow $1,051, on average, and freely contract at an average annual percentage rate (APR) of 80 percent. Incorporating estimated travel costs, the average APR is 93 percent.

JEL codes: D14, G21

Keywords: installment loans, access to credit, interest rate cap

Author Affiliation and Contact Information

Onyumbe Enumbe Ben Lukongo
Assistant Professor of Economics, Southern University
olukongo@gmail.com

Thomas W. Miller Jr.
Professor of Finance and Jack R. Lee Chair in Financial Institutions and Consumer Finance, Mississippi State University
Senior Affiliated Scholar, Mercatus Center at George Mason University
tmiller@business.msstate.edu.

This paper can be accessed at https://www.mercatus.org/publications/constitutional-interest-rate-cap-arkansas.

Adverse Consequences of the Binding Constitutional

Interest Rate Cap in the State of Arkansas

Onyumbe Enumbe Ben Lukongo and Thomas W. Miller Jr.

1. Introduction

Many Americans today live paycheck to paycheck.[1] Consequently, many American households do not have a deep pool of cash reserves to meet unexpected bills or to cover normal bills in the event of an unexpected income disruption, which many hourly workers experience frequently.[2] Subprime borrowers are more likely to rely on some form of nonbank-supplied credit. The business models for nonbank credit suppliers allow them to provide loans to their borrowers at a profit.[3]

The supply of consumer credit is limited and shaped through ongoing legislative and regulatory action. Interest rate caps are a common way states regulate credit markets.[4] Economic theory predicts that an interest rate cap, like any price ceiling, creates shortages, destroys gains from trade, and gives rise to additional search costs. The state of Arkansas provides a natural experiment to examine these three interest rate cap effects. Each of its six border states has a higher interest rate cap than Arkansas or no interest rate cap. We look at the effects of

[1] Lusardi, Schneider, and Tufano (2011) examine the ability of American households to gather $2,000 within 30 days to help weather a financial shock. They document that approximately one-half of American households certainly could not, or probably could not, do so. The Board of Governors of the Federal Reserve System (2015) places the hurdle even lower. In its report on the economic well-being of US households, it finds that 47 percent of respondents "say they either could not cover an emergency expense costing $400, or would cover it by selling something or borrowing money."

[2] See, for example, Hannagan and Morduch (2015).

[3] The size of these loans varies by the type of supplier. Pawn lenders supply the smallest loans—that is, less than $100 (Bos, Carter, and Skiba 2012). Depending on state regulations, payday lenders make loans typically ranging up to $500 (Black and Miller 2016).

[4] President Barack Obama signed the Dodd-Frank Wall Street Reform and Consumer Protection Act (Pub. L. No. 111-203, H.R. 4173) into law on July 21, 2010. The Dodd-Frank Act established the Bureau of Consumer Financial Protection (CFPB). The Dodd-Frank Act prohibits the CFPB from imposing interest rate caps.

Arkansas's constitutionally imposed 17 percent interest rate cap and offer direct evidence of how a price cap affects access to credit.

Cash installment loans are an understudied area of the nonbank-supplied, small-dollar loan landscape. A cash installment loan has (1) equal payments that fully amortize the debt after the borrower makes the last payment and (2) payments consisting of interest and an amount that reduces the principal owed. In these two ways, cash installment loan payments are like the familiar installment loans made to finance the purchase of appliances, furniture, or vehicles. Unlike these sales finance products, borrowers can use the proceeds from a cash installment loan in any manner they wish.

A century ago, consumer advocates and capitalists cooperatively created the state-regulated industry for making small-dollar cash installment loans through model legislation known as the Uniform Small Loan Law of 1916.[5] The purpose of establishing this industry was to provide a lower-cost alternative to consumers, who typically borrowed from illegal lenders, then known as "loan sharks."[6]

Although cash installment loans have existed for a century, scant academic research exists on this market.[7] The biggest obstacle to studying this market has been access to data. Researchers have typically relied on surveys to study this traditional installment loan market (Durkin and McAlister 1977; Miller 2015). Recently, the American Financial Services Association (AFSA), the trade association for the cash installment loan industry, collected data from its members on their loan portfolios.

[5] The appendix overviews the formation of the cash installment loan industry. See Black and Miller (2016) for references.
[6] For an excellent discussion on the issues that led to the development of the Uniform Small Loan Law of 1916, see Calder (1999) and "Combating the Loan Shark" (1941), a symposium featuring 14 papers.
[7] The last comprehensive study of the cash installment lending market was the National Commission on Consumer Finance (1972). Until recently, the most recent study of this market has been Durkin and McAlister (1977), who study the cash installment lending industry in Texas.

This paper is the first to study how—in light of the state's low constitutional interest rate cap—Arkansas residents obtain installment loans from finance companies. The Arkansas interest rate cap is too low for installment lenders to operate profitably within Arkansas. We study the extent to which Arkansas residents drive to other states to take out small-dollar installment loans, as well as the acquisition costs of these loans, the loan size, and the annual percentage rate (APR) they agree to pay for installment loans. We then estimate the costs of the 17 percent interest rate cap to Arkansas residents.

By examining cross-border differences, our paper is similar in spirit to Melzer (2011) but differs in significant ways. Melzer uses panel data on locations of payday loan outlets, has no access to loan data, and has a goal of assessing the effect of payday loan access on the financial well-being of residents of three states without payday lending (Massachusetts, New York, and New Jersey).[8] By contrast, we have access to average installment loan sizes at a moment in time, and our goal is to assess the costs borne by Arkansas residents from the constitutionally imposed interest rate cap.

We document a "credit desert" for installment loans in the *interior counties*, that is, Arkansas counties that do not border another state. We find that nearly all the loans held by Arkansas residents are concentrated in the *perimeter counties*, that is, Arkansas counties that border another state. In addition to interior and perimeter counties, we analyze a third set of counties. *Border counties* are the group of counties in the other states that (1) border Arkansas, and (2) border a county that borders Arkansas. The average loan size is about $1,051 with an APR of 80 percent. We estimate the costs borne by Arkansas residents to drive to out-of-state

[8] Melzer (2011) finds no evidence that access to payday loans alleviates economic hardship. Caskey (2012) points out a concern that Melzer recognizes. Melzer's results depend on the assumption, for example, that people in Massachusetts (a state without legal payday lending) living near New Hampshire (a state with legal payday lending) share the same economic conditions as people elsewhere in Massachusetts. Caskey points out that Boston might be thriving, but the rest of the state of Massachusetts might not be thriving.

installment lenders and calculate the implied APRs on these loans to reflect these additional acquisition costs.

After adjusting for travel costs to obtain the loan, Arkansas citizens pay an average implied APR of about 93 percent.

In this paper, we document that Arkansas residents have significantly less access to installment loans from finance companies than residents do in Arkansas's six border states. In addition, Arkansas residents have no access to payday loans or vehicle title loans—Arkansas laws ban these products. Arkansas residents do have access to pawnshops and rent-to-own outlets.[9]

Arkansas residents could be replacing cash installment loan credit with credit from other sources. Further, they could be doing so in different ways throughout the state. We do not study this possibility, but we do discuss other credit options available to Arkansas residents. Elliehausen et al. (2016) examine prime and subprime bankcard debt levels, retail debt levels, and other nonauto, nonstudent consumer debt balances for Arkansas borrowers and borrowers in border states. Overall, their findings are consistent with the hypothesis that the interest rate cap in Arkansas restricts overall credit availability, especially for non-prime borrowers living in the interior counties of Arkansas.

Section 2 contains a brief history of interest rate regulation in Arkansas and a brief summary of previous research on the effects of interest rate caps. Section 3 contains a description of the data and variable construction. The results appear in section 4. We present a graphical representation of cash installment loan usage as well as descriptive data concerning loans and loan terms. We test for statistical differences among loan usage rates per 10,000 population and

[9] We do not know whether their access is proportionately higher than the access of residents of Mississippi, a state with a comparable population.

estimate loan acquisition costs and implied APRs. Also, we precisely estimate how driving distance matters when obtaining small-dollar cash installment loans. In section V, we estimate the impact of raising the interest rate cap in Arkansas to levels paid by the Arkansas borrowers in our sample. In section 6, we explore what other credit sources are available to Arkansas residents. Section 7 is the summary, and an appendix contains a short history on the origins of the state-licensed cash installment lending industry.

2. The Regulatory Setting and Previous Research

2.1. A Brief History of Interest Rate Regulation in Arkansas

The Arkansas constitution of 1874 set the maximum interest rate on consumer loans at 10 percent.[10] Unlike some states with interest rate ceilings, Arkansas is constitutionally barred from allowing legislators to grant an interest rate exemption to small-dollar loan companies or any other entity.[11]

Recently, Arkansas eliminated its payday lending industry. On March 18, 2008, Arkansas attorney general Dustin McDaniel ordered payday lenders to stop issuing new loans and void any current and past-due loans. Because of his order and a state supreme court case,[12] the Arkansas

[10] Constitution of the State of Arkansas of 1874, http://ahc.digital-ar.org/cdm/fullbrowser/collection/p16790coll1/id/196/rv/compoundobject/cpd/239. See art. 19, sec. 13 on p. 35, which states, "All contracts for a greater rate of interest than ten per centum per annum shall be void, as to principal and interest, and the General Assembly shall prohibit the same by law; but when no rate of interest is agreed upon the rate shall be six per centum per annum."

[11] For example, in 1957, the Arkansas Supreme Court "affirmed that all forms of credit in the state were subject to the ten percent usury ceiling in the state constitution, regardless of actions the legislature might take." Sloan v. Sears, 228 Ark. 464, 308 S.W.2d 802 (1957). Quote is from Durkin et al. (2014).

[12] McGhee v. Ark. Bd. of Collection Agencies, 375 Ark. 52, 64–65, 289 S.W.3d 18, 28 (2008), in Bodeker (2010).

payday loan industry went from 239 outlets in January 2008 to 27 in February 2009.[13] The last payday lender in Arkansas closed its doors on July 31, 2009.[14]

Amendment 89 to the Arkansas constitution passed in November 2010, with about 64 percent of the votes cast supporting it. This amendment raised the maximum interest rate for all loans, including consumer loans, from 10 to 17 percent. An argument made in favor of the proposed amendment was the following: "Many Arkansas consumers relying on out of state lenders or lease to own financing would be able to obtain in-state financing and get it at a reasonable cost."[15]

An APR of 17 percent, however, has not induced small-dollar installment lenders to operate in Arkansas. Revenues on loans with this cap do not cover loan production and servicing costs. In their survey of the installment lending business, Durkin, Elliehausen, and Hwang (2017) state that the 17 percent rate ceiling makes loan sizes of "less than about $10,500 unprofitable" for traditional installment lenders.[16] Consumers, however, typically demand, and are able to repay, loans much smaller than $10,500—resulting in an "installment loan credit desert" for loans smaller than this amount.

[13] For a discussion of the legal framework under which payday lending operated in Arkansas, see Bodeker (2010, 645–67).

[14] To our knowledge, researchers have not studied the results of this ban. Morgan and Strain (2008) examine how households react after a state bans payday lenders. Morgan and Strain found some compelling evidence in consumer reaction to banning access to this credit source. In Georgia and North Carolina, they found households "bounced" more checks, filed for Chapter 7 bankruptcy protection at a higher rate, and lodged more complaints about lenders and debt collectors. Zinman (2010) compares consumer responses in Oregon to those in a border state, Washington, where payday loan laws did not change. Borrowers in Oregon met their credit needs, previously supplied by payday lenders, through the use of bank overdrafts and also by delaying payment of their bills.

[15] Arkansas Interest Rate Limits, Proposed Amendment 2 (2010), ballotpedia.org/Arkansas_Interest_Rate_Limits,_Proposed_Amendment_2_(2010). Another argument made was that "the measure would eliminate below market governmental interest caps that currently prevent bond funding of essential projects." Interestingly, in a conversation that one of the authors had with Tom Durkin, a retired senior economist at the Federal Reserve Board, Durkin pointed out that the interest paid on a 12-month amortizing loan at 17 percent, $94.50 on a $1,000 loan, is close to the interest paid on a 12-month lump sum loan at 10 percent, $100 on a $1,000 loan, or a difference of $5.50.

[16] At such a loan level, banks would likely offer personal loans to prime credit customers.

2.2. Research on the Effects of Interest Rate Caps

We document that an interest rate cap in Arkansas limits the use of installment loans from finance companies. McKernan, Ratcliffe, and Kuehn (2013) examine the relationship between consumer use of other nonbank-supplied credit products, payday loans, auto title loans, pawn broker loans, refund anticipation loans, and rent-to-own transactions, and the impact of state-level policies such as prohibitions and price caps. They also find that lower price caps, as well as prohibitions, lead to lower product use. Their results do not support the hypothesis that prohibitions and price caps on one nonbank-supplied credit product results in increased usage of other nonbank-supplied credit products.

Research shows that rate caps particularly affect consumers for whom credit is least available. Black and Miller (2016) summarize evidence that imposing interest rate caps harms the very people the proponents of such laws are seeking to protect. In an early study, Bowsher (1974) states that interest rate caps "weigh heaviest on credit seekers generally considered most risky." One set of risky borrowers is subprime borrowers, who constitute the majority of customers using the traditional installment loan product offered by finance companies.[17] Benmelech and Moskowitz (2010) find that imposing interest rate restrictions hurts financially challenged households. Rigbi (2013) summarizes results from the literature showing lower rate caps nearly always reduce the amount of credit extended, especially to higher risk borrowers.

Some studies have looked at the effect of Arkansas's interest rate cap when it was at 10 percent. Lynch (1968) found that there were relatively few consumer credit direct lenders in Arkansas. His results support the notion that the 10 percent interest rate cap (at the time) made it difficult to make money in nonbank small-dollar installment lending.

[17] This finding comes from author discussions with executives at several small-dollar loan companies.

Much early research into the effect of the 10 percent rate cap focused on retail prices of consumer durables in Arkansas versus neighboring states. The 10 percent cap in Arkansas limited interest income, which meant the retail price on goods sold in Arkansas would likely have been higher than goods sold in bordering states.[18] Lynch (1968) found prices on consumer durable goods were a few percentage points higher in Arkansas than they were in Texas. He also found that consumers were likely aware of these price differences because Arkansas customers who paid in cash often bought their appliances in Texas. Blades and Lynch (1976) found that the number of credit-oriented retail stores declined in Arkansas over time and increased in Texas. They also found that Arkansas retail stores applied higher credit standards, required larger down payments, and offered shorter lending terms than Texas retailers offer.[19]

Since 1981, little consumer credit research has focused on Arkansas.[20] Thus, there is little or perhaps no research on the effects of the current 17 percent interest rate cap—which is the focus of this paper.

3. Data and Variable Construction

The traditional installment loan product has some economically important features. First, installment lenders engage in a thorough underwriting process. That is, they investigate the income and expense streams of their borrowers before making the loan. As a result, depending on the overall state of the local economy, installment lenders make loans to only 40 to 60

[18] There is, to our knowledge, no recent research on this topic. Durkin, Elliehausen, Staten, and Zywicki (2014) present a detailed discussion concerning early studies on the Arkansas rate cap.

[19] The motivation for these studies was the notion that the total profit to a seller of consumer durable goods equals the retail price (minus costs) plus the interest income from financing the purchase. For example, if a consumer finances the $1,000 purchase of a durable good with 12 installments, the payment is $100.46 at a 36 percent APR. For an APR of 17 percent, a monthly payment of $100.46 means the sales price (amount financed) is about $1,100, or 10 percent higher. For both loans, the total amount paid is about $1,205.

[20] In their overview of the AFSA database, as discussed in section 3, Durkin, Elliehausen, and Hwang (2017) independently study installment loan activity in the state of Arkansas. As they report, "It is, of course, possible for borrowers to approach a lender in another state if regulatory differences suggest greater availability of lending offices and credit there."

percent of their applicants.[21] The sources of loanable funds for finance companies are their own equity and lines of credit from large banks.

Historically, few researchers have examined issues in the market for traditional installment loans. The Durkin and McAlister (1977) study of consumer credit in Texas is likely the most recent comprehensive study of the market. Moreover, researchers have typically relied on surveys to study the traditional installment loan market (Durkin and McAlister 1977; Miller 2015).

Recently, though, the American Financial Services Association (AFSA) solicited information about small-dollar installment loans from its members. The AFSA is the 100-year-old trade association for traditional installment lenders. To satisfy the confidentiality requirements of AFSA member firms, a law firm oversees data collection. The data is available to academic researchers through proposals to the AFSA.[22]

The initial collection of AFSA information contains various aspects of the characteristics of 5.2 million installment loans outstanding as of the end of December 2012. Until recently, the dataset was updated quarterly. Using a dataset provided by the AFSA as of December 2013, Durkin, Elliehausen, and Hwang (2017) provide a detailed overview of the loans in the dataset.

The dataset for our study consists of the AFSA data for secured and unsecured personal cash installment loans as of September 2013. With a cash installment loan, borrowers can use the proceeds in any manner they choose. For example, the dataset does not include loans that finance

[21] Author discussions with executives from various finance companies. Also from Bill Himpler, executive vice president of AFSA in his presentation at the Sixth Annual Public Policy Institute on Financial Services Regulation, Law and Economics Center at George Mason University School of Law, June 9, 2016. See http://masonlec.org/events/sixth-annual-public-policy-institute-financial-services-regulation/.

[22] An unmeasurable limitation of using this dataset is that not every installment lender reported its loan activity to the AFSA data project. Thus, there is no way to measure the ratio of installment loans made to Arkansas residents that appears in the AFSA database to the true total number of installment loans made to Arkansas residents. We have no reason to believe, however, that the nonreporting installment lenders would lend proportionately differently to Arkansas residents and residents of counties in other states that border Arkansas.

vehicle sales, where the proceeds are used to purchase a vehicle. Loan-level data is not available. Instead, the dataset includes summaries of loans made by borrower zip codes. The data includes the number of loans, the average amount financed, the average origination APR, and the average loan maturity. We aggregate the zip code data (by primary city) into county data.

Our proposal requested the AFSA data administrator to provide summarized data from a list of borrower zip codes obtained at www.zipcodestogo.com. We requested all borrower zip codes in Arkansas, as well as a specific set of counties in the six border states, Louisiana, Mississippi, Missouri, Oklahoma, Tennessee, and Texas. Using a map, we selected (1) counties that border Arkansas and (2) counties that border a county that borders Arkansas. We refer to these counties as *border counties*.[23] Because Arkansas and Mississippi have roughly the same population, for comparison we also obtained summarized data for all borrower zip codes in Mississippi.

The data administrator reported that the AFSA database contained installment loan data for 372 of the 709 zip codes in all Arkansas (about 52 percent) and 756 of the 820 zip codes in the border counties (about 92 percent). We assume that residents in all zip codes are free to choose whether to obtain an installment loan. If a zip code in the AFSA database has zero installment loans, we assume that this number is accurate and that it does not reflect missing data.

In Arkansas, there were 293 zip codes in the 30 perimeter counties (i.e., counties that border other states). About 96.8 percent of the installment loans in Arkansas, 25,809, were for residents of the perimeter counties. We refer to counties that do not border another state as *interior counties*. There are 416 zip codes in the interior counties. There is at least one

[23] Kansas lies to the north-northwest of Arkansas. A meticulous reviewer noted that at least one county in Kansas lies close to Arkansas. Kansas, however, does not border Arkansas. To get to Kansas from Arkansas, a borrower would have to drive through a county in the border states of Oklahoma or Missouri.

installment loan in 40 percent of the zip codes in the interior counties, and 10 or more installment loans in about 4 percent of the interior counties. At the county level, all but three of the 75 counties in Arkansas appear in the AFSA dataset. All three of these counties are interior counties. For the border counties, there is at least one installment loan in 70 percent of the zip codes and 10 or more installment loans in 43 percent of the zip codes.

4. Results

4.1. Graphical Representation of Cash Installment Loan Usage

Figure 1 (p. 39) is an ArcGIS-generated map of Arkansas by county. From this figure we see that residents of the perimeter counties acquire more installment loans than residents of interior counties. The western and southern perimeter counties exhibit the highest usage rates of installment loans. Sebastian County, which borders Oklahoma, is the Arkansas county with the highest rate of installment loan usage.

Perimeter counties along the northern border with Missouri and the eastern border with Mississippi have much lower usage rates than the western and southern perimeter counties. In the north, a preliminary investigation reveals that the distance to an out-of-state lender is likely higher than it is for residents living in perimeter counties on the western or southern borders. In addition, some lakes along the northern border provide a natural barrier. Along the eastern border, the Mississippi River provides a geological barrier because there are few bridges that offer access to Mississippi.

Figure 2 (p. 40) is an ArcGIS-generated map of Arkansas counties as well as the border counties. The figure presents a compelling image of the installment loan “credit desert” in the interior counties.

4.2. Number of Loans, Loan Length, Amount Financed, and APRs

Table 1 (p. 41) presents a list of the top 15 and bottom 15 Arkansas counties, by number of loans outstanding as of September 2013. The table presents weighted average results, by zip code, for loan amount, APR, monthly payment, and loan term (in months).[24] Of the 75 counties in Arkansas, only three—Grant, Monroe, and Montgomery—had no loans. There were 41 counties in all, however, with fewer than 20 installment loans outstanding. These 41 counties represented about 1 percent of the total number of outstanding installment loans.

About 90 percent of the loans outstanding are in 12 perimeter counties. Three perimeter counties—Sebastian, Benton, and Washington—had 51.7 percent of the outstanding loans. Sebastian County, bordering Oklahoma, accounted for 6,484 of the loans, or 24.3 percent. Sebastian County has a population of 127,342 people. If we assume three people per household, more than 15 percent of the households in Sebastian County have an installment loan.[25]

4.3. Loans per 10,000 Population and the Dollar Value of These Loans

Table 2 (p. 43) shows that the total number of loans outstanding to borrowers with an Arkansas zip code is 26,654. The overall average loan size is $1,051 and the overall average APR on these loans is about 80 percent. The median loan length is 13 months and the mode is 11 months. The average length of the loan ranges from seven to 40 months.

---

[24] We obtained zip codes, city name, county name, and state name from www.zipcodestogo.com. Note that it is possible for a zip code to cross a county line. For the purposes of our study, however, we simply aggregated the results for each zip code into one county using the data provided by www.zipcodestogo.com. We do not believe doing so introduces any systematic bias.

[25] Per capita income in Sebastian County was $23,774, which was slightly above the per capita income for the state of Arkansas. The unemployment rate in Sebastian County was 6.5 percent, less than the Arkansas rate of 6.9 percent. The residents of Sebastian County work more, have more income, and have a high demand for consumer credit. A seminar participant opined that the existence of nearby casinos might help explain some of the small-dollar loan usage. The issue is not clear. Fort Smith, the county seat, is about nine miles from Cherokee Casino Inn Roland, Oklahoma, and about 11 miles from Choctaw Casino Pocola, also in Oklahoma. By contrast, Marion, the county seat of Crittenden County, is 50 miles from Tunica, Mississippi, which has casino gambling and access to small-dollar loans. Crittenden County has only 65 loans in the sample.

In the perimeter counties there were 25,762 loans (96.7 percent of the total). The average loan size was $1,046 and the average APR was about 80 percent. In the interior counties, there were 892 loans with an average loan size of $1,218 and an average APR of about 75 percent.

Table 2 also presents population and weighted average loan sizes, which are used to calculate the number of loans per 10,000 population and the dollar value of loans outstanding. The number of loans per 10,000 population is much higher in the border counties than in Arkansas. In the border counties, the loan usage rate is 524.5 per 10,000 population while the loan usage rate is 90.4 per 10,000 population in Arkansas. In Mississippi, a state with a comparable population, the loan usage rate is 462.6 per 10,000 population.[26]

For the perimeter counties, the loan usage rate is 195.0 per 10,000 population. About 55 percent of the population of Arkansas lives in the interior counties. Residents of these counties have only 3 percent of the total loans outstanding in Arkansas, a rate of only 5.5 loans per 10,000 population.

The total dollar value of installment loans outstanding was $28 million in Arkansas. Mississippi, a state with roughly the same population, had a total value of installment loans of $515 million, more than 18 times as much. The total dollar value of the 205,068 loans in the border counties was $441 million.

The average loan amount for all Mississippians is $3,727, while it is $1,051 for Arkansans.[27] The average APR for Mississippi residents is 32 percent, while it is 80 percent for Arkansas residents. The APR on loans taken out by residents in border counties ranges from 31 percent (Mississippi) to 88 percent (Missouri).

[26] As shown in detail in table 6, Mississippi is a reasonable comparison state along other dimensions.
[27] The graduated rate cap in Mississippi results in a rate cap of about 32 percent. A lower permissible interest rate results in larger loan sizes, on average, to generate the revenue necessary to be profitable.

4.4. Regression Results

4.4.1. Arkansas counties. Table 3 (p. 44) contains results from seven regressions. In all regressions, the dependent variable is the number of loans per 10,000 residents in the county. In the first column, using data for the 75 Arkansas counties only, an indicator variable with a value of one for an Arkansas Interior County and zero otherwise is the only regressor. The indicator variable is significantly negative, with a *p*-value less than 0.0001. This result is consistent with the hypothesis that the number of loans per 10,000 residents is lower in the interior counties than it is for perimeter counties.

In the second column, the regressor is the estimated loan acquisition cost. We describe how we estimate this variable in section 4.5.1. The coefficient for the estimated loan acquisition cost is statistically significantly negative, with a *p*-value of 0.0001. This result is consistent with the hypothesis that the number of loans per 10,000 residents falls as loan acquisition costs increase.

4.4.2. Arkansas counties and counties in states bordering Arkansas. Column three of table 3 has two indicator variables: one for interior counties and one for perimeter counties. Using data for all 160 counties, the coefficient for both of these indicator variables is statistically significantly negative, with *p*-values less than 0.0001. This result suggests that the number of loans per 10,000 residents for all Arkansas counties is statistically significantly lower than the number of loans per 10,000 residents living in the border counties. The hypothesis test that these two coefficients are equal is rejected, with a *p*-value of 0.0294. These joint results are consistent with the hypothesis that the number of loans per 10,000 residents is lowest for interior counties and highest for border counties.

In column four, the regressor is the estimated loan acquisition cost. As described in section 4.5.1, we estimate a loan acquisition cost for residents living in the border counties, as well as for Arkansas residents. The coefficient for the estimated loan acquisition cost is statistically significantly negative, with a *p*-value of 0.0001. This result is consistent with the hypothesis that the number of loans per 10,000 residents falls as loan acquisition costs increase.

In column five, the regressors are indicator variables for the interior and perimeter counties and the estimated loan acquisition cost. In this regression, the estimated loan acquisition cost is insignificant, but both indicators for two sets of Arkansas counties are statistically significantly negative, with *p*-values less than 0.0001. The test of the hypothesis that these two coefficients are equal has a *p*-value of 0.0995. These joint results are consistent with the hypothesis that the number of loans per 10,000 residents is lower for Arkansas counties than it is for residents in the border counties.

4.4.3. Arkansas counties and counties in states bordering Arkansas—socioeconomic controls. In the spirit of the spatial econometric study of payday lending by Gallmeyer and Roberts (2009), we include a set of socioeconomic control variables and rerun the regressions whose results appear in columns three and five of table 3. These socioeconomic variables include the percentage of the population who are married females (age 15 and older), median household income (in 2010 dollars), percentage holding a bachelor's or higher degree, percentage minority, percentage classified as poor, percentage in service occupations, and percentage in sales and office occupations.[28]

After controlling for this set of socioeconomic variables, the regression results shown in columns six and seven in table 3 are consistent with the results that appear in columns three and five. Specifically, both indicator variables for the two sets of Arkansas counties are statistically

[28] Graves and Peterson (2005), among others, have suggested using a similar set of covariates.

significantly negative with *p*-values less than 0.0001. The estimated loan acquisition cost regressor is statistically insignificantly different from zero. The test of the hypothesis that the two coefficients on the Arkansas indicator variables are equal has *p*-values of 0.0316 and 0.0301, respectively.

4.5. Estimating Loan Acquisition Cost and Implied APR

As shown in figures 1 and 2, an installment loan desert exists in the central part of Arkansas. Arkansas residents living in the perimeter counties hold installment loans at a much higher rate than do the residents living in the interior counties.

When Arkansas residents drive to another state to obtain a loan, they incur loan acquisition costs that include travel time, automobile costs, and time spent at the loan office. Borrowers do not have full use of the loan proceeds because they must pay loan acquisition costs. The net loan proceeds equal the original loan amount minus loan acquisition costs. Loan acquisition costs include actual time spent acquiring the loan and the round-trip costs (in terms of time and automobile costs) of driving to the out-of-state location.

4.5.1. Estimating loan acquisition cost. To estimate the opportunity cost of time for residents of each county in Arkansas, we obtained the weekly wage, Total All Industries, from the 2014 Arkansas Occupational Employment and Wage Survey. We convert these weekly wages to an hourly one by assuming a 40-hour workweek.[29] From discussions with installment lenders, we assume that acquiring the loan takes an hour at the loan office. We also make the simplifying assumption that each Arkansas resident lives in the county seat. For the 10 Arkansas counties with two county seats, we assume they live in the county seat closest to the Arkansas border.

[29] The estimated hourly wage by county ranges from $11.80 to $22.95 with an average of $16.16, a standard deviation of $2.58, and a median of $15.75.

We assume that all installment lending takes place in the nearest county seat in the respective Border County.

We collected the travel time in minutes and the distance in miles from Google Earth/Get Directions. We built a table of origin (county seats in Arkansas) and destination (county seats in two nearest border counties). We selected the destination county using the minimum travel time.

To estimate round-trip travel costs, we used results from the US Department of Transportation's 2009 National Household Travel Survey. This survey suggests that a 2007 Chevrolet Impala is the most widely used vehicle in Arkansas. We use the survey's estimated operating cost per mile of $0.17.[30]

Table 4 (p. 46) contains the estimates of loan acquisition costs by county as well as the implied APR on net proceeds. Net proceeds equal the original loan amount minus the loan acquisition costs. As shown at the bottom of table 4, the estimated total loan acquisition cost incurred by Arkansas residents was about $1.35 million. This total cost represents $50.82 per loan.

Panel A of table 4 contains the top 10 counties, by number of loans. All 10 are perimeter counties. These 10 counties account for about 83.8 percent of the total loan acquisition cost and have about 85.7 percent of the total number of loans. The estimated acquisition cost per loan for these 10 counties is $49.70. The original APR in these counties ranged from 52 to 103 percent. The estimated loan acquisition costs added 7 to 30 percent to the original APR, with a median of

[30] The loans in the sample were taken out 6 to 12 months before September 2013. To verify the $0.17 per mile operating cost, we also used the US Department of Transportation's 2009 National Household Travel Survey estimate of 19.21 miles per gallon for a 2007 Chevrolet. We obtained gasoline prices in effect in the Midwest as of the last week of September 2013, $3.34 per gallon, from the US Energy Information Administration (EIA). The gas price used in our study is reflective of the likely price of gasoline when the loan was initiated. The average price per gas per month from October 2012 through September 2013 in the Midwest was about $3.51, with a range from $3.13 to $3.85. The average operating cost using $0.17 per mile is $23.82, and the average operating cost using estimates for miles per gallon and gasoline prices is $23.29.

12 percent. The implied APRs range from 60 to 133 percent. On a number-of-loans-weighted basis, the average implied APR for these 10 counties is 94 percent.

Panel B contains the counties with the top 10 implied APRs on net proceeds. Only three counties are perimeter counties: Boone, Carroll, and Sevier. The estimated acquisition cost per loan for these 10 counties is higher, $62.08, because they are mostly interior counties—making for a longer out-of-state trip. The original APR in the counties listed in panel B ranged from 88 to 124 percent. The estimated loan acquisition costs added 15 to 82 percent to the original APR, with a median of 33 percent. The implied APRs range from 126 to 199 percent. The number-of-loans-weighted average for these 10 counties is about 134 percent. For the 72 (of 75) Arkansas counties with loans, this weighted average is 93 percent.

4.5.2. Estimating implied APR. In table 4, the implied APR on net proceeds is calculated as follows, using Sebastian County as an example. The average origination loan size in Sebastian County is $834.[31] This number represents the weighted average loan amount by zip codes in Sebastian County. Using the original APR of 91 percent and average loan term of 9.4 months, we calculate the payment necessary, $127, to amortize this loan by:

$$\$834 = \text{Payment} \times \left[\frac{1}{0.91/12} - \frac{1}{\frac{0.91}{12}\times(1+0.91/12)^{9.4}}\right]. \quad (1)$$

The implied APR on the net proceeds ($834 – $802) is the interest rate that solves:

$$\$802 = \$127 \times \left[\frac{1}{r/12} - \frac{1}{\frac{r}{12}\times(1+r/12)^{9.4}}\right]. \quad (2)$$

For Sebastian County, this implied rate is 101 percent.

[31] The size of the outstanding loan would be interesting to know, but because loans are grouped and averaged by zip code, we have no way of calculating an accurate number for the size of the average outstanding loan. The data reflect a snapshot of the loans, which means that not all the loans are at the same point in the amortization schedule.

The results shown in table 4 indicate that Arkansas residents willingly drive out of state to acquire installment loans. With the weighted average implied APR of 93 percent, residents voluntarily pay about five times the constitutionally imposed cap of 17 percent.[32]

4.6. Estimating More Precisely How Driving Distance Matters

One consequence of the Arkansas price cap is that borrowers travel to borrow from out-of-state lenders. The more difficult it is to reach these out-of-state lenders, the less likely borrowers are to make the trip. As driving distance increases, borrowing becomes more difficult and more costly.[33]

We conducted a formal spatial regime investigation on the possible geographic difference between loan rate usages by employing a set of spatial regime regression models. The exploratory analysis of figure 2 informally suggests two regions consisting of (1) the interior counties and (2) the perimeter counties and the border counties.

The spatial econometric process involves two steps.[34] The first step is to specify a baseline model of spatial regimes using a linear regression model. The second step is to create a binary variable for the spatial regime.[35] In the baseline model, the dependent variable is the loan usage rate (i.e., the number of installment loans per 10,000 population). The explanatory

[32] A reviewer noted that the implied rate of 93 percent includes the cost of spending an hour at a loan office. If loans were made in Arkansas at the cap rate of 17 percent, time spent at a loan office, as well as a reduced travel time, should be added to the Arkansas cap rate to make a direct comparison.
[33] Lukongo and Miller (2016) model this process in considerable detail.
[34] Anselin (1988, 1990) provides an overview of the spatial regression technique. Lukongo and Miller (2016) describe how the spatial regression approach is used in the specific case of the usage on traditional installment loans by Arkansas residents. Briefly, the spatial weight matrix by construction defines what is known as a "neighborhood structure." The spatial econometric literature contains many ways to build this structure. In our specific case, think of ways to distinguish the counties in the "doughnut hole" from those on the "doughnut."
[35] To create the spatial regime binary variables, Lukongo and Miller (2016) conduct a spatial exploratory data analysis using the local indicator of spatial autocorrelation (LISA), following Anselin (1995). This procedure involves two standard spatial econometric steps. First, they create 51 spatial weight matrices consisting of 21 arc distance-based, 10 "queen" contiguity-based, 10 "rook" contiguity-based, and 10 k-nearest neighbor. These spatial weight matrices allow them to introduce the neighborhood structure both between counties and between the two geographic areas of interest. Second, following the standard spatial regression procedures, they retain the optimal spatial weight matrix that yields the best results.

variables include the population of each county, the binary variables for a commute tolerance threshold, and the socioeconomic and demographic variables listed in table 3.

Little is known about how installment borrowers residing in Arkansas react to the distance they have to drive to an out-of-state lender. Therefore, we create an "installment loan accessibility measure." Introducing and analyzing this measure improves our collective understanding of consumer access to installment loans and the notion of commuting tolerance.[36] The notion of commuting tolerance states that firm and worker locational decisions depend on the relative distance between the workplace and the worker's residence—with a maximum of a 45-minute drive time. Wheeler (2001) estimates a 45-minute drive time is about 40 to 50 miles. Using distance data calculated between county seats,[37] we generate five installment loan accessibility variables based on 40 to 60-mile commute tolerance thresholds in five-mile increments. These distances are used to connect and group the counties into two areas that can be investigated to see how regression results change as intolerance to driving increases.

Figure 2 and the exploratory spatial data analysis using the local indicator of spatial autocorrelation (LISA) suggest two regimes. We employ an empirical strategy defined by spatial regime models where the coefficients between two regimes are expected to be different by construction. The applied spatial econometrics literature provides two versions of the Chow test: the individual, or parametric, Chow test of the significance of regression coefficients, and the global Chow test of the joint significance of coefficients. These tests can be used to evaluate whether, individually or overall, the coefficient estimates differ significantly between regimes.

[36] See, for example, Garreau (1991), Wheeler (2001), and Clark, Huang, and Withers (2003) for some discussions of commuting tolerance.

[37] Because of the number of possible zip code pairs, when estimating loan acquisition costs, we made the simplifying assumption that each borrower lived in the county seat and that each out-of-state lender was located in the county seat.

We find strong evidence (not reported) that the ease of access to installment loans is a strong predictor of loan usage rates between the two geographic regimes. Our findings suggest a consistent decline in loan usage rate as the relative distance to out-of-state installment lenders increases. If the distance lies beyond 40 to 45 miles, loan usage is exceedingly low.

In table 6 (p. 49), the average travel time to work in Arkansas is 21.3 minutes. This time is equivalent to driving 12.5 miles at 35 miles per hour. Driving 40 miles at 60 miles per hour takes 40 minutes. In calculating our loan acquisition costs, the average round-trip travel time to an out of state lender was about 2.5 hours. It is likely, therefore, that a dedicated trip to an out-of-state lender greatly exceeds the average round-trip time to get to work.

These results are consistent with the idea that an interest rate cap gives rise to additional search costs. In addition, these results are consistent with the idea that consumers weigh the costs and benefits of driving out-of-state to obtain an installment loan. As explored in the next section, a higher in-state rate cap (or no rate cap) could change the frequency with which Arkansas residents use installment loans.

5. Estimating the Impact of Raising the Rate Cap in Arkansas

In this section, we estimate how many more installment loans might be made in Arkansas under two interest rate cap scenarios. We also estimate the likely dollar size of these loans and interest paid. In our sample, the dollar value of the loans outstanding by Arkansas residents is about $28 million. For the border counties, which have about one-third more residents, the dollar value of the loans outstanding is about 15.8 times higher, or $441.1 million.

In scenario one, panel A of table 5 (p. 48), we make the following assumptions. Loan usage per 10,000 people equals the grand average of the border counties, 524.5. The average

loan size is $1,051 (i.e., about the average loan size initiated by Arkansans in the AFSA data). The assumed APR is the weighted average observed APR on the loans in the AFSA data made to Arkansas residents, 80 percent—as shown in table 2. For convenience, we assume a 12-month amortization (the weighted average observed loan length in the AFSA data for Arkansas is 11.1 months).

Under these assumptions, the monthly installment payment is $130. Total interest and principal proceeds paid by the borrower is $1,558. Because the loan amount is $1,051, the interest cost paid by the borrower is $508. The total interest-to-proceeds ratio is 48.4 percent in this scenario.

With an assumed usage rate of 524.5 per 10,000 population, 154,682 loans would be made annually in Arkansas—which is an increase of 128,028 over the current number of loans, 26,654. The bigger increase in the number of additional loans comes from the interior counties. The number of actual loans in the interior counties is 892. Under this usage rate assumption, the number of loans in interior counties would be 85,404—nearly a 96-fold increase.[38]

From the US Census Bureau State and County QuickFacts (www.census.gov/quickfacts), the total number of households in Arkansas is 1,121,386. Assuming that there is no more than one installment loan per household, 2.4 percent of the households in Arkansas currently use an

[38] It is reasonable to ask how the demographics compare between the interior and Perimeter Counties of Arkansas. From the 2010 US Census, the population of the Interior Counties was 1,628,286 and 1,320,845 for the Perimeter Counties. The difference of 307,441 is 21 percent lower than the population of the most populous county in Arkansas, Pulaski, which is an Interior County. The per capita income for the Interior Counties in 2010 was $36,059 compared to $34,669 for the Perimeter Counties. The unemployment rate for the Interior Counties in 2010 was 7.0 percent and 6.7 percent for the Perimeter Counties.

installment loan.[39] In scenario one, the total percentage of households using an installment loan increases to 13.8 percent.

Scenario two mimics Mississippi. In this scenario, shown in panel B of table 5, we assume the average loan size is $3,725, the APR is 32 percent (the weighted average observed rate on Mississippi loans in the AFSA data), the loan term is 24 months, and the usage rate is 462.6. Under these assumptions, the monthly installment payment is $212. Total interest and principal proceeds paid by the borrower is $5,091. Because the loan amount is $3,725, the interest paid by the borrower is $1,366. Note that the total interest-to-proceeds ratio is 36.7 percent.

With a usage rate of 462.6 per 10,000 population, 136,427 loans would be made annually—which is an increase of 109,773 over the current number of loans, 26,654. In scenario two, the total percentage of households using an installment loan increases to 12.2 percent.

In scenario one, the dollar value of additional loans is $134.4 million. In scenario two, the dollar value of additional loans is $408.9 million. The interest expense paid (and interest income received) is $65.1 million in scenario one and nearly $150 million in scenario two.

These scenarios suggest that if interest rate caps in Arkansas were substantially increased or removed, Arkansans would borrow from licensed in-state installment lenders, who would locate in Arkansas. Of course, the actual demand for installment credit debt (i.e., the loan usage rate per 10,000 population) would determine precisely how many more installment loans would be made.

[39] Most state laws governing traditional installment loans still contain many parts of the Uniform Small Loan Law of 1916—a model law created by a coalition of consumer advocates and potential lenders (see appendix). One element of this model law is that more than one loan cannot be made for the purpose of generating extra fees. That is, if a borrower wants to borrow $1,000, two $500 loans cannot be made. More than one loan can exist in a household, however. So, for example, it is possible that loans could be made to Mr. Smith, to Mrs. Smith, and jointly to Mr. and Mrs. Smith.

6. What Other Credit Sources Are Available to Arkansas Residents?

Some consumers have access to traditional lending products available from banks and credit unions. Banks and credit unions typically cater primarily to prime borrowers—that is, those who will almost surely pay back loans. Subprime borrowers, due to their limited or poor credit histories, have less access to bank and credit union loans, except through credit cards.[40]

Littwin (2009) tests the substitution hypothesis, which she defines as restricting one form of credit results in borrowers using other credit products. Littwin's findings concerning low-income borrowers, however, suggest that pawnshops and rent-to-own stores likely function as complements to, rather than substitutes for, credit cards. Her results are consistent with the notion that restricting access to any of these credit sources reduces credit availability to the consumers in her study. Nevertheless, Arkansas residents could be replacing traditional installment credit with credit from other sources. Further, they could be doing so in different ways throughout the state.

6.1. Access to Bank Card Debt, Retail Debt, and Other Nonauto Debt

Using nonpublic Federal Reserve Board data about prime and nonprime borrowers, Elliehausen et al. (2016) examine nonautomotive installment debt levels in Arkansas and in border states for nonprime, otherwise known as subprime, borrowers. Specifically, they examine prime and nonprime bank card debt levels, retail debt levels, and other nonauto, nonstudent consumer debt balances.[41] They find that prime borrowers in Arkansas owe less

[40] Lending to subprime borrowers is riskier. In addition, subprime borrowers likely have dollar demands for credit that are smaller than that of prime borrowers. From our conversations with community bankers in Mississippi, given default rates and bank interest rates, banks cannot profitably lend amounts below $2,000 to subprime borrowers. A logical implication from the findings of the Board of Governors of the Federal Reserve System (2015) is that many households do not have any access to credit cards or have little available untapped credit on their credit cards.

[41] To the extent that they exist, installment loans from finance companies appear in the category "other nonauto, nonstudent consumer debt."

than prime borrowers owe in each of the six border states. In five of the border states, prime borrowers owe from 14 to 22 percent more than prime borrowers in Arkansas.[42]

Nonprime borrowers in each of the six border states owe much more than nonprime borrowers in Arkansas. Nonprime borrowers owe from 22 percent (in Missouri) to 36 percent (in Tennessee) more than prime borrowers in Arkansas. Prime borrowers who live in the interior counties of Arkansas carry about 8 percent more debt than prime borrowers who live in the perimeter counties of Arkansas. The finding is dramatically reversed for non-prime borrowers. Nonprime borrowers who live in the interior counties of Arkansas carry about 18 percent less debt than nonprime borrowers who live in the perimeter counties of Arkansas.

This finding is consistent with the hypothesis that nonprime borrowers in the interior counties of Arkansas have less access to all sources of credit than do non-prime borrowers living in the perimeter counties. Overall, their findings are consistent with the hypothesis that the constitutionally imposed interest rate cap in Arkansas restricts credit availability, particularly for nonprime borrowers.[43]

6.2. Access to Nonbank Sources of Consumer Credit

Arkansas residents also have less access to nonbank sources of consumer credit. There are no finance companies operating in Arkansas offering small-dollar installment loans. By contrast, in Mississippi, there were 525 finance company outlets operating as of 2011.[44]

In addition to traditional installment lenders, there are at least four other common nonbank sources of consumer credit: (1) payday loans, (2) pawn loans, (3) vehicle title loans, and

[42] In Tennessee, the sixth state that borders Arkansas, prime borrowers owe only 1 percent more debt than do prime borrowers in Arkansas.
[43] Elliehausen et al. (2016) report that their results generally hold for each type of credit (i.e., bank card, retail, and other).
[44] Mississippi Department of Banking and Consumer Finance, "Annual Report: January 1, 2011–December 31, 2011," p. 23, www.dbcf.state.ms.us/documents/annual-report11.pdf.

4) rent-to-own transactions. Arkansas residents have access to only two of these sources in state (pawn and rent-to-own). They have access to all four of these credit markets if they travel out of state.

As shown in table 6, Mississippi is a reasonable comparison state to Arkansas. According to the 2014 census, Arkansas had 2.97 million residents and Mississippi had 2.99 million. Both states had about 1.8 million people over age 18. For the population over 25 years old, 83.7 percent and 81.5 percent of Arkansas and Mississippi residents respectively, had a high school degree. Median household income (in 2014 dollars) was $40,768 in Arkansas and $39,031 in Mississippi. These levels are 77 percent and 74 percent, respectively, of the total US level.

6.2.1. Payday loans. In response to judicial and political developments, payday lenders disappeared from Arkansas starting in 2008.[45] By contrast, in Mississippi, there were 1,053 payday loan stores operating as of 2011.[46] Payday loans are also available in the other five border states. Arkansas residents can drive to other states to obtain payday loans or borrow from internet payday lenders, but we have no evidence on how often they do so.

6.2.2. Pawn loans. These nonrecourse loans are permitted in Arkansas.[47] In a pawn transaction, the consumer offers a tangible item to the pawnbroker, who pays cash to the consumer and takes possession of the item. The consumer then has the option to walk away or redeem the pawned item. To redeem the pawned item, the consumer must pay various charges for interest, storage, and other fees, in addition to the sum originally advanced by the pawnbroker.

It is reasonable to predict that there would be more pawnshops in Arkansas because other sources of small-dollar credit are not available. Evidence does not suggest that pawnshops are

[45] For a discussion of the historical legal framework for and demise of payday lending in Arkansas, see Bodeker (2010).
[46] Mississippi Department of Banking and Consumer Finance, "Annual Report."
[47] Interestingly, local ordinances regulate Arkansas pawnbroker activity. There is no state law in Arkansas that regulates pawnbrokers.

more prevalent per capita in Arkansas than they are in states that border Arkansas. From USPawnShopDirectory.com, there are 360 pawnshops in Arkansas, 404 in Mississippi, 416 in Oklahoma, 1,313 in Texas, 561 in Tennessee, and 329 in Missouri.[48] It is possible that the pawnshops are significantly larger in Arkansas than in the other states. We have no evidence about pawnshop size.

6.2.3. Vehicle title loans. Arkansas law bans vehicle title lending, as do laws in Oklahoma. Title loans are available in the other five border states. Mississippi, for example, had 402 title lending outlets as of 2011 (Shackman and Tenney 2006). Some of these non-recourse loans are essentially pawn loans where the borrower offers a vehicle title as collateral to the title lenders. In another form, these loans are installment loans made through attaching a lien to a clear vehicle title. There is evidence that vehicle title lenders, unlike pawnshops, look at income and expenses of the borrower in addition to the vehicle title (Hawkins 2012).

6.2.4. Rent-to-own. In addition to pawn, these stores are another way for Arkansas consumers to obtain credit. In these transactions, consumers take possession of the goods and agree to pay for them over time. The consumer has the option to abandon the agreement by relinquishing possession of the goods to the store. Implied APRs on these transactions greatly exceed the 17 percent rate cap in Arkansas. It does not appear that Arkansas has a greater concentration of these stores than other states. Among the major sources of this kind of credit are Aaron's Rent-to-Own and Rent-A-Center. As reported on their website, there are 41 Aaron's Rent-to-Own stores operating in Arkansas. Mississippi, a comparable state in many ways, has 44 Aaron's stores. Aaron's also operates in the other five border states. As of 2016, there were 58 stores in Louisiana, 51 stores in Missouri, 47 in Oklahoma, 60 in Tennessee, and 232 in Texas. As of 2016, Rent-A-Center reports on their website that there are 40 Rent-A-Center stores in Arkansas

[48] Shackman and Tenney (2006) also report 360 pawnshops in Arkansas.

and 37 in Mississippi. Rent-A-Center also operates in the other five border states. As of 2016, there were 19 stores in Louisiana, 66 stores in Missouri, 43 in Oklahoma, 86 in Tennessee. Rent-A-Center operates in 129 Texas cities, some of which have multiple locations.

To summarize, in their home state, Arkansas residents have no access to brick-and-mortar payday loans, vehicle title loans, or in-state installment loans. It remains for future research to look at whether Arkansans—particularly those in the interior counties—rely more heavily on credit cards, online payday loans, pawnshops, or retail-financing than residents of other states with higher interest rate caps.

7. Summary

Arkansas currently has a constitutionally imposed interest rate cap of 17 percent. Economic theory predicts an interest rate cap, like any price ceiling, creates shortages. In the case of Arkansas, the in-state shortage of installment loans is extreme. Although not banned from operating in Arkansas, no traditional installment lenders operate in the state. At the 17 percent rate cap, we surmise that traditional installment lending is not profitable.

Traditional installment lending operations, however, do exist in each of the six border states. Therefore, Arkansas residents who can make a low-cost trip over state lines, or who have sufficient demand for the product, are able to borrow from out-state installment lenders. This study uses a new database from the AFSA—the first set of reliable, zip code level data on traditional installment loans—to examine the cross-border installment borrowing activity by Arkansas residents. The database reveals that there are 26,654 installment loans outstanding in Arkansas, with most of the loans concentrated in perimeter counties.

Economic theory also predicts that an interest rate cap would give rise to increased search costs. The data shows that some Arkansas residents willingly drive out of state to acquire

installment loans that carry APRs well in excess of 17 percent. The average amount borrowed by Arkansas residents is $1,051, with an average APR of 80 percent. After adjusting for travel costs to obtain the loan, Arkansas citizens pay an average implied APR of about 93 percent.

Economic theory predicts that an interest rate cap destroys gains from trade that would have occurred without a cap. Overall, Arkansas residents hold installment loans at an average rate of 90.4 loans per 10,000 population. For perimeter counties, the usage rate is 195.4 loans per 10,000 population, and for interior counties, the usage rate is 5.5 loans per 10,000 population. In the border counties, the usage rate is 524.5 loans per 10,000 population, which suggests unmet installment loan demand in Arkansas, particularly in the interior counties.

When Amendment 89 to the Arkansas constitution raised the maximum interest rate for all loans, including consumer loans, from 10 to 17 percent, proponents argued that it would lessen the reliance on out-of-state lenders and would allow in-state lenders to offer installment loans at a "reasonable cost."

In fact, increasing the rate cap to 17 percent did not induce installment lenders to open branch offices in Arkansas. Their absence suggests that lenders cannot profitably engage in installment lending in Arkansas. Dramatically increasing the allowable rate, or even removing the cap, would allow competitive market forces to allocate small-dollar loans to Arkansas residents who have a demand for the product.

Appendix

The Origins of the Traditional Installment Lending Industry and Its Rate Cap

In the early twentieth century, many social reform causes, collectively known as the Progressive Movement, were under way in the United States.[49] In 1907, the philanthropist Margaret Olivia Sage established the Russell Sage Foundation for "the improvement of social and living conditions in the United States."[50]

Recognizing the growth in the demand for small consumer loans, the Russell Sage Foundation turned its attention to consumer credit reform in 1909. Reformers, spearheaded by Arthur Ham of the Russell Sage Foundation, sought ways to spread access to credit to workers. Calder (1999) notes that the credit reformers during the Progressive Era did not seek to alter or regulate the behavior of those they wanted to protect. Instead, they sought ways, through research, to attract "legitimate" capital into the business of small-dollar lending. Importantly, reformers at that time recognized that the needs of both lenders and borrowers had to be satisfied to create a sustainable market-based alternative to the "loan shark."[51]

As detailed in Carruthers, Guinnane, and Lee (2012), the intent of Mr. Ham and others was to encourage state legislatures to pass laws that would allow specially licensed lenders to make small consumer loans at rates *above* state-imposed interest rate caps (see Ham 1921). Through a series of rigorous studies, the reformers determined that the costs and risks of small-dollar installment lending merited an interest rate of 2.5 percent per month on amounts over $100 and 3.5 percent per month for loans up to $100. These annualized proposed rates, 30 percent and

[49] These movements included women's suffrage, temperance, child worker laws, pensions for workers, and pure food and drug laws.
[50] "History of the Russell Sage Foundation," accessed August 23, 2017. http://www.russellsage.org/about/history.
[51] See Calder (1999) and Anderson (2008) for detailed descriptions of the Progressive Era, the Russell Sage Foundation, and credit reform.

42 percent, respectively, were bold. These recommended rates, on average, were six times higher than the existing rate caps.

In a partnership with businesses willing to risk capital in the venture of lending small-dollar amounts, reformers, led by Mr. Ham, framed the Uniform Small Loan Law (USLL) of 1916. The USLL was to serve as model legislation for state legislatures.[52]

Over the next quarter decade, the Russell Sage Foundation, academics, and legislatures deliberated, debated, and studied this model legislation. Appendix C in Hubachek (1941) contains the "Sixth Draft: General Form of Uniform Small Loan Law," which distills all the work and thought on this topic up to that time into a model law.[53] Hubachek further reports how the model law was being adopted: "Thirty states and Hawaii [*sic*] have comprehensive small loan laws which are effective in one or more important respects; nine states and the District of Columbia have ineffective small loan legislation, and; nine states have no small loan legislation."[54] Of particular relevance is note 14 of the Sixth Draft, which states:

> The maximum rate of charge. . .is recommended as an initial rate in all states. . . . The rate is designed to attract aggressive competition by licensed lenders. . .in order to drive unlicensed lenders out of business. *This rate should be reconsidered after a reasonable period of experience with it*. (Hubachek 1941, p. 144, emphasis added)

It is reasonable to believe that 100 years exceeds "a reasonable period." Consequently, there is a need for exhaustive and extensive research that examines the installment loan market where buyers and sellers contractually agree to loan terms—in particular, the interest rate.

A rational economic response by installment lenders who are constrained by rate caps is to make larger loans. Larger loans generate sufficient interest income to cover operating costs

---

[52] For a more complete discussion of the development of the Uniform Small Loan Law of 1916, see Black and Miller (2016) and Calder (1999).
[53] The full title is "Sixth Draft, General Form of Uniform Small Loan Law (with corrections to June 1, 1938, including explanatory notes, as published by Russell Sage Foundation, New York)." See Hubachek (1941).
[54] Hubachek (1941, p. 123), accounts for 49 of the current 50 states as well as the District of Columbia. He recognizes the small loan laws in the Hawaiian Territory, but says nothing about them for the Alaska Territory.

and provide the appropriate risk-adjusted rate of return on equity. As installment lenders migrate to making larger loans, a credit desert emerges for loans smaller than those needed by lenders to break even.[55]

To illustrate a loan desert, consider a $100 loan in 1916. At the time, lenders could charge a 3.5 percent monthly interest rate, which is a 42 percent APR. Many state legislatures, however, have not increased allowable rates. As Black and Miller (2016) show, 40 states currently have interest rate caps equal to or less than 42 percent. The $100 loan size in 1916 dollars translates to a $2,315 loan in 2014 dollars. Durkin, Elliehausen, and Hwang (2015) restate some results of the National Commission on Consumer Finance (1972) cost study and report that a $2,100 loan (in 2013 dollars) has a 42 percent breakeven APR. As a result, if a consumer wants to borrow an amount less than $2,100, traditional installment lenders faced with a 42 percent APR cap will not make the loan. The consumer would have to use other credit sources.

[55] What matters to a lender is not the interest rate applied to a loan, but the dollar amounts that the loan generates. Similarly, borrowers pay their bills in terms of dollars, not in terms of percent. What matters to all borrowers is the dollar cost of the loan. The APR is an annualized index of this cost based on the loan amount, the duration of the loan, and the payments on the loan.

References

Anderson, Elisabeth. 2008. "Experts, Ideas, and Policy Changes: The Russell Sage Foundation and Small Loan Reform, 1909–1941." *Theory and Society* 37 (3): 271–310.

Anselin, L. 1988. "Lagrange Multiplier Test Diagnostics for Spatial Dependence and Spatial Heterogeneity." *Geographical Analysis* 20 (1): 1–17.

———. 1990. "Spatial Dependence and Spatial Structural Instability in Applied Regression Analysis." *Journal of Regional Science* 30 (2): 185–207.

———. 1995. "Local Indicators of Spatial Autocorrelation (LISA)." *Geographical Analysis* 27 (2): 93–115.

Arkansas Occupational Employment and Wage Survey. 2014. Little Rock, AR: Department of Workforce Services Labor Market Information Occupational-Career Information. July.

Benmelech, Efraim, and Tobias J. Moskowitz. 2010. "The Political Economy of Financial Regulation: Evidence from U.S. Usury Laws in the 19th Century." *Journal of Finance* 65 (3): 1029–73.

Black, Harold, and Thomas W. Miller Jr. 2016. "Examining Some Arguments Made by Interest Rate Cap Advocates." In *Rethinking Financial Regulation: Enhancing Stability and Protecting Consumers*, edited by Hester Peirce and Benjamin Klutsey. Arlington, VA: Mercatus Center at George Mason University.

Blades, Holland C., and Gene C. Lynch. 1976. *Credit Policies and Store Locations in Arkansas Border Cities: Merchant Reactions to a 109 Percent Finance Charge Ceiling*. Monograph 2. West Lafayette, IN: Purdue University Credit Research Center, Krannert Graduate School of Management.

Board of Governors of the Federal Reserve System. 2015. "Report on the Economic Well-Being of U.S. Households in 2014." May.

Bodeker, Adam L. 2010. "Casenote: McGhee v. Arkansas State Board of Collection Agencies: Arkansas Shows Predatory Lenders the Door." *Arkansas Law Review* 63 (3): 645–67.

Bos, Marieke, Susan Carter, and Paige Marta Skiba. 2012. "The Pawn Industry and Its Customers: The United States and Europe." Vanderbilt Law and Economics Research Paper No. 12–26.

Bowsher, Norman N. 1974. "Usury Laws: Harmful When Effective." *Federal Reserve Bank of St. Louis Review*. August.

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

Carruthers, Bruce G., Timothy W. Guinnane, and Yoonseok Lee. 2012. "Bringing 'Honest Capital' to Poor Borrowers: The Passage of the Uniform Small Loan Law, 1907–1930." *Journal of Interdisciplinary History* 42 (3): 393–418.

Caskey, John P. 2012. "Payday Lending: New Research and the Big Question." In *Oxford Handbook of the Economics of Poverty*, edited by Philip N. Jefferson, 681–706. New York: Oxford University Press.

Clark, William A. V., Youqin Huang, and Suzanne Withers. 2003. "Does Commuting Distance Matter? Commuting Tolerance and Residential Change." *Regional Science and Urban Economics* 33 (2): 199–221.

"Combating the Loan Shark." 1941. Special issue. *Law and Contemporary Problems* 8 (1).

Durkin, Thomas A., Gregory Elliehausen, and Min Hwang. 2017. "Rate Ceilings and the Distribution of Small Dollar Installment Loans from Consumer Finance Companies: Results of a New Survey of Small Dollar Cash Lenders." Working paper. Washington, DC: George Washington University.

Durkin, Thomas A., Gregory Elliehausen, Michael E. Staten, and Todd J. Zywicki. 2014. *Consumer Credit and the American Economy*. New York: Oxford University Press.

Durkin, Thomas A., and Edgar Ray McAlister. 1977. *An Economic Report on Consumer Lending in Texas*. Monograph 4. West Lafayette, IN: Purdue University Credit Research Center, Krannert Graduate School of Management.

Elliehausen, Gregory, Simona Hannon, Onyumbe E. Lukongo, and Thomas W. Miller Jr. 2016. "A Spatial Examination of the Consumer Credit Market in the State of Arkansas." Mimeo. Board of Governors of the Federal Reserve System.

Gallmeyer, A., and T. W. Roberts. 2009. "Payday Lenders and Economically Distressed Communities: A Spatial Analysis of Financial Predation." *Social Science Journal* 46 (3): 521–38.

Garreau, J. 1991. *Edge City: Life on the New Frontier*. New York: Doubleday.

Graves, M. S., and L. C. Peterson. 2005. "Predatory Lending and the Military: The Law and Geography of 'Payday' Loans in Military Towns." *Ohio State Law Journal* 66 (4): 653–832.

Ham, Arthur H. 1921. "Small Loan Legislation: Progress and Improvement." Address to AiLA, September 23. Division of Remedial Loans, Russell Sage Foundation, New York.

Hannagan, Anthony, and Jonathan Morduch. 2015. "Income Gains and Month-to-Month Income Volatility: Household Evidence from the US Financial Diaries." In *Economic Mobility: Selected Papers from the 2015 Federal Reserve Community Development Research Conference*. https://www.stlouisfed.org/community-development/economic-mobility-conference-2015. Federal Reserve Bank of Saint Louis.

Hawkins, Jim. 2012. “Credit on Wheels: The Law and Business of Auto Title Lending.” *Washington and Lee Law Review* 69 (2): 535–604.

Hubachek, F. B. 1941. “The Development of Regulatory Small Loan Laws.” In “Combating the Loan Shark.” Special issue. *Law and Contemporary Problems* 8 (1): 108–145.

Littwin, Angela. 2009. “Testing the Substitution Hypothesis: Would Credit Card Regulations Force Low-Income Borrowers into Less Desirable Lending Alternatives?” *University of Illinois Law Review*, 2009 (2): 403–55.

Lukongo, Onyumbe, and Thomas Miller Jr. 2016. “A Spatial Econometric Investigation into Installment Loan Usage Rates.” Working paper. Baton Rouge, LA: Southern University.

Lusardi, A., D. J. Schneider, and P. Tufano. 2011. “Financially Fragile Households: Evidence and Implications.” Brookings Papers on Economic Activity, 83–150.

Lynch, Gene C. 1968. “Consumer Credit at Ten Per Cent Simple: The Arkansas Case.” *Illinois Law Forum.* Winter. 592–620.

McKernan, Signe-Mary, Caroline Ratcliffe, and Daniel Kuehn. 2013. “Prohibitions, Price Caps, and Disclosures: A Look at State Policies and Alternative Financial Product Use.” *Journal of Economic Behavior and Organization* 95, 207–23.

Melzer, Brian T. 2011. “The Real Costs of Credit Access: Evidence from the Payday Lending Market.” *Quarterly Journal of Economics* 126 (1): 517–55.

Miller, Thomas W. Jr. 2015. “Differences in Consumer Credit Choices Made by Banked and Unbanked Mississippians.” *Journal of Law, Economics, and Policy* 11, 367–412.

Mississippi Department of Banking and Consumer Finance. “Annual Report: January 1, 2011–December 31, 2011,” p. 23, www.dbcf.state.ms.us/documents/annual-report11.pdf.

Morgan, Donald R., and Michael R. Strain. 2008. “Payday Holiday: How Households Fare after Payday Credit Bans.” Staff Report 309. February. Federal Reserve Bank of New York.

National Commission on Consumer Finance. 1972. *Consumer Credit in the United States: The Report of the National Commission on Consumer Finance*. Washington, DC: Government Printing Office.

Rigbi, Oren. 2013. “The Effects of Usury Laws: Evidence from the Online Loan Market.” *Review of Economics and Statistics* 95 (4): 1238–48.

Shackman, J., and G. Tenney. 2006. “The Effects of Government Regulation on the Supply of Pawn Loans.” *Journal of Financial Services Research* 30, 69–91.

US Bureau of Labor Statistics. 2013. Quarterly Census of Employment and Wages. (Q3).

US Census Bureau of Census State and County QuickFacts. 2015. www.census.gov/quickfacts. Accessed August 12, 2016.

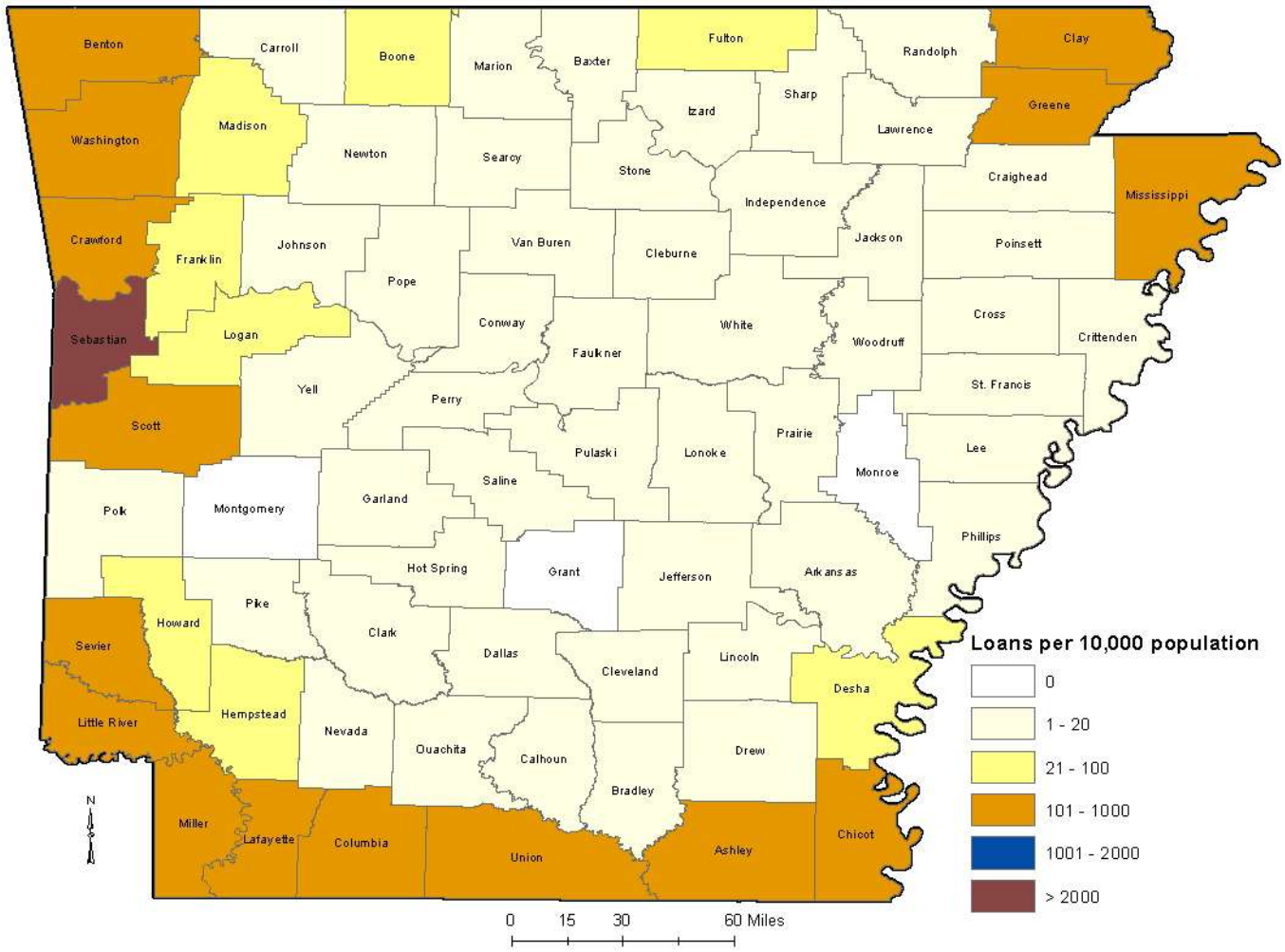
US Department of Transportation Federal Highway Administration. 2009. *National Household Travel Survey.* http://nhts.ornl.gov.

US Energy Information Administration. 2014. Gasoline and Diesel Fuel Update. Accessed June 9, 2015.

Wheeler, Christopher H. 2001. "A Note on the Spatial Correlation Structure of County-Level Growth in the U.S." *Journal of Regional Science* 41 (3): 433–49.

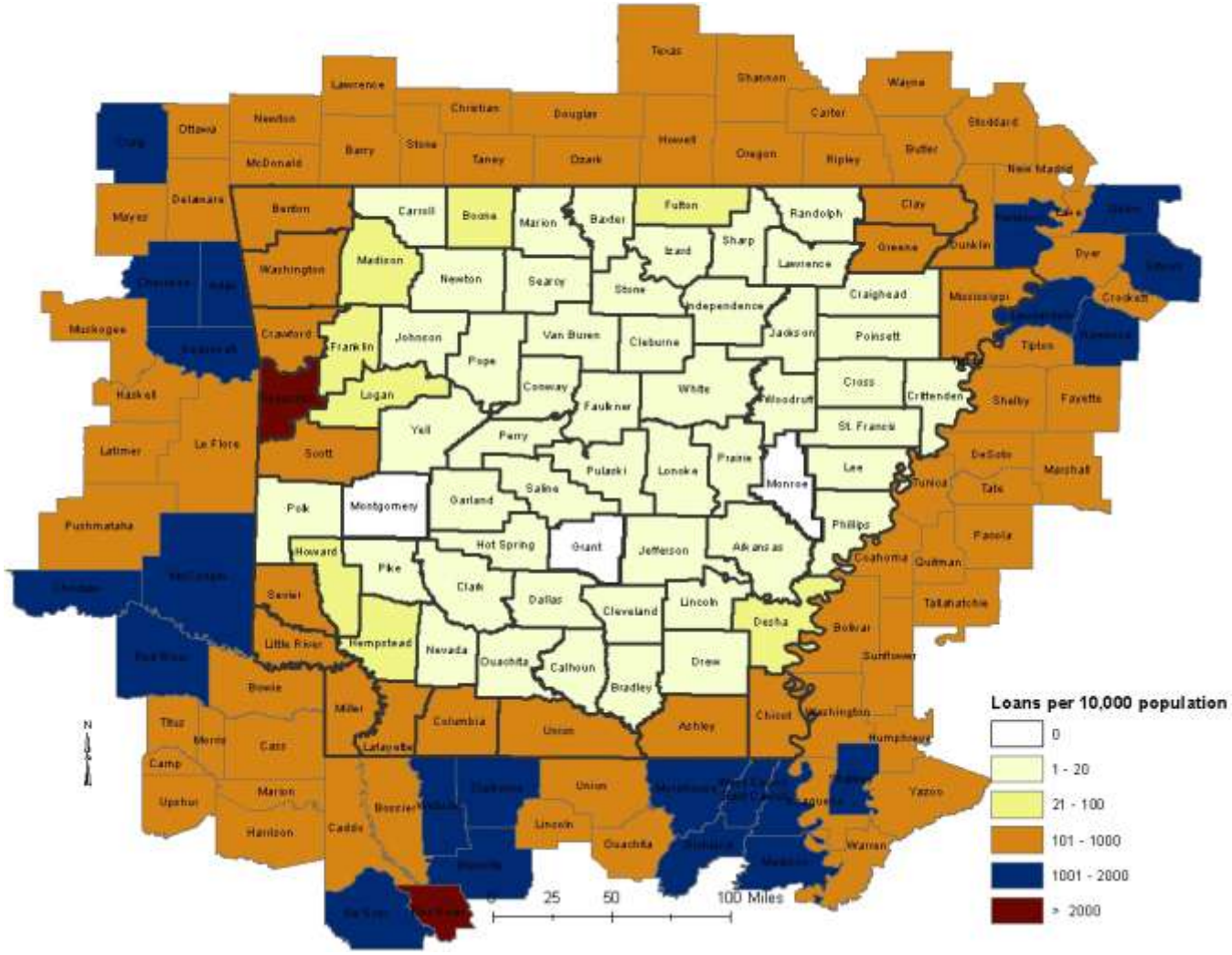
Zinman, Jonathan. 2010. "Restricting Consumer Credit Access: Household Survey Evidence on Effects around the Oregon Rate Cap." *Journal of Banking and Finance* 34 (3): 546–56.

Figure 1. Number of Traditional Installment Loans (in Sample) per 10,000 Population, Arkansas, September 2013



Source: Author generated map using ARC-GIS software and data provided by the American Financial Services Association (AFSA).

Figure 2. Number of Traditional Installment Loans (in Sample) per 10,000 Population, Arkansas and Border Counties, September 2013



Source: Author generated map using ARC-GIS software and data provided by the American Financial Services Association (AFSA).

Table 1. Loan Distribution Characteristics

Panel A. Top 15 counties, by number of loans

				Weighted average, by zip code			
Perimeter county	County name	Number of loans	Cum. %	Loan amount	APR	Monthly payment	Loan term (in mos.)
Yes	Sebastian	6,484	24.3%	$834	91%	$111	9.4
Yes	Benton	3,664	38.1%	$1,156	73%	$125	11.4
Yes	Washington	3,643	51.7%	$1,074	80%	$120	11.0
Yes	Crawford	2,615	61.6%	$887	87%	$114	9.8
Yes	Miller	1,846	68.5%	$660	84%	$100	8.3
Yes	Columbia	1,734	75.0%	$1,294	60%	$117	13.2
Yes	Union	1,108	79.1%	$1,098	65%	$105	12.4
Yes	Sevier	610	81.4%	$670	103%	$105	8.2
Yes	Mississippi	598	83.7%	$1,482	84%	$132	15.0
Yes	Ashley	530	85.7%	$1,352	52%	$119	13.9
Yes	Greene	524	87.6%	$1,575	69%	$133	15.0
Yes	Chicot	513	89.6%	$1,728	47%	$127	17.6
Yes	Lafayette	438	91.2%	$1,316	59%	$119	13.2
Yes	Clay	390	92.7%	$1,491	87%	$129	14.5
Yes	Little River	373	94.1%	$832	83%	$115	9.2

Panel B. Bottom 15 counties, by number of loans

				Weighted average, by zip code			
Perimeter county	County name	Number of loans	Cum. %	Loan amount	APR	Monthly payment	Loan term (in mos.)
Yes	Scott	199	94.8%	$1,018	84%	$119	10.3
No	Hempstead	160	95.4%	$811	82%	$113	9.4
Yes	Boone	138	95.9%	$1,161	121%	$123	11.2
Yes	Fulton	105	96.3%	$1,657	63%	$137	17.7
No	Logan	97	96.7%	$983	79%	$117	10.5
No	Franklin	95	97.0%	$789	91%	$110	9.2
Yes	Crittenden	65	97.3%	$3,728	53%	$155	18.2
No	Pulaski	50	97.5%	$1,794	52%	$163	25.9

(continued on next page)

Perimeter county	County name	Number of loans	Cum. %	Weighted average, by zip code: Loan amount	Perimeter county	County name	Number of loans
Yes	Carroll	49	97.7%	$868	124%	$110	10.6
No	Ouachita	48	97.8%	$1,538	55%	$121	16.1
Yes	Desha	47	98.0%	$4,215	34%	$127	26.3
Yes	Craighead	46	98.2%	$2,439	84%	$130	16.7
No	Howard	45	98.3%	$616	104%	$97	8.0
Yes	Polk	36	98.5%	$846	89%	$108	9.9
No	Madison	36	98.6%	$1,120	73%	$125	11.2
No	Garland	34	98.7%	$927	72%	$113	19.4
No	Faulkner	22	98.8%	$1,569	66%	$125	15.4
No	Pope	21	98.9%	$864	89%	$104	10.6
No	White	20	99.0%	$1,388	65%	$132	13.0
No	Drew	19	99.1%	$2,232	39%	$143	21.0
No	Lonoke	18	99.1%	$1,368	65%	$125	40.1
No	Independence	15	99.2%	$1,170	88%	$116	14.4
No	Lawrence	15	99.2%	$2,868	49%	$164	19.1

Source: Author calculations using data supplied by the American Financial Services Association (AFSA).

Table 2. Loans per 10,000 Population and Dollar Value of Loans

State	Number of counties	Number of loans	Weighted average Amount	Weighted average APR	Loans per 10,000 pop.	2010 population (in thousands)	Dollar value of loans (in thousands)
Arkansas	75	26,654	$1,051	80%	90.4	2,949	$28,026
Perimeter:	30	25,762	$1,046	80%	195.0	1,321	$26,947
Interior:	45	892	$1,218	75%	5.5	1,628	$1,087
Mississippi	82	138,074	$3,727	32%	462.6	2,985	$514,630
Border counties in:							
Louisiana	15	58,145	$2,078	54%	734.6	791	$120,826
Missouri	21	25,664	$1,982	88%	424.7	604	$50,866
Mississippi	16	27,339	$3,592	31%	517.2	529	$98,188
Oklahoma	14	42,121	$1,114	86%	945.6	445	$46,934
Tennessee	10	34,617	$3,161	59%	281.8	1,229	$109,422
Texas	9	17,182	$865	82%	551.3	312	$14,859
Border counties Total	85	205,068	$2,151	65%	524.5	3,910	$441,095

Source: Author calculations using data provided by the American Financial Services Association (AFSA).

Table 3. Regression Results from Seven OLS Regressions (Dependent Variable Is the Number of Loans per 10,000 People in the County)

	Arkansas counties		Arkansas counties and Border counties				
Observations	75	75	160	160	160	160	160
Adj R^2	0.3098	0.1770	0.4486	0.3023	0.4451	0.4937	0.4931
F-Value, Model	34.22	16.91	65.67	69.89	43.51	18.22	16.46
P-Value	<.0001	0.0001	<.0001	<.0001	<.0001	<.0001	<.0001
Intercept	183.1	244.2	679.2	799.6	675.5	934.8	941.1
Standard Error	7.91	5.63	36.58	56.68	61.73	435.7	436.1
P-Value	<.0001	<.0001	<.0001	<.0001	<.0001	0.0335	0.0325
Arkansas Interior County	174.8***		−670.9***		−679.2***	−660.7***	−770.3***
Standard Error	−5.85		62.18		128.97	68.1	138.8
P-Value	<.0001		<.0001		<.0001	<.0001	<.0001
Arkansas Perimeter County			−496.1***		−499.0***	−491.6***	−533.0***
Standard Error			71.62		81.71	72.7	85.87
P-Value			<.0001		<.0001	<.0001	<.0001
Estimated Loan Acquisition Cost		−2.10***		−7.62***	0.12		1.61
Standard Error		0.51		0.91	1.68		1.78
P-Value		0.0001		<.0001	0.9411		0.3664
Pct. Never Married Females > Age 15						−19.18**	−20.26***
Standard Error						7.45	7.55
Median Household Income						0.0080	0.0069
Standard Error						0.006	0.01

Pct. BA Degree or Higher			8.98	8.56
Standard Error			11.8	11.79
Pct. African Americans			5.98**	6.00**
Standard Error			2.63	2.64
Pct. Poor			12.76	13.93
Standard Error			10.38	8.42
Pct. Service Jobs			4.24	3.60
Standard Error			8.38	8.42
Pct. Office Jobs			−24.22**	−24.01**
Standard Error			9.37	9.38
F-Value: Ark. Interior = Ark. Border	4.83**	2.75*	4.71**	4.80**
P-Value	0.0294	0.0995	0.0316	0.0301

*Statistically significant at the 10% level; **Statistically significant at the 5% level; ***Statistically significant at the 1% level.
Source: Author calculations using data provided by the American Financial Services Association (AFSA).

Table 4. Estimated Loan Acquisition Costs and Implied APR on Net Loan Proceeds

Panel A. Top 10 counties, by number of loans

County	Estimated county acquisition cost	Number of loans	Estimated acquisition cost per loan	Original loan amount	Net proceeds	Original APR	Average loan maturity (months)	Calculated payment on original amount	Implied APR on net proceeds
Sebastian	$210,639	6,484	$32	$834	$802	91%	9.4	$127	101%
Benton	$183,940	3,664	$50	$1,156	$1,106	73%	11.4	$143	83%
Washington	$271,309	3,643	$74	$1,074	$1,000	80%	11.0	$141	98%
Crawford	$116,782	2,615	$45	$887	$842	87%	9.8	$129	101%
Miller	$79,532	1,846	$43	$660	$617	84%	8.3	$108	105%
Columbia	$100,780	1,734	$58	$1,294	$1,236	60%	13.2	$137	70%
Union	$72,024	1,108	$65	$1,098	$1,033	65%	12.4	$124	78%
Sevier	$36,452	610	$60	$670	$610	103%	8.2	$117	133%
Mississippi	$32,628	598	$55	$1,482	$1,427	84%	15.0	$163	91%
Ashley	$30,584	530	$58	$1,352	$1,294	52%	13.9	$131	60%
Panel A Total	$1,134,670	22,832	$49.70	(Total cost divided by number of loans)					
Percentage of Total	83.8%	85.7%							

Panel B. Top 10 counties, by implied APR on net proceeds

County	Estimated county acquisition cost	Number of loans	Estimated acquisition cost per loan	Original loan amount	Net proceeds	Original APR	Average loan maturity (months)	Calculated payment on original amount	Implied APR on net proceeds
Dallas	$170	2	$85	$440	$355	105%	7.0	$87	186%
Van Buren	$721	5	$144	$647	$503	102%	8.6	$109	184%
Howard	$3,224	45	$72	$616	$544	104%	8.0	$110	145%
Carroll	$2,399	49	$49	$868	$819	124%	10.6	$139	140%
Cross	$241	4	$60	$850	$790	118%	10.3	$135	138%
Boone	$8,682	138	$63	$1,161	$1,098	121%	11.2	$178	136%
Newton	$267	4	$67	$763	$696	111%	11.8	$109	134%
Sevier	$36,452	610	$60	$670	$610	103%	8.2	$117	133%
Prairie	$201	2	$101	$676	$575	88%	10.0	$97	132%
Pope	$2,273	21	$108	$864	$756	89%	10.6	$121	124%
Panel B Total	$54,630	$880	$62.08	(Total cost divided by number of loans)					
Percentage of Total	4.0%	3.3%							
Total, All Arkansas	$1,354,586	26,654	$50.82						

Source: Author calculations using data provided by the American Financial Services Association (AFSA).

Table 5. Number of Additional Loans, Their Dollar Value, and Interest on These Loans, Two Scenarios

Panel A. 1 year, $1,051 loan, 80 percent APR

Arkansas counties	2012 population	Assumed loans per 10K pop.	Resulting number of loans	Resulting additional loans	Payment: 1 year 80%, $1,051	Total payments of principal and interest	Interest paid per loan	Dollar value of additional loans (in thousands)	Interest on additional loans (in thousands)
Perimeter	1,320,845	524.5	69,278	43,516	$130	$1,558	$508	$45,692	$22,119
Interior	1,628,286	524.5	85,404	84,512	$130	$1,558	$508	$88,737	$42,957
Total	2,949,131		154,682	128,028				$134,429	$65,077

Panel B. 2 year, $3,725 loan, 32 percent APR

Arkansas counties	2012 population	Assumed loans per 10K pop.	Resulting number of loans	Resulting additional loans	Payment: 2 year 32%, $3,725	Total payments of principal and interest	Interest paid per loan	Dollar value of additional loans (in thousands)	Interest on additional loans (in thousands)
Perimeter	1,320,845	462.6	61,102	35,340	$212	$5,091	$1,366	$131,643	$48,278
Interior	1,628,286	462.6	75,325	74,433	$212	$5,091	$1,366	$277,261	$101,682
Total	2,949,131		136,427	109,773				$408,904	$149,961

Source: Author calcuations using data provided by the American Financial Services Association (AFSA).

Table 6. Some Demographic, Socioeconomic, and Small-Dollar Loan Data for Arkansas and Mississippi

	United States	Arkansas	Mississippi
Population, 2014 estimate	318,857,056	2,966,369	2,994,079
Persons age 18–65, 2013	61.7%	60.6%	61.4%
Female persons, 2013	50.8%	50.9%	51.4%
White alone, 2013	77.7%	79.9%	59.8%
Black or African American alone, 2013	13.2%	15.6%	37.4%
High school graduate or higher, age 25+, 2009–2013	86.0%	83.7%	81.5%
Bachelor's degree or higher, age 25+, 2009–2013	28.8%	20.1%	20.1%
Mean travel time to work (minutes), 2009–2013	25.5	21.3	23.9
Homeownership rate, 2009–2013	64.9%	66.7%	69.4%
Median value of owner-occupied housing units, 2009–2013	$176,700	$107,300	$99,900
Households, 2009–2013	115,610,216	1,129,723	1,088,073
Median household income, 2009–2013	$53,046	$40,768	$39,031
Persons below poverty level, 2009–2013	15.4%	19.2%	22.7%
Retail sales per capita, 2007	$12,990	$11,602	$11,552
Land area in square miles (000s)	3,532	52.0	46.9
Installment Lenders		0	525
Payday/Check Casher		0	1,053
Auto Title Loan		0	402
Pawnshops		360	404
Aaron's Rent-to-Own© Stores		41	44
Rent-A-Center©		40	37

Source: Author calculations using data from the US Census Bureau of Census State and County QuickFacts (2015); Mississippi Department of Banking and Consumer Finance (2011); USPawnShopDirectory.com; www.aarons.com; www.rentacenter.com.

Acknowledgments

We especially thank Hester Peirce and Carolyn Moore Miller for their steadfast willingness to work diligently to provide insightful comments. The authors also thank Brandon Cline, Tom Durkin, Greg Elliehausen, Carrie Kerekes, Stephan Miller, Tracy Miller, Gizelle Perretti, Claudia Williamson, and anonymous referees for their editorial comments. Yiwei Zhao, Gefei Wang, Vera Soliman, and Elizabeth Martin provided excellent research support. The authors thank session participants at Florida Gulf Coast University, the 2015 Association of Private Enterprise Education Conference, and at the June 2014 Mercatus Center Workshop. The authors thank the American Financial Services Association for making the data available for analysis.