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Economic perspectives

How did the Great Recession affect payday loans?

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Introduction and summary

The sharp decline in the U.S. economy that began in 2007, commonly referred to as the Great Recession, made it very difficult for many Americans to borrow. According to the *Senior Loan Officer Survey* conducted by the Board of Governors of the Federal Reserve System, banks across the country dramatically tightened credit card standards during the first two years of the Great Recession. From 2008 to 2010, the average number of credit cards per person fell from roughly 2.2 to 1.7, and the total limit on all credit card balances fell from around $25,000 to $21,000.[1] Given this sharp contraction in consumer credit, an obvious question is whether borrowers responded by shifting from conventional borrowing to more unconventional sources of credit. In particular, did Americans turn to payday lenders as an alternative? Payday lenders provide short-term, unsecured loans, typically of relatively small amounts of money at relatively high rates of interest. The typical payday loan is $300 for two weeks at an annualized interest rate of more than 350 percent. Payday lending is a controversial practice. Nearly all states regulate the industry, 13 states have made payday lending effectively illegal, and an additional five states have imposed severe restrictions on the interest that can be charged on payday loans.

In this article, we aim to answer two important questions: first, whether payday borrowing rose during the Great Recession; and second, whether the use of payday loans expanded beyond low-income borrowers to include more middle-income borrowers. In 2008, Senator Elizabeth Warren, at the time a law professor at Harvard University, argued that "as the economy has worsened … payday loans have increasingly become crutches for those higher up the economic scale" (Christensen, 2008). Many articles in the popular press in recent years have voiced the same concern (for example, White, 2013; Popper and Thompson, 2011; and Marshall, 2015).

To our knowledge, there has been relatively little research documenting trends in payday borrowing across different subgroups. Therefore, it is not clear whether payday lending is growing overall or whether it is being used by a broader swath of the population than in the past. To answer these questions, we analyze both publicly available data and confidential payday borrowing records. Using the *Survey of Consumer Finances* (SCF, conducted by the Board of Governors of the Federal Reserve System), we find that from 2007 to 2009 there was a notable increase in payday borrowing, but that payday utilization then remained flat from 2009 through 2013. Unfortunately the SCF does not measure payday borrowing prior to 2007, so we have relatively limited data on trends prior to the Great Recession. Therefore, it is not clear whether the increase from 2007 to 2009 was simply a continuation of a secular trend (that is, unrelated to the business cycle) or a cyclical phenomenon (directly related to the business cycle). The SCF data also suggest that more middle-income borrowers have in fact been using payday loan services since 2007, as Elizabeth Warren and others have long speculated.

We also study several alternative data sources to identify time trends in payday borrowing. Those analyses lead to a different conclusion: that payday borrowing did not change dramatically during the Great Recession. First, we find that the revenues of payday lending firms grew steadily from 2006 through 2013 but that there was no break in trend during the financial crisis. Second, we use data from Google searches and find no evidence that more Internet users were searching for online payday loans during the economic downturn. Third, we find no evidence of an increase in licensed payday lenders in California during the recession. In fact, if anything, there appears to have been a decline. Fourth, we use proprietary data on payday loan applications in Nevada, a state that was severely affected by the housing downturn, and find no relationship between foreclosure rates and payday lending. Fifth, we use proprietary data from a bricks-and-mortar payday lender in the Midwest and find no evidence of a change in loan volume during the economic downturn. However, there is suggestive evidence from this lender that more middle-income borrowers have been turning to payday loans since the recession began.

Overall, our findings are mixed. On the one hand, we find some evidence from survey data of an increase in payday borrowing but only in the first two years after the onset of the Great Recession with no further increase. On the other hand, a variety of alternative approaches suggest that the impacts of the Great Recession on payday borrowing have been minimal.

In the next section, we provide some background on payday borrowing. We then discuss the evidence based on publicly available data and present our analysis of actual lending data from payday lenders.

Background on payday lending

To take out a payday loan, a customer visits a payday lender with his or her most recent paycheck stub and bank statement. Because of these requirements, the unbanked typically cannot take out a payday loan. Payday lenders typically operate by requiring that a customer write a personal check for the amount being borrowed plus a fee. The lender cashes the check once the loan has matured. For example, in the case of a loan for $350, the borrower would write a check or authorize a bank to draw $400, post-dating the check to the next payday, usually ten to 14 days hence. The cost of payday borrowing is described to the consumer as a fee: a fixed-dollar cost per $100 in borrowing. The implied annual interest rate is usually over 400 percent, which is disclosed to the consumer in the loan paperwork. The payday lender verifies the borrower's employment and bank information but does not run a formal credit check. On payday, if the borrower is not able to cover the check, he or she may return to the lender and refinance the loan, incurring another $50 fee, which is paid in cash (Morse, 2011).[2]

The payday loan industry did not exist a few decades ago (Caskey, 2005), but as of 2013 there were approximately 18,000 payday lending stores, and total loan volume in the industry was approximately $45 billion (Hecht, 2014). Given how costly the loans are, why are they so popular? One explanation is that credit-constrained households are unable to borrow through traditional means (banks or credit cards) and instead resort to borrowing from payday lenders when faced with a sudden income shock or unexpected expense. Several studies provide descriptive evidence suggesting that credit constraints are an important factor.[3] Bhutta, Skiba, and Tobacman (2015) find that those who turn to payday loans typically have no other forms of credit available. Other survey research suggests that misperceptions among consumers concerning the costs of payday loans are also an important factor. For example, Martin (2010) finds that most payday borrowers are not able to accurately describe the annual percentage rate (APR) on payday loans or predict the total dollar cost of the loans.[4]

Consumers also use payday loans much more frequently than might be expected. According to Martin (2010), 63 percent of payday borrowers reported using the loans for regular, recurring monthly bills and expenses. Kenneth (2008) finds that convenience factors draw consumers to particular payday lenders. Unlike qualifying for other forms of credit, obtaining cash through payday loans is fast and relatively easy. Payday loans may also help individuals avoid the stigma of admitting to friends, family, or a financial institution that they are financially constrained. Many studies show that repeat customers make up the vast majority of payday customers.[5]

The literature is mixed on whether payday lending enhances or reduces consumer welfare. The simplest neoclassical model suggests that additional forms of credit should weakly improve consumer welfare. This notion is supported by several empirical studies that show that restrictions on payday borrowing lead to worse outcomes. Morgan and Strain (2008), for instance, find that bans on payday lending increase the rate at which consumers bounce checks or file for bankruptcy. Indeed, Morgan, Strain, and Seblani (2012) find that returned check numbers and overdraft fee income at banks increase after payday credit bans. Similarly, Zinman (2010) finds that restrictions on payday loans in Oregon led to a reduction in the overall financial condition of Oregon households. Finally, Morse (2011) found that greater access to payday credit reduces the number of foreclosures that follow natural disasters in California.

Other studies, however, have found that access to payday loans may reduce welfare. Carrell and Zinman (2014) find a decline in job performance and readiness among U.S. Air Force personnel stationed in areas with payday loan availability. Skiba and Tobacman (2011) find that access to payday loans leads to more bankruptcy filings. Melzer (2011) finds that access to payday loans leads to increased self-reported difficulty in paying bills and causes individuals to delay expenditures on needed health care.

Survey data on payday lending use

We begin our analysis with the *Survey of Consumer Finances* (SCF). This is the only survey we know of that measures how payday borrowing evolved through the Great Recession. Although the SCF has been running since the 1980s, the 2007 to 2009 panel of the SCF was the first survey to ask specifically about payday loans. Because it is a panel, it also allows us to compare the same households at two points in time. The survey asks respondents: "During the past year, have you (or anyone in your family living here) taken out a 'payday loan,' that is, borrowed money that was supposed to be repaid in full out of your next paycheck?" The same question was repeated in 2010 and 2013 but to entirely different sets of households in each year. In table 1 and figure 1, we show the fraction of respondents who reported taking out a payday loan in 2007, 2009, 2010, and 2013. Table 1 also shows the same results broken down by age, race, education, and income quartile.

TABLE 1

Probability of household head having a payday loan last year

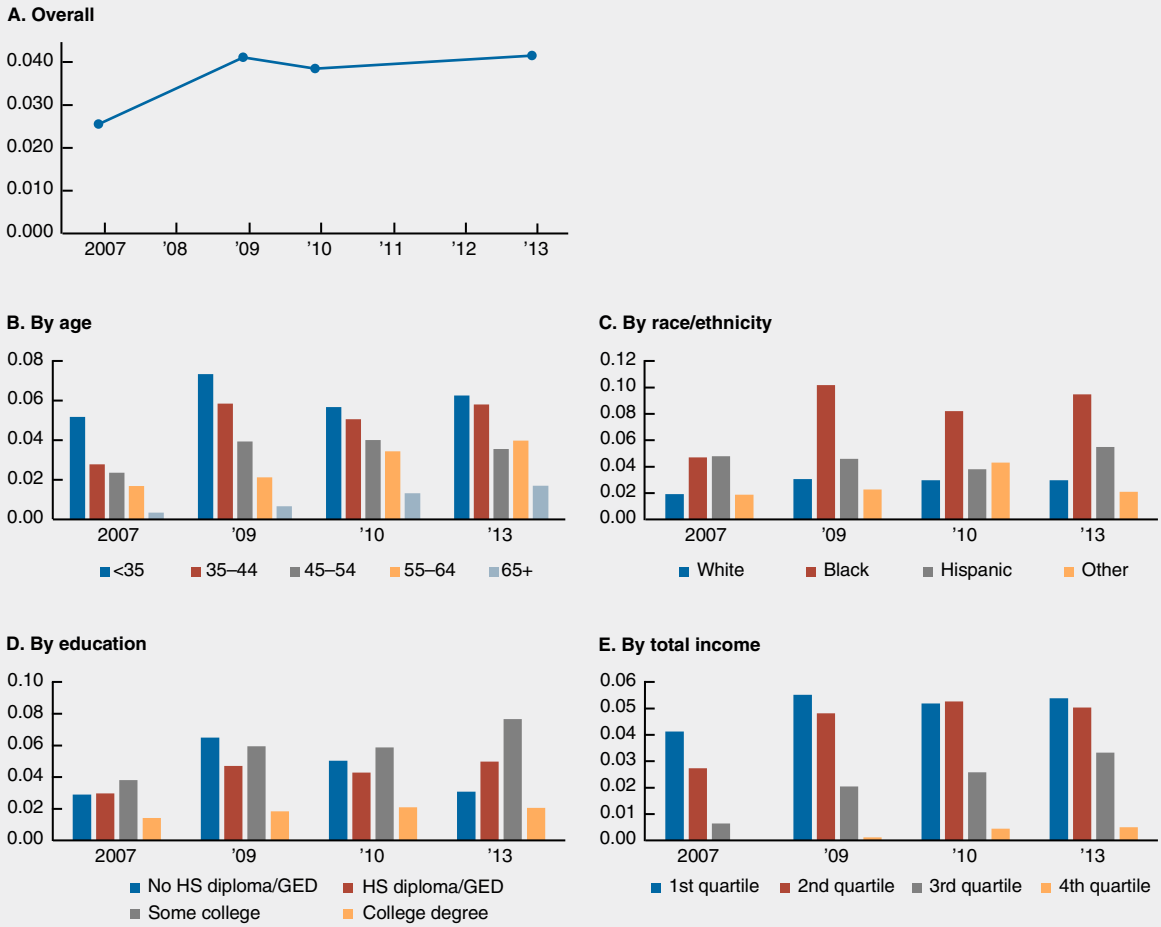
	2007	2009	2010	2013
Full sample	0.026	0.041	0.039	0.042
	(0.001)	(0.002)	(0.001)	(0.001)
Age				
<35	0.052	0.073	0.057	0.063
	(0.004)	(0.005)	(0.003)	(0.003)
35–44	0.028	0.059	0.051	0.058
	(0.003)	(0.005)	(0.003)	(0.003)
45–54	0.024	0.039	0.040	0.036
	(0.003)	(0.004)	(0.003)	(0.003)
55–64	0.017	0.021	0.034	0.040
	(0.003)	(0.003)	(0.003)	(0.003)
65+	0.003	0.007	0.013	0.017
	(0.001)	(0.002)	(0.002)	(0.002)
Race/ethnicity				
White	0.019	0.031	0.030	0.030
	(0.001)	(0.002)	(0.001)	(0.001)
Black	0.047	0.102	0.082	0.095
	(0.005)	(0.007)	(0.004)	(0.005)
Hispanic	0.048	0.046	0.038	0.055
	(0.007)	(0.006)	(0.003)	(0.004)
Other	0.019	0.023	0.043	0.021
	(0.006)	(0.006)	(0.006)	(0.004)
Education level				
No high school diploma/GED	0.029	0.065	0.050	0.031
	(0.004)	(0.006)	(0.004)	(0.003)
High school diploma/GED	0.030	0.047	0.043	0.050
	(0.003)	(0.003)	(0.002)	(0.002)
Some college	0.038	0.060	0.059	0.077
	(0.004)	(0.005)	(0.003)	(0.004)
College degree	0.014	0.018	0.021	0.021
	(0.002)	(0.002)	(0.001)	(0.001)
Total household income quartile				
1st quartile	0.041	0.055	0.052	0.054
	(0.003)	(0.003)	(0.002)	(0.002)
2nd quartile	0.027	0.048	0.053	0.050
	(0.003)	(0.003)	(0.002)	(0.003)
3rd quartile	0.006	0.020	0.026	0.033
	(0.002)	(0.002)	(0.002)	(0.002)
4th quartile	0	0.001	0.004	0.005
	(.)	(0.001)	(0.001)	(0.001)

Notes: This table presents estimates for the probability of having a payday loan in the previous year stratified by survey year (2007, 2009, 2010, and 2013) and head of household characteristics. Standard errors are reported in parentheses unless otherwise denoted. Total household income refers to income from all sources in the previous year before taxes and other deductions. These estimates are weighted using revised Kennickell–Woodburn consistent weights.

Sources: Data are from the Board of Governors of the Federal Reserve System, 2007–09, 2010, and 2013 *Survey of Consumer Finances* (SCF). For 2007 and 2009, head of household characteristics are from the 2007 data.

FIGURE 1

Probability of having a payday loan last year



Notes: These figures display the estimates for the probability of having a payday loan in the past year stratified by survey year (2007, 2009, 2010, and 2013) and head of household characteristics from table 1. Total household income refers to income from all sources in the previous year before taxes and other deductions. These estimates are weighted using revised Kennickell–Woodburn consistent weight that accounts for systematic deviations from estimates of homeownership by racial/ethnic groups based on the U.S. Bureau of Labor Statistics, *Current Population Survey*.

Sources: 2007–09, 2010, and 2013 *Survey of Consumer Finances* (SCF). For the years 2007 and 2009, head of household characteristics are from the 2007 data.

The table suggests that the fraction of SCF respondents with a payday loan increased from 2.6 percent in 2007 to 4.1 percent in 2009. This 1.5 percentage point rise represents a 61 percent increase and is statistically significant. However, the fraction remains relatively flat thereafter, with estimates of 3.9 percent in 2010 and 4.2 percent in 2013. Since the increase from 2007 to 2009 was very large, it seems reasonable to assume that the economic downturn must have played a role. However, we cannot disentangle how much of this rise was a continuation of a pre-existing secular trend as opposed to an effect of the recession. Unfortunately, the SCF did not measure payday borrowing before 2007, and we are aware of no other nationally representative estimates.

When we look by subgroups of the population, we see some interesting patterns.[6] First, we consider differences by age, dividing the sample into those under the age of 35, between 35 and 44, between 45 and 54, between 55 and 64, and 65 and older. Payday borrowing tends to decline with age, with the highest borrowing rates among those under 35. When we examine trends, however, there appears to have been a narrowing in the age gradient. While all age groups experienced an increase from 2007 to 2009, those between the ages of 55

and 64 continued to increase their payday borrowing in 2010 and 2013. Indeed in 2013, the estimate of payday use by 55–64 year olds was actually higher than that of 45–54 year olds.

The SCF data show that blacks have a higher rate of payday borrowing than Hispanics and whites, and their use of payday loans more than doubled from 4.7 percent in 2007 to 10.1 percent in 2009. In contrast, payday borrowing rates for Hispanics were flat over the same period. Hispanics did experience a notable rise in payday use from 3.8 percent in 2010 to 5.5 percent in 2013. The time pattern for whites is largely in line with the overall pattern for the population.

The results by education level also suggest some interesting patterns that have evolved over time. As might be expected, payday borrowing is lowest among those with a college degree. However, when examining changes from 2007 through 2013, payday borrowing rates for those with some college roughly doubled from 3.8 percent in 2007 to 7.7 percent in 2013. In contrast, for those without a high school diploma, payday borrowing was only a bit higher in 2013 at 3.0 percent than it was in 2007 at 2.9 percent.

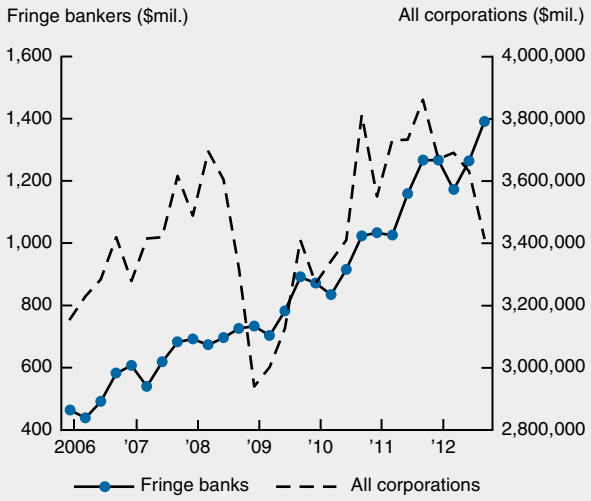
Finally, when we look at income quartiles, as one might expect, we find payday borrowing is highest for the two lowest quartiles of the income distribution. However, when we look at the time patterns, there does appear to be clear evidence of payday loans increasingly being used by those in the third and second quartiles of the income distribution. This is consistent with the speculation by Warren and numerous writers in the popular press about the middle class increasingly turning to payday loans.

Other sources of public data

We also consider several publicly available sources of data that can *indirectly* address whether consumers became more interested in payday borrowing during the Great Recession. We first study the revenue of publicly traded payday lenders. By talking to financial executives, we identified five publicly traded firms that provide a large number of payday loans.[7] Figure 2 presents the total revenue of those five firms from 2006 through 2012 versus the revenue of all corporations in the Compustat database. As is well known, corporate revenue plummeted from late 2007 through early 2009. In contrast, the revenue of these five publicly traded fringe banks seemed unaffected by the recession. While it is true that the pattern of no cyclical sensitivity among payday lenders is different from what other corporations experienced, our hypothesis is that they would have seen revenues grow if there had been a notable rise in payday usage as the SCF results imply. Instead, the revenues of these five companies were on a similar trajectory throughout the entire period.[8]

FIGURE 2

Quarterly revenue of publicly traded fringe bankers



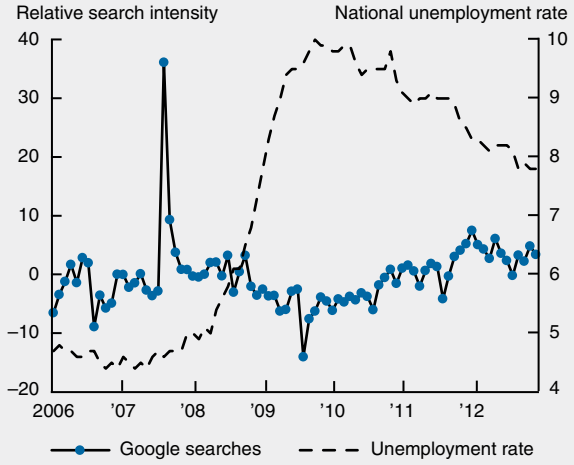
Notes: The figure presents total corporate revenue for five publicly traded firms that offer payday loans. The stock tickers of those firms are CSH, DLLR, EZPW, FCFS, and WRLD. The dashed line plots total corporate revenue in the United States, based on publicly traded corporations in the Compustat database.

Source: Compustat.

Another source of public data on payday lenders comes from online web searches. Much of payday borrowing occurs online and, presumably, much of that borrowing begins with a Google search. Figure 3 plots Google search volume for the phrase "payday

FIGURE 3

Google searches for phrase "payday loan"

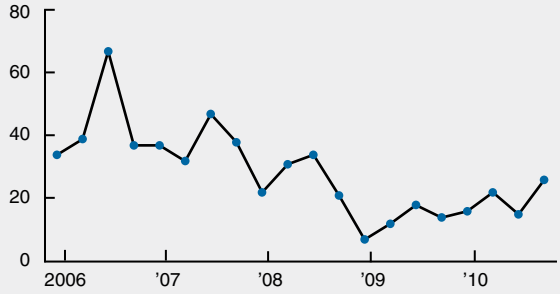


Notes: The figure presents relative search intensity for the phrase "payday loan" versus the national unemployment rate. Search intensity consists of numbers supplied by Google, which capture relative search intensity, but do not measure the absolute level. We subtract from search intensity a fixed effect for each month to eliminate the effect of seasonality.

Source: Google Trends data (https://www.google.com/trends/).

FIGURE 4

Number of new payday lenders in California by quarter

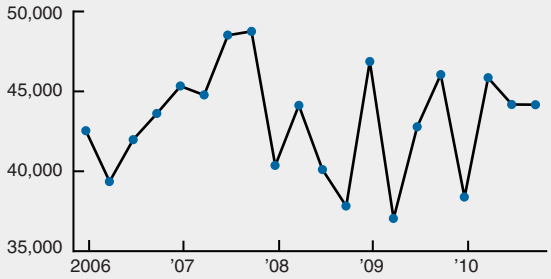


Note: The figure presents number of new, licensed payday lending locations, opened each quarter in California.

Source: California Department of Corporations.

FIGURE 5

Median family income in zip codes of new payday lenders in California



Note: The figure presents the median family income based on the 2000 decennial census in the ZIP codes of all new California payday lenders.

Sources: California Department of Corporations and 2000 Census.

loan" versus the unemployment rate. The figure suggests that the unemployment rate rose dramatically in 2008 and 2009. Meanwhile, the relative number of Google searches for the phrase "payday loan" increased only slightly. This does not suggest a sudden increase in interest for payday loans.

Figure 3 also suggests that Google searches for the phrase "payday loan" rose dramatically in August 2007. We believe that that one outlier was driven by a public debate about the regulation of payday lenders in Washington, DC. Still, beyond that short-lived interest in payday loans, it appears that interest online held steady throughout this period.

As an additional indirect measure of payday lending over time, we study the number of licensed payday lenders in California. The state of California requires all payday lenders to have a "deferred deposit transaction" license. The state provides data on the number and location of licensees. Figure 4 plots the total number of new licensees each quarter. It suggests a secular decrease. In 2006, there were roughly 40 new payday lenders opening each quarter; that number had decreased to roughly 20 by 2009.

Figure 4 thus suggests that, if anything, there was a decrease in the number of new stores opening during this period. That fact is important in light of the next section, in which we study the number of loans per store at one lender. But a remaining question is whether, as the recession began, new stores began to open in different areas. Figure 5 explores this possibility. Each new store is matched to the median family income

in that zip code, as measured in the 2000 decennial census. The figure then plots the average income for new stores in each quarter. The figure suggests no clear pattern in that time series. Overall, these patterns don't suggest any dramatic change in payday borrowing during the Great Recession.

Data from payday lenders

Next, we examine trends based on two proprietary data sets of payday loans. The first data set comprises online payday loans. We purchased a random sample of online payday loan applications by Nevada homeowners. We focused on Nevada homeowners because Nevada was hit especially hard by the foreclosure crisis, and homeowners there may therefore have been especially credit constrained. For each month from 2007 through 2012, we purchased a sample of 500 loan applications.

In order to quantify the effect of the Great Recession over time, we compiled counts of foreclosures by zip code.[9] We view those data as a proxy for the extent to which homeowners in Nevada were in financial distress. We merge the counts of foreclosures with counts of payday loan applications from each zip code. Table 2 presents regression estimates of the log of payday loan applications on the log of foreclosures. The first column presents the simple bivariate association and shows that roughly a 10 percent increase in foreclosures is associated with a 4 percent increase in payday loan applications. The coefficient is statistically significant at conventional levels. The estimate and statistical significance of the association does not diminish when we include fixed effects for each month.

But such a cross-sectional relationship does not prove that the foreclosure crisis led to an increase in payday loan applications. It could be that zip codes in which many homeowners are interested in payday loans also happen to be zip codes with many foreclosures. That is, the association could simply be evidence of omitted variables rather than a causal relationship. To test whether that is the case, we exploit the panel nature of the data: We observe zip codes over time in the data. When we include zip code fixed effects (column 3), however, the point estimate becomes negative. Finally, when we include both zip code fixed effects and month fixed effects, the relationship becomes statistically insignificant (column 4). This final regression suggests that foreclosures have no effect on payday loan applications once one accounts for time-invariant characteristics of each zip code and the overall time trend in foreclosures.

TABLE 2

Association between foreclosures and payday applications in Nevada

Dependent variable: The logarithm of payday loans by zip code and month

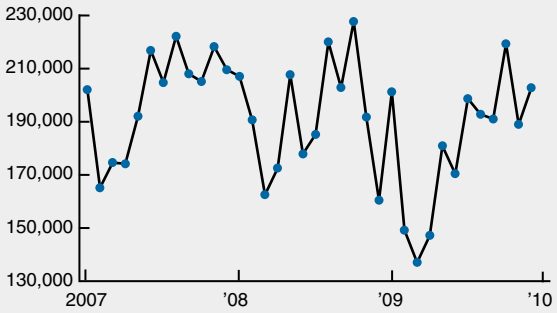
	(1)	(2)	(3)	(4)
Logarithm of foreclosure filings	0.387	0.412	–0.051	–0.010
	(0.033)	(0.033)	(0.021)	(0.020)
	[0.000]	[0.000]	[0.016]	[0.600]
Zip code fixed effects			✓	✓
Month fixed effects		✓		✓
R^2	0.261	0.337	0.602	0.669

Notes: N = 3,726. The sample consists of zip code month-level counts of payday loans issued by an online lender to homeowners in Nevada. Standard errors in parentheses are robust to auto correlation between observations based on the same zip code. Associated *p*-values are in brackets.

Sources: Authors' calculations based on payday application data from Datastream Group Inc., and foreclosure data provided by Neale Mahoney.

FIGURE 6

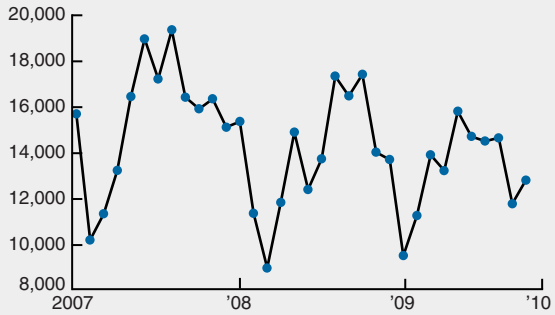
Total loan volume



Note: The figure plots monthly counts of payday loans at one bricks-and-mortar payday loan chain.
Source: Payday lender with locations throughout the Midwest.

FIGURE 7

Number of new payday borrowers



Note: The figure plots monthly counts of new payday borrowers at one bricks-and-mortar payday loan chain.
Source: Payday lender with locations throughout the Midwest.

Overall, we take this exercise as suggestive rather than definitive. It only allows us to study online payday loans and only for a select group of applicants in one state. That said, the Great Recession was most severe in Nevada, and this is one area in which we would expect to find a relationship.

We address some of these shortcomings by examining a second proprietary data set, one based on a bricks-and-mortar payday lender in the Midwest.[10] The data set consists of over 17 million payday loans serviced by a chain of lenders with locations throughout the Midwest. In order to focus on a consistent sample, we restrict the data set to 230 physical locations that opened before 2007. In what follows, we test whether the number of borrowers or the type of borrowers changed as the Great Recession began.

Figure 6 plots the total number of loans over time. This chain of payday lenders serviced roughly 200,000 loans during this period. The figure suggests some seasonal variation in that volume of loans. But, overall, we see no clear pattern in total volume. The number of loans did decrease in the beginning of 2009, but had recovered fully by the end of the year.

Figure 7 presents the number of *new* payday borrowers, borrowers that appear in the database for the first time. Between 10,000 and 20,000 new borrowers appear in the data set each month. The trend may exhibit some seasonal variation, but it does not suggest an influx of new borrowers as the recession began.

Finally, we study the socioeconomic status of the new borrowers each month. For each payday loan, we observe the zip code of residence of the borrower. We merge that variable with the median household income from the 2000 decennial census. Figure 8 then plots the average of those values for all new borrowers. Here, there is arguably some evidence of a rise in the household income of new borrowers that would be consistent with what was found in the SCF.

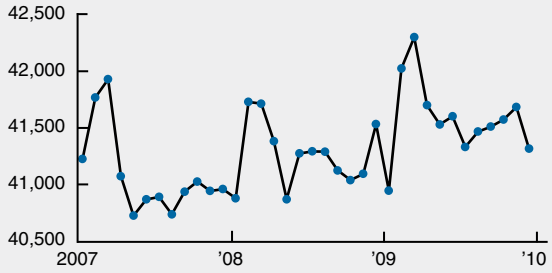
Discussion

Our analysis of data from the SCF suggests that there was a sharp increase in payday borrowing from 2007 to 2009, but that there was no subsequent change through 2013. We are also unsure how much of the 2007 to 2009 increase reflects a continuation of a secular trend versus a cyclical effect of the financial crisis. The SCF data suggest some shifting demographic patterns with older borrowers, black borrowers, those

with some college education, and those in the middle of the income distribution increasingly turning to payday loans. We also use other public and proprietary data sources and conduct a series of exercises that might help uncover trends in demand for payday loans. Each of the exercises, on its own, paints a small picture of the overall market for payday loans. But, taken together, the results suggest that demand for payday loans was largely unaffected by the Great Recession. Overall, we conclude that there was only a modest change in payday borrowing that was heavily concentrated in the 2007 to 2009 period.

FIGURE 8

Socioeconomic status of new payday borrowers



Note: The figure plots average median family income in the zip codes of new payday borrowers at one bricks-and-mortar payday loan chain.

Source: Payday lender with locations throughout the Midwest and 2000 Census.

We can only speculate as to why this is the case. It is worth emphasizing that those without a paycheck typically cannot procure payday loans, and there was a huge increase in unemployment and the duration of unemployment during the recession. Thus, some of the newly unemployed during this period may have, if anything, reduced their payday borrowing. On the other hand, there were also large expansions in unemployment insurance, and many individuals were able to receive partial unemployment insurance while still working.[11] It is also possible that the underlying demand for payday loans did rise during this period but that the many regulatory changes in the industry prevented an increase in the supply of loans. Supply might also have been constrained if sources of credit to the payday loan industry declined during this period. These are important avenues for future research. Our main contribution is to show that despite the fact that the Great Recession led to a general increase in the number of financially constrained consumers, there was not a dramatic shift in the use of payday loans during this period.

NOTES

[1]Authors' calculations based on the Federal Reserve Bank of New York's Consumer Credit Panel.

[2]The numbers we list here are typical. Caskey (2005) provides a more detailed description of the process.

[3]For example, Elliehausen and Lawrence (2001) survey payday borrowers and estimate that nearly 73 percent of payday customers responded that they had been turned down for a loan, compared with just 21.8 percent of all adults. Further, roughly 61 percent of respondents report being constrained by their credit card borrowing limit. Stegman and Faris (2003) find that avoiding overdrafts and problems with debt collection are commonly cited by payday credit users as primary drivers of their demand for payday loans.

[4]Almost 60 percent did not know the APR on their loan. Respondents who thought they knew their APR claimed that it was in the range of 18 percent to 96 percent when, in fact, the APRs were between 417 and 587 percent. Consumers also appear to misperceive the relative costs of credit cards and payday loans. Among the 30 percent who reported having a credit card, 15 percent said they would not use it because they thought it should only be used for emergencies.

[5]In an analysis of data from Oklahoma, Pew (2012) reports that more borrowers had at least 17 loans in a year than just one. A study by the Center for Responsible Lending (Ernst, Farris, and King 2004), using data from North Carolina regulators, reports that 91 percent of loans were made to borrowers with five or more loans per year. Chessin (2005) studied Colorado borrowers and found that about 65 percent of loan volume in that state comes from customers who borrow more than 12 times per year.

[6]These patterns are unchanged if we look only at individuals who have a checking account or only those who are employed.

[7]The stock tickers of those five firms are CSH, DLLR, EZPW, FCFS, and WRLD. Some of these lenders also supply pawn loans.

[8]We find a similar pattern for the market capitalization of these five firms versus the total market capitalization of all publicly traded firms. There appears to be no change in trend for these payday lenders during the Great Recession.

[9]The data on foreclosures consist of counts of foreclosure-related filings. The data are part of the public record and stored by each county office. We are grateful to Neale Mahoney for providing us with an extract of the data.

[10]We are grateful to Will Dobbie for granting us access to those data. This data set was studied earlier by Dobbie and Skiba (2013).

[11]There is evidence suggesting that some lenders may provide loans against an unemployment insurance check. See: http://articles.latimes.com/2010/mar/01/business/la-fi-payday1-2010mar01.

REFERENCES

Bhutta, Neil, Paige Marta Skiba, and Jeremy Tobacman, 2015, "Payday loan choices and consequences," *Journal of Money, Credit and Banking*, Vol. 47, Nos. 2–3, March–April, pp. 223–260.

Carrell, Scott, and Jonathan Zinman, 2014, "In harm's way? Payday loan access and military personnel performance," *Review of Financial Studies*, Vol. 27, No. 9, September, pp. 2805–2840.

Caskey, John P., 2005, "Fringe banking and the rise of payday lending," in *Credit Markets for the Poor*, Patrick Bolton and Howard Rosenthal (eds.), New York: Russell Sage Foundation, pp. 17–45.

Chessin, Paul, 2005, "Borrowing from Peter to pay Paul: A statistical analysis of Colorado's Deferred Deposit Loan Act," *Denver University Law Review*, Vol. 83, No. 2, pp. 387–423.

Christensen, Kim, 2008, "A middle-class move to payday lenders," *Los Angeles Times*, December 24, http://articles.latimes.com/2008/dec/24/business/fi-payday24.

Dobbie, Will, and Paige Marta Skiba, 2013, "Information asymmetries in consumer credit markets: Evidence from payday lending," *American Economic Journal: Applied Economics*, Vol. 5, No. 4, October, pp. 256–282.

Elliehausen, Gregory, and Edward C. Lawrence, 2001, "Payday advance credit in America: An analysis of customer demand," Georgetown University, McDonough School of Business, Credit Research Center, monograph, No. 35, April.

Ernst, Keith, John Farris, and Uriah King, 2004, "Quantifying the economic cost of predatory payday lending," Center for Responsible Lending, report, revised February 24.

Hecht, John, 2014, "Alternative financial services: Innovating to meet customer needs in an evolving regulatory framework," presentation at the 14th Annual Meeting and Conference, Community Financial Services Association of America, Orlando, FL, February 27, http://cfsaa.com/Portals/0/cfsa2014_conference/Presentations/CFSA2014_THURSDAY_GeneralSession_JohnHecht_Stephens.pdf.

Kenneth, Michael, 2008, "Payday lending: Can 'reputable' banks end cycles of debt?," *University of San Francisco Law Review*, Vol. 42, No. 3, pp. 659–714.

Marshall, Carolyn, 2015, "Payday loans: A short-term fix that can turn into a long-term debt trap," *Sacramento Bee*, May 29, http://www.safebee.com/money/payday-loans-short-term-fix-can-turn-long-term-debt-trap.

Martin, Nathalie, 2010, "1,000% interest—good while supplies last: A study of payday loan practices and solutions," *Arizona Law Review*, Volume 52, No. 3, pp. 563–622.

Melzer, Brian T., 2011, "The real costs of credit access: Evidence from the payday lending market," *Quarterly Journal of Economics*, Vol. 126, No. 1, February, pp. 517–555.

Morgan, Donald P., and Michael R. Strain, 2008, "Payday holiday: How households fare after payday credit bans," Federal Reserve Bank of New York, staff report, No. 309, revised February.

Morgan, Donald P., Michael R. Strain, and Ihab Seblani, 2012, "How payday credit access affects overdrafts and other outcomes," *Journal of Money, Credit and Banking*, Vol. 44, Nos. 2–3, March–April, pp. 519–531.

Morse, Adair, 2011, "Payday lenders: Heroes or villains?," *Journal of Financial Economics*, Vol. 102, No. 1, pp. 28–44.

Pew Charitable Trusts, 2012, "Payday lending in America: Who borrows, where they borrow, and why," Payday Lending in America, Washington, DC, July.

Popper, Margaret, and Mary Thompson, 2011, "Lack of credit leads some borrowers to controversial payday lenders," CNBC, January 13, http://www.cnbc.com/id/41056493.

Skiba, Paige Marta, and Jeremy Tobacman, 2011, "Do payday loans cause bankruptcy?," Vanderbilt University Law School, working paper, No. 11-13, February 23.

Stegman, Michael A., and Robert Faris, 2003, "Payday lending: A business model that encourages chronic borrowing," *Economic Development Quarterly*, Vol. 17, No. 1, February, pp. 8–32.

White, Martha C., 2013, "Meet the new payday loan customer: Middle-class, well-educated," *Time*, October 2, http://business.time.com/2013/10/02/meet-the-new-payday-loan-customer-middle-class-well-educated/.

Zinman, Jonathan, 2010, "Restricting consumer credit access: Household survey evidence on effects around the Oregon rate cap," *Journal of Banking and Finance*, Vol. 34, No. 3, pp. 546–556.

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