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Abstract

Many states have capped consumer loan interest rates to protect households from high-cost lenders. Using triple-difference and event study analysis, we investigate how these usury limits affect the availability and allocation of credit across households. Consistent with standard price theory, we find that credit to the riskiest borrowers contracts under usury limits without improving delinquencies. More surprisingly, credit to lower risk borrowers expands under usury limits. This reallocation suggests that usury limits have unintended effects that are not entirely explained by standard theory.

JEL classification: G28, G50, G51
Key words: usury limits, household debt

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1 Introduction

Usury limits, an ancient type of financial regulation, are spreading across the United States. In 2007, Congress capped interest rates on loans to military personnel at 36 percent, the first ever federal usury limit. Following that precedent, many states have imposed similar caps. A bill introduced in the Senate in 2023, "The Predatory Lending Elimination Act," would apply the 36 percent cap all across the country. That cap likely binds not just for payday lenders but also for installment lenders offering larger, longer-term loans, auto-title lenders, and tax refund-anticipation loans.[1]

Advocates for usury limits, a diverse coalition including consumer groups, clergy, and the Bar, claim that rate caps protect households from high cost lenders or curb monopoly power. Opponents, drawing on standard economic theory, counter that limiting interest rates will lead lenders to ration credit to riskier borrowers. The political economy of usury laws, whether they serve public or private interests, is also debated (Benmelich and Moskowitz, 2010; Glaeser and Scheinkman, 1998).

To contribute to these debates, our paper investigates how recent state usury limits have affected the availability and allocation of credit. While standard price theory predicts rationing, that prediction may not hold in practice for various reasons. For example, if the affected lenders enjoy market power, usury limits may work to lower borrowing costs without limiting credit. Alternatively, lenders may evade usury limits by, for example, changing their product structure or partnering with exempt lenders (U.S. House of Representatives, 2016). Finally, even if the lenders bound by usury limits contract credit, exempt lenders, namely banks and credit unions, may fill the gap at better rates (National Consumer Law Center, 2022).

Our study uses quarterly credit bureau data on nearly four million households.[2] We observe their debt balances, the number of accounts they held, and whether they have any delinquencies. We compare "high-risk" borrowers in the bottom decile of credit scores, to other, less risky ones. To identify effects, we compare households in three states that capped consumer loan rates to counterparts in control states that did not enact limits over that period. We estimate event study models revealing how outcomes for high-risk borrowers changed under usury laws relative to households

[1] The effective annual interest (APR) rate on refund anticipation loans range from 70 percent to triple digits. The effective APR auto title loans is around 300 percent (Pew Research Center, 2015).

[2] Our data are from the FRBNY Consumer Credit Panel / Equifax (CCP) developed by the Federal Reserve Bank of New York with data provided by Equifax.

in control states. The models include household and zip code-by-quarter fixed effects, allowing for us to control for time-invariant household characteristics, and macroeconomic changes occurring in each zip code over time.

Consistent with standard price theory, we find that credit to the riskiest borrowers contracts sharply under usury limits. Their debt balances decline about 16.9% relative to similar borrowers in control states while the number of accounts declines about 20%. These findings imply that high-risk borrowers are not substituting toward mainstream lenders. While these findings might be taken as evidence that usury laws are protecting borrowers from high cost credit, delinquencies among those borrowers do not improve under usury limits.

While rationing riskier borrowers is the most predictable response to usury limits, lenders in some circumstances may choose to reallocate "freed up" funds to less risky ones for whom the rate cap is not binding. In particular, those whose lending capacity was constrained before (due to capital or technological constraints) may redirect funds to less risky borrowers. Blitz and Long (1965) claim "it is the less risky borrowers ...who are most likely to benefit from ...usury control." Adam Smith viewed reallocation from "prodigal" to more "sober" borrowers as a benefit of usury limits (Smith, 1937). To look for reallocation we study how credit to marginally safer borrowers (in the 2nd - 5th deciles of credit scores) changes relative to borrowers in higher deciles after usury limits take effect.[3] Consistent with the reallocation hypothesis, we find increased credit at both the intensive and extensive margins as both debt balances and their number of accounts rise.

Our findings deepen our understanding of how usury limits affect credit access. Consistent with much of the literature (see for example Greer (1974), Villegas (1982), Rigbi (2013), Melzer and Schroeder (2017), Cuesta and Sepúlveda (2021), Nelson (2018), Bolen et al. (2023), Jansen et al. (2024), and Bhutta et al. (2016)), we conclude that the recent wave of anti-predatory lending reduces credit to high-risk borrowers. Moreover, our evidence that delinquency does not improve after usury limits calls into question claims by consumer advocates and some researchers that usury limits can reduce interest costs without reducing credit access.

While credit rationing under usury limits is not new, our finding of credit reallocation is more novel. To our knowledge, only two studies have found similar evidence. Studying a single state,

[3]We compare to higher rather than the lowest deciles because we have already established that credit to the lowest decile declined relative to higher deciles.

Bolen et al. (2023) find that lenders shifted credit toward prime consumer borrowers under usury limits. Studying a rate cap on small business loans in Peru, Burga et al. (2025) find that banks redirect loans from riskier firms to safer ones, although only in concentrated lending markets. Our study reinforces and extends these others with its focus on consumer credit in multiple states in the U.S. Collectively, these findings suggest that the rationing prediction in standard models, though accurate, is incomplete. Models that incorporate lending capacity constraints that lead to reallocative effects would be useful. By showing that some borrowers may benefit from increased credit under usury, we provide new evidence on the distributional effects of usury limits. Our findings suggest that the welfare effects of usury limits are also more complex than previously believed. The reallocation we find, from the riskiest borrowers to less risky ones, seems at odds with theory in Glaeser and Scheinkman (1998) of usury limits as "primitive social insurance." In their model, usury limits lower the cost of borrowing when individuals have low income and high marginal utility, while lowering the return to lending for high income individuals with low marginal utility. Credit scores are positively correlated with income (Knapp and Dean, 2018), so usury limits in our case may be transferring credit from lower income to higher income individuals.

Our paper proceeds as follows. Section 2 discusses recent consumer usury legislation, including the three states we study. Section 3 describes our credit data. Section 4 begins by testing for reallocation at the aggregate (state) level using a difference-in-difference analysis. Section 5 tests for credit rationing on high-risk borrowers. Section 6 explores the possibility of credit reallocation from high-risk borrowers to marginally safer borrowers. Section 7 includes robustness checks. Section 8 concludes.

2 Recent Usury Legislation

Usury limits experienced a resurgence in the U.S. starting in the mid-1990s with the entry of payday lenders into the small dollar loan market (Rockoff, 2003). The triple digit rates on payday loans (when annualized) convinced many critics and legislators that payday loans should be banned, either expressly or by usury limits.

The first ever national usury limit, the Military Lending Act of 2007, prohibits charging military staff interest rates higher than 36 percent annually, including all fees. This initial legislation led

consumer advocates rally around 36 percent as a focal point for usury regulation movement across states.[4] A federal bill, the Predatory Loan Elimination Act, introduced in the Senate in 2023, would extend the 36% cap across the U.S.[5]

We study three states that enacted consumer usury limits between 2016 and 2022: South Dakota, North Dakota, and Illinois. Table 1 provides effective dates and other detail on the laws. All three capped rates at 36 percent, inclusive of all fees. The caps applied only to payday lenders, installment lenders, auto-title lenders, with banks and credit unions expressly exempt. State regulatory reports in Illinois and South Dakota show sharp declines in the number of affected lenders in these states declined by 19 percent and 50 percent the year after the cap.[6] While these declines suggest a contraction in credit, the fact that many lenders continued operating leaves open the possibility that they shifted credit toward marginally safer borrowers at rates below the cap.

In our analysis, we compare households in these three treated states to households in seven control states without consumer usury limits. Both treated and control states were identified based on annual reports published by the National Consumer Law Center (NCLC).[7] Our identification relies on whether a state did or did not have a cap on consumer installment loans in a given year, rather than the level of caps. We are more confident in the former as the NCLC emphasizes whenever a state switched from "no cap" to "cap". Several control states prohibit only "unconscionable" rates. We follow the NCLC and treat those states as "no cap" states.

3 Data and Descriptive Analysis

Our credit data are from the FRBNY Consumer Credit Panel/Equifax (CCP). The CCP provides detailed, quarterly credit profiles for a 5% random and anonymized sample of American households tracked by Equifax, one of the three major U.S. credit bureaus.[8] Our observation period begins in 2015:Q1, 7 quarters before the first event and ends in 2022:Q4, 7 quarters after the final event. This period encompasses the COVID pandemic which might have confounded the

[4]The thirty-six may trace back to reform efforts of the Russell Sage Foundation (RSF) in the early 20th century. Concerned that usury limits prevailing at the time, around 6 percent, were too *low*, the RSF drafted and promulgated a Uniform Small Loan Law recommending a higher cap of 3.5 percent per month. Thirty-four states passed versions of the Law between 1914-and 1943 with caps between 36 and 42 percent (Anderson et al., 2015)

[5]See https://www.congress.gov/bill/118th-congress/senate-bill/3549

[6]North Dakota did not produce such a report.

[7]The control states are Alabama, Delaware, Idaho, Missouri, South Carolina, Utah and Wisconsin.

[8]See Lee and Van der Klaauw (2010) for a detailed description of the data.

effects of the usury limits (by changing credit demand) but we show our results hold if we exclude the post-COVID period from the sample.

A key variable in our analysis is the borrowers' Equifax Risk Score 3.0,[9] which has a range of scores between 300-850 and scores increase with creditworthiness. The distribution of scores, by deciles, for the treated and control states are plotted in Figure 1. For borrowers in treated states the risk deciles are based on the distribution of scores the year before the usury limit. For borrowers in control states we use observations across the entire sample period. The distributions are broadly similar, providing some assurance the control states constitute a reasonable comparison group. Borrowers in the bottom decile ("high-risk" from hereon) are our main focus when we investigate the rationing hypothesis, as we compare outcomes for these borrowers relative to lower risk borrowers in higher deciles. When we investigate the reallocation hypothesis, we focus on lower risk, but not prime, borrowers in deciles 2 - 5 versus higher deciles.

Table 2 summarizes the three outcomes we study. *Debt* is the household's debt balance and *Accounts* is the number of open credit accounts. These capture changes in credit at the intensive and extensive margins, respectively. We exclude student loans and mortgage debt as they are unlikely to be affected by usury limits (given their low interest rates). *Delinquent* indicates if the household is delinquent on any account in a given quarter. This will provide some indication of whether the usury laws are associated with more or less financial stress.

The credit profile for high-risk borrowers looks very different from lower-risk borrowers; they owe $2,000 less on average yet have more (0.5) accounts. They are also far more likely to have a delinquent account (57% versus 7%). Given that profile, they seem more likely than other borrowers to rely on high-cost lenders.

Figure 2, where we compare outcomes before and after usury limits took effect across risk score declines, anticipates our main findings. *Debt* for high-risk borrowers was lower afterwards while debt for lower risk borrowers in deciles 2-6 rose. *Accounts* changed in a similar pattern. Though only suggestive, this pattern anticipates the rationing and reallocation effects we study more formally below.

[9] Henceforth referred to interchangeably as credit or risk score.

4 State-level Effects

Although we are ultimately interested in the effect of usury laws across risk cohorts, we begin by studying all households in treated states relative to control states. The descriptive analysis above suggested that credit declined for high-risk borrowers under usury limits but increased for lower-risk borrowers. For this reason, it is not clear whether usury limits should be associated with any change in borrowing at the state-level.

We identify the credit impact of usury limits by comparing changes in outcomes in three states that enacted usury limits, after the usury limit is passed, relative to a set of seven control states without such limits. To that end, we estimate difference-in-difference models:

$$y_{izst} = \beta Treated_s \times Post_{st} + \alpha_i + \alpha_z + \alpha_t + \gamma Age_i + \epsilon_{ist}. \quad (1)$$

The dependent variable, y_{izst}, equals one of the three outcomes mentioned above for individual i in zip code z in state s at date t. $Treated_s$ equals 1 for states that enacted a rate cap between 2015:Q1 and 2022:Q4, and zero for control states. $Post_{st}$ equals 1 after state s enacted laws capping rates and zero before. We use a five-quarter estimation window, both pre- and post-treatment. For the control states we keep all observations. The coefficient β captures how each outcome changes for borrowers in states with usury limits after the laws pass, relative to borrowers in other states. Our identifying assumption is that usury laws are not themselves driven by credit trends in the state. If this assumption holds, then our tests satisfy the parallel trends assumption for a difference-in-differences analysis (i.e., if the usury laws had not passed, credit trends would have changed similarly in treated and control states). We include fixed effects for the individual α_i, their zip code α_z and the date α_t. We also control for the age of the household head, an important life-cycle determinant of credit demand.[10] The standard errors are clustered at the state-by-quarter level.

The empirical design of this paper relies on the staggered rollout of usury limits, across different states. As shown in Goodman-Bacon (2021), if there are differences in treatment effects across time, the difference-in-differences estimator may be difficult to interpret. Note that subsequent methods to address this concern rely on the existence of never-treated units to serve as controls (see, for example, Callaway and Sant'Anna (2021); Sun and Abraham (2021)). As we include a set of

[10] Age is the only personal characteristic available in the CCP.

control states that never have any usury limits in our test sample, our empirical design incorporates a never-treated group into the analysis, which helps mitigate these concerns. Regardless, for full transparency, we separately display results examining each state with a usury limit in the appendix.

Table 3 displays the results. Overall, the state-level analysis does not reveal a substantial change in credit conditions in the aggregate. Both total debt balances and the number of credit accounts experience statistically significant decreases following implementation of usury limits, but the effects are economically small. Specifically, total debt balances declines by 0.9% and the number of accounts declines by 0.6%, so the average borrower experienced a barely noticeable decline in credit provision.

Similarly, we do not see any change in delinquencies after the usury limits, indicating that at the state-level borrowers' credit standings do not change after these laws are enacted. This is intuitive, as only borrowers without access to traditional credit markets typically access high-cost credit. For this reason, the average borrower in the CCP likely did not borrow from high-cost lenders prior to the implementation of usury limits. Moreover, if there was any reallocation of credit from high-risk borrowers to marginally more creditworthy borrowers after usury limits, this would somewhat offset any decline in credit at the state-level.

Next, we examine the dynamics of the change in borrowing surrounding usury limits using an event-study analysis. Specifically, we estimate the following regression:

$$y_{izst} = \sum_{k=-m}^{m} \alpha_k Treated_s * \mathbb{1}_{t-k} + \alpha_i + \alpha_s + \alpha_t + \gamma Age_{it} + \epsilon_{izst}, \tag{2}$$

where $\mathbb{1}_{t-k}$ is an indicator variable that the event took place k periods away from the observation's calendar time.[11] To address the staggered nature of the treatment, we follow Borusyak and Jaravel (2016) in omitting both α_0 and α_{-5} from the estimating equation (i.e., the coefficient for the period before the usury limit passed and the coefficient for the first period of the test sample). Figure A.1 displays the corresponding event-study plots, which display the α_k's from these regressions for changes in borrowing and credit standing. We observe a marginally significant decline in total debt outstanding and the number of credit accounts in the quarter after the usury limit, but no change in delinquencies. This consistent with the view that at an aggregate level, there was not

[11] For observations in the control state, we assume all observations are the period before the event date.

a substantial change in credit conditions after the implementation of usury limits.

The results in this subsection do not indicate substantial aggregate changes in borrowing after usury limits. This is not surprising because the limits in question, at 36 percent or higher, are unlikely to bind for lower-risk borrowers. Usury limits should be most constraining for households that do not have access to traditional credit markets (i.e., those with lower risk scores). In the next section, we focus on understanding how the usury limits affect the provision of credit for the least creditworthy households.

5 Effects on High-Risk Borrowers

In the previous section, we showed that credit provision did not change substantially for the average borrower following usury limits. In this section, we will introduce a triple-difference design that will allow us to separately analyze whether credit changed for borrowers with different risk scores. This will allow us to ask whether usury limits caused credit to decline for the highest risk borrowers after usury limits.

To study how usury limits affect credit the riskiest cohort of borrowers, we estimate the following triple-difference model:

$$y_{izst} = \alpha_i + \alpha_{zt} + \beta HighRisk_i \times Treated_s \times Post_{st} + \gamma Age_i + \epsilon_{ist}, \tag{3}$$

where $HighRisk_i$ equals one if borrower i was in the bottom decile of risk scores before the usury limit is enacted.[12] Here we exploit individual-level variation in risk scores by including zip code-by-quarter fixed effects in place of zip code and quarter fixed effects. The β coefficient measures the change in credit outcomes for high-risk borrowers following usury limits, after controlling for time-invariant household characteristics and aggregate zip code-level changes in credit market conditions over time.[13]

Table 4 displays the estimates. By contrast to the largely null state-level results, usury limits have more consequential effects for high-risk borrowers. Debt held by high-risk borrowers decreases

[12] Results are qualitatively similar when defining high-risk borrowers as either those in the bottom quintile of risk scores, or those with risk scores below 620.

[13] Similar to in the difference-in-differences design, we are able to use the standard triple-difference specification due to the presence of households from never-treated states in our control group.

significantly in treated states relative to other borrowers. The point estimate implies a decline of 14.7% of the sample mean for borrowers in the bottom risk score decile relative to other borrowers. This is consistent with credit rationing to the highest risk borrowers after usury limits. Similarly, the number of accounts decreases by 19.6% of the sample mean. This indicates these borrowers are either closing debt accounts, or opening fewer debt accounts. That is, household debt declines on the extensive margin under usury limits.

While usury limits reduce credit access for high-risk borrowers, households could benefit from these laws in other ways. For instance, borrowers may become delinquent on debt less often, and their credit scores may improve. If this is the case, we may expect that in the long run these declines in credit access may reverse as borrowers gain access to lower cost debt options. To this end, we also study changes in incidences of delinquencies for high-risk borrowers after usury limits, and find no change. Together, these results are consistent with a contraction in credit for high-risk borrowers, with no corresponding improvement in credit standing.

Next, we study how the change in household credit after usury limits evolves over time using the following event-study design:

$$y_{izst} = \alpha_i + \alpha_{zt} + \sum_{k=-m}^{m} \alpha_k HighRisk_i \times Treated_s \times \mathbb{1}_{t-k} + \gamma Age_i + \epsilon_{izst}. \tag{4}$$

This exercise allows us to plot how outcomes change after the usury law, period-by-period. α_k close to zero prior to the usury limit is consistent with the parallel trends assumption required for a triple-difference framework. Just as in the event-study, we follow Borusyak and Jaravel (2016) in omitting α_0 and α_{-5} from the estimating equation.

Figure 3 plots the estimates from these event-studies over time. Consistent with parallel trends, there is not a substantial difference in the trend of each borrowing outcome prior to the enactment of the usury limit. Panel (a) shows event-study plots for debt balances, which decrease by close to $1,000 per borrower immediately after the law is enacted. This decrease in debt balances eventually doubles from this initial decrease in the five quarters after the usury limit. The reduction in credit for high-risk borrowers under usury limits is therefore highly persistent.

We further study changes in credit provision for high-risk borrowers with event-study plots showing changes in the number of accounts in panel (b), which decrease by over 20% of the sample

mean in the five quarters after the usury limit, indicating the decrease in debt balances is primarily driven by changes in borrowing on the extensive margin. These results show that debt balances decrease for high-risk borrowers after usury limits are enacted. This is consistent with (Bolen et al., 2023) who finds that interest rate caps in Illinois reduced access to credit for less creditworthy borrowers.

Lastly, we examine changes in delinquencies over time in panel (c). Similar to what was observed in the triple-difference regression tables, there does not appear to be any change in delinquencies surrounding usury limits, indicating no improvement in credit standing following these laws. The event-study results therefore confirm the patterns observed in the triple-difference tables.

The results in this section show that credit to high-risk borrowers fell after usury limits were enacted. Given this finding, it may be surprising that the difference-in-differences regressions do not reveal a larger decrease in aggregate borrowing. In the following section, we reconcile this difference by studying whether lenders facing usury limits reallocated credit from borrowers with low credit scores to borrowers with marginally higher credit scores.

6 Credit Reallocation

What do lenders do when their main clientele of subprime borrowers no longer qualify for credit under the usury limit? When bound by a usury limit, lenders may redirect credit to marginally safer borrowers for which the rate cap is not binding.

Lenders may reallocate in this manner if their lending capacity was constrained ex ante.

To test the reallocation hypothesis, we estimate the same triple-difference regressions as before, except here we compare outcomes for borrowers in the second through fifth risk score deciles scores to borrowers in higher deciles.[14] Our premise is that prime borrowers above the fifth decile are unlikely to borrow from small dollar lenders in any event, making them a reasonable control. Our question is whether credit to borrowers in deciles 2-5 increases relative to higher deciles.

Table 5 reports the results. Panel (a) repeats the lowest (first) risk score decile, as in Table 4. Panel (b) shows that credit for borrowers in the second decile increased slightly relative to borrowers with higher risk scores. Specifically, total debt balances increase by 1% and the number of credit

[14] We exclude borrowers in lower risk score deciles because we have already found that credit to that cohort declined relative to higher risk score cohorts.

accounts increase by 5.6% for borrowers in the second decile relative to lower risk borrowers under usury limits. Interestingly, this increase in credit for borrowers in the second risk score decile corresponds to a decline in delinquencies of 42%. This implies that these borrowers are not receiving loans at prohibitively high interest rates, which is consistent with lenders changing their business models to conform with the demands of the usury limit. Since delinquencies decline, this could actually be consistent with borrowers in the second decile benefiting from the usury limit.

Panel (c) contains results examining how usury limits affected borrowers in the third risk score decile, relative to those in the fourth through tenth deciles. These borrowers are more clearly affected by the usury limit than those in the second decile. Specifically, borrowing increased by 9.3% of the sample mean for those in the third decile of credit scores relative to less risky borrowers, and the number of credit accounts increases by 13.8%. This increase in credit is consistent with a reallocation of lending from high-risk borrowers to relatively more creditworthy borrowers. Moreover, the reason why the effects are greater for the third decile than the second decile is that the second risk score decline likely includes a mix of borrowers for whom the usury limit is binding, and others for whom it is not binding. On the other hand, the usury limit is probably not binding for any borrowers in the third risk score decile. Similar to the second risk score decile, delinquencies also fall for borrowers in the third risk score decile relative to borrowers with high risk scores, indicating that these new loans did not have adverse effects on borrowers' credit health.

Panels (d) displays results showing changes in credit for borrowers in the fourth risk score decile relative to more creditworthy borrowers. Similar to borrowers in the second and third risk score deciles, total debt balances and the number of accounts increase by 10.8% and 13.5%, respectively, indicating reallocation of credit from the least creditworthy borrowers to those in the fourth risk score decile. Unlike the second and third risk score deciles, though, there is no statistically significant change in delinquencies. Nonetheless, the lack of any increase in delinquencies suggests that the increase in borrowing did not have adverse outcome for borrowers in the fourth risk score decile.

Finally, Panel (e) shows results that examine the change in credit for borrowers in the fifth risk score decile. While credit increases for borrowers in the fifth risk score decile, the magnitude of the increases is smaller than that observed for borrowers in the second through fourth risk score deciles. Total debt balances increase by 7.6% and the number of credit accounts increases by 7.8%.

As observed in the raw trends in borrowing shown in Figure 2, at a certain point in the risk score distribution the newfound credit access under usury limits is less enticing. This is because these borrowers likely already had sufficient access to credit prior to the implementation of the usury limits.

Next, we estimate event-study plots in order to evaluate the dynamics of the change in credit for borrowers in the second through fifth risk score deciles. We estimate the event-study specification described by equation (4), but now assign $HighRisk_i = 1$ if a borrower is in the risk score decile in question and 0 otherwise. Similar to the results shown in Table 5, we restrict the sample for each risk score decile to borrowers in the same decile or higher.

Event-study plots examining changes in the provision of credit for borrowers across the risk score distribution are shown in Figure 4. Panel (a) displays the event-study plots examining total debt balances. The leftmost plot displays the change in total debt balances for the highest risk borrowers, which is the same as the plot shown in Figure 3. Moving to the right, you can find plots examining changes in total debt balances for the second, third, fourth and fifth risk score deciles, respectively. In stark contrast to first risk score decile, there is no decrease in debt balances for borrowers in the second through fifth risk score deciles. Looking at the second risk score decile, there is no change in borrower for the first four quarters after the usury limit, and a slight increase in borrowing in the fifth quarter after the usury limit is implemented. For borrowers in the third risk score decile and higher, we observe a substantial increase in borrowing after the usury limit goes into effect. This effect is not immediate, and slowly builds over time, which is because it takes time for lenders to shift their business models to accommodate relatively lower risk borrowers. In particular, lending to more creditworthy borrowers may require investing in additional hiring, or purchase of additional technology such as alternative credit data (Jansen et al., 2025).

Panel (b) displays results examining changes in the number of accounts for borrowers in the second through fifth deciles relative to lower risk borrowers. Similar to when examining total debt balances, there is no decrease in the number of accounts for these borrowers relative to lower risk borrowers, but rather an increase. This is consistent with lenders offering fewer credit accounts to borrowers in the lowest risk score deciles, while working to attract new borrowers who are relatively more creditworthy.

Lastly, we examine the change in delinquencies for borrowers in the second through fifth deciles

in Figure 4. While there is no notable change in delinquencies for borrowers in the lowest risk score decile, and there is a pre-trend in the change in delinquencies for borrowers in the second risk score decile, we clearly so no increase in delinquencies for borrowers in the third through fifth risk score deciles. This indicates that the new credit for borrowers in the second through fifth risk score deciles does not have an adverse impact on these borrowers.

Overall, the results in this subsection are consistent with lenders extending more credit to borrowers that are more creditworthy, while retracting credit for those who are the least creditworthy, under usury limits. This is consistent with lenders reallocating credit to borrowers for whom the usury limit is not binding. Given that some lenders reallocate credit to relatively higher risk borrowers after usury limits, it appears that instead of leaving the state, some lenders chose to change their operations to abide by the usury limits. Moreover, the increase in credit for some borrowers following usury limits helps to explain why lending does not change in the aggregate following the implementation of usury limits.

7 Robustness

We conduct several tests to ensure the robustness of our results. First, we implement a battery of robustness checks to validate the triple-difference regressions showing that credit declines for the highest risk borrowers following usury limits. Second, we check for robustness in the results on the reallocation of credit from high-risk borrowers to relatively lower-risk borrowers.

7.1 Robustness of effects of usury limits on high-risk borrowers

We repeat the triple-difference analysis as a difference-in-differences test, examining how debt balances change for high-risk borrowers relative to others within the treated states in Table A.1, and the results are similar. One additional concern is that the change in borrowing and credit conditions could be related to the COVID-19 pandemic, and the associated policy response. To this point, Table A.2 shows results excluding data from the COVID years, which are similar to the baseline results, indicating the findings are not driven by the COVID-19 pandemic. We also note that usury laws are often complicated, and we may be including some control states that have usury laws not fully captured by the NCLC data. Fortunately, it is well documented that Wisconsin and

Utah have no usury laws, making them particularly useful control states.[15] Given this institutional feature, we include a version of the test excluding all control states except Utah and Wisconsin in Table A.3, and the results are similar to the baseline.

Lastly, given concerns regarding staggered difference-in-differences designs, we display results separately examining the usury limits passed in Illinois, North Dakota and South Dakota in Table A.4. Importantly, since these analyses have only one treated state, we are able to limit observations in the control states to those within the five-quarter estimation window around the treatment being studied. Results showing that total debt balances decline for high risk borrowers after usury limits are observed in Illinois and North Dakota, although no statistically significant change in total debt balances occurs in South Dakota. In North Dakota, the number of credit accounts declines for the highest risk borrowers, although no statistically significant change in the number of accounts is seen in Illinois and South Dakota. Lastly, no change in delinquencies occurs each any of the three states after usury limits.

7.2 Robustness of credit reallocation

Next, we examine the robustness of the results examining the reallocation of credit from high risk borrowers to relatively lower risk borrowers after usury limits are enacted in a similar set of tests. Table A.5 conducts the reallocation analysis as difference-in-differences regressions, studying changes for each decile within each treated state, and the results are consistent with reallocation of credit. Table A.6 conducts the reallocation analysis excluding the COVID years, and the results are consistent with reallocation. Table A.7 conducts the reallocation analysis only using Wisconsin and Utah as control states, and the results are consistent with reallocation. Lastly, we separately conduct the reallocation analysis for Illinois in Table A.8, for North Dakota in Table A.9 and for South Dakota in Table A.10. Overall, these results are not consistent with reallocation, which could be due to reduced power from having only one treated state in these regressions.

The results in this section show that the changes in credit surrounding usury limits are robust to alternative specifications and samples. This provides comfort in the inferences derived on the

[15] Wisconsin State Law states that "There is no maximum interest rate; however, a loan company license is required to assess an annual percentage rate in excess of 18% per year on a Wisconsin consumer loan unless the lender is exempt from the licensing requirements set forth in Wis. Stat. s. 138.09" and Utah State Law states that "Utah law does not specify an interest rate ceiling, but does have an 'unconscionability' provision".

effect of usury limits on borrowers across the risk score distribution found in this paper.

8 Conclusion

Usury limits, an ancient form of financial regulation, are resurging in the modern U.S. as many states cap rates to curb payday and other small dollar lenders. Despite their antiquity, the efficacy of these regulations is still debated.

This paper contributes to the debate by studying how usury laws reshape credit markets. Studying three states that capped rates, we find that lending to the riskiest cohort of borrowers decreased sharply under usury limits. These borrowers were unable to find lower cost loans from banks and credit unions, as proponents of rate caps may have expected. Nor does delinquency risk for this cohort improve, implying the rate caps reduced credit access but not credit stress. The unexpected winners from rate caps, it seems, are somewhat less risky borrowers who get more credit under usury limits without more delinquency. The welfare implications of this reallocation are beyond our scope, but at the least, it may not have been what policymakers intended.

On the academic front, this reallocation implies that the standard prediction of rationing under usury limits is, though not incorrect, incomplete. Credit market models that incorporate the constraints, whether funding or technological, that may lead lenders to reallocate credit would be useful for future research.

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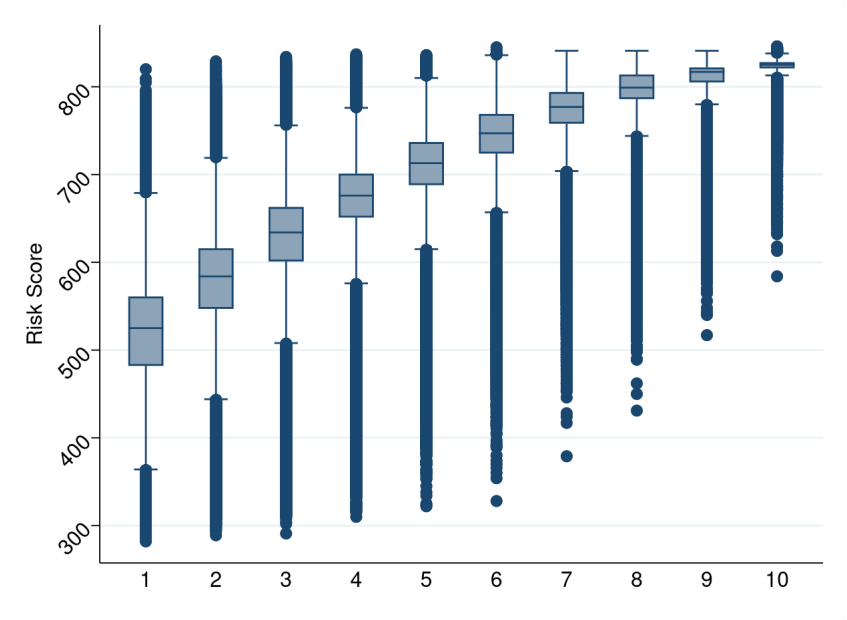
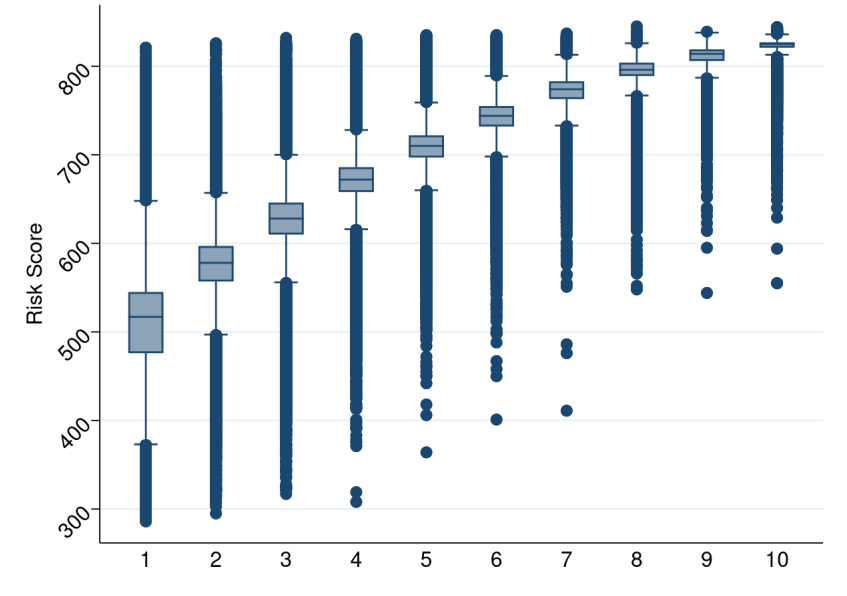
Figure 1. Risk Scores by Decline in Usury Limit and Control States

(a) Usury Limit States

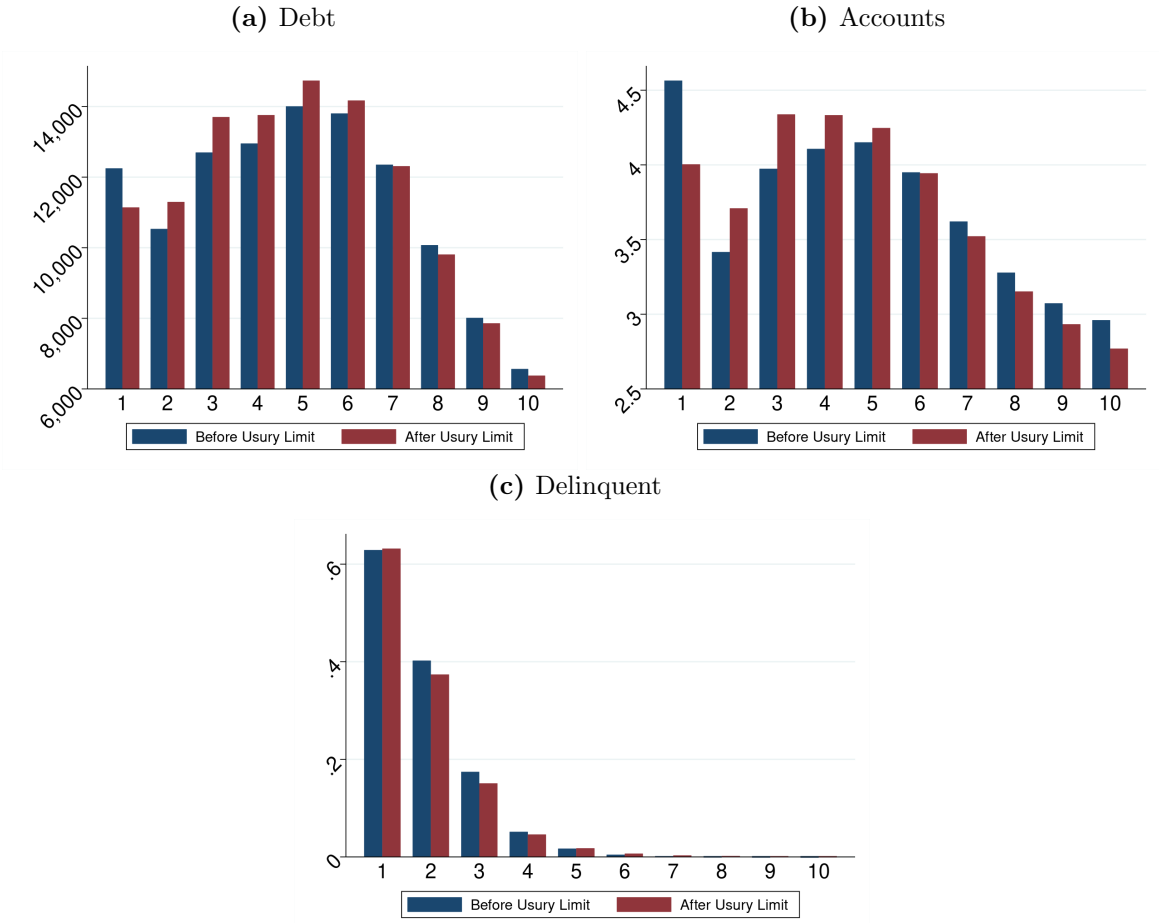


(b) Control States



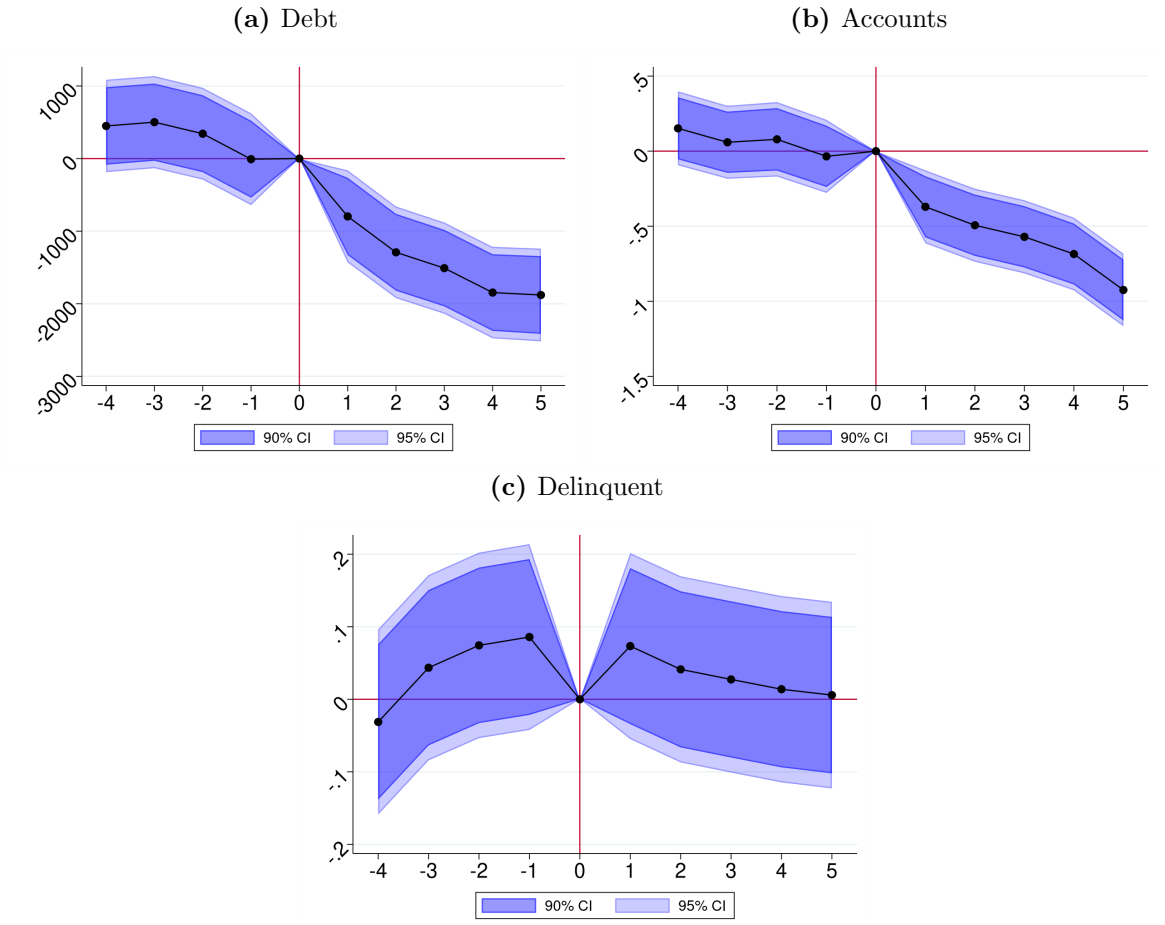
This figure shows the distribution of each risk score decile for usury limit and control states. Debt excludes mortgage debt and student loan debt. For control states, the deciles are defined based on household risk scores throughout the sample period, and for usury limit states the deciles are defined based on household risk scores in the four quarters leading up to the passage of the usury limit. Source: FRBNY Consumer Credit Panel/Equifax 2015:Q1–2022:Q4 and authors' calculations.

Figure 2. Credit Outcomes by Risk Score Decile, Before and After Usury Limits



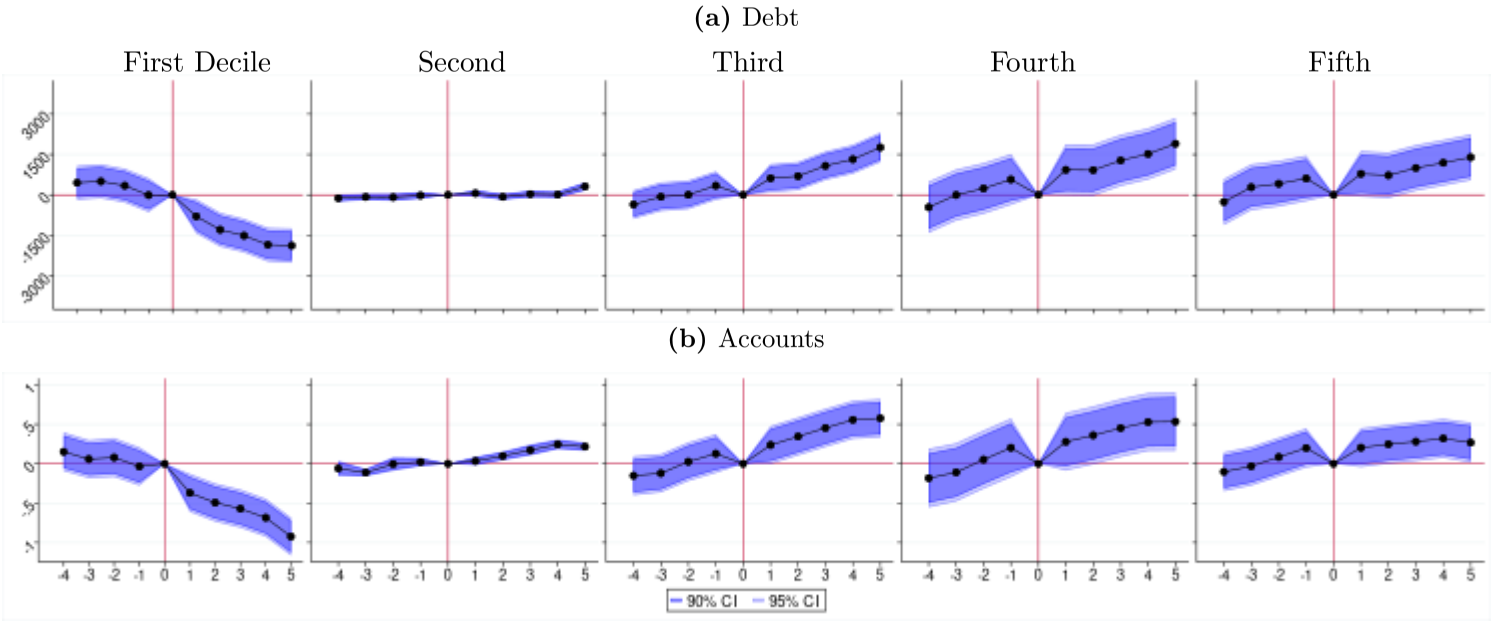
These figures shows the changes in credit after usury limits for borrowers in states with a usury limit in the sample period, according to their risk score deciles. Debt is the dollar amount of all debt outstanding for a borrower, excluding mortgage debt and student loan debt. Accounts are the total number of credit accounts open for a borrower, excluding mortgage and student loan accounts. Delinquencies are defined as any debt delinquency of 90 days or more. The deciles are defined based on household risk scores in the four quarters leading up to the passage of the usury limit. Source: FRBNY Consumer Credit Panel/Equifax 2015:Q1–2022:Q4 and authors' calculations.

Figure 3. Changes in Credit for High-Risk Borrowers Over Time



These figures show dynamic triple-differences plots examining the changes in credit after usury limits for borrowers in the bottom risk decile, located in states passing the usury limit, relative to other borrowers. Debt is the dollar amount of all debt outstanding for a borrower, excluding mortgage debt and student loan debt. Accounts are the total number of credit accounts open for a borrower, excluding mortgage and student loan accounts. Delinquencies are defined as any debt delinquency of 90 days or more. For control states, the deciles are defined based on household risk scores throughout the sample period, and for usury limit states the deciles are defined based on household risk scores in the four quarters leading up to the passage of the usury limit. Individual and zip code-by-quarter fixed effects are included in regressions and standard errors are clustered at the state-by-quarter level. Source: FRBNY Consumer Credit Panel/Equifax 2015:Q1–2022:Q4 and authors' calculations.

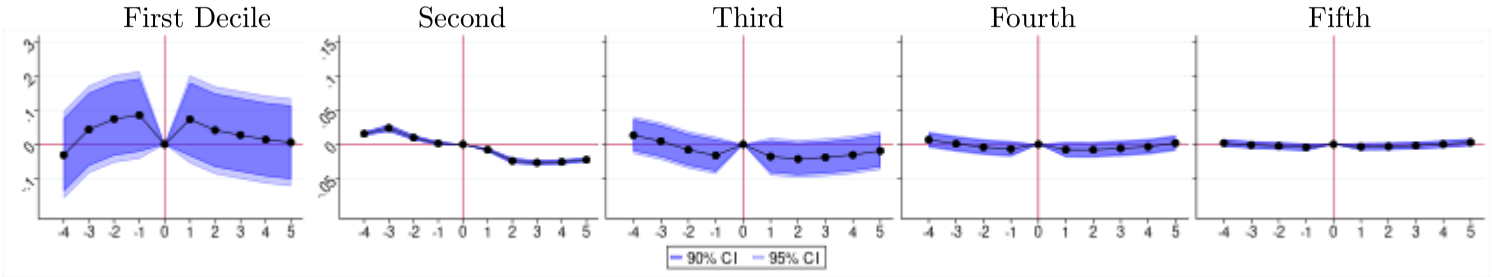
Figure 4. Credit Reallocation from Higher Risk to Lower Risk Borrowers Under Usury Limits



These figures show dynamic triple-difference plots examining the changes in credit after usury limits for borrowers with risk scores in either the second, third, fourth or fifth decile, located in states passing the usury limit, relative to borrowers in all higher risk score deciles. Debt is the dollar amount of all debt outstanding for a borrower, excluding mortgage debt and student loan debt. Accounts are the total number of credit accounts open for a borrower, excluding mortgage and student loan accounts. For control states, the deciles are defined based on household risk scores throughout the sample period, and for usury limit states the deciles are defined based on household risk scores in the four quarters leading up to the passage of the usury limit. Individual and zip code-by-quarter fixed effects are included in regressions and standard errors are clustered at the state-by-quarter level. Source: FRBNY Consumer Credit Panel/Equifax 2015:Q1–2022:Q4 and authors' calculations.

Figure 4. No Increase in Delinquencies for Lower Risk Borrowers Under Usury Limits

(c) Delinquent



These figures show dynamic triple-difference plots examining the changes in credit after usury limits for borrowers with risk scores in either the second, third, fourth or fifth decile, located in states passing the usury limit, relative to borrowers in all higher risk score deciles. Delinquencies are defined as any debt delinquency of 90 days or more. For control states, the deciles are defined based on household risk scores throughout the sample period, and for usury limit states the deciles are defined based on household risk scores in the four quarters leading up to the passage of the usury limit. Individual and zip code-by-quarter fixed effects are included in regressions and standard errors are clustered at the state-by-quarter level. Source: FRBNY Consumer Credit Panel/Equifax 2015:Q1–2022:Q4 and authors' calculations.

Table 1: Summary of Usury Limit Laws

State	Law	Law Name	Passed	Effective	% Δ Licenses	Limit
South Dakota	IM 21	South Dakota Payday Lending Initiative	11/8/2016	11/16/2016	19%	36%
Illinois	SB 1792	Predatory Loan Prevention Act	3/23/2021	3/23/2021	Over 50%	36%
North Dakota	SB 2103	Money Brokers Act	4/19/2021	8/1/2021	Not Available	36%

This table provides information on the usury laws examined in the analysis. Information on Illinois licenses are from Illinois Trends Report for Selected Consumer Loan Products for 2021.. Information on South Dakota are from personal correspondence with SD Department of Labor and Regulation (10/10/2024), and page 14 in the SD Division of Banking Industry Overview. No data on licenses are available for North Dakota.

Table 2: Household Credit Summary Statistics

	High-Risk Borrowers				All Other Borrowers			
	Mean	*Median*	*St. Dev*	*Count*	*Mean*	*Median*	*St. Dev*	*Count*
Debt	9640.86	4421.00	13902.46	3,510,580	11493.94	4151.00	21363.95	31,588,003
Accounts	3.75	2.00	4.23	3,510,580	3.24	2.00	3.25	31,588,003
Delinquent	0.57	1.00	0.50	3,510,580	0.07	0.00	0.25	31,588,003

These tables show summary statistics for high-risk borrowers and all others, where high-risk borrowers are defined as those in the bottom-decile of risk scores. For control states, the deciles are defined based on household risk scores throughout the sample period, and for usury limit states the deciles are defined based on household risk scores in the four quarters leading up to the passage of the usury limit. Debt is the dollar amount of all debt outstanding for a borrower, excluding mortgage debt and student loan debt. Accounts are the total number of credit accounts open for a borrower, excluding mortgage and student loan accounts. Delinquencies are defined as any debt delinquency of 90 days or more. Source: FRBNY Consumer Credit Panel/Equifax 2015:Q1–2022:Q4 and authors' calculations.

Table 3: Changes in Credit After Usury Limits

	Debt	Accounts	Delinquent
Limit × Post	-96.60**	-0.02*	-0.00
	(44.97)	(0.01)	(0.00)
Mean of Outcome	11,297.05	3.29	0.12
N	35,157,395	35,157,395	35,157,395
R-Squared	0.67	0.78	0.61
Household FE	Yes	Yes	Yes
Zip code FE	Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes

These tables show difference-in-differences regression results examining the changes in credit after usury limits for borrowers located in states passing the usury limit, relative to other borrowers. Debt excludes mortgage debt and student loan debt. Debt is the dollar amount of all debt outstanding for a borrower, excluding mortgage debt and student loan debt. Accounts are the total number of credit accounts open for a borrower, excluding mortgage and student loan accounts. Delinquencies are defined as any debt delinquency of 90 days or more. All regressions controls for quarter, zip code and state fixed effects, as well as borrower age. Standard errors, which are clustered at the state-by-quarter level, are shown in parentheses. *, ** and *** indicate 10%, 5% and 1% significance respectively. Source: FRBNY Consumer Credit Panel/Equifax 2015:Q1–2022:Q4 and authors' calculations.

Table 4: Changes in Credit for High-Risk Borrowers After Usury Limits

	Debt	Accounts	Delinquent
High-risk × Limit × Post	-1669.70***	-0.65***	0.00
	(217.51)	(0.09)	(0.03)
High-risk × Limit	341.52	-0.06	-0.01
	(377.43)	(0.12)	(0.02)
Mean of Outcome	11,308.04	3.30	0.12
N	35,076,379	35,076,379	35,076,379
R-Squared	0.67	0.78	0.61
Zip Code-quarter FE	Yes	Yes	Yes
Household FE	Yes	Yes	Yes

This table shows triple-differences regression results examining the changes in credit outcomes after usury limits for borrowers in the bottom risk decile, located in states passing the usury limit, relative to other borrowers. Debt is the dollar amount of all debt outstanding for a borrower, excluding mortgage debt and student loan debt. Accounts are the total number of credit accounts open for a borrower, excluding mortgage and student loan accounts. Delinquencies are defined as any debt delinquency of 90 days or more. For control states, the deciles are defined based on household risk scores throughout the sample period, and for usury limit states the deciles are defined based on household risk scores in the four quarters leading up to the passage of the usury limit. All regressions control for household and zip code-by-quarter fixed effects, as well as borrower age. Lower order interactions are included included in regressions but not reported. Standard errors, which are clustered at the state-by-quarter level, are shown in parentheses. *, ** and *** indicate 10%, 5% and 1% significance respectively. Source: FRBNY Consumer Credit Panel/Equifax 2015:Q1–2022:Q4 and authors' calculations.

Table 5: Credit Reallocation from Higher Risk to Lower Risk Borrowers Under Usury Limits

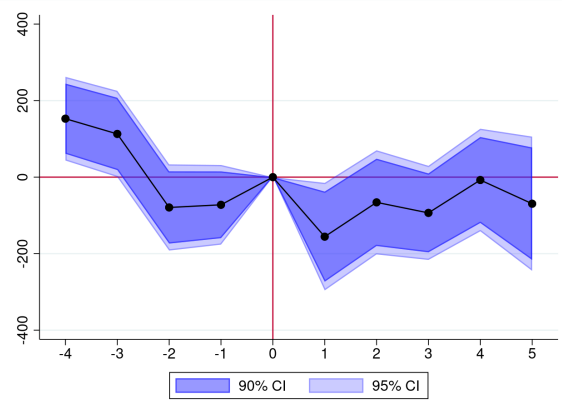
	Debt	Accounts	Delinquent
	(a) First Decile		
Dec. 1 × Limit × Post	-1669.70***	-0.65***	0.00
	(217.51)	(0.09)	(0.03)
Mean	11,308.04	3.30	0.12
N	35,076,379	35,076,379	35,076,379
R-Squared	0.67	0.78	0.61
	(b) Second		
Dec. 2 × Limit × Post	116.84*	0.18***	-0.03***
	(65.69)	(0.04)	(0.01)
Mean	11,493.43	3.24	0.07
N	31,568,255	31,568,255	31,568,255
R-Squared	0.67	0.79	0.54
	(c) Third		
Dec. 3 × Limit × Post	1092.79***	0.45***	-0.02**
	(212.23)	(0.07)	(0.01)
Mean	11,638.76	3.25	0.03
N	28,061,066	28,061,066	28,061,066
R-Squared	0.67	0.80	0.49
	(d) Fourth		
Dec. 4 × Limit × Post	1233.62***	0.43***	-0.00
	(254.40)	(0.09)	(0.00)
Mean	11,429.73	3.19	0.01
N	24,553,467	24,553,467	24,553,467
R-Squared	0.67	0.81	0.43
	(e) Fifth		
Dec. 5 × Limit × Post	835.14***	0.24***	-0.00
	(201.87)	(0.06)	(0.00)
Mean	11,022.11	3.08	0.01
N	21,045,573	21,045,573	21,045,573
R-Squared	0.67	0.81	0.37
Zip-Code Quarter FE	Yes	Yes	Yes
Household FE	Yes	Yes	Yes

These tables show triple-differences regression results examining the changes in credit standing outcomes after usury limits for borrowers in the second, third, fourth or fifth risk score decile, located in states passing the usury limit, relative to borrowers in the bottom risk score decile. Debt is the dollar amount of all debt outstanding for a borrower, excluding mortgage debt and student loan debt. Accounts are the total number of credit accounts open for a borrower, excluding mortgage and student loan accounts. Delinquencies are defined as any debt delinquency of 90 days or more. For control states, the deciles are defined based on household risk scores throughout the sample period, and for usury limit states the deciles are defined based on household risk scores in the four quarters leading up to the passage of the usury limit. All regressions control for household and zip code-by-quarter fixed effects, as well as borrower age. Lower order interactions are included included in regressions but not reported. Standard errors, which are clustered at the state-by-quarter level, are shown in parentheses. *, ** and *** indicate 10%, 5% and 1% significance respectively. Source: FRBNY Consumer Credit Panel/Equifax 2015:Q1–2022:Q4 and authors' calculations.

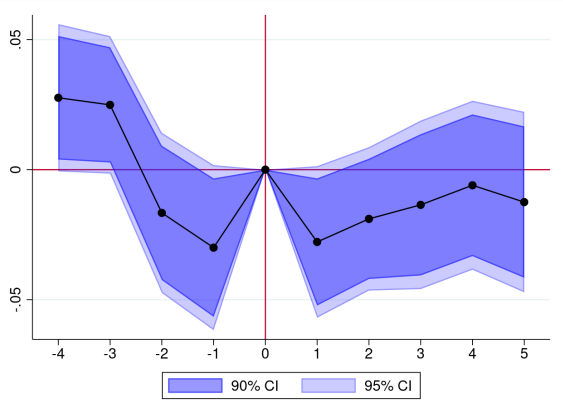
Appendix

Figure A.1. Changes in Credit Over Time

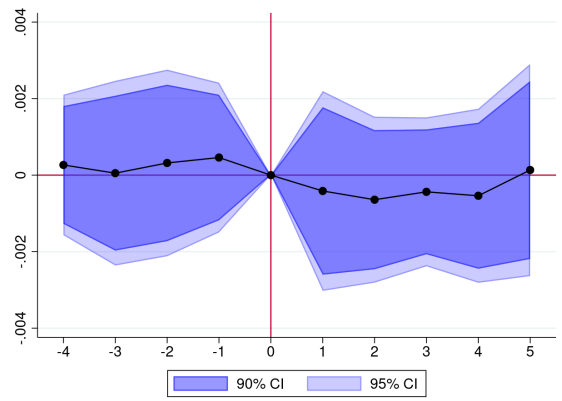
(a) Debt



(b) Accounts



(c) Delinquent



These figures show dynamic difference-in-differences plots examining the changes in credit for borrowers located in states passing the usury limit, relative to other borrowers. Debt is the dollar amount of all debt outstanding for a borrower, excluding mortgage debt and student loan debt. Accounts are the total number of credit accounts open for a borrower, excluding mortgage and student loan accounts. Delinquencies are defined as any debt delinquency of 90 days or more. Individual, zip code and quarter fixed effects are included in regressions, and Standard errors, which are clustered at the state-by-quarter level, are shown in parentheses. *, ** and *** indicate 10%, 5% and 1% significance respectively. Source: FRBNY Consumer Credit Panel/Equifax and authors' calculations.

Table A.1: Changes in Credit After Usury Limits - Within usury limit states

	Debt	Accounts	Delinquent
High-risk × Post	-1678.91***	-0.65***	0.00
	(229.44)	(0.10)	(0.03)
Mean of Outcome	11,205.98	3.66	0.10
N	5,316,013	5,316,013	5,316,013
R-Squared	0.83	0.91	0.79
Zip Code-Quarter FE	Yes	Yes	Yes
Household FE	Yes	Yes	Yes

These tables show difference-in-differences regression results examining the changes in credit after usury limits for high-risk borrowers in states passing the usury limits, relative to other borrowers. Debt is the dollar amount of all debt outstanding for a borrower, excluding mortgage debt and student loan debt. Accounts are the total number of credit accounts open for a borrower, excluding mortgage and student loan accounts. Delinquencies are defined as any debt delinquency of 90 days or more. Sample are limited to states that pass a usury limit. The deciles are defined based on household risk scores in the four quarters leading up to the passage of the usury limit. All regressions control for borrower age. Standard errors, which are clustered at the state-by-quarter level, are shown in parentheses. *, ** and *** indicate 10%, 5% and 1% significance respectively. Source: FRBNY Consumer Credit Panel/Equifax and authors' calculations.

Table A.2: Changes in Credit for High-Risk Households - Excluding COVID Years

	Debt	Accounts	Delinquent
High-risk × Limit × Post	-2042.94***	-0.84***	-0.00
	(295.26)	(0.11)	(0.03)
High-risk × Limit	-2767.31***	-0.96***	-0.08***
	(201.25)	(0.07)	(0.01)
Mean of Outcome	10,845.83	3.06	0.12
N	18,462,995	18,462,995	18,462,995
R-Squared	0.74	0.79	0.63
Zip Code-Quarter FE	Yes	Yes	Yes
Household FE	Yes	Yes	Yes

These tables show triple-differences regression results examining the changes in credit after usury limits for borrowers in the bottom risk decile, located in states passing the usury limit, relative to other borrowers.Debt is the dollar amount of all debt outstanding for a borrower, excluding mortgage debt and student loan debt. Accounts are the total number of credit accounts open for a borrower, excluding mortgage and student loan accounts. Delinquencies are defined as any debt delinquency of 90 days or more. For control states, the deciles are defined based on household risk scores throughout the sample period, and for usury limit states the deciles are defined based on household risk scores in the four quarters leading up to the passage of the usury limit. Analysis excludes observations in 2020 or later. All regressions control for household and zip code-by-quarter fixed effects, as well as borrower age. Lower order interactions are included included in regressions but not reported. Standard errors, which are clustered at the state-by-quarter level, are shown in parentheses. *, ** and *** indicate 10%, 5% and 1% significance respectively. Source: FRBNY Consumer Credit Panel/Equifax and authors' calculations.

Table A.3: Changes in Credit for High-Risk Households - Excluding All Controls States Except Wisconsin and Utah

	Debt	Accounts	Delinquent
High-risk × Limit × Post	-1676.67***	-0.65***	0.00
	(221.99)	(0.09)	(0.03)
High-risk × Limit	311.94	0.10	0.01
	(380.25)	(0.13)	(0.02)
Mean of Outcome	10,522.75	3.30	0.08
N	14,863,103	14,863,103	14,863,103
R-Squared	0.72	0.82	0.65
Zip Code-Quarter FE	Yes	Yes	Yes
Household FE	Yes	Yes	Yes

These tables show triple-differences regression results examining the changes in credit after usury limits for borrowers in the bottom risk decile, located in states passing the usury limit, relative to other borrowers.Debt is the dollar amount of all debt outstanding for a borrower, excluding mortgage debt and student loan debt. Accounts are the total number of credit accounts open for a borrower, excluding mortgage and student loan accounts. Delinquencies are defined as any debt delinquency of 90 days or more. For control states, the deciles are defined based on household risk scores throughout the sample period, and for usury limit states the deciles are defined based on household risk scores in the four quarters leading up to the passage of the usury limit. Analysis excludes all control states except Wisconsin and Utah. All regressions control for household and zip code-by-quarter fixed effects, as well as borrower age. Lower order interactions are included included in regressions but not reported. Standard errors, which are clustered at the state-by-quarter level, are shown in parentheses. *, ** and *** indicate 10%, 5% and 1% significance respectively. Source: FRBNY Consumer Credit Panel/Equifax and authors' calculations.

Table A.4: Changes in Credit After Usury Limits by State

	Debt	Accounts	Delinquent
(a) Illinois			
High-risk × Limit × Post	-447.24*	-0.11	-0.00
	(258.42)	(0.11)	(0.03)
Mean	11,603.70	3.55	0.12
N	15,109,032	15,109,032	15,109,032
R-Squared	0.80	0.91	0.80
(b) North Dakota			
High-risk × Limit × Post	-1039.01***	-0.25**	-0.00
	(342.51)	(0.11)	(0.02)
Mean	12,052.22	3.48	0.12
N	10,700,290	10,700,290	10,700,290
R-Squared	0.79	0.90	0.81
(c) South Dakota			
High-risk × Limit × Post	120.48	0.11	-0.02
	(359.96)	(0.14)	(0.03)
Mean of Outcome	10,552.58	2.88	0.12
N	9,929,097	9,929,097	9,929,097
R-Squared	0.83	0.82	0.72
Zip-Code Quarter FE	Yes	Yes	Yes
Household FE	Yes	Yes	Yes

These figures show triple-differences regression results examining the changes in credit after usury limits for borrowers located in Illinois, North Dakota, and South Dakota, relative to borrowers in control states.Debt is the dollar amount of all debt outstanding for a borrower, excluding mortgage debt and student loan debt. Accounts are the total number of credit accounts open for a borrower, excluding mortgage and student loan accounts. Delinquencies are defined as any debt delinquency of 90 days or more. All regressions control for household and zip code-by-quarter fixed effects, as well as borrower age. Lower order interactions are included included in regressions but not reported. Standard errors, which are clustered at the state-by-quarter level, are shown in parentheses. *, ** and *** indicate 10%, 5% and 1% significance respectively. Source: FRBNY Consumer Credit Panel/Equifax 2015:Q1–2022:Q4 and authors' calculations.

Table A.5: Reallocation of Credit After Usury Limits – Within Treated States

	Debt	Accounts	Delinquent
	(a) First Decile		
Dec. 1 × Post	-1678.91***	-0.65***	0.00
	(229.44)	(0.10)	(0.03)
Mean	11,205.98	3.66	0.10
N	5,316,013	5,316,013	5,316,013
R-Squared	0.83	0.91	0.79
	(b) Second		
Dec. 2 × Post	103.87	0.17***	-0.03***
	(69.35)	(0.04)	(0.01)
Mean	11,158.64	3.60	0.06
N	4,891,224	4,891,224	4,891,224
R-Squared	0.83	0.91	0.75
	(c) Third		
Dec. 3 × Post	1081.89***	0.45***	-0.02**
	(219.93)	(0.08)	(0.01)
Mean	11,184.95	3.61	0.03
N	4,481,754	4,481,754	4,481,754
R-Squared	0.83	0.91	0.70
	(d) Fourth		
Dec. 4 × Post	1231.72***	0.43***	-0.00
	(263.11)	(0.09)	(0.00)
Mean	10,939.11	3.54	0.01
N	3,985,462	3,985,462	3,985,462
R-Squared	0.83	0.91	0.62
	(e) Fifth		
Dec. 5 × Post	823.93***	0.23***	-0.00
	(208.29)	(0.06)	(0.00)
Mean	10,547.63	3.43	0.00
N	3,422,963	3,422,963	3,422,963
R-Squared	0.83	0.91	0.52
Zip-Code Quarter FE	Yes	Yes	Yes
Household FE	Yes	Yes	Yes

These tables show difference-in-differences regression results examining the changes in credit outcomes after usury limits for borrowers in the second, third, fourth or fifth risk score decile, relative to all borrowers that are more creditworthy. Debt is the dollar amount of all debt outstanding for a borrower, excluding mortgage debt and student loan debt. Accounts are the total number of credit accounts open for a borrower, excluding mortgage and student loan accounts. Delinquencies are defined as any debt delinquency of 90 days or more. For control states, the deciles are defined based on household risk scores throughout the sample period, and for treated states the deciles are defined based on household risk scores in the four quarters leading up to the passage of the usury limit. All regressions control for household and zip code-by-quarter fixed effects, as well as borrower age. Lower order interactions are included included in regressions but not reported. The sample is limited to borrowers located in treated states. Standard errors, which are clustered at the state-by-quarter level, are shown in parentheses. *, ** and *** indicate 10%, 5% and 1% significance respectively. Source: FRBNY Consumer Credit Panel/Equifax 2015:Q1–2022:Q4 and authors' calculations.

Table A.6: Reallocation of Credit After Usury Limits – Excluding COVID Years

	Debt	Accounts	Delinquent
	(a) First Decile		
Dec. 1 × Limit × Post	-2042.94***	-0.84***	-0.00
	(295.26)	(0.11)	(0.03)
Mean	10,845.83	3.06	0.12
N	18,462,995	18,462,995	18,462,995
R-Squared	0.74	0.79	0.63
	(b) Second		
Dec. 2 × Limit × Post	-1018.74***	-0.51***	-0.01
	(154.49)	(0.18)	(0.01)
Mean	11,088.50	3.00	0.07
N	16,615,387	16,615,387	16,615,387
R-Squared	0.74	0.80	0.59
	(c) Third		
Dec. 3 × Limit × Post	527.34***	0.21*	0.01
	(127.70)	(0.11)	(0.01)
Mean	11,332.48	3.02	0.04
N	14,769,760	14,769,760	14,769,760
R-Squared	0.74	0.81	0.55
	(d) Fourth		
Dec. 4 × Limit × Post	607.26***	0.36**	0.00
	(219.38)	(0.15)	(0.01)
Mean	11,280.96	2.99	0.02
N	12,924,166	12,924,166	12,924,166
R-Squared	0.74	0.81	0.51
	(e) Fifth		
Dec. 5 × Limit × Post	1140.66***	0.23***	0.00
	(289.20)	(0.06)	(0.00)
Mean	11,013.18	2.92	0.01
N	11,080,878	11,080,878	11,080,878
R-Squared	0.74	0.81	0.45
Zip-Code Quarter FE	Yes	Yes	Yes
Household FE	Yes	Yes	Yes

These tables show triple-differences regression results examining the changes in credit outcomes after usury limits for borrowers in the second, third, fourth or fifth risk score decile, located in states passing the usury limit, relative to all borrowers that are more creditworthy. Debt is the dollar amount of all debt outstanding for a borrower, excluding mortgage debt and student loan debt. Accounts are the total number of credit accounts open for a borrower, excluding mortgage and student loan accounts. Delinquencies are defined as any debt delinquency of 90 days or more. For control states, the deciles are defined based on household risk scores throughout the sample period, and for treated states the deciles are defined based on household risk scores in the four quarters leading up to the passage of the usury limit. All regressions control for household and zip code-by-quarter fixed effects, as well as borrower age. Lower order interactions are included included in regressions but not reported. Standard errors, which are clustered at the state-by-quarter level, are shown in parentheses. *, ** and *** indicate 10%, 5% and 1% significance respectively. Source: FRBNY Consumer Credit Panel/Equifax 2015:Q1–2019:Q4 and authors' calculations.

Table A.7: Reallocation of Credit After Usury Limits – Only use Wisconsin and Utah as Controls

	Debt	Accounts	Delinquent
	(a) First Decile		
Dec. 1 × Limit × Post	-1678.91***	-0.65***	0.00
	(229.44)	(0.10)	(0.03)
Mean	11,205.98	3.66	0.10
N	5,316,013	5,316,013	5,316,013
R-Squared	0.83	0.91	0.79
	(b) Second		
Dec. 2 × Limit × Post	103.87	0.17***	-0.03***
	(69.35)	(0.04)	(0.01)
Mean	11,158.64	3.60	0.06
N	4,891,224	4,891,224	4,891,224
R-Squared	0.83	0.91	0.75
	(c) Third		
Dec. 3 × Limit × Post	1081.89***	0.45***	-0.02**
	(219.93)	(0.08)	(0.01)
Mean	11,184.95	3.61	0.03
N	4,481,754	4,481,754	4,481,754
R-Squared	0.83	0.91	0.70
	(d) Fourth		
Dec. 4 × Limit × Post	1231.72***	0.43***	-0.00
	(263.11)	(0.09)	(0.00)
Mean	10,939.11	3.54	0.01
N	3,985,462	3,985,462	3,985,462
R-Squared	0.83	0.91	0.62
	(e) Fifth		
Dec. 5 × Limit × Post	823.93***	0.23***	-0.00
	(208.29)	(0.06)	(0.00)
Mean	10,547.63	3.43	0.00
N	3,422,963	3,422,963	3,422,963
R-Squared	0.83	0.91	0.52
Zip-Code Quarter FE	Yes	Yes	Yes
Household FE	Yes	Yes	Yes

These tables show triple-differences regression results examining the changes in credit outcomes after usury limits for borrowers in the second, third, fourth or fifth risk score decile, located in states passing the usury limit, relative to all borrowers that are more creditworthy. Debt is the dollar amount of all debt outstanding for a borrower, excluding mortgage debt and student loan debt. Accounts are the total number of credit accounts open for a borrower, excluding mortgage and student loan accounts. Delinquencies are defined as any debt delinquency of 90 days or more. For control states, the deciles are defined based on household risk scores throughout the sample period, and for treated states the deciles are defined based on household risk scores in the four quarters leading up to the passage of the usury limit. All regressions control for household and zip code-by-quarter fixed effects, as well as borrower age. Lower order interactions are included included in regressions but not reported. Only Wisconsin and Utah are included as control states. Standard errors, which are clustered at the state-by-quarter level, are shown in parentheses. *, ** and *** indicate 10%, 5% and 1% significance respectively. Source: FRBNY Consumer Credit Panel/Equifax 2015:Q1–2022:Q4 and authors' calculations.

Table A.8: Reallocation of Credit After Usury Limits – Illinois

	Debt	Accounts	Delinquent
	(a) First Decile		
Dec. 1 × Limit × Post	-447.24*	-0.11	-0.00
	(258.42)	(0.11)	(0.03)
Mean	11,603.70	3.55	0.12
N	15,109,032	15,109,032	15,109,032
R-Squared	0.80	0.91	0.80
	(b) Second		
Dec. 2 × Limit × Post	-330.83***	-0.02	-0.00
	(113.34)	(0.05)	(0.01)
Mean	11,614.11	3.49	0.06
N	13,597,525	13,597,525	13,597,525
R-Squared	0.80	0.91	0.76
	(c) Third		
Dec. 3 × Limit × Post	-211.53	0.02	-0.00
	(289.63)	(0.10)	(0.01)
Mean	11,683.37	3.49	0.02
N	12,086,107	12,086,107	12,086,107
R-Squared	0.81	0.92	0.68
	(d) Fourth		
Dec. 4 × Limit × Post	-251.91	0.01	-0.00
	(314.87)	(0.10)	(0.00)
Mean	11,458.87	3.42	0.01
N	10,568,972	10,568,972	10,568,972
R-Squared	0.80	0.92	0.60
	(e) Fifth		
Dec. 5 × Limit × Post	-190.89	0.00	-0.00
	(247.50)	(0.07)	(0.00)
Mean	11,015.47	3.31	0.00
N	9,060,177	9,060,177	9,060,177
R-Squared	0.80	0.92	0.49
Zip-Code Quarter FE	Yes	Yes	Yes
Household FE	Yes	Yes	Yes

These tables show triple-differences regression results examining the changes in credit outcomes after usury limits for borrowers in the second, third, fourth or fifth risk score decile, located in Illinois, relative to all borrowers that are more creditworthy. Debt is the dollar amount of all debt outstanding for a borrower, excluding mortgage debt and student loan debt. Accounts are the total number of credit accounts open for a borrower, excluding mortgage and student loan accounts. Delinquencies are defined as any debt delinquency of 90 days or more. For control states, the deciles are defined based on household risk scores throughout the sample period, and for treated states the deciles are defined based on household risk scores in the four quarters leading up to the passage of the usury limit. All regressions control for household and zip code-by-quarter fixed effects, as well as borrower age. Lower order interactions are included included in regressions but not reported. Standard errors, which are clustered at the state-by-quarter level, are shown in parentheses. *, ** and *** indicate 10%, 5% and 1% significance respectively. Source: FRBNY Consumer Credit Panel/Equifax 2015:Q1–2019:Q4 and authors' calculations.

Table A.9: Reallocation of Credit After Usury Limits – North Dakota

	Debt	Accounts	Delinquent
	(a) First Decile		
Dec. 1 × Limit × Post	-1039.01***	-0.25**	-0.00
	(342.51)	(0.11)	(0.02)
Mean	12,052.22	3.48	0.12
N	10,700,290	10,700,290	10,700,290
R-Squared	0.79	0.90	0.81
	(b) Second		
Dec. 2 × Limit × Post	-571.90***	-0.11	-0.00
	(147.75)	(0.07)	(0.01)
Mean	12,101.62	3.43	0.06
N	9,627,437	9,627,437	9,627,437
R-Squared	0.79	0.90	0.76
	(c) Third		
Dec. 3 × Limit × Post	81.67	0.02	0.00
	(364.96)	(0.12)	(0.01)
Mean	12,178.19	3.42	0.02
N	8,556,015	8,556,015	8,556,015
R-Squared	0.80	0.91	0.67
	(d) Fourth		
Dec. 4 × Limit × Post	42.46	0.01	0.00
	(375.24)	(0.13)	(0.00)
Mean	11,961.03	3.33	0.01
N	7,488,283	7,488,283	7,488,283
R-Squared	0.80	0.91	0.59
	(e) Fifth		
Dec. 5 × Limit × Post	281.50	-0.01	-0.00
	(281.52)	(0.09)	(0.00)
Mean	11,496.80	3.21	0.00
N	6,414,672	6,414,672	6,414,672
R-Squared	0.79	0.91	0.48
Zip-Code Quarter FE	Yes	Yes	Yes
Household FE	Yes	Yes	Yes

These tables show triple-differences regression results examining the changes in credit outcomes after usury limits for borrowers in the second, third, fourth or fifth risk score decile, located in North Dakota, relative to all borrowers that are more creditworthy. Debt is the dollar amount of all debt outstanding for a borrower, excluding mortgage debt and student loan debt. Accounts are the total number of credit accounts open for a borrower, excluding mortgage and student loan accounts. Delinquencies are defined as any debt delinquency of 90 days or more. For control states, the deciles are defined based on household risk scores throughout the sample period, and for treated states the deciles are defined based on household risk scores in the four quarters leading up to the passage of the usury limit. All regressions control for household and zip code-by-quarter fixed effects, as well as borrower age. Lower order interactions are included included in regressions but not reported. Standard errors, which are clustered at the state-by-quarter level, are shown in parentheses. *, ** and *** indicate 10%, 5% and 1% significance respectively. Source: FRBNY Consumer Credit Panel/Equifax 2015:Q1–2019:Q4 and authors' calculations.

Table A.10: Reallocation of Credit After Usury Limits – South Dakota

	Debt	Accounts	Delinquent
	(a) First Decile		
Dec. 1 × Limit × Post	120.48	0.11	-0.02
	(359.96)	(0.14)	(0.03)
Mean	10,552.58	2.88	0.12
N	9,929,097	9,929,097	9,929,097
R-Squared	0.83	0.82	0.72
	(b) Second		
Dec. 2 × Limit × Post	-196.62	0.03	-0.01
	(149.33)	(0.21)	(0.00)
Mean	10,788.25	2.83	0.07
N	8,933,602	8,933,602	8,933,602
R-Squared	0.83	0.82	0.69
	(c) Third		
Dec. 3 × Limit × Post	-194.07	0.11	0.01
	(149.66)	(0.14)	(0.01)
Mean	11,048.29	2.85	0.03
N	7,940,190	7,940,190	7,940,190
R-Squared	0.83	0.82	0.65
	(d) Fourth		
Dec. 4 × Limit × Post	-734.55***	0.07	0.00
	(244.97)	(0.17)	(0.01)
Mean	11,034.31	2.84	0.01
N	6,948,601	6,948,601	6,948,601
R-Squared	0.83	0.82	0.59
	(e) Fifth		
Dec. 5 × Limit × Post	-111.70	-0.03	0.00
	(329.44)	(0.08)	(0.00)
Mean	10,830.06	2.78	0.01
N	5,955,954	5,955,954	5,955,954
R-Squared	0.82	0.82	0.51
Zip-Code Quarter FE	Yes	Yes	Yes
Household FE	Yes	Yes	Yes

These tables show triple-differences regression results examining the changes in credit outcomes after usury limits for borrowers in the second, third, fourth or fifth risk score decile, located in South Dakota, relative to all borrowers that are more creditworthy. Debt is the dollar amount of all debt outstanding for a borrower, excluding mortgage debt and student loan debt. Accounts are the total number of credit accounts open for a borrower, excluding mortgage and student loan accounts. Delinquencies are defined as any debt delinquency of 90 days or more. For control states, the deciles are defined based on household risk scores throughout the sample period, and for treated states the deciles are defined based on household risk scores in the four quarters leading up to the passage of the usury limit. All regressions control for household and zip code-by-quarter fixed effects, as well as borrower age. Lower order interactions are included included in regressions but not reported. Standard errors, which are clustered at the state-by-quarter level, are shown in parentheses. *, ** and *** indicate 10%, 5% and 1% significance respectively. Source: FRBNY Consumer Credit Panel/Equifax 2015:Q1–2019:Q4 and authors' calculations.