When Debt Relief Hits Main Street: Evidence from the Indirect Channel of Consumer Credit Access*

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Using administrative U.S. Census data, this paper investigates how weakened creditor rights — designed to offer consumer debt relief — create unintended economic spillovers by restricting consumer access to credit. Leveraging staggered adoptions of third-party debt collection restrictions and granular household data, I show that consumers in states with weakened creditor rights exhibit reduced spending using credit relative to nearby peers. Consistent with reduced consumer demand, further analyses based on confidential establishment-level data document that businesses in law-shocked states experience lost revenue, especially for nontradable goods and discretionary purchases, as well as reduced employment and payroll. The findings highlight that, in addition to the direct firm borrowing channel, creditor rights affect local entrepreneurial activity through a novel indirect channel of consumer credit access.

*Disclaimer: Any views expressed are those of the author and not those of the U.S. Census Bureau. The Census Bureau has reviewed this data product to ensure appropriate access, use, and disclosure avoidance protection of the confidential source data used to produce this product. (CBDRB-FY24-P2988-R11769). Conclusions drawn from the NielsenIQ data are those of the researcher and do not reflect the views of NielsenIQ. NielsenIQ is not responsible for, had no role in, and was not involved in analyzing and preparing the results reported herein.

1. Introduction

Financial distress and debt collection are pervasive challenges among U.S. households, drawing sustained regulatory and public scrutiny. In response, many U.S. states have enacted laws to restrict third-party debt collection practices, aiming to alleviate consumer hardship by providing a form of debt relief. However, debt collection is more than a consumer protection issue — it functions as a critical mechanism of contract enforcement, underpinning the broader framework of creditor rights.

A long-standing view is that creditor rights play an important role on entrepreneurial activity and local economic resilience. On the one hand, stronger creditor protections enhance lenders' confidence, increasing the availability of credit for entrepreneurs, reducing borrowing costs, and stimulating economic activity (Berger et al., 2011; Cerqueiro and Penas, 2017; Cole et al., 2024; Davydenko and Franks, 2008; King and Levine, 1993; La Porta et al., 1997, 1998; Qian and Strahan, 2007). However, in addition to entrepreneurs, changes of creditor rights could affect credit supply to consumers. Consumer credit has become central to household consumption, which could directly affect business viability through the revenue. Even an unconstrained entrepreneur will face challenges if their customers cut back on spending due to limited access to credit. Therefore, a key issue for local business success could be the impact of creditor rights on credit frictions among the general population of consumers, distinct from credit frictions affecting the narrower population of business owners.

This paper examines whether weaker creditor protections affect local entrepreneurial activity through a channel of consumer access to credit. It does so by leveraging the staggered adoption of state-level third-party debt collection laws as an identification, which has been shown to reduce consumer access to personal credit (Fedaseyeu, 2020; Fonseca, 2023). In addition, the paper exploits two sources of microdata: first, the NielsenIQ Consumer Panel (NCP), which provides detailed data on household spending and their purchasing methods (e.g., credit card or cash), to investigate the impact of creditor rights on individual consump-

tion; second, the restricted Census data, which provides disaggregated establishment-level data, to identify the dynamics of entrepreneurial activity in response to these law changes.

To evaluate the causal effect, this paper exploits time-series variation in third-party debt collection restrictions at state borders. Specifically, it compares outcomes of consumers and entrepreneurs in counties that experienced a change in creditor protections with outcomes in a contiguous county in another state not subject to the same changes, similar to (Dube et al., 2010; Holmes, 1998; Huang, 2008). Neighboring counties are likely to experience similar economic conditions and have similar local shocks, but by dint of falling on one side of a state border, one county will experience the policy shock while its neighboring county does not. Although states may adjust policies based on overall economic conditions, it is likely that the neighboring border county will experience similar conditions.

The three main findings are summarized as follows. First, relative to borrowers residing in a contiguous county located in a state that did not restrict debt collection practices, increased debt collection restrictions reduce household spending by around 1%. In addition, I separate household spending based on the method of payment and show that the result is mainly driven by household spending via credit card. There is no statistically significant decline in household spending via debit card or cash. These results are consistent with the prior literature that debt collection restrictions lead to a contraction in consumer personal credit by making credit contracts less enforceable.

Second, consumer credit is increasingly central to household consumption, which can directly influence business viability. Further analyses document that local establishments experience around 1% decline in revenue following debt collection restrictions, relative to establishments residing in a contiguous county located in a state that did not restrict debt collection practices. The estimate is consistent with the finding regarding the effect on household consumption, which shows that debt collection restrictions reduce household spending. Due to this reduction in revenue, local establishments experience declines in employment and payroll of around 0.6% and 1%, respectively.

I then provide a collage of evidence supporting the proposed mechanism, that is, that declines in entrepreneurial activity are driven by a reduction in consumer demand. First, I find that the slowdown in local businesses is concentrated—in terms of both statistical and economic significance—among the establishments in the retail trade and service industries (which solely rely on local consumer demand). In contrast, there is no significant decline in entrepreneurial activity among establishments in tradable industries, which are more likely to rely on national or international demand. Furthermore, using rich establishment data from the Census Longitudinal Business Database (LBD), I separate the sample based on the goods and services that the local establishments provide. I find that the main results are mainly driven by establishments offering discretionary goods, which are more sensitive to consumer access to credit, rather than those providing necessary goods.

While my focus is on whether weaker creditor rights restrict credit supply to consumers, one might argue that they affect personal credit supply to entrepreneurs, a different mechanism by which creditor rights affect entrepreneurial activity. I exploit several unique aspects of the Census data (that is, establishment external financing method, size, industry, and single versus multi-unit status) to test this mechanism. First, businesses using different external financings—credit cards, bank loans, or no financing—show negative and statically significant impacts on revenue, employment, and payroll. Importantly, the magnitudes are similar and I cannot reject the hypothesis that estimates are the same across different groups. To further support evidence that the main results are unlikely to be explained by this channel, I separate the sample of establishments based on size, industry dependence on external financing, and firm ownership. Consistent with the findings above, the coefficients across these groups are similar. Although it is possible that business owners may have been directly affected by the same debt collection restrictions, thorough examination suggests that this is not the only channel at play and that the consumer access to credit channel is a first-order driver of my findings.

Finally, I show that these restrictions could have a negative externality on consumer

welfare. I first show that debt collection restrictions lead to more retail trade and service business closures. Specifically, a county experiences around a 2% increase in the number of business closures following debt collection restrictions. In addition, I document that more restrictions lead to a decline in municipal government revenue because consumer demand decreases and establishments lose revenue. Due to a reduction in tax revenue, municipal governments cut back expenditure on local facilities. Overall, regulating third-party debt collection raises some potential concerns about its impact on local consumer welfare.

Even though leveraging changes in third-party debt collection laws as an identification and applying a county-pair difference-in-differences strategy helps to address some endogeneity concerns, these concerns cannot be fully eliminated with nonexperimental data. To alleviate them, this paper conducts a series of robustness checks. First, I analyze outcomes in treatment and control groups prior to the law changes and find no indication of preexisting trends. Second, the results indicate changes in third-party debt collection laws appear to be unrelated to other plausible determinants of credit market performance and supply. Third, I show results are robust when focusing on a subsample of two neighboring counties at a close distance, indicating counties in the control group in the county-pair difference-in-differences regression are not materially affected by regulatory changes in neighboring states. In addition, I verify that the results are robust by excluding states that have loosened restrictions on debt collection. Finally, I show that results remain significant when using only the first legislation change introduced by a state.

This paper contributes to the existing literature in the following three ways. Beginning with the seminal work of La Porta et al. (1997, 1998), the effects of creditor rights on economic activity has been studied extensively in the finance and economic literature. Cross-country evidence suggests that counties with stronger creditor protections have stronger credit markets and increases in economic activity (Calomiris et al., 2017; Campello and Larrain, 2016; Giannetti, 2003; Haselmann et al., 2010; Levine and Zervos, 1998; Qian and Strahan, 2007). Mann (2018) shows patenting companies raised more debt and spent more on R&D when

creditor rights to patents were strengthened. On the other hand, stronger creditor rights could also deter entrepreneurs' risk-taking behavior and demand for credit (Ersahin et al., 2021; Vig, 2013). In recent years, there has been a growing literature on the impact of bankruptcy protections on economic activity. Corporate leverage declines when creditor rights in bankruptcy are stronger (Acharya et al., 2011; Calomiris et al., 2017). Berger et al. (2011) and Cerqueiro and Penas (2017) show that increases in debt exemption reduce the amount of credit supplied by banks to startups. Cole et al. (2024) find that it leads to fewer small establishments, especially in industries dependent on external finance. The current study makes two primary contributions relative to this existing work. First, this study considers a underexplored aspect of creditor protections: third-party debt collection restrictions. Dawsey et al. (2013) show that most defaulting consumers do not file for bankruptcy and debt collection often takes place outside the courtroom. Studying how collection restrictions affect entrepreneurial activity enhances our understanding of debt enforcement in the real economy. More importantly, the existing literature focuses on the credit supply to entrepreneurs channel. This study highlights a novel channel: consumer access to credit. It finds that weaker creditor rights reduce consumer access to credit and consumption, consequently inhibiting local economic development. To the best of my knowledge, it is the first paper highlighting this alternative channel.

More than one in four consumers (28%) with a credit report had at least one third-party collections tradeline on their report (Consumer Financial Protection Bureau 2018). Although debt collections are pervasive, the literature on debt collection remains small. Fedaseyeu and Hunt (2015) provide a model showing that third-party debt collectors use harsher collection practices than original creditors. Fedaseyeu (2020) finds that stricter debt collection laws reduce the number of collectors, lower recovery rates on delinquent credit card loans, and restrict access to revolving credit. Romeo and Sandler (2021) study debt collection regulations in four states and show that introducing regulations leads a decline in new credit card accounts and a increase in interest rates. Cheng et al. (2021) examine civil collection

lawsuits and find settlements increase financial distress relative to going to court and do not improve consumer access to credit. Fonseca (2023) uses individual credit record data and shows restricting collections reduces access to mainstream credit and increases payday borrowing. This paper argues that these laws not only affect consumers; they also affect entrepreneurial activity. With more debt collection restrictions, local businesses lose revenue and reduce employment and payroll. This suggests that policymakers should also take into account the negative externalities of these regulations when addressing the widespread issue of third-party debt collections.

Finally, this study also relates to the literature on the effect of bankruptcy protections on consumer credit and consumption. Gropp et al. (1997) find bankruptcy exemptions increase the amount of credit held by high-asset households and reduce the availability and amount of credit to low-asset households. Dobbie and Goldsmith-Pinkham (2015) show bankruptcy protections raise regional consumption and employment. Pattison (2020) documents that higher bankruptcy exemptions smooth consumption by reducing collection in default. Gross et al. (2021) study the Bankruptcy Abuse Prevention and Consumer Protection Act (BAPCPA) and show that a reduction in bankruptcy filing risk decreases credit card interest rates. Severino et al. (2024) find that borrowers respond to greater bankruptcy protection by increasing their unsecured debt. From a supply-side perspective, consumption should decrease as collection restrictions lead to lower access to credit. From the borrowers' perspective, individuals might borrow and consume more as these laws make credit contracts less enforceable. This paper finds that collection restrictions lead to a decrease in consumption, which suggests supply-side effects dominate in this case.[1]

[1]The results are consistent with the findings from Fonseca (2023). Fonseca (2023) shows consumers experience a decline in total balances and revolving loan balance following collection restrictions and suggests the reduction in credit balances for low-income consumers is likely due to a reduction in the supply of credit, as consumers experience a decline in revolving credit limits and an increase in credit utilization.

2. Institutional Background and Data

2.1. Regulation of Debt Collection

According to the Quarterly Report on Household Debt and Credit, third-party debt collections are prevalent, with more than one in four consumers having a collection account. Lenders typically begin with in-house collection departments but often resort to third-party debt collectors for debts that are more than 90 days overdue. The third-party debt collection industry plays an important role in debt recovery, contributing over $90 billion back into the U.S. economy (State of the Industry Report 2020).

In recent years, concerns about third-party debt collection practices have increased, primarily due to the impact these practices have on consumers. Common issues include aggressive and harassing collection tactics, such as frequent calls and threatening language to coerce payment. Another significant concern is the lack of transparency; for instance, debt collectors may purchase "zombie debt," which is legally uncollectible through the court system. Consumers are often unaware of their rights regarding old debts, including the possibility that paying a small portion could reset the statute of limitations and render the debt legally collectible again. The Consumer Financial Protection Bureau (CFPB; 2020) reports that approximately 82,700 complaints were filed in 2019 regarding debt collection, making it the second-most-common complaint category.

This has attracted the attention of the CFPB and state legislators, leading to increased regulatory activities. Third-party debt collection practices are regulated by the Fair Debt Collection Practices Act of 1977 (FDCPA), a federal law designed to eliminate abusive, deceptive, and unfair debt collection practices. The FDCPA also permits states to implement additional regulations on debt collection practices. From 1997 to 2018, there have been 44 changes to third-party debt collection laws in 23 states.[2] These state-level regulations of-

[2]Fedaseyeu (2020) identified 38 changes in third-party debt collection laws in 22 states between 1999 and 2014. I independently validate all legislation changes identified in this existing work and extend the sample from 1997 to 2018 via different sources, including the National Consumer Law Center's publication Fair Debt Collection, the National List of Attorneys white papers, and Internet searches.

ten differ from the FDCPA, imposing further restrictions on debt collectors. Many include licensing requirements and mandates for collection agencies to post bonds with state regulators, as well as specifying prohibited and unlawful collection practices. Finally, they increase penalties for violations, modify the prosecution methods available to state regulators, and offer private remedies to consumers. Importantly, these laws apply based on the consumers' place of residence, regardless of the state where the original creditors or third-party collectors are located. Thus, changes in state laws could impact the operations of third-party debt collectors and the credit market outcomes at the state level.

To quantify the strictness of third-party debt collection practices, this paper constructs an index to track changes in state third-party debt collection laws, similar to Fedaseyeu (2020) and Fonseca (2023). Specifically, this index is a variable that equals zero before any debt collection law changes, one after the first law change, and two if the same state enacts another law change, and so on up to four . Each legal change contributing to the index is assigned equal weight. While this equal-weighted approach may reduce variation, it avoids subjective judgments regarding the relative strengths of various legal changes. The map in Figure 1 illustrates the level of index across different states from 2000 to 2018, with values ranging from zero to four, where higher values indicate more restrictions on third-party debt collection practices.

[Insert Figure 1 Here]

In addition to regulating the debt collection process, bankruptcy law limits the ability of unsecured creditors to pursue delinquent debtors. Personal bankruptcy allows individuals to protect some or all of their equity in their primary residence when filing for bankruptcy. Over the last two decades, bankruptcy exemptions have changed frequently. This paper compiles the homestead exemption levels for each state during the sample period. While some states offer unlimited homestead debt exemptions, I set the exemption at $1 million (Berkowitz and White, 2004; Lin and White, 2001). In states that allow residents to choose between the federal bankruptcy exemption level and the state exemption level, I adopt the higher

of the two values. Finally, when states permit doubling the homestead debt exemption, I double the exemption values. There were 77 changes in bankruptcy exemption amounts during the sample period, with the average level of bankruptcy exemption being $233,790 and a standard deviation of $354,060.

2.2. Data

The establishment- and firm-level data comes from the Longitudinal Business Database (LBD) of the U.S. Census Bureau. The LBD is a longitudinally linked dataset encompassing the entire universe of establishments and firms in the Unted States that have at least one paid employee (Haltiwanger et al., 2013). The LBD serves as the foundation for the publicly available dataset provided by the Business Dynamic Statistics (BDS). Compared to regional aggregate-level data, the LBD microdata offers several advantages. First, its panel structure enables this study to track individual establishments in relation to changes in debt collection laws. Second, it provides detailed information on employment, payroll, industry, location, age, and firm ownership.

The key outcome variables in the main analyses include establishment-level employment and payroll. Conducting establishment-level analyses offers several advantages. First, compared to firm-level data, establishment data provides more precise information regarding location and sector, both of which are critical factors in this research. Additionally, Bloom et al. (2010) present evidence of decentralization among firms in the United States, indicating that establishment managers often possess significant discretion over hiring and investment. Furthermore, changes in establishment employment sizes are independent of reallocations across firms due to mergers and acquisitions.

This study also incorporates revenue information from the Business Register (BR), following the methodologies of Decker et al. (2014), Moreira (2016), and Walsh (2019). The revenue measure from the BR is derived from administrative data related to annual business income tax returns (Decker et al., 2014). Unlike payroll and employment data, which have

been available at the establishment level, revenue data is only available at the firm level. I employ the matching process outlined by Moreira (2016) and Walsh (2019) to align these revenues with the LBD. For single-establishment firms, the matching process is straightforward, as revenue can be matched based on firm ID, resulting in a revenue variable for 86% of firms. For multi-establishment firms, I first exclude those with establishments located in different states.[3] I consider two primary methods to apportion revenues across multi-establishment firms: first, by assigning revenue in proportion to the employment of each establishment; second, by assigning it in proportion to the payroll of each establishment. This study primarily focuses on the first revenue measure but also includes a robustness check using the second measure. The results from these two alternative revenue measures are virtually identical.[4]

This paper utilizes the LBD to develop a county-level measure of entrepreneurial activity, specifically focusing on establishment closures. An establishment closure is defined as a situation in which an establishment that had a positive number of employees in the previous year has no employees in the current year. I aggregate the total number of establishment closures at the county-year level.

The Survey of Business Owners (SBO) provides a comprehensive and regularly collected source of information on selected economic and demographic characteristics of businesses and their owners. This paper obtains information on the external financing methods employed by business owners to start or expand their businesses, including bank loans, credit cards, or personal savings, or no financing needed. The SBO data is available only during Census years, beginning in 2002. In this study, I merge the SBO data with the LBD using firm identifiers and focus on a subsample of firms covered by the three waves of surveys.

[3]I exclude large firms which have multiple establishments across different states: first, firms with establishments across different states are often larger and older, which are less likely to represent entrepreneurial activity (Kerr and Nanda, 2009); second, it is difficult to measure the effects on firms with establishments across different states as they face different exposure to debt collection restrictions; firms that have operations that span multiple states are likely to have access to national sources and thus should be less dependent on local economic conditions.

[4]See Table IA.**10**.

Household-level retail spending data is obtained from the Kilts Center for Marketing NielsenIQ Consumer Panel (NCP), which includes approximately 40,000 to 60,000 U.S. households that provide information about their purchases.[5] Demographic and product ownership variables are collected for each household. The demographic variables include household location, size, income range, information about children, education levels, marital status, type of residence, and race. For each shopping trip, summary information is recorded, including the date, total amount spent, and store zip code. The NCP primarily captures trips to grocery, pharmacy, and mass merchandise stores, but it also encompasses a wide range of other channels such as catalog and online purchases, liquor stores, delis, and video rental outlets. The types of goods purchased include groceries, drug products, small electronics, appliances, small home furnishings, garden equipment, kitchenware, and some soft goods. Research by NielsenIQ indicates that most panelists shop at stores closest to their homes. Notably, the NCP also records the payment methods used by households, which include cash, check, credit card, debit card, and other forms of payment.[6] Einav et al. (2010) conducted a thorough analysis of the NCP and concluded that it offers comparable quality to many widely used self-reported consumer datasets.

For this paper, households that moved from a different county or state in the past year are excluded. This exclusion is based on the application of debt collection laws, which are dependent on consumer residency; households that recently moved may not immediately experience the effects of changes in these laws. Furthermore, this paper requires that a household must spend at least $10 per month and remain in the sample for a minimum of 24 months. Furthermore, households with an annual income lower than $8,000 are excluded from the sample.[7] Finally, individual-trip purchases are aggregated to calculate monthly spending totals. After applying these filters and performing this aggregation, over 2,000,000

[5]Monetary prizes and other drawings are utilized to incentive higher levels of engagement.

[6]In cases where there are multiple methods of payment used on the same trip, NielsenIQ asks the panelist to record the "primary" method of payment (or the one method of payment that accounted for the majority of the dollars spent on that trip). The other payment types include gift cards, SNAP, or WIC.

[7]Results remain robust without these filters. See Table IA.11.

household-month observations remain, with the average household monthly spending at $712. Of this amount, 25% is paid via credit card, 20% via debit card, 13% via cash, and 37% remains unknown.

In addition to the restricted Census data and consumer data, I also collect state-level data on the debt collection industry from the Census County Business Patterns. This dataset provides information on the number of establishments, the number of employees, and the annual payroll for third-party debt collection agencies classified under NAICS 561140. This information is used to validate that changes in state-level third-party debt collection laws significantly impact the collection industry. Finally, I gather a range of county- and state-level macroeconomic variables. Data on unemployment rates are obtained from the Bureau of Labor Statistics (BLS), and income per capita, income growth, and population statistics come from the Bureau of Economic Analysis (BEA). Information on personal hospital care spending is obtained from CMS. The bankruptcy exemption amount is sourced from Indarte (2023). Information on municipal government tax income and expenditures is obtained from the Government Finance Database (Pierson et al., 2015).

3. Empirical Method

3.1. Main Method

The main objective of this paper is to examine how creditor rights affect entrepreneurial activity, using changes in state-level debt collection laws as identification. Existing literature typically employs a standard state-level difference-in-differences strategy to compare stages before and after law changes. However, to document causal effect, robust assumptions are necessary. Specifically, for the difference-in-differences estimator to be valid, states implementing policy changes should exhibit similar trends to those that do not make changes prior to the legislation taking effect. In addition, there should be no unobserved geographic shocks correlated with the legislation in question, as these could skew the results.

To address these identification challenges, this paper employs the county-pair difference-

in-differences method (Dube et al., 2010; Holmes, 1998; Huang, 2008), which exploits differences in entrepreneurial activity between contiguous counties located on either side of a state border. In contrast to the standard state-level difference-in-differences strategy, neighboring counties are likely to experience similar economic conditions and local shocks, but by dint of falling on one side of a state border, one county will encounter the policy shock while its neighbor remains unaffected. Even if states adjust their policies based on broader economic conditions—where border counties undergo similar economic trends—it is still likely that the neighboring cross-state county will face analogous economic circumstances.

To perform this analysis, I obtain a complete list of counties that share state borders with counties from other states. Similar to Curtis and Decker (2018), I exclude both counties in a border pair if they had fewer than 3,000 workers or recorded zero start-ups or establishment failures throughout the entire sample period.[8] Overall, my sample consists of 942 counties. The main regression specification is as follows:

$$Y_{ispt} = \alpha + \beta_1 Index_{s,t} + X'_{ispt}\Gamma_1 + \kappa_{pt} + \epsilon_{ispt}, \tag{1}$$

where Y_{ispt} is an outcome of i residing in state s in a county that is part of border county pair p during year t. $Index_{s,t}$ indicates the relevant index value for third-party debt collection restrictions in state s during year t. X'_{ispt} consists of a set of controls, which includes unemployment rate, per capita personal income, population, personal hospital care spending, and bankruptcy debt exemption. The vector κ_{pt} represents county-pair $\times$ year fixed effects, which accounts for shocks shared among counties within a particular period. Standard errors are clustered within state and state border-segment.[9] The coefficient of

[8]Dropping small counties is helpful. Small counties have far more variation in the outcome variables. For example, for small counties, a minor business creation or destruction event results in large swings due to the small denominator. I conduct a robustness analysis and find that the results are not sensitive to this data restriction.

[9]Standard errors are clustered within a state given that there is a positive serial correlation among the outcomes and the treatment variable is constant within each state. In addition, given that the border-county- pair sample stacks all pairs, a particular county will be in the sample as many times as it can be paired with a neighbor across the border.

interest, β_1, captures the average change in outcomes for businesses in counties bordering states with restricted debt collection legislation, compared to consumers in adjacent counties located in another state, following the law change.

3.2. Validation: The Impact on Debt Collection Industry

One underlying assumption of this study is that changes in state-level debt collection laws meaningfully impact the debt collection industry, leading to substantial differences in treatment intensity within border-county pairs. To assess this assumption, I estimate the following specification:

$$Y_{st} = \alpha + \beta_1 Index_{s,t} + X_{st}^{'}\Gamma_1 + \kappa_t + \theta_s + \epsilon_{st}, \tag{2}$$

where Y_{st} denotes the number of debt collectors per collection establishment in state s during year t. $Index_{s,t}$ represents the corresponding index value for third-party debt collection restrictions in state s during year t. $X_{st}^{'}$ consists of a set of controls, which includes unemployment rate, per capita personal income, population, personal hospital care spending, and bankruptcy debt exemption. κ_t is a vector of year fixed effects, and θ_s represents state fixed effects that absorb unobservable time-invariant heterogeneity across states. Standard errors are clustered within states.

Table IA.3 shows that debt collection restrictions reduce the number of debt collectors per establishment. In addition, Figure IA.1 presents the dynamic effects and indicates that the timing of these results aligns with legislative changes. The findings are consistent with the existing studies, suggesting that restrictions on debt collection practices significantly impact the third-party debt collection industry.

3.3. Validation: The Determinants of Debt Collection Laws

The primary regression specification compares outcomes in a county located in a state that adopts new debt collection laws with those in a neighboring county located in a state

that does not adopt such laws. A key concern in difference-in-differences analyses is the possibility that an omitted variable relevant to the outcome variables of interest may change simultaneously with the treatment. Thus, when applying this framework, it is crucial to test whether changes in third-party debt collection restrictions are exogenous to the credit cycle and entrepreneurial activity. To assess this assumption, I estimate the following specification:

$$Index_{st} = \alpha + \beta_1 MacroEconomy_{s,t} + \kappa_t + \theta_s + \epsilon_{st}, \tag{3}$$

Table IA.2, column (1), reports results from linear regressions of the index level on the number of debt collection establishments and debt collectors , population, hospital care spending, number of bank branches, personal income, house price index, unemployment rate, average earnings per job, proprietor income, bankruptcy debt exemption, state governor political party, total employment, and personal health care spending. Column (2) uses the same regression but replaces the index level with the year-on-year change of the index. Column (3) substitutes the dependent variable with a dummy variable indicating law changes. Across all three specifications, none of these variables significantly impact the timing of changes in debt collection legislation, which is consistent with findings from the existing studies.

3.4. Validation: Parallel Trends Assumption

To provide evidence supporting the parallel trends assumption— which posits that, in the absence of legislative changes, outcomes for entrepreneurs in treatment counties and control counties would evolve along parallel trends—I estimate the following specification:

$$Y_{ispt} = \alpha + \beta_\tau \sum_{\tau \in \mathcal{T}} I_s(\tau) + X'_{ispt}\Gamma_1 + \kappa_{pt} + \epsilon_{ispt}, \tag{4}$$

where $I_s(\tau)$ is equal to 1 exactly τ years after (or before if τ is negative) state s enacts a new debt collection law. Figure 2 and Figure 3 report the estimates and confidence intervals

of Equation (4). There is no evidence of pre-existing trends across all of the main outcome variables in this study.

4. Main Results

4.1. The Effects on Consumer Consumption

When credit card issuers are unable to collect unpaid debts, they often rely on third-party debt collectors (CFPB 2018). According to ACA International, these collectors recovered approximately $78.5 billion from consumers. Third-party debt collection laws create challenges for creditors in collecting unpaid debts, ultimately leading to lower recovery rates. Since creditors' willingness to lend depends on the likelihood of repayment, reduced recovery rates caused by debt collection restrictions result in a decreased supply of credit to consumers. As consumer credit becomes increasingly central to household consumption, limited access to personal credit may reduce consumer consumption demand for local businesses.

The empirical test of this hypothesis is reported in Table **1**, which provides estimates of the county-pair specification of Equation (1) regarding household spending. Column 1 of Table **1** indicates that debt collection restrictions negatively affect monthly household spending. The coefficient is negative, statistically significant, and economically substantial: a one-point increase in the value of the debt collection restrictions index correlates with approximately a 1% reduction in total household spending compared to other consumers in contiguous counties without such debt collection restrictions.

Furthermore, I provide evidence that this reduction in consumption is primarily driven by lack of consumer access to credit. To illustrate this, I analyze spending by payment method, hypothesizing that the spending reduction is mainly due to decreased credit card use rather than reliance on personal savings. Results from Columns 2 and 3 support this hypothesis. Column 2, which examines household spending via credit cards, reveals about a 5% reduction in spending following legislative changes. In contrast, Column 3 indicates no statistically significant decline in household spending via debit cards or cash.

Additionally, Figure 2 presents estimates and 95% confidence intervals for Equation (4). These results support the parallel trends assumption, showing that total household spending and spending via credit cards in both treatment and control groups moved closely in parallel prior to the treatment.

[Insert Table 1 Here]

[Insert Figure 2 Here]

I then provide a collage of analyses to support the main results. First, consumers might be shifting from in-store shopping to online shopping. Columns 1 and 2 of 2 focus exclusively on in-store purchases, excluding online and mail-order transactions. The results align with those of Table 1, indicating that debt collection restrictions reduce in-store spending, mainly driven by credit card purchases rather than cash or debit purchases. Second, consumers may travel across state lines to shop, resulting in reduced spending at local stores. Columns 3 and 4 exclude observations where a household purchases in states other than their own. The results remain robust, indicating that households decrease spending in nearby stores. Third, a reduction in local spending may be due to fewer local stores being available for consumers, rather than a decrease in consumer demand. Columns 5 and 6 focus exclusively on online and mail-order shopping. The results show that consumers are also cutting back on online spending, indicating a decrease in consumption demand.

[Insert Table 2 Here]

Finally, Fonseca (2023) shows that debt collection restrictions primarily reduce credit supply to lower-income consumers, while higher-income consumers are less affected. In Table IA. 4, I separate the sample by household income and find that the results are mainly driven by lower-income consumers, consistent with existing studies.

4.2. The Effects on Entrepreneurial Activity: Consumer Demand Channel

Next, I examine the effect of weaker creditor rights on entrepreneurial activity. Due to debt collection restrictions reducing local consumer demand, businesses may experience revenue losses, leading to decreased employment and payroll. The empirical test of this hypothesis is reported in Table **3**, which presents estimates of the county-pair specification of Equation (1) regarding entrepreneurial activity. Column 1 in Table **3** shows that local establishments experience approximately a 1% decline in revenue following these restrictions compared to establishments in contiguous counties located in states without such restrictions. This estimate aligns with findings from Table **2**, which indicates that the introduction of new debt collection restrictions lead to about a 1% reduction in household spending.

In addition, columns 2 and 3 in Table **3** reveal that increased debt collection restrictions correspond to 0.6% and 1% declines in employment and payroll at establishments, respectively. Figure **3** displays the coefficients and 95% confidence intervals for Equation (4), demonstrating that the timing of these effects corresponds with the implementation of debt collection legislation, with no evidence of pre-existing trends in these three outcomes.

[Insert Table **3** Here]

[Insert Figure **3** Here]

To further investigate whether the declines in entrepreneurial activity are driven by local consumer demand, this paper separates the sample by establishment industry. It distinguishes between retail trade and service industries, which rely on local consumer demand, and tradable industries, primarily consisting of manufacturing sectors that depend heavily on national or global demand (Barkai and Karger, 2020; Mian and Sufi, 2014).

Table **4** shows that the estimates from establishments in retail trade and service industries are significant and closely align with the findings in Table **3**. In contrast, establishments in tradable industries do not show a significant decline in revenue, employment, or payroll.

Overall, the comparison between retail trade and service industries and tradable industries suggests that local consumer demand is a key factor driving the main results.

[Insert Table 4 Here]

In addition, leveraging rich establishment data from the Census LBD, this paper separates the sample based on the goods and services that the local establishments provide. Demand for discretionary goods tends to be more sensitive to consumer access to credit, while demand for necessary goods is expected to remain stable. Thus, consumers with limited access to credit due to debt collection restrictions are more likely to reduce their spending on discretionary goods.

Table 5 compares the effects of debt collection restrictions on local establishments that provide different types of goods and services.[10] The results indicate that establishments offering discretionary goods experience a significant decline in revenue, employment, and payroll. Conversely, results among establishments providing necessary goods are not significant. Overall, the comparison in Table 5 provides further evidence supporting the proposed mechanism, confirming that debt collection restrictions hinder local entrepreneurial activity by reducing consumer consumption demand.

[Insert Table 5 Here]

[10]The categorization of discretionary goods and necessary goods is based on the 6-digit NAICS industry code. Businesses that provide discretionary goods include (441110) New Car Dealers; (441210) Recreational Vehicle Dealers; (441222) Boat Dealers; (441228) Motorcycle, ATV, and All Other Motor Vehicle Dealers; (442110) Furniture Stores; (443142) Electronics Stores; (446120) Cosmetics, Beauty Supplies, and Perfume Stores; (448310) Jewelry Stores; (448320) Luggage and Leather Goods Stores; (451120) Hobby, Toy, and Game Stores; (451140) Musical Instrument and Supplies Stores; (451212) News Dealers and Newsstands; (453220) Gift, Novelty, and Souvenir Stores; (453920) Art Dealers; (453991) Tobacco Stores; (721120) Casino Hotels; (721211) RV (Recreational Vehicle) Parks and Campgrounds; (721214) Recreational and Vacation Camps (except Campgrounds); (722320) Caterers; (722410) Drinking Places (Alcoholic Beverages); (812112) Beauty Salons; (812113) Nail Salons; (812910) Pet Care (except Veterinary) Services; and (621210) Dental Services. Businesses that provide necessary goods include (445110) Supermarkets and Other Grocery (except Convenience) Stores; (445120) Convenience Stores; (445210) Meat Markets; (445220) Fish and Seafood Markets; (445230) Fruit and Vegetable Markets; (445291) Baked Goods Stores; (446110) Pharmacies and Drug Stores; (446130) Optical Goods Stores; (446191) Food (Health) Supplement Stores; (447110) Gasoline Stations with Convenience Stores; (447190) Other Gasoline Stations; (448130) Children"s and Infants' Clothing Stores; (452112) Discount Department Stores; (811111) General Automotive Repair; (812310) Coin-Operated Laundries and Drycleaners; and (812320) Drycleaning and Laundry Services (except Coin-Operated).

4.3. Credit Supply to Entrepreneurs Channel

Following the implementation of stricter debt collection laws, creditors reduce personal credit supply to individuals, which could also include entrepreneurs. Prior research shows that access to personal credit plays an important role in entrepreneurial activity (Herkenhoff et al., 2021). Therefore, the results documented above could also be influenced by the entrepreneurs' access to credit. In this section, I exploit several unique aspects of the Census data (i.e., establishment external financing method, size, industry, and single- versus multi-unit status) to test this potential mechanism.

First, I separate the sample of establishments based on external financing methods, which include bank loans, credit cards/personal savings, and no financing needed. If limited access to credit from entrepreneurs mainly drives the results, establishments reliant on it should show significant effects, while those using bank loans or no external financing should not be affected.[11] Table **6** presents the empirical test of this hypothesis. The corresponding coefficients across different groups are negative, statistically significant, and economically meaningful. Importantly, the magnitudes are similar, and I cannot reject the hypothesis that the estimates are the same across the various external financing method groups. Overall, these results suggest that entrepreneurs' access to credit is unlikely to be a key factor influencing the findings.

[Insert Table **6** Here]

To further test this mechanism, I conduct three additional heterogeneity tests. First, compared to smaller firms, larger firms can more easily expand external financing (Beck et al., 2008). If the results are mainly driven by a reduction in business owners' personal credit, we would expect to see a more pronounced effect in smaller establishments. To test this hypothesis, I separate the sample into small (<20 employees) and large (≥20 employees)

[11] Bank loans should not be affected by third-party debt collection laws, as they usually require collateral to pledge. Therefore, creditors do not worry about debt recovery rates of this type of debt.

establishments. Panel A in Table 7 shows that the coefficients for different sizes are negative and have similar magnitudes. Second, establishments in industries that heavily rely on external capital should be more likely to be affected by this mechanism (Cole et al., 2024). I follow Rajan and Zingales (1998) to create a measure of industry dependence on external capital using data from Compustat. I then divide the sample into two groups: industries with above-median and below-median dependence on external capital. Panel B in Table 7 shows that the results across these two industry groups are also similar. Finally, compared to single-location businesses, owners of multi-location businesses tend to have more assets and are less susceptible to personal credit shocks. Panel C in Table 7 echoes the findings above, indicating that both single-location and multi-location businesses lose revenue following the adoption of debt collection laws.[12]

While I do not rule out that business owners' access to credit may have been directly affected by the same debt collection restrictions, thorough examination suggests this is not the only channel at play, and that the consumer credit channel is a first-order driver of my findings.

[Insert Table 7 Here]

4.4. The Effects on Local Business Closure and Government

The tables above indicate that debt collection restrictions result in establishments losing revenue and reducing employment and payroll. I will now examine the impact of these restrictions on a macro level, specifically focusing on the survival of local businesses at the county level. Table 8 shows that weaker creditor rights lead to an increase in business closures, particularly in the retail trade and service industries. The corresponding coefficient is negative and statistically significant: a county experiences approximately a 2% increase in

[12]One reason why entrepreneurs' access to credit may be less important is that debt collection restrictions are more likely to affect relatively low-income consumers instead of high-income consumers (Fonseca, 2023). Entrepreneurs are less likely to be affected by these laws. In addition, entrepreneurs could substitute personal credit with business credit, such as bank loans, which are not affected by third-party debt collection laws.

the number of business closures following the implementation of debt collection restrictions when compared to a contiguous county in a state without such restrictions. Consistent with the proposed mechanism, the impact on establishments within tradable industries is not statistically significant.

[Insert Table 8 Here]

Furthermore, local governments depend on tax revenue from local consumers and businesses to operate. If consumer demand declines and establishments lose revenue, we would expect municipal governments to collect less revenue. The empirical test of this hypothesis is detailed in Table 9. Column 1 indicates that debt collection restrictions result in a decline in revenue for municipal governments. Column 2 shows that municipal governments consequently reduce expenditures on local facilities.

[Insert Table 9 Here]

Along with Tables 8 and 9, the closure of local retail and service businesses, combined with decreased municipal spending on public facilities, is likely to diminish consumer welfare by limiting access to essential services and amenities, ultimately lowering the quality of life for local residents.

5. Robustness

5.1. Using Only First Legislation Changes

To quantify the strictness of third-party debt collection regulations, this paper constructs an index to track changes in state third-party debt collection laws. Specifically, the index is set to zero before any changes in debt collection law, one after the first law change, two after a second change, and so forth. Each legal change contributing to the index is assigned equal weight, resulting in an index that ranges from zero to four across the sample.

Table IA.5 re-estimates the effects of third-party debt collection laws on entrepreneurial activity by only utilizing the first regulatory change for each state and estimating the following specification:

$$Y_{ispt} = \alpha + \beta_1 Treat_s \times Post_t + X'_{ispt}\Gamma_1 + \kappa_{pt} + \epsilon_{ispt}, \tag{5}$$

where Y_{ispt} is an outcome of i residing in state s in a county that is part of border-county pair p in year t. $Treat_s$ is an indicator equal to 1 if a state enacts debt collection restriction laws. $Post_t$ equals 0 prior to the first legislation change in state s and 1 after. X'_{ispt} is a set of controls, which includes unemployment rate, per capita personal income, population, personal hospital care spending, and bankruptcy debt exemption. κ_{pt} is a vector of county-pair $\times$ year fixed effects, which absorbs any shock that is common to a county pair in a particular period.

Columns 1–3 in Table IA.5 indicate that debt collection restrictions have a significant negative impact on local entrepreneurial activity. Columns 4–6 present similar robust results for establishments in the retail trade and service industries. Overall, this section provides robust evidence that considering only the initial changes in debt collection restriction laws leads to conclusions consistent with the main analyses.

5.2. Excluding States that Loosened Debt Collection Restrictions

This paper analyzes 44 state laws that imposed stricter rules on third-party debt collection. However, during the sample period, four states loosened restrictions on debt collectors. In 2000, Colorado repealed the licensing requirement for debt collectors and shortened the statute of limitations for violations. In 2006, Louisiana allowed collection agencies to represent creditors in all cases, and Maine exempted licensed attorneys from bonding and licensing. In 2004, Tennessee enabled collection agencies to take debt assignments and sue under their own name with specified procedures.

One potential concern is that states that have loosened restrictions on debt collectors

might serve as an inadequate control group compared to states that have never enacted laws regulating debt collectors. To address this concern, I exclude establishments in these four states and re-estimate Equation (1). Columns 1–3 in Table IA.**6** show that the corresponding coefficients on revenue, employment, and payroll are negative, statistically significant, and consistent with those from Table **3**. Additionally, columns 4–6 present similar robust results for establishments in the retail trade and service industries. Overall, this section provides robust evidence that excluding states that loosened restrictions on debt collection does not alter the interpretation of the main results.

5.3. Characteristics of Law Changes

The laws that this paper focuses on can be categorized into three types: 1) laws that require every individual debt collector to be licensed and to post a surety bond with state regulators; 2) laws that clarify and expand the list of prohibited practices; and 3) laws establish penalties for collectors engaging in prohibited practices. In this section, I re-estimate the effects of third-party debt collection laws on entrepreneurial activity by examining the three categories of law changes separately. Table IA. **7** reports the estimates from Equation (1).

Overall, this section provides evidence that licensing requirements, prohibitions on certain practices, and penalties for engaging in prohibited practices can all lead to a decline in entrepreneurial activity. Such evidence offers valuable insights for policymakers, as it highlights the potential trade-offs and broader economic implications of various laws regulating third-party debt collection. While these regulations are often intended to protect consumers from predatory practices, they could inadvertently create financial and operational burdens for local businesses.

5.4. Robustness to County-Pair Distance

A potential concern with the county-pair difference-in-differences approach is that it may capture a lower bound of the impact of debt collection restrictions on entrepreneurial activity. Consumers facing stricter debt collection laws may have reduced access to credit, leading to lower local spending, including cross-border shopping. This effect is more significant when bordering counties are close, as consumers can easily travel across state lines. As distance increases, cross-border shopping becomes less feasible. In this section, I examine the heterogeneous effects based on the distance between counties that share state borders.

Specifically, I first calculate the median distance between all pairs of counties, use this median to divide the sample into two groups, and re-estimate Equation (1).[13] Table IA.8 shows that the coefficients on establishment revenue, employment, and payroll are all negative and significant across the county-pair distance groups. Notably, inability to reject the hypothesis that the estimates are the same across these two groups suggests that the control group in the county-pair difference-in-differences regression is not materially affected by changes in neighboring states' regulations.

6. Conclusion

The relationship between creditor rights and economic growth has been an important research question, with previous studies primarily focusing on the mechanism of entrepreneurs' access to credit to explain this connection. In this paper, I highlight a novel channel—consumer access to credit, which has not been explicitly documented before. I leverage the staggered adoptions of state-level third-party debt collection laws as an identification strategy, which sheds light on weaker creditor rights, and I show that weaker creditor rights reduce local consumer consumption, especially purchases via credit card. In turn, the affected local businesses lose revenue, reduce employment, and decrease payroll. While I do not rule out that

[13]County distances are great-circle distances calculated using the Haversine formula based on internal points in the geographic area. The data is downloaded from the NBER website.

business owners themselves may have been directly affected by the same debt collection restrictions, thorough examination suggests that this is not the only channel at play and that the consumer credit channel is a first-order driver of changes in consumer demand.

These findings are important because consumer credit is increasingly central to households' consumption, directly influencing the viability of local businesses. A reduction in credit-driven consumption adversely affects local economic health. While debt collection restrictions are intended to protect consumers from predatory practices, my results show that they could inadvertently create financial and operational burdens for local consumers and businesses. This finding underscores the need for policymakers to adopt a balanced approach that supports both consumer welfare and local economic growth.

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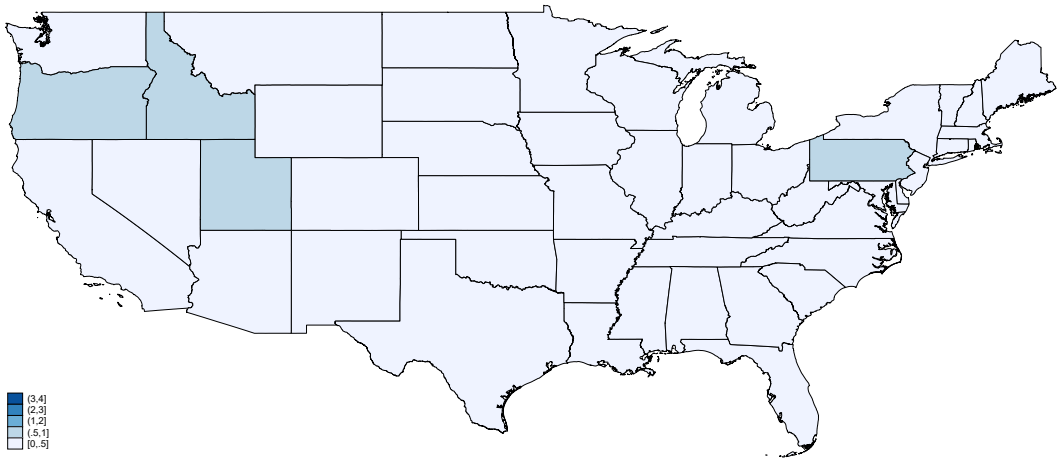
Figure 1
Index variation across states and time
This figure shows the value of the debt collection index by state in 2000 (Panel A) and in 2018 (Panel B). The darker areas represent a higher value of the index, which indicates that there are more restrictions on third-party debt collection.

Panel A: 2000



Panel B: 2018

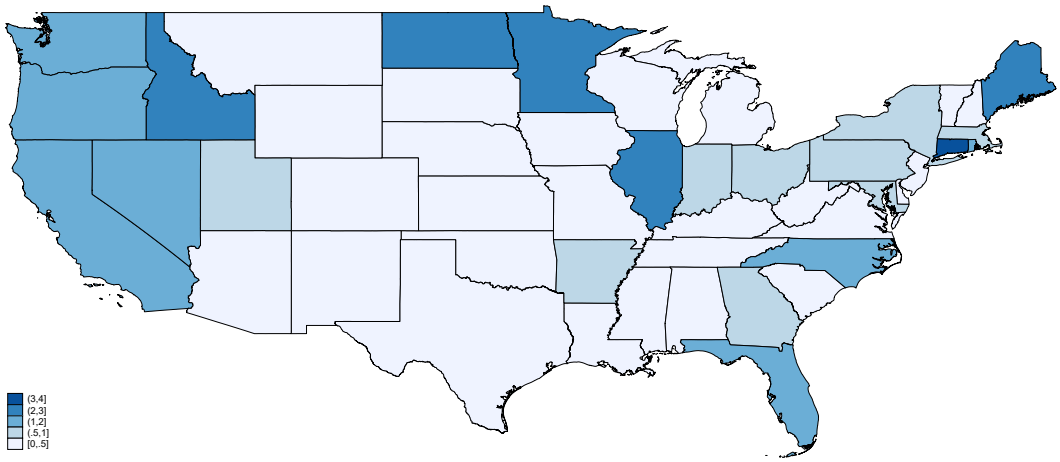
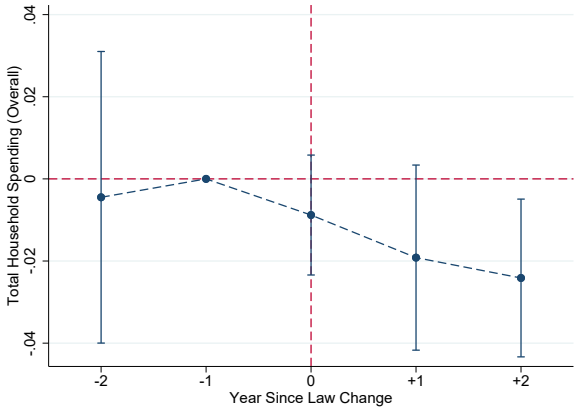
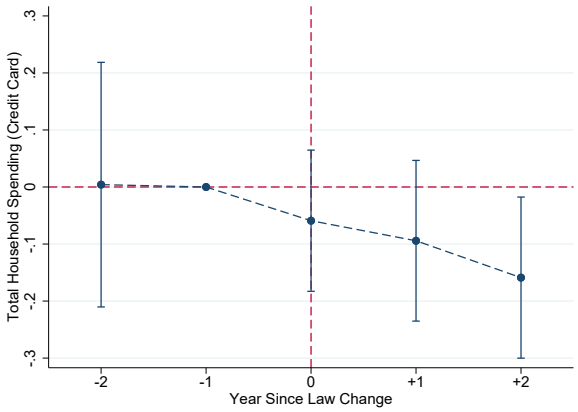


Figure 2
The effect of creditor rights on consumer spending
This figure shows the timing of the effect of weaker creditor rights on household spending. The dependent variable in figure (a) is total household monthly spending. The dependent variable in figure (b) is household monthly spending using credit cards. The figure plots coefficient estimates and 95% confidence intervals from Equation 4. Observations are at the household-month level, and standard errors are clustered at the state and state-border segment.

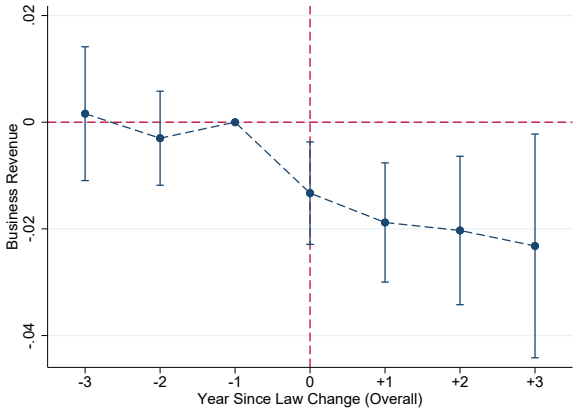


(a) Household Overall Spending

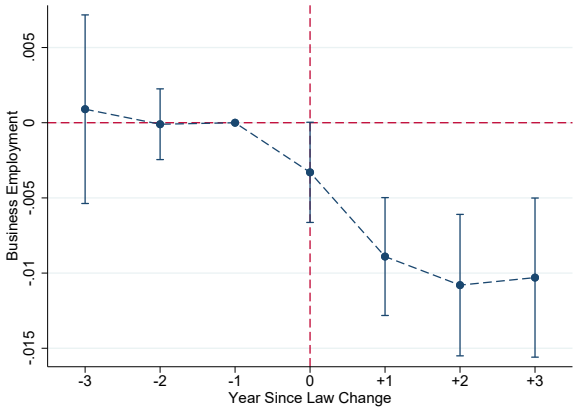


(b) Household Credit Card Spending

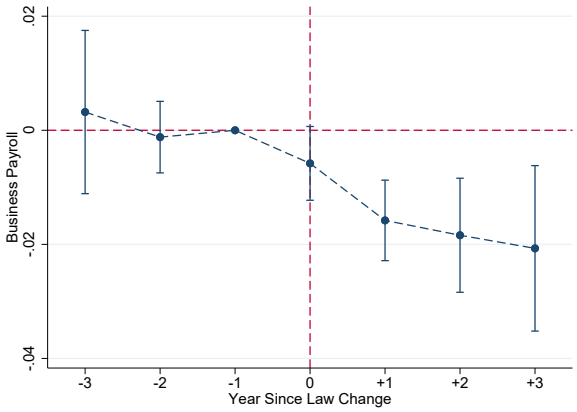
Figure 3
The effect of creditor rights on entrepreneurial activity
This figure shows the timing of the effect of weaker creditor rights on entrepreneurial activity. The dependent variable in figure (a) is business revenue. The dependent variable in figure (b) is business employment. The dependent variable in figure (c) is business payroll. The figure plots coefficient estimates and 95% confidence intervals from Equation 4. Observations are at the establishment-year level, and standard errors are clustered at the state and state-border segment.



(a) Business revenue



(b) Business employment



(c) Business payroll

Table 1
The effect of creditor rights on consumer spending
This table shows the effect of weaker creditor rights on consumer spending. The dependent variable in column (1) is household monthly spending. Column (2) is household monthly spending using credit cards. Column (3) is household monthly spending using debit cards or cash. County pair × year-month, household income group × year-month, household size group × year-month fixed effects, and controls are included as reported. Controls include population, personal hospital care spending, per capita personal income, unemployment rate, homestead debt exemption, household race, household marital status, household type of residence, and household composition. Household income and size information are collected two years prior to the current year. Information on consumer spending at local stores and the primary method of payment is obtained from NielsenIQ Consumer Panel data. The regression is estimated using ordinary least squares. Reported standard errors in parentheses are heteroscedasticity-robust and clustered by state and state-border segment. ***p <0.01, **p <0.05, *p <0.10.

Dependent variable	Household spending		
	Overall	Via credit card	Via Debit/Cash
	(1)	(2)	(3)
Index	-0.0096***	-0.0542**	0.0177
	(0.0036)	(0.0209)	(0.0342)
County pair × Month FE	Yes	Yes	Yes
Household group × Month FE	Yes	Yes	Yes
Controls	Yes	Yes	Yes
N	2,233,892	2,233,892	2,233,892
Adj.R^2	0.08	0.07	0.05
Mean of dependent variable	6.32	2.29	2.96

Table 2
Heterogeneity analyses: The effect of creditor rights on consumer spending
This table shows the effect of weaker creditor rights on consumer spending. The dependent variables in columns (1) and (2) are household monthly spending excluding any online or mail-order purchases. Columns (3) and (4) are household monthly spending excluding any observations when households shop in states other than their own. Columns (5) and (6) are household monthly spending online. Credit card represents household purchases made using a credit card. Debit/Cash represents household purchases made using a debit card or cash. County pair × year-month, household income group × year-month, household size group × year-month fixed effects, and controls are included as reported. Controls include population, personal hospital care spending, per capita personal income, unemployment rate, homestead debt exemption, household race, household marital status, household type of residence, and household composition. Household income and size information are collected two years prior to the current year. Information on consumer spending at local stores and the primary method of payment is obtained from NielsenIQ Consumer Panel data. The regression is estimated using ordinary least squares. Reported standard errors in parentheses are heteroscedasticity-robust and clustered by state and state-border segment. ***p <0.01, **p <0.05, *p <0.10.

Dependent variable	Household spending					
	Exclude online shopping		Exclude border shopping		Only online shopping	
	Credit card	Debit/Cash	Credit card	Debit/Cash	Credit card	Debit/Cash
	(1)	(2)	(3)	(4)	(5)	(6)
Index	-0.0512**	0.0169	-0.0516**	0.0482	-0.0204**	0.0049
	(0.0203)	(0.0342)	(0.0249)	(0.0334)	(0.0082)	(0.0037)
County pair × Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Household group × Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
N	2,233,892	2,233,892	1,847,278	1,847,278	2,233,892	2,233,892
Adj.R^2	0.07	0.05	0.07	0.05	0.02	0.01
Mean of dependent variable	2.24	2.95	2.28	2.95	0.29	0.15

Table 3
The effect of creditor rights on entrepreneurial activity
This table shows the effect of weaker creditor rights on local entrepreneurial activity. The dependent variable in column (1) is establishment-level annual revenue. The dependent variable in column (2) is establishment-level number of employees. The dependent variable in column (3) is establishment-level annual payroll. County pair × year, establishment fixed effects, and controls are included as reported. Controls include population, personal hospital care spending, per capita personal income, unemployment rate, and homestead debt exemption. The information on business revenue, employment, and payroll is obtained from the LBD and BR. The sample includes all establishments in all industries except the public administration sector (Sector 92). The sample is at the establishment-year level and spans from 1997 to 2018. The regression is estimated using ordinary least squares. Reported standard errors in parentheses are heteroscedasticity-robust and clustered by state and state-border segment. ***p <0.01, **p <0.05, *p <0.10.

Dependent variable	Revenue	Employment	Payroll
	(1)	(2)	(3)
Index	-0.0113**	-0.0058***	-0.0130***
	(0.0049)	(0.0013)	(0.0038)
County pair × Year FE	Yes	Yes	Yes
Establishment FE	Yes	Yes	Yes
Controls	Yes	Yes	Yes
N	56,980,000	56,980,000	56,980,000
Adj.R^2	0.6712	0.7797	0.7123
Mean of dependent variable	5.928	1.697	4.438

Table 4

The effect of creditor rights on entrepreneurial activity: Retail trade vs tradable industries

This table shows the effect of weaker creditor rights on local entrepreneurial activity. The dependent variables include establishment-level annual revenue, number of employees, and payroll. Columns (1)-(3) focus on establishments in retail trade and service industries. Columns (4)-(6) focus on establishments in tradable industries. County pair × year, establishment fixed effects, and controls are included as reported. Controls include population, personal hospital care spending, per capita personal income, unemployment rate, and homestead debt exemption. The information on business revenue, employment, and payroll is obtained from the LBD and BR. The sample is at the establishment-year level and spans from 1997 to 2018. The regression is estimated using ordinary least squares. Reported standard errors in parentheses are heteroscedasticity-robust and clustered by state and state-border segment. ***p <0.01, **p <0.05, *p <0.10.

	Retail trade & service industries			Tradable industries		
Dependent variable	Revenue	Employment	Payroll	Revenue	Employment	Payroll
	(1)	(2)	(3)	(4)	(5)	(6)
Index	-0.0150**	-0.0050**	-0.0112**	-0.0005	0.0041	-0.0071
	(0.0069)	(0.0019)	(0.0055)	(0.0101)	(0.0054)	(0.0094)
County pair × Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Establishment FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
N	18,040,000	18,040,000	18,040,000	3,027,000	3,027,000	3,027,000
Adj.R^2	0.6318	0.7553	0.6986	0.725	0.8156	0.7382
Mean of dependent variable	5.87	1.762	4.196	6.467	2.07	5.035

Table 5

The effect of creditor rights on bussiness: Discretionary goods vs necessary goods

This table shows the effect of weaker creditor rights on local entrepreneurial activity. The dependent variables include establishment-level annual revenue, number of employees, and payroll. Columns (1)-(3) focus on establishments which provide discretionary goods. Columns (4)-(6) focus on establishments which provide necessary goods. County pair × year, establishment fixed effects, and controls are included as reported. Controls include population, personal hospital care spending, per capita personal income, unemployment rate, and homestead debt exemption. The information on business revenue, employment, and payroll is obtained from the LBD and BR. The sample is at the establishment-year level and spans from 1997 to 2018. The regression is estimated using ordinary least squares. Reported standard errors in parentheses are heteroscedasticity-robust and clustered by state and state-border segment. ***p <0.01, **p <0.05, *p <0.10.

	Discretionary goods			Necessary goods		
Dependent variable	Revenue	Employment	Payroll	Revenue	Employment	Payroll
	(1)	(2)	(3)	(4)	(5)	(6)
Index	-0.0220***	-0.0083***	-0.0209***	0.0052	-0.0030	0.0057
	(0.0075)	(0.0027)	(0.0075)	(0.0124)	(0.0037)	(0.0080)
County pair × Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Establishment FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
N	4,518,000	4,518,000	4,518,000	2,736,000	2,736,000	2,736,000
Adj.R^2	0.6886	0.7691	0.7368	0.6197	0.7617	0.6883
Mean of dependent variable	5.818	1.719	4.314	5.949	1.598	4.057

Table 6
The effect of creditor rights on bussiness: financing methods

This table shows the effect of weaker creditor rights on local entrepreneurial activity. The dependent variables include establishment-level annual revenue, number of employees, and payroll. Columns (1)-(3) focus on establishments that reported they did not need external capital to start or maintain their businesses. Columns (4)-(6) focus on establishments that reported they used bank loans to start or maintain their businesses. Columns (7)-(9) focus on establishments that reported they used credit cards or personal savings to start or maintain their businesses. County pair × year, establishment fixed effects, and controls are included as reported. Controls include population, personal hospital care spending, per capita personal income, unemployment rate, and homestead debt exemption. The information on business revenue, employment, and payroll is obtained from the LBD and BR. The information on external financing methods is obtained from the SBO. The sample is at the establishment-year level and spans from 2002 to 2018. The regression is estimated using ordinary least squares. Reported standard errors in parentheses are heteroscedasticity-robust and clustered by state and state-border segment. $^{***}p<0.01$, $^{**}p<0.05$, $^{*}p<0.10$.

	Financing methods								
	None needed			Bank loans			Credit cards&savings		
Dependent variable	Rev	Emp	Pay	Rev	Emp	Pay	Rev	Emp	Pay
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Index	-0.0668***	-0.0174*	-0.0704**	-0.0657***	-0.0304***	-0.0523***	-0.0724***	-0.0257***	-0.0670***
	(0.0247)	(0.0097)	(0.0267)	(0.0191)	(0.0088)	(0.0160)	(0.0234)	(0.0094)	(0.0237)
County pair × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Establishment FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	885,000	885,000	885,000	816,000	816,000	816,000	1040,000	1040,000	1040,000
Adj.R^2	0.7566	0.8640	0.7916	0.7164	0.8343	0.7613	0.7497	0.8549	0.7889
Mean of dependent variable	6.676	2.353	5.333	7.298	2.767	5.843	6.719	2.332	5.234

Table 7
The effect of creditor rights on bussiness

This table shows the effect of weaker creditor rights on local entrepreneurial activity. The dependent variables include establishment-level annual revenue, number of employees, and payroll. In panel A, columns (1)-(3) focus on establishments that have fewer than 20 employees. Columns (4)-(6) focus on establishments that have more than 20 employees. In panel B, columns (1)-(3) focus on establishments that are in high capital dependence industry. Columns (4)-(6) focus on establishments that are in low capital dependence industry. In panel C, columns (1)-(3) focus on single-location establishments. Columns (4)-(6) focus on multi-location establishments. County pair × year, establishment fixed effects, and controls are included as reported. Controls include population, personal hospital care spending, per capita personal income, unemployment rate, and homestead debt exemption. The information on business revenue, employment, and payroll is obtained from the LBD and BR. The sample is at the establishment-year level and spans from 1997 to 2018. The regression is estimated using ordinary least squares. Reported standard errors in parentheses are heteroscedasticity-robust and clustered by state and state-border segment. $^{***}p<0.01$, $^{**}p<0.05$, $^{*}p<0.10$.

Panel A: Small size vs large size

	Small size			Large size		
Dependent variable	Revenue	Employment	Payroll	Revenue	Employment	Payroll
	(1)	(2)	(3)	(4)	(5)	(6)
Index	-0.0096*	-0.0045***	-0.0115***	-0.0095**	-0.0064*	-0.0116*
	(0.0050)	(0.0011)	(0.0041)	(0.0046)	(0.0037)	(0.0059)
County pair × Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Establishment FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
N	50,160,000	50,160,000	50,160,000	6,772,000	6,772,000	6,772,000
Adj.R^2	0.6303	0.6854	0.6647	0.6300	0.5349	0.5823
Mean of dependent variable	5.654	1.447	4.126	7.954	3.539	6.747

Panel B: High capital depend vs low capital depend

	High capital dependence industry			Low capital dependence industry		
Dependent variable	Revenue	Employment	Payroll	Revenue	Employment	Payroll
	(1)	(2)	(3)	(4)	(5)	(6)
Index	-0.0123**	-0.0063***	-0.0161***	-0.0125*	-0.0046**	-0.0099**
	(0.0058)	(0.0019)	(0.0048)	(0.0063)	(0.0017)	(0.0047)
County pair × Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Establishment FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
N	25,440,000	25,440,000	25,440,000	20,070,000	20,070,000	20,070,000
Adj.R^2	0.6825	0.7909	0.7219	0.6531	0.7684	0.7023
Mean of dependent variable	5.942	1.746	4.611	6.075	1.733	4.244

Panel C: Single-location business vs multi-location business

	Single location business			Multi location business		
Dependent variable	Revenue	Employment	Payroll	Revenue	Employment	Payroll
	(1)	(2)	(3)	(4)	(5)	(6)
Index	-0.0110**	-0.0053***	-0.0120***	-0.0230***	-0.0097*	-0.0218**
	(0.0050)	(0.0013)	(0.0038)	(0.0090)	(0.0050)	(0.0083)
County pair × Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Establishment FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
N	52,000,000	52,000,000	52,000,000	4,983,000	4,983,000	4,983,000
Adj.R^2	0.6770	0.7738	0.7109	0.6041	0.7638	0.6647
Mean of dependent variable	5.867	1.632	4.351	6.560	2.37	5.345

Table 8
The effect of creditor rights on business closures
This table shows the effect of weaker creditor rights on business closures. The dependent variable is the county-level number of establishment closures. Column (1) includes all establishments in all industries except the public administration sector (Sector 92). Column (2) includes establishments in retail trade and service industries. Column (3) includes establishments in tradable industries. County pair × year, county fixed effects, and controls are included as reported. Controls include population, personal hospital care spending, per capita personal income, unemployment rate, and homestead debt exemption. The information on business closure is obtained from the LBD. The sample is at the county-year level and spans from 1997 to 2018. The regression is estimated using ordinary least squares. Reported standard errors in parentheses are heteroscedasticity-robust and clustered by state and state-border segment. ***p <0.01, **p <0.05, *p <0.10.

Dependent variable	Business closure		
	Overall industry	Retail & service	Tradable industries
	(1)	(2)	(3)
Index	0.0119	0.0210***	-0.001
	(0.0094)	(0.0073)	(0.0111)
County pair × Year FE	Yes	Yes	Yes
Establishment FE	Yes	Yes	Yes
Controls	Yes	Yes	Yes
N	39732	39732	39732
Adj.R^2	0.9832	0.9366	0.7918
Mean of dependent variable	4.383	2.828	0.7133

Table 9
The effect of creditor rights on municipal finance
This table shows the effect of weaker creditor rights on municipal finance. The dependent variable in column (1) is municipal government total revenue per capita. The dependent variable in column (2) is municipal government expenditure on local facilities per capita. County pair × year, municipality fixed effects, and controls are included as reported. Controls include population, personal hospital care spending, per capita personal income, unemployment rate, and homestead debt exemption. The sample is at the municipality-year level and spans from 1997 to 2018. The regression is estimated using ordinary least squares. Reported standard errors in parentheses are heteroscedasticity-robust and clustered by state and state-border segment. ***p <0.01, **p <0.05, *p <0.10.

Dependent variable	Total revenue (1)	Total expenditure (2)
Index	-0.025** (0.016)	-0.023* (0.012)
County pair × Year FE	Yes	Yes
Municipal FE	Yes	Yes
Controls	Yes	Yes
N	85,805	85,805
Adj.R^2	0.82	0.85
Mean of dependent variable	1.47	1.25

Internet Appendix
When Debt Relief Hits Main Street: Evidence from the Indirect Channel of Consumer Credit Access

A. Supplementary figures and tables

Figure IA.1
The effect of creditor rights on the debt collection industry
This figure shows the timing of the effect of weaker creditor rights on the debt collection industry. The dependent variable is the total number of debt collectors scaled by the total number of debt collection agencies. The figure plots coefficient estimates and 95% confidence intervals from Equation 4. The information on debt collection industry is obtained from the CBP, with the NAICS code equal to 561440. Observations are at the state-year level, and standard errors are clustered at the state.

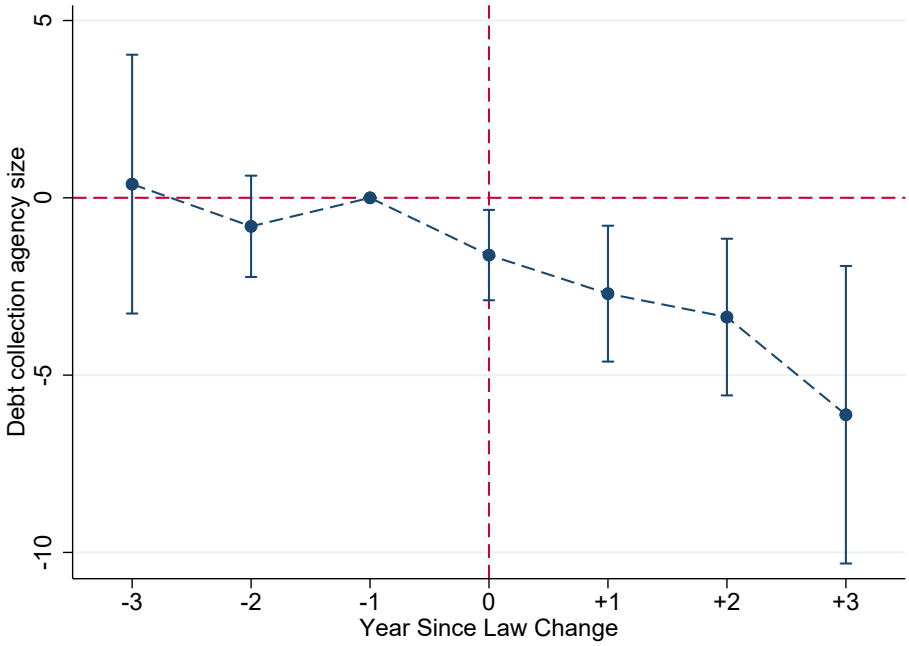
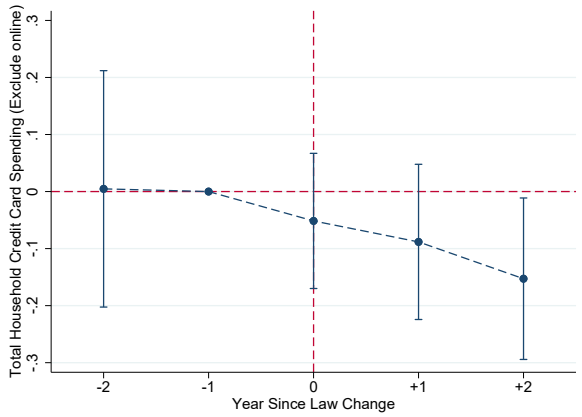
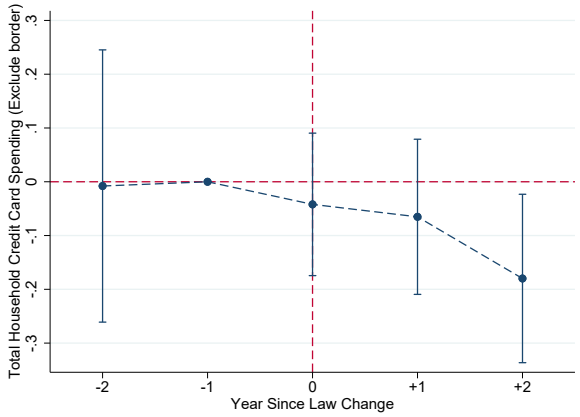


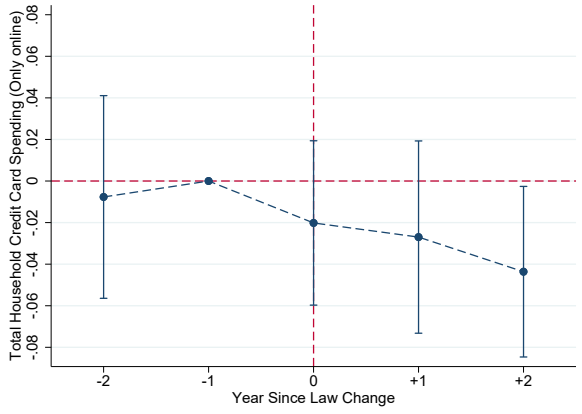
Figure IA.2
The effect of creditor rights on consumer spending
This figure shows the timing of the effect of weaker creditor rights on household spending. The dependent variable in figure (a) is household monthly spending using credit cards excluding any online or mail-order purchases. The dependent variable in figure (b) is household monthly spending using credit cards excluding any observations when households shop in states other than their own. The dependent variable in figure (c) is household monthly spending online using credit cards. The dependent variable in figure (d) is lower-income household monthly spending using credit cards. The figure plots coefficient estimates and 95% confidence intervals from Equation 4. Observations are at the household-month level, and standard errors are clustered at the state and state-border segment.



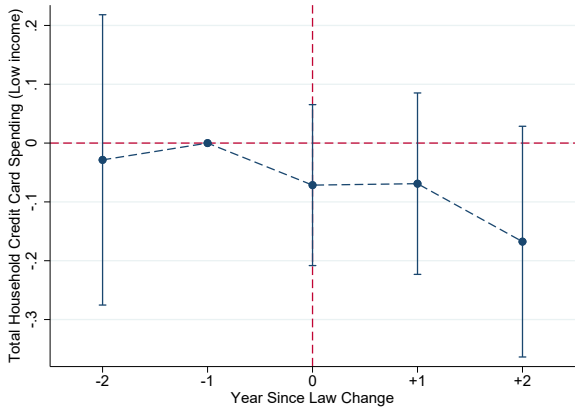
(a) Credit Card Spending-Exclude Online Shopping



(b) Credit Card Spending-Exclude Cross Border Shopping



(c) Credit Card Spending-Only Online Shopping



(d) Credit Card Spending-Low Income Household

Figure IA.3
Debt collection law changes
This figure breaks down the 44 state-level law changes that restricted debt collection practices by type of change. The laws can be categorized into three types: 1) requiring every individual debt collector to be licensed and to post a surety bond with state regulators; 2) clarifying and expanding the list of prohibited practices; and 3) establishing penalties for collectors who engage in prohibited practices.

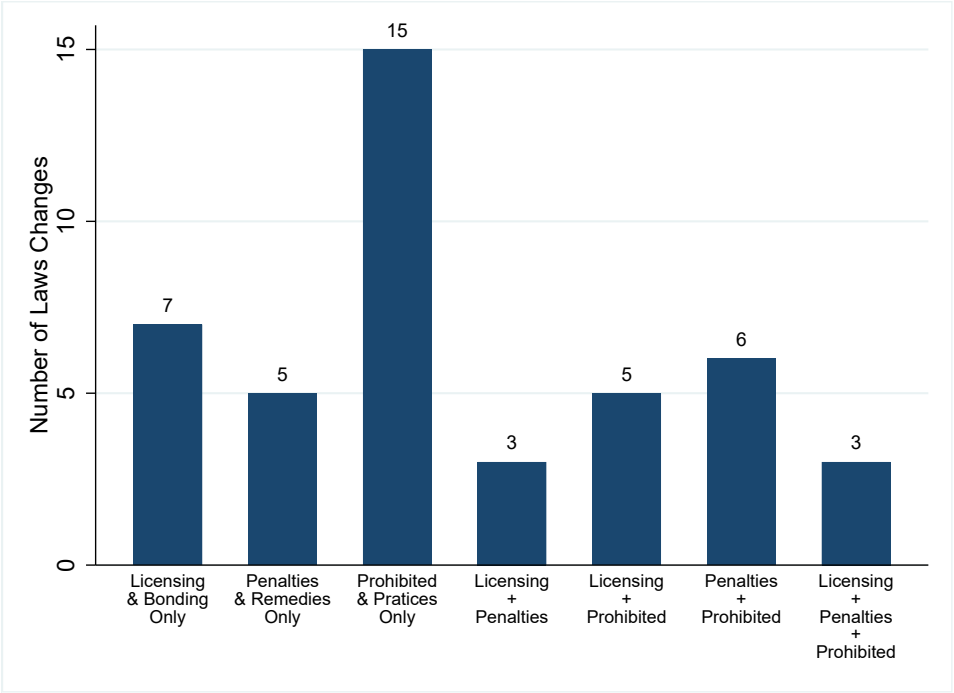


Figure IA.4
Contiguous border counties
This figure shows the list of contiguous border counties in the sample. The sample includes 942 counties in the United States.

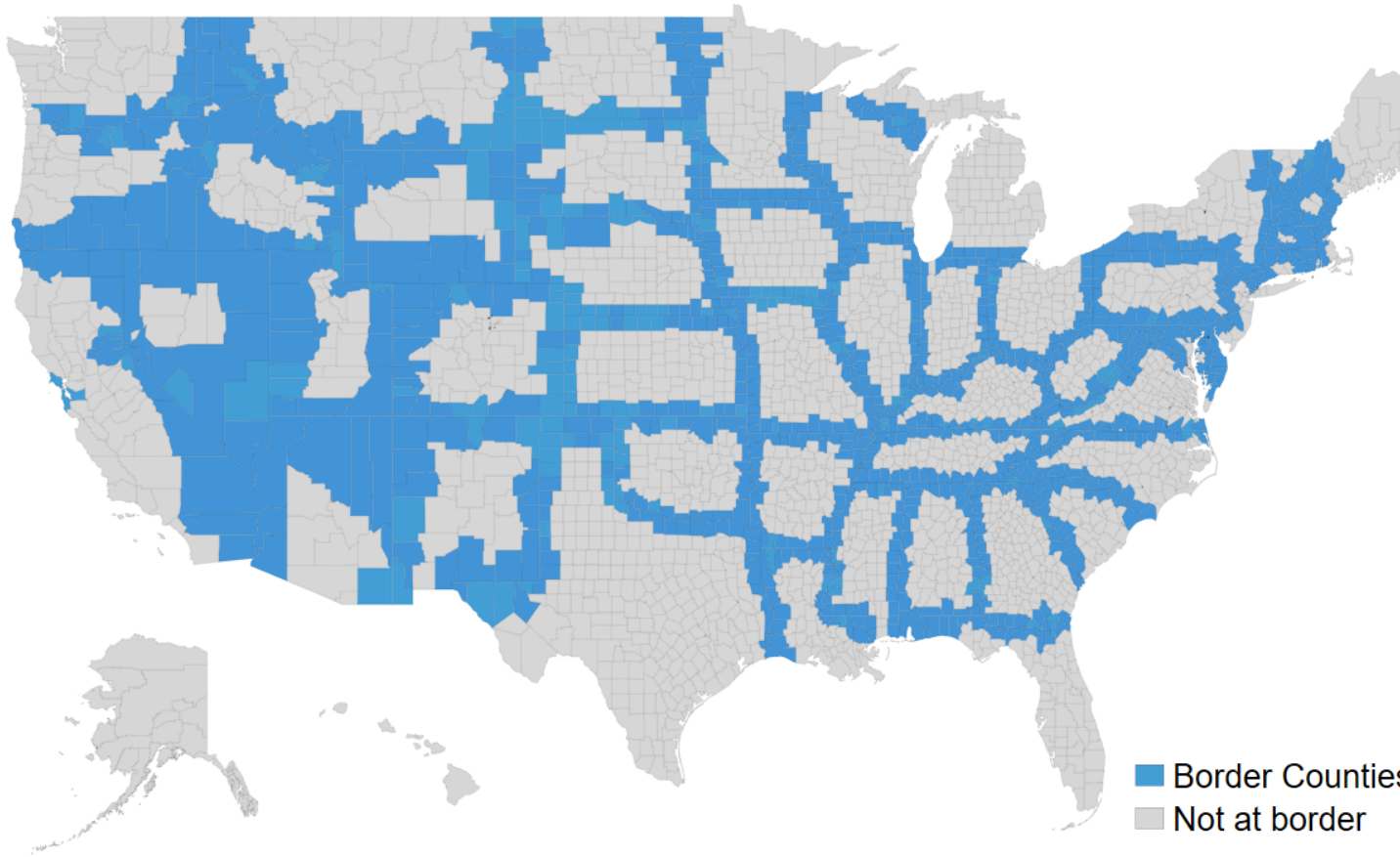


Table IA.1
Year of debt collection law changes
This paper validates all law changes identified in this existing work (Fedaseyeu, 2020) and expands the sample to 2018. The sources used to identify the statutes that regulate third-party debt collection in each state are: (1) the National Consumer Law Center's publication Fair Debt Collection (various years), (2) the National List of Attorneys white papers with summaries of debt collection laws, and (3) Google searches. There are 44 state-level law changes regarding debt collection restrictions from 1997 to 2018.

	Law change year			
Alabama				
Alaska	2009			
Arizona				
Arkansas				
California	2015			
Colorado				
Connecticut	2002	2009	2014	2016
Delaware				
District of Columbia				
Florida	2009	2011	2015	
Georgia	2004			
Hawaii	2012			
Idaho	1999	2002	2008	
Illinois	2006	2013	2015	
Indiana	2007	2014		
Iowa				
Kansas				
Kentucky				
Louisiana				
Maine	2009	2015		
Maryland	2007	2013		
Massachusetts	2004			
Michigan				
Minnesota	2005	2011	2013	
Mississippi				
Missouri				
Montana				
Nebraska				
Nevada	2001	2007		
New Hampshire				
New Jersey				
New Mexico				
New York	2011			
North Carolina	2001	2009		
North Dakota	2003	2011	2013	
Ohio	2008			
Oklahoma				
Oregon	1999	2006		
Pennsylvania	2000			
Rhode Island	2007	2014		
South Carolina				
South Dakota				
Tennessee				
Texas				
Utah	1999			
Vermont				
Virginia				
Washington	2011	2015		
West Virginia				
Wisconsin				
Wyoming				

Table IA.2
Determinants of the index
This table shows the regression of the debt collection index on state-level characteristics. The dependent variable in column (1) is the level of the index. The dependent variable in column (2) is the year-on-year change of the index. The dependent variable in column (3) is a dummy indicator of the change of the index. The independent variables include the state-level number of debt collection establishments, population, personal hospital care spending, number of bank branches, per capita personal income, house price index, unemployment rate, income growth, average wages, proprietor income, state governor's political party, and homestead debt exemption. The sample is from 1998 to 2018. The regression is estimated using ordinary least squares. Reported standard errors in parentheses are heteroscedasticity-robust and clustered by state. ***p <0.01, **p <0.05, *p <0.10.

Dependent variable	Level of main index (1)	Year-on-year change of index (2)	Dummy indicator change of index (3)
Debt collection establishments	0.003	-0.000	-0.000
	(0.003)	(0.001)	(0.001)
Debt collection employment	-0.048	0.002	0.003
	(0.040)	(0.008)	(0.008)
Population	0.194	-0.010	-0.011
	(0.333)	(0.041)	(0.040)
Personal hospital care spending	-0.270	0.017	0.020
	(0.212)	(0.023)	(0.022)
Number of bank branches	-0.001	0.000	0.000
	(0.000)	(0.000)	(0.000)
Personal income	-0.004	-0.000	-0.000
	(0.005)	(0.001)	(0.001)
House price index	-0.001	0.000	0.000
	(0.001)	(0.000)	(0.000)
Unemployment rate	0.060	0.008	0.002
	(0.037)	(0.013)	(0.011)
Average earnings per job	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)
Nonfarm proprietor income	-0.000	0.000	-0.000
	(0.000)	(0.000)	(0.000)
Homestead debt exemption	0.006	0.004	0.003
	(0.042)	(0.004)	(0.003)
Political party	0.122	0.002	-0.002
	(0.091)	(0.012)	(0.012)
Total employment	0.000	-0.000	-0.000
	(0.001)	(0.000)	(0.000)
Personal health care spending	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)
State FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
N	1,008	1,008	1,008
R^2	0.68	0.03	0.03
Mean of dependent variable	0.47	0.04	0.04

Table IA.3
The effect of creditor rights on the debt collection industry
This table shows the effect of debt collection laws on the debt collection industry. The dependent variable is the total number of debt collectors scaled by the total number of debt collection agencies. Controls include state-level population, personal hospital care spending, per capita personal income, unemployment rate, and household debt exemption. The information on the debt collection industry is obtained from the CBP, with the NAICS code equal to 561440. The sample is from 1998 to 2018. The regression is estimated using ordinary least squares. Reported standard errors in parentheses are heteroscedasticity-robust and clustered by state. ***p <0.01, **p <0.05, *p <0.10.

Dependent variable	Debt collectors per establishment
	(1)
Index	-2.893***
	(1.056)
State FE	Yes
Year FE	Yes
Controls	Yes
N	1,008
R^2	0.73
Mean of dependent variable	25.26

Table IA.4
Heterogeneity analyses: The effect of creditor rights on consumer spending
This table shows the effect of weaker creditor rights on consumer spending. The dependent variable is household monthly spending either using credit card or debit card/cash. Columns (1) and (2) focus on households who are below the median income distribution. Columns (3) and (4) focus on households who are above the median income distribution. Credit card represents household purchases made using a credit card. Debit/Cash represents household purchases made using a debit card or cash. County pair × month, household income group × quarter, household size group × quarter fixed effects, and controls are included as reported. Controls include log(population), personal hospital care spending, per capita personal income, unemployment rate, log(homestead debt exemption), household race, household marital status, household type of residence, and household composition. Household income and size information are collected two years prior to the current year. Information on consumer spending at local stores and the primary method of payment is obtained from NielsenIQ Consumer Panel data. The sample is from 2013 to 2018. The regression is estimated using ordinary least squares. Reported standard errors in parentheses are heteroscedasticity-robust and clustered by state and state-border segment. ***p <0.01, **p <0.05, *p <0.10.

Dependent variable	Household spending			
	Below median household income		Above median household income	
	Credit card	Debit/Cash	Credit card	Debit/Cash
	(1)	(2)	(3)	(4)
Index	-0.0637**	0.0026	-0.0328	0.0287
	(0.0307)	(0.0366)	(0.0315)	(0.0539)
County pair × Month FE	Yes	Yes	Yes	Yes
Household group × Month FE	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
N	1,357,584	1,357,584	864,476	864,476
Adj.R^2	0.04	0.05	0.05	0.05
Mean of dependent variable	1.89	2.92	2.92	3.02

Table IA.5
Robustness to using the first law changes

This table shows the effect of weaker creditor rights on local entrepreneurial activity. The dependent variables include establishment-level annual revenue, number of employees, and payroll. Columns (1)-(3) focus on all establishments in all industries except the public administration sector (Sector 92). Columns (4)-(6) focus on establishments in retail trade and service industries. Treat is an indicator equal to 1 if a state ever adopted restrictions in debt collection practices. Post is an indicator equal to 0 prior to the first legislation change in a state and one after. County pair × year, establishment fixed effects, and controls are included as reported. Controls include population, personal hospital care spending, per capita personal income, unemployment rate, and homestead debt exemption. The information on business revenue, employment, and payroll is obtained from the LBD and BR. The sample is at the establishment-year level and spans from 1997 to 2018. The regression is estimated using ordinary least squares. Reported standard errors in parentheses are heteroscedasticity-robust and clustered by state and state-border segment. $^{***}p<0.01$, $^{**}p<0.05$, $^{*}p<0.10$.

	Overall industry			Retail & service		
Dependent variable	Revenue	Employment	Payroll	Revenue	Employment	Payroll
	(1)	(2)	(3)	(4)	(5)	(6)
Treat × Post	-0.0200**	-0.0097***	-0.0200***	-0.0283**	-0.0091**	-0.0191*
	(0.0076)	(0.0024)	(0.0065)	(0.0113)	(0.0037)	(0.0096)
County pair × Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Establishment FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
N	56,980,000	56,980,000	56,980,000	18,040,000	18,040,000	18,040,000
Adj.R^2	0.6712	0.7797	0.7123	0.6318	0.7553	0.6986
Mean of dependent variable	5.928	1.697	4.438	5.870	1.762	4.196

Table IA.6
Robustness to excluding states that loosened restrictions
This table shows the effect of weaker creditor rights on local entrepreneurial activity. The dependent variables include establishment-level annual revenue, number of employees, and payroll. Columns (1)-(3) focus on all establishments in all industries except the public administration sector (Sector 92). Columns (4)-(6) focus on establishments in retail trade and service industries. County pair × year, establishment fixed effects, and controls are included as reported. Controls include population, personal hospital care spending, per capita personal income, unemployment rate, and homestead debt exemption. The information on business revenue, employment, and payroll is obtained from the LBD and BR. The sample is at the establishment-year level and spans from 1997 to 2018. The sample excludes establishments located in Colorado, Florida, Louisiana, Maine, and Tennessee. The regression is estimated using ordinary least squares. Reported standard errors in parentheses are heteroscedasticity-robust and clustered by state and state-border segment. ***p <0.01, **p <0.05, *p <0.10.

	Overall industry			Retail & service		
Dependent variable	Revenue	Employment	Payroll	Revenue	Employment	Payroll
	(1)	(2)	(3)	(4)	(5)	(6)
Index	-0.0107**	-0.0059***	-0.0121***	-0.0154 **	-0.0053**	-0.0110 **
	(0.0050)	(0.0014)	(0.0038)	(0.0073)	(0.0020)	(0.0056)
County pair × Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Establishment FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
N	53,380,000	53,380,000	53,380,000	16,880,000	16,880,000	16,880,000
Adj.R^2	0.6716	0.7804	0.7126	0.6323	0.7562	0.6991
Mean of dependent variable	5.932	1.696	4.443	5.869	1.760	4.196

Table IA.7
Heterogeneity by characteristics of laws

This table shows the effect of weaker creditor rights on local entrepreneurial activity. The dependent variables include establishment-level annual revenue, number of employees, and payroll. The index is broken down into three categories: (1) laws that impose or tighten licensing and/or bonding requirements, (2) laws that impose civil or administrative penalties for debt collection violations or introduce private remedies (such as damage provisions and class action lawsuits), and (3) laws that prohibit certain debt collection practices. County pair × year, establishment fixed effects, and controls are included as reported. Controls include population, personal hospital care spending, per capita personal income, unemployment rate, and homestead debt exemption. The information on business revenue, employment, and payroll is obtained from the LBD and BR. The sample is at the establishment-year level and spans from 1997 to 2018. The regression is estimated using ordinary least squares. Reported standard errors in parentheses are heteroscedasticity-robust and clustered by state and state-border segment. ***p <0.01, **p <0.05, *p <0.10.

Dependent variable	Revenue			Employment			Payroll		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Licensing bonding	-0.0039			-0.0101***			-0.0163***		
	(0.0072)			(0.0028)			(0.0058)		
Penalities remedies		-0.0211**			-0.0094***			-0.0186**	
		(0.0087)			(0.0023)			(0.0084)	
Prohibited pratices			-0.0142**			-0.0048**			-0.0137***
			(0.0055)			(0.0019)			(0.0045)
County pair × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Establishment FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	56,980,000	56,980,000	56,980,000	56,980,000	56,980,000	56,980,000	56,980,000	56,980,000	56,980,000
Adj.R^2	0.6712	0.6712	0.6712	0.7797	0.7797	0.7797	0.7123	0.7123	0.7123
Mean of dependent variable	5.928	5.928	5.928	1.697	1.697	1.697	4.438	4.438	4.438

Table IA.8
The effect of creditor rights on entrepreneurial activity: County pair distance
This table shows the effect of weaker creditor rights on local entrepreneurial activity. The dependent variables include establishment-level annual revenue, number of employees, and payroll. Columns (1)-(3) focus on establishments located in counties that are below the median distance among all county pairs. Columns (4)-(6) focus on establishments located in counties that are above the median distance among all county pairs. County pair × year, establishment fixed effects, and controls are included as reported. Controls include population, personal hospital care spending, per capita personal income, unemployment rate, and homestead debt exemption. The information on business revenue, employment, and payroll is obtained from the LBD and BR. The sample is at the establishment-year level and spans from 1997 to 2018. The regression is estimated using ordinary least squares. Reported standard errors in parentheses are heteroscedasticity-robust and clustered by state and state-border segment. ***p <0.01, **p <0.05, *p <0.10.

	County pair distance groups					
	Below median			Above median		
Dependent variable	Revenue	Employment	Payroll	Revenue	Employment	Payroll
	(1)	(2)	(3)	(4)	(5)	(6)
Index	-0.0060*	-0.0054***	-0.0083**	-0.0140***	-0.0052**	-0.0147***
	(0.0030)	(0.0014)	(0.0033)	(0.0060)	(0.0020)	(0.0043)
County pair × Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Establishment FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
N	37,420,000	37,420,000	37,420,000	19,380,000	19,380,000	19,380,000
Adj.R^2	0.6670	0.7800	0.7085	0.6519	0.7665	0.6977
Mean of dependent variable	5.950	1.695	4.461	5.9160	1.712	4.423

Table IA.9
The effect of creditor rights on entrepreneurial activity: Exclude business age filter
This table shows the effect of weaker creditor rights on local entrepreneurial activity. The dependent variables include establishment-level annual revenue, number of employees, and payroll. Columns (1)-(3) focus on all establishments in all industries except the public administration sector (Sector 92). Columns (4)-(6) focus on establishments in retail trade and service industries. County pair × year, establishment fixed effects, and controls are included as reported. Controls include population, personal hospital care spending, per capita personal income, unemployment rate, and homestead debt exemption. The information on business revenue, employment, and payroll is obtained from the LBD and BR. The sample is at the establishment-year level and spans from 1997 to 2018. The sample includes all establishments, including those newly launched with an age younger than one year. The regression is estimated using ordinary least squares. Reported standard errors in parentheses are heteroscedasticity-robust and clustered by state and state-border segment. ***p <0.01, **p <0.05, *p <0.10.

	Overall industry			Retail & service		
Dependent variable	Revenue	Employment	Payroll	Revenue	Employment	Payroll
	(1)	(2)	(3)	(4)	(5)	(6)
Index	-0.0113**	-0.0060***	-0.0135***	-0.0141**	-0.0047**	-0.0109**
	(0.0045)	(0.0013)	(0.0036)	(0.0067)	(0.0019)	(0.0053)
County pair × Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Establishment FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
N	61,520,000	61,520,000	61,520,000	19,490,000	19,490,000	19,490,000
Adj.R^2	0.6484	0.7657	0.6948	0.6066	0.7405	0.6812
Mean of dependent variable	5.892	1.670	4.394	5.846	1.746	4.161

Table IA.10

The effect of creditor rights on entrepreneurial activity: Revenue scaled by payroll

This table shows the effect of weaker creditor rights on local entrepreneurial activity. The dependent variables include establishment-level annual revenue. Column (1) focuses on all establishments in all industries except the public administration sector (Sector 92). Column (2) focuses on establishments in retail trade and service industries. Column (3) focuses on establishments in tradable industries. County pair × year, establishment fixed effects, and controls are included as reported. Controls include population, personal hospital care spending, per capita personal income, unemployment rate, and homestead debt exemption. The information on business revenue is obtained from the BR. The sample is at the establishment-year level and spans from 1997 to 2018. I apportioning revenues across multi-establishment firms by assigning it in proportion to the payroll of each establishment. The regression is estimated using ordinary least squares. Reported standard errors in parentheses are heteroscedasticity-robust and clustered by state and state-border segment. ***p <0.01, **p <0.05, *p <0.10.

Dependent variable	Business revenue		
	Overall industry	Retail & service	Tradable industries
	(1)	(2)	(3)
Index	-0.0116**	-0.0147**	-0.0005
	(0.0048)	(0.0069)	(0.0101)
County pair × Year FE	Yes	Yes	Yes
Establishment FE	Yes	Yes	Yes
Controls	Yes	Yes	Yes
N	56,980,000	18,040,000	3,027,000
Adj.R^2	0.6742	0.6345	0.7262
Mean of dependent variable	5.926	5.866	6.466

Table IA.11
The effect of creditor rights on consumer spending: Exclude filter

This table shows the effect of weaker creditor rights on consumer spending. The dependent variable in column (1) is household monthly spending. Column (2) is household monthly spending using credit cards. Column (3) is household monthly spending using debit cards or cash. County pair × year-month, household income group × year-month, household size group × year-month fixed effects, and controls are included as reported. Controls include population, personal hospital care spending, per capita personal income, unemployment rate, homestead debt exemption, household race, household marital status, household type of residence, and household composition. Household income and size information are collected two years prior to the current year. Information on consumer spending at local stores and the primary method of payment is obtained from NielsenIQ Consumer Panel data. The filter that applies to Table 2 is lifted. The regression is estimated using ordinary least squares. Reported standard errors in parentheses are heteroscedasticity-robust and clustered by state and state-border segment. ***p <0.01, **p <0.05, *p <0.10.

Dependent variable	Household spending		
	Overall	Via Credit card	Via Debit/Cash
	(1)	(2)	(3)
Index	-0.0068**	-0.0400**	0.0118
	(0.0026)	(0.0173)	(0.0280)
County pair × Month FE	Yes	Yes	Yes
Household group × Month FE	Yes	Yes	Yes
Controls	Yes	Yes	Yes
N	3,009,699	3,009,699	3,009,699
Adj.R^2	0.10	0.07	0.05
Mean of dependent variable	6.21	2.23	3.04