

THE POLITICAL ECONOMY OF FINANCIAL REGULATION: EVIDENCE FROM U.S. STATE
USURY LAWS IN THE 19TH CENTURY*

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ABSTRACT

The motives and consequences of financial regulation are being hotly debated. Yet, this debate is hardly new. We study the political economy of state usury laws in 19th century America as a microcosm for financial regulation today. Using unique data on state policies, enforcement, and economic conditions, we study the rich landscape of the political economy at the time through the lens of two long-standing and competing views: private versus public interests. We provide unique evidence on the impact of usury laws on credit and economic activity and novel evidence consistent with private interests using regulation to extract rents from other groups.

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Introduction

The motives and consequences of financial regulation are once again being hotly debated in the current global financial crisis. Researchers and policy makers world-wide seek to understand the implications of regulation on financial development and growth, and whose interests among their constituents these policies most affect. However, this debate is hardly new and we can learn from a long history of financial regulation and development to shed light on these issues today.

We study the political economy of financial regulation and its consequences through the lens of usury laws in 19th century America. Usury laws are arguably the oldest form of financial regulation. Mentioned in the Bible and the Koran and dating back to ancient Rome, usury laws have been the subject of religious and political debate. The rich political and economic landscape of the 19th century U.S. provides a useful laboratory to investigate the motives and impact of financial regulation during a critical point of U.S. economic development. The emerging U.S. state economies of the 19th century provide rich variation in regulation, enforcement, financial crises, and political and economic activity to help identify the relation between regulation, economic incentives, and development. Understanding the economic motivation and impact of financial regulation in this setting may be a microcosm for regulation and development in today's global environment.

Our investigation into the causes and consequences of financial regulation entails answering who and what determines regulation and who benefits and loses from it. To interpret our empirical evidence, we examine usury laws through the guidance of two competing theories: public versus private interests. Do usury laws serve as a social insurance mechanism that transfers wealth across states of the world and households in the public interest of social welfare? Or, do private interests with political power impose usury laws to benefit themselves and impede competition?

We argue the evidence is most consistent with usury laws being used by incumbents with political power for their own private interests to control entry and hamper competition (as well as lower their own cost of capital). By limiting the maximum legal interest rate, usury laws cause credit rationing that increases the cost of entry in the market. Since wealthy incumbents already have access to capital via their reputation, relationships, creditworthiness, and ownership of assets that can be used as collateral, they are relatively immune to these restrictions.¹ However, since motives are inherently

¹Artificially lowering the cost of capital may even encourage more investment from those who can obtain credit at those rates (e.g., large, collateralized borrowers with established reputations), while causing even further credit rationing among riskier borrowers (e.g., new entrants with little capital and no local reputation) resulting in potentially

difficult to measure, a more benign interpretation of our results is that regulation designed to serve the politically and financially weak has the unintended consequence of exacerbating their plight.

We first argue that usury laws had financial and economic impact. We show that binding rate ceilings constrain some borrowers at certain times and that usury laws significantly affect lending activity in the state. We further show that changes in these laws are associated with future economic growth and, more importantly, that the impact on growth is concentrated exclusively among the smallest borrowers in the economy.

We then investigate the determinants of financial regulation. Usury laws vary with the cost of regulation. States impose tighter usury laws (lower maximum rates and stiffer penalties) when it is less costly to do so. For example, when current market interest rates rise above the rate ceiling or during financial crises, states relax restrictions by raising the rate ceiling. When market rates fall or the crisis abates, ceilings are reimposed or tightened. Moreover, states hit hardest by financial crises are even more likely to follow this pattern. We also show that usury laws respond to neighboring state competition for capital flows (particularly foreign at this time). These results suggest that usury laws have real (or at least perceived) impact, otherwise why bother to change them?

We attempt to distinguish between the private and public interest motives for regulation by measuring the extent of incumbent political power in a state and its relation to usury laws. State suffrage laws that restrict who can vote based on land ownership and tax payments (not race or gender) keep political power in the hands of wealthy incumbents. We find that such voting restrictions are highly correlated with financial restrictions. Economic historians argue that wealth-based suffrage laws are primarily driven by private interests [Engerman and Sokoloff (1997), Engerman and Sokoloff (2005), Engerman, Haber, and Sokoloff (2000), and Sokoloff and Engerman (2000)] and are less affected by general economic conditions, making it an effectual proxy for incumbent interests. Consistent with this view, we find that suffrage laws are *not* affected by financial crises. We also find that *after* a financial crisis abates, states with stronger wealth-based voting restrictions are even more likely to reimpose tighter usury laws.

As further corroboration of private interests, we find a positive relation between wealth-based suffrage restrictions and other forms of economic regulation designed to exclude certain groups, such as general incorporation laws that permit free entry of firms. Usury laws are tighter when incorporation restrictions are also tight. The combination of these two policies restricts free entry further,

more monopolistic power for incumbents.

implying financial regulation is adopted in conjunction with other exclusionary policies designed to limit access to outsiders. This evidence seems to conflict with the public-interest motivation, which is supposed to include or help underserved or disadvantaged groups rather than limit access. Furthermore, when the cost of financial regulation becomes high (e.g., during a financial crisis), usury laws are loosened but incorporation restrictions remain. Since incorporation restrictions do not constrain established incumbent corporations, incumbents maintain these restrictions at no cost to themselves to deter new entry, but lift rate ceilings, which become costly to them in a credit crisis, to loosen their own borrowing constraints.

We also consider whose private interests (non-financial or financier) are best being served by these policies. Free banking laws, which allow outside banks to compete directly in the state, are a natural candidate for distinguishing the motives of these two groups since incumbent banks want to restrict bank entry, while incumbent firms or farms are either indifferent or may wish to foster bank competition to lower the cost of capital. We find that the combination of policies most correlated with usury laws fits non-financial incumbent interests best, and find no relation between other measures of bank market or political power and usury laws.

Examining the extent to which public interests influence usury laws, we analyze the relation between financial regulation and policies designed to protect the poor such as bankruptcy stay and debt moratoria laws, newspaper circulation and the prevalence of political and corruption coverage as a proxy for when public interests are likely to be heightened, and agricultural shocks as a test of the social insurance motive of Glaeser and Scheinkman (1998). We find little evidence that these public interest proxies are linked to usury laws. We also consider alternative explanations for the variation in usury laws related to government bureaucratic costs and religious motives and find no consistent evidence in favor of these hypotheses.

Our results support the literature on the political economy of financial regulation² and relate to the broader literature on financial development and economic growth (Jayaratne and Strahan (1996), Rajan and Zingales (1998), Bekaert, Harvey, and Lundblad (2005), and Levine and Zervos

²Peltzman (1965) and Kroszner and Strahan (1999) argue that financial regulation is determined by private interests. Bekaert, Harvey, and Lumsdaine (2002) study the effects of regulatory changes on growth in emerging capital markets. Rajan and Zingales (2003) propose an interest group theory of financial development, where both incumbent financiers and industrialists oppose financial development because it breeds competition. Braun and Raddatz (2007) show that the relative strength of interest groups determines the level of financial system sophistication. Feijen and Perotti (2006) show that weak democratic institutions allow incumbent interest groups to capture financial regulation and Perotti and Volpin (2006) provide evidence that entry in financially dependent sectors is higher in countries with better investor protection.

(1998)), which argues that financial development fosters growth. An outstanding puzzle from this literature is that if finance is so beneficial to growth, then why do some economies choose to remain less financially developed? The tension between private and public interests helps explain part of this puzzle, where incumbent groups may make themselves better off at the expense of the rest of the economy, highlighting the endogenous relation between financial development and growth. As an alternative to aggregate measures of financial development such as market capitalization or credit divided by GDP used in other studies, usury laws provide a direct policy instrument for the mechanism of financial regulation to be identified. In addition, our within-country analysis rules out explanations based on national interests, legal systems, or growth at the national level that may be important factors in cross-country studies.

The rest of the paper is organized as follows. Section I develops the theoretical framework and testable hypotheses on financial regulation from private and public interests. Section II describes the data on state usury laws, their variation, and their evolution in the U.S. during the 19th century. Section III analyzes whether usury laws have financial and real impact during this time. Section IV examines the determinants of usury laws, focusing on market conditions and the tension between private and public interests. Section V concludes.

I. Theoretical Framework and Testable Hypotheses

We layout the hypotheses to be tested on financial regulation from two competing views: public and private interests as they pertain to usury laws.

The premise underlying both the public and private-interest theories implies financial regulation, proxied by usury laws, impacts financial development and growth.

PREDICTION 1. Tighter usury laws generate lower lending activity and slower economic growth, particularly for small, risky borrowers.

The first part of this prediction arises naturally from a simple supply-side story of credit. A cap on the price of capital will reduce quantities lent. Furthermore, if financial access helps foster growth, then economic activity will also be affected, and even more so for the set of small, risky borrowers who are likely the first to be credit rationed.

A. The Private-Interest Group Hypothesis

The private-interest theory treats regulation as a process in which specific groups use the coercive power of the state in their own interest to extract rents at the expense of other groups. The following predictions emerge from applying the private-interest theory to usury laws.

Well-organized and powerful incumbent groups impose interest rate ceilings to credit ration potential competition and capture rents. Established incumbents can either finance new projects out of earnings without accessing external credit markets or already have an established reputation in the credit market and pledgeable collateral, and thus are not bound by the maximum legal rate. Incumbents may, therefore, benefit from usury laws if they discourage entry from others who cannot access finance as easily. The notion that access to finance can be used as a barrier to entry is a central theme in Rajan and Zingales (2003, 2004).

Incumbents weigh the marginal costs and benefits of financial regulation. When the marginal cost of capital increases, usury laws are relaxed because they start to bind on incumbents themselves.

PREDICTION 2. Usury laws tighten (relax) when the cost of capital declines (rises), particularly for states more sensitive to capital shocks.

This prediction follows from Becker (1983). The loss of incumbent rents reduces the pressure for continued regulation of interest rates. When the benefits from credit competition outweigh the private benefits of surplus division, even incumbents will favor usury repeal. During intense periods of high interest rates, competition for capital, and financial crises, it is likely the benefits from increased capital outweigh those from surplus division and usury ceilings are lifted. Conversely, when market interest rates subside and the financial crisis abates, private benefits of surplus division will once again dominate and usury ceilings will be reinstated.

Prediction 2 is also consistent with the competing public-interest theory. Without private interests there is no tension between credit competition and surplus division, hence usury laws will simply follow market interest rates.

The ability of incumbent private interests to dictate financial regulation depends on their relative political power within the state.

PREDICTION 3. Usury laws are more strict when incumbents have more political power.

This general prediction emerges from Stigler (1971), Peltzman (1976), Becker (1983), and Rajan

and Zingales (2004).³ States respond less to economic forces when incumbents exert their political influence to protect their own interests because incumbents do not need financial development to ensure financial access.

PREDICTION 4. Usury laws will coexist with other policies designed to exclude new entrants when incumbents have political power.

If usury laws are used by incumbents to exclude new entry, then other exclusionary policies are likely simultaneously adopted by the state to protect incumbent interests as well. Financial restrictions are only one way of hampering competition but more direct restrictions on new entry are likely taken as well to protect incumbent private interests.

B. The Public-Interest Hypothesis

According to the public-interest theory, the government intervenes to correct market inefficiencies to maximize social welfare. The public interest view argues that usury laws protect borrowers from creditor market power.

PREDICTION 5. Usury laws are more strict when credit markets are less competitive.

Since the public interest view argues for the protection of borrowers who face creditor market power, usury laws should coexist with other policies designed to assist the disadvantaged.

PREDICTION 6. Usury laws will coexist with other policies designed to protect the poor.

During times of intense public scrutiny, the demand for public policy to assist the general population may be greatest. Hence,

PREDICTION 7. Usury laws will tighten when public interests are given more prominence.

Finally, Glaeser and Scheinkman (1998) model usury laws as a primitive means of social insurance. When banks have market power, financial regulation transfers income to states of the world where individuals have a high marginal utility of income from states of the world where they have

³Glaeser and Scheinkman (1998) also analyze a rent seeking motive for usury laws. However, in their analysis, maximum legal rates *rise* with the political power of the wealthy since they want to charge higher interest rates to the poor, whereas we predict that maximum legal rates will be lower since the wealthy use finance as a capital-constraining barrier to entry and wish to lower their own cost of capital.

a low marginal utility of income. This insurance mechanism helps smooth idiosyncratic shocks.

PREDICTION 8. Usury laws will tighten to smooth idiosyncratic shocks.

C. A Case Study in Private vs. Public Interests

Before proceeding to the empirical analysis, we highlight a case study of the relation between the tension of private and public interests and usury laws during the panic of 1819 that depicts many of the themes from our formal analysis in the paper.

According to Rothbard (1962), the panic of 1819 was America's first great economic crisis and depression. Prices of imported goods dropped with the influx of foreign goods during the peace years that followed the 1812 war. Prices of exports of farm staples dropped when European demand declined in 1818. According to Wright (1949):

The gathering storm broke in 1819. Within a few months cotton fell from 90 to 51 cents a bushel...The most acute distress was felt in the Middle Atlantic states and in the Ohio Valley, though the cotton belt was also hard hit. In New York City in 1820 a tenth of the people was said to be receiving poor relief, and for the first time the country was forced to consider the serious problem of urban pauperism... As always at such times, a widespread demand for relief arose, and varied measures to provide this were advocated. To protect debtors, stay and replevin laws were passed and the statutes governing imprisonment for debt modified.

The movement for debt relief and help for the poor arose from public interest. According to Bonelli (2003), during the depression of 1819 to 1820 private philanthropy paralleled by public relief were part of a great philanthropic effort. President James Monroe advocated debt relief in his annual message of November, 1820, and a federal debtor relief bill was passed in the Senate on February 28, 1821. As part of the public efforts, state legislatures passed debt moratoria laws known as "stay laws" which postponed foreclosure of property. Some states also passed minimum appraisal laws that prevented "fire sales" of properties below a certain minimum price. Most states, especially the frontier states adopted some form of debt relief legislation between 1818 and 1822 (Bolton and Rosenthal (2002) and Rothbard (1962)).

However, during this period of debt relief sentiment, *none* of the states tightened their usury laws. Moreover, the year following the crisis in 1820, 5 out of the 9 frontier states, who were passing stay laws aimed at helping the poor, were relaxing not tightening their usury laws. In contrast, states with more strict usury laws were also less likely to adopt pro-debtors laws. This evidence

suggests that usury laws coexist with other policies *not* aimed at helping the poor, which contradicts the public interest view that strict usury laws are designed to help debtors.⁴

The panic of 1819 also provides evidence in support of the hypothesis that incumbents oppose financial development because it breeds competition. The economic downturn also led to a demand for a protective tariff for American industry. Domestic industry that had expanded during the War of 1812, which virtually blocked foreign trade and imports of manufacturing goods, was hit by the impact of foreign competition in the postwar period. When the depression came in late 1819, the protectionists argued that free trade caused the depression, and that protection would bring prosperity. The industrialists also proposed to curtail credit in order to limit competition (Rothbard (1962) p. 176). The New York Daily Advertiser pointed out that: “abolition [of credit] would help the large capitalists at the expense of the small, since it was the young and enterprising merchants who would be forced to abandon trade for lack of capital.”

These facts suggest that the private interests of wealthy incumbents were driving a host of policies, including financial regulation, around the 1819 depression. We now turn to our data throughout the 19th century to test some of the broader themes present in the 1819 financial crisis case study.

II. Usury Laws in the 19th Century United States

Usury laws regulate the maximum legal interest rate that can be charged on a loan and the penalties imposed on lenders for exceeding this rate. Usury laws in America date back to at least 1641 when Massachusetts set the maximum legal rate at 8%. The rest of the original 13 colonies enacted their usury laws during the 18th century and the remaining 20 states we study adopted their usury laws in the 19th century. By restricting the maximum legal rate of interest with no relation to risk, usury laws make the financing of some risky, yet profitable, projects illegal. Usury laws apply to the residence of the loan or borrower, regardless of the location of the lender. Hence, banks in a state without usury laws are subject to the usury laws of the state where the borrower resides or the loan is made.

⁴Bolton and Rosenthal (2002) show that states with restricted suffrage laws are also less likely to pass debtor relief legislation. Stay laws and other forms of debt relief are more prevalent in the frontier states that do not have restricted suffrage laws, where debtors may have more political voice. Since these states also have more lax usury laws, this evidence further suggests that when debtors have political power they are more likely to adopt lax rather than strict usury laws, which is again inconsistent with the public interest view.

A. Data

The source of the data for both the maximum legal rates and penalties is Holmes (1892). The penalty for usury typically makes a distinction between ‘loss’ and ‘forfeiture’. Lenders that violate the law can lose the legal interest and/or the principal if the law denies their collection from the borrower. Moreover, in some states lenders are subject to forfeiture of up to triple the amount of the principal, or triple the illegal interest. We construct a qualitative index of the penalty.⁵

B. Cross-sectional and time-series variation

In 19th century America, there is substantial heterogeneity in usury laws across states and time. Table 1 reports the heterogeneity of usury laws over time and across the 33 states for which we have at least 40 years of data. States are sorted in ascending order by their time-series average maximum legal rate and summary statistics for both the maximum legal rate and the total penalty are reported. The mean maximum legal rate for each state over the entire time period for which the state has usury laws on its books is reported in the first column of Table 1. The average legal maximum rate ranges from 5.73% in Virginia to no limit in California during the sample period. For the purpose of calculating means, if a state has no limit on the maximum legal rate in a given year, we employ 5% plus the maximum legal rate ceiling observed in that year across all states as the effective maximum rate.⁶

The second and third columns of Table 1 report the minimum and maximum legal rates over time and the fourth and fifth columns report the number of positive and negative changes, respectively, to the maximum legal rate for each state. More than half (17) of the states eventually lift the ceiling on rates and allow for no rate limit at some point during the sample period, while nearly half (16)

⁵The penalty index is constructed as follows. A state gets a score of 0.5 for loss of the illegal interest, 1 for loss of the entire interest and 0 otherwise. Likewise, a state gets a score of 1 for loss of the principal and 0 otherwise. Since forfeiture is not limited to the nominal amounts of the principal or interest, a state gets a score of 1 for forfeiture of the nominal amount of the principal 2 or 3 for forfeiture twice or triple the principal, and 0 otherwise. Likewise, a state gets 0.5 for forfeiture of only the illegal interest, 1 or 1.5 for forfeiture twice or triple the illegal interest, and 0 otherwise. When the penalty is the forfeiture of the entire interest the score is 1. None of the states forfeited more than the entire amount of interest although several states set the penalty at triple the illegal interest. An index of the severity of penalties is constructed as the sum of these measures across all dimensions of the usury penalty code. This index preserves the ranking of states on penalty severity, but may understate differences in the quantitative severity of the penalties. We have experimented with other ways to construct a penalty index that attempt to highlight the quantitative differences across states and found similar results.

⁶We have also used a flat rate of 25%, which is 5% higher than the maximum rate observed across all years and states in the sample, and a flat rate of 20%, which is the maximum observed rate, for any state-year with no rate limit. White (2001) finds that loan rates of 40% were not uncommon for the small private bank in California he studies in the late nineteenth century. In addition, we have employed censored regressions to handle states with no rate limit. Results in the paper are robust to these alternative specifications for coding states with no rate limit.

of the states never repeal their usury laws. Many states change their rate limits multiple times and in multiple directions. Virginia, for instance, increases its rate ceiling twice and reduces it on three separate occasions. The number of positive and negative changes for a given state suggests that policy makers believed usury laws to be impactful, otherwise why change them?

The next five columns of Table 1 report the same summary statistics for the penalty for charging usurious rates. There is substantial heterogeneity across states and for a given state over time in the penalties imposed for violating usury. States not only raise and lower the interest rate ceiling, but also alter the penalties for exceeding the ceiling. This evidence indicates variation in enforcement as well. The last two rows of Table 1 report that the correlation between the maximum legal rate and total penalty is -0.37 and the correlation between their changes (first differences) is -0.33 . States with low rate ceilings adopt stiff penalties to enforce them and when states tighten their rates they also tighten the penalties for violation. The evidence points to states adopting tougher penalties when the rate ceiling becomes more binding. If the penalties are innocuous or irrelevant, either because the maximum rate does not bind or is not enforced, why bother to change them?

C. Evolution of usury laws

The last column of Table 1 reports the year of statehood for each state (year when the state joins the union). States that join the union later tend to adopt higher maximum legal rates and less stringent penalties.⁷ While maximum rate limits may in part reflect inflation or real interest rates, an issue we take up in the next section, penalties for usury do not. Hence, cross-sectionally, older states have tighter financial regulation. There may be many reasons why older states tend to have more stringent usury laws than younger states: life cycle growth patterns, greater need for usury protection, more developed banking systems, more bureaucratic capital, and perhaps more likely to have private interest groups with stronger political clout. We will try to provide evidence in favor of or against each of these potential explanations. However, the general time trend in financial regulation is toward liberalization. Figure 1 plots the time-series evolution of usury laws in the U.S. by plotting the equal-weighted cross-state average of maximum legal rates and the penalty index annually. On average, states relax their usury laws as the 19th century comes to a close.

Age has both a significant time-series and cross-sectional association with usury laws. The general time trend is toward liberalization, but cross-sectionally older states are more conservative.

⁷Rockoff (2003) finds a similar pattern.

To control for these effects, we employ state and year fixed effects to difference out state and year-level unobservables and use state age as a regressor in all of our tests, which is equivalent to accounting for a state-specific linear time trend in all of our regressions. Since age may be correlated with private and/or public interests, these controls may understate our findings.

Figure 1 also depicts the financial crises of 1819, 1837, 1857, 1873, and 1884 as well as the end of the Civil War (1865). Usury laws tend to relax following each of these episodes, both in terms of higher maximum rates and lower penalties. We investigate the relation between usury laws and financial crises more deeply in the next section.

III. Do Usury Laws Matter?

We first establish whether usury laws are binding and have an impact on financial access. Some argue that financial regulation can be circumvented by market participants through clever contracting (e.g., Wright (1949)), but North (1990) discusses how contracts attempting to disguise interest and evade usury laws by specifying “late payment penalties,” manipulating exchange rates, or other devices impose additional costs that would not be present in the absence of usury laws.⁸ These costs and risks must have *some* impact on financial development.

Another possibility is that rate ceilings simply do not bind and therefore never have to be enforced. Usury ceilings may simply change with market interest rates so that the constraint is never binding.⁹ However, both of these explanations have difficulty reconciling the heterogeneity in rate ceilings and penalties we observe across states at a point in time. Ultimately, however, these are empirical questions, which we now attempt to answer.

⁸In addition to the costs of writing complex contracts, North (1990) points to the difficulty in enforcing such contracts, which often deterred lenders, particularly foreign lenders. Usury laws not only impose contracting and enforcement costs on lenders directly, but also may signal the danger of enforcement and expropriation in general for outside lenders. Temin and Voth (2005, 2006, 2007) find that lending activities in England during the 18th century were constrained by usury laws. Wright (2002) also argues that banks were reluctant to violate usury laws because doing so placed their corporate charter at risk.

⁹The mindset of legislators at the time was that usury laws certainly did bind, as suggested by some of the quotes in Appendix A. Rockoff (2003, p. 24-25) discusses how “Friedman (1963) documents a number of cases in which the fear of a capital drain to states with more liberal usury laws was brought up in legislative debates. For example a legislative committee in Connecticut in 1871 “painted a picture of money fleeing to Massachusetts,” where the usury law had been repealed in 1867.” (see Murray (1866)).

A. Market interest rates

In order to determine the strictness of usury laws, we need measures of (unconstrained) market interest rates. Ideally, we would like to have a detailed panel of state-level interest rates that covers our sample of usury law changes. Bodenhorn (2002), using Comptroller of the Currency records, calculates average bank lending rates at the state level. However, his data only begin in 1878 and hence only cover 14 years of our sample. To supplement these data we also use several longer series of 18th and 19th century market interest rates from Homer (1963): the yields on long-term British government bonds (beginning 1727), the yields of high-grade long-term American bonds (beginning 1798), the average annual U.S. commercial paper rate (beginning 1831), the annual New England municipal bond yield (beginning 1798), the average yield on high-grade railroad bonds (beginning 1857), and the average annual call money rate (beginning 1857), which is the overnight lending rate between banks in New York on collateralized loans. All series are annual, except for call money rates which are monthly, and all rates end in 1891 to coincide with our usury law sample. The state-level bank lending rates provide rich cross-sectional information and better capture the loan rates facing small businesses and farms and other potentially credit-rationed borrowers. Their short time-series is limiting, however, making it difficult to analyze the impact of financial crises, for example. In addition, because bank lending rates are subject to usury laws, these rates do not reflect true unconstrained market rates. On the other hand, while rates from Homer (1963) provide a long time series, they offer no cross-sectional information (except for New England municipal bond rates and NY call money rates) and they are likely far below what a small credit-rationed borrower could obtain, making them a lower bound on available rates to these borrowers. However, unlike bank lending rates, neither bond, commercial paper, nor call money rates are subject to usury laws. For these reasons, we compare both sets of rates to usury laws.

Panel A of Table 2 reports that the correlations among these rates are quite high, including a state GDP-weighted average of the state-level bank lending rates.¹⁰ The high correlation may reflect common inflation expectations or risk premia and are reassuring since they indicate the interest rates are not simply noise. We also construct an index of interest rates by extracting the largest common component among the rates from Homer (1963) using the first principal component of the covariance matrix to weight the six different market interest rates. The average correlation

¹⁰We use the average state gross product from 1850 and 1860 to determine the weights.

between the principal component index and each series is 0.85 and its correlation with the average state bank lending rate is 0.64.

B. Are rate ceilings restrictive?

Panel B of Table 2 reports the frequency (number and percentage of years) with which the maximum legal rate for a state is binding relative to the U.S. bond rate, commercial paper rate, high-grade railroad bond rate, and call money rate. There are two important features of these rates. First, none of these rates are subject to usury laws and hence, can (and often do) exceed usury rate ceilings. Second, these rates are likely lower bounds on the prevailing interest rates faced by small borrowers at the time, who are almost certainly greater credit risks and have less collateral than those large borrowers who have access to the U.S. bond, commercial paper, railroad bond, or call money markets. For example, when the call money rate, an overnight collateralized interbank rate, exceeds the maximum legal interest rate in a state, it almost certainly has to be the case that actual borrowing rates faced by less creditworthy households or small firms for maturities longer than one day on non-collateralized loans are even more restricted by the rate ceiling.

As Panel B of Table 2 shows, for many states there are a significant fraction of years when the usury restriction binds relative to the (low) market rates that small borrowers did not likely have access to. Hence, the restriction on small borrowers must be even more binding. In addition, the rate differences can be substantial, suggesting usury laws impose very tight constraints on lending at certain times. The data also highlight the tremendous heterogeneity over time for a given state and across states, with some states having binding rate ceilings a significant fraction of the time, while borrowers in other states never being constrained.

Figure 2 plots the average state-level bank lending rate for states with and without a rate ceiling, the average rate ceiling for states with rate limits, the minimum rate ceiling among states, and the commercial paper rate annually from 1878 to 1891. Also highlighted on the figure is the financial crisis of 1884. Figure 2 shows that prior to 1884, average bank lending rates in states with usury restrictions are considerably lower than unconstrained states, and much closer to the commercial paper rate, a rate available to only the largest and most creditworthy borrowers. Once the financial crisis of 1884 hits, however, these states loosen their rate ceilings, evidenced by the increase in their average rate ceiling, and consequently their average bank lending rates jump to the same level as those in unconstrained states. The figure suggests that even toward the end of the 19th

century, usury laws are binding for some borrowers and that financial crisis was the catalyst to loosen regulation. This theme is highlighted throughout the paper with more formal tests.

C. Impact on lending activity and enforcement

Table 3 contains a series of tests for the first part of Prediction 1, which states that usury laws generate lower lending activity. Panel A of Table 3 examines the impact of usury laws on loan volume. We report results for regressions of the change in total amount of loans and discounts per capita in year t on the change in maximum legal rate and the change in the difference between the maximum legal rate and market interest rates in year $t - 1$. We use the principal component index rate, regional rates, and state bank lending rates that allow for variation in interest rates across states at a point in time. The regional rate is constructed as the New England municipal bond rate for all states in the New England region, the New York call money rate for New York state, and the U.S. bond rate for all other states and is available beginning in 1857. The state-level bank lending rates from Bodenhorn (2002) start in 1878. We run the regressions in first differences, with controls for age and state fixed effects when using the U.S. bond and principal components index rates, and controls for age, state and year fixed effects when using the regional and state-level rates. Standard errors used to compute t -statistics (reported in parentheses in the table) are clustered by state for the maximum rate regression and by year for the difference between maximum rate and market rate regressions. Loan volume data is obtained from state-level national banks' balance-sheets for the years 1865 to 1890 from the reports of the Comptroller of the Currency.

Panel A of Table 3 shows that subsequent changes in lending volume per capita increase when changes in the maximum rate increase. The elasticity of next period's per capita lending volume to rate ceilings is 0.98. We obtain equally sharp results when employing the maximum rate relative to market interest rates as a regressor. The most compelling tests are those using the regional and state-level interest rates that control for state and year fixed effects. When market interest rates approach or exceed the maximum legal rate, usury laws become more binding and subsequently loans per capita decrease.

The premise underlying the private and public interest theories is that financial regulation has a causal effect on financial activity (Prediction 1). Hence, we would like to interpret the results in Panel A of Table 3 as evidence of a supply restriction, where usury rate ceilings affect lending volume. Although usury law changes predict lending volume the next year (avoiding some of the

simultaneity problem), it is unclear whether this empirical relation is driven by supply (regulation) or demand sources. Panel B of Table 3 tries to sort out these two possibilities by examining the relation between changes in bonds for circulation per capita and maximum rate changes. National banks are required to hold at least one-third of their capital (but not less than \$30,000) in government bonds that are deposited with the comptroller of the currency. In exchange for these bonds, the banks receive national bank notes equal to the lesser of 90 percent of the bond's notional amount or market value. These bonds are not subject to usury laws and hence their supply should not be directly affected by usury restrictions. Therefore, if rate ceilings from usury laws affect supply, we should expect either no effect on government bonds holding or the opposite effect as that on lending volume, since banks may substitute away from bank notes creation and would rather use their capital (in excess of the minimum required by the comptroller of the currency) to supply new loans.

As Panel B of Table 3 shows, bonds for circulation has a weaker and opposite signed relation with usury law changes than lending activity, even over the short sample for which we have state-level interest rates and control for state and year fixed effects as well as a state-specific linear time trend (age). Our results are in general consistent with the micro-level evidence in Temin and Voth (2007) that finds significant supply distortions in London credit markets following the tightening of usury laws by the British government in 1714.

Panel C of Table 3 addresses whether penalties for violating usury also become tougher when rate ceilings become more binding. Penalties are a form of enforcement. We find that penalties increase when maximum legal rates are more binding.

D. Relation to Economic Growth

The literature on financial development and economic growth emphasizes the importance of financial development in allocating resources to their best use. While much of the literature studies cross-country differences in financial development, we study financial regulation *within* a country, essentially holding other factors such as institutions (Acemoglu and Johnson (2001)) and legal origins (La Porta et al. (1997)) fixed.¹¹

¹¹Few studies (Jayaratne and Strahan (1996), Rajan and Zingales (1998), Guiso, Sapienza and Zingales (2004), Garmaise and Moskowitz (2004), and Burgess and Pande (2005)) offer plausible identification strategies that attempt to document a causal effect of financial development on economic growth. Many of these studies look within a country or region in order to better identify the causal relations.

We examine whether usury laws (as a measure of financial development), have any impact on economic development. We hypothesize that more restrictive usury laws affect economic growth since they affect lending activity and therefore some risky, but positive NPV, projects cannot be financed. On the other hand, if projects are simply getting financed through other means that we cannot measure (i.e., private loans or “illegal black market” loans), then the effect on growth may be inconsequential.

Panel A of Table 4 reports results from regressing measures of per capita state economic growth on the lagged change in maximum legal interest rate. We compute five measures of per capita economic growth: state gross product, manufacturing value added, manufacturing establishments, agricultural output, and total number of farms from the 1850, 1860, and 1870 U.S. Censuses. We detail the construction of our measures of per capita economic growth in Appendix B. The breakdown of most state economies in the 19th century is between the manufacturing or industrial sector and the agricultural sector. Usury laws affect borrowers in both sectors. Regressions contain a dummy variable for Civil law states, state age, and regional fixed effects as controls.

The first column of Panel A of Table 4 reports regression results for the per capita growth in State Gross Product from 1850 to 1870 on the lagged change in maximum legal rates from the previous decade (1840 to 1850 and 1850 to 1860). Increases in maximum rates are associated with future increases in economic growth for the state, consistent with Prediction 1. An increase in the change in the maximum legal rate for a state of 1 percent translates into a 5.5 percent increase in economic growth over the next decade. The second column of Panel A of Table 4 reports regression results for the growth in manufacturing value added per capita, which increases 4.7 percent over the subsequent decade for a percentage point increase in rate ceilings. Likewise, the third column reports results for the per capita growth in manufacturing establishments, which also rise following a loosening of financial restrictions. Finally, the last two columns of Panel A of Table 4 show that agricultural sector growth is also affected, as both output in the agricultural sector and number of farms increase following a relaxation of usury laws, though the effect on number of farms is statistically insignificant.

While the results in Panel A of Table 4 are consistent with Prediction 1, their interpretation is difficult since it is possible that local omitted variables correlated with changes in usury laws may also be driving economic development. Examining the effect of changes in usury laws on subsequent economic growth rates controlling for regional fixed-effects and state age helps alleviate some omitted

factors. However, to gain clearer identification for the mechanism of financial development driving economic growth, we study the differential effect of changes in usury laws on the growth rates of smaller and larger farms.¹² We obtain detailed data from the 1860, 1870, 1880, and 1890 U.S. Censuses, where decennial data exists on the total number of farms in a state, as well as the number of farms across various acreage size categories. Panel B of Table 4 reports results from regressing growth rates of number of farms of various sizes within a state on the lagged decennial change in maximum legal interest rates. All regressions contain state age and regional fixed effects as controls, and standard errors are clustered by state. We find that relaxation of usury laws leads to higher subsequent growth rates of smaller farms, while larger farms are either not affected by less restrictive laws or experience slightly negative growth rates. The coefficient on the lagged change in the maximum legal rate declines almost monotonically for farm size increases, moving from 0.077 for farms with less than 10 acres (t -statistic= 2.30), to 0.038 (t -statistic= 2.06) for farms between 10 and 20 acres, 0.019 (t -statistic= 1.46) for farms between 20 and 50 acres, -0.001 for farms between 50 and 100 acres (t -statistic= -0.04), -0.042 for farms between 100 and 500 acres (t -statistic= -2.02), -0.037 for farms between 500 and 1,000 acres (t -statistic= -0.99), and -0.096 for farms greater than 1,000 acres (t -statistic= -2.15). These results indicate that not only do smaller farms primarily benefit from the relaxation of usury laws, but also that increased entry probably hampers growth in the number of large farms. Thus, consistent with our political economy story and Prediction 1, usury laws have a different effect on the growth of small and large entities, greatly affecting entry among the smallest segment of the market and not affecting or adversely affecting the larger segment who likely face fewer borrowing restrictions. Our finding that local financial development matters more for smaller firms is consistent with the empirical findings of Guiso, Sapienza and Zingales (2004), and is consistent with the literature in banking that small firms are more dependent on local credit markets (Berger et al. (2001), Petersen and Rajan (2003), and Garmaise and Moskowitz (2004)).

The effects we uncover in Table 4 on economic growth may come from the direct impact of usury laws themselves or from the other omitted political and economic factors driving usury laws and other regulation, which also may affect growth. Writers and policy makers in the 19th century seemed to believe or at least argue that usury laws have a direct effect on economic growth (see Appendix A). However, the endogeneity of regulation and economic activity makes this determination

¹²We thank an anonymous referee for suggesting this test.

difficult. Our goal is to understand the political and economic forces that drive financial regulation and to link those same factors to economic growth. An alternative interpretation of our results is not that usury laws directly affect growth, but that the political economy drives both regulation and growth. Indeed, we believe omitted political economic factors are jointly determining regulation and real activity and further investigate this link in the next section.

IV. The Determinants of Usury Laws

In this section we study the factors that determine the adoption and repeal of usury laws across states and time and attempt to link these to the private and public interest theories of Section I.

A. Is regulation tighter when it is less costly?

Table 5 provides results for a variety of tests of Prediction 2, which states that usury laws relax when the cost of capital rises (e.g., the cost of regulation increases). We proxy for the marginal cost of capital using periods of high market interest rates, financial crises, and when neighboring states compete for outside capital by altering their own usury laws.

Panel A of Table 5 examines how maximum legal rates respond to the proximity of market rates to the usury rate ceiling. We regress the change in the maximum rate for a state on the lagged change in the difference between the maximum legal rate and the average U.S. bond rate last period. For states that change their rate ceiling to no limit, we use a number that is 5 percentage points higher than the maximum rate ceiling across all states in that year, which turns out to be higher than any of the market interest rates in that year as well. The negative and significant coefficient indicates that when the market interest rate approaches or exceeds the usury ceiling in year $t - 1$, states increase their rate ceiling subsequently in year t . The economic significance of this effect is large. A one standard deviation increase in interest rates relative to the state-imposed rate ceiling in the previous year results in an average 35 basis point lift/repeal of the rate ceiling the following year. The next two columns of Panel A of Table 5 employ the principal components index rate and the regional rate (which allows both state and year fixed effects to be employed) as market interest rate proxies and finds nearly identical results. The fourth column of Panel A of Table 5 repeats the regression for regional rates separating the difference between the lagged change in the maximum legal rate and regional rate into positive and negative components. This regression tests whether states respond differently to a tightening or loosening of the regulation. When the local

interest rate is greater than the maximum rate, usury restrictions become binding and we see a subsequent increase in the state's maximum allowable rate to alleviate this constraint, indicated by the positive and significant coefficient. When the regional rate falls below the maximum rate, however, usury laws become less costly, and we see a subsequent reduction in the usury ceiling to tighten the restriction the following period. The last two columns repeat these tests using state-level bank lending rates that allow for state and year fixed effects to be employed. Despite the very short sample period (1878 to 1891), the results are remarkably consistent: states lift rate ceilings when they become costly and lower them when it is cheap to do so. These results provide evidence in favor of Prediction 2.

Panel B of Table 5 examines how maximum rates change in response to financial crises, where the marginal cost of capital is especially high. We regress a state's maximum legal rate on dummies for financial crisis years (1819, 1837, 1857, 1873, and 1884) and the year after each crisis, to account for a potential lag in legislative response.¹³ Maximum rates rise during and following times of financial distress, consistent with Prediction 2 that laws relax when they become costly. States raise their maximum legal rate by 1.3 percentage points during or shortly following financial crises. Since interest rates are particularly high during these times, the second column of Panel B of Table 5 reports results including the lagged difference between the maximum rate and regional rate as a regressor. (There is only one crisis during the 14-year sample of state-level bank rates, making it infeasible to conduct this and other tests with state-level bank rates.) Both variables are significant, indicating that financial crises affect usury laws even beyond the higher market rates that prevail during these times. The total effect from the sum of both a one standard deviation move in market rates and a financial crisis is 1.5 percentage points, most of which comes from interest rate movements being more binding, but about 32 basis points comes purely from the crisis itself controlling for interest rates (i.e., the quantity restriction). Since financial crises are defined by quantity restrictions as well as high prices, this result is intuitive. Likewise, column 3 of Panel B of Table 5 shows that the interaction between the two is negative – in financial crises, states with the most binding usury laws subsequently raise their rate ceiling even more. The economic effects are also quite large as the interaction term adds another 20 basis points to the overall effect, raising rate ceilings by a total of 1.7 percentage points on average.

¹³We have also included a dummy for the five years after the end of the civil war (1865 to 1869) and obtain very similar results. We have also defined 1839 to 1843 as crisis years and found very similar results, but given the lack of consensus about these years being a crisis, we do not classify them as such for the results in the paper.

The last three columns of Panel B of Table 5 add measures of a state’s sensitivity to financial crises and interact them with the dummy for financial crisis years. Prediction 2 also claims that states more sensitive to capital shocks are more likely to repeal usury laws during a crisis. To capture a state’s sensitivity to financial crises, we use the total mileage of railroads that defaulted during the financial crisis of 1873 for every state. These data are recorded as of September, 1873 and come from Benmelech and Bordo (2007). Since railroads are not typically affected by usury laws because they have substantial collateral and could issue public debt (which was not subject to usury laws), this proxy should capture a state’s sensitivity to the crisis of 1873 that is otherwise unrelated to usury laws. We scale track mileage of defaulted railroads by the number of manufacturing establishments in the state from the 1870 Census. The fourth column of Table 5 shows that states hit hardest by the financial crisis, as proxied by the total mileage of defaulted railroad tracks, are more likely to raise rate ceilings subsequently. The last two columns employ two additional measures of crisis sensitivity: the amount of manufacturing capital per manufacturing establishment in 1870 and the amount of machinery capital per capita in 1870. Benmelech and Bordo (2007) show that the manufacturing sector and particularly the machinery sector are hit hardest by financial crises. Consistent with Prediction 2 that states hit hardest by financial crisis are more likely to change their laws, we find positive interaction terms for both measures of crisis sensitivity. In all these regressions, the inclusion of state fixed effects absorbs the level effects of the railroad failure, manufacturing capital, and machinery capital variables and the year fixed effects absorb the level effect of the crisis, enabling a straightforward interpretation of the interaction terms.

Panel C of Table 5 examines how maximum rates and lending activity respond to competition, as another proxy for the cost of capital. The first column of Panel C of Table 5 reports results from regressing the maximum legal interest rate for a state in a given year on the average maximum legal interest rate for that year among states that border it as well as states that do not border it.¹⁴ The maximum legal rate for a state in each year is highly positively correlated with the maximum rate imposed in bordering states in that same year, even after accounting for year fixed effects, which eliminate general interest rate levels or economic conditions, and state fixed effects, which eliminate any time-invariant unobserved effects at the state level. This finding suggests that a state’s variation in rate ceilings over time is in part determined by what its neighbors are doing, which we

¹⁴In unreported results, we also looked at states “nearby” but not bordering it (e.g., same region) and found similar, though weaker, results consistent with the theme of competition for capital.

interpret as a response to competition for capital. Contemporaneous changes in financial regulation are likely motivated by neighboring states competing for the same capital, and thus affecting the marginal benefit and cost of capital for the state. The magnitude of the response is also large. A one percentage point increase in a neighboring state's maximum legal rate increases the state's own rate ceiling by 96 basis points. Whether a non-border state changes its rate has no effect.

As another test for the role competition plays in determining usury laws, the second column of Panel B of Table 5 interacts the wealth of the state (per capita output) with the border rate variable and interacts the wealth of bordering states with the border rate variable. Wealthy states should be less prone to competition for outside capital since their marginal utility for capital is lower (e.g., New Jersey is more likely to follow New York than vice versa). The level effects of the state wealth variables are absorbed by the state fixed effects. The interaction terms indicate that states respond less to poorer neighbors and respond more to wealthier neighbors' usury laws.

Finally, the premise that border effects represent competition for outside capital hinges on usury laws actually affecting capital flows and lending activity across states. However, if states respond optimally to competition for capital, then in equilibrium there will be no distortion in financing activity across states. Therefore, to test this premise, we need to observe what happens to state lending activity if a state does not respond to competition? The last column of Panel C of Table 5 regresses changes in loans per capita on two dummy variables designed to capture when a state either does not respond to competition or responds in the opposite direction of its neighbors. As the last column of Panel C of Table 5 shows, when a state's neighbors increase their rate ceiling, but the state itself does not, loans per capita decrease in the state, and when its neighbors tighten their ceilings, and the state does not also tighten, loans per capita increase in the state. These results indicate that failure to respond to competition for capital impacts subsequent loan activity.

An interesting question arises as to why some states at certain times *do not* respond to neighboring state law changes if it has these adverse capital consequences? The tension between private and public interests provides an answer, since states at certain times will tradeoff the public benefits of greater capital supply for the private benefits of certain groups within the state benefiting from limited capital access.

The results in Table 5, indicating that regulation tightens when it is less costly, are consistent with both the private and public interest theories. We now turn to tests that attempt to distinguish private and public interest motives as they pertain to usury laws.

B. Private interests and incumbent political power

Table 6 examines the role incumbent political power plays in determining a state’s usury laws, as a proxy for private interests.

B.1 Restricted suffrage laws

We follow the literature on the relation between restricted suffrage laws based on wealth and the power of the elite (e.g., Engerman and Sokoloff (1997), Engerman and Sokoloff (2005), Engerman, Haber, and Sokoloff (2000), and Sokoloff and Engerman (2000)), by using wealth-based suffrage laws as a proxy for the political power of incumbents. Restricted suffrage laws are generally instituted to keep voting control in the hands of the established incumbent elite and prevent political power from swinging to a new group. Voting in the 19th century United States was largely a privilege reserved for wealthy white men who owned a significant amount of properties, and these voting rights varied by state. Restricted suffrage implies more concentrated voting power to push policies that further the private interests of the voting group. We focus exclusively on suffrage restrictions that are based on wealth as our proxy for incumbent elite power, and ignore suffrage laws based on race or gender, where additional factors may be motivating these laws.

Figure 3 plots the year-by-year average interest rate ceiling for states with and without wealth-based restricted suffrage laws. States with restricted suffrage have more restrictive usury laws in terms of lower interest rate ceilings. During financial crises, however, both restricted and non-restricted suffrage states loosen their usury laws, even to the point near the end of the century where there is little difference between the two.

Panel A of Table 6 examines the relation between wealth-based suffrage restrictions and usury laws more thoroughly by including controls for state and year effects and state age (state-specific linear time trend). We regress the maximum legal interest rate for a state in a given year on a dummy variable indicating whether the state has wealth-based restricted suffrage laws that only allow land owners and/or those who pay taxes to vote in that year. We find that states with wealth-based restricted suffrage laws have much tighter usury laws. The average maximum interest rate is 1.32 percentage points lower when wealth-based restricted suffrage laws are present.

As another proxy for concentrated incumbent political power, we employ the percentage of white males who did not vote in the most recent Presidential election, available for 23 states for

the following election years: 1824, 1828, 1832, 1836, 1840 and 1844.¹⁵ The second column of Panel A of Table 6 reports regression results of the percentage of non-voting white males on the wealth-based restricted suffrage indicator. Restricted suffrage implies 12 percent fewer white males vote, controlling for state and year fixed effects. The third column of Panel A reports results from regressing the maximum legal rate on the percentage of non-voting white males. A 10 percentage point increase in voting concentration translates into a 1.5 percentage point lower rate ceiling. The fourth column of Panel A includes both restricted suffrage and the percentage of non-voting white males as regressors and the fifth column also includes an interaction term between them. Both restricted suffrage and percentage of non-voting white males are associated with lower usury rate ceilings and the interaction between them is even more negative, implying that states where restricted suffrage laws result in the most concentrated voting power also have the most restrictive usury laws. These findings support Prediction 3, which states that usury laws are more strict when incumbents have more concentrated political power.

The last column of Panel A of Table 6 tests the interaction between Prediction 2, that cost of regulation matters, and Prediction 3, that political power matters. Specifically, we document a distinct pattern in usury laws around financial crises, when the cost of financial regulation is high: states with incumbent political power liberalize usury laws in the short-term to accommodate the financial crisis (Prediction 2), but then revert back to financial restrictions when the crisis abates (Prediction 3). The interaction term between restricted suffrage and crisis years on maximum rates is positive and insignificant, indicating that during financial crises, even states with incumbent political power liberalize their rate ceilings, presumably because incumbents are also hit by the crisis. However, the interaction term between restricted suffrage and a dummy variable for *five years after* the crisis shows that these same states with incumbent political power reduce their rate ceilings after the crisis is over. (The level effects of both variables are captured by the inclusion of state and year fixed effects). Hence, all states relax financial regulation during a crisis, but only those states with concentrated voting power among the wealthy elite reimpose the restrictions after the crisis subsides. This evidence supports the private interest view of regulation and is difficult to reconcile under alternative theories. For example, the public interest hypothesis, which argues that financial restrictions benefit the public and protect the poor, would have to somehow argue that these protections are not needed during a financial crisis, a time when lending protection would

¹⁵The source of this data is Engerman and Sokoloff (2005).

seem most valuable.

B.2 Restricted incorporation laws

If suffrage laws are a good proxy for incumbent political power, then according to Prediction 4, which states that usury laws coexist with other policies designed to exclude other groups when incumbents have political power, other forms of regulation that benefit incumbents by restricting entry should be adopted simultaneously. Financial regulation is not the only barrier to entry. Incumbents with political power can restrict entry directly using licensing or charter restrictions. During the 19th century, states limited competition from new entrants by imposing restrictions on forming non-financial corporations. According to Wallis (2005): “Initially, all corporations were ‘special’: created by an act of the legislature that specified the rights and responsibilities of each corporation individually . . . The numerous examples of truly special privileges created by state legislatures gave substance to concerns about corruption.”¹⁶ In contrast, general incorporation laws allow the formation of non-financial corporations without a special charter from the legislature. We, therefore, exploit variation in the adoption of general incorporation laws across states and time, which allow for easier and faster entry of new firms. Data on general incorporation laws comes from Evans (1948).

Panel B of Table 6 tests whether restricted suffrage laws are correlated with restricted incorporation laws. The first column reports the specification with state fixed effects and the second column reports results from a first difference regression of changes on changes (both regressions include age as a control). Both specifications show that restricted suffrage laws are associated with restricted incorporation laws, implying tighter restrictions on firm entry. Having wealth-based suffrage restrictions increases the probability of having restricted incorporation laws by 22 percent. This evidence supports Prediction 4 that usury laws coexist with other policies designed to exclude new entrants when incumbents have political power.¹⁷

On average, states with incumbent political power adopt strict usury restrictions in conjunction with strict incorporation and voting restrictions. Previously, however, we also showed that during

¹⁶One notable example of such corruption is the case of the Camden and Amboy railroad that obtained a monopoly of the Northeast to Southwest rail route in New Jersey, connecting New York and Philadelphia, in return for giving a substantial block of stock to the state.

¹⁷Probit regressions yield the same results as the linear probability models we use. We choose to stick with the linear probability model because it also allows us to cluster the standard errors by state and include fixed effects which are not estimated reliably in a probit model.

a financial crisis even states with concentrated voting power tend to liberalize their usury laws. We now investigate whether incorporation and voting restrictions are also relaxed during financial crises. According to the private-interest view, these policies should *not* be altered during crises because incumbents are not directly affected by them. However, incumbents still wish to maintain their political power so restricted suffrage laws should remain in place irrespective of a financial crisis. Moreover, incumbents still want to deter entry of new firms through other regulation, implying that restricted incorporation laws should also remain or perhaps even tighten in a financial crisis. Hence, the private-interest view predicts that during times when usury laws bind for incumbents (e.g., financial crises), lending restrictions are relaxed, but voting and charter restrictions, which are not binding for incumbents, are maintained. Consistent with this conjecture, the last four columns of Panel B of Table 6 show that, despite usury laws being loosened, incorporation and restricted suffrage laws are not altered during or immediately after a financial crisis. This shift in the correlation of these policies during a financial crisis is difficult to reconcile under alternative theories.

The results in Table 6 indicate that usury laws are correlated with other forms of political and economic restrictions that are designed to *exclude* others from the right to vote or start up a firm. While these policies are likely determined endogenously, the evidence suggests that usury laws, too, are designed to exclude groups from credit markets, contrasting sharply with the public-interest view of regulation which is designed to assist, protect, and *include* weaker groups.¹⁸

C. Who are the Powerful Incumbents?

Rajan and Zingales (2003) argue that incumbent private interests may come from industrialists or financiers. We try to identify whose private interests are motivating regulation by separating the private interests of the financial and non-financial sectors, the latter of which includes primarily the industrial and agricultural sectors. While less restrictive usury laws provide financiers with an opportunity to finance more projects, they also facilitate entry of new financial institutions. We examine combinations of policies that should favor one group versus another in order to identify which incumbent groups likely drive regulation.

We begin by looking at measures where incumbent power is likely to be greatest – where re-

¹⁸The relation between direct entry restrictions and usury laws presented in Table 6 is similar to the evidence in Djankov et al. (2002) and is consistent with Rajan and Zingales' (2003, 2004) hypothesis that financial regulation and entry restrictions are used complementarily.

stricted suffrage and restricted incorporation laws exist. In the first two columns of Table 7, we regress the maximum legal interest rate on a dummy variable that equals one if a state in a given year has both wealth-based restricted suffrage and restricted incorporation laws. The other extreme set of policies we define as being “egalitarian,” which are years in which a state has general incorporation laws and no suffrage restrictions. As the first column of Table 7 shows, states in which incumbents have more power adopt more strict usury laws; rate ceilings are 145 basis points lower in these states. This evidence suggests that financial and economic barriers to entry are used in complement, consistent with the incumbent private-interest view. The most egalitarian states have significantly more lax rate ceilings that are 36 basis points higher than the average maximum rate.

To distinguish the private interests of industrialists or farmers from those of incumbent financiers or banks, we examine other forms of financial regulation that should appeal differentially to each group and analyze their relation to usury laws. Free banking laws are a natural candidate for this task since incumbent banks want to restrict bank entry and competition, while incumbent firms or farms are either indifferent or may want to foster bank competition to lower their own cost of capital. We use free banking laws as an inverse proxy for the political power of the financial sector.¹⁹

The third column of Table 7 reports regression results of the maximum legal interest rate on a dummy variable that equals one if a state has free banking laws in a given year. Free banking was only used in antebellum America, so the sample ends in 1861. The results indicate that free banking laws are not associated with maximum legal rates, suggesting that it is not incumbent financiers that are setting financial regulation.

To better distinguish the private interests of financiers from other incumbents (industrialists and agriculture), we also consider the combination of policies most appealing to each group along three dimensions: suffrage, general incorporation, and free banking laws. Non-financial incumbent private interests are most aligned with voting restrictions, incorporation restrictions, and free banking laws to promote lender competition to reduce their own cost of capital. To capture these preferences we designate non-financial power with an indicator variable equal to one if a state-year has this combination of policies. Financier incumbent private interests are aligned with voting restrictions, general incorporation laws that create more potential borrowers, and restrictions on free banking

¹⁹Similar to general incorporation laws that are applied to non-financial corporations, free banking laws enable free entry to the banking industry in antebellum America. For example, according to Bodenhorn (2003), in 1821 New York’s constitution required a two-thirds majority for the passage of a charter, which further protected the existing banks’ favored positions.

laws to control bank entry. We designate bank incumbent power with an indicator variable equal to one for state-years with these combination of policies. Finally, we create a dummy variable to capture the most egalitarian set of policies which consists of no restrictions on suffrage, incorporation, or banking.

The fourth and fifth columns of Table 7 report the results from using the three indicators of non-financial, financial, and egalitarian platforms. Consistent with non-financial incumbent private interests, usury rates are more restrictive, about 1.2 to 1.4 percentage points lower, when the set of regulation policies favors them. Bank incumbent power has no significant effect on rate ceilings, suggesting that incumbent financiers are not driving financial regulation. Finally, the most egalitarian set of policies is associated with 2.5 to 2.8 percentage points higher maximum legal rates. The evidence suggests that financial regulation is the outcome of a broader set of policies designed to protect private non-financial incumbent interests.

D. Penalties for violating usury

In unreported results we confirm that the same determinants of rate ceilings also capture variation in the penalty index for violating the maximum rate, with, of course, the opposite sign. States reduce penalties during a financial crisis and when neighboring states liberalize, and impose stiffer penalties when they also have restrictions on suffrage and other economic policies like incorporation laws. These results emphasize that not only do states alter their rate ceiling in response to economic and political conditions, but that they also simultaneously alter the enforcement mechanism of these laws, as proxied by the penalties imposed.

E. Public interest

To directly test the public-interest view of financial regulation we examine whether variables designed to proxy for public interests influence usury laws.

E.1 Personal bankruptcy stay and debt moratoria

The first set of proxies we employ for public interests are a set of policies designed to protect the poor and weak debtors. We employ bankruptcy stay laws or debt moratoria passed by state legislatures and examine their relation with usury laws. Bolton and Rosenthal (2002) and Rothbard (1962) show that these laws resulted from the outcry of public interest to provide relief for the poor,

especially during financial crisis. We use a dummy variable for whether a state has bankruptcy stay laws forgiving personal debt, obtained from Coleman (1974) and include year fixed effects in the regression, with standard errors used to compute t -statistics (in parentheses) clustered at the state level. As the first column of Panel A of Table 8 shows, there is no significant relation between personal bankruptcy stay laws and usury laws. We also employ another variable to proxy for protection of weak debtors which is the vote in the House of Representatives in 1822 for the relief of debtors who bought public land from the Federal government. The percentage of representatives in each state voting in favor of debt relief is used as a proxy for the state's interest in protecting the poor. As the second column of Table 8 shows, there is also no relation between this measure and usury laws. These two results are inconsistent with Prediction 6 of the public interest theory that usury laws coincide with other policies designed to protect the poor.

E.2 Newspaper circulation and corruption coverage

The second set of proxies we employ for public interests are the extent of newspaper circulation and the coverage of political and corruption stories, obtained from Gentzkow, Glaeser, and Goldin (2005) and Glaeser and Goldin (2005), respectively. We use the number of newscopies per capita as a proxy for when public interests are likely heightened. Greater circulation of mass media likely makes it more difficult for private interests to push forward their own policies and may provide a mechanism to coalesce public interests. As the third column of Panel A of Table 8 reports, there is a strong positive relation between news copy circulation per capita and maximum legal rates, indicating that usury laws are more lax when public opinion has a more widespread outlet. This evidence, which controls for state fixed effects, suggests that if newspaper circulation is a good proxy for the strength of public interests, then those public interests desired lax rather than tight usury laws. Hence, restrictions on financial activity do not seem consistent with public interests.

The fourth and fifth columns of Panel A of Table 8 employ the extent of political and corruption coverage of newspapers. We employ the measures used by Glaeser and Goldin (2005), which for political coverage is the count of the word "politic" deflated by the count of the word "January" which controls for the newspaper's size, and corruption and fraud coverage which is the count of the word "corrupt" or "fraud" deflated by the word count "January." The former variable proxies for the extent of coverage of political events and politics in general. The latter variable proxies for the number of reported corruption and fraud events. We interpret both of these variables as proxies

for public interests that make it more difficult for private interests to pass their policies. When political coverage in newspapers is high, public interest in policies is likely heightened. In addition, when public reporting of corruption is high, then either recent corruption activity has been high or monitoring of corruption has improved, both of which (we hypothesize) likely amplify public interests and deter private interests. As Table 8 shows, neither variable is significantly related to usury laws.

Finally, the last column of Panel A of Table 8 reports results from a multiple regression that includes all three media proxies: newcopies, political coverage, and corruption coverage. All three variables are positively associated with maximum rates, meaning that when there is more media coverage, particularly about corruption, usury laws are relaxed. If these variables proxy for the prominence of public interests, then these results are inconsistent with Prediction 7, which states that usury laws will tighten when public interests are more prominent.

E.3 Agricultural shocks

The third set of proxies for public interests we employ are a series of agricultural shocks. According to Prediction 8, usury laws should smooth idiosyncratic shocks. The evidence presented previously on market interest rates, financial crises, and state competition for capital are aggregate shocks. To test Prediction 8, we employ shocks to the agricultural sector in each state that had little to no effect on the industrial sector, causing an idiosyncratic distortion to one sector of the economy.

We obtain a set of agricultural technology shocks from “A History of American Agriculture” from the United States Department of Agriculture (USDA) from 1800 to 1891. We assign an indicator variable to state-years experiencing a technological shock (positive or negative) to the agricultural sector. We employ the nearest year for which we can find data on agricultural production across various crops to determine which states are exposed to which crops and match the technology shock affecting those crops (e.g., invention of the cotton gin on cotton-producing states). We also include a year lag of the shock to account for any additional time needed to alter regulation. As the first column of Panel B of Table 8 shows, the relation between agricultural technology shocks and usury laws is negligible, though the sign is in the right direction for the public interest story.

We also employ a series of extreme weather shocks which adversely affect agriculture. Similar to the assignment of technology shocks, we identify which states are most exposed to the weather event and how much their particular agricultural sector is affected by the event based on its crop

production (e.g., Mississippi River flood of 1849, which affected states along the river, particularly to the South). We assign a value of 1 to these state-years and zero otherwise. As the second column of Panel B of Table 8 shows, there is no significant relation between weather shocks to the agricultural sector and usury laws, though again the sign is in the predicted direction of public interests.²⁰

Finally, we also employ a series of commodity price shocks using the Froot, Kim, and Rogoff (2005) commodity price series from England and Holland which spans the 17th, 18th, and 19th centuries and supplement these series with data from the NBER Macrohistory database. Froot, Kim, and Rogoff (2005) describe the construction of their series, which is provided in both nominal and real terms for the following commodities: wheat, oats, eggs, cheese, butter, barely, and peas. We take an equal-weighted average of the English and Dutch prices of each commodity in each year. The NBER data we use adds corn and cotton prices, but only covers the period 1860 to 1891 and 1870 to 1891, respectively. We assign the exposure of each state to each of these commodities at different points in time using the most recent available data we can find on the composition of the state’s agricultural sector.²¹ We assign the absolute value of commodity price changes to the state based on a state’s weighted average exposure to the commodities in that year.

The third column of Panel B of Table 8 reports results for the 1800 to 1891 period where we have commodity price data. Although the sign of the coefficient is consistent with Prediction 8, the result is not significant. Since we only have corn and cotton prices starting in 1870, we repeat the previous test over the 1870 to 1891 period where we have a complete set of commodity prices. Here, we obtain a negative and statistically significant effect consistent with Prediction 8, that usury laws tighten following idiosyncratic shocks. The last two columns of Panel B of Table 8 include all three agricultural shocks in a multivariate regression over the 1800 to 1891 and 1870 to 1891 periods. All three shocks result in tight (lower) usury law (maximum rates), consistent with Prediction 8. The evidence provides some mild support for the public interest view of Glaeser and Scheinkman (1998) if these agricultural shocks are idiosyncratic to other sectors and if usury laws help smooth them.

²⁰We also employ a series of demand shocks for agricultural products using, for instance, the Crimean War from 1854 to 1857, where international demand for U.S. agricultural exports boomed, particularly wheat. There is no significant relation between these shocks and usury laws either.

²¹When we cannot find ‘hard data’, we employ historical documents that indicate, for example, “Minnesota, California, and Illinois were the chief wheat states in 1890” and assign an exposure of 1 for these states to the respective commodity in the relevant years. Statements and data pertaining to “grains” are assigned equally to oats and barely prices, information on “dairy” is assigned equally to cheese and butter prices, and information on “vegetables” is assigned to prices for peas.

F. Alternative explanations using cross-sectional evidence from 1850

Table 9 examines the determinants of usury laws on the cross-section of states in 1850 that employs a host of additional state-level variables only available from the 1850 Census. The 1850's were also a time of unparalleled growth and changes in financial regulation in the U.S., making it an interesting time period to study.

F.1 Proxies for bank market power

The first two rows of Table 9 examine the relation between usury laws and proxies for bank market power: a bank Herfindahl concentration index based on bank capital and the amount of bank capital per capita in the state (bank wealth). Maximum legal rates are negatively, but insignificantly, related to banking concentration and wealth. This null result is inconsistent with two possible themes. First, if bank market power proxies for financier incumbent power, then these results suggest that financier incumbent private interests are not determining financial regulation. Second, the premise of the public-interest view of usury is to protect citizens against the market power of banks. Accordingly, Prediction 5 conjectures a relation between bank market power and tight usury restrictions under the public interest theory that is not supported by the data.

F.2 Proxies for bureaucratic capital

The third row of Table 9 reports results from regressing the maximum legal interest rate on the percentage of people employed as city officers or lawyers per employed persons. The idea is to test whether more developed bureaucracies, proxied by the dearth of city officers and lawyers, may be better able to pass and enforce usury laws, whereas states without bureaucratic capital or experience may simply not be able to maintain such regulation. There is no significant relation between this proxy and usury rates, though the sign is in the predicted direction.

F.3 Proxies for borrower sophistication

The public-interest theory is predicated on protecting borrowers from the market power of lenders. In particular, less sophisticated borrowers require the most protection from bank market power and require more social insurance. Tighter usury laws are therefore more likely to exist where less sophisticated borrowers are present, according to the public interest view. As a proxy for the financial sophistication of residents in a state, we employ the number of pupils or publishers per

employed persons in the state, controlling for per capita capital, a proxy for household wealth. The relation between maximum legal rates and percentage of pupils and publishers is negative, suggesting that states with more sophisticated residents have *lower* legal rates. This result is opposite to that predicted by the public-interest hypothesis. However, if the percentage of pupils and publishers proxies for the incumbent elite, who have powerful private interests, then the negative relation with usury rates may be consistent with private interests.

F.4 Religious motives

Finally, we consider the role religion plays in determining usury laws. Previous research documents a role for religion in the determination of usury laws in Europe centuries prior (Ekelund, Hebert, and Tollison (1989), Nelson (1947), and Nelson (1969)).²² Moreover, recent studies show that religion and financial or economic development are related (Stulz and Williamson (2003), Guiso, Sapienza, and Zingales (2003), and Barro and McCleary (2003)).

While some writers claim that prohibition of interest is the decisive criterion of the difference between the Catholic and Protestant ethic, Ekelund, Hebert, and Tollison (1989) argue that in Europe usury laws were affected by the influence of the Roman Catholic church due to the church's rent-seeking behavior. They argue that the apparent influence of religion is driven more by private economic interests. It seems unlikely, however, that the rent-seeking behavior of the Catholic church was an important factor in determining usury laws during the 19th century in the U.S. Moreover, given the protestant origins of the U.S and religious freedom during the 19th century, religion is less likely to play a prominent role in the determination of U.S. usury laws.

More broadly, we investigate the role of religion as a proxy for conservative attitudes toward lending. In the last two rows of Table 9, we regress the maximum legal rate on the number of church accommodations (seating capacity summed across all churches, temples, synagogues, and other religious dwellings) per capita and religious accommodations per capita attributed to the Roman Catholic Church. More religious states adopt more strict usury laws. This result may be consistent with either the public or private interest view of financial regulation. However, in sharp

²²Weber (1930) argues that usury laws had a parallel in almost every religious ethic in the world. According to Nelson (1969), Calvin was the key figure in abolishing the restrictions on lending. Furthermore, Nelson (1969) argues that the ancient prohibition against lending at interest was removed abruptly with the Protestant Reformation. While Weber (1930) argues that the more liberal attitude of Calvin to usury did not gain a definite victory, he agrees that usury laws were abolished by the time of Salmasius. The original usury prohibition was against "any interest rate", but modern Judaeo-Christian meaning is "high interest rate." The Muslim world still adheres to the historical definition of "any interest rate."

contrast to evidence from Europe, a higher presence of Catholicism is related to lax usury laws. In fact, 1850 followed a period of a wave of Irish and German immigration to the U.S. that heightened the tension between Catholic and Protestant views. Consequently, this period should show a strong relation between usury strictness and Catholic influence if religion is an important driving force. The contrasting results in Europe and the U.S. suggest it is not religious beliefs per se that are driving usury laws.

V. Conclusion

We examine the political economy of one of the oldest forms of financial regulation, usury laws, and link it to financial development in the U.S. in the 19th century. We find that usury laws bind and have an impact on financial and economic activity, particularly among smaller borrowers. The tension between private and public interests can best explain the heterogeneity in regulation observed across U.S. states and over time during this period. When the cost of regulation is low, private interests impose tight restrictions to extract rents and impede competition, but when the cost of regulation is high for those private interests, the restrictions are lifted. Our evidence suggests incumbents with political power prefer stringent usury laws because they impede competition from potential new entrants who are credit rationed. However, during financial crises when incumbents become credit rationed themselves, usury laws are relaxed. We also find that financial regulation is correlated with other restrictive political and economic policies adopted by the state designed to exclude other groups and protect incumbent interests.

The collection of evidence supports the private-interest view of financial regulation and highlights the political economy of financial development. Drawing parallels to today's financial environment, these findings may provide guidance for financial policy in the current global financial crisis as well as in emerging markets generally. History indicates that financial regulation is often motivated by special interests that can generate long-term local and global consequences. Our evidence is consistent with private interests using regulation to extract rents from others, where financial crises are often used as a catalyst to push through such regulation.

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Appendix A: The Mindset of Regulators in the 19th Century

Several quotes from legislators at the time highlight the mindset and arguments of regulators in the 19th century. In a stirring speech against usury laws in the Massachusetts legislature, Richard Henry Dana pointed to the link between rent seeking behavior and usury laws.

*The borrower is no longer the trembling suppliant at the threshold of the patrician lender. Who are the borrowers now? The railroad, manufacturing, steam-boat and mining corporations. They are borrowers,— those great corporations that are suspected of **controlling the politics of our States and towns.** [emphasis added] The States and National Governments are borrowers, All mercantile enterprises require loans of credit; and the great merchants and manufacturers are borrowers one day and lenders the next. The great builders are borrowers.*

Again, it is not the poor mechanic that is the borrower. The journeymen the member from Boston employs, are not borrowers. Hired laborers in this country seldom are. It is mostly enterprise that borrows, and capital borrowing more capital. (Dana (1867) pp. 20-21.)

Concerns about the relation between the competitiveness of credit markets and usury laws were reflected in the arguments of those in favor of repealing usury laws in the 19th century.

The only practical objection to the repeal, seemed to me to be, the fear that the banks of discount might combine and keep up an artificial rate of interest. I have made careful inquiries on this subject, and am satisfied that there is no more practical danger on that head, than the community must always incur in its financial transactions. The

banks are numerous. There will be competition among them. And there is not only the competition of private lenders at home, but competition from abroad. capital is drawn toward demand. State lines and town lines are disregarded. Loans are made in a few minutes by telegraph; and it will more and more be the case that, when an inadequacy of supply to the demand, or a combination of lenders had raised the rate of usance, an influx from abroad will bring it to its natural level. (Richard Henry Dana, Jr., Feb. 14, 1867, Speech in the House of Representatives of Massachusetts, pp. 22-23.)

Legislators argued that usury laws had financial and economic consequences for state economic growth. For example, in 1867 during a discussion of the usury bill in Virginia, and following the request of several members of the Virginia Senate, John Harmer Gilmer published an opinion paper titled “What is the Effect of the Usury Laws?.” He writes:

Virginia in the past has been almost exclusively an agricultural and planting community. It may be unnecessary to pause here to inquire into the causes that gave her this complexion, or to show why it is that the boundless wealth, nature bestowed upon her in her water power and minerals, has been allowed to remain in unprofitable idleness; but I think he who examines the question will not deem the assertion, that the spirit of her usury laws was at least one of the original causes – very extravagant. She undoubtedly possesses as many of the elements essential to successful manufacture as any other section of the continent, and her people have for centuries trodden beneath their feet such riches as in other communities would have made the land teem with the opulence of cities, railroads and canals. But be this as it may, the fortunes of the state took this direction as an early day in her history, and she has since made but little advance in wealth or power.(Gilmer (1867) pp. 14.)

Appendix B: Construction of Economic Growth Measures

To the best of our knowledge there are no existing measures of state-level economic activity for the 19th century such as their modern counterparts. We collect data from the seventh (1850), eighth (1860), and ninth (1870) census reports to construct local measures of economic activity. Before the 7th census it was difficult to get reliable data for economic activity, thus the period 1850 to 1860 is the earliest period for which data exists and usury laws were in effect and important. We construct five different measures of economic activity growth at the state level: population, state gross product, manufacturing value added, establishments, and employment.

Construction of Agricultural Production variables for 1849 and 1859:

For the year 1849, nominal values for agricultural production are given in the census, however the census reports only quantities (and not nominal values) for many commodities in 1859. To construct total agricultural production in 1849, we sum across all commodities for which we have prices in 1859 in order to have comparable measures that cover an identical set of commodities.

Since for 1859, only real values are reported for agricultural production, we construct nominal values in the following manner. We obtain the average annual price for each commodity in 1859 by

averaging prices from five markets (Philadelphia, New York, New Orleans, Cincinnati, Charleston). We then form nominal production for each commodity by multiplying the reported quantity by the average annual price. The total production includes production of the following commodities: Corn, wheat, cotton, oats, butter, wool, tobacco, cane sugar, rye, orchard products, rice, hops, clover seed, cheese, peas and beans, flaxseed, flax, hemp, molasses and wine. Significant commodities for which no price data was found, and which consequently are excluded from our agricultural production measure are: Hay, Irish potatoes and sweet potatoes.²³

The rate of growth of the number of farms in each state by farm size (acreage) for the years 1860, 1870, 1880, and 1890 is obtained from the U.S. Censuses in each of those years. Number of farms are recorded for acreage less than 10 acres, between 10 and 20, between 20 and 50, between 50 and 100, between 100 and 500, between 500 and 1,000, and more than 1,000 acres. We compute growth rates in farms per capita over the decade between census years.

Construction of Gross State Product for 1849 and 1859:

Gross state product is formed by summing total agricultural production (as described above), manufacturing annual product and the value of animals slaughtered. Stock variables which are measured in 1850, but not converted to a flow to be included in the gross state product due to lack of stock data in 1840 are: Live stock, business capital stock and railroad stock (as measured by cost of construction).

Construction of Manufacturing Value Added for 1849 and 1859:

Manufacturing value added is formed by subtracting the value of raw materials used in manufactured goods from the annual product generated by the sale of those manufactured goods.

²³Sources for agricultural commodity prices are Bezanson, Anne and Robert D. Gray and Miriam Hussey. "Wholesale Prices in Philadelphia 1784-1861. Part II." Philadelphia, 1937 and Cole, Arthur Harrison. "Wholesale Commodity Prices in the United States 1700-1861." Cambridge, 1938.

Table 1:

Summary Statistics on Maximum Legal Interest Rate and Penalty for Usury

The table reports summary statistics of the maximum legal interest rate and penalty for usury for each state from 1787 to 1891. The severity of penalty for usury is captured by the sum of all dimensions of the usury penalty code: forfeiture of principal and interest and loss of principal and interest. States are sorted in ascending order by their average maximum legal interest rate and then by their severity of penalty for usury in descending order. For the purposes of calculating means, if a state has no limit on the maximum legal rate, we employ a rate that is 5% higher than the maximum legal rate across all other states in that year as the maximum legal rate for the state.

| State | MAXIMUM INTEREST RATE (%) | | | | | PENALTY FOR USURY | | | | | Year of Statehood |
|----------------------------------|---------------------------|------|------|----------|---|-------------------|------|------|----------|---|---|
| | Avg. | Min. | Max. | #Changes | | Avg. | Min. | Max. | #Changes | | |
| | | | | + | - | | | | + | - | |
| Virginia | 5.73 | 5 | 12 | 2 | 3 | 3.65 | 0.50 | 4.00 | 1 | 1 | 1788 |
| Delaware | 6.00 | 6 | 6 | 0 | 0 | 0.61 | 0.50 | 1.00 | 0 | 2 | 1787 |
| Maryland | 6.00 | 6 | 6 | 0 | 0 | 1.50 | 1.50 | 1.50 | 0 | 0 | 1788 |
| New Hampshire | 6.00 | 6 | 6 | 0 | 0 | 2.00 | 2.00 | 2.00 | 0 | 0 | 1788 |
| Vermont | 6.00 | 6 | 6 | 0 | 0 | 4.28 | 0.50 | 5.00 | 0 | 1 | 1791 |
| Tennessee | 6.19 | 6 | 10 | 1 | 1 | 2.55 | 1.00 | 4.00 | 0 | 1 | 1796 |
| Pennsylvania | 6.19 | 6 | 8 | 1 | 1 | 0.91 | 0.50 | 1.00 | 0 | 1 | 1787 |
| Kentucky | 6.26 | 6 | 10 | 1 | 2 | 0.65 | 0.50 | 1.00 | 1 | 2 | 1792 |
| North Carolina | 6.34 | 6 | 8 | 1 | 0 | 3.62 | 1.00 | 4.00 | 1 | 2 | 1789 |
| Ohio | 6.49 | 6 | 8 | 1 | 0 | 0.99 | 0.50 | 2.00 | 2 | 2 | 1803 |
| New Jersey | 6.64 | 6 | 7 | 1 | 2 | 1.82 | 1.00 | 2.00 | 0 | 1 | 1787 |
| New York | 6.89 | 6 | 7 | 0 | 1 | 2.02 | 0.00 | 2.50 | 1 | 1 | 1788 |
| Connecticut | 7.20 | 6 | none | 2 | 1 | 2.47 | 0.00 | 3.00 | 0 | 2 | 1788 |
| Massachusetts | 7.76 | 6 | none | 1 | 0 | 1.80 | 0.00 | 3.00 | 1 | 2 | 1788 |
| Alabama | 7.84 | 6 | none | 1 | 1 | 2.10 | 0.50 | 4.00 | 1 | 2 | 1819 |
| Indiana | 7.86 | 6 | none | 2 | 3 | 0.95 | 0.00 | 2.50 | 2 | 2 | 1816 |
| District of Columbia | 8.10 | 6 | 10 | 1 | 0 | 1.48 | 1.00 | 2.00 | 0 | 1 | 1871 |
| Georgia | 8.14 | 7 | none | 2 | 3 | 2.89 | 0.00 | 5.00 | 2 | 4 | 1788 |
| South Carolina | 8.65 | 7 | none | 2 | 4 | 3.56 | 0.00 | 5.00 | 2 | 2 | 1788 |
| Rhode Island | 9.02 | 6 | none | 1 | 0 | 1.37 | 0.00 | 2.33 | 0 | 2 | 1790 |
| Michigan | 9.08 | 6 | 10 | 2 | 1 | 0.64 | 0.50 | 1.50 | 2 | 1 | 1837 |
| Mississippi | 9.26 | 6 | none | 4 | 2 | 0.82 | 0.00 | 1.00 | 2 | 3 | 1817 |
| Missouri | 9.52 | 6 | 10 | 1 | 2 | 1.00 | 1.00 | 1.00 | 0 | 0 | 1821 |
| Illinois | 9.68 | 6 | 12 | 1 | 3 | 1.64 | 1.00 | 3.00 | 0 | 2 | 1818 |
| Maine | 10.14 | 6 | none | 1 | 0 | 0.99 | 0.00 | 4.00 | 0 | 2 | 1820 |
| Arkansas | 10.71 | 10 | none | 1 | 1 | 1.50 | 0.00 | 2.00 | 2 | 1 | 1836 |
| Wisconsin | 10.92 | 7 | none | 2 | 3 | 2.37 | 0.00 | 3.50 | 1 | 2 | 1848 |
| Iowa | 11.06 | 8 | none | 1 | 3 | 1.24 | 0.00 | 1.50 | 1 | 2 | 1846 |
| Texas | 12.88 | 10 | none | 1 | 2 | 0.88 | 0.00 | 1.00 | 1 | 1 | 1845 |
| Minnesota | 13.12 | 10 | none | 0 | 2 | 1.67 | 0.00 | 4.00 | 2 | 0 | 1858 |
| Louisiana | 13.43 | 8 | none | 1 | 1 | 0.92 | 0.50 | 1.00 | 1 | 1 | 1812 |
| Florida | 13.48 | 8 | none | 2 | 3 | 0.66 | 0.00 | 2.00 | 1 | 2 | 1845 |
| California | none | none | none | 0 | 0 | 0.00 | 0.00 | 0.00 | 0 | 0 | 1850 |
| mean | 7.63 | | | | | 2.22 | | | | | |
| stdev. | 2.59 | | | | | 1.77 | | | | | |
| correlation (max. rate, penalty) | | | | | | | | | | | = -0.37 |
| | | | | | | | | | | | correlation (Δ max. rate, Δ penalty) = -0.33 |

Table 2:

Market Interest Rates and Binding Usury Ceilings

Panel A reports correlations between various market interest rates: yields on long-term British government securities, the yields of high-grade long-term American bonds, the average annual U.S. commercial paper rate, New England municipal bond yields, high-grade railroad bond yields, and the average annual call money rate, which is the overnight lending rate between banks in New York on collateralized loans. None of these rates were subject to usury laws. Data are from Homer (1963). All series are annual (call money rates are available monthly) and end in 1891 to coincide with our usury law data. The series begin at different dates indicated below. An index of interest rates is constructed by weighting each series using the principal components of the covariance matrix of the six interest rates. Also reported are average state-level bank lending rates from 1878 to 1891 from Bodenhorn (2002), obtained from the Comptroller of the Currency. Correlations with the state GDP-weighted average of the bank lending rates are reported. Panel B of Table 2 reports the frequency (number and percentage of years) with which the maximum legal rate for a state is binding relative to the U.S. bond rate, commercial paper rate, high-grade railroad bond rate, and call money rate, non of which were subject to usury laws. States are sorted in ascending order by their average maximum legal interest rate.

PANEL A: CORRELATION MATRIX OF MARKET INTEREST RATES

| | UK bonds | US bonds | Commercial paper | NE municipal | Railroad bonds | Call money rate | Principal component index | State loan rate |
|-----------------------|-------------|-------------|---------------------|-----------------|-------------------|--------------------|---------------------------------|--------------------|
| <i>Sample begins:</i> | <i>1727</i> | <i>1798</i> | <i>1831</i> | <i>1798</i> | <i>1857</i> | <i>1857</i> | <i>1857</i> | <i>1878</i> |
| UK bonds | 1.00 | 0.81 | 0.50 | 0.86 | 0.88 | 0.34 | 0.77 | 0.14 |
| US bonds | | 1.00 | 0.45 | 0.79 | 0.86 | 0.40 | 0.75 | 0.39 |
| CP | | | 1.00 | 0.73 | 0.74 | 0.91 | 0.91 | 0.48 |
| NE municipal | | | | 1.00 | 0.98 | 0.55 | 0.94 | 0.42 |
| Railroad bonds | | | | | 1.00 | 0.57 | 0.95 | 0.38 |
| Call money | | | | | | 1.00 | 0.77 | 0.45 |
| PC index | | | | | | | 1.00 | 0.64 |

PANEL B: FREQUENCY OF MAXIMUM LEGAL RATES BELOW MARKET INTEREST RATES

| Maximum rate < <i>Sample period</i> | US bond | | Commercial paper | | Railroad bond | | Call money | |
|--|-------------|--------|------------------|--------|---------------|--------|-------------|---------|
| | 1798 - 1891 | | 1831 - 1891 | | 1857 - 1891 | | 1857 - 1891 | |
| | #years | %years | #years | %years | #years | %years | #months | %months |
| Virginia | 18 | 11.1% | 34 | 21.0% | 10 | 6.2% | 88 | 9.5% |
| Delaware | 18 | 10.5% | 37 | 21.6% | 14 | 8.2% | 105 | 11.3% |
| Maryland | 18 | 9.0% | 37 | 18.6% | 14 | 7.0% | 105 | 11.3% |
| New Hampshire | 18 | 17.8% | 37 | 36.6% | 14 | 13.9% | 105 | 11.3% |
| Vermont | 18 | 17.1% | 37 | 35.2% | 14 | 13.3% | 105 | 11.3% |
| Tennessee | 18 | 11.9% | 34 | 22.5% | 10 | 6.6% | 83 | 8.9% |
| Pennsylvania | 18 | 9.4% | 37 | 19.3% | 14 | 7.3% | 105 | 11.3% |
| Kentucky | 18 | 19.1% | 35 | 37.2% | 11 | 11.7% | 84 | 9.1% |
| North Carolina | 18 | 11.9% | 32 | 21.2% | 6 | 4.0% | 65 | 7.0% |
| Ohio | 17 | 18.3% | 35 | 37.6% | 9 | 9.7% | 79 | 8.5% |
| New Jersey | 8 | 5.2% | 35 | 22.7% | 6 | 3.9% | 86 | 9.3% |
| New York | 5 | 2.9% | 28 | 16.0% | 0 | 0.0% | 51 | 5.5% |
| Connecticut | 18 | 9.5% | 36 | 18.9% | 12 | 6.3% | 84 | 9.1% |
| Massachusetts | 18 | 7.2% | 30 | 12.0% | 7 | 2.8% | 43 | 4.6% |
| Alabama | 8 | 9.2% | 20 | 23.0% | 0 | 0.0% | 31 | 3.3% |
| Indiana | 3 | 4.1% | 24 | 32.4% | 7 | 9.5% | 55 | 5.9% |
| DC | 2 | 4.8% | 18 | 42.9% | 10 | 23.8% | 76 | 8.2% |
| Georgia | 0 | 0.0% | 24 | 18.0% | 0 | 0.0% | 26 | 2.8% |
| South Carolina | 5 | 2.5% | 22 | 10.9% | 0 | 0.0% | 12 | 1.3% |
| Rhode Island | 18 | 14.4% | 28 | 22.4% | 5 | 4.0% | 33 | 3.6% |
| Michigan | 0 | 0.0% | 11 | 15.3% | 0 | 0.0% | 12 | 1.3% |
| Mississippi | 8 | 9.2% | 14 | 16.1% | 0 | 0.0% | 6 | 0.6% |
| Missouri | 0 | 0.0% | 15 | 19.0% | 0 | 0.0% | 12 | 1.3% |
| Illinois | 0 | 0.0% | 12 | 16.4% | 0 | 0.0% | 12 | 1.3% |
| Maine | 3 | 4.2% | 34 | 47.9% | 11 | 15.5% | 71 | 7.7% |
| Arkansas | 0 | 0.0% | 9 | 10.7% | 0 | 0.0% | 0 | 0.0% |
| Wisconsin | 0 | 0.0% | 5 | 9.4% | 0 | 0.0% | 12 | 1.3% |
| Iowa | 0 | 0.0% | 6 | 11.3% | 0 | 0.0% | 12 | 1.3% |
| Texas | 0 | 0.0% | 1 | 1.9% | 0 | 0.0% | 0 | 0.0% |
| Minnesota | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% |
| Louisiana | 3 | 3.4% | 15 | 17.2% | 0 | 0.0% | 9 | 1.0% |
| Florida | 0 | 0.0% | 15 | 21.4% | 0 | 0.0% | 9 | 1.0% |
| California | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% |

Table 3:
Do Usury Laws Matter?

Panel A reports results for the impact of usury laws on lending volume using the total amount of loans and discounts per capita and Panel B reports results using the total bonds for circulation per capita (data obtained from state-level banking-sector balance-sheets for the years 1865 to 1891 from the reports of the Comptroller of the Currency). Regressors are the change in the maximum legal interest rate in year $t - 1$ as well as the change in the difference between the maximum legal rate and the principal component index rate, Regional rate, and state-level bank lending rate in year $t - 1$ for that state. The Regional rate is constructed as the New England municipal bond rate for all states in the New England region, the New York call money rate for New York state, and the U.S. bond rate for all other states. Panel C reports results using the change in total penalty for a state in a given year as the dependent variable. All Regressions are run in first differences, with a control for state age. In addition, regressions using the U.S. bond and principal components index rates include state fixed effects and regressions using the Regional and state-level bank lending rates include state and year fixed effects. Reported t -statistics (in parentheses) assume group-wise clustering of errors by state or year depending on the regression. Adjusted R^2 s are reported for the full specification that includes the fixed effects as well as the amount of remaining variation explained by the regressors after the fixed effects are accounted for (\bar{R}^2 after F.E.).

| PANEL A: IMPACT OF USURY LAWS ON LENDING VOLUME | | | | |
|---|--|-----------------|-----------------|-----------------|
| Dependent variable = | Δ Loans and discounts per capita $_t$ | | | |
| Sample period | 1865-1891 | 1865-1891 | 1865-1891 | 1878-1891 |
| Δ Max. rate $_{t-1}$ | 0.982 (2.38) | | | |
| Δ (Max. rate-PC rate) $_{t-1}$ | | 0.840 (2.44) | | |
| Δ (Max. rate-Regional rate) $_{t-1}$ | | | 0.926 (2.43) | |
| Δ (Max. rate-State bank rate) $_{t-1}$ | | | | 0.261 (2.65) |
| Fixed effects: | | | | |
| Year? | yes | no | yes | yes |
| State? | yes | yes | yes | yes |
| \bar{R}^2 | 0.20 | 0.07 | 0.19 | 0.10 |
| \bar{R}^2 after F.E. | 0.04 | 0.03 | 0.04 | 0.01 |
| Cluster | state | year | year | year |
| N | 779 | 779 | 779 | 375 |

PANEL B: IMPACT OF USURY LAWS ON BONDS FOR CIRCULATION

| Dependent variable = | Δ Bonds for circulation per capita _t | | | |
|---|--|-------------------|-------------------|-------------------|
| Sample period | 1865-1891 | 1865-1891 | 1865-1891 | 1878-1891 |
| Δ Max. rate _{t-1} | -0.039 (-1.62) | | | |
| Δ (Max. rate-PC rate) _{t-1} | | -0.043 (-1.65) | | |
| Δ (Max. rate-Regional rate) _{t-1} | | | -0.043 (-2.41) | |
| Δ (Max. rate-State bank rate) _{t-1} | | | | -0.072 (-1.67) |
| Fixed effects: | | | | |
| Year? | yes | no | yes | yes |
| State? | yes | yes | yes | yes |
| \bar{R}^2 | 0.22 | 0.08 | 0.21 | 0.34 |
| \bar{R}^2 after F.E. | 0.01 | 0.01 | 0.03 | 0.02 |
| Cluster | state | year | year | year |
| N | 779 | 779 | 779 | 375 |

PANEL C: ARE PENALTIES TOUGHER WHEN MAXIMUM RATES ARE MORE BINDING?

| Dependent variable = | Δ Penalty for violating usury _t | | | |
|---|---|-------------------|-------------------|-------------------|
| Sample period | 1787-1891 | 1857-1891 | 1857-1891 | 1878-1891 |
| Δ Max. rate _{t-1} | -0.064 (-4.63) | | | |
| Δ (Max. rate-PC rate) _{t-1} | | -0.044 (-4.38) | | |
| Δ (Max. rate-Regional rate) _{t-1} | | | -0.063 (-4.71) | |
| Δ (Max. rate-State bank rate) _{t-1} | | | | -0.015 (-3.42) |
| Fixed effects: | | | | |
| Year? | yes | no | yes | yes |
| State? | yes | yes | yes | yes |
| \bar{R}^2 | 0.07 | 0.05 | 0.11 | 0.12 |
| \bar{R}^2 after F.E. | 0.07 | 0.05 | 0.07 | 0.03 |
| Cluster | state | year | year | year |
| N | 2,805 | 1,122 | 1,122 | 422 |

Table 4:

The Relation Between Usury Laws and Economic Growth

Panel A reports results from regressing measures of per capita state economic growth from 1850 to 1870 on the lagged change in maximum legal interest rate from the previous decade (1840 to 1850 and 1850 to 1860, respectively). Five measures of per capita economic growth are employed: state gross product per capita, manufacturing value added per capita, number of manufacturing establishments per capita, agricultural production per capita, and number of farms per capita from the 1850, 1860, and 1870 U.S. Censuses. Panel B reports results from regressing the rate of growth of the number of farms in each state by farm size (acreage) for the years 1860, 1870, 1880, and 1890 obtained from the U.S. Censuses on the lagged change in maximum legal interest rate. All regressions include a dummy variable for Civil Law states, the age of the state, and region fixed effects as control variables (coefficient estimates not reported for brevity). Adjusted R^2 s are reported and t -statistics (in parentheses) are reported that assume group-wise clustering of errors at the state level.

| PANEL A: ECONOMIC GROWTH RATE FROM 1850 TO 1870 | | | | | | | |
|--|---------------------|---------------------------|------------------------------|---------------------|-------------------|-------------------|-------------------|
| Per capita growth rates in: | State Gross Product | Manufacturing Value Added | Manufacturing Establishments | Agricultural Output | Number of Farms | | |
| $\Delta\text{Max. rate}_{t-1}$ | 0.055 (2.13) | 0.047 (3.08) | 0.079 (4.53) | 0.094 (1.93) | 0.010 (1.37) | | |
| Fixed effects: | region | region | region | region | region | | |
| \bar{R}^2 | 0.44 | 0.43 | 0.51 | 0.56 | 0.47 | | |
| Cluster | state | state | state | state | state | | |
| N | 66 | 66 | 66 | 66 | 66 | | |
| PANEL B: GROWTH IN NUMBER OF FARMS FROM 1860 TO 1890 | | | | | | | |
| Number of Farms | size < 10 acres | 10 ≤ size < 20 | 20 ≤ size < 50 | 50 ≤ size < 100 | 100 ≤ size < 500 | 500 ≤ size < 1000 | size ≥ 1000 |
| $\Delta\text{Max. rate}_{t-1}$ | 0.077 (2.30) | 0.038 (2.06) | 0.019 (1.46) | -0.001 (-0.04) | -0.042 (-2.02) | -0.037 (-0.99) | -0.096 (-2.15) |
| Fixed effects: | region | region | region | region | region | region | region |
| \bar{R}^2 | 0.14 | 0.12 | 0.12 | 0.31 | 0.34 | 0.23 | 0.25 |
| Cluster | state | state | state | state | state | state | state |
| N | 129 | 130 | 130 | 129 | 130 | 125 | 114 |

Table 5:

Is Regulation Tighter When it is Less Costly?

The first three columns of Panel A report results from regressing the change in the maximum rate for a state on the lagged change in the difference between the maximum legal rate and the U.S. bond rate, principal component index rate, Regional rate, and state-level bank lending rate, respectively last period. The regressions using Regional rates and state-level bank lending rates are repeated by separating the difference between the lagged maximum legal rate and Regional (and state bank) rates into positive and negative components, where the rate exceeds the maximum rate and where it falls below the maximum rate. Panel B reports results from regressing the maximum allowable interest rate on dummies for financial crisis years (1819, 1837, 1857, 1873, and 1884) and the year following each crisis, as well as the lagged difference between the maximum legal rate the Regional rate and its interaction with crisis years. Also reported are interactions between crisis years and proxies for the impact of the crisis on the state's economy: the total number of railroad track miles that defaulted divided by the number of manufacturing establishments in the state during the 1873 crisis (Railroad failure), the amount of manufacturing capital per manufacturing establishment in 1870, and the amount of machinery capital per capita in 1870. Panel C reports results from regressing the maximum legal interest rate for a state in a given year on the contemporaneous average maximum legal interest rate of states that border and do not border it. The average state border maximum legal interest rate is also interacted with the wealth (per capita output) of the state and the average wealth of the border states. Finally, the last column of Panel C reports results from regressing the change in loans per capita on dummies for whether the state changed its usury laws in the opposite direction as its neighbors. Regressions are estimated with year and/or state-level fixed effects and include age as a regressor (coefficients not reported). Standard errors used to compute t -statistics (reported in parentheses) are calculated assuming group-wise clustering at either the state or year level. Adjusted R^2 s are reported for the full specification that includes the fixed effects as well as the amount of remaining variation explained by the regressors after the fixed effects are accounted for (\bar{R}^2 after F.E.).

| PANEL A: HOW DO MAXIMUM RATES RESPOND TO MARKET RATES? | | | | | | |
|---|---|-------------------|-------------------|-------------------|-------------------|-------------------|
| Dependent variable = | Δ Maximum legal rate _{<i>t</i>} | | | | | |
| Sample period | 1798-1891 | 1857-1891 | 1857-1891 | 1857-1891 | 1878-1891 | 1878-1891 |
| $\Delta(\text{Max. rate} - \text{US bond rate})_{t-1}$ | -0.064 (-4.90) | | | | | |
| $\Delta(\text{Max. rate} - \text{PC rate})_{t-1}$ | | -0.072 (-4.90) | | | | |
| $\Delta(\text{Max. rate} - \text{Regional rate})_{t-1}$ | | | -0.103 (-5.12) | | | |
| ..Regional rate < Max. rate | | | | 0.099 (2.93) | | |
| ..Regional rate > Max. rate | | | | -0.103 (-5.11) | | |
| $\Delta(\text{Max. rate} - \text{State bank rate})_{t-1}$ | | | | | -0.101 (-2.49) | |
| ..State bank rate < Max. rate | | | | | | 0.107 (1.88) |
| ..State bank rate > Max. rate | | | | | | -0.097 (-1.82) |
| Fixed effects: | | | | | | |
| Year? | no | no | yes | yes | yes | yes |
| State? | yes | yes | yes | yes | yes | yes |
| \bar{R}^2 | 0.04 | 0.04 | 0.10 | 0.10 | 0.17 | 0.17 |
| \bar{R}^2 after F.E. | 0.03 | 0.03 | 0.05 | 0.05 | 0.05 | 0.05 |
| Cluster | year | year | year | year | year | year |
| <i>N</i> | 2,631 | 1,122 | 1,122 | 1,122 | 422 | 422 |

PANEL B: HOW DO MAXIMUM RATES RESPOND TO FINANCIAL CRISES?

| Dependent variable = <i>Sample period</i> | Max. rate <i>1787-1891</i> | Δ Max. rate <i>1857-1891</i> | Δ Max. rate <i>1857-1891</i> | Max. rate <i>1857-1891</i> | Max. rate <i>1857-1891</i> | Max. rate <i>1857-1891</i> |
|---|-------------------------------|--|--|-------------------------------|-------------------------------|-------------------------------|
| Crisis | 0.978 (2.80) | 0.259 (3.00) | 0.266 (2.01) | | | |
| (Max. rate– Regional rate) $_{t-1}$ | | -0.098 (-4.97) | -0.098 (-4.26) | | | |
| Crisis \times (Max. rate– Regional rate) $_{t-1}$ | | | -0.011 (-2.36) | | | |
| Crisis \times railroad failure | | | | 114.654 (2.13) | | |
| Crisis \times manufacturing capital | | | | | 0.173 (1.60) | |
| Crisis \times machinery capital | | | | | | 0.126 (2.16) |
| Fixed effects: | | | | | | |
| Year? | no | no | no | yes | yes | yes |
| State? | yes | yes | yes | yes | yes | yes |
| \bar{R}^2 | 0.49 | 0.06 | 0.06 | 0.59 | 0.56 | 0.56 |
| \bar{R}^2 after F.E. | 0.06 | 0.06 | 0.06 | 0.01 | 0.07 | 0.07 |
| Cluster | year | year | year | year | year | year |
| <i>N</i> | 2,825 | 1,122 | 1,122 | 1,122 | 1,122 | 1,122 |

PANEL C: HOW DO MAXIMUM RATES AND LENDING VOLUME RESPOND TO COMPETITION?

| Dependent variable = <i>Sample period</i> | Max. rate $_t$ <i>1787-1891</i> | Max. rate $_t$ <i>1787-1891</i> | Δ Loans per capita <i>1865-1891</i> |
|---|------------------------------------|------------------------------------|---|
| Max. rate of border states $_t$ | 95.869 (6.03) | 63.062 (2.79) | |
| Max. rate of non-border states $_t$ | 10.812 (0.11) | 50.682 (0.41) | |
| Border \times own wealth | | -0.039 (-3.05) | |
| Border \times border wealth | | 0.238 (2.15) | |
| Δ border rate > 0 , Δ own rate < 0 | | | -3.486 (-2.78) |
| Δ border rate < 0 , Δ own rate ≥ 0 | | | 1.565 (2.41) |
| Fixed effects: | | | |
| Year? | yes | yes | yes |
| State? | yes | yes | yes |
| \bar{R}^2 | 0.72 | 0.75 | 0.18 |
| \bar{R}^2 after F.E. | 0.42 | 0.47 | 0.02 |
| Cluster | state | state | state |
| <i>N</i> | 2,825 | 2,825 | 858 |

Table 6:

Private Interests and Incumbent Political Power

Panel A reports results from regressing the maximum legal interest rate for a state in a given year from 1787 to 1891 on proxies for the political power of incumbents: a dummy variable indicating whether the state had suffrage laws that only allowed land owners and/or those who paid taxes to vote, and the percentage of white males who did not vote, available for 23 states for the following election years: 1824, 1828, 1832, 1836, 1840 and 1844. Panel B reports results on the relation between suffrage restrictions and general incorporation restrictions as well as how both suffrage and incorporation regulation behave in financial crises. Regressions are estimated with year and/or state-level fixed effects and include age as a regressor (coefficients not reported). Standard errors used to compute t -statistics (reported in parentheses) are calculated assuming group-wise clustering at the state level. Adjusted R^2 s are reported for the full specification that includes the fixed effects as well as the amount of remaining variation explained by the regressors after the fixed effects are accounted for (\bar{R}^2 after F.E.).

| PANEL A: RESTRICTED SUFFRAGE AND USURY LAWS | | | | | | |
|--|--------------------------|------------------|--------------------------|--------------------|---------------------|-------------------|
| Dependent variable = | Max. rate | %Non-voting | Max. rate | Max. rate | Max. rate | Max. rate |
| <i>Sample period</i> | <i>1787-1891</i> | white males | <i>1824-1844</i> | <i>1824-1844</i> | <i>1824-1844</i> | <i>1787-1891</i> |
| | | <i>1824-1844</i> | | | | |
| Restricted suffrage | -1.318 (-2.71) | 12.284 (3.17) | | -3.058 (-12.02) | -22.945 (-7.15) | -1.446 (-7.42) |
| %Non-voting while males | | | -1.510 (-3.01) | -0.646 (-1.60) | 2.122 (5.34) | |
| Restricted suffrage \times %NVWM | | | | | -5.033 (-6.67) | |
| Restricted suffrage \times Crisis _{t} | | | | | | 0.059 (1.56) |
| Restricted suffrage \times Crisis _{$t+5$} | | | | | | -0.420 (-2.51) |
| Fixed effects: | | | | | | |
| Year? | yes | yes | yes | yes | yes | yes |
| State? | yes | yes | yes | yes | yes | yes |
| \bar{R}^2 | 0.56 | 0.89 | 0.48 | 0.52 | 0.55 | 0.56 |
| \bar{R}^2 after F.E. | 0.07 | 0.04 | 0.01 | 0.08 | 0.15 | 0.03 |
| Cluster | state | state | state | state | state | state |
| N | 2,825 | 138 | 138 | 138 | 138 | 2,825 |
| PANEL B: RESTRICTED SUFFRAGE, INCORPORATION LAWS, AND FINANCIAL CRISES | | | | | | |
| Dependent variable = | Restricted incorporation | | Restricted incorporation | | Restricted suffrage | |
| <i>Sample period</i> | <i>1787-1891</i> | | <i>1787-1891</i> | | <i>1787-1891</i> | |
| | levels | changes | levels | changes | levels | changes |
| Restricted suffrage | 0.219 (3.71) | 0.002 (3.09) | | | | |
| Crisis | | | -0.012 (-0.91) | -0.017 (-1.09) | -0.001 (-0.02) | 0.005 (0.85) |
| Fixed effects: | state | none | state | none | state | none |
| \bar{R}^2 | 0.52 | 0.01 | 0.68 | 0.02 | 0.44 | 0.02 |
| \bar{R}^2 after F.E. | 0.24 | 0.01 | 0.35 | 0.02 | 0.16 | 0.00 |
| Cluster | state | state | state | state | state | state |
| N | 2,825 | 2,792 | 2,825 | 2,792 | 2,825 | 2,792 |

Table 7:

Non-Financial vs. Financial Incumbent Political Power

The table reports results from regressing the maximum legal interest rate for a state in a given year on proxies for the political power of the non-financial and financial sectors, as well as a proxy for egalitarian law or the most *laissez faire* regulation. Non-financial incumbent political power is greatest when the state adopts restricted suffrage laws and restricts general incorporation in order to restrict entry. Egalitarian law implies no restrictions on suffrage laws or general incorporation. Two indicator variables are created to capture these preferences. Banking incumbent power is defined using free banking laws that opened access to outside banks and were only relevant until 1861. An indicator variable is set equal to one for states with free banking laws that allow outside banks to compete in the state in a given year. The last two columns report results defining non-financial and financial power and egalitarian law using all three forms of regulation. Non-financial power equals one if there are restricted suffrage laws, restricted general incorporation laws, and no restrictions on free banking laws in a given state and year. Financial sector power equals one if there are restricted suffrage laws, no restrictions on general incorporation laws, and restricted free banking laws. Egalitarian law equals one if there are no restrictions on suffrage, general incorporation, or free banking laws. Regressions are estimated with year and/or state-level fixed effects and include state age as a regressor (coefficients not reported). Standard errors used to compute *t*-statistics (reported in parentheses) are calculated assuming group-wise clustering at the state level. Adjusted R^2 s are reported for the full specification that includes the fixed effects as well as the amount of remaining variation explained by the regressors after the fixed effects are accounted for (\bar{R}^2 after F.E.).

| Dependent variable = | Max. rate | Max. rate | Max. rate | Max. rate | Max. rate |
|---|-------------------|-------------------|-------------------|-------------------|-------------------|
| <i>Sample period</i> | <i>1787-1891</i> | <i>1787-1891</i> | <i>1787-1861</i> | <i>1787-1861</i> | <i>1787-1861</i> |
| Incumbent power | | | | | |
| Restricted suffrage and incorporation | -1.453 (-2.96) | -1.488 (-2.41) | | | |
| Egalitarian law | | | | | |
| No restrictions | 0.361 (2.04) | 0.0405 (2.80) | | | |
| Free banking laws | | | | | |
| | | | -0.221 (-0.48) | | |
| Non-financial incumbent power | | | | | |
| Restricted suffrage and incorporation, free banking | | | | -1.359 (-2.92) | -1.194 (-3.18) |
| Financial incumbent power | | | | | |
| Restricted suffrage and banking, free incorporation | | | | 0.349 (0.90) | 0.473 (1.31) |
| Egalitarian law | | | | | |
| No restrictions | | | | 2.533 (1.49) | 2.789 (1.62) |
| Fixed effects: | | | | | |
| Year? | yes | no | yes | yes | no |
| State? | no | yes | yes | no | yes |
| \bar{R}^2 | 0.23 | 0.48 | 0.67 | 0.17 | 0.74 |
| \bar{R}^2 after F.E. | 0.02 | 0.05 | 0.00 | 0.09 | 0.11 |
| Cluster | state | state | state | state | state |
| <i>N</i> | 2,825 | 2,825 | 1,802 | 1,802 | 1,802 |

Table 8:
Proxies for Public Interests

The first set of proxies we employ for public interests are a set of policies designed to protect the poor and weak debtors: bankruptcy stay laws or debt moratoria passed by state legislatures. We use a dummy variable for whether a state had bankruptcy stay laws that forgave personal debt, obtained from personal bankruptcy laws from Coleman (1975) and use the percentage of representatives in each state voting in favor of debt relief in the House of Representatives in 1822 for the relief of debtors who bought public land from the Federal government. The second set of proxies we employ for public interests are the extent of newspaper circulation and the coverage of political and corruption stories, obtained from Gentzkow, Glaeser, and Goldin (2005) and Glaeser and Goldin (2005), respectively. The extent of political and corruption coverage of newspapers is approximated by the count of the word “politic” deflated by the count of the word “January” which controls for the newspaper’s size, and corruption and fraud coverage is estimated as the count of the word “corrupt” or “fraud” deflated by the word count “January.” The third set of proxies for public interests we employ are a series of agricultural shocks: agricultural technology shocks, obtained from “A History of American Agriculture” from the United States Department of Agriculture (USDA) from 1800 to 1891, extreme weather shocks, and a series of commodity (absolute) price shocks to capture shocks to the agricultural sector in each state. Specifically, we use the Froot, Kim, and Rogoff (2005) commodity price series from England and Holland which spans the 17th, 18th, and 19th centuries and supplement this data with data from the NBER Macroeconomy commodity price series on corn, cotton, and wheat. Results are reported with and without the supplemented data which limits the time-series of prices. For all of these measures we assign the exposure of each state to each of the shocks at different points in time using the most recent available data we can find on the composition of the state’s agricultural sector.

PANEL A: PROTECTION OF THE POOR AND NEWS COVERAGE

| Dependent variable = | Maximum legal interest rate | | | | | |
|-----------------------------|------------------------------------|------------------|------------------|------------------|------------------|-------------------|
| <i>Sample period</i> | <i>1820-1840</i> | <i>1820-1840</i> | <i>1788-1891</i> | <i>1788-1891</i> | <i>1788-1891</i> | <i>1788-1891</i> |
| Bankruptcy stay | 0.966 (0.14) | | | | | |
| Debt moratoria vote | | 0.631 (1.08) | | | | |
| Newscopies per capita | | | 24.307 (2.76) | | | 119.728 (5.18) |
| Political coverage | | | | 0.036 (0.17) | | 0.691 (1.16) |
| Corruption coverage | | | | | 1.097 (1.16) | 4.069 (3.85) |
| Fixed effects: | | | | | | |
| Year? | yes | yes | no | no | no | no |
| State? | no | no | yes | yes | yes | yes |
| \bar{R}^2 | 0.49 | 0.29 | 0.50 | 0.49 | 0.49 | 0.52 |
| \bar{R}^2 after F.E. | 0.48 | 0.29 | 0.09 | 0.09 | 0.09 | 0.10 |
| Cluster | state | state | state | state | state | state |
| <i>N</i> | 315 | 461 | 2,811 | 2,337 | 2,337 | 2,337 |

PANEL B: AGRICULTURAL SHOCKS

| Dependent variable = | ΔMaximum legal interest rate | | | | | |
|-----------------------------|---|-------------------|-------------------|-------------------|-------------------|-------------------|
| <i>Sample period</i> | <i>1800-1891</i> | <i>1800-1891</i> | <i>1800-1891</i> | <i>1870-1891</i> | <i>1800-1891</i> | <i>1870-1891</i> |
| Technology shocks | -0.040 (-0.48) | | | | -0.015 (-0.18) | -0.122 (-0.30) |
| Weather shocks | | -0.035 (-1.01) | | | -0.132 (-2.04) | -0.298 (-2.55) |
| Commodity price shocks | | | -0.295 (-1.59) | -0.765 (-2.09) | -0.299 (-1.59) | -0.800 (-2.24) |
| Fixed effects: | | | | | | |
| Year? | yes | yes | yes | yes | yes | yes |
| State? | yes | yes | yes | yes | yes | yes |
| \bar{R}^2 | 0.05 | 0.05 | 0.05 | 0.07 | 0.05 | 0.07 |
| \bar{R}^2 after F.E. | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
| Cluster | state | state | state | state | state | state |
| <i>N</i> | 2,615 | 2,615 | 1,582 | 511 | 1,582 | 511 |

Table 9:

Alternative Explanations Using Cross-Sectional Evidence from 1850

The table reports results from regressing a state's maximum legal rate in 1850 on alternative explanations that might influence usury laws: two measures of bank market power (a bank Herfindahl concentration index and average bank wealth), number of city officers and legal professionals per employed persons, number of pupils and publishers per capita, number of religious seating accommodations per capita, and percentage of Roman Catholic accommodations. Regressions include the percentage of gross state product from the banking and manufacturing sectors, a dummy variable for Civil law states, the age of the state, capital per capita, and region fixed effects (coefficients not reported for brevity). Adjusted R^2 s are reported.

| Dependent variable = | Maximum legal interest rate | | | | | |
|-------------------------------------|-----------------------------|-------------------|-------------------|--------------------|-------------------|-------------------|
| Bank concentration | -0.055 (-1.34) | | | | | |
| Banking wealth | | -0.192 (-1.25) | | | | |
| %City officers, lawyers | | | -2.496 (-1.34) | | | |
| %Pupils, publishers | | | | -22.688 (-6.75) | | |
| Religious accommodations per capita | | | | | -0.107 (-5.77) | -0.153 (-6.95) |
| %Roman Catholic accommodations | | | | | | 0.091 (5.86) |
| \bar{R}^2 | 0.41 | 0.36 | 0.52 | 0.71 | 0.65 | 0.71 |
| N | 33 | 33 | 33 | 33 | 33 | 33 |

Figure 1. Evolution of Average Maximum Allowable Interest Rate and Usury Penalty

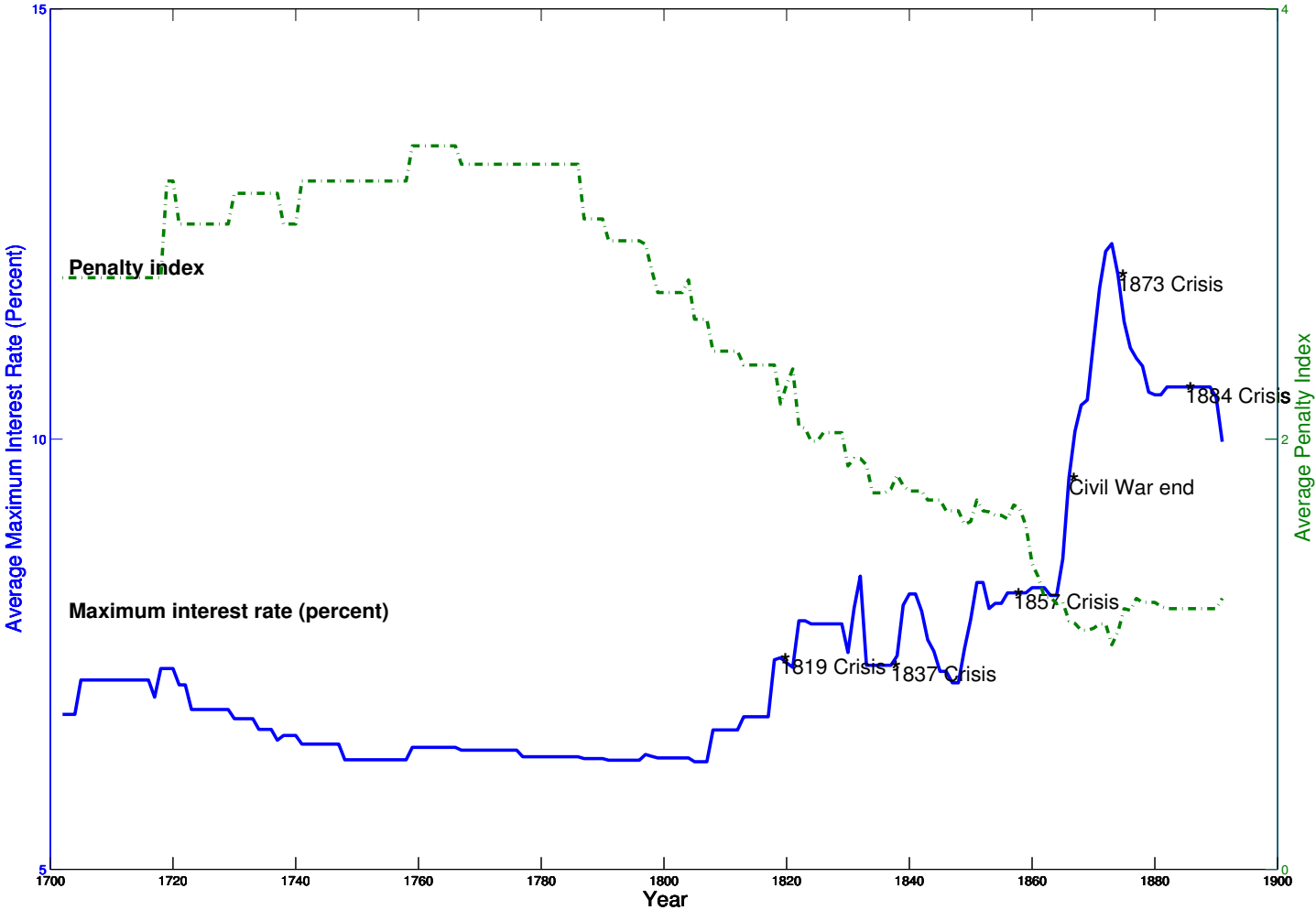


Figure 2. Market Interest Rates and Maximum Legal Rates (1878 to 1891)

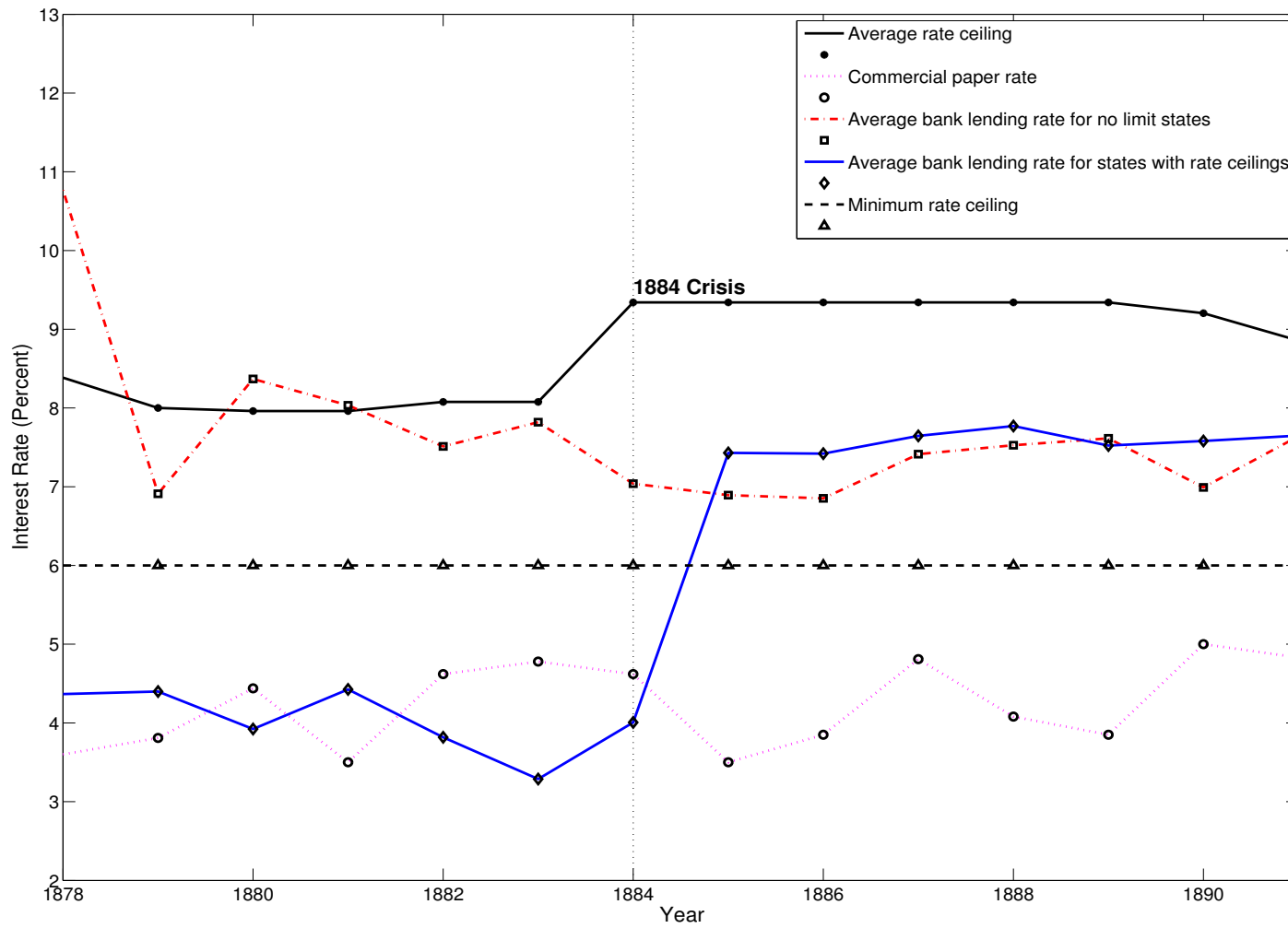


Figure 3. Time-Series of Interest Rate Ceiling for Wealth-Based Restricted and Non-Restricted Suffrage States (1787 to 1891)

