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It's easier to contract than to pay: Judicial independence and US municipal default in the 19th century

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ABSTRACT

It is well established in the literature that an independent judiciary can act as a signal of credibility by a sovereign state and as a guarantor of creditor rights. However, to date there has been little systematic work analyzing how an independent judiciary reacts to fiscal stress and public-sector default. This article addresses that very question by evaluating how and if judicial independence affects default rates using US municipal data through the nineteenth century. Overall, the results do indicate that greater judicial independence is associated with a significantly lower likelihood of default. This channel largely occurs through the method by which a member of a state's court of last resort is selected (either appointment or popular election) and term length.

1. Introduction

There is a long literature establishing the importance of an independent judiciary and the economic benefits that stem from it (Hayek, 1960; North, 1990; North and Weingast, 1989; La Porta et al., 2004; Feld and Voigt, 2003; Klerman and Mahoney, 2005). Ultimately, where an independent judiciary exists, disputes tend to be adjudicated in a relatively more impartial and unbiased manner. This creates an atmosphere in which property rights are better protected, the rule of law exists, and arbitrary expropriation is minimized. These factors reduce the ex-ante risks associated with undertaking and pursuing economic activity.

Further, adherence by central authorities to the decisions of an independent judiciary can signal a credible commitment to market participants, which tends to increase economic growth over time. This is especially important when dealing with issues of public indebtedness where the potential exists for a sovereign government to renege on outstanding agreements made with creditors, and thereby default on or even repudiate debt (North and Weingast, 1989). While this connection has been discussed theoretically, there has been less work done to assess how judicial independence (JI) might affect the decision of a public-sector actor to undermine the property rights of creditors and default on or repudiate outstanding obligations.

The current paper attempts to fill this void and evaluate how and if relatively greater JI might influence rates of public-sector default. This can be especially important in times of financial and fiscal crisis, when the problems associated with time-inconsistent public policy become even more acute and greater pressure is placed on public-sector actors to default. To address this question, the current study employs long-run US municipal government default data from 1830 to 1910 and several measures of JI consistent with the literature as applied to a state's court of last resort (hereafter Supreme Court).

As will be discussed in greater detail below, state judiciaries underwent significant institutional change through the nineteenth

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century, especially regarding tenure, composition, and the method by which justices of these courts were selected to the bench. Each change was meant to address the need to maintain an independent judiciary, with some factors appearing to be more successful than others. Two specific changes that occurred were shifts toward popular election of judges and, at least initially, shorter term lengths. While this did have the effect of greater judicial invalidation of legislation, it also led to increased populism within state courts (Shugerman, 2012). This rise in populism through popular election should, and appears to have had, significant effects on municipal default, especially where defendants (municipal debtors and taxpayers) tended to be in-state constituencies directly elected those judicial actors, while plaintiffs (bondholders and creditors) tended to be out-of-state individuals.

Further, the evidence indicates that once popularly elected, state courts began overturning precedent that had established the legitimacy of many municipal bonds when the popular will began to sour in regard to repayment. Overall, the results do indicate that relatively more independent judiciaries are associated with a reduced likelihood of municipal default. This is especially true regarding the method by which individuals are selected to the bench and their term length, with judicial appointment and service under "good behavior" or life tenure correlated with a significantly lower likelihood of municipal default.

The remainder of the paper is structured as follows: Section 2 discusses the literature and some theoretical considerations regarding JI and default. Section 3 provides a brief historical background of US municipal public finance and indebtedness in the nineteenth and early twentieth century along with a discussion of state judiciaries generally during this period. The section also includes important anecdotal evidence suggesting that a state judiciary did play a significant role in adjudicating disputes between private creditors and municipal debtors and how this impacted the outcomes observed. Section 4 lays out a detailed discussion of the data and method employed to evaluate the effect that JI had on the incidence of municipal default. Section 5 presents and discusses the results, while Section 6 concludes.

2. Review of the literature and theoretical considerations

An independent judiciary is a vital and centrally important economic institution for many reasons. First, the availability of an impartial, third-party arbitrator is essential when disputes arise. These disputes can emerge between two private individuals (contract enforcement), between a private individual and state actor (which requires an outside party that can fairly assess fault and ensure that proper procedural means were followed by state actors), and between two state actors (i.e. other branches of government or administrative agencies) (Hayo and Voigt, 2007). Where such an arbitrator exists, then it should create a credible commitment whereby state actors abide by a set of pre-specified rules, especially as regards the rights of creditors and debtors, and adherence to contractual obligations (North and Weingast, 1989; Klerman and Mahoney, 2005).

In the context of a judiciary, while it may not be possible for such a body to itself enforce decisions over contract and property disputes, if a state actor were to disavow and not abide by the decision of a relatively neutral arbitrator, then this could lead to significant reputational costs, which would be reflected in lower economic activity and growth in general (Klerman and Mahoney, 2005). Importantly, in the context of sovereign default, this also tends to increase borrowing costs and may result in an inability for a sovereign to borrow in the future. Thus, a relatively independent judiciary would tend to incentivize a sovereign to pursue more time-consistent policy which would mitigate default and repudiation.

Further, a relatively more independent judiciary should also incentivize bargaining between creditors and debtors if a default was on the horizon rather than automatically defaulting, which may also lower rates of public-sector default. Thus, increased JI tends to lower the probability that the rights of creditors will be arbitrarily terminated and default occurs to begin with. This is especially important when the popular will supports either default or repudiation at the expense of legitimate creditor rights, contract enforcement, and protection of property rights.

Additionally, not only does adherence to the decisions of a relatively independent judiciary signal credibility, this adherence can have spillover effects on several other aspects. Such adherence conveys the reputational effects that along with honoring these decisions, a public entity will also honor debts when they come due (Biglaiser and Staats, 2012). Further, committing to these decisions and establishing an independent court to carry them out will generally force current and future governments to also adhere to the law, which even if changed through the political process tends to be more procedurally sound (Biglaiser and Staats, 2012).

Given the above considerations there are several reasons why a historical analysis of US municipal default would be fruitful. First, state courts played a much more central role in the event of municipal default than they do today, given the current ability for a municipal government to file for bankruptcy under certain circumstances, which is an issue where federal courts have sole jurisdiction. Second, municipalities unlike states, are not sovereign agents meaning that their debt obligations cannot necessarily be arbitrarily repudiated.

However, where a default occurs, it typically requires (and historically this appears to be the case) a court to intervene in some manner. Further, where bondholders were out-of-state individuals this allowed diversity jurisdiction to become a factor and provided the option for a plaintiff to seek recourse in federal court. While federal courts did tend to be creditor friendly, seeking recourse through federal courts was extremely costly (with dockets in district appellate courts backlogged several years and adjudication by the Supreme Court of the United States backlogged by roughly two years) (Fairman, 1971; Freyer, 1979).[1] Thus, a less costly alternative would be to pursue recourse through state courts. However, the tradeoff here is the possibility for a relatively less

[1] For comparison, Freyer (1979) notes that the Federal Circuit Court in Chicago had 3045 pending suits on January 1, 1878, while the Supreme Court of the United States had 791 pending cases in 1879, 837 cases in 1880, and 871 cases by 1883 with numbers increasing annually.

independent state judiciary (to the extent that they existed) to rule in a particularly biased or arbitrary manner.[2]

This situation led to over two hundred cases involving the validity of municipal bonds reaching the US Supreme Court through the nineteenth century (Fairman, 1971). Additionally, anecdotal evidence from several states indicates that relatively less independent state courts were more likely and willing to overturn precedent that had previously established the legitimacy of many of these bonds, once popular opinion began to sour in regard to repayment. Where such a potential existed, increased municipal default should be observed, which would then force (relatively risky) legal action by creditors. However, where a state court was relatively more independent and would more impartially evaluate both creditor and debtor rights, this should minimize the risk of default and incentive bargaining in the shadow of the law between both parties if a default was on the horizon.

Given all of this it is important then to operationalize JI both in the context of US states and the academic literature at large. As will be discussed, a large body of theoretical and empirical work has considered the method by which individuals are selected to the bench, which is also adopted by this study. Through the period under analysis the typical methods were either through popular election or some form of gubernatorial or legislative appointment. Most of the existing research indicates that judiciaries elected along partisan lines tend to be far less independent than other methods of selection. Theoretically, Maskin and Tirole (2004) and Alesina and Tabellini (2007, 2008) consider the tradeoff between electoral accountability and relatively unaccountable, appointed public officials. This literature indicates that where minority rights are important, the electorate is rationally ignorant about an optimal policy response, acquiring information over the policy is costly, and feedback about a decision is slow, then relatively unaccountable, appointed officials are preferred. This tends to be the case for a judiciary.

Empirical research has found that tort awards tend to be higher against out of state defendants in popularly elected jurisdictions relative to others (Tabarrok and Helland, 1999), the property rights of firm owners tend to be less protected (Besley and Payne, 2003), administrative agencies tend to worry less about decision reversal (Hanssen, 2000), political business cycles tend to be more prevalent (Huber and Gordon, 2004; Berdejó and Yucktman, 2013; Gordon and Huber, 2007), and judicial quality tends to be worse (Ash and MacLeod, 2016; Berkowitz and Clay, 2006; Sobel and Hall, 2007). Therefore, I would expect an elected judiciary to be less independent and thus associated with more municipal defaults.

Additionally, I also consider the length of tenure for a given state's judiciary. Historically, various arguments were made across states with varying degrees of success to increase term lengths. Here it was argued that with longer terms judges would be better insulated from any blowback associated with controversial decisions (Shugerman, 2012). Further, Hanssen (2000) indicates that along with appointment, longer term lengths also better insulate judges. Finally, Klerman and Mahoney (2005) find that increased term lengths (service during “good behavior”) granted to English courts through the eighteenth century were associated with abnormally large and significant equity returns on the London Stock Exchange. Thus, increased tenure should be associated with greater independence and lower rates of default.

Finally, there is also a literature evaluating the importance of *de facto* judicial independence, especially as it relates to the ability of a government to credibly commit to pre-specified rules (Hayo and Voigt, 2007; Feld and Voigt, 2003; Voigt et al., 2015). Here, it is ultimately the *de facto* JI that tends to truly matter. To address this, the above-mentioned authors consider the size of various court budgets, judicial salaries, and arbitrarily altered changes in court size and composition. While states typically constitutionally guaranteed many of these things to judges (like salary), court composition was something that saw continual constitutional and legislative change across states on numerous occasions. To the extent that these changes were politically motivated or came as retaliation in response to controversial decisions, this could undermine JI, resulting in a greater likelihood of default. The next section provides a brief historical background in the US context and discusses anecdotal evidence that many of the variables discussed above were, in fact, considered to be important for maintaining and upholding an independent judiciary.

3. A brief historical background

3.1. A history of state judiciaries

State judiciaries are clearly quite diverse and have seen many evolutionary changes over time. Some of these evolutionary changes include the scope of these courts’ authority and their relative independence, with the latter issue revolving around judicial selection and tenure. After US Independence, early state courts were typically selected through legislative appointment for relatively lengthy terms (Hanssen, 2004). Due to concerns about undue influence from a state legislature and sometimes outright corruption that existed within the judiciary, by the 1840 s many states began to shift away from legislative appointment and toward popular election.

This change in judicial selection, which emerged through constitutional upheaval was directly related to the overextension of public credit for the construction of public works and other perceived abuses of power perpetrated by state legislatures (Shugerman, 2010). Through legislative initiative, states invested heavily in various infrastructure projects (dubbed internal improvements), especially canals and railroads as well as banks through the 1830s.[3] However, economic downturn brought on by the Panic of 1839 culminated with eight states and one territory defaulting on these debt obligations. Many believed that state courts had become

[2] To understand this tradeoff and as evidence regarding the relative tilt between state and federal tribunals, at one point the state of Iowa attempted to deny any railroad or non-resident corporation the right to conduct business within the state unless that corporation explicitly waived its right to bring litigation in federal court (Freyer, 1979).

[3] For a full review of these antebellum economic policies see Goodrich (1960) and Ratchford (1941).

complicit in these fiscal excesses perpetrated by state legislatures. These factors resulted in significant constitutional change that simultaneously attempted to limit legislative power and promote more independent state judiciaries. Some specific legislative constraints included debt limits and prohibitions on state investment in or ownership of private projects, and general incorporation laws for banks and other corporate forms (Wallis, 2005).[4]

However, it has been argued that such constraints needed to be enforced, and this required a judiciary that was no longer dependent upon legislative or gubernatorial appointment for office. Therefore, states increasingly adopted partisan popular elections for judges, arguing that judicial elections would incentivize a more liberal use of judicial review and greater protection of the constitutional rights of the people (Shugerman, 2010). New York became the catalyst in this wave of judicial change after adopting partisan elections in 1846. Specifically, between 1846 and 1851 seventeen states at least partially switched to popular election and by 1860 twenty-three states had done the same (Shugerman, 2010).[5] Overall, research indicates that the desired effect was achieved: state courts increasingly began to invalidate legislation (Shugerman, 2010).

While popular election did lead to an increase in judicial review and with it an increase in legislation deemed unconstitutional, judicial elections were also quickly overtaken by party politics and party machines. For example, with party machines dominating state judiciaries, members of the bench in popularly elected states tended to be far more populist in both temperament and training (Shugerman, 2012). These issues, as will be discussed in greater detail below, had a profound effect on municipal aid for public works (specifically railroads), municipal indebtedness, and municipal default and repudiation.

Therefore, due to heightened worries about increased partisanship and corruption coming from the bench, new demands were made to find ways to again increase judicial independence. This resulted in calls for extending judicial term lengths and later non-partisan elections (Shugerman, 2012; Hanssen, 2004). The result was many states granting significantly longer tenure to sitting judges to better insulate those individuals from undue influence. Here, it was believed that longer term lengths would embolden judges to base controversial decisions in law and not on popular will. Table 1 provides a full breakdown of the changes that occurred across state judiciaries over this period.

As can be seen most, but not all, states experimented with different methods of selection and tenure over this period. The table suggests that newer states tended to adopt popular election at statehood, and to maintain that method through the sample, while Northeastern states were typically committed to significantly longer terms and appointment. Thus, by the turn of the century a diverse set of arrangements had emerged across state judiciaries, which would have important implications for private creditor and public-sector debtor relations.

3.2. A brief history of municipal default

Public-private cooperation in the development and construction of internal improvement projects has been a recurring theme within the US. Specifically, Wallis and Weingast, (2008) note three distinct cycles regarding such public support. The first, from roughly 1790–1850, saw significant state involvement in the financing of such infrastructure projects. The second cycle, from 1840 to 1880, led to a significant growth in municipal aid to such projects, while the third cycle (from roughly 1880 to 1930), was associated with the growth in special purpose governments providing much of the financing. Each period was defined by economic crises that ultimately caused fiscal crises for state and local governments. The result was to constitutionally and legislatively constrain these governmental units in a way to prohibit and limit certain financing schemes and to better align the taxes paid for those projects with the actual beneficiaries of the projects. These transitions had significant effects on public indebtedness, where in 1841 state debt was roughly 9 times that of local debt, by 1902 local debt was roughly 8 times state debt (Wallis and Weingast, 2008).

The first wave of public investment saw significant aid generated largely through “taxless finance” (Wallis, 2005). Here, state governments issued debt in order to finance many of these projects, with the expectation being that once these projects came to fruition, they would generate more than enough revenue to repay those outstanding obligations. Thus, so long as these projects succeeded, there would be no liability accruing to taxpayers. However, in the event of failure, the liability would ultimately be borne by taxpayers. Unfortunately, financial crisis and the Panic of 1839 led to many of these projects failing and with it an increased inability or outright refusal by states to make good on those loans. The result was default by eight states and one territory, with five states ultimately repudiating at least part of those debts.

These events led a number of states to impose constitutional restrictions to ensure that such taxless finance was not employed by state governments moving forward. These specific restrictions were generally either debt restrictions, which limited the total amount of debt that could be issued, or were procedural limits, which allowed debt to be issued so long as certain procedural requirements (like legislative supermajority approval or citizen approval) were met (Tejedo-Rodriguez and Walls, 2012). Additionally, these constraints stipulated that any debt that was issued also needed to be funded with an explicit revenue source sufficient to cover repayment. These events led to a retrenchment of state aid to private enterprise, but also incentivized local governments to provide public-sector aid to internal improvements, which generally came in the form of railroad aid.

Here municipal governments applied several forms of financing, including directly issuing debt to construct some internal improvement, issuing debt to purchase the stock of a private internal improvement company, or issuing debt to inject funds directly into a private internal improvement company (Pinsky, 1963). Thus again, taxless finance became the dominant method – used now by

[4] See also Wallis and Weingast (2008) and Tejedo-Rodriguez and Wallis (2012) for overviews of these state fiscal crises and the constitutional developments that ensued, as well as the following subsection.

[5] For a full treatment of state judiciaries and the issues involved in the changing nature of these tribunals see Shugerman (2010; 2012) and Hanssen (2004).

Table 1
List of cumulative changes made to state courts of last resort 1830–1910.
Source: The National Center for State Courts, "Judicial Selection in the States." http://www.judicialselection.us/.** The New York Court for the Trial of Impeachments was the court of last resort prior to 1847, but was largely a political body concerned with matters of public impeachment. Therefore, this court is excluded from the analysis prior to 1847.

State	Method of selection (year adopted)	Tenure (year adopted)
Alabama	Appointment (1819)	To age 70 (1819)
	Popular election (1867)	6 years (1830)
Arkansas	Appointment (1836)	6 years (1836)
	Popular election (1864)	
California	Popular election (1849)	6 years (1849)
		10 years (1862)
		12 years (1879)
Colorado	Popular election (1876)	9 years (1876)
Connecticut	Appointment (1818)	Good behavior (1818)
Deleware	Appointment (1792)	Good behavior (1792)
		Life (1831)
		12 years (1897)
Florida	Appointment (1838)	5 years (1838)
	Popular election (1885)	6 years (1865)
		Life (1868)
		6 years (1885)
Georgia	Appointment (1835)	Good behavior (1835)
	Popular election (1868)	6 years (1865)
	Appointment (1877)	12 years (1868)
	Popular election (1896)	6 years (1877)
Idaho	Popular election (1890)	6 years (1890)
Illinois	Appointment (1818)	Good behavior (1818)
	Popular election (1848)	9 years (1848)
Indiana	Appointment (1816)	7 years (1816)
	Popular election (1851)	6 years (1851)
Iowa	Appointment (1846)	6 years (1846)
	Popular election (1857)	
Kansas	Popular election (1861)	6 years (1861)
Kentucky	Appointment (1792)	Good behavior (1792)
	Popular election (1850)	8 years (1850)
Louisiana	Appointment (1812)	Good behavior (1812)
	Popular election (1852)	8 years (1845)
	Appointment (1864)	10 years (1852)
		8 years (1864)
		12 years (1879)
Maine	Appointment (1819)	Good behavior (1819)
		7 Years (1839)
Maryland	Appointment (1776)	Good behavior (1776)
	Popular election (1851)	Life (1837)
		10 years (1851)
Massachusetts	Appointment (1780)	Good behavior (1780)
Michigan	Appointment (1836)	7 years (1836)
	Popular election (1850)	8 years (1850)
Minnesota	Popular election (1857)	7 years (1857)
		6 years (1883)
Mississippi	Appointment (1817)	Life (1817)
	Popular election (1832)	6 years (1832)
	Appointment (1868)	9 years (1868)
Missouri	Appointment (1820)	Good behavior (1820)
	Popular election (1872)	12 years (1872)
Montana	Popular election (1889)	6 years (1889)
New Hampshire	Appointment (1792)	To age 70 (1792)
New Jersey	Appointmetn (1776)	7 years (1776)
New York**	Appointment (1777)	Life (1777)
	Popular election (1847)	8 years (1847)
		6 years (1876)
North Carolina	Appointment (1776)	Life (1776)
	Popular election (1868)	8 years (1868)
North Dakota	Popular election (1889)	6 years (1889)
Nebraska	Popular election (1866)	6 years (1866)
Nevada	Popular election (1864)	6 years (1864)
Ohio	Appointment (1802)	7 years (1802)
	Popular election (1851)	6 years (1851)
		5 years (1883)
		6 years (1892)

(*continued on next page*)

Table 1 (*continued*)

State	Method of selection (year adopted)	Tenure (year adopted)
Oregon	Popular election (1859)	6 years (1859)
Pennsylvania	Appointment (1790)	Life (1790)
	Popular election (1850)	15 years (1838)
		21 years (1874)
Rhode Island	Appointment (1776)	Good behavior (1776)
South Carolina	Appointment (1776)	Life (1776)
		6 years (1868)
South Dakota	Popular election (1889)	6 years (1889)
Tennessee	Appointment (1796)	Good behavior (1796)
	Popular election (1853)	12 years (1835)
		8 years (1853)
Texas	Appointment (1845)	6 years (1845)
	Popular election (1866)	10 years (1866)
	Appointment (1869)	9 years (1869)
	Popular election (1876)	6 years (1876)
Utah	Popular election (1896)	6 years (1896)
Vermont	Appointment (1777)	Good behavior (1777)
		1 year (1786)
		2 years (1870)
Virginia	Appointment (1776)	Life (1776)
	Popular election (1850)	12 years (1850)
	Appointment (1864)	8 year (1864)
Washington	Popular election (1889)	6 years (1889)
Wisconsin	Popular election (1848)	6 years (1848)
		10 years (1853)
West Virginia	Popular election (1862)	12 years (1862)
		8 years (1872)
Wyoming	Popular election (1890)	8 years (1890)

municipal governments – to fund these projects. Of course, such financing schemes led to questions regarding the validity of this municipal aid and indebtedness. This was especially true as many states had imposed constitutional restrictions on public indebtedness and aid to private enterprise at the state level as discussed above, but also increasingly at the municipal level.[6] Interestingly, between 1837 and 1859, 26 separate state courts had weighed in on the issue, upholding the validity of this municipal indebtedness (Hillhouse, 1936).

The result was rapid growth in local public indebtedness in order to finance these projects (Gillette, 2003; Secrist, 1914; Hillhouse, 1936). In fact, data compiled by the US Census indicate that state debt was roughly $175 million in 1840, peaking at roughly $350 million in 1870 and declining to roughly $200 million by 1890. On the other hand, local indebtedness steadily rose from roughly $27 million in 1840 to almost $926 million by 1890.[7] Further, Hempel (1967) indicates that between 1853 and 1870 municipal indebtedness in Southern states grew by 275%, with a 135% increase observed across all other regions. The significant increase in municipal indebtedness for such projects did not go unnoticed by contemporaries. For example, the American jurist and leading municipal legal scholar John F. Dillon noted that such aid was, “an ‘epidemic insanity’ inducing extravagant corporate subscriptions to public works” (Dillon, 1876, p. 5).

Unfortunately, these methods of finance also incentivized the abuse of public credit, which could and did increase the propensity of municipal default due to economic downturns and outright corruption between public officials and railroad promoters (Dobbin, 1994; Hillhouse, 1936; Summers, 1984). The most important of these episodes occurred as a result of the panic of 1873 and the resulting economic downturn. Railroad projects, many of which had been subsidized by local aid, began failing. This ultimately passed the burden onto local taxpayers. Predictably, citizen backlash, especially in Midwestern and Southern states, toward railroad aid and local indebtedness also grew (Freyer, 1979). This backlash led to increased agitation for default and repudiation and also escalated the development of debt restrictions similar to those that had been imposed on state governments through the 1840 s (See Liu et al., 2013 for a treatment of this latter development).[8] In describing this indebtedness, worries of corruption, and the overissue of such municipal debt, Dillon points out the following:

> Another serious consequence of this policy is, that even the *interest* on these bonds often proves to be a heavy burden upon the community . . . When the sting of taxation is felt, and when the tax-payer knows that the bonds were fraudulently issued, and even when he feels that they were improvidently given, experience shows that repudiation, or attempted repudiation, is the next stage, involving a forfeiture of the public faith pledged for their payment. Occasionally it has been witnessed that the *state*, in all its departments, has actively sympathized with the repudiating municipality, and the public faith has been redeemed only through

[6] See Dove (2014) for an overview of these municipal fiscal constraints and Libgober (2016) for an overview of state fiscal constraints.

[7] Taken from the report of US Department of the Interior (1872) and US Department of the Interior, Census Office (1884, 1895).

[8] In fact, during the Depression of 1873, which was the height of these municipal financial troubles, it has been estimated that roughly one-fifth of all outstanding municipal debt was in a state of default (Hillhouse 1936).

the coercion of the Supreme Court of the United States.
(Dillon 1876, p. 5–6)

Importantly, as defaults emerged and as Dillon (1876) indicates, these events inevitably led to additional litigation by creditors and, especially important for an elected judiciary which has been shown to pander more to popular desires, increased pressure for decisions favorable to debtors (which were typically the local communities within a state). Augmenting these pressures within judiciaries was the nature of popular judicial selection, where states tended to hold districted elections rather than statewide elections for Supreme Court justices (Shugerman, 2010). This led to increased localism and greater pandering to local popular opinion by judicial candidates.

Additional anecdotal evidence at least suggests that popularly elected state judiciaries were influenced by these political realities. For instance, Hillhouse (1936) noted that especially in popularly elected state courts, many citizens believed that any state court decision in favor of creditors was proof that the court had been "bought up" by the railroads, with the result generally being ouster from the bench and rapid overturning of prior decisions.

As noted, prior to 1859 state courts had accommodated much of this municipal indebtedness. However, this situation began to change in 1859 when the new, constitutionally altered and now popularly elected Iowa Supreme Court overturned all precedent handed down from the previously appointed state court and ruled that the legislature had no constitutional power to authorize municipal aid for railroad construction, which was reaffirmed in 1862. Iowa specifically had imposed a constitutional limit on state indebtedness in 1846, which required taxes to be levied in a manner to pay off both interest and principal on any outstanding debt as it accrued, and also required a popular referendum before debt could be issued.[9] However, in 1850 the state legislature passed enabling legislation granting county indebtedness in support of works of internal improvement. This legislation was challenged on constitutional and statutory grounds in 1853 in regard to county bonds that had been issued in support of railroad construction. Among other challenges, it was argued that the state debt limit also applied to all governmental units. The Supreme Court of Iowa ultimately decided in favor of the validity of the bonds, ruling that the state debt limit did not apply to any governmental units beyond the state and that local aid to support railroad construction was legitimate. This was reaffirmed in a later decision. Local aid was spurred by two additional statutes granting local governments the right to issue debt in aid of internal improvements after these decisions as well.[10]

While municipal indebtedness grew as a result, the panic of 1857 severely crippled the industry within Iowa. This increasingly left the obligations the responsibility of local taxpayers. Simultaneously, the state Supreme Court was transformed into a popularly elected body in 1858. Faced with growing agitation against these obligations, the now elected Iowa Supreme Court effectively nullified all outstanding local debt in two separate decisions, ruling that the 1846 constitutional debt limit prohibiting state debt also prohibited the state from passing enabling legislation allowing municipal aid.[11]

The Iowa court's decision had a snowball effect, with the high courts of Wisconsin, Michigan, and Missouri following suit and overturning prior decisions that had favored creditors in 1859 (one year after ruling otherwise), 1870 (reaffirmed in 1873), and 1878, respectively (Hillhouse, 1936). This led to significant federal litigation, with the Supreme Court of the United States explicitly reprimanding some of these high courts in several instances.[12] Specifically, Fairman (1971) indicates that the US Supreme Court heard over 200 municipal bond cases through the latter half of the nineteenth century.[13]

Other more colorful methods by which a municipality would attempt to nullify a legal bond issue was through "corporate suicide," whereby a municipal government (typically sanctioned by the state legislature) would renounce its corporate charter, effectively becoming a new political unit, and theoretically then not responsible for the repayment of any bonds that had been issued. Memphis, Tennessee provides a ready example of this, where through legislative act the city of Memphis ceased to be and was reorganized (in name) as the Taxing District of Shelby County, whereupon the debts of Memphis became legal nullities. The

[9] Article 7, Section 1 of the 1846 Constitution of Iowa reads as follows: "The General Assembly shall not in any manner create any debt or debts, liability, or liabilities, which shall singly, or in the aggregate, with any previous debts or liabilities, exceed the sum of one hundred thousand dollars . . . unless the same shall be authorized by some law for some single object or work to be distinctly specified therein; which law shall provide ways and means, exclusive of loans, for the payment of the interest of such debt or liability as it falls due, and also to pay and discharge the principal of such debt or liability . . . but no such law shall take effect, until at a general election it shall have been submitted to the people, and have received a majority of all the votes cast for and against it at such election; and all money raised by authority of such law, shall be applied only to the specific object therein stated, or to the payment of the debt thereby created."

[10] The 1853 case, *Dubuque and Pacific Railroad Company v. Dubuque County,* 4 Greene 1 (1853), revolved around the constitutional validity of county aid supporting the construction of a railroad line. In a two-to-one decision, the Iowa Supreme Court held that these were constitutionally valid bonds. The court reaffirmed and broadened the scope of local aid a year later in *State v. Bissell,* 4 Greene 328 (1854).

[11] In *Stokes v. County of Scott,* 10 Iowa 166 (1859) the now elected Iowa high court held that municipal bonds were constitutionally invalid in certain, limited circumstances, while *State of Iowa, ex rel. The Burlington and Missouri River Railroad Company v. The County of Wapello,* 13 Iowa 388 (1862) led the state high court to ultimately invalidate all municipal bonds. The result ended with the US supreme court overruling the Iowa high court in *Gelpcke v. Dubuque*, 68 U.S. 175 (1863).

[12] In referencing the Iowa decision, Justice Noah Swayne of the US supreme court suggested that, "We shall never immolate truth, justice, and the law, because a State tribunal has erected the altar and decreed the sacrifice." (As quoted in Fairman 1971, p. 936). See Fairman (1971) and Heckman (1988) generally for a detailed overview of these issues.

[13] While it is hard to ascertain every one of these specific cases, A cursory Westlaw search by the author was conducted to determine the state of origin for at least some of these cases. Applying the search term "*Gelpcke*" – applied as it was the first case deciding a municipal bond issue by the US supreme court, and should thus be referenced by at least some future decisions for its precedent – between 1860 and 1900 netted 43 US supreme court cases. Of these, 35 dealt specifically with municipal bond issues. An individual search of each case found that 13 had originated from the state of Iowa, 7 from Illinois, 5 from Wisconsin, 2 from Indiana, 2 from Michigan, and 1 each from Tennessee, Nebraska, Kentucky, and Louisiana. Of those states, Louisiana was the only one that had an appointed judiciary at the time the case was decided. Though by no means conclusive, this finding is at least suggestive of how contemporaries may have viewed particular judiciaries and especially the method of selection.

Tennessee high court – also a popularly elected body – upheld this arrangement in 1877. However, in 1880 the US Supreme Court overturned this decision, holding that the Taxing District of Shelby County was liable for all debts issued by the city of Memphis.[14]

Many times, these outcomes received significant national media attention. For example, the Illinois Supreme Court held in 1873 that legislation regulating railroad rates was unconstitutional. This decision was followed by a successful push to vote the Chief Justice of the Illinois Supreme Court, C. B. Lawrence, out of office (Shugerman, 2012). That outcome drew intense national media scrutiny, with *The Nation* warning, "All investors at home or abroad will do well to keep out of Illinois till the State chooses to set up an independent judiciary" (As quoted in Shugerman, 2012, p. 146).

Additional creditor sentiments toward municipal defaults was noted in 1878 in the wake of a county default in the Midwest, "It seems to be the old story of communities promising largely to projected railways, and after the roads are built and their benefits secured for all time, taking advantage of the first technical flaw that is discovered by unscrupulous lawyers, repudiating their obligations and robbing those who purchased the securities in good faith of the money which built the roads." (Hillhouse, 1936, p. 157).

Because of these adverse rulings and decision reversals regarding municipal indebtedness, real tensions emerged between railroad operators, creditors, and local governments with many railroad operators charging those courts with "bossism" for conceding to popular will (Freyer, 1979). Overall then, significant litigation in state courts led to many bonds being held void, which appears to have been especially prevalent in states with popularly elected judiciaries. Given the above anecdotal evidence, the remainder of the paper provides an important test to determine how and even if relatively independent judiciaries can influence public sector outcomes, especially regarding public indebtedness and default.

4. Data and empirical specification

To evaluate the impact that JI may have on municipal default I employ a panel dataset covering the years 1830–1910. Default data was obtained from Hillhouse (1930) who compiled all known defaults that occurred over this period, all of which were gathered from first hand sources including various newspaper accounts, court records, and personal inquiries. While this is the most comprehensive source for municipal defaults that exists over this period, it does have some shortcomings. The first is that obviously, if a default was unreported, then it was not included. Second, Hillhouse (1930) does not differentiate between a missed or delayed interest payment and a principal payment.[15] These issues aside, this is still the most comprehensive dataset on municipal default available.

These data are aggregated to the state level and sorted by year, largely driven by the fact that very little municipal-level socioeconomic data are available over this period.[16] However, one benefit to this approach is the ability to evaluate the probability of a default event occurring given the relative JI that is present within a state. Table 2 presents a list of all reported municipal defaults broken down by state over the sample period.

As can be seen there does appear to be some general geographic patterns that emerge, with relatively fewer defaults occurring in Northeastern states and relatively more in Midwestern states. When compared to Table 1, this suggests some relationship between the judicial variables discussed and default.

To measure JI between states I include the various measures as discussed in Section 2. First, I include the method by which members of a state court of last resort are selected to the bench. Given the extensive literature regarding the relationship between elected and appointed state judiciaries, I posit that appointed courts will be relatively more independent and will thus be associated with a lower likelihood of municipal default. In order to operationalize these variables, I create a dummy variable represented by a "1" if a member of a state's Supreme Court is either legislatively or gubernatorially appointed and "0" otherwise.

The next two variables represent the length of tenure for members of a state supreme court. Here, I include a variable for the number of years that a judge sits per term.[17] Along with this measure of tenure I also create a separate dummy variable representing whether members of a state court were granted life tenures or served during "good behavior". As Klerman and Mahoney (2005) indicate, service during "good behavior" granted to English judges was associated with greater independence and abnormally high stock returns. Given this, I posit that life tenure or service during good behavior would increase JI and be associated with a lower likelihood of municipal default. Again, this variable is represented by a "1" if the provision existed and a "0" otherwise.

Additionally, I include a variable for the number of times that a state court's composition had been legislatively or constitutionally changed. This is meant to represent the *de-facto* JI that exists within a state. As the composition of the court is legislatively changed, this will change the relative influence that can be had over the court by other branches of government. Further, it may be the case that if these changes are made because of highly controversial decisions or to wrest independence from the court, then this should have a negative effect on JI overall and thus increase municipal default.

Finally, it does appear that collinearity may be an issue between some of these main independent variables of interest, which

[14] See *Meriwether v. Garrett,* 102 U.S. 472 (1880) for the holding and Hillhouse (1936) for discussion.

[15] This latter issue should not detract from the main premise of the current study, which is to say that at the margin the prevalence of municipal default should be greater where less JI exists. Whether the default event was a single missed interest payment, or a systematic and long-standing default should not matter.

[16] For robustness, I do include several municipal-level specifications with a subsample of municipalities to be discussed in greater detail below. Further, I only include states, meaning no territories are included in the sample.

[17] Several states over this period granted either life terms or terms based on "good behavior" to judges. To operationalize these and include them in the sample, I assume that the term length for either life tenure or "good behavior" is equivalent to the average tenure of a justice of the Supreme Court of the United States between 1789 and 1910, which was roughly 15 years as calculated by Calabresi and Lindgren (2005).

Table 2
Total defaults by state 1830–1910.

State	Defaults	State	Defaults	State	Defaults	State	Defaults	State	Defaults
Alabama	39	Indiana	26	Mississippi	10	Ohio	51	Vermont	1
Arkansas	6	Iowa	8	Missouri	79	Oklahoma	2	Virginia	6
California	28	Kansas	102	Montana	0	Oregon	1	Washington	16
Colorado	27	Kentucky	23	Nebraska	45	Pennsylvania	26	West Virginia	5
Connecticut	2	Louisiana	12	Nevada	1	Rhode Island	0	Wisconsin	13
Deleware	1	Maine	2	New Jersey	18	South Carolina	29	Wyoming	0
Florida	2	Maryland	0	New York	48	South Dakota	18		
Georgia	5	Massachusetts	1	North Carolina	16	Tennessee	23		
Idaho	3	Michigan	15	New Hampshire	0	Texas	61		
Illinois	107	Minnesota	16	North Dakota	4	Utah	3		

would affect the significance of the results if regressed together. Therefore, I also utilize each of these variables and create a JI index variable. This is done through principal component analysis (PCA), where the first two principals are drawn from each of the main independent variables of interest to derive the index.[18] This index variable is then normalized between a range of "0" and "10" with higher scores representing relatively more JI within a state.

Given the count nature of the data I employ a random-effects negative binomial model, which takes the following form :[19]

$$E(Default_{it}|\alpha_i, X_{it}) = \alpha_i e^{X_{it}'\beta} = \alpha_i \lambda_{it} \quad (1)$$

Where: $i = 1, 2\ 3, \ldots, 46$ and $t = 1830, 1831, \ldots, 1910$ and parameter estimates are obtained from

$$X_{it}' = \gamma_0 + \gamma_1 JI_{it} + \gamma_5 Z_{it} + u_i + \varepsilon_{it} \quad (2)$$

JI_{it} represents each of the main independent variables of interest (discussed above), while Z_{it} is a vector of socioeconomic control variables discussed below. $\frac{\partial E(Default_{it} \mid \alpha_i, X_{it})}{\partial X_{itj}}$ nets the marginal effects from the model.

Table 2 shows that many states had no or very few municipal defaults over the sample; this would suggest significant time invariance or near invariance in the dependent variable. However, these states provide highly important and valuable information regarding the overarching question at hand, making their inclusion vital to the analysis, though also making the application of fixed effects problematic. Though a shortcoming, there are a considerable number of controls included to minimize the adverse consequences from the exclusion of fixed effects. Regardless, several specifications which include state and US region fixed effects are also evaluated.

As mentioned, I include several socioeconomic and institutional control variables. First, I include a control for total population in each state taken from US Census data.[20] As population increases this would tend to be associated with a growing number of municipal governments in general, which would increase the likelihood of municipal default. While it would be preferable to have data on the exact number of local governments by state this is, unfortunately, not available. The US Census only began reporting and compiling data on the number of local governments per state beginning in 1890. Therefore, I use population as a proxy. Importantly, at least for the three years where population and local government data are available (1890, 1900, and 1910) the correlation is quite high at 0.82 in 1890, 0.78 in 1900, and 0.71 in 1910. These data are only available decennially and are thus linearly interpolated in this study to fill in the missing years.

I also control for the number of members sitting on a state's supreme court. There is evidence that as a court's size increases, overall quality of judicial decision-making decreases (Halberstam, 2016). This result is derived from research on group size generally, and especially as related to corporate boards of directors, with smaller boards associated with higher valuations. In the context of courts, Halberstram (2016) shows that as court size increases, this result in lower court reversals due to increased false positives, and is thus a reflection of lower court quality. Thus, I posit that a larger court will be associated with more defaults.

I also include controls for the percent of the population that lives in urban areas and debt to GSP.[21] Generally, as the urban population grows, this should increase the tax base available to a local government, which should have a negative effect on the likelihood of default. However, as urbanization increases it may also increase the demand for publicly provided services, which could act to strain local government budgets. Overall then the effect that this variable has should be ambiguous. Debt should proxy for the overall fiscal policy environment within a state. Here, larger debt burdens would tend to have a positive effect on the likelihood of defaulting. However, it may also be the case that as debt to GSP increases this could take greater fiscal pressures off local governments, as relatively more publicly provided services emerge at the state level. Thus, this variable should also have a potentially ambiguous effect.

I also incorporate two political control variables. The first is whether a state's governor is a member of the Democratic Party, while

[18] Inclusion of the first two principals captures just over 64% of the variance.

[19] This model is drawn from Blundell et al. (1995) and Cameron and Triverdi (2013) and is, for the sake of space, presented in much reduced form here.

[20] Data are freely available at www.census.gov.

[21] State income data were calculated by Easterlin (1960) for the years 1840, 1880, and 1900. These data are also linearly interpolated. Per capita debt was also evaluated with no substantive differences in the results. For the sake of space, these latter results are excluded from the paper.

Table 3
Summary statistics.

Variable	Observations	Mean	Std. dev.	Min	Max
Defaults	3888	0.235	0.878	0	19
ppointment (1 = Yes)	3888	0.178	0.383	0	1
Length of tenure	2873	8.630	3.466	1	21
Lifetime appointment (1 = Yes)	3888	0.147	0.354	0	1
Number of members on court of last resort	2873	4.976	2.554	3	16
Population (In 100,000 s)	2987	1,175,808	1,211,921	6077	9,113,614
Court composition change	2873	0.785	1.149	0	6
Municipal homerule (1 = Yes)	3888	0.026	0.160	0	1
Democrat governor (1 = Yes)	3888	0.347	0.476	0	1
Southern democrat governor (1 = Yes)	3888	0.163	0.369	0	1
House DW-NOMINATE score	2813	0.040	0.383	−0.957	1.00
Southern reconstruction government (1 = Yes)	3888	0.012	0.110	0	1
Civil war (1 = Yes)	3888	0.062	0.241	0	1
Debt to GSP	2024	30.19	39.88	0	273.97
% Urban population	3008	22.757	19.011	0	91
% Agricultural employment	2721	17.042	7.955	2.141	100
Recession (1 = Yes)	3888	0.519	0.500	0	1
Hard budget constraint (1 = Yes)	3888	0.041	0.199	0	1
Public debt limit (1 = Yes)	3888	0.023	0.149	0	1
Free banking law (1 = Yes)	3888	0.281	0.449	0	1
Land valuation (In 100 milions)	2862	10.56	16.13	0.00028	131.14

the second is whether a Democratic governor is located within a former Confederate state. The Democratic Party tended to be relatively more fiscally conservative through this period and thus may indicate that overall state and local fiscal policy is relatively more conservative in general, which should have a negative effect on the likelihood of default. However, Southern states, especially through Reconstruction experienced a greater need for rebuilding of public infrastructure, with these expenditures tied to the political climate and party in power. Thus, this second variable may have a relatively more ambiguous effect. Both variables are represented by a “1” if the governor is a member of the Democratic party and “0” otherwise.

There is also a proxy for economic activity and growth within a state included in the analysis, which is the percentage of the population employed in agricultural production.[22] To control for taxable wealth, I include the total land valuation by state, as compiled by the US Census.[23] Here, wealthier states should have a greater capacity to carry larger debt loads and also ultimately repay them, thus wealthier states should see fewer defaults. I also include three variables for the overall economic and political environment that existed at various times within the U.S. These include dummy variables for the Civil War, if a Southern state was under the control of a federally imposed Reconstruction government, and if the U.S. economy was suffering from a recession as defined by the National Bureau of Economic Research.[24] Generally, these three variables would be expected to be positively related to municipal default. However, as Hillhouse (1936) notes municipal default did not typically revolve around national recessions. Further, private capital did dry up during the Civil War and Reconstruction, at least for municipal purposes. Overall, the effect that these variables have may be somewhat ambiguous.

There are also several institutional variables included to control for institutional quality, which can have a profound effect on municipal default. The first is whether or not home rule authority existed, which typically granted local governments much more autonomy over their day-to-day operations and allows for greater flexibility and scope.[25] Thus, to the extent that this reduced additional checks on time-inconsistent policy and overborrowing, home rule authority should increase the likelihood of default. This variable was compiled from Vanlandingham (1968). Further, as noted numerous states imposed various fiscal constraints on municipal governments through this period meant to stem the use of public aid for private purposes and to reduce the likelihood of public corruption. Therefore, I include two additional dummy variables which represent an explicit and binding constitutional debt limit imposed on local governments within a given state and also whether or not a state government was explicitly prohibited from

[22] Given that population data is interpolated between decennial Census observations, one observation for Nevada (1864) would suggest that the percentage of agricultural employment is greater than 100%. Therefore, I round this observation down to 100%. While still artificially high, results are robust to the exclusion of the observation and therefore it is still included in this analysis. Further, agricultural employment data is only available beginning in 1840. Therefore, for those specifications where this variable is included, the analysis begins in 1840. Again, given that this information is only available from the US Census decennially, these variables are also interpolated.

[23] The US Census calculated land valuations decennially between 1850 and 1900. Again, I interpolate these values and extrapolated back to 1840.

[24] Business cycle data are freely available at http://www.nber.org/cycles.html. These data begin in 1857. For data prior to that I use recession data calculated by Thorp (1926). Given that I have annual data, I consider a year to be in recession if the economy was in a recession for 6 or more months in a year.

[25] A major doctrinal debate emerged through the latter half of the century regarding the sovereignty and rights of municipal governments. One theory (Dillon's Rule) expressed the opinion that the origin of a municipal government is from its parent state government and legislature. Thus, all powers and rights afforded to a municipal government can only be derived from that legislative authority. A counter doctrine (The Cooley Doctrine) argued that all power is derived from the people and as such, locally organized governments are a matter of absolute right and thus cannot be abrogated by a state. Courts generally adopted Dillon's Rule over time, which facilitated the emergence of home rule legislation in many states. See Gere (1982) and Liu et al. (2013) for a broader discussion of the two doctrines in historical context.

Table 4
Negative binomial regression results.

Dependent variable = number of municipal defaults by state						
Variable	(1)	(2)	(3)	(4)	(5)	(6)
Judicial independence index	−0.0579***	−0.0480***	−0.0383***	−0.0371**	−0.0350***	−0.0341
	(0.0165)	(0.0174)	(0.0129)	(0.0147)	(0.00808)	(0.0526)
Population (In 100,000 s)	0.0120***	0.00903***	0.0105*	0.0105*	0.00898***	0.0370
	(0.00396)	(0.00303)	(0.00577)	(0.00591)	(0.00216)	(0.0280)
Number of members of court of last resort		0.0109	−0.000286	−0.00401	0.0126	−0.0616
		(0.0136)	(0.0111)	(0.0121)	(0.0171)	(0.0794)
Municipal homerule (1 = Yes)		0.498*	0.274**	0.334*	0.216**	0.482
		(0.301)	(0.128)	(0.203)	(0.0892)	(0.588)
Democrat Governor (1 = Yes)		−0.00869	−0.0153	−0.0117	−0.0155	−0.00338
		(0.0359)	(0.0270)	(0.0256)	(0.0405)	(0.0941)
Southern democrat governor (1 = Yes)		0.0764	0.101	0.100	0.183**	0.282
		(0.0688)	(0.0778)	(0.0782)	(0.0923)	(0.246)
House DW-NOMINATE Score		0.142**	0.0834**	0.0887*	0.136***	0.228
		(0.0579)	(0.0424)	(0.0489)	(0.0434)	(0.177)
Southern reconstruction government (1 = Yes)		−0.160	−0.182***	−0.189***	−0.171***	−0.549
		(0.306)	(0.0430)	(0.0573)	(0.0418)	(0.356)
Civil war (1 = Yes)		−0.0732	−0.0346	−0.0394	−0.0512	−0.105
		(0.0452)	(0.0425)	(0.0381)	(0.336)	(0.138)
Debt to gross state product			0.000427	0.000392	0.000153	0.00262
			(0.000464)	(0.000464)	(0.000242)	(0.00340)
% Urban population			0.00326	0.00342	0.00182	0.0253
			(0.00211)	(0.00229)	(0.00146)	(0.0232)
% Agricultural employment			0.00300	0.00328	0.00339*	0.00238
			(0.00449)	(0.00446)	(0.00186)	(0.0195)
Recession (1 = Yes)			0.00348	0.00285	0.00207	0.0118
			(0.0118)	(0.0125)	(0.00929)	(0.0333)
Land valuation (In 100 milions)			−0.00200	−0.00225	−0.000428	−0.0186
			(0.00425)	(0.00448)	(0.000988)	(0.0172)
Hard budget constraint (1 = Yes)				−0.0347	−0.0264	−0.101
				(0.0282)	(0.0307)	(1.070)
Public debt limit (1 = Yes)				0.0221	0.0174	0.167
				(0.0502)	(0.105)	(0.326)
Free banking law (1 = Yes)				0.0570	−0.0219	0.465
				(0.0477)	(0.0364)	(0.466)
Random effects	Y	Y	Y	Y	N	N
Regional fixed effects	N	N	N	N	Y	N
State fixed effects	N	N	N	N	N	Y
Log-likelihood	−1580.01	−1539.41	−1041.87	−1039.30	−1030.44	−891.02
Observations	2836	2755	1897	1897	1824	1619

Note: Coefficients listed are marginal effects. Bootstrap standard errors clustered by state in parentheses.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

assuming any outstanding debt obligations of a municipal government – effectively a constitutional hard budget constraint imposed on local governments.[26]

Through the municipal debt crisis of the 1870 s, several states including Illinois and New York, considered legislation that would have had those state governments assume at least some portion of outstanding municipal debt. This led a number of states to constitutionally prohibit the assumption of any municipal debt by the parent state.[27] These two variables are lagged by the previous constitution for each state to mitigate reverse causality. Finally, as another proxy for public corruption, I include a dummy variable for whether or not free banking legislation existed in a state, as this has been shown to be directly tied with attempts to curb public corruption (Wallis, 2005). Summary statistics for all included variables can be found in Table 3.

One final issue associated with this analysis is the potentially endogenous nature of the main independent variables of interest. Unfortunately, given the persistent data limitations that exist there are no particularly valid instruments that could be employed. Here, it may be the case that some omitted variable (namely voter preferences) could be driving both decisions to default and decisions to transform the judiciary.[28] Therefore, I include a variable to proxy specifically for voter preferences, which should reduce any correlation between JI and some unobserved voter preference. To do this, I include the averaged DW-NOMINATE score for each

[26] See Dove (2014; 2016) for a historical discussion of these municipal fiscal constraints and Goodspeed (2002), Oates (2005), and Qian and Roland (1998) for overviews regarding the effect of hard budget constraints within a system of federalism.

[27] A typical example of these clauses can be seen in Idaho's constitution of 1890 which stipulates, “The state shall never assume the debts of any county, town, or other municipal corporation, unless such debts shall have been created to repel invasion, suppress insurrection or defend the state in war.” These amendments were compiled from the NBER/University of Maryland State Constitution Project where available and hand collected from original constitutions otherwise.

[28] See Poterba and Rueben (1999) and Shadbegian (1998) for a discussion of this issue in the context of fiscal rules.

Table 5
Negative binomial regression results.

Dependent variable = number of municipal defaults by state						
Variable	(1)	(2)	(3)	(4)	(5)	(6)
Appoint (1 = Yes)	−0.241***	−0.230***	−0.174**	−0.180**	−0.126***	−0.256
	(0.0807)	(0.0772)	(0.0719)	(0.0757)	(0.0394)	(0.165)
Population (In 100,000 s)	0.0119**	0.00830**	0.0136	0.0140	0.00952***	0.0264
	(0.00578)	(0.00355)	(0.00996)	(0.0111)	(0.00319)	(0.0214)
Number of members of court of last resort		0.00595	−0.00464	−0.0113	0.0120	−0.0474
		(0.0138)	(0.0184)	(0.0211)	(0.0230)	(0.0536)
Municipal homerule (1 = Yes)		0.468*	0.241	0.310	0.160***	0.311
		(0.284)	(0.169)	(0.235)	(0.0493)	(0.382)
Democrat governor (1 = Yes)		−0.0173	−0.0240	−0.0189	−0.0184	−0.00656
		(0.0398)	(0.0376)	(0.0375)	(0.0442)	(0.0701)
Southern democrat governor (1 = Yes)		0.123	0.154	0.162	0.196*	0.269
		(0.0990)	(0.124)	(0.134)	(0.0999)	(0.204)
House DW-NOMINATE score		0.179**	0.132*	0.143*	0.153***	0.185
		(0.0701)	(0.0689)	(0.0830)	(0.0555)	(0.121)
Southern reconstruction government (1 = Yes)		−0.180	−0.248***	−0.260**	−0.187***	−0.509*
		(0.295)	(0.0887)	(0.115)	(0.0405)	(0.287)
Civil War (1 = Yes)		−0.0812	−0.0493	−0.0578	−0.0563	−0.0814
		(0.0549)	(0.0621)	(0.0595)	(0.343)	(0.110)
Per capita debt			0.000880	0.000831	0.000188	0.00219
			(0.000709)	(0.000803)	(0.000285)	(0.00246)
% Urban population			0.00332	0.00415	1.02e-05	0.0191
			(0.00427)	(0.00531)	(0.00267)	(0.0153)
% Agricultural employment			0.00114	0.00204	0.00245	0.00324
			(0.00783)	(0.00810)	(0.00308)	(0.0143)
Recession (1 = Yes)			0.00590	0.00485	0.00265	0.00725
			(0.0170)	(0.0183)	(0.00927)	(0.0245)
Land valuation (In 100 milions)			−0.00319	−0.00375	−0.000408	−0.0136
			(0.00662)	(0.00733)	(0.00113)	(0.0129)
Hard budget constraint (1 = Yes)				−0.0664	−0.0545***	−0.0926
				(0.0521)	(0.0105)	(0.786)
Public debt limit (1 = Yes)				0.0358	0.0424	0.121
				(0.0695)	(0.0819)	(0.676)
Free banking law (1 = Yes)				0.0989	−0.0234	0.336
				(0.0810)	(0.0399)	(0.311)
Random effects	Y	Y	Y	Y	N	N
Regional fixed effects	N	N	N	N	Y	N
State fixed effects	N	N	N	N	N	Y
Log-likelihood	−1604.64	−1535.25	−1044.09	−1040.80	−1039.67	−886.58
Observations	2987	2755	1897	1897	1824	1619

Note: Coefficients listed are marginal effects. Bootstrap standard errors clustered by state in parentheses.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

state's congressional delegation to the U.S. House of Representatives. These scores, first developed by Poole and Rosenthal (1985), are based on the roll-call voting records of each member of congress with values between −1 (relatively liberal) and 1 (relatively conservative). Further, it is important to note that while defaults occur at the municipal level, changes to the judiciary occur at the state level, making these latter changes, at least to a degree, exogenous. This fact should mitigate this concern at least to some degree.

Second, it is possible that as more defaults occur it may drive changes within a state's judiciary. Importantly, this may not be a particularly serious concern. As Hanssen (2004) notes, at least for post-war former Confederate states, changes within the judiciary corresponded to major constitutional revisions in those states, with evidence suggesting that these changes may have been pursued to uphold white supremacy. Also, while Shugerman (2012) indicates that changes to state judiciaries occurred in response to state-level defaults during the 1840 s, there is no indication that any changes corresponded to the fiscal situations of municipal governments.

5. Results and interpretation

With the model developed in Section 4, I include six separate specifications. The first specification (which corresponds to column 1 of each of the following Tables 4–9), excludes all control variables except population. The second specification (corresponding to column 2 of each table), includes population as well as the institutional and voter preference variables discussed above. These are specifically the size of the Supreme Court, whether local governments had home rule authority, whether a state's governor was a Democrat and a dummy variable for Southern Democrat. I also include the averaged DW-NOMINATE score for a state's congressional delegation, whether a Reconstruction government was overseeing a Southern state, and a dummy variable to control for the US Civil War.

Table 6
Negative binomial regression results.

Dependent variable = number of municipal defaults by state						
Variable	(1)	(2)	(3)	(4)	(5)	(6)
Length of tenure	−0.0249**	−0.0198*	−0.0156*	−0.0144	−0.0123**	0.00595
	(0.0111)	(0.0111)	(0.00840)	(0.0106)	(0.00554)	(0.0326)
Population (In 100,000 s)	0.0151***	0.0109***	0.0149	0.0164	0.0110***	0.0435
	(0.00527)	(0.00386)	(0.00960)	(0.0117)	(0.00284)	(0.0327)
Number of members of court of last resort		0.00980	−0.00383	−0.0124	0.0126	−0.0826
		(0.0147)	(0.0161)	(0.0217)	(0.0128)	(0.0893)
Municipal homerule (1 = Yes)		0.618	0.369*	0.472	0.285***	0.405
		(0.383)	(0.213)	(0.327)	(0.105)	(0.546)
Democrat governor (1 = Yes)		−0.0100	−0.0195	−0.0151	−0.0142	−0.00143
		(0.0444)	(0.0359)	(0.0381)	(0.0430)	(0.108)
Southern democrat governor (1 = Yes)		0.0595	0.108	0.119	0.179**	0.304
		(0.0753)	(0.0971)	(0.115)	(0.0895)	(0.265)
House DW-NOMINATE score		0.163**	0.108**	0.132*	0.149***	0.278
		(0.0731)	(0.0525)	(0.0719)	(0.0492)	(0.197)
Southern reconstruction government (1 = Yes)		−0.190	−0.247***	−0.277**	−0.195***	−0.627*
		(0.350)	(0.0822)	(0.127)	(0.0381)	(0.374)
Civil war (1 = Yes)		−0.0806	−0.0439	−0.0566	−0.0534	−0.117
		(0.0529)	(0.0580)	(0.0616)	(0.404)	(0.154)
Per capita debt			0.000685	0.000755	0.000175	0.00331
			(0.000711)	(0.000860)	(0.000190)	(0.00361)
% Urban population			0.00348	0.00473	0.000620	0.0293
			(0.00426)	(0.00591)	(0.00243)	(0.0241)
% Agricultural employment			0.000327	0.000359	0.00144	−0.00525
			(0.00751)	(0.00861)	(0.00370)	(0.0222)
Recession (1 = Yes)			0.00594	0.00575	0.00240	0.0168
			(0.0163)	(0.0196)	(0.0102)	(0.0382)
Land valuation (In 100 milions)			−0.00320	−0.00441	−0.000626	−0.0238
			(0.00675)	(0.00827)	(0.000973)	(0.0207)
Hard budget constraint (1 = Yes)				−0.0391	−0.0194	−0.112
				(0.0594)	(0.0450)	(0.929)
Public debt limit (1 = Yes)				0.0517	0.0445	0.201
				(0.0983)	(0.157)	(0.487)
Free banking law (1 = Yes)				0.109	−0.0250	0.552
				(0.103)	(0.0430)	(0.521)
Random effects	Y	Y	Y	Y	N	N
Regional fixed effects	N	N	N	N	Y	N
State fixed effects	N	N	N	N	N	Y
Log-likelihood	−1591.72	−1550.45	−1051.22	−1048.25	−1045.45	−891.68
Observations	2836	2755	1897	1897	1824	1619

Note: Coefficients listed are marginal effects. Bootstrap standard errors clustered by state in parentheses.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

The third specification (corresponding to column 3 of each table), builds on the above and includes debt to GSP, the percentage of the population living in an urban area, the percentage of the population employed in agriculture, and if the US economy was experiencing a recession. The fourth specification (corresponding to column 4), adds the variables for a state free banking law, restrictions on municipal debt, and a municipal hard budget constraint. The final two specifications (corresponding to columns 5 and 6 of each table), include regional fixed effects as defined by the US Census Bureau and state fixed effects respectively along with all control variables.

As a first approximation of JI's impact on municipal default, I present the PCA results in Table 4.

The results (which are the reported marginal effects for each variable) indicate that in every specification greater JI is negatively associated with municipal default, with five of six specifications highly statistically significant. Including state fixed effects nets an insignificant result in column 6, but again this specification necessarily excludes those states that did not have any observed defaults over the sample. It is this loss of vital information that is likely driving the insignificant result. Given this, while somewhat less precise, regional fixed effects provide a more meaningful result. In other words, a relatively more independent state Supreme Court is associated with a decreased likelihood of municipal default. Unfortunately, one drawback of PCA is that it is not possible to interpret the coefficients, however the signs and statistical significance can still be used to indicate the overall effect.

The following tables now consider each of the main independent variables of interest separately, with each following the layout of Table 4. First, I evaluate the method of selecting an individual to the bench in Table 5.

Here again, every specification nets negative and statistically significant results if a member of a state supreme court is appointed rather than popularly elected.[29] The coefficients suggest that appointed state courts are associated with a decreased probability of a

[29] Inclusion of state fixed effects led to insignificance, but is again likely due to the reason discussed above.

Table 7
Negative binomial regression results.

Dependent variable = number of municipal defaults by state						
Variable	(1)	(2)	(3)	(4)	(5)	(6)
Lifetime appointment (1 = Yes)	−0.296**	−0.259**	−0.193**	−0.198**	−0.176***	−0.327
	(0.122)	(0.122)	(0.0833)	(0.0851)	(0.0439)	(0.522)
Population (In 100,000 s)	0.00851	0.00675	0.00979	0.00984	0.00786***	0.0326
	(0.00831)	(0.00588)	(0.0134)	(0.0129)	(0.00215)	(0.0369)
Number of members of court of last resort		0.00875	−0.00201	−0.00642	0.00991	−0.0529
		(0.0116)	(0.0121)	(0.0147)	(0.0154)	(0.0806)
Municipal homerule (1 = Yes)		0.343	0.138	0.183	0.116***	0.338
		(0.310)	(0.192)	(0.253)	(0.0291)	(0.456)
Democrat governor (1 = Yes)		−0.00877	−0.0153	−0.0111	−0.0126	−0.00516
		(0.0327)	(0.0316)	(0.0281)	(0.0347)	(0.0859)
Southern democrat governor (1 = Yes)		0.0586	0.0907	0.0906	0.160**	0.261
		(0.0671)	(0.106)	(0.105)	(0.0708)	(0.275)
House DW-NOMINATE score		0.138	0.0930	0.0980	0.131***	0.222
		(0.114)	(0.0990)	(0.0987)	(0.0388)	(0.214)
Southern reconstruction government (1 = Yes)		−0.148	−0.181	−0.184	−0.150***	−0.513
		(0.282)	(0.195)	(0.184)	(0.0252)	(0.528)
Civil War (1 = Yes)		−0.0618	−0.0278	−0.0353	−0.0407	−0.0913
		(0.0548)	(0.0541)	(0.0541)	(0.307)	(0.157)
Per capita debt			0.000382	0.000315	−7.06e-05	0.00210
			(0.000687)	(0.000605)	(0.000235)	(0.00344)
% Urban population			0.00388	0.00422	0.00209*	0.0238
			(0.00489)	(0.00484)	(0.00125)	(0.0279)
% Agricultural employment			0.00216	0.00288	0.00418***	0.00585
			(0.00549)	(0.00545)	(0.00122)	(0.0162)
Recession (1 = Yes)			0.00524	0.00439	0.00267	0.0114
			(0.0132)	(0.0135)	(0.00768)	(0.0325)
Land valuation (In 100 milions)			−0.00300	−0.00329	−0.00125	−0.0173
			(0.00598)	(0.00621)	(0.000823)	(0.0210)
Hard budget constraint (1 = Yes)				−0.0513	−0.0477***	−0.120
				(0.0585)	(0.00867)	(0.739)
Public debt limit (1 = Yes)				0.0251	0.0288	0.153
				(0.0552)	(0.0747)	(0.321)
Free banking law (1 = Yes)				0.0687	−0.0138	0.424
				(0.0851)	(0.0346)	(0.541)
Random effects	Y	Y	Y	Y	N	N
Regional fixed effects	N	N	N	N	Y	N
State fixed effects	N	N	N	N	N	Y
Log-likelihood	−1594.44	−1532.09	−1041.58	−1037.36	−1031.09	−888.39
Observations	2987	2755	1897	1897	1824	1619

Note: Coefficients listed are marginal effects. Bootstrap standard errors clustered by state in parentheses.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

given municipality defaulting generally between 12.6% and 24%. Thus, along with being statistically significant these findings are also economically significant. Overall then, this corroborates what has been found in much of the literature regarding appointment versus popular elections of judicial actors, with several studies finding both theoretical and empirical support that appointment does tend to increase independence.

Next the impact that tenure has on municipal default is presented in Tables 6 and 7, with Table 6 reporting the actual length of tenure and Table 7 listing the results for whether an individual was granted tenure for life or “good behavior”.

The evidence indicates that as the tenure of a given justice increases, this is negatively correlated with municipal default. However, the results are only significant in four of six specifications, though the coefficients suggest that for every one-year increase in a justice's term this is associated with a decrease in the likelihood of default anywhere between 1.2% and 2.5% depending on the specification. Results in Table 7 are much more robust. Specifically, there is a consistently negative relationship, again with every coefficient economically significant and only the final specification with state fixed effects again statistically insignificant. Here, lifetime appointment is associated with a decreased likelihood of default anywhere between 17.6% and 30% generally. Thus, along with typically being considered a major factor in analyzing judicial independence, the existence of lifetime appointment or service under “good behavior” are consistently associated with a significantly lower likelihood of municipal default.

Finally, Table 8 includes the number of times that a state supreme court's composition was statutorily or constitutionally changed.

Again, this variable is meant to proxy for the *de-facto* JI that exists within a state court. The coefficients in five specifications are positive. However, none of the results are statistically significant. Nevertheless, the positive coefficient does at least suggest that tampering with the composition of a court over time may weaken the independence of that body resulting in it acting more deferentially and sympathetically toward municipal defaults.

Table 8
Negative binomial regression results.

Dependent variable = number of municipal defaults by state						
Variable	(1)	(2)	(3)	(4)	(5)	(6)
Court composition change	0.296	0.185	0.0779	0.0748	−0.0219	0.298
	(0.214)	(0.120)	(0.0910)	(0.102)	(0.0187)	(0.395)
Population (In 100,000 s)	0.0181**	0.0114**	0.0255	0.0272	0.0110***	0.0415
	(0.00887)	(0.00547)	(0.0194)	(0.0217)	(0.00402)	(0.0390)
Number of members of court of last resort		0.000499	−0.0187	−0.0360	0.0135	−0.104
		(0.0195)	(0.0342)	(0.0441)	(0.0260)	(0.183)
Municipal homerule (1 = Yes)		0.644*	0.274	0.412	0.227***	0.286
		(0.379)	(0.267)	(0.398)	(0.0838)	(0.725)
Democrat Governor (1 = Yes)		−0.0346	−0.0330	−0.0228	−0.0177	−0.00954
		(0.0740)	(0.0624)	(0.0660)	(0.0494)	(0.120)
Southern democrat governor (1 = Yes)		0.0565	0.183	0.192	0.198**	0.263
		(0.121)	(0.204)	(0.224)	(0.0939)	(0.260)
House DW-NOMINATE score		0.279*	0.210	0.244	0.168**	0.353
		(0.152)	(0.129)	(0.164)	(0.0679)	(0.274)
Southern reconstruction government (1 = Yes)		−0.299	−0.438*	−0.467*	−0.209***	−0.729*
		(0.436)	(0.227)	(0.283)	(0.0434)	(0.384)
Civil War (1 = Yes)		−0.105	−0.0639	−0.0868	−0.0643	−0.108
		(0.0868)	(0.110)	(0.110)	(0.384)	(0.191)
Per capita debt			0.00163	0.00162	0.000109	0.00317
			(0.00137)	(0.00154)	(0.000351)	(0.00306)
% Urban population			0.00971	0.0119	−0.000222	0.0383
			(0.0114)	(0.0140)	(0.00309)	(0.0286)
% Agricultural employment			−0.00359	−0.00312	−0.00172	−0.000573
			(0.0164)	(0.0178)	(0.00491)	(0.0247)
Recession (1 = Yes)			0.0144	0.0126	0.00555	0.0181
			(0.0307)	(0.0350)	(0.0112)	(0.0365)
Land valuation (In 100 milions)			−0.00961	−0.0115	−0.000600	−0.0292
			(0.0135)	(0.0153)	(0.00123)	(0.0260)
Hard budget constraint (1 = Yes)				−0.0927	−0.0628***	−0.124
				(0.129)	(0.0179)	(1.203)
Public debt limit (1 = Yes)				0.111	0.0401	0.379
				(0.183)	(0.130)	(1.260)
Free Banking Law (1 = Yes)				0.228	0.00547	0.578
				(0.199)	(0.0389)	(0.386)
Random Effects	Y	Y	Y	Y	N	N
Regional Fixed effects	N	N	N	N	Y	N
State fixed effects	N	N	N	N	N	Y
Log-likelihood	−1584.81	−1546.93	−1053.23	−1049.27	−1052.46	−885.87
observations	2836	2755	1897	1897	1824	1619

Note: Coefficients listed are marginal effects. Bootstrap standard errors clustered by state in parentheses.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

As noted, when judges were appointed it was typically through either legislative or gubernatorial appointment. However, the analysis thus far has lumped these two methods together into one dummy variable representing both gubernatorial and legislative appointment. For robustness, this variable is now disaggregated into dummy variables representing the two types of selection, whether gubernatorial or legislative, with both regressed together. These results, which are relative to elected judiciaries, are reported in Table 9.

Relative to elected judiciaries, both legislative and gubernatorial appointment are associated with a lower likelihood of default, with every specification negative and statistically significant, again except where state fixed effects are included.[30] Here, legislative appointment is generally correlated with a 9% to 19% lower likelihood of default relative to elected judiciaries. Further, gubernatorial appointment suggests a reduced likelihood of default relative to elected judiciaries generally between 14% and 29%. Finally, the point estimates indicated that gubernatorial appointment nets a larger coefficient than does legislative appointment, with a Wald test indicating that gubernatorial appointment is statistically different from legislative appointment. These findings indicate that both legislative and gubernatorial appointments are associated with lower rates of default relative to elected judiciaries.

As a final specification, I also evaluate the impact that each of the main independent variables of interest has on a subsample of municipal bond yields. Here I employ bond price data from the *Commercial and Financial Chronicle*, which was a major weekly financial publication through the post-bellum period as compiled by Dove (2014).[31] These data are a subsample of bond prices from the *Chronicle* for the years 1875, 1880, 1885, and 1890, with average yields taken over each year for the months of April and

[30] Here too, gubernatorial appointment is time invariant, and thus drops from the model in column 6.
[31] Importantly, the par value on all bonds was $100, making yields easily convertible and comparable.

Table 9
Negative binomial regression results – legislative and gubernatorial appointment.

Dependent variable = number of municipal defaults by state						
	(1)	(2)	(3)	(4)	(5)	(6)
Legislative appointment (1 = Yes)	−0.187***	−0.149***	−0.105**	−0.107**	−0.0873***	−0.256
	(0.0628)	(0.0548)	(0.0430)	(0.0468)	(0.0271)	(0.165)
Gubernatorial appointment (1 = Yes)	−0.288***	−0.218***	−0.163**	−0.170**	−0.140***	
	(0.0878)	(0.0680)	(0.0639)	(0.0825)	(0.0314)	
Population (In 100,000 s)	0.00801**	0.00574**	0.00867	0.00880	0.00692***	0.0264
	(0.00325)	(0.00237)	(0.00688)	(0.00752)	(0.00226)	(0.0214)
Number of members on court of last resort		0.00410	−0.00299	−0.00706	0.00876	−0.0474
		(0.00967)	(0.0122)	(0.0137)	(0.0169)	(0.0536)
Municipal homerule (1 = Yes)		0.322*	0.155*	0.195	0.117***	0.311
		(0.193)	(0.0888)	(0.140)	(0.0356)	(0.382)
Democrat governor (1 = Yes)		−0.0112	−0.0151	−0.0116	−0.0128	−0.00656
		(0.0265)	(0.0262)	(0.0240)	(0.0325)	(0.0701)
Southern democrat governor (1 = Yes)		0.0821	0.0972	0.100	0.140*	0.269
		(0.0701)	(0.0848)	(0.0883)	(0.0725)	(0.204)
House DW-NOMINATE score		0.124**	0.0847*	0.0902*	0.113***	0.185
		(0.0489)	(0.0436)	(0.0533)	(0.0415)	(0.121)
Southern reconstruction government (1 = Yes)		−0.125	−0.162**	−0.169**	−0.137***	−0.509*
		(0.216)	(0.0630)	(0.0808)	(0.0314)	(0.287)
Civil war (1 = Yes)		−0.0557	−0.0314	−0.0363	−0.0410	−0.0814
		(0.0394)	(0.0442)	(0.0375)	(0.248)	(0.110)
Per capita debt			0.000558	0.000519	0.000128	0.00219
			(0.000496)	(0.000517)	(0.000213)	(0.00246)
% Urban population			0.00208	0.00256	−2.43e-05	0.0191
			(0.00253)	(0.00301)	(0.00197)	(0.0153)
% Agricultural employment			0.000595	0.00115	0.00159	0.00324
			(0.00512)	(0.00474)	(0.00235)	(0.0143)
Recession (1 = Yes)			0.00381	0.00310	0.00200	0.00725
			(0.0127)	(0.0130)	(0.00685)	(0.0245)
Land valuation (In 100 milions)			−0.00201	−0.00233	−0.000264	−0.0136
			(0.00419)	(0.00465)	(0.000823)	(0.0129)
Hard budget constraint (1 = Yes)				−0.0416	−0.0401***	−0.0926
				(0.0298)	(0.00750)	(0.786)
Public debt limit (1 = Yes)				0.0226	0.0314	0.121
				(0.0415)	(0.0593)	(0.676)
Free banking law (1 = Yes)				0.0615	−0.0173	0.336
				(0.0523)	(0.0295)	(0.311)
Random effects	Y	Y	Y	Y	N	N
Regional Fixed effects	N	N	N	N	Y	N
State fixed effects	N	N	N	N	N	Y
Wald test statistic	153.83	116.81	90.52	224.37	143.28	
Log-likelihood	−1575.49	−1534.20	−1043.60	−1040.36	−1038.91	−886.585
Observations	2836	2755	1897	1897	1824	1619

Note: Coefficients listed are marginal effects. Bootstrap standard errors clustered by state in parentheses.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

September.[32]

Although by no means all encompassing, this sample does represent 71 unique municipal governments across 26 different states. Of those 71 municipal governments included, 11 had defaulted at some point. Given this, the subsample appears to be fairly representative of the broader analysis. Along with the main independent variables of interest, I also include as many of the socio-economic and institutional controls discussed previously, but now disaggregated to the municipal level.

To that, I have included controls for the population of each city, the size of a state supreme court, whether or not a particular municipality had been granted home rule authority, whether a governor was a member of the Democratic party, whether a governor was a Southern Democrat, the DW-NOMINATE score for the delegation to the US House of Representatives representing the particular municipality, constitutional hard budget constraints, and limitations on public indebtedness, and also assessed property values compiled from both the US Census and the *Commercial and Financial Chronicle*. Some differences from the initial analysis is the inclusion of a dummy variable representing if a particular city had defaulted, a dummy variable for the month of April, and also per capita municipal debt, which was collected from the *Commercial and Financial Chronicle*. Finally, these observations are pooled and dummy variables for each year are included. The results are reported in Table 10.

[32] These months were chosen for a couple of reasons. First, these two months are exactly six months apart. Second, there appeared to be much heavier trading volume on these secondary markets during the Spring and Fall in general. Thus, it was possible to compile a fairly large sample from these two months.

Table 10
Municipal-level pooled OLS results.

Dependent variable = bond yield by city 1875, 1880, 1885, 1890					
	(1)	(2)	(3)	(4)	(5)
Judicial independence index	−0.121***				
	(0.0241)				
Appoint (1 = Yes)		−1.185**			
		(0.530)			
Length of tenure			−0.140***		
			(0.0196)		
Lifetime appointment (1 = Yes)				−0.383*	
				(0.201)	
Court composition change					−0.154***
					(0.0344)
Default (1 = Yes)	3.857***	3.773***	4.143***	3.846***	3.850***
	(0.392)	(0.385)	(0.396)	(0.403)	(0.393)
Population (In 100,000 s)	0.264***	0.228***	0.273***	0.247***	0.275***
	(0.0567)	(0.0550)	(0.0555)	(0.0567)	(0.0573)
Number of members on court of last resort	0.0341	0.0239	0.0551**	0.0292	0.0264
	(0.0265)	(0.0265)	(0.0259)	(0.0263)	(0.0267)
Municipal homerule (1 = Yes)	1.275***	0.817**	1.421***	1.173***	1.211***
	(0.336)	(0.328)	(0.323)	(0.345)	(0.344)
Democrat governor (1 = Yes)	−0.455**	−0.188	−0.626***	−0.240	−0.336*
	(0.198)	(0.167)	(0.198)	(0.203)	(0.179)
Southern democrat governor (1 = Yes)	1.939***	2.585***	1.899***	2.005***	1.974***
	(0.535)	(0.716)	(0.530)	(0.528)	(0.534)
House DW-NOMINATE score	−1.016***	−1.166***	−0.859***	−1.128***	−1.107***
	(0.245)	(0.251)	(0.233)	(0.256)	(0.246)
Hard budget constraint (1 = Yes)	−1.427***	−1.027***	−1.125***	−1.380***	−1.448***
	(0.344)	(0.311)	(0.340)	(0.344)	(0.349)
Public debt limit (1 = Yes)	−0.821***	−0.563***	−0.700***	−0.635***	−0.805***
	(0.202)	(0.180)	(0.186)	(0.206)	(0.198)
Per capita debt	0.0117***	0.0137***	0.00928***	0.0129***	0.0126***
	(0.00239)	(0.00241)	(0.00243)	(0.00242)	(0.00241)
Land valuation (In 100 milions)	−0.333***	−0.320***	−0.292***	−0.337***	−0.354***
	(0.0513)	(0.0504)	(0.0482)	(0.0520)	(0.0523)
Free banking (1 = Yes)	1.123***	0.837***	0.937***	1.065***	1.158***
	(0.196)	(0.186)	(0.196)	(0.197)	(0.198)
April yield (1 = Yes)	0.00278	0.00749	0.0128	0.00549	0.00153
	(0.148)	(0.149)	(0.147)	(0.149)	(0.148)
Constant	5.707***	5.261***	6.800***	5.177***	5.435***
	(0.511)	(0.464)	(0.557)	(0.520)	(0.466)
Year dummies	Y	Y	Y	Y	Y
Observations	1165	1165	1165	1165	1165
R-squared	0.451	0.450	0.461	0.446	0.450

Robust standard errors in parentheses.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

In these specifications, each of the main variables of interest is statistically significant now, with each negatively correlated with municipal bond yields. Specifically, municipal yields located in a state with an appointed judiciary are 119 basis points lower relative to elected judiciaries. Further, tenure suggests that each additional year added to a term lowers bond yields by roughly 14 basis points, while life tenure or tenure during "good behavior" is associated with a 38 basis point reduction in yields. Interestingly, these specifications also suggest that more alterations to a court's composition is associated with an 15 basis point decline in municipal yields.[33]

As a final specification I also consider a logit model with the same municipal data from Table 10 but now apply a dummy variable for whether or not a municipality in that sample had defaulted as the dependent variable (Table 11).

This model considers how each of the main independent variables of interest affect the likelihood of default.[34] Here again both the PCA and judicial appointment variables are associated with a lower likelihood of default, with the latter coefficient indicating a 24% reduction. Interesting, both the length of tenure and *de-facto* JI variables net results that are the opposite of what was expected, being positively and negatively correlated with default respectively. However, both coefficients are fairly small in magnitude.

Overall then there are several important implications that arise from the above analysis, at least to the extent that these results

[33] These observations are also consistent with Kuran and Rubin (2018) who find evidence that Ottoman elites paid a premium to creditors when borrowing due to partial judicial enforcement that tended to tilt in favor of those elites.

[34] The variable for lifetime appointment was perfectly collinear with the outcome, meaning that no estimates could be obtained. This variable is thus dropped from the analysis.

Table 11
Municipal-level pooled logit results.

Dependent variable = municipal default (1 = Yes) by city 1875, 1880, 1885, 1890				
	(1)	(2)	(3)	(4)
Judicial independence index	−0.0121***			
	(0.00265)			
Appoint (1 = Yes)		−0.239***		
		(0.0454)		
Length of tenure			0.0187***	
			(0.00247)	
Court composition change				−0.0271***
				(0.00363)
Population (In 100,000s)	−0.00560	−0.0113*	0.00310	0.000119
	(0.00641)	(0.00604)	(0.00561)	(0.00699)
Number of members on court of last resort	0.00589**	0.00416	0.000906	0.00363
	(0.00272)	(0.00280)	(0.00339)	(0.00259)
Municipal homerule (1 = Yes)	0.255***	0.119***	0.141***	0.256***
	(0.0436)	(0.0399)	(0.0396)	(0.0426)
Democrat governor (1 = Yes)	−0.190***	−0.148***	−0.0854***	−0.199***
	(0.0256)	(0.0204)	(0.0231)	(0.0231)
Southern democrat governor (1 = Yes)	0.264***	0.348***	0.228***	0.267***
	(0.0319)	(0.0348)	(0.0302)	(0.0312)
House DW-NOMINATE score	−0.0252	−0.0602**	−0.155***	−0.0295
	(0.0258)	(0.0240)	(0.0263)	(0.0261)
Hard budget constraint (1 = Yes)	0.0698***	0.126***	0.0242	0.0464**
	(0.0238)	(0.0258)	(0.0217)	(0.0230)
Public debt limit (1 = Yes)	−0.0319	−0.0171	0.00465	−0.0517**
	(0.0236)	(0.0223)	(0.0226)	(0.0240)
Per capita debt	0.00112***	0.00107***	0.00151***	0.00110***
	(0.000240)	(0.000233)	(0.000261)	(0.000232)
Land valuation (In 100 milions)	−0.0335***	−0.0327***	−0.0711***	−0.0430***
	(0.00716)	(0.00735)	(0.0108)	(0.0104)
Constant	0.219***	0.130***	0.160***	0.225***
	(0.0262)	(0.0253)	(0.0233)	(0.0253)
Year dummies	Y	Y	Y	Y
Observations	1464	1464	1464	1464
Log-likelihood	−455.06	−437.59	−432.93	−449.22

Robust standard errors in parentheses.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

may be causal. First, from the principal component analysis, it does indeed appear to be the case that relatively greater JI reduces the likelihood of municipal default. Though this link has never been directly addressed in the literature, given both the theoretical and empirical work that has been done as discussed in Section 2 with supporting anecdotal evidence in Section 3, the above findings do corroborate both the importance of a relatively independent judiciary and also the impact that such a judiciary might have on state and local public finances, perceptions about the credibility of a public sector agent in the eyes of market participants, and now the impact that a relatively independent judiciary can have on the incidence of municipal default in particular.

When broken down, it also appears that several of the variables are particularly important. These tend to include those that have been viewed as being the most influential at impacting JI and are the method of selecting an individual to the bench and the term length for which an individual serves, which specifically is whether that individual has a lifetime appointment. While the results in this paper are consistent with the theoretical and empirical literature, they are also consistent with the historical record and existing anecdotal evidence, where many contemporaries reported on the incentive that existed for popularly elected state courts to invalidate municipal bonds.

6. Conclusion

This study has evaluated the extent to which relative judicial independence may influence the likelihood of municipal default by employing a long-run dataset of all known municipal defaults within the U.S. between 1830 and 1910. The findings, which are robust to a number of specifications, corroborate both existing theoretical and empirical literature and suggest that a relatively more independent judiciary is in fact associated with a lower likelihood of public sector default. This is especially true regarding the method of selecting a member to a state's court of last resort and the general term length of a given member, specifically being whether that individual is granted life tenure or service under “good behavior”.

Overall then there are several possible implications and potential areas of future research that could be drawn from these observations. First, it appears that selection and term lengths do fundamentally matter. This fact has important implications even today, especially within the U.S. where a serious debate exists over the relative merits of various methods of selecting members to the bench.

The necessity to find ways to better insulate judicial actors and hold them accountable to the rule of law rather than outside partisan and special interest pressures has especially driven this debate. There is a significant body of work that has developed in this vein, and much of the debate has revolved around more normative issues affiliated with JI. However, less has been done to bring to light the role that JI can play for public finance and solvency in general. This is an important aspect to the debate in need of clearer articulation.

Further, given the results obtained an interesting issue to address in future research would be to more deeply analyze term lengths relative to the method of selection. Specifically, how might longer term lengths impact judicial decisions between popularly elected relative to appointed judiciaries? Additionally, future work could also address some of the long-run ramifications tied to a longer lasting and persistent state judiciary that has remained relatively independent. Finally, a deeper analysis as to why, at least based on the results obtained here, might it be the case that the impact of *de-facto* JI appears to be somewhat weaker than might be expected.

Not only do these findings add to the literature on the importance of the judiciary as an institution and the need for judicial independence, it also suggests that an independent judiciary does indeed create a credible commitment and send a signal to market participants that contractual obligations between sovereigns and market actors will be better protected and enforced and may also incentive better and more time-consistent public policy by those sovereign actors. These findings also provide potential policy implications regarding the role that a relatively independent judiciary plays in aligning public sector outcomes to more time consistent policy along with several possible extensions and increased opportunities for research.

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