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RESEARCH ARTICLE

US State constitutional entrenchment and default in the 19th century

John A. Dove and Andrew T. Young*

Manuel H. Johnson Center for Political Economy, Troy University, Troy, AL USA 36082 and Rawls College of Business, Texas Tech University, Lubbock, TX USA 79409
*Corresponding author. Email: a.t.young@ttu.edu

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Abstract
Constitutional scholars emphasize the importance of an enduring, stable constitutional order, which North and Weingast (1989) argue is consistent with credible commitments to sustainable fiscal policies. However, this view is controversial and has received little empirical study. We use 19th-century US state-level data to estimate relationships between constitutional design and the likelihood of a government default. Results indicate that more entrenched and less specific constitutions are associated with a lower likelihood of default.

Keywords: Default; debt; fiscal crisis; constitutions; credible commitment; entrenchment

1. Introduction

How can governments credibly commit to sustainable fiscal policies? Taxation and spending patterns that are sustainable can be time-inconsistent (Kydland and Prescott, 1977). Anticipating this, individuals may rationally respond in ways that harm both public finance and private economic activity. Governments must signal an intent to pursue sustainable patterns *and* be able to credibly commit to them (Chari *et al.*, 1989).

In this context, the lack of a third-party enforcer is problematic (Aguiar and Amador, 2014). Creditors' last resort for enforcement is government. When supplying funds to government, that last resort is the debtor itself. This necessitates commitments at the constitutional level. By a *constitution* we mean the framework of rules constraining policymakers and other political agents. We employ data from 19th-century US states to estimate the role of constitutional design in making those commitments credible.

Constitutions can include constraints both *de jure* (i.e. legally codified) and *de facto* (i.e. implied by agents' incentives). As an example of the latter, North and Weingast (1989) argue that the Glorious Revolution shifted the balance of power away from the English crown and toward Parliament, decreasing the probability of default and repudiation.[1] This shift was embodied in political bargains between Parliament and William of Orange.[2] Those bargains were self-enforcing, because holders of wealth were heavily represented within Parliament.[3] This provided Parliament with incentives and means to check the monarch.

[1]Also see Weingast (1997: 252–253). North and Weingast's (1989) argument is controversial. (See Stasavage (2002) and Hodgson (2017) for critiques; alternatively, Cox (2012) argues that the Glorious Revolution was a watershed, but for different though contemporaneous constitutional changes.)

[2]Given changes in the political/economic environment, mutually beneficial bargains can arise between holders of political property rights (Congleton, 2007, 2011; Salter, 2015; Tsebelis, 2002; Young, 2019). Congleton (2007, 2011) examines such changes and subsequent bargains associated with the Glorious Revolution.

[3]In the absence of a third-party enforcer, constitutions must be self-enforcing if they are to be effective (de Lara *et al.*, 2008; Leeson, 2011; Mittal and Weingast, 2011; Salter and Young, 2019).

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Codification can also play a role in making constraints binding. It can provide "a focal solution … so that citizens gain the ability to act in concert and police their government" (Weingast, 2005: 105; also Weingast, 1997).[4] This makes collective action against transgressions less costly. Codification may involve pre-existing conventions or novel elements around which citizens can coordinate.[5] Both cases suggest that *constitutional design* can play a role in achieving sustainable fiscal policy. Consistent with this, Dove (2012) finds that 19th-century US states that adopted fiscal amendments faced lower borrowing costs. Beach (2017) finds a similar effect for reforming states that previously defaulted.[6]

Along with Dove (2012) and Beach (2017), we study constitutional design (a concept meaningful only for *de jure* elements). While there is an extensive theoretical literature on constitutional design – see Ginsburg (2010b) – the empirical literature relating it to economic outcomes is modest. Most studies focus on specific constitutional rules.[7] Studies linking those rules to government size and deficits are relevant to our present work. For example, parliamentary forms of government have been linked to higher expenditures and deficits (Blume *et al.*, 2009; Persson and Tabellini, 2003, 2004).[8]

Rather than specific rules, we estimate the effect of general dimensions of constitutional design on the likelihood of default. Two alternative models of constitutional design – entrenched/spare *versus* unentrenched/specific – motivate our choice of dimensions considered (Versteeg and Zackin, 2016).

The entrenched/spare model of constitutional design suggests that good governance arises within a framework of relatively few, widely agreed-to, durable constraints (Buchanan and Tullock, 1962). Political agents have leeway to pursue protective and productive governance, but not predation and redistribution (Buchanan, 1975). As Versteeg and Zackin (2016: 658) observe:

> Entrenched constitutions are typically constructed as spare frameworks, rather than detailed policy directives, since highly specific documents are unlikely to remain relevant over long time horizons (Hammons 1999). As a result, along with rigidity, "generality and abstraction" are also widely considered to be defining features of written constitutions (Marmor 2007, 91–4).[9]

Alternatively, in the unentrenched/specific model the constitution aims at "limiting the latitude within which agents operate (through specificity) and relaxing the rigidity of the constitutional boundaries (increasing flexibility) to accommodate … increased scope and detail" (Versteeg and Zackin, 2016: 658).

The entrenched *versus* unentrenched and spare *versus* specific dimensions are, on the one hand, distinct. (Many specific provisions can be entrenched; alternatively, spare frameworks can be frequently revised.) On the other hand, they are related. A spare constitution is more likely to be entrenched than a specific one for two reasons. First, a spare constitution includes relatively few, widely agreed-to constraints. Wide agreement implies, all else equal, a low likelihood that citizens subsequently demand amendment/replacement.[10] Second, highly detailed provisions are more likely to become unsuitable over time with changing circumstances.[11]

[4]Also see Elkins *et al.* (2009) and Mittal and Weingast (2011). While political economists emphasize constraints, constitutions also define governance institutions and express a polity's values (Ginsburg, 2010a: 70).

[5]Scholars have emphasized collective action by citizens against political agents. However, the same logic applies to other political agents. For example, legislators can be uncertain about whether an executive's actions are unconstitutional. Codification can help them to coordinate.

[6]Alternatively, Beach (2017) finds that reforming states that had not defaulted faced *higher* borrowing costs. He conjectures that, for those states, reforms signaled deteriorating fiscal situations.

[7]Voigt (2011) reviews the theoretical and empirical literatures; his Table 2 provides a list of empirical studies.

[8]Bicameral legislatures are associated with higher expenditures (Bradbury and Crain, 2001; Plümper and Martin, 2003).

[9]Versteeg and Zackin also associate this model with Elster (1979), Rubenfeld (2008), Young (2008), and Waldron (1999).

[10]Subsequent amendment/replacement will be costly if it requires wide agreement.

[11]As we mention in section 4 below, one critique of the entrenchment measure is that it is an outcome that may reflect factors other than constitutional design (e.g. different demand for constitutional changes). A virtue of the specificity measures is that they capture objective characteristics of a constitution's design.

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These models offer different solutions to the same principal–agent problem (Versteeg and Zackin, 2016: 658). The unentrenched/specific model allows the governed to provide political agents with "ongoing constitutional micromanagement" (p. 660); this through numerous, specific directives that change frequently in response to the changing circumstances. Alternatively, the entrenched/spare model is concerned primarily with preventing political agents from amending a constitution in their own interests (Aghion and Bolton, 2003; Buchanan and Tullock, 1962; Ginsburg and Posner, 2010; Persson *et al.*, 1997). A fundamental tradeoff is between costs of agents capturing the rules and benefits of principals having greater use of the rules.

Both models have implications for the ability of a government to credibly commit to some goal (e.g. sustainable fiscal policy). On the one hand, the governed may issue directives that fail to constrain political agents' actions toward the goal. Priors may then need to be updated and new directives issued; these may be effective or may themselves have to be revisited, etc. In that case, being able to "micromanage" the constitution may be essential. On the other hand, micromanagement (flexibility) invites time-inconsistency. Without strong and durable rules, political agents may have incentives to renege on long-run commitments to obtain short-run gains.

These tradeoffs are evident in the debates of the 1787 US Constitutional Convention. The Madisonian view was one of creating a loose and broad framework that would endure through future governments. Alternatively, the Jeffersonian view favored shorter-lived rules that would grant future generations (who had no say in the original document) more autonomy over governance. The Madisonian view ultimately won the day and constitutional economists today emphasize the importance of entrenchment. However, most constitutions actually last less than 20 years (Elkins *et al.*, 2009).[12]

In this paper, we estimate the extent to which an entrenched/spare constitution increases a government's ability to make credible commitments. In the 19th century, US state governments faced debt crises rooted in ill-advised fiscal policies. We employ 1841–1884 (the years of actual defaults) panel data to estimate the roles of constitutional entrenchment and specificity on the likelihood of default.

We contribute to the small literature on empirical links between constitutional design and economic outcomes. Montenegro (1995) argues that the length (specificity) of a country's constitution reflects individuals' distrust of political agents; he finds that length is negatively related to GDP per capita.[13] Tsebelis and Nardi (2016) also report that longer constitutions are associated with lower per capita GDP and also higher levels of corruption in OECD countries. Tsebelis (2017) corroborates this for a larger sample of countries. To our knowledge, we are the first to estimate the effect of constitutional design on government default.

We proceed as follows. Section 2 discusses the political economy of government debt. Section 3 provides a historical backdrop to 19th-century US states. Section 4 describes the data and empirical model. Results are in section 5. Section 6 concludes.

2. Debt and default; commitment and credibility

We are concerned with constitutional design and its relationship to a government's commitments to time-consistent policies (Frye, 2004; Frye and Shleifer, 1997; Kydland and Prescott, 1977; North, 1991; North and Weingast, 1989; Weingast, 1993, 1995). *Time-consistency* describes a situation where an agent has incentives to commit to certain future actions and no incentives to renege when that future arrives. (Otherwise, there is time-*in*consistency.)

The issue of time-consistency is important because a society can benefit from sustainable debt policies. A government presently committing to sustainable policies may find, viewed from a future decision-making point, that it has incentives to renege. Prescott (1977) provides the example of a government that can finance a decrease in distortionary taxes by defaulting. Given the cost of defaulting on *existing*

[12]Even US state constitutions average only 70 years (Hammons, 1999).

[13]Björnskov and Voigt (2014) find that specificity correlates negatively with measures of social trust.

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debt, the government may find it desirable to default and cut taxes. However, if creditors anticipate default, then issuing the debt in the first place will be costlier. In the long run, a no-default policy is better.

How does a government achieve time-consistent fiscal policy? Scholars have offered possible solutions, including reliance on a government's reputation, the creation of political institutions characterized by multiple veto points, and delegation of authority via bureaucracies (Stasavage, 2002). Establishing an effective reputation through repeated interactions is unlikely (Bulow and Rogoff, 1989). Alternatively, North and Weingast (1989) argue that, following the Glorious Revolution, Parliament's control of the fisc and the Bank of England's establishment provided credible commitments to property rights and sustainable fiscal policies. This involved both political institutions and bureaucratic delegation.

We focus on dimensions of constitutional design (entrenchment and specificity). These fit within the political institutions category. Constitutions define the institutions through which governance is provided (Ginsburg, 2010a: 70). These institutions embody the relevant veto points in the processes of determining how governance is provided. The explicit constraints that are enumerated in a constitution are also, in and of themselves, political institutions.

Entrenchment and specificity are too general to be indicative of specific veto points. Yet they do speak to what sort of solutions are applied generally to agency problems between the governed and political agents. Our prior is that the entrenched/spare model is more conducive to credible commitments. First, the veto points defined by a constitution are more meaningful when entrenched. Demonstrated durability makes the implicit constraints more credible.

Second, the entrenched/spare model favors relatively few, widely agreed-to and durable constraints. These tend to be more credible than a larger number of frequently revisited/revised constraints. Credibility arises from durability – the expectation that a constraint will remain in effect tomorrow as well as today. In turn, to the extent that a constraint is widely agreed-to, it is likely to be durable. Alternatively, an unentrenched/specific constitution may allow for greater opportunity to tailor constraints but the resulting constraints will be less credible.

Entrenchment and specificity can be relevant to credibility regarding government debt specifically; even if a constitution does not specifically address debt. This is because of reputational effects. Notwithstanding Bulow and Rogoff (1989), once credibility *is* established in a specific range of commitments, it can foster a reputation for credibility generally.

Alternatively, Versteeg and Zackin (2016: 664–665) actually point to 19th-century US states as evidence that the unentrenched/specific model is conducive to credible commitments.

> The original impetus to include detailed policy instructions in state constitutions is often traced to the economic crisis of 1839, which revealed the fiscal blunders that many state legislatures had made, and motivated a wave of constitutional change designed to prevent legislatures from repeating these mistakes[.]

Dove's (2012) work does suggest that specific constitutional amendments lowered borrowing costs. Our take from this is twofold. First, the question of which model is more conducive to credible commitments is empirical. Second, it is critical to control for specific amendments regarding debt.

Standard models of government debt suggest additional variables to control for in our analysis.[14] First, these models predict that governments borrow during economic stagnation and repay during expansion. When there is uncertainty about economic conditions, however, an unexpected sequence of negative shocks can lead to default. Models incorporating uncertainty predict countercyclical defaults (Aguiar and Gopinath, 2006; Rochet, 2006). As such, we control for recessions.

Relatedly, Eaton and Gersovitz (1981) provide a model where economic volatility is a determinant of default. The qualitative prediction of their model is ambiguous.[15] Still, controlling for volatility is

[14]See Panizza *et al.* (2009) for a literature review on government debt/default.

[15]If volatility is predictable, a government facing greater volatility is less likely to default because, *ex post*, the cost of losing access to credit is higher. However, if volatility is stochastic, a series of unexpected negative shocks can lead to default.

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desirable. The recession control helps. However, in lieu of good 19th-century US state-level data on volatility, we also control for agricultural employment and urban population shares. Given common macroeconomic shocks, these variables can help account for variation in cross-state volatility (e.g. a larger agricultural sector is likely to be associated with greater volatility).

We also control for existing debt levels. If a government borrows excessively, small shocks can lead to default (Panizza *et al.*, 2009: 669). Consistent with this, studies typically report a positive relationship between debt and default (Panizza *et al.*, 2009: 670; studies cited in footnote 28).[16]

Standard models of government debt suggest factors that can, for political agents, increase the perceived short-run benefits and/or costs of issuing excessive debt and/or defaulting on existing debt. These benefits and costs are weighed against the long-run benefits of access to more and/or cheaper credit. Alternatively, the long-run benefits stem from creditors not anticipating the excessive debt and default; so they are increased by credible government commitments. Holding other factors from models of government debt constant, we then expect an entrenched/spare constitution to lower the likelihood of default.

3. Historical background

Nineteenth-century US state governments sought to finance public works (dubbed "internal improvements") and investments in private banks (Wallis and Weingast, 2008). New York led the way, having made bank investments that by the 1820s generated dividend payments of more than $100,000 annually (Wallis *et al.*, 2004). It also financed construction of the Erie Canal through a policy of "taxless finance": borrowing and then using premium sales to pay interest due (Wallis, 2005).[17] The rationale was that an investment or improvement would create a dividend or revenue stream to cover servicing and repayment. In the best case, the dividends/revenue could actually reduce future tax burdens.

States in the Midwest were especially active in canal and railroad investments; states in the South invested more heavily in banking. Table 1 reports states' outstanding debts through 1838 and then 1841. Large increases are evident in many cases.

Taxless finance appeared effective during good times. However, the Panic of 1839 culminated in debt crises for many states (Wallis, 2001). Many completed projects and investments failed to generate revenues; those that did fell short of servicing debts. Furthermore, many uncompleted projects were abandoned. This left many states unable to meet outstanding obligations. When they turned to taxation, citizens often called for default and/or repudiation. Eight states and one territory ultimately defaulted; five of them partially or fully repudiated. Table 2 lists the years of default for both the antebellum period and the Reconstruction period (discussed below).

In the aftermath, there were numerous attempts to impose constraints on fiscal irresponsibility. These included the expansion of general incorporation and free banking laws; also, popularly elected judiciaries with shortened terms.[18] Many states adopted constitutional amendments in order to commit to sustainable debts. These included prohibitions on a government lending its credit on behalf of private interests and purchasing stock; and also included debt limits.[19]

A second bout of defaults came following the Civil War. Southern states were in dire straits both economically and politically. State coffers were nearly empty and total property values had plummeted from roughly $4.4 billion before the war to $1.6 billion (Ratchford, 1941). State governments struggled to provide basic services and repair infrastructure.

Politically, states grappled with how best to reintegrate with the Union. Processes were laid out in both Presidential and Congressional Reconstruction plans, each with different readmission

[16]We also control for a number of additional demographic, historical, and political variables (section 4).

[17]Taxless finance took three forms: issuing debt directly, issuing debt to be transferred directly to an improvement company in exchange for that company's stock, and/or issuing debt to inject capital directly into an improvement company (Pinsky, 1963).

[18]See Tejedo-Rodriguez and Wallis (2012), Wallis and Weingast (2008), and Shugerman (2012).

[19]See Dove (2012: Table 1) for a summary of the amendments adopted by states.

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Table 1. Total outstanding debt through 1838 and 1841

State	Through 1838	Per capita debt	Through 1841	Per capita debt	Default
Alabama	$10,000	16.93	$15,400	26.07	N
Arkansas	3,000	30.75	2,676	27.43	Y
Florida	0	0.00	4,000	73.43	Y
Georgia	0	0.00	1,310	1.89	N
Illinois	11,600	24.36	13,527	28.41	Y
Indiana	11,890	17.34	12,751	18.59	Y
Kentucky	7,369	9.45	3,085	3.96	N
Louisiana	23,135	65.65	23,985	68.06	Y
Maine	555	1.11	1,735	3.46	N
Maryland	11,493	24.45	15,215	32.37	Y
Massachusetts	4,290	5.82	5,424	7.35	N
Michigan	5,340	25.16	5,611	26.43	Y
Mississippi	7,000	18.63	7,000	18.63	Y
Missouri	2,500	6.52	842	2.19	N
New York	22,931	9.44	21,797	8.97	N
Ohio	6,101	4.02	10,924	7.19	N
Pennsylvania	27,277	15.82	36,336	21.08	Y
South Carolina	5,560	9.35	3,691	6.21	N
Tennessee	7,148	8.62	3,398	4.10	N
Virginia	6,318	6.16	4,037	3.94	N
Wisconsin	0	0	200	6.46	N

Source: Ratchford (1941).

requirements. Although the 1865 Presidential Reconstruction initially readmitted of a number of states, Congressional Reconstruction (Act of March 2, 1867) resulted in all Southern states falling under military rule until they met its requirements. As a result, Republicans increasingly came to dominate the political landscape. Several Southern states held constitutional conventions to address the requirements. These included ratification of the 14th Amendment to the US Constitution and repudiation of Confederate war debt.

During Reconstruction, an important concern was revitalization of the Southern economy. Many believed that railroad development was critical. Many also believed that private financing (especially from Northern financiers) would be insufficient. The predominant view was that funding by the states would be necessary (Summers, 1984). Between 1865 and 1867, state funding and other assistance to private railroad projects were enacted. For example, Alabama passed legislation granting $12,000 in state aid (which was subsequently increased to $16,000) per mile of track laid after 20 miles of line had been completed (Summers, 1984). Georgia pursued a similar policy; other states provided substantial tax incentives and land grants. Many new Southern constitutions included explicit stipulations for aid to railroads.[20] Ultimately, Southern state indebtedness increased markedly (Table 3).

[20]With only two exceptions, new Southern state constitutions provided for land grants and direct subsidies. The exceptions were Mississippi and Texas.

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Table 2. List of defaults by State

State	Year	State	Year
Alabama	1873	Michigan	1841
Arkansas[a]	1841	Minnesota	1860
Florida	1841, 1870	Mississippi	1841
Georgia	1872	North Carolina	1870
Illinois	1842	Pennsylvania	1842
Indiana	1841	South Carolina	1871
Louisiana	1843, 1874	Tennessee	1870
Maryland	1842	Virginia[b]	1865

Sources: Ratchford (1941); McGrane (1935); Scott (1898).
[a]Arkansas defaulted on a series of bonds in 1841, with final settlement over those bonds resulting in repudiation in 1884.
[b]The Virginia debt question resulted from the creation of West Virginia in 1863. Virginia claimed that West Virginia was responsible for one-third of all outstanding debt, which West Virginia disputed. This resulted in the non-payment of this disputed debt until the issue was settled in 1902.

Support for these policies began to wane in the 1870s (Dobbin, 1994) and then came the Panic of 1873. There was a banking panic and a rash of railroad failures. In 1871 three railroads entered receivership; 12 in 1872 and then another 35 followed in 1873; by 1874 nearly 25% of all railroads had defaulted (Swain, 1898). Nearly every Southern state over this period defaulted and repudiated a portion of its debts (Summers, 1984).

As in the case of antebellum defaults, political backlash subsequently led to attempts to constrain state governments from unsustainable policies, including constitutional amendments.

4. Data and model specification

We employ 1841–1884 annual data from US states. Our dependent variable is an indicator of whether a state was actively in default (1 if yes; 0 otherwise). This information comes from several sources including Ratchford (1941), McGrane (1935), and Scott (1893). Our controls of primary interest are measures of constitutional entrenchment and specificity. These variables are drawn from Versteeg and Zackin (2016).

Entrenchment is measured as the number of years that a given polity (in this case a state) has existed divided by the number of years that the polity experienced a constitutional change (either amendment or replacement). This entrenchment measure is an imperfect one. We employ it to indicate the strength and durability of constraints on political agents. This is consistent with Versteeg and Zackin's (2016: 657) conceptualization of the term: "establishing constraints durable enough to bind across generations." While the measure directly speaks to the durability of *de jure* provisions, we are left to assume that those provisions *de facto* bind. However, *de jure* provisions can fall passively into disuse and/or be superseded actively by convention (Albert, 2014). Whether or not a durable constitutional document corresponds to an entrenched *de facto* constitution is not always clear.

Notwithstanding the above, a preferable measure of *de facto* constitutional entrenchment is unavailable. Also, a large number of scholars have sought to account for variation in the amendment rates of *de jure* constitutions. Their work is of interest because amendment rates have been linked to important economic outcomes (Tsebelis, 2017; Tsebelis and Nardi, 2016). Furthermore, recent work suggests that culture, rather than *de jure* amendment procedures, accounts for a large part of their variation (Ginsburg and Melton, 2015; Tarabar and Young, 2019).[21] This work is based on cross-country

[21]Measures of constitutional *rigidity* are often based on the *de jure* amendment procedures (e.g. Anckar and Karvonen, 2015; La Porta *et al.*, 2004; Lijphart, 1999; Lorenz, 2005; Lutz, 1994; Rasch and Congleton, 2006).

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Table 3. Southern state debts through reconstruction

State	Early 1865	1872-1874	Percentage change
Alabama	$4,065	$30,038	638.94
Arkansas	4,528	13,612	200.62
Florida	1,371	5,446	297.23
Georgia	2,800	18,183	549.39
Louisiana	11,182	36,356	225.13
Mississippi	1,100	3,750	240.91
North Carolina	13,869	38,922	180.64
South Carolina	5,160	23,159	348.82
Tennessee	25,277	27,920	10.46
Texas	1,000	3,167	216.70
Virginia	41,061	47,025	14.52

comparisons. Given the relative cultural homogeneity across US states, it is likely that variation in *de jure* constitutional change largely reflects *de facto* change. Still, controlling for other determinants of default that may be correlated with *de facto* entrenchment is important.

In certain cases, observations for the entrenchment measure were missing from the Versteeg and Zackin data. We have filled in these observations using both the National Bureau of Economic Research (NBER) State Constitutions Database and hand collection from state constitutions (where the NBER data were incomplete).[22] Thus, the current study employs two separate entrenchment series: the original from Versteeg and Zackin (2016) and our own expanded set.

Along with these measures, we use the specificity, scope, and detail measures from Versteeg and Zackin (2016). These are important to consider because another criticism of the entrenchment measure is that it is measured as an outcome and only imperfectly reflects features of constitutional design. Indeed, Ginsburg and Melton (2015) and Tarabar and Young (2019) imply that this outcome may be a function of both the supply side (constitutional design) and the demand for constitutional changes. Alternatively, the specificity, scope, and detail measures are straightforward characteristics of a constitution's design.[23]

Constitutional *specificity* is measured as the total number of words in a state's constitution. However, specificity is a less straightforward concept than entrenchment. In the context of the unentrenched/spare model, it indicates a "relaxing [of] the rigidity of the constitutional boundaries (increasing flexibility) to accommodate … increased scope and detail" (Versteeg and Zackin, 2016: 658). The total number of words is likely a meaningful indicator of both scope and detail. However, we also employ separate measures. *Scope* is the total number of unique words in a constitution and is meant to capture the breadth of topics covered. *Detail* is the total word count divided by the total number of unique words; it aims to capture the extent to which particular topics are discussed (see Versteeg and Zackin, 2016: 661).[24]

[22]See: www.stateconstitutions.umd.edu/index.aspx (accessed 8 July 2019).

[23]As we discuss in the introduction, specificity may be a determinant of durability. Ginsburg and Melton (2015) and Tarabar and Young (2019) both find that specificity positively correlates with amendment rates. Though beyond the scope of this paper, more systematic research on the extent to which constitutional design determines durability is called for.

[24]As expected, entrenchment and specificity are negatively correlated. However, the correlations are not large (-0.470 to -0.444). While related, entrenchment and specificity are distinct both conceptually and empirically.

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Given the nature of these data, we employ a probit model:

$$\Pr(Y_{it} = y_{it}|x_{it}) = \alpha + \beta_1 ConScore_{it} + Z'_{it}\beta_2 + \mu_t + \varepsilon_{it}, \quad (1)$$

where $i = 1, 2 \ldots, 33$ and $t = 1841, 1801 \ldots, 1884$; $ConScore_{it}$ represents a constitutional design measure; Z'_{it} represents a vector of other factors that might influence the likelihood of default; and μ_t is a set of year dummies.[25]

In some specifications, we employ lagged ($t - 1$, $t - 5$, or $t - 10$) rather than contemporaneous values of constitutional design variables. This is for two reasons. First, an amendment or replacement can change the contemporaneous values of these variables meaningfully. The contemporaneous value, therefore, may not always be indicative of a state's recent constitutional history; the lagged value may be more relevant for the contemporaneous probability of default.

Second, endogeneity is a concern. Bias could arise from reverse causality. During the time period studied here, state constitutional reforms were often a reaction to default. It is important, then, to explore whether a state's recent constitutional history – not including contemporaneous events caused directly by fiscal developments – is significantly related to default. We find that results are not sensitive to using lagged rather than contemporaneous values of design variables. Omitted variables are also a concern. We include a large number of controls. Some of these are motivated by standard theories of government default (section 2) and others are introduced below.

While we aim to estimate the effects of constitutional design, we control for more specific constitutional features that were often responses to debt crises. We control for whether public debt was prohibited above a certain threshold, whether the purchase of private debt with public funds was prohibited, and whether there was a property tax limit. We also control for whether a state had a free banking law.

Here we would expect debt restrictions and the existence of a free banking law to be negatively associated with default, and property tax limits to be positively associated. Wallis (2005) notes that free banking laws were explicitly meant to curb corruption. More corrupt states are associated with lower credit ratings and higher borrowing costs (Depken and LaFountain, 2006). Evidence also suggests that debt restrictions resulted in lower borrowing costs for state and local governments (Dove, 2012, 2014) and lower rates of municipal default, while property tax limits are positively associated with municipal default (Dove, 2016) and borrowing costs (Maher *et al.*, 2016).

We also include a number of institutional and political controls. These include dummies for whether a state's governor was a Democrat, whether the governor was a Southern Democrat, and whether a state was under a Reconstruction government; also the DW-NOMINATE score for each state's delegation to the US House of Representatives. The Democratic Party tended to be more fiscally conservative, and fiscal mismanagement obviously played into the likelihood of default. The DW-NOMINATE scores control for voter preferences and ideology. Defaults usually corresponded to citizen demand to do so (Hillhouse, 1936).

We additionally control for a US economy recession dummy, a Civil War dummy, and state per capita debt.[26] We also control for a number of variables accounting for state-level economic activity. These include population density, the urban population share, the agricultural employment share, the age of the state, and whether or not a state is landlocked (1 if yes; 0 if no). These first three variables are taken from the US Census Bureau and are linearly interpolated between decennial years.[27]

Given the nature of the entrenchment measure, it is important that we control for years of statehood. A brand new state with a brand new constitution (e.g. Minnesota, statehood granted in 1858) will have the highest entrenchment score. If new states were more likely to default, this can bias our

[25]State-level fixed effects cannot be included. Some states did not default during 1841–1884; state fixed effects would lead to those observations being dropped.

[26]Recession data comes from the NBER and Thorp (1926). Debt numbers are from various sources including *US Census*, *Hunt's Merchant's Magazine*, and *The Commercial and Financial Chronicle*. Where data are missing between years, we linearly interpolate.

[27]The 1864 observation for Nevada indicates an agricultural share greater than 100%. This observation is coded as 100%.

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Table 4. Summary Statistics

Variable	Observations	Mean	Std Dev.	Min.	Max.
Default (l = Yes)	1980	0.108	0.311	0	1
Entrenchment score (Versteeg and Zakin)	1207	13.36	10.48	1	68
Entrenchment score (Dove and Young)	1490	15.49	15.01	1	179
Scope (in 100s)	1086	14.69	3.11	5.87	24.06
Detail	1086	8.88	1.85	4.42	21.30
Specificity (in 100s)	1086	133.90	53.47	25.93	420.86
Landlocked state (l = Yes)	1980	0.52	0.50	0	1
Years since statehood	1483	51.05	27.09	0	97
Recession (l = Yes)	1980	0.523	0.50	0	1
Free banking law (l = Yes)	1980	0.111	0.31	0	1
% Urban	1566	18.13	16.33	0	83.32
Per capita debt	1565	8.57	10.37	0	84.36
Population density	1565	38.73	46.10	0.062	294.41
% Agricultural employment	1528	0.186	0.087	0.022	1.095
House DW-NOMINATE Score	1424	-0.187	0.320	-0.901	0.51
Democratic Governor (l = Yes)	1980	0.370	0.483	0	1
Southern Democratic Governor (l = Yes)	1980	0.168	0.374	0	1
Reconstruction govermnent (l = Yes)	1980	0.024	0.154	0	1
Civil War (l = Yes)	1980	0.114	0.317	0	1
Property tax limit (l = Yes)	1980	0.028	0.164	0	1
Public debt prohibition (l = Yes)	1980	0.342	0.475	0	1
Private debt prohibition (l = Yes)	1980	0.411	0.492	0	1
Civil law south (l = Yes)	1980	0.133	0.340	0	1
Civil law North (l = Yes)	1980	0.107	0.309	0	1
Common law South (l = Yes)	1980	0.111	0.314	0	1
Common law North (1 = Yes)	1980	0.44	0.50	0	1

results toward identifying entrenchment with greater likelihood of default. Controlling for years of statehood helps to ensure that we independently account for a possible young state effect.

Finally, we include dummies for a state's legal origins (Berkowitz and Clay, 2005). Legal origins may influence the security of property rights, which may impact the incidence of public sector default. Using Berkowitz and Clay's (2005) data, we include Southern civil law, Northern civil law, Southern common law, and Northern common law dummies.

Table 4 provides summary statistics.[28]

5. Results, interpretation, and discussion

Table 5 reports results for Versteeg and Zackin's (2016) constitutional entrenchment scores. Column 1 reports bivariate estimations (including a constant). We then introduce socio-economic controls

[28]Through the first default episode subsequent to the Panic of 1839, several states had no debt. While by definition these states could not default, they all had accrued some debt by the early 1850s.

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Table 5. Constitutional entrenchment (Versteeg and Zackin) and default dependent variable = state default (1 = Yes)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Entrenchment score (Versteeg and Zakin)	-0.00664*	-0.00685**	-0.00745**	-0.00616**	-0.00720**			
	(0.00340)	(0.00346)	(0.00346)	(0.00305)	(0.00342)			
Entrenchment score t-1 (Versteeg and Zakin)						-0.00756**		
						(0.00343)		
Entrenchment score t-5 (Versteeg and Zakin)							-0.00693**	
							(0.00310)	
Entrenchment score t-10 (Versteeg and Zakin)								-0.00694**
								(0.00277)
Landlocked state (1 = Yes)		0.0546	0.146*		0.139*	0.138*	0.113	0.0974
		(0.0647)	(0.0778)		(0.0749)	(0.0750)	(0.0709)	(0.0634)
Years since statehood		0.00178	0.00349*		0.00243	0.00231	0.00125	0.000403
		(0.00160)	(0.00186)		(0.00186)	(0.00185)	(0.00154)	(0.00168)
Recession (1 = Yes)		-0.0498	-0.0672		-0.0710	-0.0684	-0.0582	-0.0683
		(0.0529)	(0.0530)		(0.0570)	(0.0570)	(0.0521)	(0.0500)
Free banking law (1 = Yes)		-0.0799	-0.0540		-0.0699	-0.0835*	-0.151***	
		(0.0762)	(0.0585)		(0.0499)	(0.0452)	(0.0507)	
% Urban		-0.00696	0.000158		0.00143	0.000928	-0.00133	-0.00260
		(0.00542)	(0.00381)		(0.00375)	(0.00372)	(0.00349)	(0.00426)
Per capita debt		0.00441***	0.00343**		0.00369***	0.00432***	0.00709***	0.00921***
		(0.00167)	(0.00165)		(0.00126)	(0.00129)	(0.00181)	(0.00219)
Population density		-0.00203	-0.00361		-0.00368	-0.00355	-0.00242	-0.00168
		(0.00295)	(0.00257)		(0.00256)	(0.00263)	(0.00207)	(0.00162)
House DW-NOMINATE score			-0.0242	-0.00183	-0.0542	-0.0614	-0.0468	-0.0483
			(0.0590)	(0.0490)	(0.0551)	(0.0557)	(0.0516)	(0.0738)
Democratic Governor (1 = Yes)			-0.00527	-0.00541	-0.0174	-0.0245	-0.0393	-0.0424
			(0.0407)	(0.0442)	(0.0365)	(0.0364)	(0.0409)	(0.0557)

(*Continued*)

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Table 5. (*Continued.*)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Southern Democratic Governcr (1 = Yes)			-0.0572	-0.0491	-0.0351	-0.0246	0.0111	0.0281
			(0.0426)	(0.0509)	(0.0385)	(0.0385)	(0.0421)	(0.0590)
Reconstruction government (1 = Yes)			-0.0234	-0.0567	-0.0277	-0.0151	-0.000976	-0.0334
			(0.0539)	(0.0575)	(0.0572)	(0.0568)	(0.0737)	(0.0956)
Civil law South (1 = Yes)			0.208**	0.226***	0.147	0.126	0.0677	0.0213
			(0.0824)	(0.0628)	(0.0893)	(0.0883)	(0.0900)	(0.108)
Civil law North (1 = Yes)			0.0211	0.0987**	0.00435	0.000230	-0.0145	-0.0394
			(0.0591)	(0.0469)	(0.0587)	(0.0595)	(0.0591)	(0.0703)
Common law South (1 = Yes)			0.0701	0137***	0.0302	0.0160	-0.0156	-0.0629
			(0.0701)	(0.0397)	(0.0709)	(0.0713)	(0.0715)	(0.0877)
Public debt prohibition (1 = Yes)				-0.0437	-0.0979**	-0.0999**	-0.0928**	-0.132*
				(0.0553)	(0.0491)	(0.0483)	(0.0469)	(0.0682)
Private debt prohibition (1 = Yes)				-0.0199	-0.00674	-0.00115	0.00497	0.0145
				(0.0606)	(0.0492)	(0.0495)	(0.0517)	(0.0598)
Property tax limit (1 = Yes)				-0.0852	-0.0188	-0.0112	-0.00836	0.00285
				(0.101)	(0.0707)	(0.0688)	(0.0696)	(0.0933)
Civil War (1 = Yes)				0.107	0.126	0.110	0.102	
				(0.0701)	(0.102)	(0.103)	(0.0844)	
% Agricultural employment					-0.0105	-0.0101	0.0105	0.189
					(0.185·)	(0.209')	(0.320)	(0.568)
Observations	1,207	1,206	1,162	1,162	1,162	1,207	1,206	804
Log-likelihood	-370.99	-275.27	-232.41	-269.89	-223.02	-217.20	-194.64	-164.51
Year dummies	Y	Y	Y	Y	Y	Y	Y	Y

Standard errors clustered by state in parentheses. Due to the loss of observations in column 8, both the 'free banking ' and 'Civil War' variables fell out of the model.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

(column 2); then institutional controls as well (column 3); next, institutional, political, and fiscal constraint controls along with the Civil War dummy (column 4); and then all of the previously mentioned controls plus the agricultural employment share (column 5). Columns 6, 7, and 8 employ, respectively, the one-year, five-year, and ten-year lagged entrenchment scores. (We report marginal effects rather than coefficient estimates.)

The correlations between entrenchment and default are all negative and statistically significant (10% level in column 1; 5% otherwise). The more entrenched a constitution, all else equal, the less likely is default. Point estimates indicate that a one-point increase in a state's entrenchment score lowers the likelihood of default by 0.66 to 0.72 percentage points. Not surprisingly, state per capita debt (columns 2, 3, and 5) enters positively and significantly.

A standard deviation increase in entrenchment (10.48) is associated with a decrease in default likelihood of about 6.9 to 7.6 percentage points. Relative to the mean value of the default dummy in our sample (0.108), that is an increase of over 65%. (This estimated effect is similar for lagged entrenchment values.)

Table 6 results are based on our recalculated entrenchment scores (accounting for missing observations). (In this and subsequent tables, the columns correspond to the same control variable sets as in Table 5.[29]) These results are similar. Entrenchment always enters negatively and significantly. A one-unit increase in the entrenchment score reduces default likelihood by 0.61 to 0.90 percentage points. The standard deviation increase of our recalculated entrenchment variable is a bit higher (15.01 *versus* 10.48) so it is associated with a decrease in default likelihood of 9.2 to 13.5 percentage points.

In Table 7 we consider specificity. Greater specificity is associated with greater default likelihood. In all but one specification (column 1; the bivariate case) the estimated effect is statistically significant. Point estimates indicate that an additional 100 words is associated with a 0.065 to 0.096 percentage point increase in default likelihood. A standard deviation increase in specificity (5,347 words) is associated with a 3.5 to 5.1 percentage point increase in that likelihood. Results using lagged values of specificity are similar.

Specificity can be broken down conceptually into the *scope* and *detail*. The scope measure is the total number of *unique* words. Alternatively, the detail measure is total words divided by the total unique words. We find no statistically significant link between scope and the likelihood of default (Table 8). However, detail is significantly and positively associated with default (except, again, in the column 1 bivariate case; Table 9). A one-unit change in detail is associated with a 2.3 to 3.2 percentage point increase in default likelihood. A standard deviation increase in detail (1.85) is associated with a 4.3 to 5.9 percentage point increase.

To summarize: results generally support the entrenched/spare model of constitutional design as conducive to fiscal sustainability. We have considered the entrenchment and specificity dimensions separately and found them to be, respectively, negatively and positively related to the likelihood of default. In terms of specificity, the level of constitutional detail seems most relevant.

6. Conclusion

North and Weingast (1989) call attention to the role of constitutional factors for a government credibly committing to sustainable fiscal policies. We have built upon their insight by estimating the relationship between formal dimensions of constitutional design and default using data from 19th-century US states.

These dimensions we consider are *entrenchment* and *specificity*. Are these dimensions determinants of a government's credibility? Does a sparse framework of broad constraints correspond to

[29]We do not report on the additional controls due to space constraints. The estimates are similar to those in Table 5 and are available upon request.

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Table 6. Constitutional entrenchment (Dove and Young) and default dependent variable = state default (1 = Yes)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Entrenchment score (Dove and Young)	-0.00738** (0.00373)	-0.00823** (0.00324)	-0.00886*** (0.00271)	-0.00611* (0.00324)	-0.00895*** (0.00284)			
Entrenchment score $_{t-1}$ (Dove and Young)						-0.00941*** (0.00288)		
Entrenchment score $_{t-5}$ (Dove and Young)							-0.00971*** (0.00275)	
Entrenchment sc ore $_{t-10}$ (Dove and Young)								-0.00994*** (0.00237)
Socioeconomic control variables	N	Y	Y	Y	Y	Y	Y	Y
Political control variables	N	N	Y	Y	Y	Y	Y	Y
War and debt limit control variables	N	N	N	Y	Y	Y	Y	Y
All control variables	N	N	N	N	Y	Y	Y	Y
Observations	1,817	1,815	1,749	1,750	1,749	1,817	1,815	1037
Log-likelihood	-582.58	-392.38	-343.09	-419.90	-338.30	-299.74	-268.70	-232.16
Year dummies	Y	Y	Y	Y	Y	Y	Y	Y

Standard errors clustered by state in parentheses. Socioeconomic control variables include "Landlocked state," "Years since statehood," "Recession," "Free banking law," "%Urban," "Per capita debt," and "Population density." Political control variables include "DW-NOMINATE," "Democratic Governor," "Southern Democratic Governor," "Reconstruction Government," "Civil law South," "Civil law North," and "Common law South." War and debt limit controls includes "Public debt prohibition," "Private debt prohibition," "Property tax limit," and "Civil War." Finally, all controls adds "% Agricultural employment." These results are available upon request. Due to the loss of observations in column 8, both the "Free banking" and "Civil War" variables fell out of the model.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

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Table 7. Constitutional specificity and default dependent variable = state default (1 = Yes)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constitutional specificity (in 100s)	0.000645 (0.000477)	0.000956* (0.000494)	0.000931** (0.000432)	0.000828** (0.000329)	0.000874** (0.000406)			
Constitutional specificity $_{t\text{-}1}$ (in 100s)						0.000910** (0.000397)		
Constitutional specificity $_{t\text{-}5}$ (in 100s)							0.000900** (0.000374)	
Constitutional specificity $_{t\text{-}10}$ (in 100s)								0.00104** (0.000460)
Socioeconomic control variables	N	Y	Y	Y	Y	Y	Y	Y
Political control variables	N	N	Y	Y	Y	Y	Y	Y
War and debt limit control variables	N	N	N	Y	Y	Y	Y	Y
All control variables	N	N	N	N	Y	Y	Y	Y
Observations	1,086	1,085	1,039	1,039	1,039	1,086	1,085	768
Log-likelihood	-444.07	-292.01	-245.59	-306.24	-237.65	-234.41	-221.61	-193.58
Year dummies	Y	Y	Y	Y	Y	Y	Y	Y

Standard errors clustered by state in parentheses. Socioeconomic control variables include "Landlocked state," "Years since statehood," "Recession," "Free banking law," "% Urban," "Per capita debt," and "Population density." Political control variables include "DW-NOMINATE," "Democratic Governor," "Southern Democratic Governor," "Reconstruction government," "Civil law South," "Civil law North," and "Common law South." War and debt limit controls includes "Public debt prohibition," "Private debt prohibition," "Property tax limit," and "Civil War." Finally, all controls adds "% Agricultural employment." These results are available upon request. Due to the loss of observations in column 8, both the "Free banking" and "Civil War" variables fell out of the model.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

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Table 8. Constitutional scope and default dependent variable = state default (1 = Yes)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constitutional scope (in 100s)	0.0173 (0.0135)	0.00770 (0.0121)	0.00931 (0.0113)	0.0131 (0.0112)	0.00799 (0.0109)			
Constitutional scope $_{t-1}$ (in 100s)						0.00947 (0.0105)		
Constitutional scope $_{t-5}$ (in 100s)							0.0101 (0.00987)	
Constitutional scope $_{t-10}$ (in 100s)								0.00777 (0.0142)
Socioeconomic control variables	N	Y	Y	Y	Y	Y	Y	Y
Political control variables	N	N	Y	Y	Y	Y	Y	Y
War and debt limit control variables	N	N	N	Y	Y	Y	Y	Y
All control variables	N	N	N	N	Y	Y	Y	Y
Observations	1,086	1,085	1,039	1,039	1,039	1,086	1,085	768
Log-likelihood	-440.38	-302.97	-257.26	-311.51	-248.51	-245.19	-230.95	-201.61
Year dummies	Y	Y	Y	Y	Y	Y	Y	Y

Standard errors clustered by state in parentheses. Socioeconomic control variables include "Landlocked state," "Years since statehood," "Recession," "Free banking law," "% Urban," "Per capita debt," and "Population density." Political control variables include "DW-NOMINATE," "Democratic Governor," "Southern Democratic Governor," "Reconstruction government," "Civil law South," "Civil law North," and "Commcn law South." War and debt limit controls includes "Public debt prohibition," "Private debt prohibition," "Property Tax Limit," and "Civil War." Finally, all controls adds "% Agricultural employment." These results are available upon request. Due to the loss of observations in column 8, both the "Free banking" and "Civil War" variables fell out of the model.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

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Table 9. Constitutional detail and default dependent variable = state default (1 = Yes)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constitutional detail	0.0106 (0.00876)	0.0317** (0.0125)	0.0315*** (0.0109)	0.0234*** (0.00660)	0.0298*** (0.0104)			
Constitutional detail $_{t\text{-}1}$						0.0301*** (0.0105)		
Constitutional detail $_{t\text{-}5}$							0.0278*** (0.0103)	
Constitutional detail $_{t\text{-}10}$								0.0297*** (0.0109)
Socioeconomic control variables	N	Y	Y	Y	Y	Y	Y	Y
Political control variables	N	N	Y	Y	Y	Y	Y	Y
War and debt limit control variables	N	N	N	Y	Y	Y	Y	Y
All control variables	N	N	N	N	Y	Y	Y	Y
Observations	1,086	1,085	1,039	1,039	1,039	1,086	1,085	768
Log-likelihood	-446.97	-285.77	-238.29	-304.93	-229.97	-227.28	-216.57	-189.80
Year dummies	Y	Y	Y	Y	Y	Y	Y	Y

Standard errors clustered by state in parentheses. Socioeconomic control variables include "Landlocked state," "Years since statehood," "Recession," "Free banking law," "% Urban," "Per capita debt," and "Population density." Political control variables include "DW-NOMINATE," "Democratic Governor," "Southern Democratic Governor," "Reconstruction government," "Civil law South," "Civil law North," and "Commcn law South." War and debt limit controls includes "Public debt prohibition," "Private debt prohibition," "Property tax limit," and "Civil War." Finally, all controls adds "% Agricultural employment." These results are available upon request. Due to the loss of observations in column 8, both the "Free banking" and "Civil War" variables fell out of the model.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

creditworthiness, or is creditworthiness gained via "micromanagement" of political agents? Our study speaks to these questions.

Variation in constitutional design across US states, and the fact that several of them defaulted on their debts, provides an opportunity to evaluate the links between entrenchment and specificity and the likelihood of default. We find that more entrenched (specific) constitutions are associated with a lower (higher) default likelihood.

Our study joins a handful of others in exploring relationships between constitutional design and economic outcomes. Being focused on the experience of 19th-century US states, our research is clearly only a starting point. Future research would benefit from cross-country analyses (as well as analysis of the US during different periods) to see if results generalize.

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