

# Do States Circumvent Supermajority Voting Requirements to Raise Taxes?

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## Abstract

To constrain legislative taxing power, 16 U.S. state constitutions require a supermajority in both chambers to increase or impose taxes. Existing studies report mixed results on the effect of the supermajority rules. In addition, it is little known how states respond to the rule and whether they circumvent them. This study documents states' administrative and judicial responses to the rule and tests if states circumvent the rule by increasing fees instead of taxes. The analyses using a state-level panel data from 1960 to 2008 reveal that (1) supermajority rules significantly increase a tax burden instead of decrease it, (2) the tax burden significantly falls for the first six after the rule adoption, but this effect decays over time, (3) this time-variant effect is substantially small, and (4) states do not increase fees to circumvent the rules.

**Keywords:** supermajority; TEL; state finance; fiscal institutions; budget institutions; budget process; tax limit

## I. Introduction

The constitutional supermajority voting requirement to raise taxes is a procedural constraint on the taxing authority of the legislature. As of December 2016, 16 U.S. state constitutions require a supermajority in both chambers to increase taxes.<sup>1</sup> Many other states—recently Indiana, New Hampshire, and New York—have attempted to adopt the rule (Lee 2014).

Adoption of supermajority requirements brings a substantially rigid change in state constitutions, and therefore their effectiveness must be carefully studied. Surprisingly, only a handful of studies are currently available and those studies provide an unclear conclusion. In addition to the mixed evidence, they miss an important issue in policy debates—the potential circumventing behavior of state governments.

Supermajority voting requirements have been criticized by both supporters and opponents because arguably, state governments can find ways to circumvent the rule to raise revenue and to abide by the rule simultaneously. Existing literature, however, does not account for the potential circumvention when estimating the effect of the rules on taxes. If state governments circumvent supermajority requirements their effectiveness (if there is any) is expected to deteriorate.

To fill the gap in the current literature, this paper scrutinizes the effectiveness of supermajority rules by accounting for potential time-varying effects. In addition, it documents legal cases where state governments were suspected to circumvent the supermajority requirements. This paper is the first attempt to document and empirically test the potential circumvention.

The empirical model of this paper allows each state to have its own time trend to address a potential self-selection issue. Analyses using a state-level panel dataset from 1960 to 2008 reveal that (1) supermajority rules significantly increase a tax burden instead of decrease it, (2)

the tax burden significantly falls for the first six years for an additional year after the rule adoption, but the effect decays after that, (3) this time-variant effect is substantially small, and (4) states do not increase fees to circumvent the rules.

## **II. Effectiveness of Supermajority Rule to Raise Taxes**

There are theoretical arguments on the effectiveness legislative supermajority voting requirements for tax and tax-related bills. From the Public Choice perspective, requiring supermajority votes will control budgetary discretion of politicians by increasing political costs of a winning coalition (Niskanen 1971; Brennan and Buchanan 1977, 1980; Stansel 1998). This perspective contends that budget-maximizing politicians cause budget growth because they tax and spend more than what is necessary. Naturally, it presumes that a large government is wasteful and incongruent with what the electorate desires. Therefore, the supporters of this view recommend that taxing power must be constrained to counter-balance the bias of wasteful spending (Brennan and Buchanan 1977, 1980).

In contrast, the skeptics of the rule argue that it neither promotes fiscal discipline nor controls the growth of government as intended. Fiscally conservative governments are likely to constraint spending regardless of the presence of the rule. Since they are fiscally conservative, they are also more likely to adopt the rule. On the contrary, budget-maximizing governments tax and spend more. And they are likely to circumvent the rules to raise taxes even if the rule is present. Thus, the rule in those states would not be effective anyway (Poterba 1994; Leachman et al. 2012; McCubbins and McCubbins 2014).

In current literature, evidence on the effectiveness of the rule remains unsettled. Studies in the early 2000s report that the rules are effective in reducing taxes and spending (Crain and Miller 1990; Knight 2000; Beasley and Case 2003). Nonetheless, studies in the late 2000s and

the recent years show conflicting evidence. Bradbury and Johnson (2006) find no effect of the rules on taxes and spending. Heckelman and Dougherty (2010) find that their effect depends on types of taxes. Recently, Lee et al. (2014) show that the rules increase rather than decrease taxes and spending through pork-barrel politics and vote trading because the rules unintentionally grant strong negotiating power to a super-minority.

It must be emphasized that existing studies unintentionally overlook the central question of policy debates on this issue. Both supporters and opponents of the rules point out that states use gimmicks to avoid the rules to raise revenue. This type of behavior is known as “circumvention” (Kiewiet and Szakaly 1996). Studies show that states find ways to circumvent constitutionally-required balanced budget rules and debt limits (Poulson and Kaplan 1994; Wagner and Sobel 2006; Rose 2008; McCubbins and Moule 2010; Bifulco et al. 2012). Specifically for supermajority vote requirements, Lee (2014) finds that the effect of the supermajority requirement in California decays over time, suggesting a time-variant effect of the rule.<sup>2</sup> Although this time-varying effect—losing effectiveness of the rule—is one of the most important and frequent points in policy debates, current studies assume that states consistently comply with the rules once it is adopted and the effectiveness or ineffectiveness of the rules is permanent and time-invariant in constraining taxes. Unfortunately, current literature does not provide sufficient knowledge as to how states cope with the rules and whether the circumvention affects the effectiveness of the rules. In the next section, cases are presented to show responses of state governments to the rules.<sup>3</sup>

### **III. State Responses to Cope with Supermajority Rule**

#### **A. State Actions to Circumvent the Supermajority Rule**

Opponents of the supermajority rules argue that state governments may raise taxes by increasing fees, tuition, and other levies that are not subject to the rule. Because this circumvention makes the rule ineffective, opponents recommend the rule removed from the state constitutions (Garrett 1999; McGunnis and Rapaport 1999; Leachman et al. 2012). For exactly the same reason, supporters of the rule recommend an extension of the rules to fees and surcharges, but unlike the opponents, they want stricter enforcement of the rule to prevent circumvention.

***Taxes vs. Fees.*** California Proposition 26 “Stop Hidden Taxes” in 2010 demonstrates the effort to close the potential loophole of the rules. Proposition 26 was proposed by the California Chamber of Commerce to extend the definition of a tax to various types of fees in the State Constitution because fees were not subject to the two-thirds supermajority rule when it was approved in 1978. The Chamber argued that the proposition is necessary to ensure the effectiveness of the supermajority requirement in California because state and local governments disguise new taxes as fees to raise more revenue without abiding by the supermajority rule. Voters approved it with 52.5% votes in favor. Likewise, in Arizona, Florida, and Nevada, supermajority requirements apply to fees, penalties, levies, charges, funds, tuitions, and assessments as well as taxes.

***State-Enterprise Exemptions.*** Voters have suspected that state legislators use state to impose regulatory fees that are not subject to supermajority rules to circumvent them. In 2006, for example, California state legislators established the California Air Resources Board (ARB) to reduce greenhouse gas emissions. The Board was authorized to auction greenhouse gas allowances through cap and trade to generate revenues for air quality regulations. The California Chamber of Commerce filed a petition arguing that the allowances are illegal taxes. The

Chamber argued that ARB was established by a simple majority and, therefore, has no authority to impose new taxes for which the State Constitution requires a two-thirds legislative supermajority in both chambers. In essence, the Chamber accused the state of circumventing the rule by using ARB.

The ARB, on the other hand, disputed that the allowances are not subject to the supermajority requirement because they are not new taxes for two reasons. First, the allowances are collected for specific regulatory reasons, not for increasing general revenues. Second, unlike taxes, participation in the auction is voluntary and participants pay a market price. The Superior Court of California agreed with the ARB in 2013 (*California Chamber of Commerce et al. v. California Air Resources Board*, 2013).

Colorado has a similar case. The Tax Payers Bill of Rights (TABOR) group filed a petition against the Colorado Bridge Enterprise (CBE) for illegally levying bridge safety surcharges. TABOR claimed that the surcharges are illegal taxes because they were not approved by a constitutionally-required supermajority. In 2014, the Colorado Court of Appeals decided that the surcharge is legal because the General Assembly declared that the CBE is a state enterprise exempted from the TABOR requirement (*TABOR Foundation v. Colorado Bridge Enterprise*, 2014).

These two cases in California and Colorado anecdotally show how state governments could circumvent the supermajority requirements. It is also plausible that other state governments may engage in this type of practice. Nonetheless, it is unclear whether it is a widespread practice across states. If they do as some voters suspect, revenues from fees and miscellaneous sources would increase after states adopt the rule. This will be tested in the empirical section.

## **B. No Circumvention**

Although the circumvention hypothesis is popular in policy debates, Stark (2014) maintains that “there is no reason to believe that fiscal outcomes are being directed by a hostile legislature attempting to circumvent the will of the people” because voters are regularly and directly engaged in the fiscal decision making. He argues that voters want to limit taxes, but they also want to increase spending. Brennan and Buchanan (1977; 1980; 1985) conjecture that when the rules become too restrictive to fund increased demands for public programs, voters will relax constitutional taxing limits. Although rare, it has happened a few times in California where voters lowered the legislative supermajority threshold from two-thirds to a simple majority to pass the budget and budget-related bills. In 2000, Californians also lowered the popular vote threshold to approve school facility bond measures from two-thirds to 55%. However, none of the states has lowered the supermajority requirements for a tax increase in the state constitutions.

When a tax increase is needed, state governments often raise taxes by the books through a legislative supermajority vote or referenda. However, when they do, states usually ask for a temporary tax increase to reduce high political costs. But once approved, the tax hikes are often extended to become permanent in effect. For instance, voters in Nevada extended a temporary increase in sales tax to support schools three times since 2009. In 2012, Californians approved the Proposition 30 to increase personal income tax on earnings over \$250,000 for seven years. It was extended for 12 years by a referendum in 2016.

Supermajority voting requirements impose high political costs when state legislators want to increase taxes and revenues. A cursory examination reveals that supermajority states proposed 2.3 less bills than non-supermajority states between 2013 and 2015 fiscal years. On average, 4.8 tax bills that would bring additional revenues were proposed by supermajority states whereas 7.1

bills were proposed by non-supermajority states (National Conference of State Legislatures State Tax Actions Database). This lower average number of tax bills may suggest that states do not always attempt to circumvent the rules, and they are effective in constraining may be effective in constraining tax hikes, which is the rule initially intends to achieve.

### **C. Judicial Actions to Undermine the Rule**

Some state governments have actively sought legal actions to undermine or even eliminate the supermajority requirement. In those states, the supermajority rule has been suspended, overturned, and overruled.

In 2002, Nevada Governor Kenny Guinn petitioned the State Supreme Court for a writ of mandamus to compel the state legislature to raise taxes using a simple majority to fund public schools. Due to the budget shortfall, the Legislature had to increase taxes by a supermajority to fund public schools and to meet the constitutionally-required balanced budget. To do so, the Nevada Legislature had to meet the two-thirds supermajority requirement to raise taxes. At that time, however, the Legislature was unable to form a supermajority coalition, which led to a deadlock in the state legislature.

The court ordered the Legislature to proceed with a special session to fund public education under a simple majority rule. The court stated that the supermajority rule “must give way to the substantive and specific constitutional mandate to fund public education” (*Guinn v. Legislature of Nevada*, July 2003). In essence, the court’s decision undermined the constitutional supermajority requirement to raise taxes. The decision, however, was overturned in 2003 by the State Supreme Court which stated that “such initiatives, however inconvenient to the operatives of government they may be at times, represent the ultimate form of citizen consent to government” (*Guinn v. Legislature of Nevada*, September 2003).

The state of Washington has a muddled history with its supermajority rule. Voters adopted a two-thirds supermajority rule to raise taxes in 1993 through an initiative process. The state legislators, however, suspended the rule in 2001 and renewed the suspension three times since then.<sup>4</sup> Furthermore, the state House Democrats filed a petition in 2011 that the supermajority rule is an unconstitutional limit on the legislative taxing authority. In 2013, the State Supreme Court ruled that the supermajority requirement does violate the state constitution (*League of Education Voters v. State of Washington*, 2013), which overturned the supermajority rule.

In sum, states have responded to supermajority vote requirements in various ways. State governments have used exemptions and loopholes to circumvent the rule; they have increased taxes through referenda without circumventing the rule; they have taken judicial and legislative actions to undercut the rule. But all these actions are not mutually exclusive. This is why it is important to document and recognize how states cope with the rule in various ways because it challenges the assumption that states abide by the rule once it is adopted and therefore the effects are permanent and time-invariant. If we recognize various actions by state governments, the effect of supermajority requirements may change over time depending on how states respond to the rule. This potential time effect resulted from states' circumventing behavior will be examined in the next section.

## **IV. Data and Methods**

### **A. Data**

The dataset is a state-level yearly panel data with 46 states from 1960 to 2008. It was compiled mainly from the U.S. Census State Government Finances, the Bureau of Economic Analysis, and the National Conference of State Legislatures. (See appendix for details.) The four excluded

states are Alaska, Nebraska, Arkansas, and Michigan. It is common to treat Alaska as an outlier in state tax literature because of its heavy reliance on severance taxes (Primo 2006). Nebraska was excluded because of its unicameral system. All supermajority states require a supermajority in both chambers, so it is important to control for political party composition of both, which makes it impossible to include Nebraska. Arkansas was excluded due to its unusually long period of time under a supermajority rule as presented in table 1. The state adopted a constitutional supermajority voting requirement in 1934, while the rest of the states did so after 1970. This may unduly influence the results when the time effects are estimated.

[Table 1 here]

Table 1 shows that the specifics of the rules vary. For example, Michigan applies the rule only to property taxes. That means the state can raise other taxes by a simple majority. Thus, Michigan was excluded from the sample because state's response to the rule and its fiscal effects may qualitatively differ from the rest of states whose supermajority requirement applies to all taxes.

## **B. Empirical Model**

One of the challenges in estimating the effects of supermajority requirements on fiscal outcomes is endogeneity, specifically the self-selection issue. Unobserved variables may affect states' propensity towards the rule adoption, which cause biased estimates. For instance, citizens in high spending states may be more prone to adopting rules to constrain a tax burden. If that is the case, the estimates will have an upward bias. On the contrary, the estimates will have a downward bias

if citizens are less inclined to adopt the rule because they want more public goods. This potential endogeneity has been recognized in Knight (2000) and Lee et al. (2014) where the presence of a supermajority rule was instrumented with the existence of initiative processes and the degree of difficulty to amend state constitutions.<sup>5</sup>

Nevertheless, there are concerns about the instrumental variable approach in previous studies. First, the initiative is likely to influence fiscal outcomes through mechanisms other than the supermajority requirements. It can directly affect taxes and spending through referenda and initiatives and it can affect other constitutional budget rules. Second, the initiative process is more commonly available in some regions, particularly the West, than in others. As a result, the instrument may be even more strongly correlated with an unobserved preference for fiscal policies than with supermajority requirements. Third, recent evidence shows that states have had their own fiscal preferences even long before they allowed initiative processes in their state constitutions (Berry 2015). Furthermore, existing studies provide little information about the validity of their instrument variables, such as the joint explanatory power test of the instrument and identification test. Results in the previous studies also indicate signs of weak instruments as the second-stage coefficients of supermajority rules are much larger than the Ordinary Least Squares estimates.<sup>6</sup>

Instead of taking an instrument variable approach that is used in previous studies, this study employs fixed effect estimators with state-specific random trend. The fixed effect estimator is like a difference-in-difference estimator that identifies the treatment effect by comparing pre- and post-fiscal outcomes in the supermajority states to the pre- and post-fiscal outcomes in the non-supermajority states over the same period. The state-specific random trend

allows each state to have its own linear time trend (Wooldridge 2002). The estimator is as follows:

$$y_{it} = \beta_1 D_{it} + \beta_2 S_{it} + \beta_3 S_{it}^2 + \lambda X + \alpha_i + \delta_t + \psi_i T + \varepsilon_{it},$$

where  $y_{it}$  is fiscal outcome in state  $i$  and year  $t$ .  $\beta_1$  is the coefficient of the dummy variable  $D_{it}$ , which indicates the presence or absence of a supermajority rule in state  $i$  at time  $t$ . It captures the change in pre- and post-fiscal outcomes.  $S$  is the number of years since the rule adoption. For instance,  $S=5$  if five years have passed since the adoption.  $\beta_2$  captures the time effect of supermajority rule after the rule adoption. The coefficient  $\beta_3$  captures any time-varying effect of the square term  $S^2$ .  $X$  is a vector of covariates and  $\lambda$  is a vector of their coefficients. The model includes conventional state fixed effects  $\alpha_i$  to capture state-level unobserved heterogeneity and year fixed effects  $\delta_t$  to capture any aggregate common year shocks, and  $\varepsilon_{it}$  to capture idiosyncratic errors.

It is important to include the term  $\psi_i T$ . It allows states to have their own linear time because one of the key identifying assumptions for fixed effects estimators is the parallel trends. The fact that the treated states seem systematically different from the untreated states raises serious doubts about this assumption. Thus, mere state and year fixed effects will not be sufficient. At a minimum, it is necessary to allow states to be different. This will make the parallel trends assumption much more plausible and can help to ensure that differences in pre-existing trends between states do not bias effect estimates.

### **C. Variables**

***Dependent Variables.*** Four dependent variables are examined: tax burden, growth of tax burden, fee burden, and tax-to-fee ratio. Tax burden was measured as an effective tax rate, the total tax amount collected by state governments per \$1000 of personal income. It does not include local

taxes.<sup>7</sup> Some studies examine types of taxes, but it is appropriate to use the total tax because some states do not collect certain types of taxes.

Growth of tax burden was computed to examine whether supermajority requirements slow down the growth of tax burden as intended. The requirements aim to constrain the growth of tax rates rather than to reduce tax rates. Previous studies mostly focus on the level of tax rates rather than the growth of tax rates. This study examines both.

Total fee burden is examined to see if supermajority requirements increase fees to avoid tax increases. The variable is defined as state revenue from fees, charges, and miscellaneous revenue sources per \$1000 of personal income, excluding local fees and transfers from the federal government.<sup>8</sup> Lastly, a tax-to-fee ratio in state revenue was examined to see the relative fractions of the two revenue sources. The circumvention hypothesis predicts that states increase fees instead of taxes. If that is the case, then the tax-to-fee ratio is expected to decrease.

***Key Independent Variables.*** One of the key independent variables is a binary indicator of the presence of a constitutional supermajority requirement to raise taxes. It takes a value of one if a state is under supermajority requirement at a given year and zero otherwise. To estimate the time effect of supermajority rule, the empirical models include the number of years passed since the rule adoption and its squared term. The coefficients capture any linear or non-linear relationships between time passed since the rule adoption and fiscal outcomes.

***Control Variables.*** Demographic, economic, and political-institutional variables are controlled for. A natural log of state population is controlled for to account for the economy of scale. The fraction of the population that are children (under 18 years old) and the elderly (age 65 and older) is controlled for because it influences the level of state spending on education and assistance for the elderly. Real per capita income is controlled for because the demand for public

spending increases with income (Wildasin 1989). The growth rate of per capita income is included to account for economic fluctuations for two reasons. Economic downturns reduce tax revenues from income and sales; they also increase the need for public assistance.

Several political-institutional factors are included: the governor's party affiliation (one if Democrat), the percentage of Democrats in the lower chamber, and the percentage of Democrats in the upper chamber. In addition, the model controls for a divided government, citizen ideology, government ideology, and the existence of expenditure limits. The detailed description of the variables, data sources, and summary statistics are in the appendix.

## **V. Results**

### **A. Tax Burden**

Table 2 presents the effect of supermajority rule on tax burden measured as the tax amount collected by the state governments per \$1000 of personal income. Models 1 and 2 include only the supermajority rule indicator variable, models 3 and 4 include the number of years since the rule adoption and its squared term, and finally Models 5 and 6 include states' economic, political institutional, and demographic attributes. All models control for state and year fixed effects.

[Table 2 here]

For comparison purposes, models without and with state-specific time trends are presented. In model 1 without state-specific time trends, the coefficient of the supermajority rule is -4.887 and is statistically significant at the 5% significance level. It implies that the average tax burden is

lower by \$4.89 per \$1000 of personal income after states adopt a supermajority rule. Yet, when state-specific trends are allowed to vary in model 2, the coefficient is no longer statistically significant and the magnitude of the coefficient becomes smaller by almost one-tenth. Goodness-of-fit statistics indicate model 2 performs better than model 1 in fitting the data, as indicated by the larger *Adjusted R<sup>2</sup>*, smaller *AIC*, and *BIC* statistics.

Note that for all estimations, model fit is better when state-specific time trends are allowed to vary (compare model 3 to model 4, and model 5 to model 6). Models without state-specific time trends—models 3 and 5—are presented to show the importance of controlling for state-specific time trends.

Model 4 shows estimates of the time variables whose coefficients are statistically significant at the 5% significance level. The coefficients are virtually the same as those in model 8 with demographic, economic and political-institutional covariates, so the interpretations will focus on model 6.

In model 6, the coefficient of the supermajority rule is 2.843 and is statistically significant at the 5% significance level. It indicates that supermajority rules significantly increases tax burden by \$2.84 per \$1000 of personal income. This positive coefficient goes against the expectation that the supermajority rule would reduce tax burden. However, this positive coefficient is consistent with the findings in Lee et al. (2014).

The time variables provide an interesting insight. The coefficients of time variables indicate a nonlinear time effect. The tax burden initially decreases by \$0.48 per \$1000 of personal income for additional year passed since the rule adoption, but it rises by \$0.02 per \$1000 of personal income after eleven years since the adoption. This time effect is graphically presented in figure 1.

[Figure 1 here]

The results in table 2 and figure 1 reveal a statistically significant, but substantially small time effect of supermajority requirements on tax burden. During the first eleven years after the rule adoption, the tax burden decreases as an additional year passed since the adoption. After eleven years, the tax burden begins to rise. However, the linear combination of time variables is significantly lower than zero at the 10% significance level only for the first six years. At the 5% significance level, the tax burden statistically differs from zero only in the first year after the adoption. The range of the magnitude of time effects approximates \$0.45 to \$2.00 per \$1000 of personal income. In 2008 (the last year of the sample time periods), the median tax burden was \$66. Even if we assume the maximum effect of supermajority requirements in reducing tax burden, the effect is a reduction in tax burden from \$66 to \$65.98 per \$1000 of personal income. The size of the coefficients is not substantially significant.

### **B. Growth of Tax Burden**

Even if supermajority requirements do not substantially change the level of tax burden they may suppress the growth of tax burden. If states adopt the rule because they prefer taxing and spending more, they may have a higher level of tax burden in the first place and even after the rule adoption. Yet, the growth of tax burden may slow down because of supermajority requirements. Table 3 reports the effects of supermajority requirements on the growth of tax

burden. All models control for state fixed effects, year fixed effects, state-specific time trends, and covariates.

[Table 3 About Here]

The coefficient of supermajority requirements is expected to be negative if the rules constrain the growth of tax burden. In models 1 through 3, it is negative, but is not statistically significant. It indicates no effect of the rule in constraining the growth of tax burden. In model 2, the coefficient of the number of years since the rule adoption is negative and statistically significant at the 5% significance level. The growth of tax burden slows down by 0.13 percentage points for each additional year after the rule adoption. However, model 2 with the time variable is not better than model 1. The time variable does not add a substantial predictive power to model 1. In model 3, the squared term of the years after the rule adoption is not statistically significant. It indicates no time-variant effect of supermajority requirements on the growth of a tax burden.

### **C. Fee Burden and Tax-to-Fee Ratio**

Do states collect more fees instead of taxes to circumvent supermajority requirements? Both opponents and supporters of the rule assert that states do. As presented in table 1, however, most supermajority states apply the rule to fees or any means that would increase state revenues regardless of a revenue source. Exceptions are Michigan (which is excluded from the sample because its rule applies only to property taxes), South Dakota, and Louisiana. That means in most states, legislators are restricted by the rule to raise fees.

Table 4 presents the effect of supermajority requirements on fee burden and tax-to-fee ratio in state revenue. All models include state and year fixed effects, state-specific time trends, and covariates with state-clustered standard errors.

[Table 4 About Here]

Panel A in table 4 shows the effects of supermajority requirements on fee burden. It shows no statistically significant effect of supermajority requirements on fee burden because all coefficients are not statistically significant at the 5% significance level. The coefficient of the supermajority requirement dummy variable is positive, which indicates an increase in fee burden after the rule adoption, but it is not statistically significant. Thus, the rule does not change the level of fee burden. In addition, statistically insignificant coefficients of the time variables indicate no evidence for the circumvention hypothesis in which states increase fees instead of taxes to avoid supermajority requirements. Also the model fit to the data is better without time variables than with time variables.

Panel B reports that supermajority requirements have little effect on tax-to-fee ratio in state revenue either. The model fit to the data is better in predicting the outcomes when time variables are included. The coefficient of the supermajority rule indicator is expected to be negative if tax-to-fee ratio decreases after the rule adoption. Indeed, the coefficient is negative, but it is not statistically significant at the 5% significance level. The insignificant coefficients on

time variables indicate no evidence to support that states raise more revenues from fees or miscellaneous charges than from taxes.

Overall, the results show that the effect of supermajority requirements on tax burden is not as straightforward as previous studies suggest. The rules do not reduce the level of tax burden; in fact, the average tax burden is higher after the rule adoption, which is consistent with the findings and theoretical expectations in Lee et al. (2014). Although the higher average tax burden seems unexpected, it could make sense if states that adopt the requirements impose taxes at a higher level in the first place. For these states, it is possible that the rules do not reduce the level of tax burden, but decelerate the growth of tax burden. Indeed, empirical evidence of this study provides that the rules reduce the growth of tax burden by 0.13 percentage points for every additional year since the rule adoption.

Lastly, the conjectured circumventing behavior of the legislators implies that state governments increase fees and other revenue sources to avoid the rule. Yet, empirical evidence of this study suggests that fees do not significantly grow and the tax-to-fee ratio in state revenue does not decline after the rule adoption.

## **VI. Conclusion**

The supermajority requirement is a popular constitutional amendment because it is considered to be an effective apparatus in controlling budget-maximizing governments. Yet, imposing a supermajority voting requirement in state constitutions brings institutional rigidity in state fiscal management. Current policy debates, however, are based on not only mixed empirical evidence on the effectiveness of the rules and untested claims that state governments circumvent the rules. This study offers two important points. First, it documents past court cases that indicate how state governments circumvent and undermine the rules. Second, it improves the empirical

identification strategy of current literature and provides evidence that the effects of supermajority voting requirements are more nuanced than previously reported. In sum, there is weak evidence that the constitutional supermajority voting requirements to raise taxes are an effective policy tool to control the budget-maximizing government.

Given the effect is weak at best, the long-term practicality of supermajority requirements for tax increases still remains unclear. It is often portrayed that legislators want to increase taxes and spending, while voters want to constraint them. Nonetheless, literature in social psychology points out that voters have systemic cognitive biases to prefer low taxes and high spending while wanting a balanced budget (Block 2008). The evidence of this study suggests that the effectiveness of the rule is short-run at best, which means that the rule may end up a psychologically pleasing policy with no economically sound outcome. Moreover, the rule may distract legislators and voters from important social and fiscal policy objectives (Block 2008). Dealing with the supermajority rule may tie up much more resources than the necessary as seen in *Guinn v. Legislators of Nevada*. Implementing voter initiatives, forming a supermajority coalition, and challenging the rule in the judicial system incur high transaction costs that may prove wasteful.

It will require more scrutiny to understand the complex nature of the supermajority voting requirements that interact with state-specific characteristics. Further examinations are needed as to whether and how voters as well as the government of each state behave after the rule adoption. Future studies will need to include state-by-state case studies (Temple 1997) as seen in Lee (2014) and McGuire and Rueben (2006) to account for state-specific institutional structures and voter sentiments towards taxes.

## Appendix

### A. Definition of variables (47 U.S. state panel, 1960-2008)

Variable	Description (Data Source)
Tax burden	Total state taxes per \$1000 of personal income (US Census State Government Finances)
Fee burden	Total fees, charges, and miscellaneous revenue per \$1000 of personal income (US Census State Government Finances)
Supermajority rule status	1=States under supermajority rule; 0=otherwise (Author's data collection from state constitutions)
Years passed after adoption	Number of years passed after adoption of supermajority rule. Supermajority states only. (Author's own calculation)
Governor's party affiliation	1=Democrats; 0=otherwise. (US Census)
Democrats lower chamber	% of Democrats in lower chamber (US Census)
Democrats upper chamber	% of Democrats in upper chamber (US Census)
Divided government	1=The governor in a different party from one of houses of the legislature; 0=otherwise. (The Book of the States published by The Council of State Governments)
Citizen ideology	Scale 0-100, Higher values indicate more liberal ideology. (Fording 2015)
Government ideology	Scale 0-100, Higher values indicate more liberal ideology. (Fording 2015)
Population	Population in natural log (US Census)
Dependent population	% of dependent population (ages 0-17 and 65 and over)
Income per capita	In \$2015, thousands, in log (Bureau of Economic Analysis)
Growth	Real income growth rate
Expenditure limit	Information adopted from Kioko (2010) 1=presence of expenditure limits; 0=otherwise.
Term limit	1=presence of legislative term limit (either consecutive/lifetime); 0=no legislative term limit.
Initiative/referendum	1=presence of initiative or referendum process to amend a state constitution; 0=otherwise. (Initiative and Referendum Institute at the University of Southern California.)

## B. Summary statistics

Variable	N	Mean	Std. Dev.	Min	Max
Tax per \$1000 of personal income (\$)	2254	61.96	13.39	22.41	118.34
Tax growth from the previous year	2208	.77	5.84	-27.47	51.46
Fee per \$1000 of personal income (\$)	2254	10.80	5.23	2.10	38.78
Tax-to-fee revenue ratio	2254	6.77	2.80	1.36	20.14
Existence of supermajority rule	2254	.13	.34	0	1
Number of years passed since adoption of supermajority rule	2254	1.70	5.44	0	38
Squared value of number of years passed since adoption	2254	32.43	136.42	0	1444
Log population	2254	14.91	1.02	12.58	17.42
Population age<18 or age>=65 (%)	2254	69.77	11.08	53.38	106.16
Income per capita (\$)	2254	15396.97	11754.52	1272.00	56121.00
Income growth	2208	6.31	3.36	-9.26	40.95
Democrats in lower chamber (%)	2254	.58	.19	.13	1
Democrats in upper chamber (%)	2254	.58	.20	.09	1
Governor's party affiliation	2254	.55	.50	0	1
Divided government	2254	.49	.50	0	1
Citizen ideology	2254	47.95	16.81	.96	95.97
Government ideology	2254	49.35	24.74	0	99.39
Expenditure limit (1=Yes, 0=No)	2254	.28	.45	0	1

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Table 1.

## States with Constitutional Supermajority Rules in the Sample (1960-2008)

State (year)	Provision in State Constitution
Arizona (1992)	[Article 9, Sec. 22] 2/3 for a net increase in state revenues (for imposition and an increase.) State revenues include fees, penalties, funds, tuition, etc (Sec. 17(2)).
Arkansas (1934)	[Article 5, Sec. 38] 3/5 for tax rate increase. Alcohol and sales taxes are not subject to the rule.
California (1978)	[Article 13A, Sec. 3(a)] 2/3 for any change in state statute which results in any taxpayer paying a higher tax. Tax means any levy, charge, or exaction of any kind imposed by the State with some exceptions (Article 13A, Sec. 3(b)).
Colorado (1992)	[Article 10, Sec. 20(6)(a)] 2/3 for “emergency taxes.” Emergency property taxes are prohibited.
Delaware (1980)	[Article 8, Sec. 10&11] 2/5 for imposition and an increase of tax rates and license fees.
Florida (1994)	[Article 7, Sec. 1(e)] 2/3 for a state revenue increase. State revenue means taxes, fees, licenses, and charges for services. New tax and fees can be imposed only with 2/3 of the voters (Article 11, Sec. 7, 1996).
Kentucky (2000)	[Part I, Sec. 36] 3/5 for raising revenue or appropriating funds in an odd-numbered year.
Louisiana (1974)	[Article 7, Sec. 2] 3/4 for the levy of a new tax, an increase in an existing tax, or a repeal of an existing tax exemption.
Michigan (1994)	[Article 9, Sec. 3] 3/4 for the maximum ad valorem property taxes for school district operation.
Mississippi (1970)	[Article 4, Sec. 70] 3/5 for revenue bill or any bill for assessment of property for taxation.
Missouri (1980, 1996)	[Article 10, Sec. 19 (1980) and Sec. 18(a) (1996)] 2/3 for raising revenue exceeding the revenue limit. State revenues include all general and special revenues, license, and fees. New taxes or fees only by voter approval.
Nevada (1996)	[Article 4, Sec. 18(2)] 2/3 to create, generate, or increase any public revenue in any form, including but not limited to taxes, fees, assessments and rates, or changes in the computation bases for taxes, fees, assessments and rates.
Oklahoma (1992)	[Article 5, Sec. 33(d)] 3/4 for any revenue bill.
Oregon (1996)	[Article 4, Sec. 25(2)] 3/5 for raising revenue.
South Dakota (1978)	[Article 11, Sec. 14] 2/3 for any increase or imposition of tax.
Washington (1993)	[Article 7, Sec. 2] 2/3 for tax raise, fee increase, and new fees.

Table 2.  
Effect of Supermajority Requirements on Tax Burden

Dependent variable: Tax burden (Tax per \$1000 of personal income)	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Supermajority requirements dummy	-4.887* (2.032)	-.598 (1.444)	-1.314 (1.059)	2.468* (1.120)	.702 (1.019)	2.843* (1.290)
# years passed since the adoption			-.488 (.299)	-.456* (.210)	-.680* (.298)	-.482* (.233)
Squared # years passed since the adoption			.009 (.006)	.021* (.010)	.017* (.008)	.022* (.010)
State Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
State-specific Year Trends	No	Yes	No	Yes	No	Yes
Control Variables	No	No	No	No	Yes	Yes
<i>N</i>	2254	2254	2254	2254	2208 <sup>#</sup>	2208 <sup>#</sup>
<i>Adj.R-squared</i>	.412	.63	.419	.636	.493	.636
<i>AIC</i>	14432	13341	14403	13305	13670	12890
<i>BIC</i>	14689	13598	14660	13562	13927	13147

Notes: State clustered standard errors are in parentheses.

<sup>#</sup> Model 5 and Model 6: N is smaller due to the inclusion of economic growth variable. Data in 1960 are lost.

\* p<0.05.

Table 3.  
Time Effect of Supermajority Requirements on Growth of Tax Burden

DV=tax growth	Model 1	Model 2	Model 3
Supermajority requirements dummy	-.924 (.567)	-.755 (.575)	-.591 (.722)
# years since rule adoption		-.129* (.042)	-.158* (.060)
Squared # years since rule adoption			.001 (.002)
State Fixed Effects	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
State by Year Fixed Effects	Yes	Yes	Yes
Control Variables	Yes	Yes	Yes
<i>N</i>	2208	2208	2208
<i>Adj. R-squared</i>	.184	.184	.184
<i>AIC</i>	13571	13570	13570
<i>BIC</i>	13833	13838	13838

Notes: State clustered standard errors are in parentheses.

\*  $p < .05$ .

Table 4.  
Time Effect of Supermajority Requirements on Fees and Tax-to-Fees Ratio

Panel A. Fees			
	Model 1	Model 2	Model 3
Supermajority requirements dummy	.538 (.436)	.532 (.456)	.145 (.677)
# years since rule adoption		.005 (.063)	.071 (.097)
Squared # years since rule adoption			-.003 (.003)
<i>N</i>	2208	2208	2208
<i>Adj. R-squared</i>	.788	.787	.788
<i>AIC</i>	7722	7722	7718
<i>BIC</i>	7990	7989	7992

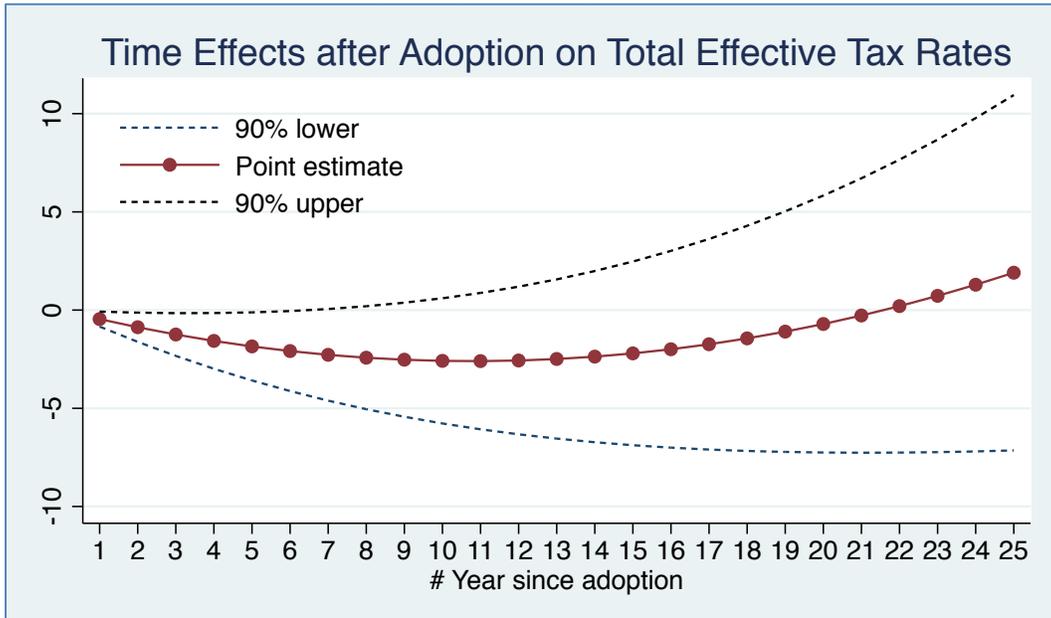
  

Panel B: Tax-to-fee ratio			
	Model 4	Model 5	Model 6
Supermajority requirements dummy	-.745 (.528)	-.765 (.507)	-.135 (.563)
# years since rule adoption		.015 (.054)	-.093 (.067)
Squared # years since rule adoption			.004* (.002)
<i>N</i>	2256	2256	2208
<i>Adj. R-squared</i>	.618	.618	.623
<i>AIC</i>	6472	6472	6448
<i>BIC</i>	6729	6728	6710

Notes: State clustered standard errors are in parentheses. All models include state fixed effects, year fixed effects, state-by-year fixed effects, and control variables.

\* p<.05.

Figure 1.  
Time Effect of Supermajority Requirements on Tax Burden



## Endnotes

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<sup>1</sup> Wisconsin adopted a statutory two-thirds supermajority voting requirement in 2011. A bill is pending to amend the state constitution.

<sup>2</sup> Not many studies have distinguished the short-run and long-run effects of tax and expenditure limitations (TEs). Poulson and Kaplan (1994) show that TEs are effective only in the short run due to rent-seeking interest groups. McGuire and Rueben (2006) show that Colorado's TEL increased economic growth only in the short run.

<sup>3</sup> Note the state governments primarily refer to the legislature since the rule is imposed on it, but administrative bodies also react to the rule in some states.

<sup>4</sup> The Washington Legislature can repeal or amend approved initiatives with a simple majority after two years on the books (Washington Constitution Article II Section 1).

<sup>5</sup> Knight (2000) uses instrumental variables including difficulty in changing state constitutions, the availability of voter direct legislation, the legislative vote required to initiate a constitutional amendment, and the number of legislative sessions needed to consider an amendment. Lee et al. (2014) use availability of voter initiatives, the legislative vote required to initiate a constitutional amendment, and the number of legislative sessions needed to consider an amendment and neighbor state characteristics.

<sup>6</sup> The author of this paper replicated previous studies and finds that the robustness of the weak instrument test (the Anderson-Rubin tests) show weakness of the instrument. Results are available upon request.

<sup>7</sup> Total state taxes include property, sales, excise, individual income, and corporate income, severance, stock trade, death/gift, and poll taxes (U.S. Census Bureau). They exclude local taxes.

<sup>8</sup> Total fees and charges consist of fees on air transportation, education, hospitals, health services, highways, housing, natural resources, parks, sewerage, solid waste management, public welfare, public safety, financial administration, and other charges (U.S. Census Bureau).