

# Policy Representation in the State Legislatures <sup>\*</sup>

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## Abstract

How do electoral and legislative institutions translate public opinion into policy outcomes? Voters first choose representatives and these representatives then agree on policy changes. Understanding representation therefore entails the study of both voting behavior and legislative institutions. We use a new set of estimates which place policy outcomes, status quo locations, the ideology of elite political actors, and the ideology of voters, on a common scale. We apply our results to the state legislatures. We find that the positions of pivotal actors are weakly responsive to the positions of the median voter. In addition, policy outcomes are only moderately correlated with the preferences of voters, policy outcomes experience little change over time, and the lack of change is more incremental than anticipated by existing models of legislative institutions.

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# 1 Introduction

How do electoral and legislative institutions translate public opinion into policy outcomes? Representative democracy entails a two-step process in which voters first choose representatives and these representatives then choose policy. Understanding representation therefore entails the study of both voting behavior and legislative institutions. The study of each has often been strictly compartmentalized because each topic presents its own methodological challenges. Much has been learned recently from the separate study of representation in elections and the lawmaking process, but a deep understanding of *substantive* representation requires building on progress in both areas to track the representation process across all steps.

Our goal is to study the correspondence between public opinion and policy outcomes, as well as the mechanisms behind this correspondence. To go beyond simply measuring representation and to begin to understand institutional factors that moderate representation, we study the state legislatures, where electoral institutions (such as public financing) and legislative institutions (such as gatekeeping committees) vary. Like [Lax and Phillips](#) and [Caughey and Warshaw](#) we are partially motivated to study representation in the states because the states offer us variation in electoral and legislative institutions. In previous work we developed a new set of estimates of policy outcomes, status quo locations, the ideology of elite political actors, and the ideology of voters, on a common scale ([Battista, Peress and Richman, Forthcoming](#)), building on recent advances in the study of representation in elections ([Wright, 2004](#); [Bafumi and Herron, 2010](#); [Stone and Simas, 2010](#); [Shor and McCarty, 2011](#); [Battista, Peress and Richman, 2013](#); [Shor and Rogowski, 2018](#)) and in testing theories of lawmaking ([Clinton and Meirowitz, 2001](#); [Woon, 2008](#); [Richman, 2011](#); [Peress, 2013](#)). These estimates open the possibility of exploring both the quality of representation and the circumstances where representation breaks down.

Here we use those estimates to uncover evidence of imperfect policy representation, and to trace its sources. In particular, our findings indicate that policy outcomes are weakly correlated with and somewhat over-responsive to the position of the median voter—a unit change in the position of the median voter leads to on average a 1.2 unit change in the expected policy outcome.<sup>1</sup> Separately analyzing spending and taxation policies, we find that spending is under-responsive to the median voter and taxes are over-responsive to the median voter.

Both representation to elections and legislative institutions play a role in shaping the modest degrees of responsiveness. The positions of pivotal actors—governors, median legislators, majority medians, and so on—are over-responsive to the position of the state’s median voter, but the predicted responses remain sufficiently noisy that the correlations are weak. The position of the governor is the exception to this, and is moderately correlated with the position of the median voter. The weak correlation between the positions of state legislative political actors and the median voter is explained by the fact that this relationship is indirect, being mediated by the partisan composition of the state and the partisan composition of the legislative chamber. The patterns are relatively stable across states, though there is some weak evidence that pivotal actors in the upper chamber are more over-responsive under more open primary systems.

Turning to the legislatures, we find that the status quo is even more likely to be preserved than in the most ‘gridlocked’ and ‘blocked’ formal models of the legislative process. Policy

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<sup>1</sup>Throughout this paper, we use the term median voter to refer to the median voter *in the electorate* and use the term median legislator for the chamber medians in the upper and lower houses of the state legislatures. We also use the terms Senate and House to refer to the upper and lower houses of each state legislature, irrespective of local nomenclature, to avoid confusion with the terms lower pivot and upper pivot. We prefer these terms as it avoids such confusing phrases as the “the lower chamber’s upper pivot”.

change at the state level appears to be incremental even when our estimates suggest support from majorities of voters and a sufficient number of pivotal policymakers. Among the set of spatial models we consider, policy outcomes can be best described by a model which incorporates the veto, the presence of a filibuster, supermajority requirements for some legislation, and negative agenda setting by the majority party in each chamber. We refer to this model, a hybrid of [Krehbiel's \(1998\)](#) Pivotal Politics model and [Cox and McCubbins's \(2005\)](#) Party Cartel model, as the Cartel and Pivots model. Our results are thus consistent with existing findings for the U.S. Congress. At the same time, the relative power of this model comes from the fact that it predicts the least policy change among all the conventional theories of lawmaking. When we include the status quo as an explanatory variable, reflecting the classic incremental budgeting perspective ([Davis, Dempster and Wildavsky, 1966](#)), the various other theories of lawmaking do not have any additional explanatory power, suggesting that the spatial models examined cannot fully explain the dearth of policy change at the state level.

## 1.1 Representation in Elections

The study of representation in elections has largely followed the path-breaking work of [Miller and Stokes \(1963\)](#), who realized many years ago that advances in the measurement of public opinion and elite opinion would allow for the empirical study of a topic that had animated political philosophers for many decades. While [Miller and Stokes](#) believed that they could measure the preferences of voters and candidates for office using a series of policy questions, they generated measures of public and elite opinion on different scales. [Miller and Stokes](#) presented evidence that public and elite opinion were correlated while acknowledging that their findings were limited by the absence of a common scale—[Achen \(1978\)](#) later termed this the “perils of the correlation coefficient”. While [Miller and Stokes's](#) study demonstrated that congressional and public ideology were correlated, it remained possible that representation

was poor if members of Congress were systematically more extreme, more moderate, or biased in a particular direction relative to their constituents.

Recent work has made significant progress in measuring the preferences of voters and candidates for office on a common scale. [Stone and Simas \(2010\)](#) developed common measures of voter and candidate ideology by combining surveys of voters and expert placements of candidates for office on a liberal-conservative scale. Rather than rely on expert placements of candidates, [Bafumi and Herron \(2010\)](#) estimated the preferences of legislators using roll call votes and obtained comparable measures of voter opinion through a survey that asked respondents their opinions on a select set of roll call votes. [Shor and Rogowski \(2018\)](#) used common items from the NPAT and the National Annenberg Election Study (NAES) to generate comparable measures of voter and candidate ideology. The recent work in this area tells a story of over-responsiveness—members of Congress vote in ways that are correlated with their constituents’ preferences, but members of Congress tend to be more extreme than their district’s median voter in the direction of their party.

## 1.2 Theories of Lawmaking

Assessments of representation based purely on preference congruence are arguably incomplete without a coupled account of the lawmaking process because policy outcomes are affected by the institutional features and decision processes of legislatures. Scholars of the U.S. Congress have built competing models of the lawmaking process, including [Krehbiel’s \(1998\)](#) Pivotal Politics model and [Cox and McCubbins’s \(2005\)](#) Party Cartel model. These abstracted models attempt to explain when change from the status quo is infeasible and what change is likely to occur when change can take place.

The Pivotal Politics model assigns agenda setting power to the median legislator, who is constrained by the need to satisfy competing “pivots”—actors that have veto power in the legislative process. According to [Krehbiel \(1998\)](#), in the U.S. Congress the pivots include

chamber medians, the 41<sup>st</sup> and 60<sup>th</sup> most conservative members of the Senate (the “filibuster pivots”), and either the President or the “veto-override pivots”. This creates a gridlock interval where no alternative to the status quo can be enacted.<sup>2</sup>

The pivotal politics model does not give the majority party an explicit role. [Cox and McCubbins \(2005\)](#) developed an alternative “Party Cartel” model where the majority party is able to kill legislation by refusing to bring to a vote bills that a majority of the majority party opposes. This model generates a partisan blockout zone—bills that are opposed by the majority party die before receiving a vote. Additionally, [Cox and McCubbins](#) posit that the majority party may also foster majority-party-favored alternatives against the centrist pressure of the median legislator.

Our data also allows us to examine whether any of these models can fully account for the dearth of policy change from one period to the next—is incremental policy change sufficiently explained by gridlock intervals and party blocking? According to [Davis, Dempster and Wildavsky \(1966\)](#), the status quo is particularly privileged, with legislators adopting incrementalism as an aid to calculation, as way of dealing with the complexity of policy-making. In its strongest form, [Davis, Dempster and Wildavsky](#)’s theory posits that the status quo will often fail to change even when substantial (and pivotal) majorities support policy change.

These competing theories of lawmaking describe the likely policy outcome as a function of the status quo and the preferences of the pivotal actors in the lawmaking process. As a result they have implications for the nature of policy representation. The theories offer different predictions about whether and in which direction outcomes will be biased as a function of the particular configuration of preferences and initial status quos. Testing these

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<sup>2</sup>Of course, there are median legislators in both the House and the Senate. [Krehbiel](#)’s model assigns agenda setting power to one of the medians, but his predicted gridlock intervals are invariant to which median is selected as the agenda setter.

theories directly has proven quite challenging. If the preferences of political actors, the status quo, and the policy outcome could be measured on a common scale, it would be straightforward to test the competing theories of lawmaking. Unfortunately, the leading methods for estimating legislator preferences based on roll call voting—pioneered by [Poole and Rosenthal \(1997\)](#)—do not produce reliable estimates of the policy outcome and the status quo. Instead, these techniques only produce a reliable estimate of the cutpoint. [Clinton and Meirowitz \(2001\)](#) developed an approach for estimating the locations of legislative proposals using a series of related votes. The limitation of this approach is the coding requirements for applying this technique are quite steep. Consequently, studies employing the [Clinton and Meirowitz](#) technique have considered a single piece of legislation or a small number of pieces of legislation. Work by [Woon \(2008\)](#), [Richman \(2011\)](#), and [Peress \(2013\)](#) sought to systematically test theories of lawmaking by generating estimates for a more comprehensive set of bills or issues. [Woon \(2008\)](#) developed a technique for estimating the locations of bills using cosponsorship data. [Peress \(2013\)](#) used a combination of voting data, cosponsorship data, and the legislative record to estimate both bill locations and status quo locations. [Richman \(2011\)](#) developed an approach for estimating proposal and status quo locations for tax policies and spending policies using the NPAT. Both [Richman](#) and [Peress](#) find support for theories of lawmaking that combine aspects of [Krehbiel \(1998\)](#)'s Pivotal Politics model and the cartel model of [Cox and McCubbins \(2005\)](#).

### **1.3 Policy Representation in the States**

While much can be learned from separately studying representation in elections and the lawmaking process, there are inherent limitations in the sense that ultimately one might want to know how these fit together to produce overall policy representation. [Erikson, Wright and McIver \(1993\)](#) make important progress by developing measures of state public opinion and state policy to study policy representation in the U.S. States. [Caughey and Warshaw](#)

(2018) developed measures of state public opinion and state policy over a longer period of time. In both cases, public opinion and policy were not measured on comparable scales, so Erikson, Wright and McIver and Caughey and Warshaw (2018) looked at the correlation between state public opinion and state policy, both finding a relatively strong correlation. As with Miller and Stokes’s work, they could not rule out the possibility that policy was over-responsive, under-responsive, or consistently biased relative to public opinion.

Recent work by Lax and Phillips (2011) addressed this limitation by using dichotomous policy choices instead of a continuous policy space. They compare state policy on a number of issues to public opinion specifically on those issues. Lax and Phillips’s findings provided evidence that state policy is over-responsive to public opinion, in the sense that when a slight majority preferred policy X, there was a high likelihood of the state adopting policy X. At the same time, however, they found evidence that policy outcomes were often out of sync with voters’ preferred outcomes.

Our recent study (Battista, Peress and Richman, Forthcoming) laid the ground work for synthesizing the electoral representation, legislative organization, and policy representation areas of research by developing the measures employed here. We first, build on the recent work on representation in elections—on Shor and Rogowski’s (2018) in particular—and employ measures of ideology for political elites and voters on a common scale. Second, we build on Richman’s (2011) methodology for estimating proposal and status quo outcomes while taking this approach from the U.S. Congress to a cross-state comparative perspective. Finally, we address similar questions to Erikson, Wright and McIver (1993), Lax and Phillips (2011), and Caughey and Warshaw (2018) in studying policy representation in the states, while providing the first spatial estimates that place state policies and preferences in common space.

Our methodology differs from Erikson, Wright and McIver (1993) and Caughey and Warshaw (2018) in two important ways. Erikson, Wright and McIver and Caughey and Warshaw



study the correspondence between a broad policy index (or in [Caughey and Warshaw](#)'s case, two broad policy indices) while we estimate the locations of spending and taxation along more specific dimensions. It is this difference that allows us to relate our measures of policy outcomes and status quos to theories of the legislative process. Beyond this, we measure policy outcomes on the same scale as the locations of voters and legislators. This allows us to characterize whether policy is over-responsive, under-responsive, or biased relative to the preferences of various political actors.

Our methodology differs from [Lax and Phillips \(2011\)](#) in three important ways. First, while [Lax and Phillips](#) measure binary policy outcomes (e.g. does the state have an assault weapons ban?), we measure continuous policy outcomes (e.g. the state sales tax, mapped onto a continuous ideological space). Second, [Lax and Phillips](#) use issue-specific measures of public opinion while we use a single composite spatial or ideological measure of public opinion. Third, we are able to generate common space measures of public opinion, policy outcomes, status quos, and the preferences of political actors, while [Lax and Phillips](#) only generate estimates of public opinion and policy outcomes. Our use of a single continuous measure of public opinion allows us to generate comparable estimates of the positions of legislators, governors, and the status quo. This then allows us to analyze the separate roles of electoral institutions and legislative institutions in generating the over-responsiveness and lack of responsiveness which we along with [Lax and Phillips](#) have observed in state policy representation, but which [Lax and Phillips](#)' technique could not unpack. This study is the first able to separately and jointly analyze the process of representation from elections and lawmaking through policy outcomes.

## 2 Methodology

In (Battista, Peress and Richman, Forthcoming), we developed a technique for estimating the preferences of voters, pivotal actors in state politics, policy outcomes, and status quos, on a common scale. Here, we summarize the technique we developed. We next describe the theories of lawmaking that we test. Finally, we present the basic relationship between policies and the state median voter, which we unpack in the main analyses.

### 2.1 Estimating the Common Space

The data that we used to estimate the common space come from three sources. We used the National Annenberg Election Study (NAES) to measure the preferences of voters. We used the National Political Awareness Test (NPAT) to both estimate the preferences of elite political actors and to locate the proposal and status quo. We used state legislative roll call data collected by Wright (2004) to estimate the preferences of elite political actors. To connect the scale of voters and elite political actors, following Shor and Rogowski (2018), we leveraged common items between the NAES and the NPAT. To connect the scale of the different state legislatures, following Shor and McCarty (2011), we used common items between the NPATs for different state legislative chambers.

As is always the case, the scale of the ideal points must be specified. We transformed the ideal points so that median Democrat in the U.S. House is located at -1 and the median Republican in the U.S. House is located at 1. This normalization was chosen because readers are more likely to have a sense of the differences between the parties in the U.S. House than they are to have a sense of the differences between the parties in the state legislatures.

Our estimates of policy outcomes and status quo locations were generated using Richman's (2011) technique. State legislative candidates who responded to the NPAT indicated whether they preferred a large increase, small increase, maintaining the current level, a small

<b>Spending</b>	<b>Taxes</b>
Environment	Alcohol
Healthcare	Capital gains
Higher education	Cigarette
K-12 Education	Corporate
Law enforcement	Gasoline
Transportation	Income greater than \$75,000
Welfare	Income less than \$75,000
	Property taxes
	Sale taxes

Table 1: List of Spending Policies and Tax Policies in the State Legislative NPATs

decrease, a large decrease, or complete elimination—of spending and taxes across various categories. The list of issues included in the analysis is given in Table 1. For each issue, the current policy can be estimated based on the ideal points of legislators that are most likely to respond that they want the policy to be maintained at its’ current level. This is captured by the following ordered probit model,

$$\Pr(\text{MaintainSQ}) = \Phi(c_3 - \beta x_n) - \Phi(c_2 - \beta x_n) \quad (1)$$

Maximizing this probability with respect to  $x_n$  leads to the following formula for the current policy,<sup>3</sup>

$$\widehat{SQ} = \frac{\hat{c}_2 + \hat{c}_3}{2\hat{\beta}} \quad (2)$$

Our NPAT responses come primarily from two years—1998 and 2000—and our estimates of the preferences of legislators come primarily from the 1999-2000 legislative session. We applied the approach above to each of these years.

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<sup>3</sup>Here,  $\Phi$  denotes the normal cumulative distribution function,  $\beta$  denotes the slope of ideology in the probit model,  $c_2$  and  $c_3$  denote the cutoff parameters above and below “Maintain SQ”, and  $\hat{\beta}$ ,  $\hat{c}_2$ , and  $\hat{c}_3$  denote the estimates of the ordered probit parameters.

## 2.2 Modeling Framework

Most of the theories of law-making we consider select some legislator—typically the median legislator—as the “proposer”. They place constraints on the proposer by introducing veto players. For example, according to the Pivotal Politics model, the other chamber, the filibuster pivots, and the president have a veto, where the presidential veto may be over-ridden by the veto override pivots. Some models also assume that there are actors that can kill legislation before it is considered—the Party Cartel model in particular assumes that the majority party median has this ability. There are six theories of lawmaking we consider in this paper.

**Median Legislator Model:** The median legislator model is more a normative representational standard than it is an attempt to encapsulate actual state legislative politics. State policy outcomes are shaped by majoritarian legislative decision-making.

**Pivotal Politics Model:** According to the Pivotal Politics model ([Krehbiel, 1998](#)), the median legislator retains the ability to propose legislation, but must consider the constraints imposed by the gubernatorial veto (subject to an over-ride), supermajority requirements imposed by the possibility of a filibuster, and supermajority requirements for raising taxes or passing a budget.

**Party Cartel Model:** The Party Cartel model ([Cox and McCubbins, 2005](#)) predicts that the majority party in each legislative chamber will block legislation that would roll the party. Therefore, any policy outcomes predicted by the Median Legislator Model that would make the majority party median of either chamber worse off will not occur.

**Cartel and Pivots Model:** This model is a hybrid of the Pivotal Politics and Party Cartel models. The median legislator proposes, but must consider the various pivots and

supermajority requirements and may not get a chance to act if the majority party prefers to block legislation.

**Setter and Pivots Model:** The majority party could conceivably have sufficient control of the agenda to prevent its proposals from being moderated by the median legislator. The Setter and Pivots model gives the majority party median the proposal power, but the proposer must consider the various supermajority requirements.

Here, we develop a framework that incorporates these existing theories of lawmaking. We develop our framework to handle mixtures of theories of lawmaking—in particular, rather than assume a single proposer, we assume that different individuals are selected to be the proposer with a certain probability. This provides a natural approach for incorporating bicameralism, by allowing for example each chamber median to be the proposer with some probability.

Our framework can be described as follows. In period 1, a random proposer is selected from the set of possible proposers and the identity of the proposer becomes known to the other players in the game. This set of proposers may include the medians of each chamber, or as in the Setter and Pivots model, the majority party medians.

In period 2, a set of a-priori veto players have the ability to block legislation. If the a-priori veto players choose to block legislation (anticipating that they prefer the status quo to the ultimate outcome of the legislative process), then the status quo becomes the policy outcome. This set of a-priori veto players would typically include no one, or the majority party medians in each chamber in the case of the Party Cartel and Cartels and Pivots models. This stage of the game exists to model the fact that the majority party may be able to kill legislation in the committee stage, but may not be able to kill legislation once floor action is already underway.

In period 3, the proposer makes a proposal. In the game, the proposal is not amended.

This is not meant to suggest that proposals cannot be amended—instead, the proposer is simply interpreted as representing the eventual outcome of the amending process. If the state legislatures are majoritarian in nature, the median legislator’s preferred proposal should eventually prevail, in which case the proposer would be modeled to be the median legislator. The case where each chamber median is selected as the proposer with some probability is meant to model a bicameral legislature where each chamber is majoritarian in nature and conflict between the chambers is resolved in such a way that neither chamber wins with probability one. In the models we consider, there are often multiple outcomes that improve the utility of a decisive coalition. The probability that a given actor is the proposer can be thought of as representing the bargaining power of that actor (Baron and Ferejohn, 1989).

In period 4, the legislature and the governor decide on whether to allow the proposal to pass, according to the prevailing supermajority requirements. These would typically require that in order to become law, the proposal must receive a majority in each chamber, be approved by the governor or have sufficient support for a veto override, meet the relevant requirement to end debate in those chambers were a filibuster is possible, and meet the prevailing supermajority requirements for raising taxes and passing a budget in states where such supermajority requirements exist.

The outcome of this game can be summarized as follows. In period 4, we can characterize the set of proposals that will win against the status quo as the Winset,  $W(s) = [l, u]$ . In period 3, a proposer with ideal point  $\alpha$  will make the proposal,

$$p^*(s, \alpha) = \begin{cases} \alpha, & s \leq 2l - \alpha \\ 2l - s, & 2l - \alpha \leq s \leq l \\ s, & l \leq s \leq u \\ 2u - s, & u \leq s \leq 2u - \alpha \\ \alpha, & s \geq 2u - \alpha \end{cases} \quad (3)$$

In period 2, the a priori veto players will veto any legislation for which the anticipated proposal  $p^*(s, \alpha)$  is inferior to the status quo. Let  $l'$  denote the ideal point of the left-most

$h_m$	House Median
$s_m$	Senate Median
$h_{maj}$	House Majority Median
$s_{maj}$	Senate Majority Median
$h_{fl}$	House Lower Filibuster Pivot
$h_{fu}$	House Upper filibuster Pivot
$s_{fl}$	Senate Lower Filibuster Pivot
$s_{fu}$	Senate Upper Filibuster Pivot
$g$	Governor
$h_{ol}$	House Lower Override Pivot
$h_{ou}$	House Upper Override Pivot
$s_{ol}$	Senate Lower Override Pivot
$s_{ou}$	Senate Upper Override Pivot
$h_t$	House Tax Supermajority Pivot
$h_b$	House Budget Supermajority Pivot
$s_t$	Senate Tax Supermajority Pivot
$s_b$	Senate Budget Supermajority Pivot

Table 2: Notation for Theories of Lawmaking.

a priori veto player and let  $u'$  denote the ideal point of the right-most a priori veto player.

We can represent the policy outcome if a proposer with ideal point  $\alpha$  is selected by,

$$x^*(s, \alpha) = \begin{cases} \alpha, & s \leq 2\min\{l', l, \alpha\} - \alpha \\ 2m_{l\alpha} - s, & 2\min\{l', l, \alpha\} - \alpha \leq s \leq 1\{m_{l\alpha} < l'\}m_{l\alpha} + 1\{m_{l\alpha} \geq l'\}(2l' - \alpha) \\ s, & 1\{m_{l\alpha} < l'\}m_{l\alpha} + 1\{m_{l\alpha} \geq l'\}(2l' - \alpha) \leq s \leq 1\{m_{u\alpha} > u'\}m_{u\alpha} + 1\{m_{u\alpha} \leq u'\}(2u' - \alpha) \\ 2m_{u\alpha} - s, & 1\{m_{u\alpha} > u'\}m_{u\alpha} + 1\{m_{u\alpha} \leq u'\}(2u' - \alpha) \leq s \leq 2\max\{u', u, \alpha\} - \alpha \\ \alpha, & s \geq 2\max\{u', u, \alpha\} - \alpha \end{cases} \quad (4)$$

where  $m_{l\alpha} = \min\{l, \alpha\}$  and  $m_{u\alpha} = \max\{u, \alpha\}$ . Finally, before period 1, we can characterize the expected proposal using,

$$E[x^*(s)] = \beta_1 E[x^*(s, \alpha_1)] + \dots + \beta_J E[x^*(s, \alpha_J)] \quad (5)$$

For the Median Legislator and Cartel models, we have  $l = \min\{h_m, s_m\}$  and  $u = \max\{h_m, s_m\}$ .<sup>4</sup> For the Pivotal Politics, Cartel and Pivots, and Setter and Pivots mod-

<sup>4</sup>The notation is summarized in Table 2.

els,  $l$  and  $u$  depend on whether the issue is a tax level (in which case the tax supermajority requirement is relevant) or a spending level (in which case the budget supermajority is relevant). For tax issues, we have,

$$l = \max\{\min\{h_m, s_m, h_{fl}, s_{fl}, g\}, \min\{h_m, s_m, h_{fl}, s_{fl}, h_{ol}, s_{ol}\}\} \quad (6)$$

$$u = \min\{\max\{h_m, s_m, h_{fu}, s_{fu}, h_t, s_t, g\}, \max\{h_m, s_m, h_{fu}, s_{fu}, h_t, s_t, h_{ou}, s_{ou}\}\} \quad (7)$$

and for spending issues, we have,

$$l = \max\{\min\{h_m, s_m, h_{fl}, s_{fl}, g\}, \min\{h_m, s_m, h_{fl}, s_{fl}, h_{ol}, s_{ol}\}\} \quad (8)$$

$$u = \min\{\max\{h_m, s_m, h_{fu}, s_{fu}, h_b, s_b, g\}, \max\{h_m, s_m, h_{fu}, s_{fu}, h_b, s_b, h_{ou}, s_{ou}\}\} \quad (9)$$

For the Median Legislator and Pivotal Politics models, we have  $l' = \min\{h_m, s_m\}$  and  $u' = \max\{h_m, s_m\}$ . For the Cartel, Cartel and Pivots, and Setter and Pivots models, we have  $l' = \min\{h_{maj}, s_{maj}\}$  and  $u' = \max\{h_{maj}, s_{maj}\}$ .

Now, considering the proposers, for the Median Legislator, Pivotal Politics, Cartel, and Cartel and Pivots models, we had that the proposer was equal to  $h_m$  or  $s_m$ . In our main analysis, we assumed each proposer proposed with equal probability. For the Setter and Pivots model, we had that the proposer was equal to  $h_{maj}$  or  $s_{maj}$ . We again assumed that each proposer proposed with equal probability in our main analysis. Our framework, however, allowed us to relax this assumption in various ways. For example, in Section 4, we alternately considered the lower chamber having all proposal power.

## 2.3 Basic Patterns

The overall relationship between public opinion and policy outcomes relates the end-point of the electoral and legislative systems (policy) and the beginning (voters). This is illustrated



in Figure 1. We find that a more right-wing median voter is associated with a more right-wing average policy outcome (the average policy outcome averages over the issues reported in Table 1). The average policy is over-responsive to the median voter and policy outcomes tend to be to the right of the median voter. This, however, misses an important difference captured in the right panel of the figure—spending outcomes tend to be to the right of the median voter and tax outcomes tend to be to the left of the median voter. When the median voter moves one unit, the average policy outcome is expected to move 1.2 units, and the correlation between the average policy outcome and the median voter is 37.4% (correcting for measurement error). If policy outcomes are only moderately correlated with the median voter’s ideal point, then why? Is it because elections select winning candidates that poorly represent the median voter or because the legislative process produces outcomes that are unrepresentative of the median legislator? And which specific electoral and legislative institutions harm representation in the states? We address these questions in the next two sections.

### 3 Representation in Elections

We first study representation in elections, modeling the policy process by focusing on the positions of pivotal actors highlighted in the legislative theories. Specifically, we regress the ideological location of the various pivotal actors (the median House member, the median Senate member, the governor, etc.) on the ideal points of the median voter. Why focus on the positions of pivotal actors rather than the positions of individual legislators? Our study of policy representation builds on the work of [Erikson, Wright and McIver \(1993\)](#), [Lax and Phillips \(2011\)](#), and [Caughey and Warshaw \(2018\)](#), but unpacks the policy-making process into electoral and legislative “phases”. The relationships between the median voter and the positions of the pivotal actors are more directly relevant for understanding the causes of

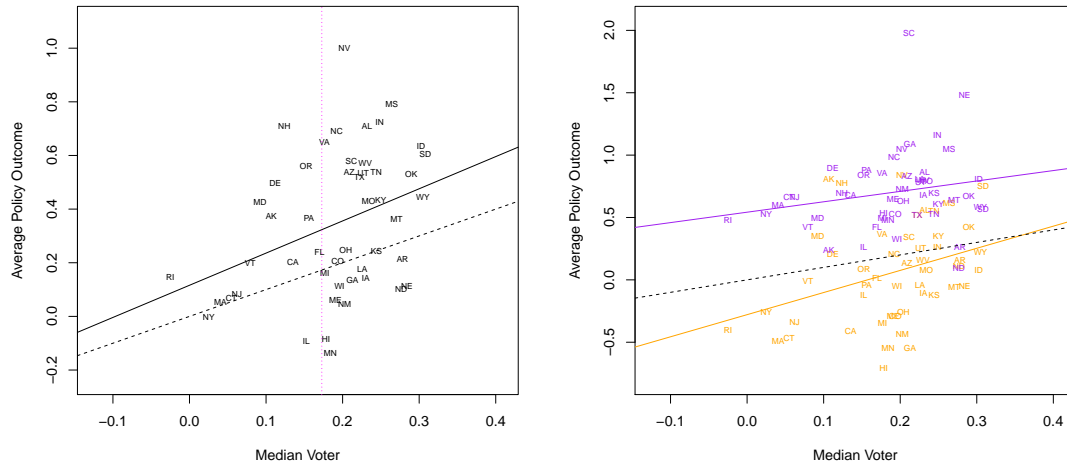


Figure 1: Policy Representation in the State Legislatures – Scatter plot of the average policy outcome vs. the median voter in the states. Each point represents an average policy outcome in the state indicated by its' abbreviation. The dotted black line denotes the 45 degree line and the solid black line denotes the regression line. The dashed magenta line denotes the position of the U.S. median voter. In the right panel, purple denotes spending outcomes and orange denotes tax outcomes.

imperfect representation because the theories of lawmaking we study in the next section model policy outcomes as a function of the location of the status quo and the ideal points of these pivotal actors.

The results summarized in Table 3 indicate that all five pivotal actors are over-responsive to the median voter, but are relatively unbiased. A one unit change in the ideology of the state median voter is associated with a 1.7 to 3.0 unit change in the location of the pivotal actors. The relationship is statistically significant at the 10% level for all pivotal actors except the House majority median. In all five cases, the election is predicted to produce a pivotal actor to the left of the state median when the state median is equal to the overall U.S. median, but this difference is small. The correlations between the pivotal actors and the median voter in the state are fairly weak for all actors except the governor.

DV:	(1) House Median	(2) Senate Median	(3) Governor	(4) House Maj. Median	(5) Senate Maj. Median
Constant	-0.292 (0.228)	-0.347 (0.281)	-0.463** (0.173)	-0.418 (0.345)	-0.523 (0.404)
Median Voter	1.685+ (0.908)	2.145* (1.070)	2.841*** (0.755)	2.224 (1.363)	2.967+ (1.546)
N	47	48	48	46	48
$R^2$	0.050	0.053	0.207	0.033	0.048
Correlation	0.224	0.230	0.455	0.182	0.219
Bias at U.S. Median	-0.174+ (0.105)	-0.149 (0.132)	-0.145+ (0.074)	-0.207 (0.169)	-0.184 (0.191)

Table 3: Representation in Elections – The dependent variables are the ideal points of the pivotal actors in each state and the independent variable is the ideal point of the state’s median voter. One star indicates statistical significance at the 5% level. Two stars indicates statistical significance at the 1% level. Three stars indicates statistical significance at the 0.1% level. A plus sign indicates statistical significance at the 10% level.

### 3.1 Mechanisms for Representation in Elections

What accounts for the weak correlation between the chamber median and the electoral median and the pattern of over-responsiveness? What accounts for the stronger correlation between the position of the governor and the electoral median? An obvious explanation is that governors are selected directly by a state-wide electorate in what is typically a relatively intense and information rich electoral contest, whereas the influence of the state median on other pivotal actors is more indirect, mediated by the drawing of district boundaries and electoral processes within the resulting districts.

A relatively direct relationship between the electoral median and the chamber medians would be found if voters effectively sanctioned state legislative candidates based on the positions they took—as [Wrone, Brady and Cogan \(2002\)](#) and others have shown for the national legislature—and if state legislative candidates, anticipating this response, adapted their strategies to the issue politics of their state. However, as [Rogers \(2017\)](#) has shown, voters rarely hold candidates to similar account at the state level. This mechanism arguably places too high an informational requirement on voters in state legislative elections. An indirect mechanism might work as follows—more conservative states may have higher Re-

publican party identification, higher Republican party identification may lead the Republican party to increase its chances of winning a majority in the state legislature, and the legislative median may be more conservative when the Republican party holds more than half of the seats. A second indirect mechanism could operate if more conservative states are more likely to elect a Republican majority and if the legislative median is more conservative when the Republican party holds more than half of the seats.

The results presented in Table 4 speak to these mechanisms by regressing (i) the positions of the pivotal actors on the voter ideology, voter partisanship, and control of the chamber, (ii) control of the chamber on voter ideology and voter partisanship, and (iii) voter partisanship on voter ideology. There is no detectable direct effect of the state’s median voter on the House median. Instead, we find that states with more conservative voters have higher net Republican party identification (column 9), states with higher net Republican party identification are more likely to elect a Republican House majority (column 6), and states with a Republican House majority are more likely to have a more conservative House median (column 1). The weak overall relationship occurs because the relationship is so indirect. While each of the constituent relationships are relatively strong—the correlation between the House median and House majority party is 0.75, the correlation between the House majority party and net Republican party identification is 0.52, and the correlation between net Republican party identification and the position of the median voter is 0.58—there is some slippage at each stage. A simple path analysis (treating the insignificant slopes as if they were zero) suggests that the strength of the overall relationship will be  $0.75 * 0.52 * 0.58 = 0.22$ , which is very close to the observed correlation between the House median and the median voter.

Similar patterns are found for the Senate median, the House majority median, and the Senate majority median—we observe no detectable direct effect of the position of the median voter. Instead, each effect apparently works through party identification and the majority control of the chamber. For the governor, we observe a direct effect of the median voter on

position (column 3). Moreover, while the coefficient on the governor's party is statistically significant in column 3, we don't have a detectable indirect effect because we don't observe a detectable effect of state party identification on the party of the governor.

<b>Dependent Variable:</b>	House Median	Senate Median	Governor Position	House Maj. Med.	Senate Maj. Med.	House Maj. Party	Senate Maj. Party	Governor Party	Net Rep. Party Iden.
<b>Independent Variables:</b>									
Constant	-0.564*** (0.158)	-0.563*** (0.171)	-0.460*** (0.133)	-0.970*** (0.174)	-0.884*** (0.177)	0.826*** (0.210)	0.616** (0.218)	0.320 (0.460)	-0.153*** (0.023)
Median Voter	0.871 (0.621)	0.340 (0.635)	2.404*** (0.660)	0.636 (0.691)	-0.106 (0.710)	-1.397 (0.859)	-0.361 (0.890)	0.024 (2.017)	0.649*** (0.119)
House Majority Party	0.936*** (0.127)			1.859*** (0.131)					
Senate Majority Party		1.255*** (0.144)			2.086*** (0.149)				
Governor Party			0.338*** (0.053)						
Net Rep. Party Iden.						3.470*** (0.533)	2.655*** (0.529)	1.403 (1.652)	
<i>N</i>	46	46	46	46	46	46	46	46	46
<i>R</i> <sup>2</sup>	0.568	0.654	0.556	0.819	0.829	0.309	0.221	0.021	0.336
<b>Correlation w/ DV:</b>									
House Maj. Party	0.745			0.903					
Senate Maj. Party		0.808			0.911				
Governor Party			0.636						
Net Rep. Party Iden.						0.521	0.468	0.144	
Median Voter	0.220	0.221	0.442	0.182	0.202				0.579

Table 4: Mechanisms for Representation in Elections — One star indicates statistical significance at the 5% level. Two stars indicates statistical significance at the 1% level. Three stars indicates statistical significance at the 0.1% level. A plus sign indicates statistical significance at the 10% level.

Overall, these results contribute substantial nuance to our understanding of representation at the electoral level. Pivotal actors in the states are over-responsive to the preferences of the state median voter—as the electorate moves to the left, the policy preferences of the pivotal actors also shift to the left, but to a greater degree than the preferences of the voters. In the case of legislative pivotal actors, the mechanism that underlies this is indirect and mediated by the partisanship of voters. By contrast, the mechanism for governors involves direct responsiveness to the ideology of voters.

### **3.2 Pivotal Actors and Electoral Institutions**

Thus far, we have applied a single model of representation to the fifty states. The states, however, differ in many electoral institutions. Here, we consider the following institutions—public funding of elections, whether the legislature is a career legislature, whether the legislature is a citizen legislature, whether term limits are in effect, and an index of primary system type.<sup>5</sup> Each of these variables is plausibly related to the positions that candidates for office take. Public funding may free candidates for office from pandering to potential donors, and may lead to more responsive candidates. Legislators may be more beholden to their party in career legislatures, and may be forced to take more extreme positions, with the opposite being true for citizen legislatures. Term limits may make legislators less beholden to the current electorate, which may lead them to take more extreme positions in order to raise money for election to higher office. More open primary elections may lead to greater responsiveness to the median voter because moderate voters can play a greater role in the primary election. Of course, for each of these institutional variables, one could make plausible alternative arguments, and the true direction of the effect can best be determined by looking at the data.

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<sup>5</sup>0 indicates a closed primary, 1 indicates a hybrid primary, 2 indicates an open primary, and 3 indicates a blanket or top-two primary.

The approach we take is to include the institutional variables and to interact the institutional variables with the position of the median voter. The (omitted) intercept terms for each of the institutional variables indicates whether the institution leads to left-wing or right-wing bias in the positions of the pivotal actors. The interactions of the institutional variables with the median voter’s position indicates the effects of the institutional variables on responsiveness. Results are given in Table 5. Few of the institutional variables are statistically significant. The exception to this is the index of primary openness. For the Senate median and the Senate majority median, we find that more open primaries are associated with significantly more responsiveness. To be sure, some degree of skepticism should be applied to this result given that the two coefficients are only statistically significant at the 10% level and because we examined the effects of five institutions on five pivotal actors.

<b>DV:</b>	(1) <b>House Median</b>	(2) <b>Senate Median</b>	(3) <b>Governor</b>	(4) <b>House Maj. Median</b>	(5) <b>Senate Maj. Median</b>
<b>Responsiveness</b>					
Median Voter	1.864 (2.351)	3.128 (2.293)	3.842*** (0.816)	2.523 (3.342)	3.105 (3.087)
Public Funding * MV	-3.495 (5.343)	-4.400 (3.935)	1.625 (2.175)	-0.917 (9.803)	-5.809 (6.733)
Career Legislature * MV	-0.693 (3.179)	-3.455 (3.602)		0.026 (4.930)	-5.283 (4.911)
Citizen Legislature * MV	-0.191 (5.021)	-1.274 (5.490)		3.335 (7.596)	1.206 (7.252)
Term Limits in Effect * MV	-0.418 (4.952)	-0.271 (5.745)		-0.572 (7.246)	-3.249 (7.796)
Primary Type * MV	0.382 (2.160)	3.658+ (2.084)	0.597 (1.015)	1.151 (3.011)	4.532+ (2.681)
N	46	48	48	46	48
R <sup>2</sup>	0.141	0.247	0.308	0.101	0.249

Table 5: Pivotal Actors and Electoral Institutions – The dependent variables are the ideal points of pivotal actors and the independent variables include the state’s median voter, measures of electoral institutions, and interactions between the median voter and electoral institutions. The base terms for electoral institutions are omitted from the table. Robust standard errors are in parenthesis. One star indicates statistical significance at the 5% level. Two stars indicates statistical significance at the 1% level. Three stars indicates statistical significance at the 0.1% level. A plus sign indicates statistical significance at the 10% level.

The lack of strong evidence for moderating institutions may surprise some readers, but we note that our results are largely consistent with the findings of other scholars. [Caughey](#)



and Warshaw (2018) similarly find little evidence for moderation of responsiveness by state institutions (though they study different institutions than we do) Lax and Phillips (2011) argue that responsiveness is moderated by legislative professionalism and term limits. The result that open primary systems are associated with more responsiveness corresponds closely with a finding reported, but not emphasized, in McGhee et al. (2014)—candidates are more responsive to the median voter in their *district* in open primary states.

## 4 Theories of Lawmaking

Policy representation occurs in large part through the actions taken by elected representatives. The specific way in which this occurs, however, is likely to be mediated by the structure of legislative institutions and as noted above scholars have proposed several competing theories. The theories we examine are described in detail in Section 2.2—the median legislator, pivotal politics, party cartel, cartel and pivots, and setter and pivots models. Nearly all of the models tested incorporate substantial cross-state institutional variation. The effects of party blocking vary substantially across states with unified and divided legislatures. Some states have gubernatorial vetoes (and consequent veto pivots) which require a mere majority for override while other states have much higher override margins. Some states require supermajorities to enact budgetary and tax policy changes while others do not. Some states have filibuster-type institutions, while many others lack such institutions. All of this institutional variation forms the basis for the nuanced predictions of the models, including (and especially) the hybrid models. Following Richman (2011), we allowed for inflation drift for tax issues and spending issues.<sup>6</sup>

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<sup>6</sup>Specifically, we measure the policy outcome using the status quo in the next legislative session, so it is likely that the policy outcome has drifted due to inflation in the intervening period, if tax and spending policies are denominated in nominal dollar amounts.

<b>Model:</b>	(1) <b>Median Legislator</b>	(2) <b>Pivotal Politics</b>	(3) <b>Party Cartel</b>	(4) <b>Cartel and Pivots</b>	(5) <b>Setter and Pivots</b>
Constant (drift)	0.649*** (0.035)	0.568*** (0.059)	0.634*** (0.052)	0.529*** (0.067)	0.566*** (0.061)
Tax (drift)	-0.693*** (0.054)	-0.621*** (0.055)	-0.655*** (0.061)	-0.573*** (0.059)	-0.611*** (0.058)
Prediction	0.002 (0.032)	0.282*** (0.063)	0.117** (0.045)	0.298*** (0.054)	0.237*** (0.054)
N	441	441	441	441	441
Clusters	48	48	48	48	48
$R^2$	0.278	0.365	0.313	0.408	0.377

Table 6: Testing Theories of Lawmaking – The dependent variable is the policy outcome. The independent variables include a constant term and a dummy for tax issues (which together model drift due to inflation) and the prediction of each of the theories of lawmaking. Results are estimated using Weighted Least Squares and restricted to status quo estimates with sufficiently small standard errors. Standard errors clustered by state are in parenthesis. One star indicates statistical significance at the 5% level. Two stars indicates statistical significance at the 1% level. Three stars indicates statistical significance at the 0.1% level. A plus sign indicates statistical significance at the 10% level.

The results of our test can be seen in Table 6. We can compare the fit of the model based on the size of the R-squared. To facilitate this comparison, the models have the same dependent variable and are estimated on a common sample. Furthermore, the number of parameters is equal across the models, so alternative measures of model fit, such as the AIC and the BIC, would yield the same ranking of models as the R-squared. The results indicate that the Cartel and Pivots model is the best fitting model among these five. The R-squared of 40.8% provides evidence of a relatively strong correlation between the prediction of the Cartel and Pivots model and the policy outcome. The fit of the Pivotal Politics and Setter and Pivots models are similar to the fit of the Cartel and Pivots model, although marginally weaker.

However, before concluding in favor of one model, we assess whether the model can sufficiently explain when change occurs. Figure 2 plots the policy outcome vs. the status quo on the same sample as was used to estimate the legislative models. The policy outcome and the status quo are highly correlated for both tax and spending items (the correlation is 83.6% for tax items and 77.6% for spending items). All models including the Median

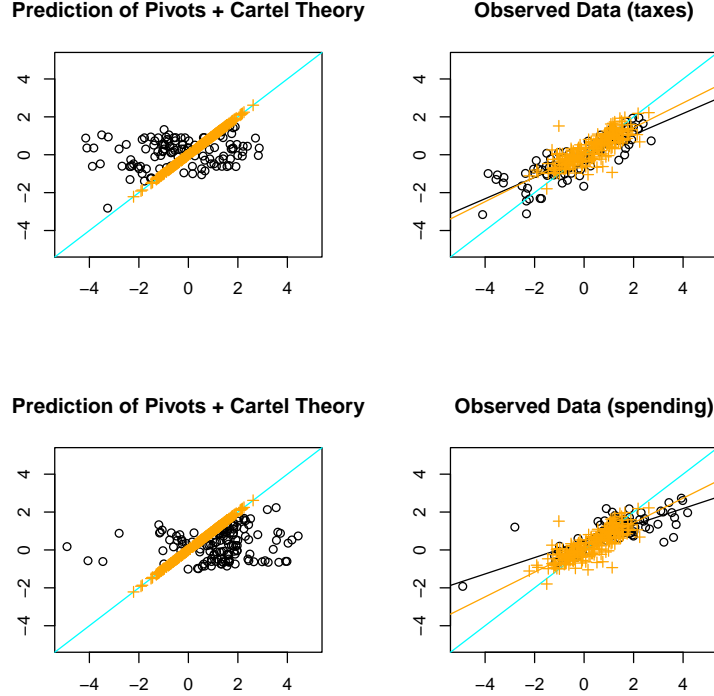


Figure 2: Policy Outcomes vs. the Status Quo – The top-left and bottom-left panels plot the predicted policy outcome vs. the status quo for the Cartel + Pivots theory for tax and spending items respectively. The top-right and bottom-right panels plot the observed policy outcome vs. the status quo for tax and spending items respectively. Throughout, an orange plus sign denotes a status quo in the gridlock interval and a black circle denotes a status quo outside of the gridlock interval. The cyan line is a 45 degree line, the orange line is a linear fit for the status quos in the gridlock interval, and the black line is a linear fit for the status quos outside the gridlock interval.

Legislator model (because of bicameralism) predict areas in which the policy outcome is expected to be equal to the status quo, with the Pivots and Cartel model predicting the largest area of gridlock. The figure does not display much evidence of a key prediction of the Party and Cartel model—we do not observe outcomes equal to the median legislator’s position when the status quo is in the gridlock region. Instead, it appears that there is a very high degree of persistence of policy combined with a mean reverting tendency. All five models we consider appear to have difficulty in predicting the policy outcome when the status quo is outside the gridlock interval and the superior fit of the Pivots and Cartel

models seems to result from the fact that it has the largest gridlock interval.

Table 7 repeats the analysis reported in Table 6, including the status quo as a variable. These results confirm that the relatively good performance of the Pivots and Cartel model is driven by the fact that it predicts the largest gridlock interval and none of the five spatial models have detectable explanatory power once the status quo is controlled for. Instead, in the data, we observe much more stability in policy than any of these five models predict. In fact, a specification that omits the prediction of a spatial theory of lawmaking (column 6) fits the data substantially better than any of the models considered in Table 6.

<b>Model:</b>	(1) <b>Median Legislator</b>	(2) <b>Pivotal Politics</b>	(3) <b>Party Cartel</b>	(4) <b>Cartel and Pivots</b>	(5) <b>Setter and Pivots</b>	(6) <b>Incremental Budgeting</b>
Constant (drift)	0.276*** (0.029)	0.281*** (0.032)	0.277*** (0.031)	0.278*** (0.034)	0.279*** (0.033)	0.279*** (0.033)
Tax (drift)	-0.297*** (0.045)	-0.298*** (0.046)	-0.298*** (0.046)	-0.296*** (0.046)	-0.297*** (0.046)	-0.297*** (0.046)
Status Quo	0.478*** (0.032)	0.478*** (0.032)	0.479*** (0.032)	0.471*** (0.032)	0.475*** (0.031)	0.475*** (0.032)
Prediction	-0.045+ (0.023)	-0.024 (0.043)	-0.014 (0.020)	0.011 (0.034)	-0.001 (0.030)	
N	441	441	441	441	441	441
Clusters	48	48	48	48	48	48
$R^2$	0.762	0.759	0.759	0.759	0.758	0.758

Table 7: Testing Theories of Lawmaking, Controlling for the Status Quo – The dependent variable is the policy outcome. The independent variables include a constant term, a dummy for tax issues (which together model drift due to inflation), the status quo, and the prediction of each of the five spatial theories of lawmaking. Results are estimated using Weighted Least Squares and restricted to status quo estimates with sufficiently small standard errors. Standard errors clustered by state are in parenthesis. One star indicates statistical significance at the 5% level. Two stars indicates statistical significance at the 1% level. Three stars indicates statistical significance at the 0.1% level. A plus sign indicates statistical significance at the 10% level.

Before concluding that the various spatial models cannot account for the lack of change in state fiscal policy one must consider various potential problems with the data. First, it is possible that the pattern we found—the extreme stability of state policy over time—is not a real phenomenon, but is driven by some quirks in how legislative candidates respond to survey questions about desired policy change. To investigate this, we use the fact that most of the spending and taxation items we employ can be matched closely or exactly with

specific state policies. For example, we can match the status quo on health spending to actual health spending per capita by the state. Similarly, for tax items, we can match the status quo estimate of the sales tax to the actual sales tax. For the 16 items we considered, we were able to obtain close or exact matches for 15 of them. The exception was property taxes (property tax rates are generally not determined at the state level). In addition, we did not match the capital gains tax at the state level because in the time period we study, only one state taxed capital gains differently than other income.

For the 14 matched items, the correlation between the policy in 1998 and 2000 ranged from 88.5% (for the tax on gasoline) to 99.9% (for the lowest marginal income tax rate). For the sales tax, for example, Maine dropped its sales tax by 0.5% during the time period, and no other state changed its sales tax. Evidently, state legislative candidates correctly identified that state policies exhibit a very high level of stability over time. Our results further indicate that this is a stability that spatial models of legislative outcomes have a difficult time explaining.

An additional concern is that our measures of the policy outcome, the status quo, and the predicted policy outcome are subject to measurement error.<sup>7</sup> In Table 8 in Appendix A, we correct for measurement error using Fuller's (1987) Method of Moments estimator. Here, the prediction of the theory and the status quo are subject to correlated measurement error. The results here largely mimic the results of Table 7—we continue to find that none of the spatial theories provide improved fit once the prediction of incremental budgeting (the status quo) is included in the model.

One response to our findings is that, although most of the models of legislative outcomes do indeed predict a great degree of policy change, common sense would predict otherwise—we should not expect the legislature to bother changing a large collection of policies in

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<sup>7</sup>The predicted policy outcome is a function of the status quo and the positions of various political actors.

every two year period. Indeed, we believe there is something to this argument, at least for the case of tax policies. Nonetheless, the stability though perhaps unsurprising still poses a serious challenge for these models of lawmaking. Existing tests have largely interpreted these theories as predicting immediate change, not lagged or incremental change.<sup>8</sup> One could assume that (i) there is a probability  $p$  that a policy comes under consideration, that (ii) conditional upon consideration, the outcome is as predicted by one of the five spatial theories of lawmaking, and (iii) conditional upon no consideration, the outcome remains the status quo. The specification in Table 7 is consistent with this framework and suggests that if these models have any explanatory power, it is quite small. For the case on spending, the stability we observe is even more surprising, in light of the models, since the stability is typically not the result of failing to take action and even the stable per capita spending level we observe itself represents a change in the spending level. One possibility is that these changes reflect mere updating of budget formulas without altering those formulas, but this itself suggests the importance of incrementalism as a limitation of existing spatial theories of lawmaking and a potential driver of poor representation on fiscal issues.

## 4.1 Institutional Differences

We next consider the possibility of institutional differences between the states. We incorporate institutional differences in two different ways—states may differ in who has veto power and who has proposal power. Differences in veto power across the states were partially considered in Tables 6 and 7, but here we further consider some of the choices we made in testing the competing models of lawmaking. A choice we made was to simultaneously consider all three types of supermajority requirements—the gubernatorial veto, the filibuster, and the tax and budget supermajority requirements. While it would be very surprising if models including a gubernatorial veto or the supermajority requirements for tax and spending bills

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<sup>8</sup>See, for example, [Krehbiel \(1998\)](#), tables 3.6 and 3.7.

were not better fitting, the filibuster is a more interesting case. State legislatures might not make use of supermajority requirements for cloture, much as the U.S. Senate did not do so until the late 19<sup>th</sup> century. We tested all 8 combinations of models. None of these alternatives altered the conclusion that the Cartel and Pivots model was the best fitting (absent a control for the status quo) and none provided statistically significant explanatory power once the status quo was included in the model.

In Section 2.3, we found that the average tax status quo was on the left and the average spending status quo was on the right. This suggests another explanation for the relative stability in policy we observe—states may find it harder to borrow money than the federal government and this may prevent moving tax status quos on the left (which generally correspond to high tax rates) and spending status quos on the right (which generally correspond to low spending). We address this altering the theories to predict that policy change never involves decreasing taxes or increasing spending. This is a relatively extreme interpretation of the effect of a balanced budget constraint on the theories. While making this change improves the fit of all of the theories of lawmaking, we continue to find that the five non-incremental theories of lawmaking do not improve the fit once the status quo is included in the model.

A second potential difference between the states comes from proposal power. In the analyses we reported so far, we assigned an equal probability of proposing for the House and Senate medians for four of the models and an equal probability of proposing for the House and Senate majority medians for the Setter and Pivots model. A case could be made for modeling the House median or House majority median as the proposer with probability one as many state lower houses require spending and revenue bills to originate in the lower house. Our interpretation here of the probability of proposing is that it reflects bargaining power and the requirement that bills originate in the lower house may increase the lower house's bargaining power. We considered models where the House had complete proposal power.

We continued to find that absent a control for the status quo, the Cartel and Pivots model had the best fit, and that none of the models provided improved fit once the persistence of policy was accounted for.

## 4.2 Discussion

What in our data allowed us to find that the various spatial theories of lawmaking we considered did not provide additional fit beyond an incremental mean reverting tendency of policy? First, tax and spending policy exhibit a great deal of stability. This fact is not in much question—while our estimates of the status quo and policy outcome are subject to measurement error, actual per-capita spending and tax rates exhibit the same stability. One might then wonder why our methodology was even necessary for demonstrating the poor predictive ability of the five theories of lawmaking. In fact, the finding that spending and taxes are highly stable over time is potentially consistent with these theories (even the Median Legislator model has a bicameral gridlock interval), provided that these policies correspond to status quos in the gridlock interval. Placing status quos and elite political actors on a common space allows us to investigate whether this explanation has validity. We observed responses by legislators to the NPAT and we often found that the only individuals who reported supporting no change in the status quo were relatively extreme. We also found examples where most legislators in the state claimed to support increasing tax or spending levels, and examples where most legislators in the state claimed to support decreasing tax or spending levels. These observations are inconsistent with status quos being in the gridlock interval, yet we often observed little policy change in these cases, as confirmed by the statistical analysis performed.

How can we understand the failure of these theories to explain policy change? There are a number of possibilities. The five theories we considered assume that there are no time constraints on the legislature, and hence the legislature can change all status quos for which



legislative preferences are such that there is agreement for change. Time constraints on the legislature may alter this (Cox and McCubbins, 1993) and the number of policies may be large relative to the amount of time to address them. The complexity of policy could also leave legislators reluctant to make major policy changes (Davis, Dempster and Wildavsky, 1966). Parties also may be playing an extreme version of blame game politics. Change may require at least some buy in from the other party and the out-party may view any policy change as helping the in-party. This explanation, however, has a difficult time explaining the dearth of change under unified government. Legislators might alternatively believe that voters have an extreme aversion to change not captured by the voter's stated issue preferences. Voters may say they want free public college tuition or universal health insurance while still punishing politicians who make good on promises to enact these policies. In light of this, politicians may feel comfortable stating support for these policies publicly (in their NPAT responses), but may be wary of actually implementing such changes. Furthermore the preferences we observe from legislators may not fully anticipate concentrated interests that may mobilize once policy change is attempted, and thus may lead to unsuccessful policy change. These alternative theoretical frameworks each have a degree of plausibility, but a number of these arguments apply less well to spending policy, which must be regularly addressed by the legislature.

The high level of stability exhibited by state policy outcomes even when theories of law-making suggest policy ought to change does not necessarily undermine a gradual adjustment of state policies that is somewhat guided by the preferences of pivotal actors, and indeed the high level of policy stability we observe could help prevent transitory shifts in the preferences of pivotal actors from generating excessive swings in policy. However, the slow adjustment would be hard to reconcile with policy outcomes closely following the preferences of voters. As we reported earlier (see Figure 1), we indeed find a weak relationship between state fiscal policies and state opinion.

## 5 Conclusions

In this paper, we employed estimates for the locations of voters, elite political actors, policy outcomes, and status quo locations in a common space. We used these estimates to study policy representation, decompose policy representation into electoral and legislative components, and attribute imperfect representation to particular electoral and legislative institutions. Common-space measures of the preferences of voters, elite political actors, and policy outcomes make possible a study of elections and legislating in a unified framework. Measuring voters, legislators, and outcomes on a common scale, addresses [Achen's \(1978\)](#) critique of [Miller and Stokes \(1963\)](#).

This is the first analysis able to decompose policy representation into electoral and legislative components, and hence to attribute imperfect representation to particular electoral and legislative institutions. It contributes to our understanding of lawmaking institutions across state legislatures. Elections produce over-responsiveness in which elite political actors are extreme relative to the median voter. This over-responsiveness produces large gridlock intervals—where spatial theories of lawmaking predict policy stability. Nonetheless, we observe far more stability in state policy outcomes than is predicted by any of the common theories of lawmaking and these theories of lawmaking do not appear to have any explanatory power relative to the incremental budgeting prediction that policy won't change on average. Thus, relatively weak levels of responsiveness at both the electoral and legislative stages combine to produce modest levels of fiscal policy representation in the U.S. states.

The combination of electoral and legislative phases also points to ways in which what might appear to be a representational deficiency in one stage may contribute of overall modest levels of responsiveness once the electoral and legislative phases are combined. Over-representation in elections—the pattern in which a modest shift in the ideology of the median voter is associated is substantially larger changes in the ideology of elected representatives—

could produce excessive policy change. But if policy change tends to be very muted and incremental, then voters might prefer over-responsiveness in elections as a way to partially counter-balance the limited levels of change likely to occur in any given legislative session.

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## A Additional Tables

<b>Model:</b>	(1) <b>Median Legislator</b>	(2) <b>Pivotal Politics</b>	(3) <b>Party Cartel</b>	(4) <b>Cartel and Pivots</b>	(5) <b>Setter and Pivots</b>	(6) <b>Incremental Budgeting</b>
Constant (drift)	0.225*** (0.029)	0.233*** (0.032)	0.225*** (0.030)	0.232*** (0.033)	0.232*** (0.034)	0.230*** (0.035)
Tax (drift)	-0.243*** (0.047)	-0.246*** (0.048)	-0.245*** (0.047)	-0.247*** (0.048)	-0.247*** (0.048)	-0.244*** (0.048)
Status Quo	0.542*** (0.039)	0.549*** (0.042)	0.550*** (0.042)	0.550*** (0.046)	0.544*** (0.042)	0.538*** (0.039)
Prediction	-0.051* (0.024)	-0.066 (0.055)	-0.033+ (0.020)	-0.033 (0.045)	-0.026 (0.040)	
N	441	441	441	441	441	441
Clusters	48	48	48	48	48	48

Table 8: Testing Theories of Lawmaking, Correcting for Measurement Error – The dependent variable is the policy outcome. The independent variables include a constant term and a dummy for tax issues (which together model drift due to inflation), the status quo, and the prediction of each of the five spatial theories of lawmaking. Results are estimated using a weighted versions of Fuller’s (1987) Method of Moments estimator and restricted to status quo estimates with sufficiently small standard errors. Standard errors clustered by state are in parenthesis. One star indicates statistical significance at the 5% level. Two stars indicates statistical significance at the 1% level. Three stars indicates statistical significance at the 0.1% level. A plus sign indicates statistical significance at the 10% level.