Overcoming Fiscal Gridlock:
Institutions and Budget Bargaining

Carl E. Klarner [*]
Department of Political Science
Indiana State University
cklarner@isugw.indstate.edu

Justin H. Phillips
Department of Political Science
Columbia University
jhp2121@columbia.edu

Matt Muckler
Town of Buckeye, AZ
mattmuckler@juno.com

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Abstract

We argue that the costs of bargaining failure are important determinants of legislative delay and gridlock. When these costs are high, elected officials have a greater incentive to reach legislative bargains, even if doing so means compromising on their policy objectives. We develop and evaluate this claim in the context of state budgeting, treating late budgets as examples of fiscal gridlock. Specifically, we argue that budgetary gridlock imposes political and private costs on lawmakers, the magnitudes of which are shaped by institutions and features of the political environment. Our expectations are tested and confirmed using an original dataset of the timing of budget adoption for all states over a forty-six year period. Though our investigation is set in the context of the states, we show that differences in the costs of bargaining failure can also account for variation in the patterns of budgetary delay across levels of government and (to a lesser extent) variation in fiscal gridlock within the federal government.

1   Introduction

American political institutions are seemingly designed to produce gridlock. The Madisonian system, in which governmental power is fragmented among competing veto players or branches of government, can frustrate the lawmaking process. Indeed, elected officials often fail to negotiate their way out of a variety of legislative impasses (Krehbiel 1998, Binder 2003). For many, this gridlock serves as an important check on governmental authority. For others, frequent and lengthy stalemate raises concerns about the ability of government to effectively respond to changing economic, social, and political circumstances. Gridlock may also lead voters to become disillusioned with the political process, particularly if they perceive elected elites as unwilling or unable to work through their disagreements in order to address pressing public concerns.

Despite a tendency towards stalemate, the amount of gridlock under American political institutions varies considerably. Some sessions of Congress seem to accomplish little, while others generate a great deal of output (Clinton and Lapinski 2006). The same is true at the sub-national level, where legislative productivity differs both across states and within states over time (Rogers 2005). This variation raises important substantive questions. What accounts for differences in gridlock over time and across legislatures? Under what conditions are lawmakers in a separation-of-powers system able to overcome the tendency towards impasse and reach compromise?

In addressing these questions, existing work focuses largely on the distribution of policy preferences. This research, using spatial models of lawmaking, argues that when the preferences of key institutional actors—typically the majority party in each legislative chamber and the chief executive—diverge, lawmaking becomes difficult. Researchers thus anticipate frequent gridlock during periods of divided government, particularly if the ideological space between the Democratic and Republican parties is large (Binder 1996, 2003; Chiou and Rothenber 2003). Many studies also point to procedural rules. Rules that require supermajority votes for legislative action, such as the filibuster in the U.S. Senate, are thought to increase stalemate by making it more difficult to assemble a winning coalition and by empowering the minority party to block bills favored by the majority (Krehbiel 1998, Binder 2003, Wawro and Shickler 2006, Binder and Maltzman 2009).

While both divided government and supermajority voting rules have been shown to increase gridlock, such factors alone do not provide a full accounting of variation in stalemate. We build on the contributions of the existing literature by arguing that models of policymaking should take seriously the costs associated with bargaining failure. When these costs are high, elected officials have a greater incentive to reach legislative bargains, even if this means compromising on their policy objectives. When the costs of stalemate are low, however, competing sides in a negotiation may repeatedly delay action in hopes of extracting a "better" deal, or decide that inaction altogether is acceptable. The costs of delay should vary across bargaining contexts.

We develop and evaluate this argument in the arena of budgeting. Specifically, we consider the timing of state budget adoption with late budgets—those adopted after the start of the fiscal year—indicating gridlock. Our efforts focus on whether the probability of budgetary delay varies as a function of the costs of stalemate. In particular we identify two potential costs of bargaining failure. First, when a budget is not agreed upon by the start of the fiscal year, the governor and legislators pay *political costs* in that their public images are harmed, potentially making them vulnerable to electoral challenge. Second, many lawmakers also face *private costs* because fiscal stalemate forces them into what may be a time-consuming special legislative session, preventing lawmakers from pursuing their private careers and personal lives. The magnitude of these costs varies across states and fiscal years as a function of institutions and political context. In particular, political costs should be high during an election year and when state law requires a government shutdown in the absence of a new budget. Private costs should be highest when lawmakers meet in short legislative sessions (i.e., sessions that end well before the start of the new fiscal year).

To evaluate our expectations, we have compiled an original data set on the timing of budget adoption for all states over a forty-six year period—1961 to 2006. Data were collected using legislative journals and communication with state reference librarians. For each fiscal year, we identify all late budgets as well as the number of days each was adopted after the deadline. The resulting dataset is the most complete compilation to date of fiscal delay at the state level. These data not only allow us to test hypotheses about the determinants of legislative impasse, but they

also generate new and important descriptive statistics regarding the frequency of late state budgets. As a supplementary analysis, we evaluate a subset of our hypotheses using data on the adoption of federal appropriations bills. Doing so allows us to consider the portability of our theoretical and empirical models and serves as a robustness check for many of our state-level findings.

Overall, our analysis uncovers a strong and systematic link between the costs of bargaining failure and the probability of gridlock, at least in the budgetary arena. When the political or private costs of impasse are high, elected officials are much more likely to overcome the tendency toward gridlock and enact on-time budgets. This is true regardless of legislative voting rules, the presence of unified or divided government, or a state's fiscal and economic health. Additionally, our results reaffirm the widespread conclusion that divided government is associated with increased gridlock, though we generally find that the political and private costs of impasse have substantively greater effects on outcomes.

By identifying forces that shape legislative performance and facilitate policy compromise, this analysis adds to our understanding of the lawmaking process. While our work is largely set in the context of state budgeting, we show that differences in the costs of bargaining failure can also help explain variation in gridlock in federal budgeting and account for differences in the patterns of fiscal delay across levels of government. Though there are properties of budgeting that may set it apart from other types of legislation, we believe that the arguments presented here can be "exported" to other non-fiscal areas of policymaking.

Finally, the results presented here have implications for the design of government. By understanding the role that political and private costs play in shaping the willingness of lawmakers to engage in budgetary stalemate (and the way in which institutions shape these considerations), we can develop better insight into whether there are institutional solutions to budgetary impasse. Good government organizations have long sought and proposed solutions to fiscal stalemate, including docking the salary of lawmakers when the budget is late, moving the start date of the fiscal year, and changing legislative voting rules. Our analysis allows us to evaluate those proposals and suggest solutions that may not yet be on the table. To the extent that late budgets, like other forms

of gridlock, undermine confidence in representative government and impose unnecessary costs on citizens, uncovering potential solutions to fiscal impasse is a worthwhile endeavor.

2   Late State Budgets as Gridlock

Legislators and governors are required, either by constitutional or statutory law, to adopt a new budget *prior* to the start of each fiscal year or biennium.[1] Adopting a new budget is considered to be the most important legislative action in any session (Forsythe 1997, 75). It is through the budgeting process that lawmakers decide the quantity and quality of public goods and services provided by the state, the distribution of those services, and the distribution of the burden for their finance. Many state budgets, however, fall victim to legislative impasse and are not adopted until after (occasionally well after) the prescribed deadline. A government's ability to consistently meet these deadlines is an important indicator of its performance. On-time budgeting, just as the production of other types of legislative enactments, tells us a great deal about the capacity of elected officials to reach policy compromises and make needed decisions. Indeed, the timing of budget adoption has been used elsewhere as measure of gridlock (see Binder 2003).

From a research perspective, late budgets are a very useful measure of gridlock. First, unlike the failure to pass health care or tort reform, the failure to adopt a timely budget is widely regarded as an undesirable outcome and something that governments ought to avoid. The absence of a budget agreement at the start of a fiscal year triggers a partial shutdown of government in 22 states (National Conference of State Legislators, 2008), usually forcing the furlough of public employees, the closing of state parks and facilities, and the suspension of "non-essential services" (Pulsipher 2004).[2] When a shutdown is not mandated, one may occur if lawmakers cannot agree upon or obtain short-term government financing or if the stalemate is lengthy. In the absence of a shutdown, late budgets still impose meaningful and unnecessary costs. Fiscal stalemate can lead to temporary reductions in service provision and delay promised payments to government contractors, public employees, and localities. Late budgets often force states to finance government operations

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[1]In some states, a budget passed on the first day of the new fiscal year is considered to be on time.

[2]During a shutdown, some states also lose revenue from lotteries as well as taxes on licensed gaming facilities (which often cannot operate without state inspectors present).

by issuing costly short-term bonds (Lin 2008), and have been shown to undermine the state's long-term creditworthiness (Andersen, Lassen and Nielsen, 2010).

Second, using late budgets as an indicator of gridlock avoids a difficult measurement issue. Nearly all studies of gridlock examine legislative enactments, operationalized as a share of demand (i.e., the total policy agenda). Demand for legislation, however, is largely unobservable and existing measures, though sophisticated, are imperfect (Chiou and Rothenberg 2003, 512). Getting these measures right is crucially important since low levels of output may not indicate gridlock (as is commonly assumed), but rather be a response to low public demand for legislation. Demand in budgeting, on the other hand, is clear—a new budget is needed by the start of every fiscal year. Finally, in budgeting, the costs of bargaining failure can be reasonably well established and vary across governments (and across time) in ways that facilitate hypothesis testing.

3   Theory and Hypotheses

We argue that the probability of fiscal gridlock will be, in large part, a function of the political and private costs of delay. In this section we consider how these two types of costs shape lawmakers' incentives to pass a timely budget and how the costs of delay are themselves influenced by features of a state's institutional and political environment. To these considerations we add hypotheses generated by the existing gridlock literature and by observers of budgeting.

3.1   Political Costs

A late state budget—one that is signed into law *after* the start of the fiscal year or biennium—imposes political costs on lawmakers. In all states, a late budget generates unfavorable press, often highlighting legislative gridlock and partisan acrimony in the capital as well as the very real monetary costs produced by delay. The effect on the approval of elected officials is well documented. Opinion polls, conducted during and after fiscal stalemate show that late budgets cut deeply into the public approval of both branches (Quinnipiac 2001, 2007; Field Poll 2003, 2004).[3]

There are two likely consequences of lower public approval. First, low approval ratings for

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[3]We find no evidence in public opinion polls or media coverage suggesting circumstances under which a majority (or substantial share) of voters prefer a late over an on-time budget.

incumbents should make them more vulnerable in upcoming elections. Research shows that public approval is a key determinant of the electoral success of incumbents (Erikson, MacKuen, and Stimson 2002; Mcdermott and Jones 2003). Voters also tell pollsters that fiscal stalemate makes them less willing to vote for incumbents. Even if voters do not hold lawmakers accountable, interest groups that represent entities and individuals harmed by a late budget or government shutdown—business organizations, public labor unions, local government organizations, and non-profit service providers—may do so independently. These groups are powerful actors in state politics, bringing important financial and personnel resources into the political process and offering key endorsements during elections. Of course, increased vulnerability does not guarantee electoral defeat. Reelection rates are high for states offices (Berry, Berkman, and Schneiderman 2000) and most officials win reelection even following a late budget. That being said, politicians usually work to avoid angering their constituents and key interest groups.

Second, low popularity may undermine the ability of officials to advance a legislative agenda. The literature commonly assumes that public approval facilitates policy success. This assumption is supported by research showing that a President's popularity is positively correlated with legislative influence (Canes-Wrone and de Marchi 2002) as well as evidence suggesting that popular governors are more successful at achieving their policy goals (Kousser and Phillips 2010). While there is no systematic evidence concerning the effect of approval on the ability of legislatures to move an agenda, observers note that the 1996 shutdown of the federal government reduced public support for the new Republican majority in Congress and nearly "stopped the Republican Revolution in its tracks" (Meyers 1997, 31).

While we believe that fiscal stalemate imposes political costs on governors and legislatures, these costs should not be constant across states or fiscal years. We argue that their magnitude will be shaped by the variables discussed below. When these costs are high, the governor and legislature face particularly strong incentives to agree upon a timely budget.

Automatic government shutdown. The reversion point in the absence of a new budget varies by jurisdiction. Typically, a delayed budget triggers (by law) at least a partial shutdown of the govern-

ment, resulting in the closing of many state facilities and parks, the furlough of public employees, and the suspension of "non-essential" services (Grooters and Eckl, 1998; Pulsipher 2004).[4] In some states, however, the government is temporarily allowed to operate even if the legislature and governor fail to agree upon a new budget. Lawmakers in these states usually finance government operations via one of two approaches (depending upon what is legally permissible). The first of these is a continuing resolution, which funds government operations at or near the prior year's level until a new budget can be agreed upon. The second approach relies on some combination of reserve funds, IOUs, inter-governmental revenues, borrowing, and deferrals of expenditures. While these approaches are short-term (none can become permanent), they do allow most facilities and services to remain open until an agreement can be reached or until temporary funding options have been exhausted. Whether or not a late budget triggers an automatic government shutdown is almost always determined by state constitutional law and is not easily manipulated.[5]

The political costs of a late budget should be highest when a government shutdown is triggered. Shutdowns are the most visible form of fiscal impasse, impose the greatest inconvenience on voters, and impose great costs on those individuals and organizations that are financially dependent upon the state. During shutdowns, the media often fuels public anger by focusing its coverage on sympathetic individuals or groups who are particularly harmed—students whose state university must temporarily close (Stambaugh 2002), single mothers who rely on government paychecks to provide for their children (Sweeney 2005), family vacations cut short by closed state parks (Associated Press, 2007), etc. Correspondingly, the political costs of a late budget should be lower if lawmakers can utilize continuing resolutions or other mechanisms to keep the government operating, though doing so does not fully insulate the governor or legislature.

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[4]Essential services often (though not always) include prisons, highway patrol, welfare, and public health programs (Pulsipher 2004). Examples of recent state government shutdowns are Tennessee (2002), Minnesota (2005), New Jersey (2006), Michigan (2007) and Pennsylvania (2007)

[5]Categorizing states as either mandating or not mandating a government shutdown is admittedly a blunt instrument for measuring reversion points. There remain additional more fine-grained variations. For instance, among states with a shutdown requirement there are small differences in which public services are deemed "non essential" and therefore subject to temporary closure. Identifying and operationalizing these differences is not practical. That being said, we do not expect such differences to be as meaningful as shifting from having to not having a shutdown requirement.

Election year. Political costs should also be shaped by the proximity of the next election. A late budget during an off year, as opposed to an election year, provides lawmakers with more time in which to make amends with voters before they go to the polls. We thus expect to observe a significantly lower probability of a late budget during years in which legislators or the governor must stand for reelection. Indeed, the political costs of a late budget should be highest when there is both an upcoming election and a shutdown requirement.

3.2 Private Costs

In many states, a fiscal stalemate also imposes private costs on legislators. Since a new budget is required each fiscal year or biennium, the legislature must stay in session until a final agreement with the governor can be reached. Remaining in the capital to engage in protracted budget negations can be personally costly to those legislators who must return home for professional reasons. Where legislators face high private costs (in addition to the political costs associated with fiscal delay), we should observe a decreased probability of a late budget. We argue that these private costs are inversely related to a legislature's "relative session length," that is, the length of the legislative session relative to the starting date of the fiscal year.

Relative session length varies widely across states and is shaped largely by state constitutions. It can be positive (meaning the regular session extends beyond the start of the fiscal year) or negative (meaning the session ends prior to the new fiscal year). Some state legislatures resemble the U.S. House of Representatives in that there are no constitutional limitations on the amount of time lawmakers can meet. These chambers are in session well past the start of the new fiscal year and their members routinely plan for lengthy stays in the state capital. Surveys of lawmakers show that service in these chambers is the equivalent of a full time job (Kurtz et al 2006).

Most legislatures, however, face constitutional restrictions on the number of days that they are allowed to meet, though special sessions may be called if necessary. Restrictions on session length range anywhere from 20 to 140 calendar or legislative days. In nearly all "restricted" legislatures, the regular session ends before (sometimes well before) the start of the new fiscal year. Members of legislatures that meet in restricted sessions do not usually anticipate or plan for

lengthy stays in the capital. Indeed, they frequently maintain outside careers both because doing so is possible and because many of these chambers provide little in the way of financial compensation (Moncrief, Squire, and Jewell 2001).[6]

When a budget is late, lawmakers in states with restricted legislatures are required to meet in what may be a time-consuming special session, forcing them to remain in the capital longer than planned and often preventing them from returning to their private careers. The prospect of leaving their day jobs to resolve budget conflict is costly and should make members less willing to engage in fiscal stalemate. Indeed, the farther the regular session ends before the start of the fiscal year, the greater the private costs of a late budget ought to be. As Kousser and Phillips (2009) show, governors can exploit the relative impatience of legislatures that meet in short sessions to extract concessions during the budget process. When the regular session extends beyond the start of the fiscal year (i.e., when relative session length is positive), a late budget imposes few private costs on lawmakers (particularly as the distance between start of the fiscal year and the end of the regular legislative session grows). These lawmakers have no expectation of a quick session, regardless of the progress of budget negotiations, and rarely have private sector jobs to which they must return.

Unlike legislatures, the private costs of fiscal delay should always be low for governors. The governorship, in all states, is a full-time and well-paid job and governors, unlike many lawmakers, do not maintain outside careers. All of this means that state chief executives can afford to engage in long and protracted battles over the budget.

3.3 Divided Government

The existing literature has long pointed to divided government as a potential source of gridlock. The argument is that when a single party controls the executive and legislative branches, key institutional actors are likely to share policy preferences, making legislative action and compromise easier. Under divided government, policy motivations are likely to diverge. There is mounting evidence that divided partisan control of policymaking at both the national and state level reduces legislative output (Binder 1996, 2003, Krehbiel 1998, Bowling and Ferguson 2001, Chiou and

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[6]Surveys of lawmakers reveal that service in these chambers (time in session, constituent service, committee work, and election campaigning) is equivalent to 50 percent or less of a full-time job (Kurtz et al 2006).

Rothenber 2003, Rogers 2005), though scholarly agreement is not universal (see Mayhew 1991 and Fiorina 1996). Studies of fiscal policymaking have also revealed that divided governments are slower to respond to both budget deficits and fiscal shocks (Alt and Lowry 1994; Poterba 1994). The totality of evidence suggest that we should observe a higher probability of a late budget when control of government is shared by the Democratic and Republican parties. This might be particularly true when intra-party polarization is high, though testing this possibility is difficult given the absence of over time measures of state-level legislative polarization.

An important consideration is also whether either the legislature or governor (during periods of divided government) can expect to systematically gain electoral advantage from a late budget. After giving this much thought, we believe the answer is "no." First, polling demonstrates that fiscal delay negatively impacts the public's opinion of both the legislative and executive branches, even during divided government. Second, if voters were to chose sides during fiscal stalemate, it is very difficult (in any systematic way) to anticipate whether majority opinion will support the governor or legislature. For instance, going into the 1996 budget dispute with President Clinton, many Republicans in Congress predicted that they would win the public relations battle, only to have a majority of the public eventually side with the President. The political fallout from the 1996 budget battle demonstrates the inherent risk involved in such a strategy (Meyers 1997). Journalistic coverage of fiscal standoffs generally indicates that parties to a budget negotiation prefer a timely resolution. Any predictions as to which side would be harmed the least by a late budget are idiosyncratic and depend heavily on features like the popularity of the governor, the political skills of key actors, the fiscal programs or taxes that are in dispute, and media framing of the standoff.

3.4 Supermajority Voting Rules

The use of supermajority voting rules may also increase the probability of a late budget. Rules that require supermajority votes for legislative action make it more difficult to assemble a winning coalition (Krehbiel 1998). They may also empower the minority party to prevent legislative majorities from securing their preferred policy objectives (Binder 1996). Wawro and Shickler (2006), for instance, have thoroughly documented how the filibuster in the U.S. Senate has com-

plicated lawmaking and been successfully used as a tool for obstruction.

Observers of state budgeting often point to supermajority requirements as a reason for fiscal stalemate. While state legislatures do not allow anything akin to the Senate's filibuster, three states—Arkansas, California, and Rhode Island—either require or have until recently required a two-thirds vote of the legislature to pass a budget. Opponents claim that such rules make it more difficult to budget in a timely manner. Late budgets in California, for instance, have been routinely blamed on the legislature's two-thirds rule. California voters, largely in response to this perception, voted to adopt Proposition 25 (the "Passing the Budget On Time Act") in 2010. This proposition changed the legislative vote needed to pass a budget to a simple majority.

3.5 Additional Considerations

In addition to the hypotheses we develop above and those from the existing gridlock literature, the probability of fiscal stalemate may also be shaped by state fiscal conditions and the complexity of the budgeting process, both of which vary across states and over time.

Fiscal conditions. The fiscal health of the state may be a key determinant of gridlock. When a state is struggling to fund its budgetary obligations, lawmakers must choose between cuts in popular programs and unpopular tax increases. Such choices generate intense opposition from voters and interest groups, making budgeting significantly more controversial and difficult. During periods of prosperity it should be easier to accommodate divergent fiscal preferences.

Budget Complexity. In some states the budget process may simply be more onerous than it is elsewhere, resulting in a higher propensity for delay. Lawmakers in states with a relatively sizable public sector are likely to have a significantly larger workload associated with budgeting, both when it comes to drafting appropriations bills and engaging in program review and evaluation.[7]

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[7]Though an imperfect proxy for complexity, the size of the state budget has been used elsewhere for this purpose (see Moncrief 1988). Additionally, there is evidence suggesting that lawmakers see a positive correlation between budget size and the difficulty of writing and passing a budget. For example, a 1990 resolution adopted by the Nevada senate claimed that growth in the size of the state's public sector—from $397 million in 1969 to over $3.9 billion in 1989—had resulted in a much heavier fiscal workload for lawmakers. According to the resolution, increased government expenditures meant that the length of the state budget had nearly tripled (from 552 to 1,498 pages) and the number of budget accounts nearly doubled, rising from 230 to over 445. Lawmakers argued that the increased size of the public sector meant that reforms were needed to lessen the burdens on lawmakers (Legislative Commission of the Legislative Council of the State of Nevada, 1990).

The same may be true for states that budget biennially. Some observers of state budgeting have argued that crafting two-year budgets is particularly challenging given the difficulty of forecasting state revenues so far in advance (Snell 2011).

A third factor that may affect complexity is the start date of the fiscal year. While most state fiscal years begin on July 1st, they start notably earlier in New York and much later in Texas, Alabama, and Michigan.[8] Observers argue that a late start date allows lawmakers to have a more complete and accurate revenue forecast for the upcoming year, making the budget process easier. Accurate revenue forecasts are particularly important since all states except Vermont operate under balanced budget rules. The early start of the fiscal year in New York is often cited as a reason for the state's frequent late budgets (Baker 2004; Citizens Budget Commission 2004). It is also possible that later-starting fiscal years simply allow lawmakers a greater amount of time to resolve their differences and complete the onerous task of writing and reviewing the budget.[9]

4 Frequency of Late State Budgets

We have collected systematic data on late state budgets for a 46-year period—1961 through 2006. Data collection proceeded in two steps. First, we established whether each state budgets annually or biennially using a variety of sources (including the *Book of the States*) and communication with state officials. Then, to determine the date of adoption for each budget, we consulted legislative journals. If the journal ended prior to the start of the fiscal year or biennium, we were able to conclude with certainty that the budget had been enacted on time. If the journal did not end prior to the start of the fiscal year or biennium, we searched its text for the date of budget adoption. When necessary, legislative journals were supplemented by correspondence with state reference

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[8]The starting month of the New York fiscal year was moved from July to April in 1943. The fiscal year begins on September 1st in Texas and on October 1st in Alabama and Michigan.

[9]In alternative models, we consider two additional measures of complexity—the total number of legislators and total staff members per lawmaker. The difficulty of budgeting may increases as the number of legislators grows, while the presence of numerous staff members may make budgeting easier. Ultimately, we find no meaningful correlation between the number of legislators and the probability of delay. Surprisingly though, we observe a positive and statistically significant correlation between staff per lawmaker and fiscal delay. We are cautious about reading too much into this result since systematic data on legislative staff are only sporadically available. Our results are also unchanged if we replace our indicator for the starting month of the fiscal year with a variable that measures the amount of time between the start of the legislative session and the start of the fiscal year.

librarians or budget personnel. Using this information we were not only able to identify whether the state had passed the budget late, but if so, by how many days.[10]

Ultimately, we successfully obtained data on all enacted budgets for 48 states, for a total of 1,756 state budgets. The exceptions are Alaska and Illinois, for which we only have reliable data on 5 and 15 budgets respectively. For Alaska, we were simply unable to gain access to the necessary legislative journals. Illinois, in most fiscal years, adopted over one hundred budget bills, making it all but impossible to effectively determine an adoption date.

The data reveal that fiscal delay is common—over 15 percent of all state budgets are adopted late. Of budgets for which we have data, 3.8 percent were late by one week or less, 7.1 percent were adopted between 8 and 31 days after the start of the fiscal year, and 4.5 percent were more than one month late. Figure 1, presents our data for each biennium, showing the share of late budgets across all states. This figure reveals that while there is a great deal of biennium-to-biennium fluctuation in the frequency of late budgets, there is no obvious trend toward increased gridlock. The decade with the fewest late budgets was the 1960s (with 11%); in each subsequent decade between 16% and 18% of all budgets were adopted late.

Table 1 shows, by state, the frequency and length of fiscal delay. Again, there is a great deal of variation. A total of 20 states did not experience a single late budget during the 46 years included in our analysis. At the other extreme, 10 states saw over one-third of their budgets adopted after the start of the fiscal year. The "leaders" in this category are Wisconsin (83%), New York (72%), and Louisiana (70%). Just as the frequency of late budgets varies so does their length. The average budget delay is 30 days, but several have lasted well over three months. Average delays in the three states with the most frequent late budgets range between 11 and 48 days.

5 Independent Variables

Each of the variables described below is used in our empirical analysis.

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[10]We identified a handful of instances in which a state's budget was split into multiple bills, some adopted before the start of the fiscal year, and others afterwards. In each of these cases, the vast majority of the budget was passed either before or after the deadline. We treat the date on which the bulk of the budget was passed as the date of adoption.

Political costs. Three variables are employed to consider the effects of political costs on the probability of a late budget. *Government Shutdown* identifies states where at least a partial government shutdown is mandated if a new budget is not agreed upon prior to the start of the fiscal year. *Election Year* is an indicator for years in which there is either a legislative or gubernatorial election. We also utilize an interaction between *Government Shutdown* and *Election Year*.

Private Costs. Our measure of the private costs of delay is *Relative Session Length*. This is operationalized as the amount of time (measured in calendar days) between the start of a state's fiscal year and the last date the state constitution says the legislature can meet in regular session. If the session is not limited, we assume the last day to be December 31st. When the regular session is required to end prior the start of the fiscal year, a state's score is negative. So for instance, a state receives a score of -30 if its fiscal year begins July 1st, but its regular legislative session is required to end on June 1st. Scores on *Relative Session Length*, range from -168 to 274, with a mean of 24. Larger values indicate longer session length and smaller private costs of budgetary delay.[11]

Other Variables. Divided government is measured using a dichotomous variable identifying years in which the Democratic and Republican parties share control of government. To test whether supermajority requirements increase the probability of fiscal delay, we include a dummy variable for those states that require a two-thirds legislative vote for adoption of the budget (*Supermajority to Pass Budget*). Fiscal conditions are captured by *Surplus* which is a lagged measure of a state's budgetary surplus, operationalized as the difference between total expenditures and revenues (negative values indicate a budget deficit). We also include the annual growth rate in per-capita income (*Growth Personal Income*), measured over the prior 12 months.

We use three variables to test whether the complexity of budgeting increases the probability of delay. The first is the size of the budget (*Budget Size*) measured as total expenditures in 2000 dollars. The second, *Biennial Budget*, identifies those states that budget biennially. During the period of time covered in our analysis numerous states switched from biennial to annual budgeting;

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[11]Our results are unchanged if we replace *Relative Session Length* with a dichotomous variable that is coded one for states in which the regular session extends past the start of the fiscal year and zero for states in which it does not.

a few switched in the opposite direction. The third, *Start of FY*, indicates the month in which the state fiscal year or biennium begins.

We rely upon a variety of sources for our political, institutional, and economic variables. Information regarding the partisan control of state government is from Klarner (2003) and his updates available on the *State Politics and Policy* website.[12] Data on the size of budgets and budget deficits/surpluses come from the *Historical Database of State Government Finances* which is maintained by the U.S. Census of Governments. Data on personal income are from the U.S. Census Bureau, while information on election timing, budgetary voting rules, the use of annual or biennial budgeting, session length, and the starting month of fiscal years were culled from various issues of the *Book of the States* and supplemented with state specific sources and correspondence with state reference librarians. Finally, data on state reversion points in the absence of a new budget were obtained from the National Conference of State Legislators (2008).

6 Results

Table 2 reports the results of several multivariate regression analyses.[13] The dependent variable in all models is coded 1 if the state's budget was adopted late, and zero otherwise. Each estimation is a multilevel logistical regression that includes state and year random effects. These random effects treat budgets as being nested within states and years. We standardize all continuous predictors by centering (at zero) and dividing by two standard deviations. As a result, the coefficients for all continuous and binary predictors are comparable on roughly the same scale (Gelman 2008). A one-unit change in the continuous predictors covers two standard deviations of that predictor. Because these transformations are linear, they do not affect any inferences about statistical significance; rather, they simply make it easier to interpret the relative substantive magnitude of each predictor and to make comparisons about relative magnitudes across predictors. Unstandardized results are reported in the online appendix.

We begin with models 1 through 4. The first model includes only those variables that cap-

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[12]http://spa.sagepub.com/content/3/3/309/suppl/DC1

[13]States only appear in our data in years in which a budget is required to be adopted (i.e., states that budget biennially appear only every other year).

ture political costs, the second our measure of private costs, and the third those variables that are commonly used as predictors of stalemate (divided government and supermajority voting rules). Model 4 uses all variables. The results of these estimations confirm our expectation that the political and private costs of delay crucially shape the probability of a late budget. The coefficients on two of our four measures of the cost of bargaining failure—*Government Shutdown* and *Relative Session Length*—are correctly signed and consistently significant at the 95-percent level. Even after controlling for other predictors of delay, a late budget is much less likely in the presence of a shutdown requirement (high political costs) and in states with shorter legislative sessions (high private costs). The coefficients on *Election Year* and *Government Shutdown * Election Year*, while usually not statistically significant, always have the anticipated negative sign.[14]

In model 5, we include an interaction between *Government Shutdown* and *Relative Session Length*. This new variable allows us to evaluate whether the effect of session length is conditioned by the presence of a shutdown requirement. Though not anticipated by our theoretical analysis, it is possible that the private costs of delay will "matter" much less when the political costs are high. This is precisely what we find. With the addition of the new interaction term, the coefficient on *Relative Session Length* remains large, positive, and statistically significant, indicating (once again) that the probability of stalemate grows as relative session length increases. However, the negative and significant coefficient on the interaction term indicates that in states with a shutdown requirement, the magnitude of the effect of increased session length is much smaller. This result (which we explore in greater detail in Section 6.2) suggests that, when high, political costs trump private considerations.

The regression results in Table 2 provide mixed support for the key predictions of the existing gridlock literature. As expected, we find that divided government increases the probability of fiscal stalemate. The coefficient on *Divided Government* is positive and statistically significant

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[14]Our findings are robust to alternative estimation strategies, including the use of clustered standard errors, as well as alternative operationalizations of key independent variables. In models not reported here, we replace *Election Year* with separate dummies for gubernatorial and legislative election years. We also evaluated several alternatives to *Relative Session Length*, including the use of a dichotomous variable coded one for regular sessions that end after the start of the fiscal year. None of these modeling changes alter our principal findings.

in all models. We do not, however, observe a statistically meaningful correlation between super-majority voting rules and budgetary delay. Indeed, in some model specifications the coefficient on this term is surprisingly negative. Of course, since only three states use supermajority rules in budgeting, we caution against drawing a firm conclusion that such rules are unrelated to gridlock.

In the online appendix, we further explore the effects of divided government by replacing our dichotomous indicator with measures that capture differing configurations of divided control (split branch vs. split legislature). When we do so, we find evidence that fiscal delay is greatest under the split branch configuration (i.e., when the party in opposition to the governor controls both legislative chambers). Indeed, the coefficient on split branch is always larger than that on split legislature, though the difference between the two is not consistently significant.[15] Regardless of how divided government is operationalized, however, we find that the political and private costs of delay powerfully shape the probability of a late budget.

Additionally, we find evidence that a state's fiscal circumstances and the complexity of its budgeting process are meaningful predictors of stalemate. The statistically significant positive coefficients on *Biennial Budget* and *Budget Size* as well as the negative coefficient on *Start of FY* indicate that as the complexity of the state budget process increases, so does the likelihood of delay.[16] The negative and significant coefficient on our lagged measure of budget surplus suggests that a late budget is less likely when the fiscal circumstances of the state are strong. However, we do not observe a meaningful relationship between fiscal gridlock and growth in personal income (though this variable has the anticipated sign). If we also include a variable capturing changes in the state unemployment rate, its coefficient (like that on our measure of income change) has the anticipated sign, but also does not reach statistical significance.

6.1 Additional Robustness Checks

We have conducted a number of further robustness checks, most of which are summarized here and described in greater detail in an online appendix. First, we consider whether the results

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[15]This result differs from many existing studies which find that gridlock is most prevalent in the split-branch configuration (Alt and Lowry 1994, Bowling and Ferguson 2001, Rogers 2005; but see Klarner and Karch 2008).

[16]Our results remain unchanged if we replace *Start FY* with a variable that measures the amount of time between the start of the legislative session and the start of the fiscal year.

of our analysis differ if we add legislator salary to our regressions. Legislators in some states are generously paid, while compensation in others is quite low or nonexistent. Adding salary to our model allows for the possibility that financial compensation, by reducing the need for outside employment, drives down the private costs of delay and increases the likelihood of a late budget. We operationalize salary as the total annual base salary paid to legislators as a share of state per capita income.[17] When added to our estimations (see Model 6 in Table 2), the coefficient on salary (though positive) does not reach statistical significance and its inclusion does not meaningfully affect either the size or significance of the coefficients on any of the substantive variables.

Next, we add a measure that captures the content of the budget over which lawmakers are bargaining. It is reasonable to anticipate that late budgets will be driven, at least in part, by policy disputes. For a subset of years (1988 through 2006) we have data on executive budget proposals, particularly any tax changes asked for by the governor.[18] While fiscal controversy is certainly not limited to taxation, we believe this to be a useful proxy. All else equal, we anticipate that a late budget will be more likely when the governor is asking the legislature for large changes in tax policy. This is confirmed by Model 7 in Table 2 which includes a measure of the absolute value of all of the governor's proposed tax changes.[19] Controlling for the content of budgets does not alter any of our substantive findings.

Third, we consider whether polarization increases the probability of a late budget. Scholars have argued that gridlock will be particularly likely during periods of divided government in which the political parties (particularly their elected elites) are ideologically distant (Binder 1996, 2003). Unfortunately, there is no measure of polarization in state government, particularly over the time period included in our analysis. We can, however, consider the effect of mass polarization using

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[17]This figure does not include benefits or per diem. Data on benefits are very difficult to come by, particularly over a long period of time. While it would be ideal to have these data, prior research has shown that base salary is a fair approximation of overall compensation and correlates highly with more complete measurements (Squire 2007). Our results remain unchanged if we use (inflation adjusted) salary instead. Salary data come from the *Book of the States*.

[18]These data were culled from the *Fiscal Survey of States*, a publication of the National Association of State Budget Officers (NASBO). Each spring, NASBO publishes a list of all the tax increases and tax cuts in the budget that the governor submits to the legislature, as well as their net fiscal impact.

[19]This variable is calculated by summing the absolute value of each proposed change, adjusting to constant dollars, and dividing by the state population.

a measure developed by Erikson, Wright, and McIver (1993). This measure captures the difference between the mean ideology of Democrats and Republicans in a state's electorate. Using this measure we find no statistically significant relationship between polarization and the probability of fiscal gridlock, even during divided government (see model A4 and A5 in the online appendix).

Fourth, we consider the power of legislative leaders. A desire on the part of individual lawmakers to avoid paying the political and private costs of stalemate may be insufficient to avert a late budget, particularly given the collective action problems and disagreements that are inherent in the legislative process. Powerful leaders—those who are able to exert a great deal of influence over their fellow legislators—may be able to help lawmakers overcome these obstacles.[20] We evaluate this possibility by estimating regression models that include measures of the formal and perceived powers (Carey, Neimi, and Powell 1995, Clucas 2001, Battista 2011) of legislative leaders. These models uncover some evidence that leadership power deceases the probability of a late budget. The coefficient on our measure of perceived power is negative and statistically significant at the 90 percent level (see Model A7 in the online appendix).

Finally, we estimate models of the length of fiscal stalemate. Lengthier delays are arguably more costly for lawmakers than shorter ones. As the length of delay grows, negative media coverage accumulates, voters are more likely to experience reduced government services or other ill-effects of fiscal stalemate, and lawmakers are forced to spend more time in the capital and away from their private lives and careers. Here we measure the length of delay as a count of the number of days the budget was enacted after the start of the fiscal year (with on-time budgets scored as zero). We find that most of the variables that shape the probability of a late budget also impact the number of days a budget is late. Stalemate is lengthier when political and private costs are low, during periods of divided government, and when budgeting is more complex (see model A8 in the online appendix).

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[20]Indeed, legislative leaders may face stronger incentives to pass an on-time budget, since the their leadership positions depend upon their party maintaining majority status and because leaders may be more likely than rank-and-file lawmakers to receive blame for a late budget.

6.2 Substantive Effects

To further flesh out the substantive importance of political and private costs, we calculate and graph predicted probabilities of a late budget. These are shown in Figure 2. In each graph, the x-axis is *Relative Session Length* and the y-axis is the predicted probability of a late budget. Unless otherwise noted, all continuous variables have been set to their means and all dichotomous variables have been set to zero. The predicted probabilities are generated using Model 5, from Table 2. Note that Panel A displays predicted probabilities for unified government, while Panel B does the same for divided government.

The figure demonstrates the importance of a shutdown requirement. In states with these rules (see the dashed curves) the probability of a late budget is consistently quite low, never growing larger than 6 percent in either panel. During unified government the probability of delay is only 0.9 percent when session length is one standard deviation below the mean (-105 days), rising to 2.2 percent when session length is one standard deviation above the mean (155 days), and topping out at 3.2 percent if session length is set at its maximum value (274 days). The corresponding numbers for divided government are 1.5, 3.4, and 5.6 percent respectively. The likelihood of delay is much higher in those states without a shutdown rule (see the solid curves), especially as session length increases.[21] At a session length of one standard deviation above the mean, states without a shutdown rule are approximately 14 points more likely to experience a late budget during unified government and 22 points more likely to do so under divided government.[22] This increased probability of delay is both statistically and substantively quite meaningful.

Both panels also show the conditional importance of session length. Obviously in states with a shutdown rule (high political costs), increases in relative session length (even large ones) have only a modest effect on the the likelihood of stalemate. However, when political costs are low, the impact of session length is quite dramatic. During periods of unified government, moving from

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[21]Note that at all session lengths the predicted probability of delay is larger for states without a shutdown rule.

[22]To be clear, the differences in predicted probabilities for unified and divided governments (i.e., the differences between Panel A and Panel B) are not due to an explicit interaction term, but rather are a function of the intercept shift for the presences of divided government.

low to high levels of session length (from one standard deviation below the mean to one standard deviation above) raises the probability of a late budget from 2 to 16 percent. If we assume the maximum value of session length, the likelihood of delay is 38 percent. For divided government moving from low to high levels of session length increases the probability of a late budget from 3 to 26 percent. At maximum session length, the probability of a late budget is 52 percent.

6.3   Comments on Causality

It is conceivable that the causal arrow between state political institutions and late budgets flows in the opposite direction of our hypotheses. Lawmakers in states that have a tendency to experience late budgets may adopt institutions that minimize the political and private costs of delay. Though possible, we think this is unlikely. First, the institutions that we find to be predictors of budgetary stalemate are not easily manipulated. Whether or not state agencies are required to shutdown in the absence of a new budget is typically established in the state constitution. Similarly, our measure of session length is based upon constitutional rules regarding regular sessions. Change at the constitutional level is difficult and almost always requires the approval of the electorate. Attempts at institutional change are likely to be met with skepticism from voters, particularly if change is viewed as a means of facilitating fiscal delay, which itself is quite unpopular

We find little evidence that state budgetary institutions change much, at least over the years included in our analysis. Only New Mexico significantly altered its policies regarding government shutdowns. The lone measure that changed with some frequency is session length. During the period of time included in our analysis, the number of states with unlimited regular legislative sessions grew from 14 to 19 and the mean value of our variable *Relative Session Length* increased from 7 to 37. Though we do not report the results here, we tested whether session length or salary were likely to increase following a late budget—something we would expect to observe if lawmakers respond to late budgets by manipulating institutions to minimize future opportunity costs of delay. To do so, we directly modeled increases in relative session length and salary as a function of late budgets in the prior one, two, or three fiscal years. We found only very weak relationships which were not consistently positive or negative and never statistically significant.

Importantly, changes in the frequency of late state budgets tend to *follow* rather than proceed increases in session length. California is an instructive case. In our dataset, California did not have a single late budget prior to the professionalization of its legislature (an event brought about by the passage of Proposition 1A). However, since professionalization (which included the removal of the state constitution's limit on session length) 60 percent of all California budgets have been late, by an average of 18 days. See the online appendix for more discussion.

7 Federal Budgeting

Can the insights from our analysis be applied to the national level? The answer to this question is "yes." Because both the political and private costs of federal fiscal gridlock are low, our theoretical model predicts that late budgets at the national level should be commonplace. As previously noted, federal agencies are not required to shutdown if Congress and the President fail to agree to a new budget by the start of the fiscal year. Indeed, Congress can avoid adopting a new budget and fund the government via continuing resolutions (Davidson, Oleszek, and Lee 2007). Furthermore, service in Congress is a full-time job, meaning that lawmakers do not maintain outside employment nor do they anticipate short legislative sessions. This of course does not mean that late budgets at the federal level are uncostly (in an absolute sense) for lawmakers. They still generate negative press coverage and are fodder for claims of a "do-nothing" Congress. Budgetary delay also risks a government shutdown if conflict prevents Congress and the President from agreeing upon a continuing resolution, as happened in 1995-96 when the government shut down twice.

As anticipated, we observe more fiscal delay at the national level. From 1961 through 2006, 81 percent of federal appropriations bills were late.[23] This figure is several times higher than the 15 percent average among states. In fact, over the past four decades Congress has succeeded only four times in passing all of the required appropriations bills by the start if the fiscal year. The typical federal length of delay (73 days), which is shown in Figure 3, is also much longer than the average delay at the state level (30 days). Even when compared to states with low political and

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[23]Data on federal appropriations bills were obtained from *Appropriations, Budget Estimates, Etc.* which is published annually by the Senate Committee on Appropriations. In the event that one or more continuing resolutions were adopted in lieu of a new appropriations bill, we use the adoption date of the final continuing resolution.

private costs, the federal government has a much worse record of on-time budgeting.

Differences in the costs of bargaining failure can also help account for over time variation in the probability of federal fiscal gridlock. In the online appendix (Table 6), we report models of federal budgeting that are parallel to those estimated at the state level. Because national legislative and fiscal institutions do not change over time, however, we can only consider the effect of one of our measures of cost—*Election Year*. This measure, as expected, has a negative and statistically significant relationship to the probability of gridlock. Substantively, an appropriations bill is nine percentage points more likely to be late during a non-election year.

In our full models, the variable with the largest substantive effect is the starting month of the fiscal year (*After CBA*). As part of the Congressional Budget Act of 1974 Congress increased the amount of time they (and the President) have to pass a new budget, moving the start of the federal fiscal year from July 1st to October 1st. As our models demonstrate, once the start date of the fiscal year was moved the federal government experienced less frequent and shorter fiscal delays. This relationship is evident using summary statistics. Prior to implementation of the CBA, 96 percent of all appropriations bills were late, by an average of 101 days. Afterwards, the share of late appropriations bills dropped to 73 percent and the average length of delay to 54 days.

Our analysis of federal budgeting also confirms insights from the existing literature. Divided government increases the probability of gridlock as does increased polarization between the Democratic and Republican parties in Congress. For example, the predicted probability of a late appropriations bill under divided government with average levels of polarization is 65 percent. Under higher levels of polarization (one standard deviation above the mean) the probability of delay is 84 percent.[24] As in the state level analysis, budget complexity is positively correlated with delay.

8   Conclusion

Concerns over the potential consequences of frequent legislative gridlock have motivated scholars to develop a more complete understanding of the conditions that facilitate compromise

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[24]Probabilities are generated from an estimation of Model A12 from the online appendix. Unless otherwise noted, all continuous variables have been set to their means and dichotomous variables have been set to zero.

in a Madisonian system of fragmented governmental power. We contribute to this endeavor by demonstrating that one of these factors is the cost of bargaining failure. Using data on state fiscal gridlock we present evidence that two types of costs—political and private—meaningfully shape the probability of stalemate. When these costs are high, late budgets are infrequent. As they decline, the probability of a late budget increases, often in dramatic fashion. In budgeting, the costs of delay are largely, though not exclusively, shaped by political and fiscal institutions. The political costs of stalemate are high when the reversion point (in the absence of a timely budget) is a government shutdown, while private costs are high when lawmakers meet in regular legislative sessions that are constitutionally required to end well before the start of the new fiscal year. Beyond showing that political and private costs are important determinants of gridlock, our analysis finds that high political costs often trump private considerations. That is, when the political costs of stalemate are large, variation in private costs has only a minor impact on outcomes.

The political and private costs of delay also help explain why the federal government experiences more fiscal gridlock than do most states. The costs of fiscal stalemate are relatively low at the national level—there is no shutdown requirement in the absence of a timely budget and Congress meets in lengthy, year-long sessions. Correspondingly, federal appropriations bills are late with over five times the frequency of state budgets and, when late, tend to miss the start of the fiscal year by twice as many days. To a lesser extent, variation in the political costs of gridlock (in this case measured by an upcoming election) can also explain year-to-year fluctuation in the number of late federal appropriations bills.

Our results speak to ongoing debates within the gridlock literature, particularly debates about the consequences of divided government. Using a seldom-explored measure of gridlock, we find new evidence that divided government increases stalemate. This result is consistent with much of the existing empirical research that considers more traditional measures of legislative productivity. The findings presented here, however, indicate that the political and private costs of bargaining failure can be more meaningful determinants of fiscal gridlock than the partisan control of government. Uncovering this result is clearly aided by our decision to focus on budgeting, an arena in

which the political and private costs of bargaining failure can be systematically operationalized.

While there are properties of appropriations bills that may set them apart from other types of legislation, the central insight presented here—that high political and private costs facilitate compromise—should also be relevant for lawmaking that occurs outside of the annual or biennial budget process. For example, during the divided and highly polarized 112th session of Congress, two bills that did not fall victim to gridlock were the re-authorization of the USA Patriot Act and an increase in the nation's debt ceiling. Arguably, the legislative success of each bill was aided by the perception that inaction could be politically costly. A failure to renew the Patriot Act would have eliminated many tools used by law enforcement to combat terrorism (potentially jeopardizing public safety), while a failure to raise the debt ceiling would have forced the government to default on its debt obligations (potentially pushing the United States into a new recession).

Anecdotal evidence suggests that private costs also matter outside of the budget process. Indeed, legislative leaders and governors sometimes seek to exploit these costs in order to overcome gridlock. Congressional leaders routinely threaten lawmakers with canceled or delayed recesses if needed legislation is not agreed upon. Governors (particularly those who bargain with part-time legislatures) occasionally promise to call time-consuming special legislative sessions if lawmakers fail to act on key bills. Though not always successful, such strategies indicate a wide-spread understanding that avoiding private costs.

Finally, our analysis has implications for the design of government. Our findings suggest that the frequency of fiscal delay can be addressed, in part, through a variety of institutional reforms. Lawmakers and reformers could, for example, adopt laws requiring a government shutdown in the absence on an on-time budget, move the start of the fiscal year to later in the calendar year, switch from biennial to annual budgeting, and even shorten legislative sessions. Though we do not find significant evidence that legislative salary alters the frequency of stalemate, the fact that we observe a general relationship between the private costs of delay and late budgets suggests that an additional approach may be to permanently deduct a large portion of legislators' pay and benefits in sessions when the budget is not adopted on time. This strategy may be particularly effective in

jurisdictions where lawmakers are well compensated for their service. Our results do not indicate that changing voting rules will have much of an effect on the frequency of fiscal stalemate. We are thus skeptical that California will see an increase in the on-time budgeting with the recent passage of Proposition 25, which reduced the share of legislative votes required to adopt the budget from two-thirds to a simple majority.

Of course, the institutional changes that are likely to reduce the frequency of fiscal gridlock are not without potential costs and may even be practical. Requiring even a partial government shutdown in the absence of an on-time budget subjects voters to the risk of burdensome disruptions in public services. Furthermore, long legislative sessions have been shown to increase the responsiveness of government policy to voter preferences (Maestas 2000; Lax and Phillips 2010) and biennial budgeting is thought to facilitate long-term fiscal planning. Retaining status quo institutions may be worth occasional budgetary delay. Reformers will ultimately have to evaluate any institutional change in a context that does not exclusively focus on avoiding late budgets.

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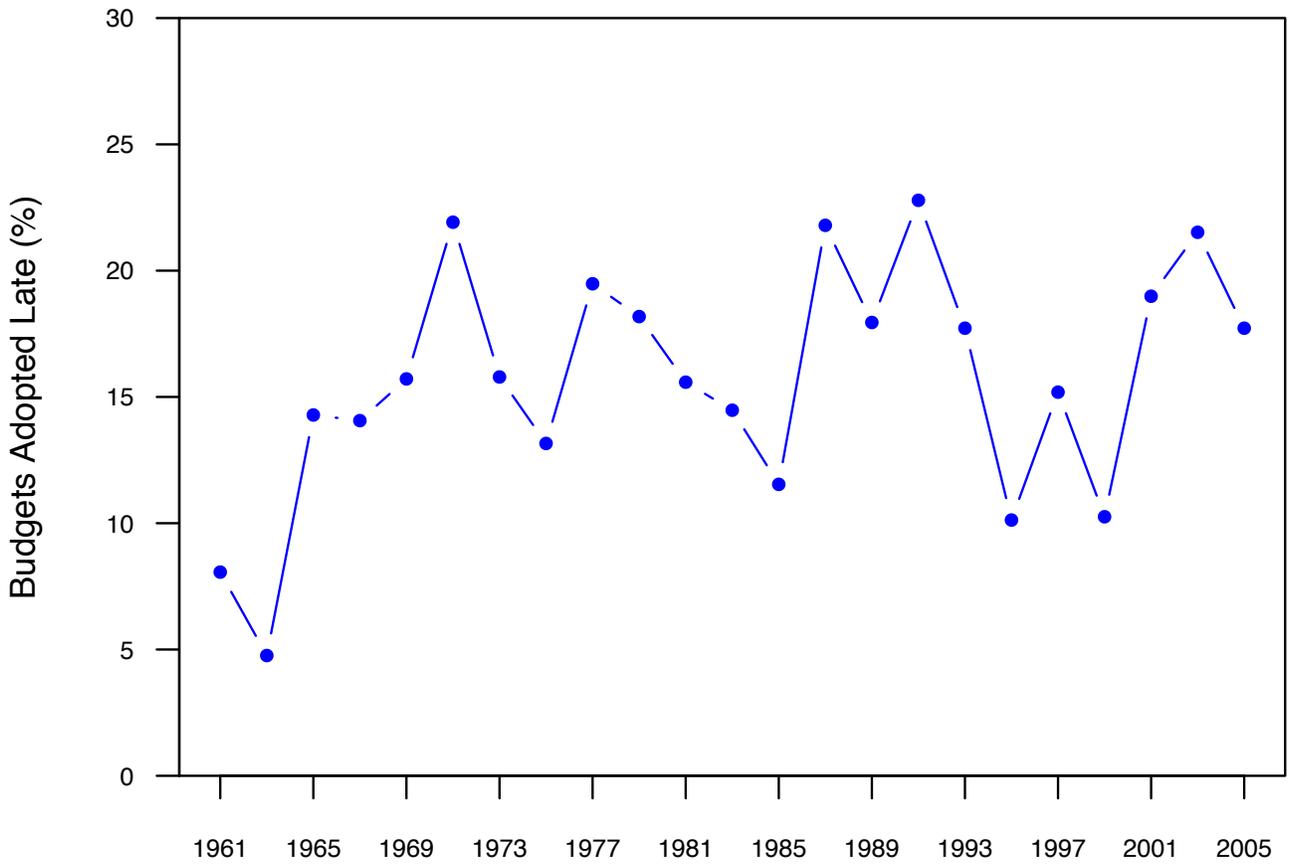
Figure 1: *Frequency of Late State Budgets: 1961-2006.* This graph depicts the share of budgets that are adopted late per biennium. Each biennium begins with an odd-numbered year. This means, for example, that the point plotted for 1961 shows the share of budgets that were adopted after the start of the fiscal year in both 1961 and 1962. For states that budget annually, data are pooled across the two years that constitute the biennium.

A. Shutdown vs. No Shutdown
(Unified Government)

B. Shutdown vs. No Shutdown
(Divided Government)

Relative Session Days
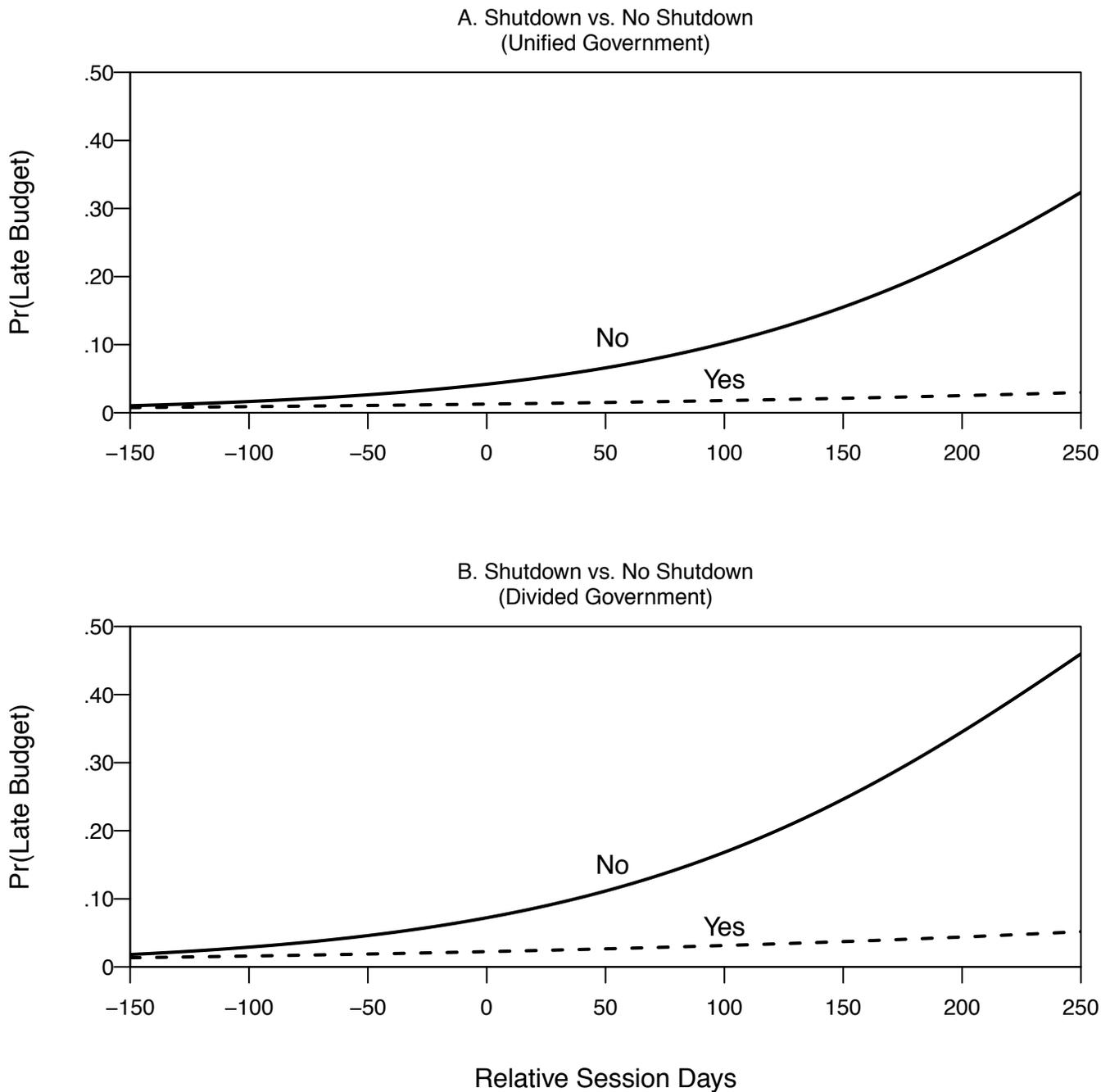
Figure 2: *Predicted Probability of a Late Budget.* Each graph plots the predicted probability of a late budget using Model 5 from Table 2. The x-axis is the number of calendar days between the start of a state's fiscal year and the last date the state constitution allows the legislature to meet in regular session. Negative values mean that the last session day takes place sometime prior to the start of the fiscal year. Larger values on the x-axis generally indicate longer sessions and lower private costs of delay. Unless otherwise noted, continuous variables have been set to their means and dichotomous variables have been set to zero.
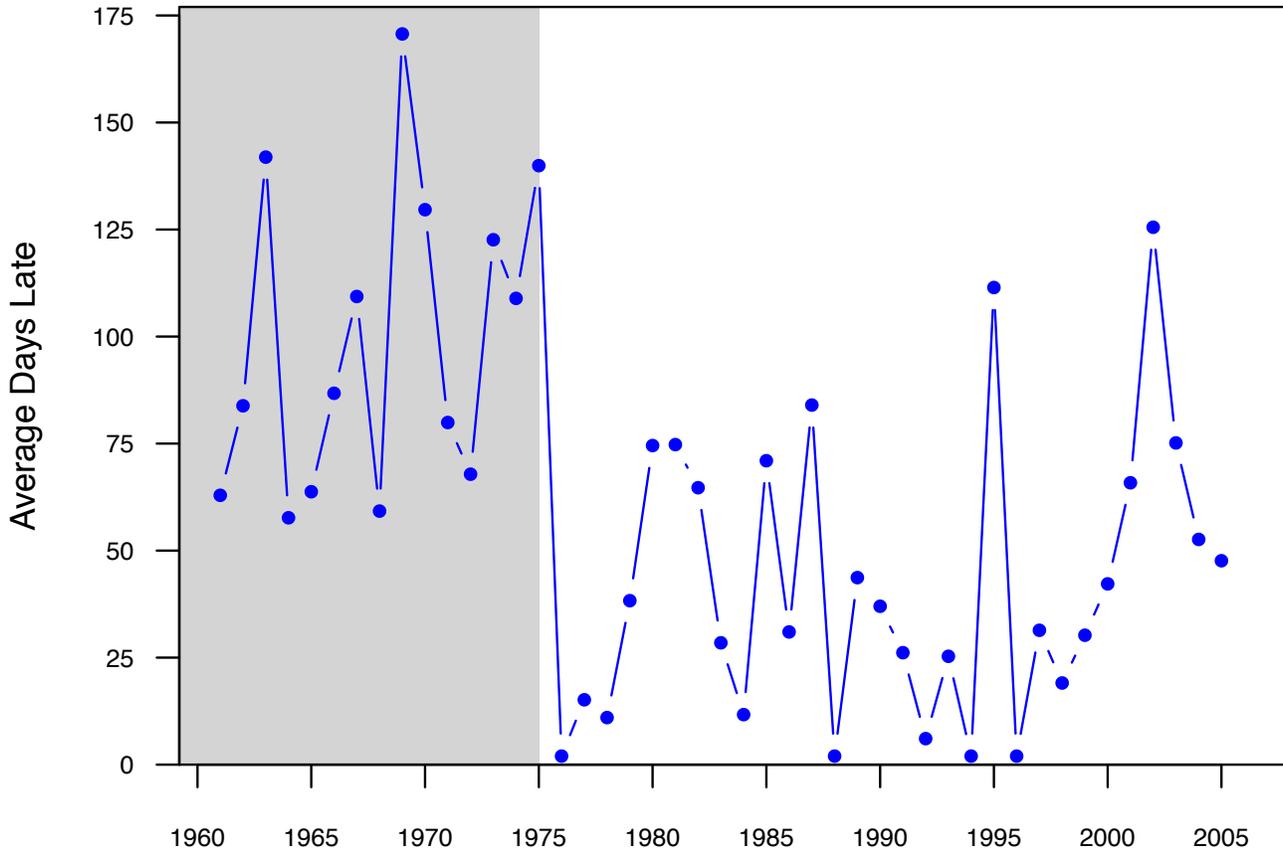
Figure 3: *Average Annual Delay in the Adoption of Federal Appropriations Bills: 1961-2006.* This graph depicts (by year) the mean "lateness" of federal appropriation bills, measured in calendar days. The gray region of the graph identifies the period of time in which the federal fiscal year began on July 1st. The white region indicates a fiscal year start date of October 1st. The start of the fiscal year was changed by the Congressional Budget Act of 1974. Source: U.S. Congress, Senate Committee on Appropriations, *Appropriations, Budget, Estimates, Etc., 87th Cong., 1st sess. - 110th Cong., 2nd sess.*

State	Late Budgets (%)	Average Days Late	Maximum Days Late
Alabama	5.1	30	52
Alaska	0	–	–
Arizona	0	–	–
Arkansas	0	–	–
California	52.2	21	65
Colorado	0	–	–
Connecticut	5.9	49	52
Delaware	17.4	6	21
Florida	2.4	9	9
Georgia	0	–	–
Hawaii	0	–	–
Idaho	0	–	–
Illinois	40.0	23	52
Indiana	0	–	–
Iowa	13.5	14	20
Kansas	0	–	–
Kentucky	8.7	261	269
Louisiana	69.6	11	35
Maine	4.3	16	16
Maryland	0	–	–
Massachusetts	56.5	38	183
Michigan	34.8	37	187
Minnesota	4.3	13	13
Mississippi	7.3	56	73
Missouri	0	–	–
Montana	0	–	–
Nebraska	3.2	16	16
Nevada	0	–	–
New Hampshire	30.4	86	164
New Jersey	4.3	4	7
New Mexico	0	–	–
New York	71.7	41	132
North Carolina	50.0	33	121
North Dakota	0	–	–
Ohio	43.5	33	179
Oklahoma	14.3	21	31
Oregon	52.2	19	57
Pennsylvania	37.0	33	175
Rhode Island	17.0	18	37
South Carolina	13.0	24	41
South Dakota	0	–	–
Tennessee	2.4	3	3
Texas	4.3	12	12
Utah	0	–	–
Vermont	2.6	31	31
Virginia	0	–	–
Washington	0	–	–
West Virginia	2.2	14	14
Wisconsin	82.6	48	126
Wyoming	0	–	–

Table 1: *Frequency and Length of Late Budgets by State: 1961-2006.* The first column is the share of budgets that have been adopted late, the second is the average length of late budgets (measured in the number of days), and the final column is the length of the state's longest fiscal stalemate. The table includes data on all enacted budgets for 48 states from 1961 through 2006. For the states of Alaska and Illinois it only includes data for 5 and 15 budgets respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Government Shutdown	-2.18**			-1.51**	-1.37**	-1.35**	-1.85**
	(0.75)			(0.58)	(0.54)	(0.54)	(0.91)
Election Year	0.04			-0.06	-0.07	-0.06	0.30
	(0.22)			(0.22)	(0.22)	(0.22)	(0.38)
Government Shutdown * Election Year	-0.85*			-0.31	-0.29	-0.30	0.39
	(0.49)			(0.54)	(0.54)	(0.54)	(0.85)
Relative Session Length		2.34**		1.79**	2.51**	2.46**	4.15**
		(0.40)		(0.41)	(0.52)	(0.54)	(1.04)
Government Shutdown * Relative Session Length					-1.60**	-1.57*	-2.37
					(0.81)	(0.81)	(1.73)
Divided Government			0.61**	0.57**	0.58**	0.57**	0.78**
			(0.18)	(0.19)	(0.19)	(0.19)	(0.35)
Supermajority to Pass Budget			1.21	-0.50	-0.65	-0.65	0.35
			(1.56)	(1.06)	(0.99)	(0.98)	(1.37)
Personal Income (rate of growth)				-0.03	-0.03	-0.03	-0.06
				(0.20)	(0.20)	(0.20)	(0.35)
Biennial Budget				0.66*	0.71*	0.72*	0.99
				(0.40)	(0.39)	(0.39)	(0.82)
Surplus (lagged)				-0.33*	-0.34*	-0.34*	-0.76**
				(0.20)	(0.20)	(.20)	(0.29)
Budget Size				0.90**	0.86**	0.86**	-0.15
				(0.26)	(0.26)	(0.26)	(0.54)
Start of FY				-0.80**	-0.64**	-0.63**	-0.46
				(0.33)	(0.32)	(0.32)	(0.75)
Legislative Salary						0.12	0.91
						(0.32)	(0.92)
Governor's Proposed Tax Changes							0.67**
							(0.28)
Intercept	-2.22	-3.09	-3.68	-2.84	-2.89	-2.90	-3.62
	(0.46)	(0.30)	(0.42)	(0.41)	(0.39)	(0.39)	(0.69)
Standard deviation of state effects	2.18	1.70	2.45	1.50	1.34	1.33	1.73
Standard deviation of year effects	0.29	0.29	0.24	0.26	0.25	0.25	0
N	1719	1719	1719	1719	1719	1719	742
AIC	1024	1003	1023	978	977	979	380

Table 2: *Determinants of Late State Budgets.* All models are logistic regressions and include random effects for state and year. Models are estimated using data from 1961-2006, except Model 7 which uses data from 1988-2006. Two-tailed tests are employed: * $< .10$, ** $< .05$