

The Causes of Fiscal Transparency: Evidence from the U.S. States

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We use unique panel data on the evolution of transparent budget procedures in the U.S. states over the past three decades to explore the political and economic determinants of fiscal transparency. Our case studies and quantitative analysis suggest that both politics and fiscal policy outcomes influence the level of transparency. More equal political competition and power sharing are associated with both greater levels of and increases in fiscal transparency during the sample period. Political polarization and past fiscal conditions, in particular state government debt and budget imbalances, also appear to affect the level of transparency. [JEL D72, D78, H70]

From a policy perspective, government transparency has been an integral part of attempts to reform public sector governance since at least the early 1990s. Broadly defined, government transparency is the overall degree to which citizens, the media, and financial markets can observe the government's strategies, its actions, and the resulting outcomes. In this paper, we focus on one important aspect of transparency: fiscal (or budget) transparency. Fiscal transparency now plays a key role in public sector design; both the Organization for Economic Cooperation and Development (OECD) and the IMF have recently implemented Codes of Best

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Practice for Fiscal Transparency to guide countries toward a more open fiscal policy decision process, partly in recognition of the fact that fiscal transparency does not always come about by itself. Although it is sometimes possible for supranational institutions or higher-level governments to push for—or outright require—reforms of the budgetary process as a part of a stabilization package, the causes of government transparency during “budgetary peacetime” remain less well understood.

In this paper we investigate, conceptually and empirically, the determinants of fiscal transparency. There exists a fairly large literature on the effects of institutions—both fiscal and political—but very little work considers the endogeneity of such institutions. Understanding the causes of institutional change is important for two reasons: First, it will help us to determine when we can reasonably expect institutions to emerge by themselves and when outside actors are needed for institutional change to take place. Second, it will enable us to estimate the effects of institutions on policy choices and outcomes. Although institutions obviously do not change as frequently as policy does, the fact that institutional change is typically deliberate makes it difficult to assess the direct impact of institutions on policy. The reason is that observed changes in policy could be a function of past outcomes that also affect the scope and desire for institutional change, rather than a function of (changing) institutions per se.

To investigate the causes of transparency, we have collected a unique data set on transparent budget practices in the U.S. states from 1972 to 2002. This period saw substantial changes in the degree of fiscal transparency in state government budgeting. Because we consider both a large number of cases and a measure with considerable variation, our analysis is an important improvement over existing studies of institutional change in budgetary procedures.

I. Theoretical Framework

Institutions—fiscal or otherwise—set the stage on which political actors, voters, and markets interact. “Institutions affect behavior primarily by providing actors with greater or lesser degrees of certainty about the present and future behavior of other actors” (Hall and Taylor, 1996, p. 939). The insight that institutions matter for choices and outcomes is the basis for the increased focus during the past two decades on principles of good governance, of which transparency of government is a prominent part.

Increasing fiscal transparency is a way of providing voters, observers, financial markets, and sometimes politicians themselves with more information about the intentions behind fiscal policy, the actual actions taken, and the immediate and longer-term consequences of specific policies. This eases the task of forecasting future fiscal policy and of attributing fiscal outcomes to policies, and fiscal policies to particular politicians. A comprehensive definition of fiscal transparency is given by Kopits and Craig (1998, p. 1):

Fiscal transparency is defined . . . as openness toward the public at large about government structure and functions, fiscal policy intentions, public sector accounts, and projections. It involves ready access to reliable, comprehensive, timely, understandable, and internationally comparable

information on government activities . . . so that the electorate and financial markets can accurately assess the government's financial position and the true costs and benefits of government activities, including their present and future economic and social implications.

There are bodies of literature that analyze the consequences of transparency in government,¹ international organizations, monetary policy, and fiscal policy. In this paper, we focus on the transparency of fiscal policy. The next section reviews the literature on fiscal policy transparency, and the following section turns to the causes of transparency.

Imperfect Information and Agency Models

Transparency is an issue only when there is imperfect information. In a simple sense, more transparency means “more information transmitted.” Many academics and policymakers see more transparency as generally beneficial. The reasons, according to Posen (2002), include trust,² predictability,³ reduced noise in markets,⁴ credibility, and coordination.⁵ However, more transparency also trades off the value of sunlight with the danger of overexposure, as Heald (2003) puts it. “Too much” transparency can produce excessive “politicization” and reduce flexibility. If information is revealed to third parties who use it harmfully, increasing transparency can be bad.⁶ Finally, as Geraats (2002 and 2005) points out, transparency can also affect incentives. For instance, if not keeping explicit promises is costly, transparency might lead politicians to keep promises when breaking them might be more beneficial.

Several authors examine the effects of transparency in the context of imperfect information models. Milesi-Ferretti (2004) develops a reduced-form model that allows him to investigate the interactive effects of transparency and fiscal rules, such as those imposed by members of the European Union under the Maastricht Treaty of the 1990s. He assumes that politicians are myopic (perhaps owing to the positive probability of being replaced in the next election) and therefore prefer to run larger deficits than the public would like. He finds that, in this context, transparency affects politicians' responses to fiscal rules: under high transparency,

¹Petrie (2003) provides thoughtful suggestions on how to make the implementation of transparency reform more effective.

²Trust increases when transparency means “tell them what you're going to do.” If politicians have a history of having nothing to hide, they are more likely to have the people's trust when they ask them to take something on faith. Transparency reassures people that politicians have not abandoned long-term goals; the confidence this fosters can give politicians greater flexibility.

³Greater disclosure makes actions more predictable when transparency means “give them details and justifications.”

⁴In the political market, voters get a clearer view of performance and can make more effective use of votes. In financial markets, participants are not misled and risks are reduced (Glennerster and Shin, n.d.). Generally, better observability is welfare-improving, as it reduces transaction costs in the broadest sense.

⁵Lowry (2001) provides such an interpretation of balanced budget rules, conditional on market behavior. In monetary policy, an incumbent wishing to be seen to fight inflation can do so more effectively if the standard for what will count as fighting inflation is unambiguous.

⁶This potential for “harmful” competition may be a reason to support secret voting (Dal Bo, 2005).

rules induce politicians to make the real fiscal adjustments needed to bring the budget into balance, whereas under low transparency such rules simply encourage “creative accounting.”

In another line of inquiry, using the probabilistic voting model of Lindbeck and Weibull (1987), Gavazza and Lizzeri (2005) investigate the effect of transparency on competition among different groups of voters who value targeted transfers. Where competing parties engage in pre-electoral competition, transparency on the expenditure side of the budget is welfare-improving, whereas transparency solely on the revenue side can result in lower welfare because it reduces the marginal political costs of offering wasteful transfers. We return to this distinction in the empirical section by separately examining the causes of expenditure and revenue transparency.

However, unlike these two papers, most work on transparency in political economics has taken place within a class of models known as political agency models, which were created by Barro (1973) and Ferejohn (1986). These models adapt the principal-agent framework, in which the agent is better informed than the principal, to a political setting such that voters, as principals, elect politicians who, as agents, make policy choices that affect voters. For an application to fiscal policy, see Persson, Roland, and Tabellini (1997).⁷ A direct focus on transparency, interpreted as the degree to which voters can observe characteristics of, or actions taken by, the agent, is not common, but we return to examples below.

In a political agency model combining adverse selection and moral hazard, Besley and Smart (2005) and Besley (forthcoming) show that increasing transparency has two countervailing effects on voter welfare. On the one hand, increasing transparency allows voters to better screen good politicians from bad ones. On the other hand, greater transparency disciplines politicians in their rent seeking, which makes it harder for voters to distinguish between good and bad politicians. The net result on the quality—and turnover—of incumbents is ambiguous. In Alt and Lassen (2006b), politicians do not seek rents for personal gain; rather, the politician’s concern for reelection is driven by a desire to implement policy. Therefore, the disciplining effect disappears and transparency unambiguously increases voter welfare through improved screening.

Prat (2005) considers a distinction, introduced by Ferejohn (1999; see below), between the effects of transparency on consequences and actions (see also Stasavage, 2004; and Fox, 2005). In Prat’s (2005) career-concerns model, in which both voters and the politician are uncertain about the politician’s type, improving the transparency of consequences is always beneficial to voters, but more information about the agent’s actions can be detrimental if it causes the agent to disregard private informative signals with an aim of appearing in a certain way to the public. The same idea motivates the treatment of transparency in monetary policy by Morris and Shin (2002).

⁷For a different asymmetric information model applied to fiscal policy, see Rogoff (1990). Geraats (2002) analyzes transparency in a signaling model in which the incentive effects of transparency are sometimes set against the effects of inflation fighters’ reputations.

Theoretical results on the effects of transparency on fiscal policy come from Shi and Svensson (2002), Besley (forthcoming), Besley and Prat (forthcoming), and Alt and Lassen (2006a and 2006b). All model transparency within a political agency framework, in which electoral promises are nonenforceable and voting is retrospective. Voters hold incumbents accountable for their policy choices in the previous period, and transparency alleviates informational asymmetries between voters and politicians. The precise effects of transparency depend on the issue under consideration, but the main empirical conclusions of this literature are that increasing transparency reduces debt accumulation and the scope for generating political budget cycles. A separate, empirical literature has investigated the effects of transparency on financial markets. Glennerster and Shin (n.d.) find that higher transparency lowers borrowing costs in sovereign debt markets, and Gelos and Wei (2005) find that emerging market funds invest less in less-transparent countries.

Models of Endogenous Transparency

Although empirical studies have uncovered evidence that transparency has some welfare-improving effects, the theoretical literature also suggests that the effects of transparency (and, therefore, for our purposes, perhaps the causes as well) are not always beneficial to voters. However, even if fiscal transparency were unambiguously desirable from the public's point of view, it would still be the case, as noted by Alesina and Perotti (1996, p. 403), that "politicians typically do not have an incentive to adopt the most transparent practices" because doing so decreases their informational advantage over markets and voters—an advantage useful for political and reelection purposes. Why might politicians dislike transparency? As suggested in the previous discussion of the literature, there are many possible reasons: rent-seeking politicians do not wish to be disciplined, bad politicians do not wish to be distinguished from good politicians, reelection-minded politicians want to generate political business cycles, myopic politicians want to run bigger deficits than the public would like. For politicians, these factors militate against increasing transparency and might even motivate decreasing transparency.

Although politicians may not have incentives to increase transparency, it nevertheless does sometimes happen, even in the absence of outside pressure. Thus, the question arises: under what circumstances will politicians implement more transparent budget procedures? We explore two broad sets of explanatory factors: the *political setting* and the *fiscal environment*. We look as well at the interaction between the two because different factors can pull in different directions and institutional change can depend on which dominates at a particular time. We look first in some detail at the political setting and then turn to the fiscal environment.

Political Setting

The political setting can influence the demand—or lack thereof—for fiscal transparency in a number of ways. First, there are what we call *partisan* changes in transparency. These occur when incumbent politicians change the degree of transparency to further a specific partisan goal, such as an increase or decrease in the

size of the public sector. Then there are *nonpartisan* changes, which can arise for a number of reasons. Sometimes nonpartisan changes take place when pressure for reform arises from within the bureaucracy. They can also reflect attempts to accommodate financial markets or, in a broader context, supranational institutions. Most important for our analysis, nonpartisan changes can arise when the political context, described by levels of political competition and polarization, provides current politicians with incentives to change transparency, independent of their partisan goals. An important feature of these political but nonpartisan goals is the desire of some set of politicians to tie other politicians' hands—whether those others are potential successors or fellow incumbents contemporaneously sharing power. In summary, we use “nonpartisan” to indicate behavior that might be partisan but would be equally likely under either party.

In the theoretical literature described above, the degree of transparency is given as a parameter determined outside of the model, before the economic and political choices of interest are taken. Only one contribution known to us (Ferejohn, 1999) explicitly considers the “constitutional choice” of an information structure. Ferejohn introduces into a political agency model the degree of transparency, modelled as the precision of a signal of the incumbent's action, which is chosen by the incumbent before a typical period begins. In his model, voters—as principals—will, under certain parameter restrictions, allocate a larger part of their resources to the agent—the public sector—when they receive a more precise signal of the political agent's action.

Ferejohn's model implies that politicians who wish to increase the size of the public sector should increase transparency so as to make voters trust them with more resources. Evidence that, in the U.S. states, Democrats' preferred level of spending is greater than that of Republicans (Alt and Lowry, 2000) suggests that partisan changes in transparency will be driven by Democratic incumbents hoping to increase the size of government.

An alternative, nonpartisan view of the constitutional choice of transparency is based on the logic of strategic institutional design. Alt and Lassen (2006b) argue that transparency reform is closely analogous to delegation to an independent judiciary. Consider Hanssen's (2004) delegation model, in which two parties compete for office and the incumbent faces an exogenous risk of replacement by the opposing party. The incumbent can choose to delegate policy choice to an independent institution, the judiciary. By doing so, the incumbent risks the possibility that the judiciary will make a decision that will favor the opponent; however, if the risk of replacement—and with it the risk of an adverse policy choice—is sufficiently large, the latter consideration outweighs the former and the politician will favor delegation.

Similarly, incumbents who are considering maintaining low-transparency regimes trade off the probability of remaining in office and enjoying the informational advantages afforded by low transparency against the risk of being replaced by opponents who, if elected, would use low transparency to pursue their own, opposing political goals. If incumbents instead choose high transparency at the constitutional stage, they tie their own hands but also those of their potential successors. If the probability of being replaced is large, the expected benefits of restricting

opponents outweigh the costs of restricting themselves; however, if incumbents are likely to be reelected, the expected benefits from increasing transparency are small. Thus, our testable hypothesis is that the level of fiscal transparency increases with political competition.⁸ As discussed below, we measure competition in a variety of ways.

Incumbents might want to tie the hands of not only their potential successors but also other politicians with whom they contemporaneously share policymaking authority. Indeed, power sharing among incumbents simply reflects another variety of political competition. This form of competition is clearly more palpable under divided government (in which different parties control different branches of government) than under unified government (where the same party controls both branches). Therefore, one might expect to see increases in transparency where divided government is more common.

In addition to the probability of being replaced by (or the need to share power with) the opposing party, the degree of political polarization can also affect the trade-off politicians face in choosing the level of transparency. This can work in two directions. First, following Hanssen (2004), increased political polarization can raise the cost of being replaced by the other party, if it means that opponents in low-transparency environments will choose policies that incumbent politicians particularly dislike. This suggests that polarization increases the benefits of tying the hands of a partisan adversary. Second, and alternatively, it could be the case that some sort of agreement is needed in order for reform to take place. This possibility is reflected in the hypothesis of North (1990, p. 191) that “political institutions constitute *ex ante* agreements over cooperation among politicians.” If this is true, a more polarized polity could be a hindrance, rather than a catalyst, to transparency. We will examine this issue empirically.

Fiscal Environment

Along with political factors, fiscal policy outcomes can also influence politicians’ incentives to implement more transparency in the budgeting process. Historically, fiscal institutions often have been implemented or reformed following periods of fiscal distress.⁹ In particular, if a lack of transparency in the budget process contributed to a negative fiscal shock, an appropriate response would be to increase transparency. In New Zealand, wide-ranging fiscal reform was implemented in the 1990s when a new incumbent took office and found a big undisclosed fiscal obligation (Campos and Pradham, 1999). Substantial stabilization packages and, in some cases, bailouts are often accompanied by reforms, either as required by outsiders or as a consequence of political turnover. Such reforms are not in the political interest of the incumbent(s) responsible for the negative shocks if they help

⁸Alt and Lassen (2006b) find support for this hypothesis in a cross-section of advanced OECD economies for the 1990s. They use this, and a measure of legal origin (common vs. civil law), to instrument for transparency in an analysis of the effects of transparency on government debt.

⁹For example, the introduction of balanced budget rules in the nineteenth century took place as a result of fiscal crises following from the construction of railroads and canals (Heckelman and Wallis, 1997).

voters attribute the bad outcomes to them. On the other hand, to the extent that transparency leads voters to attribute a newly improved fiscal situation to current politicians, it may be optimal for politicians expecting good fiscal records to increase transparency. There is a trade-off here between the incumbent's fear that voters will punish him or her for the crisis and the desire to get credit for shaping up, even at a cost of other opportunities.

II. Transparency Index

Our transparency measure for state government budget procedures is based on Alt, Lassen, and Skilling (2002). Using cross-sectional data for the 1990s from the National Association of State Budget Officers and the National Conference of State Legislatures, the authors code nine dichotomous budget procedures and create an index equal to the number of items for which each state had the more transparent procedure.¹⁰ The nine items are as follows:

1. Is the budget reported on a generally-accepted-accounting principles (GAAP) basis? (Yes = more transparent, because shared language facilitates communication.)
2. Are multiyear expenditure forecasts prepared? (Yes = more transparent, because more information about plans and the expected consequences of action is disseminated.)
3. What is the frequency of the budget cycle? (Annual = more transparent than biennial, because more frequent action produces information that is more up to date.)
4. Are the revenue forecasts binding? (Yes = more transparent, because binding estimates increase the costliness of being misleading.)
5. Does the legislative branch have (or share) responsibility for the revenue forecast? (Yes = more transparent, because legislative or consensus forecasts involve more officials, reducing the likelihood that estimates are misleading or manipulative.)
6. Are all appropriations included in a single bill? (Yes = more transparent, because a single location facilitates monitoring.)
7. Does a nonpartisan staff write appropriations bills? (Yes = more transparent, because these staff have less partisan incentive to be misleading.)
8. Is the legislature prohibited from passing open-ended appropriations? (Yes = more transparent, because published figures will be closer to ultimate outcomes.)
9. Does the budget require published performance measures? (Yes = more transparent, because these create more explicit standards and information for judging politicians' actions.)

In this study, we extend the data back in time to construct a panel on budget transparency. We have collected a unique data set, composed of survey responses to a questionnaire sent to the budget officers of all 50 states, to construct an annual

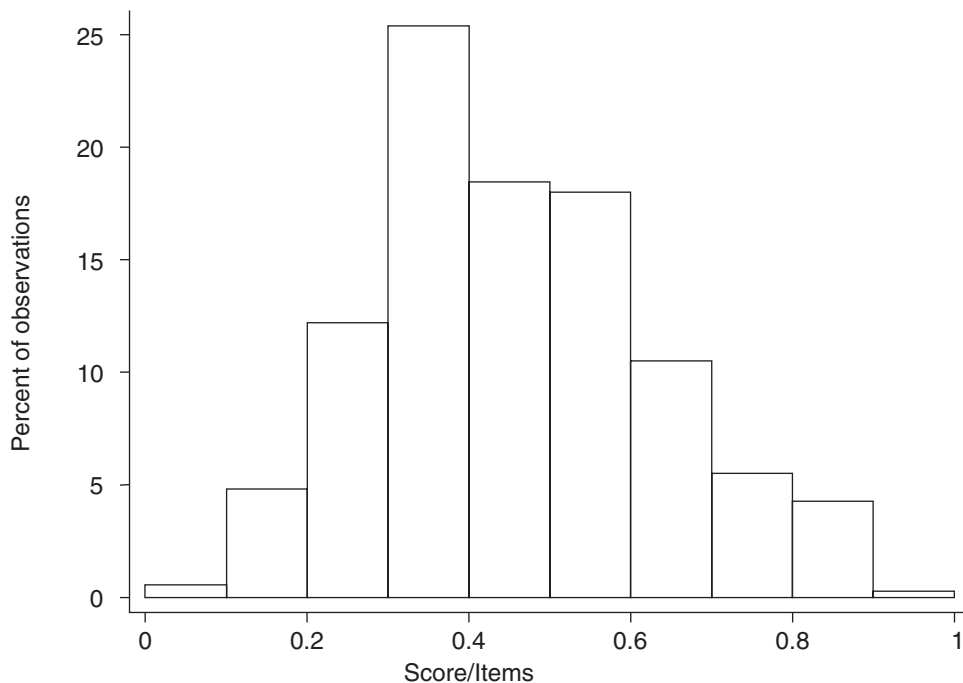
¹⁰Alt and Lassen (2006b) present a transparency index based on similar principles for 19 OECD countries.

score for each year between 1972 and 2002. We focus on the 48 contiguous states for the period 1976–98 (owing to the inclusion of four-year lags; see below), in total 1,152 cases. We could not reconstruct the nine-item scale for all states in all years: 176 of the 1,152 cases (15.3 percent) are missing one data item, 59 cases (5.1 percent) are missing two items, and 12 cases (1 percent) are missing three items. No case is missing more than three items. We code our transparency variable (“pctscore”) as the ratio of items scored = 1 to total items answered. Figure 1 shows the histogram for our 1,152 cases. The distribution is unimodal, with a median of 0.444 (4/9).

In some cases, a change in the transparency index reflects a change in the number of reported items, rather than an actual change. This would be the case, for example, if the respondent did not know the status for a particular year for a particular item. Excluding such cases does not change the impression of Figure 1; the statistical results presented below also are unaffected by such missing data.

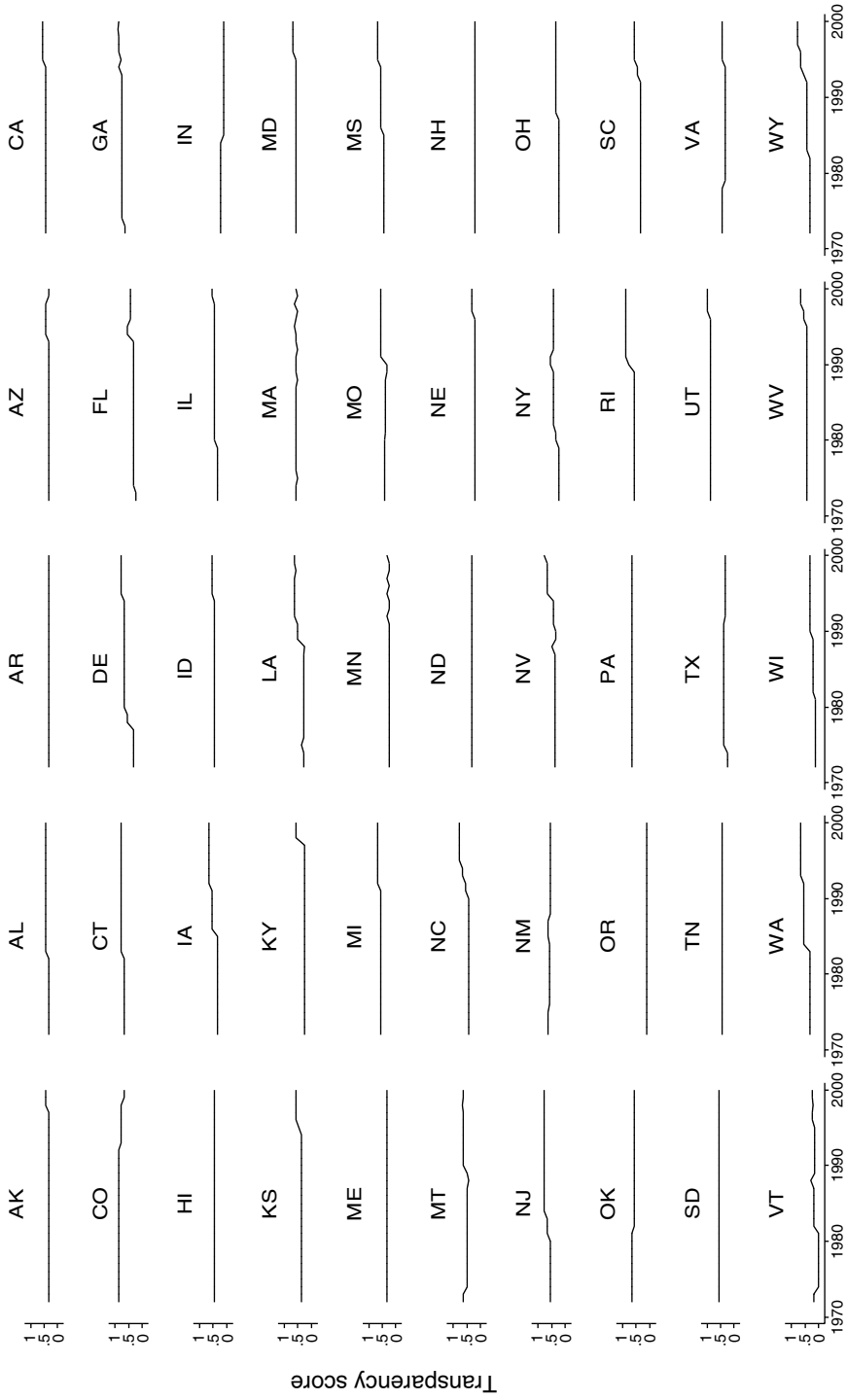
Figure 2 shows the evolution of transparency in the 50 states from 1972 to 2002. Most states saw some changes in the degree of fiscal transparency (on the vertical axis) over the three decades (horizontal axis). Some states saw quite substantial increases in transparency, some of which we will investigate in case studies, whereas seven states did not change their degree of transparency at all during the period. Overall, budget transparency increased from a cross-state average of 0.41 in 1972

Figure 1. Fiscal Transparency Scores, 1972–99



Source: Authors' data and calculations.

Figure 2. Fiscal Transparency in U.S. States, 1972-99



Source: Authors' data and calculations.

to 0.54 in 2002. There was essentially no change in annual average scores until the early 1980s, when an upward trend began and later intensified during the 1990s.

III. Four Cases of Reform

Four states made significant progress toward increasing transparency within a relatively short period of time. Specifically, these states' scores on our nine-point transparency index increased by at least three points over a period of five years or less. The states—and the periods during which their reform bursts took place—are Delaware (1978–80), North Carolina (1991–95), Rhode Island (1990–91), and Wyoming (1993–97). This section explores the political and economic circumstances surrounding these states' reforms.

Delaware

Delaware was among the states hit hardest by the national recession of 1973–75. By January 1977, when Republican Governor Pete du Pont took office, its unemployment rate had reached an all-time high of 8.2 percent and the state's finances were in shambles (Bureau of Labor Statistics, 2005). Du Pont's election followed a period of unusually high party turnover in the governor's office, compared with the state's historic tendency to elect Republican governors. Both chambers of the legislature were newly under Democratic control, having been controlled by the Republican Party during the previous decade and by Democrats during the decade before that.

In 1977, the state was trying to recover from two previous administrations that had brought it to the brink of fiscal disaster. When Governor Pete du Pont found resistance to efforts at change, he decided to throw a serious scare into the legislature, the rating agencies and the citizenry by telling everyone that as far as he was concerned, Delaware was virtually bankrupt. (Governing.com, 2005)

That year, Governor du Pont issued an executive order calling for the creation of Delaware's Economic and Financial Advisory Council (DEFAC), an independent, nonpartisan group of public and private sector experts charged with forecasting revenues. Since its inception, DEFAC's revenue forecasts have been accepted without question by both the executive and legislative branches, and the council has been widely credited with helping Delaware to weather subsequent recessions better than many other states. Many observers, including State Treasurer Jack Markell, attribute DEFAC's continuing success to the memory of the fiscal crisis: "It helps a lot that the state went through what it went through 30 years ago" (Governing.com, 2005).

North Carolina

At the time of North Carolina's 1990–91 budget crisis, Republican James Martin had just been reelected governor by a state that had, up until that point, almost always elected Democratic governors; the legislature, however, was firmly controlled by the Democratic Party, as it had been for many decades.

In 1991, North Carolina's fiscal problems grew to a crisis level. The state began the year with a \$222 million General Fund balance and ended it with \$400,000. To address its severe fiscal crisis, the General Assembly was forced to reduce and restrict hiring and operating expenditures, defer capital projects, draw down reserves, reduce nonrecurring expenses, increase taxes by \$637 million, [and] cut expenditures by \$576 million (GPAC, 1992, p. 7).

“As a consequence of fiscal pressures,” the Democratic legislature in 1991 commissioned the newly created GPAC to conduct a year-long performance audit to identify ways to “reduce the costs of program service delivery and . . . strengthen the financial planning, budgeting, and management systems” (GPAC, 1992, p. 1). The committee—consisting of the leadership and select members of the state House and Senate, the state auditor, and several private sector leaders, together with accounting firm KPMG Peat Marwick—made several recommendations to the government of North Carolina (including a recommendation for performance budgeting), which were subsequently implemented.

Rhode Island

In the early 1990s, Rhode Island was, like North Carolina, in the midst of a major fiscal crisis. The state was experiencing its largest deficit since the Great Depression, as well as the biggest government scandal in the state's history: the failure of the Rhode Island Share and Deposit Indemnity Corporation (RISDIC), the organization that insured the state. The governor at the time—Edward DiPrete—was the first Republican elected to that office in nearly two decades. DiPrete was unpopular; at one point, his job approval rating dipped to as low as 16 percent (and after leaving office, he was indicted for extortion and accepting bribes). Among other things, DiPrete was widely blamed for a budget process that was “political and inefficient,” according to Gary Sasse of the Rhode Island Public Expenditure Council, the state's most prominent watchdog group. The legislature at the time was, as usual, controlled by Democrats. A Democratic legislator named Paul Crowley successfully introduced legislation proposing binding consensus revenue forecasting. The forecasting process is widely believed to have improved dramatically since then—it is less political and produces more realistic revenue forecasts, according to Sasse.¹¹

Wyoming

Although Wyoming's legislature has long been a Republican stronghold, the state has seen frequent party turnover in the governor's office over the past 50 years. At the time of the 1990–91 recession and fiscal crisis, the governor was Democrat Mike Sullivan. In the wake of the crisis, a bipartisan, interbranch consensus emerged that the state needed to reevaluate and improve its budget process, according to current

¹¹Around the same time, Rhode Island took many other steps to open up the legislative process to public scrutiny. For a summary of these reforms, see <http://www.rilin.state.ri.us/studteaguide/RhodeIslandHistory/chapt9.html>

Fiscal Administrator Mike McVay. In 1994, Republican legislator and gubernatorial hopeful Jim Geringer submitted legislation calling for a new system that would use performance measures to link public spending to outcomes. Geringer went on to win the governorship, returning the state to unified Republican control in 1995. As governor, he oversaw the implementation of performance budgeting and continued to be a strong advocate of the new approach despite growing resistance from the legislature. According to a legislative source who wished to remain anonymous, “the legislature has basically said ‘we’re not having any part of this.’ They want an appropriations process that focuses on the nuts and bolts of spending, down to the number of paper clips”—that is, the line-item format with which they had grown familiar. McVay concedes that the state, under the new administration of Democratic Governor Dave Freudenthal, is still “fine-tuning” the process.

In summary, several common themes emerge from these states’ experiences: in all four cases, measures to increase transparency were adopted in response to recession-induced fiscal crises, during periods of divided government, following periods of high party turnover in the governor’s office. Interestingly, legislative turnover was virtually nonexistent in three of the four states. In some cases, the new measures seemed to reflect a consensus among policymakers, whereas in other cases one party or branch of government—not necessarily the same one in each case—clearly imposed reforms on the other. In the next section, we turn from qualitative to quantitative analysis in order to investigate the political and economic determinants of transparency in the full sample of U.S. states.

IV. Empirical Methodology

Our dependent variable is the transparency index summarized in Section II. As mentioned above, one of our main explanatory variables is political competition. A cursory look at the literature suggests that there exists no single agreed-upon measure of political competition. Therefore, in our empirical analysis, we utilize three different measures: (1) divided government, which is a dichotomous variable equal to 1 if different parties control the executive and legislature and zero otherwise;¹² (2) gubernatorial competition, as measured by the share of Democratic votes in the gubernatorial election, folded so that the index captures absolute deviations from one half; and (3) legislative competition, as measured by Besley and Case (2003) as the (folded) Democratic seat shares in the upper and lower houses.¹³

To measure political polarization within a state, we follow Hanssen (2004) in using measures of ideology based on roll-call voting in the U.S. Congress, because no comparable data on political polarization at the state level exist. The data are taken from Poole and Rosenthal (1997). The authors estimate the positions of members of Congress along two dimensions. Like Hanssen (2004), we use the first of these, the liberal-conservative axis, to calculate average ideology scores for

¹²If control of the legislature is split between parties, we code the case as divided government. We return to this in Table 5.

¹³It is defined as $-1 * \text{abs}(\text{share of seats in lower house held by Democrats} - 0.5) * \text{abs}(\text{share of seats in upper house held by Democrats} - 0.5)$.

each state's members of Congress. For each year and state, we measure policy distance by the absolute difference between average ideology scores.

Our key fiscal variables of interest include the deficit and debt, and general revenues, all measured in real per capita terms. Socioeconomic controls include real per capita income, income squared, population size, population squared, percent elderly, and percent school-aged. Finally, we include state fixed effects to capture permanent differences among states, and year effects to capture common exogenous shocks. Summary statistics are presented in Table 1.

Empirical Specification

We want to estimate the effect of political and economic variables on the level of the fiscal transparency index. Our basic specification is

$$y_{st} = \alpha_s + \gamma_t + \chi p_{st} + \beta' x_{st} + v_{st}$$

where y_{st} is the level of fiscal transparency in state s in year t , α_s is a state fixed effect, γ_t is a year indicator variable, p_{st} is the measure of political competition, x_{st}

Table 1. Summary Statistics

| | Observations | Mean | Standard Deviation | Minimum | Maximum |
|------------------------------------------|--------------|-----------|-----------------------|-----------|-----------|
| Transparency score ¹ | 1,152 | 0.46 | 0.19 | 0 | 1 |
| Divided government ² | 1,128 | 0.54 | 0.5 | 0 | 1 |
| Legislative competition ² | 1,128 | -0.04 | 0.05 | -0.25 | 0 |
| Gubernatorial competition ² | 1,152 | -49.31 | 11.74 | -98.5 | 0.5 |
| Polarization ³ | 1,152 | 0.48 | 0.3 | 0 | 1.17 |
| One-party state ³ | 1,152 | 0.23 | 0.42 | 0 | 1 |
| Democratic governor ² | 1,152 | 0.56 | 0.5 | 0 | 1 |
| Independent governor ² | 1,152 | 0.01 | 0.1 | 0 | 1 |
| Democratic legislature ² | 1,152 | 0.57 | 0.5 | 0 | 1 |
| Per capita debt ⁴ | 1,152 | 4,047.49 | 1,536.98 | 950.21 | 9,376.47 |
| Per capita surplus ⁴ | 1,152 | 58.91 | 81.78 | 0 | 734.2 |
| Per capita deficit ⁴ | 1,152 | 13.55 | 32.27 | 0 | 344.12 |
| Per capita budget imbalance ⁴ | 1,152 | 72.46 | 78.3 | 0.003 | 734.2 |
| General revenues ⁴ | 1,152 | 1,573.65 | 405.39 | 825.57 | 3,283.30 |
| Per capita income ⁴ | 1,152 | 23,168.48 | 4,060.33 | 14,615.39 | 40,594.95 |
| Population (millions) ⁵ | 1,152 | 5.07 | 5.31 | 0.4 | 33.5 |
| Percent school-aged ⁵ | 1,152 | 19.87 | 2.2 | 7.07 | 26.87 |
| Percent elderly ⁵ | 1,152 | 12.14 | 1.9 | 7.46 | 18.77 |

Sources:

¹Authors' survey and the National Association of State Budget Officers and the National Conference of State Legislatures.

²Council of State Governments, *Book of the States*.

³Poole and Rosenthal (1997).

⁴U.S. Department of Commerce, *Statistical Abstract of the United States*.

⁵U.S. Census Bureau.

comprises other political and economic variables, and v_{st} is the error term. When we estimate the model, we allow for heteroscedasticity in the error terms and always report F -tests based on robust standard errors.

To allow for the fact that institutional changes occur infrequently, we add to the basic model two features. First, we include a series of lags for the independent variables so that even when the conditions for change are in place, the dynamics of the political process may delay the actual implementation of a new procedure. Specifically, we include lags from $t - 2$ and $t - 4$. Second, we also include the lagged dependent variable (at $t - 4$) on the right-hand side. Although there are well-known issues with the fixed-effects estimator in the presence of lagged dependent variables, we are reasonably confident that any bias is minimal because the length of the panel spans three decades. We also note (following Judson and Owen, 1999) that any bias will mostly affect the coefficient on the lagged dependent variable, which we include as a control but which is not a variable of interest to us. As a robustness check, below we also consider a dynamic panel data model estimated by generalized method of moments (GMM) and show that results are unaffected.

V. Empirical Results

The first column of Table 2 shows our hypotheses. As explained in Section I, we expect incumbents to tie the hands of both their potential successors and other politicians with whom they contemporaneously share policymaking authority; thus, political competition should be associated with increased transparency. We also expect greater increases in transparency under Democratic control of government, as Democratic politicians arguably have greater incentives to make voters trust them with more resources. Polarization and poor fiscal performance might be hindrances or catalysts to increasing fiscal transparency, for reasons explained above.

The second column of Table 2 summarizes the actual signs of the coefficients on these variables in the empirical analysis that follows. A comparison of the first and second columns shows that the findings are largely consistent with our hypotheses. We now turn to a detailed discussion of our results.

We present the results of our quantitative empirical analysis in several tables. Table 3 reports results from our basic specification, Table 4 eliminates insignificant controls and also presents results for a sample restricted to states that experienced changes in the level of transparency, Tables 5 and 6 introduce interaction effects between the political setting and the fiscal situation, and Table 7 decomposes the transparency index into expenditure transparency, revenue transparency, and general transparency.

The tables report F -test statistics for (groups of) variables and their lags, the corresponding p -values, and the sign of the aggregate effect, which is the simple sum of the (current and lagged) coefficients on the variable, by a + or – sign. We comment on some magnitudes of effects in the text below. In addition to the lagged endogenous variable, we focus on six groups of variables and their lagged values: (1) political competition, (2) political polarization, (3) partisan composition of government, (4) debt, (5) fiscal surplus, and (6) fiscal deficit. We also include, but do not report, socioeconomic controls, a dummy variable for large deficits (which

Table 2. Summary of Hypotheses and Results

| Dependent Variable: Transparency Score = Index Value/Number of Available Indicators | | |
|-------------------------------------------------------------------------------------|---------------|-------------|
| | Expected Sign | Actual Sign |
| Political competition | | |
| Divided government | + | + |
| Legislative competition | + | + |
| Gubernatorial competition | + | + |
| Political polarization | ? | +/- |
| Partisan composition of government | | |
| Democratic governor | + | + |
| Democratic legislature | + | + |
| Economic conditions | | |
| Debt | ? | - |
| Surplus | ? | + |
| Deficit | ? | + |

Source: Authors' calculations.

Notes: ? indicates that two hypotheses are working in opposite directions; +/- indicates that the sign is sensitive to the regression specification.

equals a dummy for Rhode Island in the early 1990s and is positive and strongly significant), a dummy variable for independent governors (negative and significant), and state and year fixed effects (which are jointly significant).

Table 3 reports results from basic specifications on the full data set. The table holds five sets of results: one for each of the three measures of political competition, one for party control, and one for fiscal imbalance. The first column reports the results when we use divided government as our measure of political competition. The *F*-test statistic value of 1.91 is the result of the joint test that $\Sigma \text{divgovt}_k = 0$ for $k = t, t - 2, t - 4$. The test has (1, 1029) degrees of freedom and the resulting *p*-value is 0.167. The sum of the coefficient estimates is positive, which implies that the presence of divided government increases the level of fiscal transparency, though only in a marginally significant way. The regression reported in the first column also shows that political polarization is associated with lower transparency.¹⁴ Jointly, the continuous polarization measure and the dummy variable for one-party states have significantly negative effects on the degree of transparency.

The next pair of columns reports results from similar regressions in which the measures of political competition are, respectively, legislative competition and gubernatorial turnover. We find, across the measures of political competition, broadly similar results, which are clearest in the case of legislative competition. Political

¹⁴Recall that a polarization measure is available only for states represented by more than one party in Congress. States that elect only one party to Congress will, besides typically having small populations, have some degree of polarization and may even be more polarized than states electing more than one party, when everything else is equal. For consistency, they are represented in our analysis by a dummy variable because a score of zero indicates minimal polarization, as well as only one party in Congress.

Table 3. The Causes of Fiscal Transparency

| Dependent Variable: Transparency Score = Index Value/Number of Available Indicators | | | | | | | | | | |
|-------------------------------------------------------------------------------------|-------------------------------|-------------------------|---------------------------|------------------|---|------------------|------------------|------------------|---|------------------|
| | Political Competition Measure | | | | | Party Variables | Fiscal Variables | | | |
| | Divided government | Legislative competition | Gubernatorial competition | | | | | | | |
| <i>t</i> -test: lagged dependent variable, 4 years (<i>p</i> -value) | + | 14.54 (0.000) | + | 14.73 (0.000) | + | 14.62 (0.000) | + | 14.99 (0.000) | + | 14.32 (0.000) |
| <i>F</i> -test: current and lagged political competition (<i>p</i> -value) | + | 1.91 (0.167) | + | 6.77 (0.009) | + | 1.1 (0.295) | | | | |
| <i>F</i> -test: current and lagged political polarization (<i>p</i> -value) | - | 3.02 (0.049) | - | 4.04 (0.018) | - | 3.45 (0.032) | | | | |
| <i>F</i> -test: current and lagged Democratic governor (<i>p</i> -value) | | | | | | | + | 0.88 (0.349) | | |
| <i>F</i> -test: current and lagged Democratic legislature (<i>p</i> -value) | | | | | | | + | 2.56 (0.110) | | |
| <i>F</i> -test: current and lagged fiscal debt (<i>p</i> -value) | | | | | | | | | - | 5.93 (0.015) |
| <i>F</i> -test: current and lagged fiscal surplus (<i>p</i> -value) | | | | | | | | | + | 16.31 (0.000) |
| <i>F</i> -test: current and lagged fiscal deficit (<i>p</i> -value) | | | | | | | | | + | 7.7 (0.006) |
| Number of observations | | 1,127 | | 1,127 | | 1,152 | | 1,152 | | 1,152 |
| Years | | 1976–98 | | 1976–98 | | 1976–98 | | 1976–98 | | 1976–98 |

Source: Authors' data (see Table 1) and estimates.

Notes: All regressions include further controls not shown: per capita revenues, percent elderly, percent school-aged, income, income squared, population, population squared, a constant term, state fixed effects, and year indicators. Calculations are based on robust standard errors. Divided government includes split legislatures. +/- denotes the sign of the coefficient or, in the case of lagged variables, the sign of the sum of all coefficients.

competition tends to increase the level of fiscal transparency, which supports the idea of strategic or “nonpartisan” institutions. In state governments characterized by high degrees of turnover or by divided government, incumbent majorities of both parties can benefit from increasing transparency because this restricts potential successors from the opposing party.

To sum up, there is evidence that political competition is associated with higher transparency whereas polarization is associated with lower transparency. This could suggest that bipartisan cooperation on changing transparency is less possible when parties are polarized.

The fourth column considers party control of government. An implication of Ferejohn's (1999) model, supported empirically by Alt, Lassen, and Skilling (2002), is that higher transparency is associated with a larger public sector. A possible implication of that finding is that parties favoring a larger public sector would have an incentive to increase transparency to gain voter support. The Democratic Party is widely recognized as more favorable than the Republicans to a larger public sector. Indeed, Democratic control of the governorship and legislature is associated with increased transparency. However, neither variable achieves statistically significant estimates.

In addition to the political variables, fiscal variables also appear to matter for the adoption of fiscal transparency. Higher levels of debt are associated with lower transparency. In other studies, there is cross-sectional evidence that lower transparency produces higher debt,¹⁵ but here the inclusion of fixed effects means that this result is based on time variation. Moreover, departures from budget balance are associated with higher transparency. Both higher deficits (the deficit is presented as a positive number; see Table 1) and higher surpluses contribute to higher transparency. The deficit result has the familiar interpretation that when times are bad, politicians need to open up, explain, and justify their actions. The conjunction of debt and deficit results suggest that a deficit motivates reform more where the stock of debt is lower, that is, where the deficit more resembles a surprise or "crisis." The surplus result looks like a confirmation that politicians with good fiscal records are more likely to open the books for outsiders to see, but the debt result goes against this. We return to these issues below.

Across all specifications of Table 3, the controls for population, income, and revenues are usually insignificant, whereas the percentage of the population that is elderly (school-aged) has a positive (negative) effect on transparency. Table 4 eliminates insignificant controls and reports results from a set of regressions including both fiscal variables and significant political variables in Table 3. The regressions are repeated for each of the three competition measures, both for the full sample and for a restricted sample of states that changed transparency at some point during the sample period. This restricted sample excludes states with constant percentage scores, as well as states where changes in the score reflect the inclusion or exclusion of particular items rather than real changes. The restricted sample includes 38 states.

Compared with Table 3, the results for fiscal variables are essentially unchanged: debt has a uniformly negative effect, and imbalance a positive effect, on transparency. The political competition results are stronger than before. The coefficients on all of the competition measures are significantly positive, regardless of measure and sample. The effect of political polarization is slightly inconsistent, but usually negative and usually significant (as above) when the sample is restricted to states that actually changed transparency. Polarization aside, the general impression is that the causes of fiscal transparency identified above are not revealed by cross-state

¹⁵Alt and Lassen (2006b) show that, in a sample of OECD countries, lower transparency leads to higher debt.

Table 4. The Causes of Fiscal Transparency: Full Model

| Dependent Variable: Transparency Score = Index Value/Number of Available Indicators | | | | | | | |
|-------------------------------------------------------------------------------------|-------------------------------|--------------------|-------------------------|--------------------|---------------------------|--------------------|--|
| Sample | Political Competition Measure | | | | | | |
| | Divided government | | Legislative competition | | Gubernatorial competition | | |
| | Large | Small | Large | Small | Large | Small | |
| <i>t</i> -test: lagged dependent variable, 4 years (<i>p</i> -value) | + 13.58 (0.000) | + 11.59 (0.000) | + 14.03 (0.000) | + 12.07 (0.000) | + 13.76 (0.000) | + 11.79 (0.000) | |
| <i>F</i> -test: current and lagged political competition (<i>p</i> -value) | + 4.08 (0.043) | + 3.48 (0.062) | + 9.68 (0.001) | + 6.02 (0.014) | + 3.85 (0.050) | + 5.04 (0.020) | |
| <i>F</i> -test: current and lagged political polarization (<i>p</i> -value) | + 6.70 (0.001) | - 1.98 (0.139) | - 8.16 (0.000) | - 3.14 (0.044) | + 7.70 (0.000) | - 2.83 (0.060) | |
| <i>F</i> -test: current and lagged Democratic governor (<i>p</i> -value) | + 0.45 (0.501) | + 0.27 (0.601) | + 0.36 (0.548) | + 0.25 (0.615) | + 2.49 (0.115) | + 2.66 (0.103) | |
| <i>F</i> -test: current and lagged Democratic legislature (<i>p</i> -value) | + 2.23 (0.135) | + 1.83 (0.177) | + 1.81 (0.179) | + 1.87 (0.172) | + 1.75 (0.186) | + 1.89 (0.170) | |
| <i>F</i> -test: current and lagged fiscal debt (<i>p</i> -value) | - 7.90 (0.005) | - 9.09 (0.003) | - 3.66 (0.056) | - 4.53 (0.034) | - 8.74 (0.003) | - 8.29 (0.004) | |
| <i>F</i> -test: current and lagged fiscal surplus (<i>p</i> -value) | + 19.22 (0.000) | + 18.59 (0.000) | + 16.98 (0.000) | + 16.57 (0.000) | + 19.45 (0.000) | + 19.62 (0.000) | |
| <i>F</i> -test: current and lagged fiscal deficit (<i>p</i> -value) | + 18.21 (0.000) | + 16.32 (0.000) | + 15.82 (0.000) | + 15.32 (0.000) | + 18.60 (0.000) | + 18.45 (0.000) | |
| Number of observations | 1,127 | 912 | 1,127 | 912 | 1,152 | 936 | |

Source: Authors' data (see Table 1) and estimates.

Notes: All regressions are for the period 1976–98 and include a control for percent elderly, a constant term, state fixed effects, and year indicators. Large sample refers to all states, small sample to states with changes in transparency score. Calculations are based on robust standard errors. Divided government includes split legislatures. +/- denotes the sign of the coefficient or, in the case of lagged variables, the sign of the sum of all coefficients.

comparisons with states that did not change transparency but rather, because we control for state fixed effects, are driven by within-state changes in our explanatory variables.

How big are the effects of the explanatory variables? Because our specification includes contemporaneous and lagged values of explanatory variables and a lagged dependent variable, we calculate the magnitudes of effects as follows.

Consider the coefficient on legislative competition reported in Table 4, column 3. Suppose legislative competition increases by one standard deviation (0.05, as shown in Table 1) and sustains this new level forever, or at least long enough for the effects of lagged variables to cumulate. The sum of the coefficients is 0.252 and the coefficient on the lagged dependent variable is 0.558. Then the magnitude of a one-time, one-standard-deviation, sustained increase of 0.05 in legislative competition is $(0.05 * 0.252) / (1 - 0.558) = 0.0285$, with most of the change taking place in the first eight years. That may not seem like a big effect, but recall that 0.1 is one extra transparency item in the index, so the magnitude of this effect is between one-quarter and one-third of an item. Intriguingly, if we consider the impact of a negative fiscal imbalance using the same estimates, the cumulative effect of a sustained, one-standard-deviation increase in the deficit is also on the order of 0.03, or about three-tenths of a one-item reform.

Interactions of Political and Fiscal Variables

In Table 5, we report results from a specification that allows interactions between the political and fiscal variables in their effect on transparency. Specifically, we consider the interactive effect of one measure of political competition (divided government) and deviations from budget balance (absolute deviation or separate measures of surpluses and deficits) on the degree of transparency. Essentially, political competition and fiscal imbalance appear to act like substitutes. We find that the presence of divided government strongly reduces the positive effects of fiscal imbalance on transparency, independent of the sample used. One interpretation of this result, to be explored further, is that divided government makes it less likely that, for example, a governor can increase transparency under good budget performance to look good to observers. Conversely, divided government may limit the ability of a government to provide a prompt institutional response to negative fiscal shocks,¹⁶ though we note from columns 3 and 4 that the substitution effect is less well determined in the case of deficits than surpluses.

Until now, we have classified governments with split legislatures as divided governments. Table 6 builds on the two first columns of Table 4 but distinguishes “pure” divided government, where a governor faces a unified legislature of the opposing party, from split legislatures, in which each chamber is controlled by a different party. The results from Table 4 remain: debt has a negative effect, imbalance a positive effect, and polarization an inconsistent (but negative in the restricted sample) effect on transparency. We see that, controlling for the effects of debt, imbalance, and polarization, a Democratic legislature is indeed positively associated with transparency. However, it is no more so with a Democratic governor than without. The combination of a Democratic legislature, Republican governor, and

¹⁶In fact, what Table 3 shows is that, absent fiscal shocks, the effect of divided government is stronger than it appeared in Table 1. This may be because divided government is slow to respond to fiscal shocks (Alt and Lowry, 1994). We will also reexamine the other competition indicators, whose effects were stronger in Table 1, for evidence of interactions.

Table 5. The Causes of Fiscal Transparency: Interactive Effects

| Dependent Variable: Transparency Score = Index Value/Number of Available Indicators | | | | | | | | |
|-------------------------------------------------------------------------------------------|--------------------|------------------|-------|------------------|---|------------------|---|------------------|
| Sample | Divided Government | | | | | | | |
| | Large | | Small | | | | | |
| | | | | | | | | |
| <i>t</i> -test: lagged dependent variable, 4 years (<i>p</i> -value) | + | 13.61 (0.000) | + | 11.40 (0.000) | + | 13.56 (0.000) | + | 11.36 (0.000) |
| <i>F</i> -test: current and lagged political competition (<i>p</i> -value) | + | 18.92 (0.000) | + | 19.38 (0.000) | + | 16.85 (0.000) | + | 16.11 (0.000) |
| <i>F</i> -test: current and lagged political polarization (<i>p</i> -value) | + | 5.66 (0.004) | + | 1.14 (0.320) | + | 6.06 (0.002) | + | 1.45 (0.235) |
| <i>F</i> -test: current and lagged Democratic governor (<i>p</i> -value) | + | 0.50 (0.482) | + | 0.27 (0.601) | + | 0.53 (0.466) | + | 0.32 (0.570) |
| <i>F</i> -test: current and lagged Democratic legislature (<i>p</i> -value) | + | 1.06 (0.304) | + | 0.49 (0.177) | + | 1.25 (0.264) | + | 0.67 (0.414) |
| <i>F</i> -test: current and lagged fiscal debt (<i>p</i> -value) | − | 7.44 (0.007) | − | 9.59 (0.002) | − | 7.63 (0.006) | − | 9.57 (0.002) |
| <i>F</i> -test: current and lagged fiscal imbalance (<i>p</i> -value) | + | 41.16 (0.000) | + | 41.31 (0.000) | | | | |
| <i>F</i> -test: current and lagged fiscal imbalance * pol. competition (<i>p</i> -value) | − | 16.51 (0.000) | − | 18.69 (0.000) | | | | |
| <i>F</i> -test: current and lagged fiscal surplus (<i>p</i> -value) | | | | | + | 35.42 (0.000) | + | 37.39 (0.000) |
| <i>F</i> -test: current and lagged fiscal surplus * pol. competition (<i>p</i> -value) | | | | | − | 15.24 (0.000) | − | 17.65 (0.000) |
| <i>F</i> -test: current and lagged fiscal deficit (<i>p</i> -value) | | | | | + | 18.72 (0.000) | + | 13.72 (0.000) |
| <i>F</i> -test: current and lagged fiscal deficit * pol. competition (<i>p</i> -value) | | | | | − | 2.91 (0.089) | − | 1.91 (0.167) |
| Number of observations | | 1,127 | | 912 | | 1,127 | | 912 |

Source: Authors' data (see Table 1) and estimates.

Notes: All regressions are for the period 1976–98 and include a control for percent elderly, a constant term, state fixed effects, and year indicators. Large sample refers to all states, small sample to states with changes in transparency score. Calculations are based on robust standard errors. Divided government includes split legislatures. +/- denotes the sign of the coefficient or, in the case of lagged variables, the sign of the sum of all coefficients.

fiscal deficits observed in some of the case studies appears to be generalizable as a source of transparency reform. Similarly, a split legislature is positively associated with transparency and seems to account for most of the effect of political competition—the effect is large whereas the pure divided government indicator becomes considerably smaller and less precisely estimated. However, the split legislature and fiscal imbalance effects are substitutes, as described above. The combined effects of a Democratic legislature and fiscal surpluses are reduced by the presence of divided government.

Table 6. The Causes of Fiscal Transparency: Interactive Effects

| Dependent Variable: Transparency Score = Index Value/Number of Available Indicators | | | | |
|------------------------------------------------------------------------------------------|---|------------------|---|------------------|
| Sample | | Large | | Small |
| <i>t</i> -test: lagged dependent variable, 4 years (<i>p</i> -value) | + | 14.15 (0.000) | + | 12.25 (0.000) |
| <i>F</i> -test: current and lagged political polarization (<i>p</i> -value) | + | 5.84 (0.003) | - | 3.52 (0.030) |
| <i>F</i> -test: current and lagged Democratic governor (<i>p</i> -value) | - | 0.39 (0.531) | - | 0.81 (0.368) |
| <i>F</i> -test: current and lagged Democratic legislature (<i>p</i> -value) | + | 14.89 (0.000) | + | 16.69 (0.000) |
| <i>F</i> -test: current and lagged fiscal debt (<i>p</i> -value) | - | 5.87 (0.016) | - | 4.20 (0.041) |
| <i>F</i> -test: current and lagged divided government (<i>p</i> -value) | + | 1.34 (0.247) | + | 0.37 (0.545) |
| <i>F</i> -test: current and lagged split legislature (<i>p</i> -value) | + | 36.81 (0.000) | + | 43.32 (0.000) |
| <i>F</i> -test: current and lagged fiscal surplus (<i>p</i> -value) | + | 36.34 (0.000) | + | 35.47 (0.000) |
| <i>F</i> -test: current and lagged fiscal surplus * divided govt (<i>p</i> -value) | - | 9.57 (0.002) | - | 11.57 (0.000) |
| <i>F</i> -test: current and lagged fiscal surplus * split legislature (<i>p</i> -value) | - | 15.20 (0.000) | - | 17.79 (0.000) |
| <i>F</i> -test: current and lagged fiscal deficit (<i>p</i> -value) | + | 20.66 (0.000) | + | 15.82 (0.000) |
| <i>F</i> -test: current and lagged fiscal deficit * divided govt (<i>p</i> -value) | - | 0.09 (0.770) | + | 0.08 (0.781) |
| <i>F</i> -test: current and lagged fiscal deficit * split legislature (<i>p</i> -value) | - | 4.45 (0.035) | - | 3.48 (0.062) |
| Number of observations | | 1,152 | | 936 |

Source: Authors' data (see Table 1) and estimates.

Notes: All regressions are for the period 1976–98 and include a control for percent elderly, a constant term, state fixed effects, and year indicators. Large sample refers to all states, small sample to states with changes in transparency score. Calculations are based on robust standard errors. Divided government excludes split legislatures. +/- denotes the sign of the coefficient or, in the case of lagged variables, the sign of the sum of all coefficients.

Components of Transparency

We also consider a decomposition of the transparency index into items related (primarily) to expenditures, (primarily) to revenues, and equally to both sides of the budget. The expenditure index contains items 2 (multiyear expenditure forecasts), 6 (single appropriations bill), 7 (nonpartisan appropriations bill), 8 (non-open-ended appropriations), and 9 (published performance measures). The revenue index contains items 4 (binding revenue forecasts) and 5 (shared revenue forecasts), and the general index contains items 1 (GAAP) and 3 (budget cycle frequency). Table 7 reports the results for the three subindices for each of the three political competition measures.

Table 7. The Causes of Expenditure, Revenue, and General Transparency

| | Expenditure Transparency | | | Revenue Transparency | | | General Fiscal Transparency | | |
|----------------------------------------------------------------------------------|-------------------------------|--------------------|--------------------|-------------------------------|---------------------|-------------------|-------------------------------|--------------------|--------------------|
| | Political competition measure | | | Political competition measure | | | Political competition measure | | |
| | Div Gov | Leg Comp | Gub Comp | Div Gov | Leg Comp | Gub Comp | Div Gov | Leg Comp | Gub Comp |
| <i>t</i> -test: lagged dependent variable, 4 years (<i>p</i> -value) | + 7.97 (0.000) | + 8.16 (0.000) | + 7.67 (0.000) | + 5.65 (0.000) | + 6.01 (0.000) | + 5.61 (0.000) | + 12.02 (0.000) | + 11.72 (0.000) | + 11.80 (0.000) |
| <i>F</i> -test: current and lagged political competition (<i>p</i> -value) | + 1.76 (0.153) | + 2.07 (0.103) | + 4.11 (0.007) | + 3.05 (0.028) | + 2.30 (0.076) | - 2.06 (0.104) | + 4.25 (0.006) | - 1.74 (0.158) | + 1.67 (0.172) |
| <i>F</i> -test: current and lagged political polarization (<i>p</i> -value) | + 1.53 (0.166) | + 1.65 (0.130) | + 1.40 (0.212) | +/- 1.03 (0.406) | +/- 1.29 (0.257) | + 1.10 (0.359) | - 4.31 (0.000) | - 3.46 (0.002) | - 3.50 (0.002) |
| <i>F</i> -test: current and lagged sociodemographic variables (<i>p</i> -value) | 6.84 (0.000) | 6.60 (0.000) | 7.71 (0.000) | 2.57 (0.001) | 2.65 (0.001) | 2.73 (0.000) | 2.23 (0.005) | 2.30 (0.003) | 2.22 (0.005) |
| <i>F</i> -test: current and lagged fiscal debt and scale (<i>p</i> -value) | 3.27 (0.001) | 2.97 (0.002) | 3.36 (0.001) | 1.21 (0.288) | 1.22 (0.277) | 1.19 (0.300) | 2.50 (0.008) | 2.99 (0.002) | 2.98 (0.002) |
| <i>F</i> -test: current and lagged fiscal surplus (<i>p</i> -value) | + 10.52 (0.000) | + 10.35 (0.000) | + 11.53 (0.000) | + 0.15 (0.928) | + 0.16 (0.923) | + 0.15 (0.933) | - 0.71 (0.546) | - 0.72 (0.542) | - 0.69 (0.556) |
| <i>F</i> -test: current and lagged fiscal deficit (<i>p</i> -value) | + 9.05 (0.000) | + 8.85 (0.000) | + 8.92 (0.000) | - 0.52 (0.672) | - 0.49 (0.688) | - 0.50 (0.685) | - 1.91 (0.313) | - 1.44 (0.229) | - 1.61 (0.185) |
| Number of observations | 865 | 865 | 865 | 865 | 865 | 865 | 865 | 865 | 865 |

Source: Authors' data (see Table 1) and estimates.

Notes: All regressions are for the period 1976–98 and include a constant term and state fixed effects and year indicators. Calculations are based on robust standard errors. Divided government includes split legislatures. Where applicable, +/- denotes sign of variable(s). For the case of lagged variables, this is the sign of the sum of all coefficients.

Political competition affects different types of transparency in different ways. Although all three competition measures are associated with higher expenditure transparency, gubernatorial turnover is negatively related to revenue transparency and legislative competition is negatively related to general transparency. Furthermore, the effect of political polarization also differs markedly across indices. Although it is weakly related to higher expenditure transparency, more polarized states are significantly less likely to have implemented GAAP and have an annual budget. Finally, the strong effects of budget imbalances on our main fiscal transparency index can be traced to increases in expenditure transparency, whereas revenue transparency is not associated with the fiscal policy setting at all. These preliminary results confirm the intuition of Gavazza and Lizzeri (2005) that revenue and expenditure transparency can be conceptually different, but the stronger results on expenditure transparency may also partly be attributable to the fact that there is more variation in that variable, because it contains five items.

Robustness Considerations

As a robustness test, we included a variable for the governor's approval rating, which was generally significant and negative, although it also reduced the number of cases.¹⁷ This finding suggests once again that the "doing badly, clean up the act" motive for reform is stronger than the "doing well, show more" incentive. Note also that although Alt, Lassen, and Skilling (2002) showed that transparency was good for approval ratings, we find low approval causing transparency despite any endogeneity bias. As a second robustness test, we explored the possibility that governors who cannot run for reelection are less concerned with undertaking reforms that yield future benefits. In every specification containing an indicator for a "lame duck" governor, we observed a negative (as expected) but insignificant coefficient. The relationship between political competition and transparency was also robust to employing a variety of alternative revenue definitions and measures. Finally, we found no interaction between polarization and divided government.

We also tried omitting the lagged dependent variable, which had some effect on the results, but we believe that including the lagged dependent variable to represent the stickiness of transparency is more important than any bias induced in its coefficient. We also examined cross-sectional effects; the results stand up with two-year averages but begin to drift when more years are averaged. With five-year averages the polarization effect drops out, but the competition effect usually remains correctly signed and nearly significant, and the split legislature effect remains significant. We included a variety of trends and squared trends, and the results remained intact—perhaps not surprisingly, because the time fixed effects pick up trends anyway. We looked for regional trends and diffusion of transparency innovations but only found these for one item in our index: performance measures.

¹⁷All robustness test results are available from the authors upon request.

As a final robustness check, we used an Arellano-Bond first-difference GMM estimation, rather than fixed effects, of the main equations.¹⁸ Overall, the results are highly consistent with the earlier findings. As in Table 4, political competition in the forms of divided government and legislative competition is again associated with a higher degree of transparency, whereas gubernatorial competition does not seem to affect transparency. Fiscal surplus continues to be associated with higher transparency. In contrast to the previous results, political polarization does not appear to significantly affect transparency in the GMM estimation although the signs are the same as before. Real per capita debt remains significantly negatively associated with fiscal transparency, but a Democratic-controlled state legislature is now significantly associated with a higher degree of transparency. In comparison with the results in Table 6, divided government remains positive and becomes marginally significant whereas polarization retains its sign but becomes insignificant. One interaction becomes stronger, one becomes weaker. Virtually nothing now depends on whether we include all cases or only states that experienced changes in transparency.¹⁹

VI. Conclusions and Implications

This paper has tried to disentangle the causal effects of political and fiscal factors on transparency. The results of our empirical specifications, including long lags of the independent variables and lagged values of the transparency variables, together with the findings of the case studies, suggest that both politics and fiscal outcomes affect the level of transparency. Political competition tends to increase the level of fiscal transparency; this result holds up across different definitions, specifications, and estimation methods. Fiscal imbalance, in the form of higher surpluses or deficits, also appears to contribute to higher transparency. That relationship is a little less robust in the quantitative analysis than in the case studies, which were designed to examine “big” cases of reform.

Although these results are intriguing, there is still more work to do. One concern is that because transparency trends upward in our sample period, some of the apparent causes could actually be spurious consequences of other trending series, in spite of our inclusion of time fixed effects. Future work will examine whether in the short run an increase in polarization could produce divided government and thus also produce transparency, whereas in the long run more transparency is associated with less polarization. Finally, we have collected a panel on cable television penetration in order to estimate the relationship between demand for transparency

¹⁸The estimation was carried out using Stata’s *xtabond2* procedure (Roodman, 2003) with the *noleveleq* option. There was no sign of overidentification or second-order autocorrelation in the first-differences. For computational reasons, the instrument matrix was constructed using *xtabond2*’s *collapse* option, which drastically reduces the dimension of the instrument matrix, which becomes large in Arellano-Bond estimation of long panels. In long panels, the collapse correction reduces efficiency, which implies that the reported standard errors are conservative, but at the same time it counters problems with bias arising from the number of instruments approaching the number of observations.

¹⁹We also experimented with a random effects Tobit model, with no qualitative effect on the results.

and media consumption. In this way we hope to distinguish the effects of access to information from those of quantity, justification, and verifiability.

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