

Do troubled times invite cloudy budget reporting?

The determinants of General Fund expenditure share in U.S. states

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ABSTRACT

Fiscal controls require monitoring and transparent reporting. Financial documents with multiple funds, transfers, and inconsistent year-to-year categorization of revenues and expenditures provide opportunities to obscure a negative fiscal picture. We hypothesize that fiscal stress increases obfuscation. We investigate the relationship between the share of total governmental expenditures in U.S. states' general funds and independent variables drawn from the literature. Consistent with our hypothesis, deficit and debt are the most important explanatory variables. A one standard deviation increase in the deficit as a share of total expenditures is predicted to decrease the general fund share by one percentage point.

INTRODUCTION

In a democratic government, financial reporting is essential to transparency and accountability. Early in the 20th century, governments established fund accounting systems to track specific revenue streams and their uses. Although the intent of these systems is to increase accountability, fund accounting may also be used to circumvent restrictions on spending or to obscure budgetary changes.

U.S. state governments typically have a general fund, which is a broad-based multi-purpose account, and a number of special-purpose funds, or accounts, which are used to receive specific revenues and track their uses. Once states estimate general fund revenues for an upcoming year, much of the budget process is focused on allocating spending among multiple, competing priorities in the general fund budget. In contrast, special funds typically hold revenue streams that are earmarked for a single type of expenditure. These funds may be subject to less scrutiny by the public or elected officials, because the monies in special funds are viewed as “off limits” to discretionary decisions. For this reason, authors in public budgeting literature have argued that “off-budget” funds have important but often unrecognized impacts (Bennet and DiLorenzo 1983; Hendrick 1998; Patashnik 2000).

Transfers of revenues, fund balances, or movement of expenditure items back and forth between general and special funds within or across years provides opportunities for budget gimmickry (see Block 2008 for the characterization of such practices by the federal government as “gimmicks”). Studies of special funds refer to them as “hidden funds” (Minnesota Center for Public Finance Research 2005) and “hidden corners of public finance” (Petrie, de Renzio, and Moon 2014). According to a 2014 study by the International Budget Partnership, funds outside the general fund account for approximately forty percent of total government expenditures

worldwide, so an explanation of extra-budgetary fund activities is “critical to overall fiscal transparency, participation, and accountability,” (Petrie, de Renzio, and Moon 2014, 9). Two recent studies (Hou and Smith 2010; Mahdavi and Westerlund 2011) find that state balanced budget limitations are more likely to constrain narrow budget measures (like General Funds) than broad measures (like total governmental funds).

For all of the above reasons, we hypothesize that within-state year-to-year changes in the share of the total budget in U.S. state general funds is a potentially important indicator of fiscal transparency, an attribute that has been associated with positive governmental and societal outcomes in a number of academic studies. In this analysis we explore the determinants of the share of total governmental expenditures that come from U.S. states’ general funds. We argue that the share of total expenditures from states’ general funds is a compact and highly relevant measure of state budget complexity that allows us to identify states that use budgetary gimmicks (see Alesina and Perotti 1996 and 1999). We find that fiscal variables—fiscal balance as a share of total expenditures and per capita debt—have a significant impact upon the share of total governmental expenditures that come from state general funds.

We next provide a brief overview of the history of government fund accounting and the concepts of transparency. In our third section we review related academic literature. The fourth section describes our measure of fiscal transparency, hypotheses, and data. Fifth, we present regression results that explain cross-state and over-time variation in our measure of transparency. We conclude with a summary of the results and directions for further research.

BACKGROUND: GOVERNMENT FUND ACCOUNTING AND TRANSPARENCY

History of fund accounting

Governments' use of fund accounting differs from private-sector accounting, where a single set of accounts is generally used for all transactions. Fund accounting has been central to government accounting for nearly a century in the United States, and is used because there are legal restrictions both on the uses of government revenues and the purposes of expenditures (Mikesell 2007). Francis Oakey and Lloyd Morey, two authoritative figures in the formation of governmental accounting in the United States, argued in their writings that "commercial accounting" was not adequate for governments (Governmental Accounting Standards Board n.d., 29). Oakey and Morey specifically argued that financial reporting using funds should be implemented, as this structure would allow a reader to ascertain whether an executive in charge of the government had fulfilled his or her legal requirements. These writings contributed to the formation of the National Committee on Municipal Accounting, which began to disseminate standards in 1934 (GASB n.d.).

Today, fund accounting continues to be central to government accounting. The Governmental Accounting Standards Board (GASB), which is the modern source of Generally Accepted Accounting Principles (GAAP) in the U.S., noted in its Concepts Statement No. 1 (issued in May 1987) that fund accounting is a "control characteristic resulting from government's structure" (GASB 1987).

Operational Aspects of Fund Accounting. In practice, states typically have a general fund, which is a broad-based multi-purpose fund, a number of special funds earmarked for a single type of expenditure, as well as fiduciary funds, and funds used to track business-type activities. Still other special arrangements exist in which government may have a financial stake, such as public-private partnerships. The use of special funds is the focus of this paper.

General Fund Share as an Indicator of Fiscal Transparency

U.S. states vary widely in the use of special funds, and beyond the generic use of fund accounting, there is no standardized accounting system that is used across states. Some states have only a few special funds; others have hundreds. Differences between states reflect many factors, such as revenue mix, historical accounting conventions, and other fiscal institutions. State governments often transfer money between funds, but the legal framework of such transfers varies by state and even individual fund. For example, some states may require that a transfer from a special fund into the general fund be repaid, and others may not (Bifulco, Bunch, Duncombe, Robbins, and Simonsen 2012, 661).

Changes in the share of total budgets in general and special funds from one year to the next can be very confusing to budget watchers. For example, in its July 2010 *State Budget Update*, the National Conference of State Legislatures singled out Illinois for the highest increase of any state in FY 2011 spending compared to FY 2010 (+15.1 percent) (NCSL 2010, 13). However, the claimed increase was an artifact of a fund-accounting change. In FY 2010 Illinois issued \$3.5 billion in pension obligation bonds and deposited the proceeds in a special fund, so that pension contributions during FY 2010 did not come from the general fund. This resulted in a decline in general fund spending in 2010 and an increase in general fund spending planned for 2011, with very little substantive change in overall spending.

The general fund share of total expenditures is important to transparency because reliance on special funds containing earmarked revenues may mean that the total budget is less reflective of the public's priorities than is the general fund budget. If a state's transportation budget draws exclusively on earmarked funds while its human services budget draws solely on general funds, human services may be cut (or expanded) while transportation is not. In this way, the focus on general fund budgets may lead to outcomes that are not necessarily aligned with the priorities of

the voting public. Although special funds and earmarked revenues are often established for control, in a typical state budget consisting of hundreds of funds, there can be numerous instances in which it is questionable whether a particular special fund is warranted or whether it is still serving its intended purpose.

Government and Fiscal Transparency

The share of a state's total budget contained in general funds is also related to the broader topics of governmental and fiscal transparency.

Government transparency. Political theorists have long argued for the importance of information to enable public scrutiny of government. James Madison, for example, wrote: "A popular Government, without popular information, or the means of acquiring it, is but prologue to a farce or a tragedy" (quoted in Florini 2002, 16). Legal mandates for transparency in the United States include the 1946 Administrative Procedure Act, the 1966 Freedom of Information Act, and the 1989 Whistleblower Protection Act (Piotrowski and Van Ryzin 2007, 307). In recent years, government transparency has become a very popular—and nonpartisan—idea. Barack Obama's first executive act as President was to sign the *Memorandum on Transparency and Open Government* in 2009. One component of government transparency is fiscal transparency.

Fiscal transparency. The International Monetary Fund (IMF) and the Organization for Economic Cooperation and Development (OECD) have promulgated normative guidelines to encourage developing nations to increase fiscal transparency—defined as "full disclosure of all relevant fiscal information in a timely and systematic manner" (OECD, quoted in Bastida and Benito 2007, 667)—with the intent that these practices would promote accountability,

sustainability, and expenditure control (Kopits and Craig 1998; OECD 2002).

State and local governments also have embraced transparency. Many governments have created transparency websites containing financial reports, contract databases, and other information. Proponents have argued that transparency websites “result in a wide variety of benefits...help[ing] governments find ways to save money and meet other public policy goals,” (U.S. PIRG 2012, 12).

As a goal, fiscal transparency is so popular that some argue it has become a buzzword that may not reflect real benefit to the public—Heald (2003, 723) called it a “vogueish incantation.” If fiscal transparency merely means that the government posts information on the Internet, one might be concerned about the value of this information. For example, Kinnersley and Fleischman (2001, 17) found that the letters of transmittal of states’ Comprehensive Annual Financial Reports (CAFRs) were “beyond the reading level of roughly 80 percent of the population.” This finding is despite the letter itself being designed as an accessible introduction to more complex financial documents contained in subsequent pages of the full CAFR.

A number of organizations advocate transparency for state governments (e.g., Good Jobs First, U.S. PIRG, Sunshine Review, Truth in Accounting) and have created report cards and rankings of U.S. states’ websites. These rankings are based on the timeliness and quantity of information provided, but often say little about the quality and usefulness of the available information. In our view, a more complete understanding of the causes and effects of transparency will require measures that capture both the availability of data and the usability of the information contained in the data; concepts that have been measured in a number of academic studies to date.

LITERATURE

The main body of work on fiscal—as opposed to governmental—transparency developed from research conducted by the International Monetary Fund (IMF) in the 1990s, which compared budgetary practices across nations in relation to political institutions and economic factors. Here we focus on studies that have created empirical measures of fiscal transparency.¹

Academic empirical studies of fiscal transparency can be divided into two broad types: studies that measure the impact of transparency on government outcomes, and studies that measure the determinants of transparency. Most studies have examined transparency at the national government level. Some, including this paper, compare U.S. state governments.

Impact of Transparency on National Government Outcomes

The work of Kopits and Craig (1998) informed the IMF guidelines to best practices on fiscal transparency (IMF 1999, 2007a, 2007b). IMF and OECD best practices have, in turn, been used to construct indexes measuring transparency.

The empirical literature on national fiscal transparency has generally found greater transparency associated with positive fiscal and political attributes or outcomes: Alesina, Hausmann, Hommes, and Stein (1999) studied transparency in twenty Latin American countries; Alt and Lassen (2005 and 2006) studied transparency and political budget cycles in OECD nations; Bastida and Benito (2007) found adherence to OECD best practices for budget transparency in forty-one nations positively correlated with economic development and inversely with corruption; Benito and Bastida (2009) found positive relationships between transparency and fiscal balance and between transparency and political turnout.

¹ Khagram, Fung and de Renzio (2013) provide a sample of recent case studies about budgetary transparency in various countries and also summarize recent empirical work from the Open Budget Index project (<http://internationalbudget.org>) which compiles objective and accurate information to produce bi-annual measures of transparency in many countries around the world.

Impact of Transparency on State Government Outcomes

Only a few researchers have performed empirical studies of the impact that fiscal transparency in U.S. states has upon government outcomes. Alt, Lassen, and Skilling (2002) and later Alt and Lowry (2010) constructed a transparency index for the continental U.S. states using a tally of nine budget features from the National Association of State Budget Officers (NASBO) and the National Conference of State Legislators (NCSL). Both studies found that greater transparency leads to greater popularity of, and confidence in, state government, as well as increases in government spending. Alt and Lowry (2010) found that increased budget transparency reduced the negative effect of tax increases on retention of incumbent governors, because voters were better able to understand the justification for higher taxes.

Determinants of Transparency at the State Level

Alt, Lassen, and Rose (2006, hereafter “ALR”) and Rose and Smith (2012) are the only previous studies that explored the determinants of fiscal transparency in U.S. states, and are two of only a few that investigated transparency’s determinants as opposed to outcomes.

The ALR study used a panel dataset covering 1972-2002 and a nine-part composite index of transparency (similar to that used in Alt, Lassen, and Skilling 2002). This study examined the effect of fiscal and political factors on transparency in the 48 continental U.S. states. ALR found that political competition increased fiscal transparency and polarization decreased transparency. Party control of government and socioeconomic variables were statistically insignificant. Lower levels of debt were associated with greater fiscal transparency. Interestingly, their results suggest that both higher deficits *and* higher surpluses are associated with greater fiscal transparency (see

Alt, Lassen, and Rose 2006, 47).

Rose and Smith (2012) used panel data from 47 states from 1986 to 2007 to determine the impact of Budget Stabilization Funds (BSFs) on transparency. They defined transparency in terms of conservative revenue forecast bias, or how much a state underestimates its revenues in order to provide budgetary slack and included fifteen institutional, economic, and political controls. The authors found that the adoption of a BSF reduces revenue underestimation, and thus increases transparency.

Determinants of Transparency at the Local Level

In addition to work on the determinants of transparency at the state level, Guillamón, Bastida, and Benito (2011) studied the determinants of transparency at the local level. Guillamón et al. studied the 100 largest municipalities in Spain in 2008, and found that the greater amount of taxes and transfers per capita, the higher the level of transparency, with left-wing parties more transparent than right-wing parties.

General Fund Expenditure Share

Some authors have argued that complex accounting techniques and multiple special funds can be used to disguise budget gimmickry, and that activities that occur outside of the general funds receive less scrutiny from the public and elected officials (Alesina and Perotti 1996; Alesina and Perotti 1999; Bennett and DiLorenzo 1983; Block 2008; Hendrick 1998; Minnesota Center for Public Finance Research 2005; Patashnik 2000; Petrie, de Renzio, and Moon 2014). Similarly, Dye, Hudspeth, and Merriman (2011) provided data that shows how complex accounting conventions make it difficult to track government spending over time. This work suggests that

elected officials sometimes deliberately move some spending items “off budget” (i.e., into special funds) either to funnel money to favored programs or constituencies or to quietly reduce or eliminate certain spending categories. Kousser, McCubbins, and Rozga use the example of tax and expenditure limits (TEs) to illustrate this point, and explain, “lawmakers may have the ability to circumvent limits in ways that are buried deep in the details of thousand-page documents,” (2008, 292). Alt, Prillaman, and Lassen offer a similar account, noting “the effect of [TEs] have long been the same: they are more likely to cause politicians to shift than to cut,” (2014, 341). For example, if a state’s general fund is subject to a TEL, lawmakers may evade limitations by raising revenues or expenditures via special funds. In this interpretation of transparency, reductions in a state’s general fund share may be associated with declines in transparency.

We measure share of expenditures from a state’s General Fund as the ratio of the state’s General Fund spending as reported in the National Association of State Budget Officers’ (NASBO) *Fiscal Survey of the States*, to the U.S. Census’ measure of state total (“general”) expenditures as reported in their annual publication on *State Government Finances*.²

Our principal interest is in the impact of two fiscal variables—the fiscal balance (surplus or deficit) and the debt—on the share of the government expenditures that is reported in the General Fund. The annual budget *balance = revenue – expenditure*, which is called a *surplus* if it is positive ($revenue > expenditure$) or a *deficit* if it is negative ($revenue < expenditure$). The

² The U.S. Census and the National Association of State Budget Officers (NASBO) use the word “general” very differently. NASBO uses “General Fund Expenditures” to refer to expenditures that came specifically from a state’s multi-purpose account named the General Fund. The U.S. Census of State Government Finances defines “general expenditure” much more broadly. The Census definition of general expenditure is: “All government expenditure other than the specifically enumerated kinds of expenditure classified as Utility expenditure, Liquor stores expenditure, and Employee- retirement or other Insurance trust expenditure.” (<http://www.census.gov/govs/state/definitions.html> Archived by WebCite® at <http://www.webcitation.org/6H0m1KITI>. Accessed May 30, 2013). A better term for the Census numbers would be “all funds expenditures.”

state's accumulated *debt* comes from borrowing in order to spend more than revenue in prior years. Debt service obligations represent a claim on future revenue that cannot be used for expenditures on other state services.

Our hypothesis is that fiscal stress (i.e. a bigger deficit or debt) will lead to actions to conceal the budgetary balance, and thus to lower fiscal transparency. As the surplus gets smaller or becomes negative (as the deficit gets larger), we hypothesize that state policymakers will resort to greater use of special funds and less use of general funds.³ This implies a positive relationship between the surplus and general funds share. Similarly, the more debt, the more fiscal stress from debt service obligations, and the more pressure to obscure the problem by relying less on general funds—a negative relationship.

DATA

To determine the relationship between fiscal, socioeconomic, and political factors and our transparency measure, we created a panel dataset of 47 states⁴ spanning the period 1985-2010. In addition to our dependent variable we collected data on independent variables representing fiscal, socioeconomic and political factors. Table 1 lists the variables used and the source for each. Table 2 shows descriptive statistics about those variables.

<<Table 1 about here>>

<<Table 2 about here>>

Dependent Variable

³ There is solid anecdotal evidence that states in fiscal distress resort to accounting and other cosmetic changes (see Goodman 2011 and Bifulco et al. 2012 for examples).

⁴ Hawaii and Alaska are excluded since due to their geographic isolation and unique natural resources they have been found problematic in many other cross-state studies of fiscal effects. Nebraska is also excluded because its unicameral legislature precludes many of the independent variables measuring political attributes. These states have been eliminated in comparable studies, e.g., Rose and Smith (2011). Including AK and HI in our regressions does not change any of our substantive conclusions.

The dependent variable in our analysis—representing fiscal transparency—is the share of total state spending in the general fund. Table 2 indicates that the mean general fund share of the all-funds state budget is 45 percent and varies from a minimum of 14 percent (Wyoming in 2004) to a maximum of 82 percent (Connecticut in 2006).

Independent Variables

We collected independent control variables of three basic types: fiscal, socioeconomic, and political. We also include synthetic control variables: year and state fixed effects, and state specific time trends.

*Fiscal variables*⁵. Table 1 defines and Table 2 statistically describes our two key variables of interest, the *fiscal balance as a share of total expenditures* and the level of *debt per capita*. The third fiscal variable is the interaction between fiscal balance and a dummy variable that equals one if the fiscal balance is negative (i.e., a *deficit*). Inclusion of this variable in the regressions allows deficits and surpluses to have an asymmetric impact on the dependent variable.

Figure 1 displays maps of the states in our sample. Map A shows the number of years (between 1985 and 2010) in which each state had a substantial (more than one percent of total expenditures) deficit while map B shows the number of years in which each state had a substantial (more than one percent of total expenditures) surplus. As the maps show, every state had some variation in these measures of fiscal stress with all having at least some years of

⁵ We also ran regressions (not reported here) that control for the size of states' rainy day (or budget stabilization) funds (RDF) and for whether the state had a tax and expenditure limitation (TEL). The data for these variables was the same as that used in Rose and Smith (2012) and covers the period 1986 to 2007. The RDF and the TEL are statistically insignificant in these regressions and their inclusion does not change the size of the coefficients on the independent variables of interest: fiscal balance as a share of expenditures and debt per capita. Because the time period covered by Rose and Smith's data is shorter than the time period for our data we do not display the results here.

substantial deficits and some years of substantial surpluses. Washington exhibited the most fiscal stress with substantial deficits in 21 of 26 years and only two years of substantial surpluses. Wyoming exhibited the least fiscal stress with 24 years of surpluses and only 1 year with a deficit.

<<figure 1 about here>>

Socioeconomic variables. Similar to ALR (2006) and other cross-state fiscal studies, we included control variables for personal income, population, and the age distribution of the population.

*Political variables*⁶. For ALR (2006), the political measures were the variables of primary interest. We include updated measures of their political variables as controls, but our focus is on fiscal effects. ALR (2006) hypothesized that political competition is associated with increased transparency, arguing that politicians use openness and disclosure of information to keep their rivals honest. ALR (2006) explored three alternative measures of political competition,⁷ but since all three measures yield similar qualitative conclusions we focus on only one of these—*divided government*, which has a value of one if different parties are in control of the executive and legislative branches, zero otherwise. Like ALR (2006) we include variables for Democratic governor and Democratic share of the legislature to control for the possibility that Democrats and Republicans differ systematically in the level of transparency.

⁶ In regressions not reported here we also included an election cycle variable equal to one if there were gubernatorial election in that in that year and zero otherwise as well as the lag of this variable. Both the election cycle variable and its lag were statistically insignificant. Furthermore these variables had virtually no impact on key variables' estimated coefficients or statistical significance.

⁷ The two alternative measures are constructed from party splits in the legislature and the most recent vote for Governor. *Legislative competition* is an index ranging from a "no competition" value if a single party controls 100 percent of both house and senate to a "highest completion" value if both chambers are split exactly 50/50. *Gubernatorial competition* is an index ranging from a "no competition" value if the candidate got either 0 or 100 percent of the Democratic vote to a "highest competition" value for a 50 percent share of the Democratic vote. We estimated regressions with these alternative measures, but with no noticeable impact on the fiscal balance as a share of total expenditures and debt coefficients.

Political polarization was measured using data obtained from the DW-Nominate project, described in Poole and Rosenthal (1997). The authors developed a method for using roll-call votes in the U.S. Congress to create a two-dimensional measure that allows comparisons over time. Each Congress member in each year is scored on an economic liberal-conservative axis and a social liberal-conservative axis. These scores are updated each year (see Carroll et al. 2013) and are widely used in the political science literature. A state's level of political polarization is estimated by calculating the distance between the party-average voting positions of a state's U.S. Congress members scored in the two dimensions.⁸ According to ALR's (2006) interpretation, the direction of the expected effect of political polarization on fiscal transparency is ambiguous.

All of the political variables are lagged one year to indicate political context at the time that budgetary decisions are being made, compared to the outcome (surplus or deficit) one year later.

Synthetic variables. We also included three types of synthetic variables in our regressions: year fixed effects, state fixed effects, and state specific time trends. Year fixed effects control for all factors that are constant across states in a particular year. These variables are particularly important because they will pick up the influence of any federal policy that might influence the general fund share. For example, a federal program that raised the Medicaid match rate to all states in a particular year might lower the general fund share around the country if states are more likely to deposit federal funds outside of their general fund.

⁸ Both the economic and social liberal-conservative axes are scored from -1 to +1. The Euclidian distance between the two pairs of scores is our measure of the degree of polarization. Although there is no data on political ideology or polarization of state legislators, Schor et. al. (2010) are able to fit a model of ideological positions of state legislators using roll-call votes of U.S. Congress members. Poole and Rosenthal's NOMINATE scoring system is one of the methods used.

State fixed effects control for all factors that are constant within a state over time⁹. As discussed earlier, a state's general fund share is affected by numerous historical and institutional factors that are not easily observed. For example, some states have taken greater responsibility for funding local education and may dedicate particular revenues to this purpose and budget them outside of the general fund. As long as this is a widely known and stable arrangement it will not detract from budget transparency. State fixed effects also control for other state institutions such as balanced budget laws that may increase or decrease the attractiveness of general fund budgeting. By including state fixed effects we correlate deviations of the dependent variable around own-state averages with deviations in the independent variables around own-state averages. Thus, for example, the coefficient on fiscal balance tells us whether the dependent variable tends to be unusually high (in a given state) in the same years that fiscal balance in that state tends to be unusually high.

State specific time trends allow the dependent and independent variables in each state to have their own time trend. This could be important if, for example, a particular state had a revenue source outside the general fund (e.g., a mineral tax) that was growing more rapidly than those in the general fund. The general fund share might be falling but in predictable ways that would not detract from transparency. The coefficient on fiscal balance (for example) tells us whether the dependent variable tends to rise by more than its trend value (in a given state) in the same years that balance in that state tends to be unusually high.¹⁰ More detail on state specific time trends is given in Appendix A.

⁹ We also ran regressions not reported here using random rather than fixed effects. The random effects specification assumes implausibly that unobserved variables are uncorrelated with all of the observed variables and the dependent variable. Diagnostic tests rejected random effects in favor of fixed effects (which does not make this assumption).

¹⁰ Just as state-fixed effects allow for the possibility, but do not require, that state-specific intercepts differ, our specification allows for the possibility, but does not require, that trends rather than levels of independent variables matter. Use of state specific time trends in this kind of empirical work is now common among well-crafted empirical studies. See for example Classen and Dunn (2012) and Morgan, Strain and Seblani (2012).

REGRESSION ANALYSIS

We regressed *general fund expenditure share* on various combinations of the independent variables described in Tables 1 and 2. Table 3 presents results for four representative specifications. All specifications include state fixed effects, robust standard errors clustered by state, fixed year effects, and state-specific time trends. Clustering of standard errors takes account of potential correlation of within state error terms which could result in estimates of the standard errors that are downwardly biased (i.e. estimated standard errors will be too small so estimated significance levels will be too high). See Wooldridge (2002). Results for our key variables of interest—the fiscal balance as a share of total expenditures and the debt per capita—are robust across a wide range of alternatives, including much more complicated specifications with multiple lags similar to those in Alt, Lassen, and Rose (2006). We also re-ran our analysis with the sample restricted to the 31 states that budget annually and hold an annual budget session (30 after dropping Alaska)¹¹ and found no substantive changes in our results.¹²

<<Table 3 about here>>

Because we include state fixed effects our interpretation focuses on within-state variation in the general/special fund mix. However, the empirical results presented here apply with equal force to cross-state differences in the fund mix after taking account of the fact that some states will have a higher (or lower) base level of the ratio due to state-specific factors unrelated to fiscal, socio-economic or political conditions.

¹¹ We also ran regressions of a sample excluding only the four states that budget biennially and hold biennial sessions (MT, NV, ND, TX) plus the 3 states we excluded from all analyses (AK, HI, NE) and found that our results with respect to balance and debt were consistent.

¹² We cannot directly compare our coefficient estimates to ALR (2006) because they do not report their estimated coefficients, only F tests on groups of independent variables.

Fiscal Effects

Specification 1 of Table 3 includes just the *fiscal balance* as a share of total expenditures and *fiscal balance* as a share of total expenditures interacted with a dummy variable for a *deficit*. The *fiscal balance* as a share of total expenditures is expected to be a positive determinant of *fiscal transparency*. The argument is best understood starting in a period of fiscal stress: larger *deficits* encourage the use of *less transparent* fiscal practices and thus there is greater reliance on special funds and less on general funds. This expected positive relationship is confirmed by the highly significant positive coefficient on *fiscal balance*. The estimated coefficient of 0.22 suggests that, evaluated at the means, a one standard deviation (0.056) decrease in *fiscal balance as a share of total expenditures* (declining surplus or larger deficit) is predicted to decrease the *general fund share of total expenditures* by about one percentage point, from its mean value of 45.3 percent to 44.1 percent.

The statistically insignificant coefficient on the interaction term in specification 1 implies that the dependent variable is symmetrically affected by a decrease in the state surplus or an increase in the deficit. Thus, we reject the hypothesis of an asymmetric effect to fiscal stress and fiscal ease.

Specification 2 of Table 3 adds a measure *debt per capita* to the regression. A significant relationship between greater fiscal transparency and lower *debt per capita* has been found in several studies (Alt and Lassen 2006; ALR 2006; Kopits and Craig 1998). The argument predicting a negative association is that greater debt creates a fiscal burden as debt service crowds out other spending and the greater burden invites the use of special funds. The coefficient on *debt per capita* has the hypothesized negative relationship with the *general fund share of total expenditures*. Evaluated at the dependent variable mean, a one standard deviation (\$1,834)

increase in *debt per capita* is predicted to decrease the *general fund share of total expenditures* from 45.3 percent to 43.6 percent. All three of the fiscal effects on transparency from specifications 1 and 2—a significantly positive fiscal balance effect, an insignificant difference in deficit versus surplus effects, and a significantly negative effect of accumulated debt—hold in specifications 3 and 4 (and in almost all of the more complicated specifications not shown). Moreover, the point estimates of the three fiscal variables change very little across specifications.

Socioeconomic Control Variables

Specification 3 in Table 3 adds variables to control for *personal income* per capita, *population*, the *school-age* percent of the population, and the *elderly* percent of the population. ALR found that a similar set of socioeconomic variables were not significantly related to their measure of transparency. In specification 3 the *elderly* share has a negative impact significant at the one percent level of confidence. In specification 4 the significance level of the *elderly* share drops, while the *school-age* share shows a positive impact significant at the ten percent level of confidence. The *personal income* and *population* shares are not statistically significant.

Political Environment

Specification 4 adds controls for four measures of the political environment based on ALR (2006). These variables are lagged one year to correspond to the political context at the time that budgetary decisions are being made, as opposed to the outcome (surplus or deficit) one year later. None of the political controls has a statistically significant coefficient.

CONCLUSION

Although the concept of fiscal transparency has been widely endorsed by the general public and the term has been used extensively in political discourse, few empirical studies have attempted to measure fiscal transparency. Furthermore, most of the empirical studies have focused on government outcomes, while only a handful have explored determinants of fiscal transparency.

Although the stated purpose of special funds is to increase accountability and control, the end result often is to diminish transparency, because the focus of reporting to lawmakers and the media is so often limited to discussion of the general funds. Because special funds typically contain earmarked revenues, lawmakers may take a hands-off approach that avoids the scrutiny of these funds and sidesteps (often politically contentious) debates to restrict the use of state resources. However, changes in allocations to special funds can have implications for the general fund in both current and future years. Therefore, assessment of a state's fiscal condition requires an understanding that goes well beyond the general fund.

In this study we calculated and analyzed an original measure of fiscal transparency for U.S. states: the share of total, i.e. all funds, governmental expenditures that comes from the general fund. This measure is both easily computed and readily available. We find that after using fixed state and year effects, robust standard errors clustered by states, and controlling for socioeconomic and political variables and state-specific time trends, there is a significant relationship between our variables of interest—fiscal balance as a share of expenditures and debt—and our measure of transparency, the share of expenditures in transparent general funds. The results support the hypothesis that fiscal stress leads to actions to conceal the fiscal condition from the public by moving expenditures out of the general funds.

Our findings with respect to the fiscal balance suggest that as the surplus gets smaller or becomes negative (and the deficit gets larger), state policymakers resort to greater use of opaque

special funds. In our basic model, a one standard deviation increase in the surplus leads to an increase in the General Fund share of just under one percent. Deficits could be related to a lack of transparency in a number of ways: deliberate obfuscation, genuine misunderstanding, federal aid, or other earmarked funds being swept into the general fund to alleviate a fiscal crisis.

Per capita debt has a negative impact on our measure of transparency, and this effect is persistent with different sets of control variables. An increase of one standard deviation in per capita debt lowers the share of total expenditures in the general fund by 1.7 percentage points. This may occur because when a state's level of debt increases, more of its spending is dedicated to debt service, which is often paid from specially designated funds.

Limitations and Further Research

Although our results support the hypothesis that fiscal balance and debt contribute to increases or decreases in the share of total expenditures in the general funds—and we have argued that this budgetary indicator is a valid measure of fiscal transparency—there are limits to this approach. Fiscal transparency is a concept that cannot be measured directly—we cannot conclusively say that we know what lawmakers, voters, and other users of state financial documents are able to comprehend with regard to the operation of their government. Similarly, while the regression results are consistent with our hypotheses, we do not have direct evidence that state lawmakers deliberately mislead the public by manipulating state finances in specific ways.

A next step in this research could be an examination of the ways that fiscal stress leads to opaque, cloudy financial reporting and creative accounting through case studies of states that are typical and those that are idiosyncratic with respect to our measure of fiscal transparency. Year-

to-year variation in the share of the expenditures in the general funds may be an important red flag indicating gimmickry, and there may be lessons to be learned from in-depth studies of states that made dramatic changes in the General Fund budget share from one year to the next.

In addition, states often have additional funds beyond the general and special funds we mention: proprietary funds and fiduciary funds. Proprietary funds are used to track business-like activities. Fiduciary (trust) funds are kept for a third party; for example, a state keeps employees' retirement contributions to the pension systems in trust funds. We do not explore these funds in this paper, but billions of dollars pass through these funds each year. Further research should explore the impact of these funds.

Ultimately, defining and measuring fiscal transparency is a necessary first step toward determining whether it is being achieved or is beneficial. Fiscal transparency is very important if stakeholders are to make the difficult choices necessary to move state finances toward sustainable practices. Our proposed measure of transparency is an effort to address this gap.

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APPENDIX A: STATE SPECIFIC TIME TRENDS

Suppose the trend rate of growth in income of a particular state is faster than the national average. In such a state, a two-percent rate of income growth might signal fiscal austerity and stimulate political attempts to alter financial reporting conventions that obfuscate fiscal adaptations (e.g. use of resources from special funds). In a different state, with slower trend growth in income, a two-percent rate of income growth might signal fiscal health and might not stimulate fiscal adaptations. We allow for the possibility that the state-specific growth trend in income (or any other independent variable) may influence our dependent variable by including a state-specific time trend in our regressions. Inclusion of these trends is effectively equivalent to de-trending all of our independent variables. As a result, regression coefficients are identified on the basis of the variation around their trend.

This is illustrated in Figure 2. The solid black line shows the value of an independent variable prior to detrending. The dashed grey line shows the residual variable after adjustment for the state-specific time trend. Our regression coefficients measure the change in the dependent variable as a result of movements around the trend. Thus, in the example presented in Figure 2 we predict the same level in the dependent variable in 1997 and 2004 because in each of those years the independent variable is above trend by the same amount. Had we instead used the original data series without detrending (the solid black line) we would have predicted a much higher level for the dependent variable in 2004 than we did in 1997 (assuming the independent variable is positively correlated with the dependent variable) because the value of the independent variable is much higher in 2004 than it was in 1997.

<<Figure 2 about here>>

TABLE 1: Variables in the Analysis

Variable Name	Definition	Units	Source
Dependent Variable			
General Fund expenditure share	General Fund Expenditure / Total Expenditure (See note 2.)	Fraction: from 0 to 1	General Fund: NASBO; Total: U.S. Census, <i>State Government Finances</i>
Fiscal Variables			
Fiscal Balance as share of Tot. Exp.	(Total Revenue – Total Expenditure) / Total Expenditure	Fraction: from –1 to +1	U.S. Census, <i>State Government Finances</i>
Deficit Dummy	Fiscal balance < 0	1 or 0	
Debt per capita	Total outstanding debt	2010 dollars per capita (thousands)	U.S. Census, <i>State Government Finances.</i>
Socioeconomic Variables			
Personal Income per capita	Total personal income per capita	2010 dollars per capita (thousands)	U.S. Census, <i>Statistical Abstract of U.S.</i>
Population		Millions	U.S. Census, <i>Current Population Survey</i>
School Age Pct. of Population	Percent of population age 5-19	Percent: from 0 to 100	U.S. Census, <i>Current Population Survey</i>
Elderly Percent of Population	Percent of population age 65+	Percent: from 0 to 100	U.S. Census, <i>Current Population Survey</i>
Political Variables			
Divided government	Different parties control executive and legislative branches	1 or 0	Council of State Governments, <i>Book of the States</i>
Democrat governor		1 or 0	Council of State Govts., <i>Book of the States</i>
Democrat share of legislature	Share of legislators that are Democrats	Fraction: from 0 to 1	Council of State Govts., <i>Book of the States</i>
Polarization	Distance between party-average positions of state’s U.S. Congress members (Republicans – Dems.)	Index: from 0 to 2.83	Poole and Rosenthal (1997)

TABLE 2. Descriptive Statistics for Variables in the Analysis

Variable	Obs.	Mean	Std. Dev.	Min.	Max.
Dependent Variable					
General Fund share of total expenditures	1,222	0.453	0.114	0.142	0.819
Fiscal Variables					
Fiscal Balance share of total expenditures	1,222	0.019	0.056	-0.158	0.374
Deficit Dummy	1,222	0.367	0.482	0	1
Debt per capita (2010 dollars in 1,000s)	1,222	2.804	1.834	0	11.633
Socioeconomic Variables					
Personal income per capita (2010 \$ in 1,000s)	1,222	34.077	6.338	19.977	58.745
Population (millions)	1,222	5.731	6.070	0.454	37.338
School aged (percent of population)	1,222	18.451	1.605	15.100	26.800
Elderly (percent of population)	1,222	12.705	1.696	7.900	18.600
Political Variables					
Divided government (0,1)	1,222	0.444	0.497	0	1
Democrat governor (0,1)	1,222	0.493	0.500	0	1
Democrat share of legislature	1,222	0.539	0.157	0.114	0.948
Polarization (index)	1,222	0.627	0.261	0	1.132

Notes:

See Table 1 for variable definitions and sources.

The data set includes 47 states (excluded are Alaska, Hawaii, and Nebraska, which is unicameral) and covers 26 years (1985 through 2010).

TABLE 3: Determinants of General Fund Share of Total Expenditures

	(1)	(2)	(3)	(4)
Fiscal Variables				
Fiscal Balance (Tot. Rev.–Tot. Exp.) as share of Total Expenditure	0.219*** (0.033)	0.208*** (0.032)	0.208*** (0.032)	0.200*** (0.033)
Fiscal Balance * Deficit Dummy	0.002 (0.080)	–0.007 (0.078)	–0.008 (0.079)	–0.000 (0.078)
Debt per capita		–0.009*** (0.004)	–0.009** (0.004)	–0.008** (0.004)
Socioeconomic Variables				
Personal Income per capita			0.002 (0.002)	0.002 (0.002)
Population			–0.053 (0.034)	–0.035 (0.023)
School-Age percent of Population			0.005 (0.003)	0.006* (0.003)
Elderly percent of Population			–0.023*** (0.008)	–0.018** (0.008)
Political Variables				
Divided Government (lagged one year)				–0.001 (0.003)
Democrat Governor (lagged one year)				0.002 (0.003)
Democratic share of Legislature (lagged one year)				0.007 (0.037)
Polarization (lagged one year)				–0.008 (0.011)
Summary Statistics				
Adjusted R ²	0.934	0.935	0.938	0.943
Number of Observations	1,222	1,222	1,222	1,175

Notes:

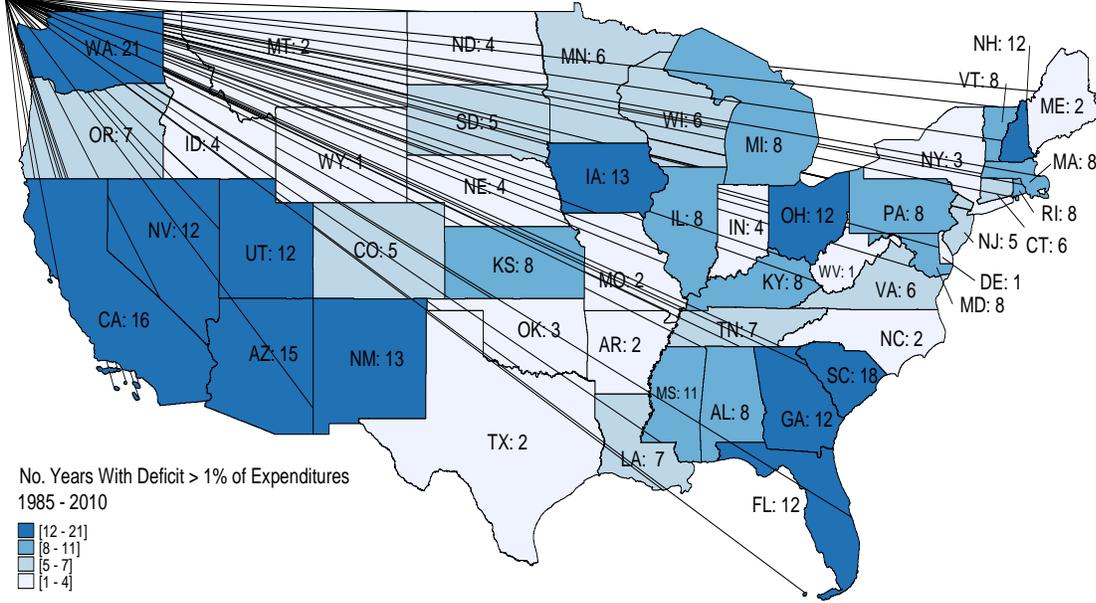
All specifications have (a) fixed state effects, (b) fixed year effects, and (c) state-specific time trends.

Robust standard errors in parentheses.

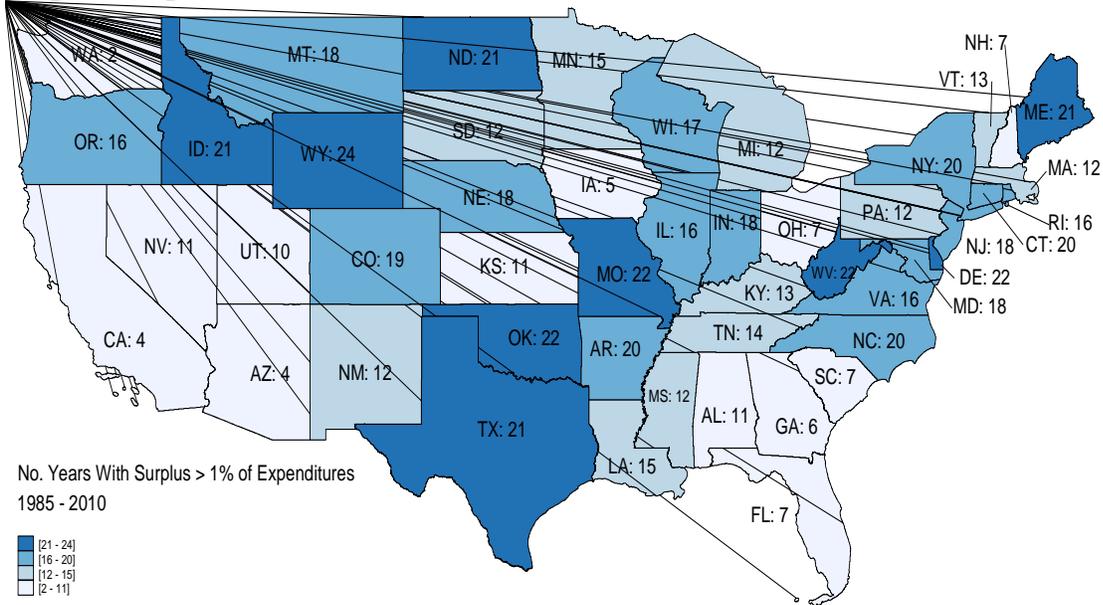
Significance indicated by: *p<0.10, **p<0.05, and ***p<0.01.

FIGURE 1. Number of Years with Budgetary Balance Greater than 1 Percent of Total Expenditures, by State, 1985-2010

Map A: Deficit Years



Map B: Surplus Years



Note: Nebraska is excluded from the analysis, even though counts are shown here.

Figure 2. Hypothetical Variable with State-Specific Time Trend Persisting After Other Controls

