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ABSTRACT

A growing literature has sought to demonstrate when and how government capacity links to performance. This article examines those questions in the area of financial management. A basic challenge for state governments is to maintain budgetary stability and program predictability in face of economic downturns. State governments can best meet this challenge by developing what we call counter-cyclical fiscal capacity. We present the concept of counter-cyclical fiscal capacity as the creation and use of financial tools that help state governments maintain counter-cyclical spending and program stability during revenue shocks. We operationalize the concept in terms of fiscal reserves that are used to mitigate emergency spending cuts and tax increases, and analyze the operation of such reserves over a period that includes recessions in 1991 and 2001. We find evidence of the efficacy of counter-cyclical fiscal capacity, and argue for greater investments in this aspect of government capacity.

INTRODUCTION

A growing literature has sought to empirically link government capacity to performance. As this literature has developed, the most prominent research challenge is not in proving that capacity, broadly defined, influences performance, but in uncovering the contingencies of the capacity-performance relationship. Capacity and performance are both multi-dimensional concepts. Government, via rules, laws, its personnel, programs and other forms of action develops innumerable types of capacity intended to bring about varieties of outcomes. By providing empirical support for causal pathways between specific forms of capacity and specific forms of performance, researchers can illuminate when government efforts work, and to what degree.

This article adds to this literature in the area of financial management, by examining how governments develop and use counter-cyclical fiscal capacity (CCFC). State governments lack the flexibility of deficit spending accorded to the federal government, and therefore have a more limited set of tools to deal with downturns in the business cycle. They rely on fiscal reserves to cushion the effects of economic shocks and to avoid dramatic cuts in program spending. Our primary research question is whether fiscal reserves exert observable and significant influence on budgetary reactions that states take in response to revenue shocks. In answering this question, we employ data from 1985 to 2003. This period incorporates recessions in 1991 and 2001, allowing us to examine how state governments mitigated the impacts of those revenue shocks.

The article is organized as follows. The next section further conceptualizes the idea of CCFC, and places it in the broad capacity-performance argument made in public management literature. Next, we provide greater detail about the specific reserve tools that state governments have at their disposal. We then offer a background to state budgetary reactions to revenue

shocks, with some descriptive analysis. The following section presents and tests a formal theory of how states reacted to revenue shocks in 1991 and 2001. We conclude by summarizing the importance and practicality of CCFC, and considering future avenues of research.

CONCEPTUALIZING COUNTER-CYCLICAL FISCAL CAPACITY

In this article we conceptualize capacity in terms of fiscal reserves, and treat the use of those reserves to mitigate emergency spending cuts and tax/fee increases in the face of revenue shocks as a measure of performance of the financial management system. The basic purpose of reserves is to accumulate in boom years so that they can reduce the negative effects of revenue declines in economic downturns. Because states must balance their budgets, the primary means of maintaining a CCFC and maintaining program stability is through the "rainy day fund," more formally known as the budget stabilization fund (BSF). In addition, the general fund balance (GFB) – the aggregate of all money available in the general fund for appropriations in the next year (Ruppel 2004), or "surplus" of money from the previous year can be used in the same way as a BSF. Together, these reserves are the basic tools of state government CCFC.

The maintenance of CCFC is a strong professional norm among financial managers. Professional organizations like the Government Finance Officers Association (GFOA) and the National Association of State Budget Officers (NASBO) have recognized the importance of financial reserves (GFOA 1995, 1999 and NASBO series), and credit rating agencies have listed these among their assessment criteria (Larkin and Raphael 2000). The Government Performance Project (GPP) has characterized the ability to maintain such reserves and effectively use them as an indicator of financial management capacity expected to shape economic performance. For example, the most recent round of the GPP employs the following criterion for financial

management: "the state uses counter-cyclical or contingency planning devices to address economic downturns."[1]

Our theoretical approach is consistent with the basic underlying approach of the GPP and other recent public management scholarship. Simply put, we are seeking to demonstrate that government capacity improves performance. This theoretical argument has intuitive appeal, and indeed serves as the basis for a professional field of public administration, and much of its scholarship. However, the work of the GPP pointed out that the links between government action and performance, though assumed, frequently lacked an empirical underpinning (Ingraham, Joyce and Donahue 2003). The GPP itself created measures of government capacity, but left it to others to draw the link to performance.

The approach of the GPP coincides with an increasing body of work which empirically examines the role that management capacity plays in fostering performance. As Boyne et al. (2005, 634) note "[t]his general proposition, needless to say, has rarely been in serious doubt, but only in the last few years have rigorous investigations begun to validate the idea." Such analysis has been spurred by new theoretical formulations of the capacity-performance link (e.g., Lynn, Heinrich and Hill 2000; Meier and O' Toole 2002). Recent symposiums on public sector performance in the *Journal of Public Administration and Research Theory* (October 2005) and the *Journal of Policy Analysis and Management* (winter 2004), collected volumes on the topic (e.g., Boyne et al. 2007; Ingraham and Lynn 2004; Lynn and Heinrich 2000), and meta-analyses of earlier work (Boyne 2003; Hill and Lynn 2005) are indicative of the variety and rigor of this scholarship. One lesson of this work is just how widely the concept of capacity stretches. Capacity can include rules, human resources, strategic approaches, distribution of authority,

[1] The GPP is a multi-year effort to develop and apply a set of standard criteria to assess the management systems of state governments, including financial management systems. More details about, and criteria for, the GPP can be found at: http://results.gpponline.org/Category.aspx?id=1

processes, and specific actions. As Boyne et al. note (2005, 634), given the variety of possible measures of capacity and performance, the pressing question for public management is not so much whether management matters, but "when, where and how."

There is limited research on financial management capacity and its link to performance, particularly for the role of financial reserves. Douglas and Gaddie (2002, 20) note that "(d)espite their potential importance, little empirical evidence exists regarding the impact of rainy day funds on fiscal stress during periods of recession." While some empirical literature has provided evidence of the effects of reserves on state expenditures during recessions in the 1980s and 1990s (Sobel and Holcombe 1996; Knight and Levinson 1999; Douglas and Gaddie 2002; Hou 2003b and 2005; Wagner and Elder 2005), there have not been studies to examine the effects during the 2001 recession in particular. This study fills this gap, and finds some interesting differences between the two most recent recessions in 1991 and 2001.

This article also expands upon previous empirical work that has sought to specify and test the various components of this relationship in greater detail. Examining the impact of financial management capacity does not always look similar to much of the empirical literature on governance cited above, which typically focuses on some measure of service delivery and incorporates consideration of treatments, client characteristics, political environment, and resources. However, the capacity to govern also includes the ability to allocate financial resources to deal with future events, and the creation of such capacity depends a great deal on predictable rules that direct and frequently constrain the behavior of public officials. In the case of counter-cyclical reserves, such rules shape the size and effectiveness of fiscal reserves. For instance, Hou et al. (2003) identify how specific financial rules shape the size and use of fiscal reserves, arguing that the existence and size of reserve funds was a useful intermediate measure

of fiscal performance. Hou et al. (2003, 309) describe "formal rules as largely contributing to capacity when they restrict the discretion of actors around clearly established desirable behavior and prevent undesirable behavior." While Hou et al. examined the relationship between rules creating reserves and the size of reserve balances, this article extends the logic chain between capacity and performance by focusing on the link between reserve balances and the use of such reserves during recessions.

Previous work has examined the role of fiscal reserves. Sobel and Holcombe (1996) and Douglas and Gaddie (2002) estimated how BSF rules and the size of BSFs reduced the impact of fiscal stress. Wagner and Elder (2005) examined the effects of GFB and BSF on the cyclicality of state expenditures, finding a correlation between larger fund balances and the stability of expenditures. We advance on their work by examining both BSF and GFB as independent variables, and examining budget cuts and revenue actions as dependent variables, and by incorporating the most recent 2001 recession into our empirical analysis. We also seek to offer a contribution advancing the concept of CCFC in terms of the fiscal tools to minimize disruption from revenue shocks. CCFC minimizes revenue shocks in two ways – providing program stability by minimizing emergency spending cuts, and allowing public spending to encourage economic activity. Governments that have these tools will be better able to have high-performing public services and prosperous economies even as they deal with recessions than governments where such tools are absent.

There is, of course, an assumption inherent in our hypothesis – which is that the use of reserves during recessions to maintain program stability and help the economy recover through counter-cyclical fiscal actions is an appropriate measure of state government fiscal performance. However, our assumption is consistent with the professional norms of financial management

organizations and the criteria of the GPP mentioned above. It also has relatively strong theoretical and empirical support (Musgrave 1959; 1989). In the past, counter-cyclical spending was assumed to be the sole responsibility of the national government (Oates 1972), while more recent economic wisdom extends this responsibility to sub-national governments (Gramlich 1987). Empirical studies offer support for the positive effects of counter-cyclical spending on fiscal stress at the state level (Sobel and Holcombe 1996; Douglas and Gaddie 2002; Hou 2003, 2005; Wagner and Elder 2005).

More broadly, our approach recognizes the multiple goals of financial management, and the effort to minimize trade-offs between those goals. Management systems seek to foster the performance of multiple and possibly conflicting goals, and understanding the tradeoffs between capacity and these goals poses one of the most difficult challenges to the nascent capacity-performance literature (a practical example is provided by Heinrich and Fournier 2004). In the area of financial management, one widely accepted purpose of financial management has been to manage the economy. However, as Schick (1966) argued, the budget process has three other goals – to control spending, plan the allocation of public resources and increase management efficiency. An effective financial management system should strive to achieve all four goals, but they can conflict with one another. For instance, state requirements for balanced budgets and minimal borrowing foster spending control and fiscal discipline, but undermine the other three goals during a recession, reducing the ability of governments to provide counter-cyclical spending, disrupting planned allocations, and undermining the stability of program management. The use of fiscal reserves can be seen as the tool by which states try to reduce the impact of spending control on these other goals during revenue shocks.

How should the link between CCFC and performance work in practice? In economic downturns, governments face declining revenues, which we refer to as revenue shocks. Unlike the federal level, state governments are largely constrained by revenues on hand, and cannot rely on deficit spending to limit budget cuts and provide a counter-cyclical boost to a sagging economy. Instead, they tend to either cut expenditures or increase taxes/fees in an effort to balance budgets. Both approaches have negative consequences during a recession. Cuts in spending and tax/fee increases are a form of pro-cyclical action when counter-cyclical action is needed, withdrawing government spending and increasing taxes when the economy would benefit from the opposite actions (Sobel and Holcombe 1996).

Cuts in spending have negative effects beyond the pro-cyclical economic effect, creating instability in program delivery. Managers may find, in the middle of a fiscal cycle, that they have less money than they were promised, and are forced to translate these cuts into poorer service delivery, e.g., by having public services available on only certain days of the week, laying off service providers, or reducing the quantity of services available. The virtue of stability and predictability in program delivery has sometimes been overlooked in more reform-focused elements of the public management literature. Such literature tends to focus on the stultifying effects of red tape, creating bureaucratic personalities that resist innovation (Osborne and Gaebler 1992). The actual empirical study of red tape has provided support for the premise that public sector managers face higher levels of red tape than private counterparts (Rainey, Pandey and Bozeman 1995), and that red tape is a drag on organizational effectiveness (Pandey and Moynihan 2006).

While there is clearly some validity to this critique of traditional bureaucratic systems, it raises the risk of ignoring the benefits of predictability in the delivery of public goods. We can

look to extreme examples of developing countries to illustrate how an unstable or unpredictable flow of resources overwhelms the ability of managers to plan for basic service delivery (Manning, Mukherjee, and Gokcekus 2000). Recent public management theory has also shown a renewed appreciation of the importance of stability – it is central to O'Toole and Meier's (1999) theory of effective public management, and Provan and Milward's (1995) theory of network success. The ability to use financial reserves to maintain a predictable flow of funds to managers is therefore expected to have positive effects on program performance.

THE TOOLS OF COUNTER-CYCLICAL FISCAL CAPACITY

Fiscal reserves are the major policy instruments of CCFC. [2] Reserves refer to financial resources previously accumulated, GFB and BSF ($reserve_{it} = bsf_{it} + gfb_{it}$). GFB has been used for a long time, almost as long as financial management itself (Rafuse 1965; Fisher 1984). Researchers and practitioners generally agree that GFB at the end of the fiscal year is a good measure of the fiscal condition of state governments (Gold 1983, 1995; NASBO series). As a rule, general fund balance accumulates in boom years and declines in recession years (Rafuse 1965). Its rise and fall is primarily the result of cyclical economic fluctuations (Firestone 1960, 8). BSF are more recent innovations. Following the recession of the early 1980s, many states reacted by adopting the BSF as an additional and formal type of fiscal reserve (Hou 2003a). The adoption of the BSF continued into the 1990s: 35 states had BSFs in 1988, and 46 in 2003 (NASBO 1987, 32; 2003, 22). While BSFs have more formal rules on their collection and use of revenues, it is generally accurate to say that, as with GFB, the flow of funds follows a cyclical pattern.

[2] There are some other minor and less explicit policy tools; but this paper focuses on the two major and most explicit ones.

There is a clear pattern in how states respond to the business cycle. As the tax base expands and generates abundant revenues during boom years, states can afford to provide more services, to spend more on capital projects with pay-go financing, and to save more in the general fund and the budget stabilization fund. In downturn years, the tax base shrinks and revenues can no longer match expectations; states draw down their reserves in an effort to maintain existing service levels. When the revenue shortfall is large or the recession is expected to last and reserves are believed to be inadequate to fill up the gap between income and outlay, service level or programs will be cut. Table 1 offers summary statistics of the three major variables that we are to examine in detail — BSF, GFB, and total reserves. Financial figures have been converted into per capita year-2000 dollars for comparability purposes.

[Table 1 about here]

Dollars spent from the GFB and BSF are equivalent in terms of their economic impact — both are accumulated resources available for appropriation in the next fiscal year (Allan (GFOA) 1990; Pollock and Suyderhoud 1986; Sobel and Holcombe 1996, 32). But there are differences between the reserves. A BSF is set up with enabling legislation detailing rules (for its method of deposit, purpose of use, and approval procedures for use) as a means to protect it from spending pressure in boom years (Hou 2003a). As such, BSF is structurally different from GFB. Another distinction between the two types of reserves is the legal restriction on their deposits and use. BSF are restricted reserves and GFB are discretionary reserves. Although fiscal reserves in general may be regarded as equivalent in their economic effects, they may function differently in the budgeting process. Specifically, when decision-makers plan budgetary policies, they may treat the two differently. Because BSF are usually restricted for use only in times of emergency (even then it is often subject to the politically loaded, time-consuming appropriations process)

(Hou 2004), budget decisions during a recession may rely more, on the discretionary, easy-to-use GFB. Because of these differences, we separate the respective effects of BSF and GFB in budgetary reactions to revenue shocks in our analysis.

State Reactions to Revenue Shortfalls

Counter-cyclical fiscal capacity is put to use during times of revenue shocks. The cross-state heterogeneity of fiscal conditions and policies lends a platform for empirical analysis of how states react to such shocks (Poterba 1994). Revenue shocks are inevitable given the cyclical nature of the economy. However, because governments do not know when recessions will occur, they have limited ability to plan for them in advance. In lean years revenue shocks cut the tax base so deep that revenue estimates, even revised ones, are frequently off target, and often force decision-makers to re-budget for the current fiscal year and revise their plan for the next year. Revenues shocks include not only shocks to state own-source revenues (taxes and fees) but also grants and other forms of assistance from the federal government. Data limitations render this distinction very difficult to operationalize on a reliable basis; therefore, this article addresses revenue shocks as a whole.

Revenue shocks require a response. State governments have to cut spending and/or raise taxes to meet their statutory or constitutional requirement to balance the budget. Though borrowing is possible, operating on debt is not allowed in most states and will hurt the states' credit rating on the financial market. Therefore, budgetary reactions to revenue shocks are unavoidable. Immediate reactions to shocks tend to be unplanned and of a temporary nature, involving urgent budget cuts to programs/services in the current fiscal year. We define "budget cuts" as program reductions that are enacted during the current fiscal year on the budget that was

adopted last year and now in the execution phase. In other words, budget cuts are emergency measures that states take to cope with surprise revenue shortfalls from the business cycle. These cuts are unplanned.

States also react by changing their revenue portfolio (types of taxes and fees) and/or revenue base/structure (rates). Unlike budget cuts, these "revenue actions" are planned and designed to increase revenue in the next fiscal year(s) to deal with the cyclical shortfall. Revenue actions can be taken for many reasons. Some of the changes are for equity and/or efficiency purposes, or for other prevailing political preferences. But revenue shortfalls caused by a downturn in the business cycle impose revenue actions on policymakers for the simple reason that resources are needed. In such cases, even long planned revisions to a state's revenue system may have to be readjusted or rescheduled to fit the new reality of declining revenues.

Though there is always variation in why states cut spending, budget cuts tend to occur in recession years and the one or two years immediately following a downturn; in the last two recessions, these are the years 1990 through 1993, and 2001 through 2004. Whereas boom years, for example 1998 through 2000, present very few cases of budget cuts and such cuts were minimal. Likewise, states take revenue actions in lean years as well as in boom years to increase revenues; but in aggregate, concentrated revenue increasing actions were also associated with recessions, taking place in years 1990 through 1994 and 2002 through 2004. Fiscal years 1995 through 2001 were marked with numerous revenue reducing actions, a result of the record-long economic expansion in the late-1990s. Among these revenue reduction years, 2001 was an extension of tax and fee abatement commitments made in earlier years when the economy was strong; they should not be taken as an indicator of inaction by the states in response to the recession. In many states the impact of the recession was not yet apparent by the end of FY2001.

Summing budget cuts and revenue actions that coincide in the same fiscal year obtains "net revenue changes." These net changes reflect turns of the economic cycle. Not surprisingly, years 1990 through 1993 and 2002 through 2004 saw remarkable net revenue increases as governments increased taxes and fees and cut programs; whereas 1996 through 2001 witnessed considerable revenue reductions.

Table 2 presents summary statistics for each of the sample years on the three key variables (BSF, GFB and total reserves) and three dependent variables (budget cuts, revenue actions and net revenue change). As indicated by the table, though states make budget cuts and raise taxes/fees in boom years, most of such budgetary changes, especially drastic ones, occur in recession years: over half of the states cut taxes and fees (made negative net revenue changes) each year between 1997 through 2001 and 24 states did so in 2001. In contrast, following the 1991 and 2001 recessions, fewer than five states made negative net changes; but over 70 percent of states raised taxes and fees (made net positive changes).

[Table 2 about here]

Table 2 further indicates that states employed different strategies in their response to the 1991 and 2001 recessions. After 1991 states tended to rely more heavily on tax/fee increases rather than spending cuts. In the years 1991-1994, the average size of budget cuts was just over $20 per capita, while the size of revenue actions was just over $37 per capita. Budget cuts were minimal in the years prior to 2002, which indicates that states employed budget cuts quickly for the 1991 recession, but appear to have waited somewhat longer to react to the 2001 recession. When state governments did react in 2002, they appear to have been reluctant to repeal their tax reductions (see also Johnson 2002) and more willing to balance budgets through cuts to spending. In 2002-2003 average annual budget cuts were approximately $41 per capita while average

revenue actions were just over $12. Since revenue increases tend to lag budget cuts, same year comparisons are not exact. An appropriate comparison would be to compare 2002 mean budget cuts (an average of $40 per capita) with 2003 revenue increases ($24). The reliance on budget cuts is striking.

The increasing preference for budget cuts over tax increases between 1991 and 2001 parallels changes in political attitudes toward taxes and spending. During this period, the Republican Party increasingly controlled state legislatures and governorships. Democrats had 1,542 more state legislators than Republicans in 1990, but only 288 more after the 2000 elections.[3] In the same period, elected officials came under increasing pressure to pledge not to increase taxes by conservative lobby groups such as Americans for Tax Reform, and were given a lesson on the political costs of reneging on such pledges when George H. W. Bush lost his bid for reelection after backtracking on his "no new taxes" pledge. Conservative political rhetoric increasingly portrayed tax cuts as an economic stimulus that was necessary during recessions. Given these political changes, budget cuts appeared an increasingly acceptable alternative to tax increases, and our comparison of the 1991 and 2001 recession provides some evidence that changing political preferences have impacted how state governments deal with revenue shocks.

Table 2 also shows a changing composition of fiscal reserves over the sample period, and the growing reliance on BSF as a tool of CCFC. Prior to the recession of the early 1990s BSF accounted for only 25 percent of the average per capita total reserves (in FY89). As states faced revenue shocks, GFB declined, from $81 in FY89 to $59 in FY90, and further to $31 by the end of FY 91. GFB was the primary defense against the revenue shocks of the early 1990s recession. BSF was a minor tool in relative terms. However, by the 2001 recession (end of FY01), BSF made up 43 percent of the $163 average per capita total reserves. Between FY00 and FY01,

[3] National Council of State Legislatures, http://www.ncsl.org/programs/legman/statevote/statevote2000.htm

GFB fell from $93 in 2000 to $68 when at the same time BSF remained essentially unchanged at $71. However, by the end of FY 2002, both BSF and GFB fell to the mid-30s. These numbers suggest that while GFB may have been relied on more during the early stages of the 2001 recession, because its unrestricted nature makes it easier to access quickly, both instruments provided a major contribution to CCFC. This represents a different pattern from the previous recession.

TESTING THE EFFECTS OF COUNTER-CYCLICAL FISCAL CAPACITY

In this section we examine how reserves are used to impact the dependent variables defined above: budget cuts, revenue actions, and the sum of both – net revenue changes. Data for these variables are published regularly by the National Association of State Budget Officers (NASBO) in its bi-annual *Fiscal Survey of the States.* Budget cut figures are available since fiscal year 1985 and figures of revenue actions are available since 1988. Our sample years are from 1985/88 to 2003. To operationalize the test, budget cuts and revenue raising actions are expressed as positive numbers because these are measures to increase state own-source revenue; while revenue decreasing actions are recorded as negative numbers. Both GFB and BSF data that come from the *Fiscal Survey of the States* are cleaned of double counting. [4] For states that do not have a BSF, reserves refer only to their GFB.

Methodology and Model Specification

[4] GFB figures in the *Fiscal Surveys* often include BSF balances. Not excluding BSF from these GFB figures will cause double counting. Specifically, California's BSF balance is reported to be negative in 1991 (-1,715 millions) and 2002 (-3,535 millions), both much larger than the negative balance of the GFB. In such cases, we turn the BSF into zeros and these larger negative balances to be the revised GFB. For more information, see California Code 16418 (d).

To test the effects of fiscal reserves on budgetary reactions, we use the panel-data method with state- and year-fixed effects. Alaska is excluded because it is an outlier in many aspects of fiscal behavior. The Prais-Winsten model is adopted to correct for auto-correlation. [5] All monetary figures are transformed into year-2000 per capita dollars. Our key variables of interest are fiscal reserves from previous years, BSF and GFB. Dependent variables are budget cuts in the current year, revenue raising actions for the next fiscal year, and net revenue change in the next year. For each of the three dependent variables, we first test the effects of the aggregate reserves, then the effects of BSF and GFB respectively. [6]

We choose four groups of controls: socio-economic factors, state tax structure, budgetary institutions, and state politics. Six variables are chosen to control for social and economic variation between the states. Per capita personal income (in thousands) captures effects of a state's wealth on its choice of reactions to revenue shortfalls, whether budget cuts or tax increases or both. Economic growth is the first-difference increase rate of real gross state product; it is to capture the effects of economic momentum on the dependent variables. Average annual unemployment rate captures the business cycle effect. Population (in millions) controls for the size of each state. Poverty rate controls for social services expenditures. And per capita general fund expenditure (in thousands) captures effects of a state's government size on its choice of fiscal reactions to revenue shocks.

[5] The annual balance of BSF and the annual GFB balance may be serially correlated, even after they are converted into per capita real levels. The Praise-Winsten model is chosen to correct for the serial correlation. For detailed explanation of the model, see S. J. Prais and Christopher B. Winsten, "Trend estimators and serial correlation," Cowles Commission Discussion Paper No. 383, Chicago, 1954.

[6] One caveat to keep in mind with this model is that it does not include state-specific recessions, and so changes in the dependent variables, while dependent on cyclical fluctuations, may also arise from other factors.

Different revenue portfolios may have influenced states' revenue fluctuations and thereby their actions in face of shocks. We introduce binary variables to indicate the use of the three most important tax types – personal income tax, corporate income tax, and general sales tax.

State budgetary institutions influence fiscal and budgetary practices the most. This paper pays special attention to this aspect. Of these institutions, balanced budget requirements (BBR) are among the most important in that they may necessitate budget cuts in years of unexpected revenue shocks followed by revenue raising actions in subsequent years. Four most frequently used BBR variables are (1) governor submitting, (2) legislature passing, (3) governor singing a balanced budget, and (4) no deficit carry-over into the next budget cycle. They have been used as controls in almost all studies of fiscal and budgetary issues. Recently Hou and Smith (2006) proposed a new, more elaborate framework of BBR which identifies nine BBR articles along a political-technical continuum. This framework carries the potential of more explanatory power. These nine articles are: (1) the governor must submit a balanced budget; (2) own-source revenue must match (meet or exceed) current expenditures; (3) own-source revenue and (unspecified) debt (in anticipation of revenues) must match (meet or exceed) current expenditures; (4) the legislature must pass a balanced budget; (5) a limit is in place on the amount of debt for deficit reduction; (6) the governor must sign a balanced budget; (7) mechanisms are in place to control supplementary appropriations or limit re-budgeting; (8) within-fiscal-year managerial controls are installed to ensure deficits are not to be incurred; and (9) no deficit carry-over is allowed. We include in our models eight of these indicator variables (with the first as the default comparison) to capture the effects of BBR on state revenue actions.

Besides BBR, we control for three other budgetary institutions. Statutory revenue limitations and expenditure limitations restrict state government's ability to increase tax or

expenditure in any given year. As a budgetary institution, revenue limitations are expected to have a negative impact on revenue raising actions, while increasing the likelihood that state governments will turn to budget cuts to achieve balance. Expenditure limits are likely to also discourage the need for revenue increases and increase pressure to cut spending when it extends beyond revenue. Of all the 50 states, about 20 still use biennial budget cycles. This practice is carried over from the old times of part-time legislators; some states keep it partly for the reason of potentially more stable financial operations. We control for this variation to capture its influence on budgetary actions in times of revenue shocks.

Among state politics, we control for the effect of a gubernatorial election year. Even in a time of revenue shocks, politicians may be more inclined to limit budget cuts and tax increases to improve reelection chances. Thus, we expect a negative sign for the election year dummy. The dummy variable Democratic governor distinguishes an incumbent Democratic Party governor from other parties. The divided government variable indicates that the majority of the state legislature is of the different party from the governor, which may render contentious political action such as budget cuts and tax raises more difficult. To control for historical and political traditions of states, we use the (Berry et al 1998) measures for citizen ideology and state government ideology. More details on variable definitions and sources are provided in the appendix. The full model is as follows:

$$\textbf{Budget cut}_{it} / \textbf{revenue action}_{it+1} / \textbf{net revenue change}_{it+1}$$

$$= \alpha + \beta_1 (\textbf{reserve}_{it-1}) + \beta_2 \mathbf{X}_{it} + \lambda_1 (\textbf{state}_i) + \lambda_2 (\textbf{year}_t) + \varepsilon_{it}, \text{ or}$$

$$= \alpha + \beta_1 (\textbf{bsf}_{it-1}) + \beta_2 (\textbf{gfb}_{it-1}) + \beta_3 \mathbf{X}_{it} + \lambda_1 (\textbf{state}_i) + \lambda_2 (\textbf{year}_t) + \varepsilon_{it}$$

I = 49 (Alaska is excluded as an outlier);

T = 19 (budget cuts); = 16 (revenue actions and net revenue change);

X is the matrix of control variables.

Effects of Reserves on State Reactions

Whether combined as aggregate reserves or as separate instruments, previously accumulated BSF and GFB are expected to exert negative influence on the dependent variables; that is, they reduce the magnitudes of budget cuts, revenue raising actions, and net revenue changes. Regression results as displayed in Table 3 show that all coefficients of these three key variables present the expected negative sign. The empirical evidence thus indicates that the presence of fiscal reserves in general seems to add to the operating certainty of state budgets. With these reserves in place, decision-makers are better able to avoid cuts to programs already being executed during the current fiscal cycle. The same reassuring effect is also seen in fiscal planning – the availability of reserves reduces the need for policy-makers to take revenue raising actions for the next fiscal year. The impact of fiscal reserves is also significant for the combined measure of revenue changes and budget cuts, the net revenue changes for the next year. The results are consistent whether the test is conducted without fixed effects, with only state-fixed effects, or even with Alaska included.

[Table 3 about here]

The magnitude of the effects of fiscal reserves, however, differs substantially among the planned revenue actions and unplanned budget cuts. A $100 reserve reduces unplanned budget cuts by five to six dollars (columns 1 and 2). The effects of reserves on planned revenue actions are more than double the impact on budget cuts: a $100 reserve reduces tax hikes by twelve to eighteen dollars (columns 3 and 4). Effects on net revenue change show that a $100 reserve can reduce the net change between fourteen and twenty-one dollars (columns 5 and 6).

This finding tells us that while fiscal reserves have a statistically significant relationship with middle-of-the-year spending cuts, the size of this impact is not especially large. When a recession hits, a state's revenue stream is adversely affected and the budgeted total revenue becomes an impossible target. As a result, decision-makers may have to immediately scale back programs to keep actual spending in line with revenues. In this process, fiscal reserves accumulated over past years help, but only by five to six dollars for each $100 of reserves. The reserves are more likely to be used when decision-makers plan for revenue actions for the next year. Put another way, reserves appear to offer a much better leverage against tax hikes in the next year than for program cuts in the current fiscal year.

Initially, this may not make intuitive sense. Since reserves are on hand, why can't state governments use them to avoid immediate cuts? There are two possible explanations. The first is caution under stress. During the early stages of a revenue shock, state governments may wish to use reserves sparingly out of a fear that the downturn may be prolonged or become worse. Recent research on the fiscal behavior of the state of Georgia during the 2001 recession supports this finding (Lauth 2003). The second explanation relates to political preferences. Emergency spending cuts may be seen as more politically and ideologically palatable than tax increases. As described in the previous section, such a preference for protecting tax cuts appears to have become more dramatic in recent years.

While these effects of reserves on current-year budget cuts are not particularly large, the results reveal differences between BSF and GFB. For middle-of-the year budget cuts, BSF is not statistically significant; that is, policy makers are "reserving" BSF for worse scenarios that may be on the way, while using GFB as the first line of defense (column 2). When budget makers plan for the next year, the comparative advantage, or real use of BSF comes to the forefront

(columns 4 and 6). This difference leads us to the question of whether BSF and GFB are really equivalent. As reserves, they should have the same effect on the budget, as previous studies have pointed out, but it is also reasonable to assume that the two types of fiscal reserves function differently. As discretionary reserves, GFB naturally serves as the first line of defense in cases of revenue shocks. BSF, on the other hand, are established as restricted reserves with its use subject to legislative approval, and may function less promptly than GFB. This finding confirms Hou's (2003) finding about the nature of BSF and GFB. The empirical results show that the relatively recent BSF have a larger effect on next-year budgets than GFB when controlling for other factors, suggesting that BSF are fulfilling their role of mediating these effects and providing the majority of the counter-cyclical fiscal capacity for states.

The control variables that are statistically significant suggest the following tentative interpretations. States with higher personal incomes are more likely to enact budget cuts and tax increases. A $1,000 difference in per capita personal income will lead to a variation of about $2.70 in current-year budget cuts, $8.90 in next-year tax increases, and $11.90 of net revenue change in the next year. This result echoes Joyce's (2001) argument that the amount of reserves each state maintains should be proportional to the composition of its revenue and expenditure portfolio. It suggests that richer states did not save enough to buffer recession effects; whereas less well-to-do states were less subject to dramatic swings in the business cycle. Further exploration of this question would require an investigation into the revenue volatility (tax elasticity) of each state's portfolios.

Economic growth, on the other hand, is shown to be the most solid buffer against budget actions, which makes perfect intuitive and theoretical sense. A one-percentage point increase in state gross product will reduce the need for current-year budget cuts by about $98, next-year

revenue action by nearly $356, and net revenue change in the next year by roughly $551. Vice versa, if the state economy goes the other direction, the reverse will be true. Unemployment is directly linked to current-year budget actions only. One percentage point increase in the unemployment rate triggers a budget cut of a little over $4 per capita in the same fiscal year. Why its effect on future revenue actions is not significant needs to be explored. Poverty rate and general fund expenditure are negatively associated with next-year budgets, significant on revenue actions but not on net revenue change. The negative sign is not expected; probably it is because the planning part has taken into consideration the social needs and the scale of expenditure. Further research is needed for better explanations.

Among the budgetary institutions, legislature passing a balanced budget is significant on planned budget actions. Presence of this article can reduce the magnitude of tax increases by about $42. The requirement of own-source revenue plus debt meeting expenditures can reduce the need for tax increase by over $50. Governor signing a balanced budget shows the expected negative sign but is significant only in one case. Revenue limits are positively related to revenue actions planned for the next year. When encountered with revenue shocks, governments with statutory revenue limits may have been forced to raise their next-year revenue by over $20 per capita. States with biennial budget may need to cut their current year spending by about $10.

We do find that election years are negatively and significantly related to budget cuts. Ceteris paribus, the presence of an election year in our analysis reduced budget cuts by about four dollars. This is consistent with our expectations that elected officials will be reluctant to make painful budget cuts immediately prior to an election. Citizen ideology is positively related to current-year budget cuts, while government ideology is positively related to planned budget

actions. These, however, are not consistent over the models; more detailed analysis is warranted for any further interpretation.

CONCLUSION

In this article we have examined the concept of CCFC, and focused our attention on fiscal reserves. We conclude by summarizing key findings, discussing caveats and identifying future research possibilities. While fiscal reserves have been popular since the 1980s, they have been largely unconsidered in the growing literature on performance in governance systems. The broader area of financial management has also been generally absent from this literature, as public sector researchers are more likely to seek to understand performance in policy areas such as education, criminal justice and social policy (e.g. Meier and O' Toole 2002; Nicholson-Crotty and O' Toole 2004; Bloom et al. 2003). But financial management programs have a purpose, and the capacity-performance link is clearer and less ambiguous with such tools than in many areas of public management. We therefore argue that the area of financial management would benefit from a greater application of the capacity-performance theoretical framework. We believe that this development would prompt researchers to ask some of the key questions (Does capacity link to performance? When? How? How much?) currently being addressed in mainstream public management (Boyne et al. 2007; Ingraham and Lynn 2005; Lynn and Heinrich 2000; Lynn, Heinrich and Hill 2000).

By asking such questions, this article offers a number of interesting findings on how reserves are used by state governments in their efforts to deal with revenue shocks. The standard caveat that empirically observed correlation does not equal causation applies here. Bearing this caveat in mind, the results offer support for the role of these reserves to act as a form of CCFC

that improves performance in two ways: first, by enabling public spending and avoiding tax cuts during recessions, at a time when the economy is weak and many citizens need additional government support. Second, reserves disrupt emergency cuts in spending, providing a measure of stability in program delivery.

The finding of small coefficients suggests that reserves have a statistically significant relationship with the budget cuts and revenue actions, but this impact is not very large. Instead, state fiscal policy is largely driven by the revenue stream and business cycle, rather than the other way around. When own-source revenues are sluggish, states will make middle-of-the-year expenditure cuts and plan tax/fee increases for the next year. The magnitude of the effects of reserves, however, is much larger for planning for the next fiscal year than for emergency budget cuts. That is, fiscal reserves are more prominent in pre-planned budgetary reactions to revenue shocks than for unplanned measures.

We also see differences in how state governments deal with revenue shocks between the 1991 and 2001 recessions. During the earlier recession, state governments were more likely to limit emergency spending cuts, while in later years there was a greater tendency to avoid tax/fee hikes. Both fiscal tools – mitigating tax hikes and mitigating spending cuts – are counter-cyclical in their nature. However, from a public management perspective, mitigating emergency spending cuts has the added advantage of maintaining program stability by avoiding unexpected cuts in the flow of program resources in the middle of the fiscal cycle. A policy recommendation that emerges from our analysis – but appears to run counter to current state government preferences for the use of reserves – is that state governments recognize the dual benefits of limiting emergency spending cuts, and be more willing to use reserves for this purpose.

The article also adds to our understanding of the evolution of fiscal reserves since the wide adoption of BSF in the 1980s. BSF have increasingly come to be relied on by states to limit budget cuts and avoid tax increases, but our analysis finds that GFB still plays a significant role in CCFC. The choice between BSF and GFB as a budgetary strategy relates to the nature of the two instruments. GFB is at the discretion of policy makers. Because of this flexibility, GFB acts as the first line of defense. BSF are restricted reserves under legal constraint intended to protect against boom-year spending pressure. Any use of BSF takes more time as legislators follow preset procedures; even so, it is an effective tool in the case of revenue shocks, increasingly relied upon by state governments.

We find that statutory revenue and expenditure limitations have little impact on state's fiscal decisions with regard to their use of funds. This finding provides further support to the conclusions of Mullins and Wallin (2004), who survey previous studies of these budgetary rules. One possible reason for the weak impact of statutory tax and expenditure limitations is that many of these rules are "on the books" but routinely ignored. A useful direction for future research would be to differentiate between formal but inconsequential tax and expenditure limitations and those which offer real constraints. A similar research issue that this article raises but does not resolve is how variation between financial rules that shape the size and use of reserves impact CCFC, emergency spending cuts and revenue actions. Some research already exists that suggests that structural differences in the operation of rainy-day funds impacts fiscal performance (Douglas and Gaddie 2002; Knight and Levinson 1999; Sobel and Holcombe 1996 Wagner and Elder 2005). Including measures of such variation would add greater depth to the empirical results presented here by taking into account that there are differences in how rainy-day funds operate across the states.

Another potential application of our model and tools is to European Union (EU) member countries and prospective members. Efforts to integrate the EU economy and currency have led to specific rules designed to enforce budgetary discipline while removing some of the traditional fiscal tools these nations once enjoyed (e.g., currency devaluation and tariff policies). These changes have made the fiscal capacity challenges faced by EU states similar to those experienced by US states.

As governments seek different ways to improve public performance, the case of reserve funds as a form of public management capacity has some curious properties. All too frequently policy-makers and researchers have great difficulty in establishing a clear link between government action and outcomes, but this is not the case here. Reserve funds have a clear and logical relationship with the goals of avoiding tax increases during recessions and reducing emergency budget cuts. This analysis finds empirical support for this relationship. In short, reserves work: they mitigate the need to raise taxes and make emergency cuts to spending during a recession.

The curious aspect is that a predictable capacity-performance relationship has not received further support and investment by policymakers. Joyce (2001) wisely cautions that reserve funds should be contingent on the particular level of volatility in the state economy, but our analysis reveals that on aggregate reserve funds are not of sufficient size to overcome the effects of serious revenue shocks. During boom periods governments do not save adequate amounts to avoid the need to make emergency expenditure cuts or raise taxes/fees when the business cycle turns negative. One relatively straightforward policy recommendation, therefore, is for state governments to consider building up reserves that will be equivalent to the fiscal challenges that they will face during economic downturns. Given the inability of state

governments to carry deficits, reserves are the only counter-cyclical fiscal tools on hand to influence, rather than be subject to, the revenue roller-coaster ride of the business cycle.

Of course, there are opportunity costs of setting aside money for an indefinite period, and the political process is effective at identifying alternative uses of unspent revenues. Politicians, and the public, may grow concerned about maintaining large reserves that could be spent or returned to taxpayers, and underestimate the relevance of such funds as the last recession recedes from memory. However, as has been shown elsewhere, state governments can design effective financial rules that guide the funding and spending of BSF to a set of pre-established guidelines (Douglas and Gaddie 2002; Hou et al. 2003), and more generally Posner and Gordon (2001) have shown it is possible for other countries to follow self-imposed restrictions that allow them to save surpluses. The question, therefore, is not that fiscal reserves link to performance – they do – or whether states can devise rules to create CCFC – they can – but whether they have the political will to do so (Gold 1995). It will probably not come as a surprise to students of administrative history that even proven capacity-performance relationships will struggle for recognition against countervailing political tendencies.

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Table 1: Summary Statistics of Major Variables

	Fiscal Reserves			Budgetary Responses to Revenue Shocks		
Variable	Budget Stabilization Fund	General Fund Balance	Total Reserve	Budget Cut	Revenue Actions	Net Revenue Change
Sample Years	1985-2003	1985-2003	1985-2003	1985-2003	1988-2003	1988-2003
# of Observations	930	931	930	950	800	800
Mean	$32.69	$62.86	$95.62	$13.77	$9.94	$23.80
Standard Deviation	51.69	91.94	111.17	33.74	55.24	67.56
Minimum	0	-369.78	-369.78	0	-299.36	-289.89
Maximum	461.17	798.02	798.02	543.59	419.58	422.69

Notes:
1. Data are from the *Fiscal Survey of the States* series, published by NASBO.
2. All financial figures are in real (year-2000) per capita dollars.
3. Alaska is excluded because it is an extreme outliner with its budget stabilization fund and general fund balance.

Table 2: Summary Statistics of Major Variables by Year

Fiscal Year	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Dep. Variable	Budget Cut																		
Mean	$1	$10	$29	$7	$5	$16	**$36**	**$26**	**$13**	**$6**	$4	$11	$4	$3	$1	$0	$7	**$40**	**$42**
Positive/	3	16	23	11	12	19	28	35	22	10	8	12	7	2	3	1	17	36	42
Dep. Variable	Revenue Actions																		
Mean				$26	$6	$32	**$39**	**$53**	**$22**	**$28**	$2	-$11	-$11	-$9	-$21	-$9	-$13	**$1**	**$24**
Positive/Negative				27/9	14/12	30/8	26/7	31/4	28/3	24/3	16/20	8/28	7/27	11/30	3/32	11/30	8/27	14/15	24/7
Dep. Variable	Net Revenue Change (Budget Cut + Revenue Actions)																		
Mean				$33	$10	$48	**$75**	**$78**	**$35**	**$34**	$6	$0	-$6	-$6	-$20	-$8	-$5	**$42**	**$66**
Positive/Negative				35/6	20/9	32/8	38/3	42/2	37/2	31/2	19/18	15/24	11/27	12/29	5/32	12/29	12/24	36/4	43/3
Key Variable	Budget Stabilization Fund Balance																		
Mean	$18	$16	$26	$27	$27	**$16**	$12	$10	$15	$20	$27	$31	$39	$61	$65	$70	**$71**	$35	$33
Key Variable	General Fund Balance																		
Mean	$71	$55	$55	$74	$81	**$59**	$31	$38	$46	$64	$60	$74	$84	$95	$80	$93	**$68**	$33	$33
Key Variable	Total Reserves																		
Mean	$89	$71	$81	$102	$109	$75	$44	$49	$60	$85	$87	$104	$124	$157	$145	$163	$139	$68	$66

Notes:

1. Financial figures are per capita year-2000 dollars.
2. Figures of "positive/negative" show number of states taking actions to increase (positive) or decrease (negative) taxes and fees.
3. Alaska is excluded because it is an extreme outliner with its budget stabilization fund and general fund balance.

Table 3: Effects of Reserves on State Responses

Column	1		2		3		4		5		6	
Dependent Variable	**Budget Cuts $_t$**				**Revenue Actions $_{t+1}$**				**Net Rev Change $_{t+1}$**			
	Coef	**Std Err**	**Coef**	**Std Err**	**Coef**	**Std Err**	**Coef**	**Std Err**	**Coef**	**Std Err**	**Coef**	**Std Err**
Reserves $_{t-1}$	*** **-0.05**	0.01			*** **-0.14**	0.03			*** **-0.16**	0.03		
BSF $_{t-1}$			-0.02	0.02			*** **-0.18**	0.05			*** **-0.21**	0.06
GFB $_{t-1}$			*** **-0.06**	0.01			*** **-0.12**	0.03			*** **-0.14**	0.04
Socio-Economic Controls												
Per capita income (,000)	** **2.69**	1.36	** **2.67**	1.36	*** **8.89**	3.14	*** **8.88**	3.14	*** **11.92**	3.88	*** **11.92**	3.88
Economic growth	*** **-98.31**	39.23	** **-97.95**	39.22	*** **-355.48**	92.44	*** **-355.85**	92.51	*** **-550.50**	109.84	*** **-550.92**	109.87
Unemployment rate	*** **4.24**	1.09	*** **4.09**	1.09	1.45	2.45	1.81	2.48	2.28	2.98	2.76	3.01
Population (million)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Poverty rate	-0.05	0.51	0.00	0.51	* **-2.00**	1.15	* **-2.12**	1.16	-1.80	1.38	-1.96	1.39
Per capita expenditure (,000)	11.12	7.26	11.32	7.26	* **-29.69**	16.14	* **-30.01**	16.17	-6.41	19.80	-6.82	19.83
State Tax Structure												
Personal income tax	0.52	40.26	3.06	40.27	25.85	169.80	35.89	96.58	1.08	210.63	-11.83	119.84
Corporate income tax	-16.56	37.00	-13.19	37.05	dropped		-24.64	88.80	dropped		-8.61	110.02
General sales tax	-21.60	22.25	-17.84	22.41	-29.54	167.80	-34.59	168.26	-73.48	208.06	-81.89	208.59
Balanced Budget Requirements												
Own-source revenue match expenditu	10.07	16.05	10.68	16.04	20.16	35.10	19.68	35.16	12.78	42.92	12.12	42.97
Own-source revenue plus debt meet e	6.21	11.60	5.60	11.60	** **-54.57**	23.92	* **-53.24**	24.02	* **-49.12**	29.81	-47.33	29.91
Legislature pass balanced budget	-1.01	7.00	-0.44	7.01	*** **-42.13**	13.51	** **-42.92**	13.57	*** **-42.66**	16.81	*** **-43.78**	16.87
Limit on debt for deficit reduction	16.75	17.65	17.86	17.66	1.56	53.63	-0.39	53.78	61.26	66.07	58.60	66.21
Governor sign balanced budget	-22.49	15.64	* **-27.12**	16.00	-12.17	29.50	-5.53	30.44	-55.64	36.67	-46.38	37.78
With controls on supplementary appro	-2.40	6.85	-3.07	6.86	8.24	14.36	9.31	14.43	5.22	17.84	6.71	17.93
Within FY controls in place to avoid de	0.64	5.79	0.83	5.79	-9.32	12.10	-9.85	12.13	-8.94	14.97	-9.63	15.00
No deficit carry-over	-3.37	11.09	-2.28	11.11	13.54	21.68	11.78	21.81	24.18	26.92	21.74	27.06
Other Budgetary Institutions												
Revenue limit	-1.53	4.68	-1.59	4.68	** **20.21**	9.21	** **20.30**	9.24	** **23.93**	11.48	** **24.05**	11.50
Expenditure limit	3.47	4.52	3.01	4.53	-8.99	9.26	-8.23	9.31	-7.99	11.49	-6.96	11.55
Biennial budget	** **9.65**	5.04	** **10.02**	5.05	-3.69	10.60	-4.00	10.62	-1.41	12.98	-1.85	13.00
State Politics												
Election year	** **-4.07**	2.03	** **-4.05**	2.03	-6.18	5.41	-6.36	5.41	-3.62	6.31	-3.83	6.31
Democrat Governor	5.70	3.63	5.69	3.63	-6.34	7.65	-6.32	7.67	-7.24	9.38	-7.19	9.39
Divided Government	-0.59	2.04	-0.49	2.04	1.44	4.23	1.23	4.24	-1.75	5.20	-2.03	5.22
Citizen ideology	*** **0.47**	0.19	*** **0.48**	0.19	-0.37	0.44	-0.38	0.44	-0.26	0.53	-0.27	0.53
Government ideology	-0.16	0.10	-0.17	0.10	*** **0.57**	0.22	0.58	0.22	** **0.62**	0.26	* **0.63**	0.27
# of observs	832		832		734		734		734		734	
Adjusted R-squared	0.18		0.18		0.28		0.27		0.29		0.29	

Notes:

1. Data are from the *Fiscal Survey of the States* series, published by NASBO.
2. Reserves, BSF and GFB figures are all in real (year 2000) per capita dollars.
3. Regressions are run with the Prais-Winsten model, state- and year-fixed effects.
4. The reported R-squared is for the overall model. The within-state R-squared is higher.
5. Significance levels are: *** p < 0.01, ** p < 0.05, and * p < 0.10.
6. Alaska is excluded as an extreme outlier.

Appendix: Variables Used in the Tests

Name	Definition	Data Source
BSF	Actual BSF balance by end of fiscal year in real year-2000 per capita dollars	*Fiscal Survey of the States*
GFB	Actual general fund balance (cleaned for double counting of BSF) by end of fiscal year in real year-2000 per capita dollars	*Fiscal Survey of the States*
Reserves	= BSF + GFB	
Personal income	Per capita personal income in thousands in year-2000 dollars	Bureau of Economic Analysis
Economic growth	Annual growth rate of real gross state product	Bureau of Economic Analysis
Unemployment rate	Average annual unemployment rate	Bureau of Labor Statistics
Population	Total state population in millions	Census Bureau
Poverty	State poverty rate	Bureau of Economic Analysis
Expenditure	Per capita general fund expenditure of state government, in thousands	Census and NASBO, calculated by authors
Personal income tax	Dummy, 1 for adoption and 0 otherwise	Tax Foundation *Facts and Figures*
Corporate income tax	Dummy, 1 for adoption and 0 otherwise	Tax Foundation *Facts and Figures*
General sales tax	Dummy, 1 for adoption and 0 otherwise	Tax Foundation *Facts and Figures*
Balanced budget requirements	Nine features	Hou and Smith 2006
Revenue limit	Tax limitation dummy	Mullins and Wallin 2004
Expenditure limit	Expenditure limitation dummy	Mullins and Wallin 2004
Biennial budget	State government follows two-year budget cycles, dummy	*The Book of the States* series
Election year	Gubernatorial election year, dummy	*The Book of the States* series
Democratic governor	Governor is a member of the Democratic party, dummy	*The Book of the States* series
Divided government	Governor and the majority of state legislature are of opposite party, dummy	*The Book of the States* series
Citizen ideology	Index of 1-100	Berry et al 1998
Government Ideology	Index of 1-100	Berry et al 1998