THE DETERMINANTS OF THE STRUCTURE OF RAINY DAY FUNDS

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Abstract: This paper investigates the factors that determine the configuration of rainy day funds along their two most important dimensions, deposit and withdrawal requirements. Most states in the United States have created budget stabilization funds (or rainy day funds) to accumulate savings that would allow them to reduce the impact of adverse fiscal conditions. However, it has been shown that the effectiveness of these funds greatly depends on their institutional structure and that most states choose configurations that compromise the efficacy of the fund. Using multinomial discrete techniques, and introducing the ordered nature of the requirements in the analysis, our results indicate that political and institutional factors, like size of the House and some strict institutions are associated with weak (less effective) budget stabilization funds, while some economic factors -such as the volatility of state tax revenues are associated with stricter funds.

Key words: rainy day funds, budget stabilization funds, adoption, states

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1. Introduction

State legislatures have constrained themselves through history to prevent the functioning of a democratic system from negatively affecting finances in the presence of an ever changing and, to some extent, unpredictable environment. Budget stabilization funds (BSFs henceforth), also known as rainy day funds (RDFs), are a relatively new addition to the set of tools states have at their disposal to face the fiscal pressures brought about by business cycles. BSFs can help states smooth consumption by serving as receptacles for savings to be used in times of economic distress. However, not all RDFs are equally effective. Their structure, in terms of the rules that control the deposit and withdrawal of funds from the fund, has repeatedly been shown to have important consequences for their effectiveness. The choices states make regarding the configuration of their BSFs are, therefore, not innocuous. We use a categorization based on the stringency of the rules that dictate how funds in the RDF enter and leave the fund to analyze why some states adopt very demanding RDFs in terms of the rules for deposit and withdrawal, while others prefer more relaxed regulations.

RDFs are just one of the tools states have at their disposal to reduce the negative effects of economic downturns, but their importance becomes apparent once we examine the alternatives closely. The same institutions that are meant to stimulate responsible fiscal behavior restrict the usage of debt for business cycle smoothing, leaving four main options open to state officials: increasing taxes to match spending needs, reducing spending in accordance with the decrease in means, using fiscal gimmicks, and depleting previously stored resources. The use of moneys from BSFs falls in this last category.

The first of the four solutions mentioned above calls for increases in taxes to meet spending demands. This may be unattractive for election-bound officials, and some states have enacted tax limitations, which reduce the potential of this venue in times of crises. Spending cannot be easily downsized to match decreased revenues: states have become increasingly responsible for the provision of care for needy citizens, and these obligations only grow during economic hardships; moreover, reduction of state spending in such times can also impede the recovery of the economy.

Fiscal gimmicks and one-time cash solutions can temporarily correct budget problems, but they do not address the problems behind the deficits. Furthermore, these tricks can have worrisome long-term consequences, and they become scarcer as time goes on and are always cosmetic operations, not fit as long-term solutions.

Since the restrictions governments face in terms of balanced budget rules are stock in nature, states are not required to maintain spending and revenues at the same level at all times, leaving savings (such as those stored in BSFs) as a viable alternative (or complement) to smooth out consumption over the business cycle. States can save in other funds aside from the BSF, and in the next section we discuss the factors that set apart these funds from the general fund. These differences can turn BSFs into relatively ineffective policy tools or significantly increase the state's capacity to weather adverse economic conditions.

This paper proceeds as follows. Section 2 describes the characteristics of the funds; Section 3 presents a series of potential determinants for the choice of configuration of the BSFs; Section 4 discusses the empirical strategy and the results, and Section 5 concludes.

2. Characterization of Budget Stabilization Funds

What exactly constitutes a BSF is not unambiguously clear, as the disagreement over the nature of some funds demonstrates.[1] The definition we use in this paper runs parallel to that most commonly used in the literature:[2] in rough terms, BSFs are institutionalized budgetary tools that allow for the accumulation of funds during expansions for use during recessions. According to this definition, there are currently five states without an RDF: Alabama,[3] Arkansas, Colorado,[4] Montana and Oregon[5].

As shown in table 1, BSFs did not become commonplace until after the mid-1980s, although dates of adoption vary substantially. Earlier studies of BSFs placed much emphasis on the "lesson effect" of the crisis of the 1980s, often thought to be the cause of the cascade of BSF adoption. However, more recent research (Wagner and Sobel (2006)) suggests that this explanation may be too simplistic and overlook other factors, such as the changes in the set of restrictions and fiscal tools available to states that occurred during that period.

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[1] Two clear examples are *Alabama's Education Proration Prevention Fund* (noted as a rainy day fund by the National Association of State Budget Officers, but not by most of the literature due to its restrictive scope) and Colorado's *Required Reserve* (considered as a rainy day fund by both NASBO and several authors in the literature, but not by policy makers in Colorado, who repeatedly initiate petitions to amend the state's Constitution to provide for a rainy day fund).

[2] The point where we deviate from the literature is excluding Colorado from the list of states with BSFs. The reasons for this elimination are several exchanges with officials and policy analysts in Colorado who consider the state as lacking such funds, and the careful study of state documents regarding the Required Reserve.

[3] Alabama set up a reserve fund, but its resources can only be used for education so it is not considered a budget stabilization fund by most of the literature.

[4] Colorado has only a small emergency fund that cannot be accessed to meet economic downturns since it is reserved mainly for natural disasters. State Treasurer Coffman and Poulson, among others, are making strong calls for a significant BSF in Colorado that would fit the state's special framework, ruled by the presence of Colorado's Taxpayer's Bill of Rights (TABOR). See Coffman's *A Rainy Day Fund for Colorado, Treasure E-notes, January 2002.*

[5] In 2008, Oregon set up an *Education Stability Fund*. Like Alabama's, its resources can only be used for education, so it is not considered here to be a BSF.

By establishing and funding a BSF, states may increase the amount of assets at their disposal during a crisis,[6] providing a cushion that can be used as an alternative or complement to other fiscal strategies. It is important to note that BSFs have certain characteristics that make their operation intrinsically different from the general fund surplus.[7] Furthermore, the structure of RDFs (which has important implications for their effectiveness) varies significantly across states.

Navin and Navin (1994) concluded that BSFs acted as countercyclical tools in only three of the Midwestern states. Sobel and Holcombe (1996) and Douglas and Gaddie (2002) consider the ability of a BSF to reduce fiscal stress during crises, and conclude that the structure of the BSF is crucial for its effectiveness –while the mere existence of a BSF has no real effects.[8] McGranahan (2002) and Zahradnik and Ribeiro (2003) find that the existence of BSFs helps states weather recessions, but remark that an appropriate configuration could significantly improve their effectiveness. Moreover, Gonzalez and Paqueo (2003) conclude that funds ruled by stringent requirements accumulate higher balances and reduce social sector expenditure volatility, and Knight and Levinson (2000) and Wagner (2003) find evidence suggesting that states with funds that operate under strict rules save more and receive better bond ratings, which makes future borrowing less costly for the state.

Deposit and withdrawal requirements are arguably the most important characteristics of RDFs. As "gates" for the resources as they move in and out of the fund, they are key in

[6] Knight and Levinson (1999) find that states with BSFs have more savings than those without funds and, furthermore, they save more after the adoption of these funds than they did previously.

[7] "Budget Stabilization Funds should not be combined with general fund ending balances because these funds serve two different purposes and they generally are not interchangeable… Nevertheless, both serve a similar purpose and should be reported as resources available to a state" Fiscal Survey of the States (NASBO, July 1985), pp 18.

determining its success as a stabilizing tool and we examine them in more detail now. Table 2 contains information on the deposit and withdrawal requirements of the funds in each state, and table 3 offers a compact view.

Rules to control the flow of money in and out of the fund are often written in the constitutional or statutory rule that establishes the RDF as part of the budgetary structure of the state, although in some cases no specific provision is made.

These rules vary in the degree of freedom given to policy makers in their decision to deposit or withdraw funds. For example, very weak deposit rules do not require contributions to be made to the fund and leave the time and amount of deposits up to discretion of the policy maker. In contrast, other RDFs explicitly present regulations that specify the circumstances in which deposits ought to be made to the fund as well as the specific amount to be contributed.

Wagner (2004) classified deposit and withdrawal requirements according to the strictness of the rule from one to four, with higher numbers depicting stricter requirements, as follows:

[8] Sobel and Solcombe (1996) find that BSFs with strict deposit requirements reduced fiscal stress, while the effectiveness of BSFs was not affected by the nature of its withdrawal requirement.

Deposits	Withdrawals
1) Through appropriation, at the discretion of the policy maker. Under this configuration, BSFs look a lot like the general fund and many elements of substitutability between the funds are introduced.	1) Through appropriation, at the discretion of the policy maker. A BSF where legislatures can access funds freely is as open to political raid as the general fund, and in this respect constitutes only a formal distinction between the two.
2) Deposits happen if there is a surplus in the budget. In practice, this option may be very similar to (1), since the existence of surplus in the budget is a decision largely in the hands of budget crafters.	2) In the event of a revenue shortfall. Although more restrictive than (1), this rule permits access to funds whether or not there is serious fiscal stress since revenue shortfalls can be triggered in a variety of ways, including cuts in taxes.
3) Fixed deposit, based on formulae tied to different parts of the budget (the most popular are linked to percentages of revenues or spending).	3) Supermajority approval is required for withdrawal.
4) Deposits based on rules tied to economic growth (usually regarding the portion of the excess in the general fund to be deposited).	4) Withdrawal is conditional on formulas tied to economic decline.

3. Factors influencing the choice of BSF configuration

Uncertainty about the future of the economy is at the core of the decision to establish a BSF: if perfect forecasting of cycles were possible, state officials could plan accordingly and smooth out consumption by saving in good times and running their reserves down during perilous times. This would not be politically taxing because it would be easy to justify both behaviors to the public under the light of the predictable nature of the state's economic cycle. However, even with state budget officers devoting much effort and resources to getting good forecasts of revenues and expenditures, these are at best good approximations that tend to get worse as the time horizon is extended and usually fail to foresee sharp downturns in state finances. We discuss some economic factors, such as increased income volatility, uncertainty or need may raise the optimal level of savings for the state, which may make a strict BSF desirable.

The second source of uncertainty comes from the political process. The desire to remain in office, paired with the fact that state budgets often finance targeted public policies, may translate into an effort to please voters at the cost of shortsighted policies, or the conscious effort to set up an unfavorable environment for the successor if he happens to be of the opposite party. In either case, these non-economic objectives have the potential to create incentives for suboptimal fiscal choices.[9]

For the choice of BSF configuration, then, economic uncertainty calls for increased savings in the spirit of life-cycle models, which –in the presence of incentives for overspending- may make institutionalized forms of savings attractive. In addition, political uncertainty creates incentives for policy makers to consume resources while in power in a common pool problem fashion. If those who draft BSF-like funds want to reduce the effects of political uncertainty, strict rules may be an attractive feature. On the other hand, weak RDFs may be used as a means to accommodate political needs, making weak funds more enticing.

Other factors, such as the socio-economic configuration of the state and the existing set of institutions can strengthen or weaken either motive. It is important to consider the effects other institutions may have had in the decision to establish a certain type of BSF, since an analysis that omits these interactions is likely to provide an incomplete, or even misleading, picture. For example, BSFs could be used as means to avoid the budget rigidities imposed by other restrictions, such as balanced budget requirements or tax and expenditure limitations. Alternatively, BSFs could introduce needed flexibility in a system that may have become too rigid. RDFs would then be part of a process of

[9] Poterba (1994) finds that in gubernatorial election years states enact less tax increases and expenditure reductions, and Velasco (2000) presents a model in which government resources are viewed as common

"recursive institutional change" in state finances, rather than an institution designed to nullify others.

To analyze the choice or RDF characteristics empirically, we use a panel dataset with information for all states that adopted such funds in the period 1951-2000 (the last year in which an adoption occurred). Since our primary focus is to investigate the determinants of the configuration choice, not why they adopt one (see Wagner 1999 for an interesting study on the issue) we include only states that adopt a BSF during our sample period. After a state adopts a fund and establishes its preferred configuration, no further observations from the state are included in the sample.[10] Seven states are excluded from our sample: Alabama, Arkansas, Colorado, Montana and Oregon (because they do not currently have a BSF), Alaska (due to the very particular nature of its BSF) and New York (which adopted its RDF before 1951).

The data used to approximate the elements that we postulate may have had an effect on the process of adoption of these BSFs are listed at the end of this section, grouped in three main categories: political, socio-economic, and institutional factors.

The political science literature suggests several variables that may be of importance. States with larger upper houses spend more, which could result in a desire for weakly configured BSFs to allow easy access to funds. On the other hand, there is no clear result that links partisan composition to spending, leaving the relationship between the composition of the houses and the nature of BSFs as a matter open for empirical investigation. There is, however, evidence suggesting that the political affiliation of the

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property. Under these circumstances, he finds that fiscal deficits and excessive debt emerge.

[10] This simplifies the empirical analysis, since it prevents the potential simultaneity bias that would occur if we were to include after-BSF years, when some of the regressors may be affected by the existence of the

governor (independently and jointly with the legislature's) and the existence of term limits for governors have real fiscal effects. Lastly, appointed State Supreme Courts are thought to be more lenient, because appointed judges may be more amenable to deviations from the rule, which would make strict BSFs rules less demanding in real terms and hence less politically constraining.

Among the socio-economic variables, we use the yearly deviation from the national mean of per-capita personal income as a measure of the state's general economic condition. To investigate the effects of the state´s sector composition, we introduce the proportion of total earnings in construction, farming, manufacturing, mining and services. The effects of state's population density are unclear: a state that has to cover the public expenditure demands of a larger population may find BSFs more attractive, an effect reinforced by the public-good component of savings in the RDF. However, larger states have been found to have less volatile business cycles, so they may find strict BSFs less appealing. Beyond their income and population, we expect states engaged in volatile spending to be in greater need for easily accessible savings, a fact that may be reflected in the type of BSF they adopt. We consider each spending type's mean standard deviation and classify the six types of expenditure in three categories (high, medium and low volatility).[11] On the other hand, we might expect states with volatile tax revenues to be

fund. The assumption does not stray far from reality, since only Ohio has changed the requirements of its BSF, and the procedures to change the configuration of a BSF can be quite cumbersome.

[11] After applying the GDP deflator and calculating the overall average standard deviations, we can see that the magnitudes of the standard deviations are similar within groups and considerably different across groups, so the choice of three groups with two components seems reasonable. Education and welfare spending are the most volatile group, while expenditure in highways and health and hospitals fall in the middle category, and unemployment compensation and spending in natural resources are the relatively least volatile expenses. Although it may seem counterintuitive that education belongs in the most volatile group, we must note that capital spending in education is included in this category, which explains its variability.

more inclined to establish strict funds. As with spending, we include tax collection by grouping the different types of taxes according to their levels of volatility.[12]

Tax collections are the most important source of income for states (although their share has decreased), followed by intergovernmental revenue (IG). IG revenues include local and federal transfers (with the latter making up about 95% of the total[13]) and are mostly outside of state control. IG revenues are likely to decrease during periods of crises, when states need resources the most. IG finances are included in the analysis by calculating the deviation from the national mean of the per capita net IG transfers (revenues minus expenses).

State savings can also affect the choice of structure for RDFs. States that maintain easily liquefiable resources may consider the need to establish a stringent fund as less pressing. On the other hand, it may be possible that states that decide to have more savings in the form of cash and securities have a preference for sound savings, and would be more inclined to establish strict funds. Since it is difficult to establish, intuitively or theoretically, a predicted sign for the relationship between other savings and the nature of BSFs, it remains a question best answered empirically.

Aside from using reserves, states can increase the resources they raise from taxation. However, states that exert higher levels of tax effort will have less room for tax increases, making meaningful BSFs more attractive. On the other side of the spectrum, our a priori expectation is that states with higher levels of debt will be, all else constant, more inclined to establish demanding BSFs, since it would be relatively more costly for them

[12] The percentages of tax income that come from severance and property taxes are grouped in the "most volatile" category, while the percentages received from sale and individual income taxes form the "least volatile" category. The percentage of tax revenues derived from corporate income taxes corresponds to the "middle volatility" group, which is used as baseline.

to go further into debt. However, high levels of per capita debt may be correlated with a higher tolerance for debt in the state, which could offset the aforementioned effect. The final effect of indebtness on BSF rules is then left to empirical investigation.

Among the institutional constraints, tax and expenditure limitations (TELs) restrict the state's ability to cope with recessions through direct action, which may make meaningful BSFs more attractive. Alternatively, RDFs may be seen as a way to put funds outside of the scope of the TELs, allowing for wider discretion in spending decisions, a proposition for which Wagner and Sobel (2006) find supporting evidence. We have explored different alternative measures of TELs, using dummies for the existence of each of these limitations as well as Poulson's (2005) indexes of TEL strictness. Another important institutional constraint is given by the existence of balanced budget requirements (BBR). States with demanding BBRs enact more restrictive spending policies (Poterba (1994)), fare better in deficit control (Alesina and Bayoumi (1996)), are more likely to enact tax increases and spending cuts during recessions (Alt and Lowry (1994)) and tend to save more (Bohn and Inman (1996)). But strict BBRs also introduce rigidities in fiscal policy (Lowry and Alt (2001)) and may exacerbate business cycle volatility (Levinson (1999)). Demanding BBRs make meaningful BSFs more appealing, since intertemporal smoothing becomes more difficult. The last institutional factor is embedded in the BSFs themselves. Their legal nature (statutory or constitutional) can also play a role on the configuration of deposit and withdrawal requirements. Constitutionally established budgetary tools allow decision makers less freedom when establishing the particulars of the law and have been shown to have stronger effects on fiscal policy than their statutory counterparts.

[13] As opposed to IG expenses, where local IG spending makes for most of the total expenditure.

List of control variables

Variable	Source
Political variables	
Number of seats in upper House	ICPSR study #0016, Statistical Abstracts of the US, Minnesota Legislative Reference Library.
Number of seats in lower House	
% seat gap between main parties (Upper House)	
% seat gap between main parties (Lower House)	
Democratic Governor (dummy)	
Appointed Supreme Court (dummy)	Bohn and Inman (1996)
Limit for governor's tenancy (dummy)	Council of State Governments
Citizens' ideology	Berry, Ringquist, Fording, and Hanson (1999)
Governments' ideology	
Socio-economic variables	
Deviation from average per capita personal income	Bureau of Economic Analysis
Percentage of earnings – by sector	Bureau of Economic Analysis
Deviation from average per capita savings	US Census Bureau
Percentage of tax revenue – by degree of volatility	Census of Governments and the Historical Statistics of the United States.
Percentage of expenditure - by degree of volatility	
Deviation from average per capita net intergovernmental revenue	
Tax effort	ACIR and Tannenwald (1997, 1999)
Deviation from average per capita debt	US Census Bureau
Population density	Statistical Abstracts of the United States
Institutional variables	
Constitutional BSF (dummy)	Wagner (2006)
Expenditure limitation (dummy)	Waisanen (2007) and Poulson (2005)
Stringency of the balanced budget rule	ACIR, NASBO, personal communication with Tennessee's Department of Finance and Administration

4. Empirical strategy and results

Since the dependent variables are not continuous, the estimation of the coefficients with an OLS regression would not be legitimate.[14] Because deposit and withdrawal requirements take distinct values that can be classified according to their level of stringency, multinomial and ordered techniques are considered.[15] In particular, we can take advantage of the ordinal multinomial nature of the data by estimating ordinal logistic

[14] OLS equivalents of the models were calculated for comparison purposes, and are available upon request. As expected, all the models considered performed better than their OLS counterparts.

[15] For this purpose, we assign numbers from one to four for the deposit and withdrawal requirements embodied in each BSF, meaning that requirements of type "four" are stricter than those of type "three", "two" and "one", requirements of type "three" are stricter than those with values "two" or "one" and so on.

regressions. The structural model for an ordered logit (or proportional odds model) is given by $y^*_{it} = x_{it}\,\beta + \varepsilon_{it}$, where i indexes the state, t the year and ε is a disturbance with the logistic distribution. In the most general case (with four possible categories), the model can be expressed in terms of probabilities as:

$$\text{logit}\,(p_1) = \frac{p_1}{1-p_1} = \alpha_1 + \beta' x\,,$$

$$\text{logit}\,(p_1 + p_2) = \frac{p_1+p_2}{1-p_1-p_2} = \alpha_2 + \beta' x \quad \text{and}$$

$$\text{logit}\,(p_1 + p_2 + p_3) = \frac{p_1+p_2+p_3}{1-p_1-p_2-p_3} = \alpha_3 + \beta' x\,,$$

with $p_1+p_2+p_3+p_4 = 1$ and $\alpha_1 < \alpha_2 < \alpha_3 < \alpha_4$.

However, because of the limitations imposed by the data and some issues with the independence of the alternatives, we estimate the model with two only two categories: "weak" (by collapsing categories one and two), and "strict" (three and four).

The ordered logit (OL) assumes that all the coefficients on the independent variables are equal for every category of the dependent variable, so the slopes of the estimated equations are identical. The parallel equation (or proportional odds) assumption can be tested using a Brant's test or a likelihood ratio test, which in our case provide evidence of violation. This is not a rare occurrence, since the proportional odds assumption is often violated (Long and Freese (2006)) even with large samples and no a priori reason that would justify the violation.[16] It is in the spirit of this literature that we report the OL

[16] Williams (2006) cites Sarah Mustillo saying "neither of us [referring to herself and a colleague] has ever run an ologit model that DID NOT violate the proportional odds assumption. My models always fail the Brant test".

results even when the proportional odds assumption seems to be violated, but keeping in mind that the estimates may be misleading.

The results of some relevant models appear in tables 4 and 5.[17] Because regression outcomes of OLs are difficult to interpret and cannot be interpreted in the same fashion as usual regression results, the tables report the marginal effects of each independent variable (holding the others at their means) rather than estimated coefficients.[18] Tables 4 and 5 then report the partial derivatives with respect to the explanatory variables of the probabilities of choosing each outcome. Following the same logic as the results of a binary logit, they indicate the estimated change for each outcome individually. The results indicate the changes in probability of a state adopting a weak (leftmost column in each specification) or a strict requirement (rightmost column) given a marginal change in the independent variable, and keeping every other variable at its mean.

From these tables we can see that an increase in the number of seats in the upper House significantly increases the probability of adopting a weak or strict deposit requirement, but the increase in probability of adopting a weak deposit outweighs the increase in probability of adopting a strict deposit. Similarly, an increase in fractionalization of the Lower House (measured as the percentage gap in the number of seats held by the two main parties) reduces the likelihood of establishing demanding requirements. These effects persist even when controlling for various other political

[17] Following Long and Freese (2006) we report the McKelvey and Zavonia's R^2, which has been shown by Hagle and Mitchell (1992) and Windmeijer (1995) to be closest to the R^2 of a linear model estimated using the underlying latent variable.

[18] It is important to note that the marginal changes expressed in the tables cannot be directly used to consider the effects on the left hand side variable of an arbitrary increase in any of the independent variables. For example, because the probabilities are not linear, we would need to calculate directly what the effect on the probability of adopting a strict deposit requirement of a 10% increase in the percentage of tax revenue that is derived from the least volatile category, rather than simply multiply the reported marginal effect by 10.

circumstances. Our results run parallel to Gilligan and Matsusaka's (1995), who conclude that larger upper houses (but not lower houses) are significantly associated with higher spending but do not find such effects for the existence of divided governments. Other results (not shown) also fail to find any significant relationship between the affiliation of either the legislative or executive branches and the configuration of a BSF. In addition, there seems to be some weak indication (regressions not shown) that more liberal governments are more likely to adopt weak withdrawal requirements. Among the group of economic characteristics, states that spend comparatively more on high-volatility spending appear to be more likely to establish weak rules, while states with higher levels of debt are less likely to establish weak withdrawal requirements. Within the institutional data, our results suggest that constitutionally configured BSFs are more likely to include strict operating rules.

Because the reliability of these results is weakened by the possibility of a true violation of the parallel equation assumption, we can restrict our model by ignoring the ordered nature of the dependent variable. While this does not bias the coefficients, it may lead to loss of efficiency.

Two logit models are commonly used: the multinomial logit (or generalized logit model) and the conditional logit.[19] For the more disaggregated case, the probabilities of adoption in the multinomial case can be expressed as: $P(y=i) = \exp(\beta_i * x) / \Sigma_{j \neq i} \exp(\beta_j * x)$ for i=1,2,3,4. As usual, for the system to be identified, we need to set one of the coefficients equal to zero and compare the results to the baseline group. The coefficients

[19] In our case, the multinomial logit is more appropriate than the conditional logit model, because the former is used when the independent variables refer to characteristics of the units, while the second one is usually employed when the independent variables are characteristics of the choices.

on the other (non-reference) groups can then be interpreted as log odds of being in a particular group as compared to being in the reference group.

A potential for bias in the estimation of the multinomial logit (MNL) exists, brought about by the independence of irrelevant alternatives (IIA) assumption. In our case, the IIA translates into a risk for bias if we include BSF configuration alternatives that are not available to legislatures, or if we are presenting as different choices configurations that are in reality very close substitutes. The latter could be a problem, since if in fact some of our four categories may in practice be very similar. Reducing our classification from four to two and three categories will provide some rough idea on whether this is actually a serious problem.[20]

As with the ordered logits, the partial derivative of the probability of a given choice does not correspond to the associated regression coefficient, so caution must be used when interpreting the results. As with any multi-output regression, there are several equations and potential comparisons. Again we report the effect of a unitary change in the independent variable on the probability of adopting a weak (or strict) requirement, keeping the rest of the independent variables at their means. Examination of tables 6 and 7 reveals similar results to those of the ordered regressions in terms of the political variables: states with bigger senates are more likely to establish weak rules; less

[20] The Hausman-McFadden (1984) test for IIA in the four-category case suggests that independence may actually exist. However, there are known problems with this test that make its validity questionable. A more reliable test (the Small-Hsiao (1985) test) produces mixed results that suggest that the IIA assumption may be violated. When we restrict our characterization of the deposit and withdrawal requirements to two categories ("strict" vs "lax") both the Hausman-McFadden and the Small-Hsiao test indicate that the IIA assumption holds. With the three categories split, again we find the same discordance between the Hausman-McFadden and the Small-Hsiao tests as we did in the four-category case.
Although Wald tests for the possibility of amalgamation of the categories suggest that none is possible, the associated chi square values for the test for the reduction of categories 1 and 2 into a single group is much smaller than the rest, suggesting that categories 1 and 2 may be much more similar than the others (as we

fragmentation in the lower House reduces the probability of adopting strict requirements;[21] and states with more liberal institutions seem to be more likely to establish weak requirements. The effect of the size of the lower house is barely significant and very small in quantitative terms.

The MNL results suggest that additional factors may be of relevance: states with appointed supreme courts are more likely to establish strict deposit rules, providing some support for the possibility that deviations from the rules may be easier under this type of Supreme Court, reducing the cost of adopting stringent requirements. As before, the results indicate that constitutional RDFs are more likely to have more demanding rules. In particular, the results from table 6 suggest that although the increase in probability of adopting a 'strict' deposit requirement from having a constitutional RDF is small in magnitude, it is highly significant.

Among the economic variables, we still find a significant increase in the odds of adopting weak rules for states with relatively large shares of highly volatile spending or whose earnings are comparatively more dependent on agriculture. If the proportion of state expenditure that falls in the most volatile category were to increase by just one unit (from the average, ceteris paribus), the results predict an increase in probability of the state adopting a weak deposit requirement of between seven and nine percentage points, depending on the specification of the model.

In addition, the MNL results suggest that states with higher levels of tax effort may be more prone to establishing strict deposit rules**.** The results indicate that a one percentage

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expected them to be). In addition, the likelihood ratio test suggests that categories 1 and 2 may be indistinguishable.

point increase from the average value of tax revenues coming from this category decreases the estimated probability of adopting a weak deposit requirement by almost two percentage points. In the tax structure, higher reliance on volatile tax sources seems to increase the odds that a state will choose a strict deposit requirement.

According to the measures of fit, there seems to be some indication that MNL may provide a better fit than the OL for the problem at hand. More support for this claim can be found in the plots of the predicted probabilities of the OL and MNL models: there is a sudden truncation of the ordered logit model's distribution that seems unrealistic, suggesting that the multinomial logit may be a better model for the data.[22] However, preliminary work with intermediate techniques suggests these may provide better fits for the model while taking into account the ordered nature of the data.

5. Conclusions

BSFs have become popular among states as tools to help them weather recessions and other adverse conditions. However, they are very disparate in nature, and the differences in terms of deposit and withdrawal requirements have a significant impact on their effectiveness. We have investigated the factors that determined the choice of BSFs' configuration, using data from the second half of the twentieth century and extending or modifying the set of indicators used in the previous literature. In particular, we corrected the figure for the stringency of Tennessee's BBR, considered a new measure of the

[21] Our results are consistent with Wallis' assertion that "states where politics were the most competitive, where both parties were most responsive to voters' concerns, were the states more likely to adopt new constitutional provisions." (Wallis (2005), pp 29).

resources easily available to the states (proposing an alternative to the measure of savings that had been previously used, which is advised against by the Census), introduced additional indicators of the political, economic and institutional particulars of the state, and proposed new methods that incorporate the ranked nature of the two requirements that have been proved to significantly affect the effectiveness of these funds: deposit and withdrawal rules.

Our results provide several insights: one suggests that the two laxest categories of deposit and withdrawal requirements may be indistinguishable, so the possibility of collapsing them when analyzing BSFs should be considered. A second result has to do with the methodology used: intuitively, ordered techniques should be employed when analyzing these funds, but the violation of the proportional odds assumption makes the OL model unreliable. Tentative work with generalized ordered logits suggests this option may be superior to MNL, and further investigation is under way to apply intermediate techniques that would incorporate a sense or ordering into the analysis without imposing excessively restrictive assumptions. A lesson to be drawn from this is that we must consider carefully the ordered nature of the requirements and the assumption of proportional odds.

Turning to the investigation of the factors that determined the decision to configure these funds,[23] we find indications that bigger Senates are conducive to laxer deposit requirements and that more fragmented lower houses (which generally have high levels

[22] The correlations between the sets of predictions for ordered logits and multinomial logits are not very high (about 0.6 [0.4] for lax [strict] deposit requirements and 06 [0.7] for lax [strict] withdrawal requirements).

[23] We do not have enough data to allow us for clustering by year. We have, however, run our regressions with clustering by economic cycle using the business cycles data reported by NBER. The resulting estimates are smaller in magnitude but none of the significant coefficients switches signs.

of control over the budget and more members) may be correlated with less stringent BSFs.

Among the economic variables, we find some evidence suggesting that states with higher levels of debt are more prone to establish weak deposit requirements but stricter withdrawal rules, and that the state earning's composition may be a factor to take into account.[24] In addition, we find evidence that states which receive higher percentages of their total tax revenue from relatively more volatile sources show some inclination to establish funds with stricter deposit requirements, as do states with higher levels of tax effort. Both effects provide some indication in favor of the hypothesis that states adopt these funds to accumulate resources in order to weather recessions. However, states that spend a higher proportion of their budgets on volatile spending categories are more likely to establish weak funds.

Other state institutions are relevant in the configuration decision, in line with Poterba's (1994) suggestion that fiscal tools should not be studied individually. Firstly, states with stricter balanced budget requirements seem to be less likely to establish demanding deposit requirements (although no such result appears regarding withdrawal requirements). Also, although the mere existence of tax and expenditure limitations is not a significant factor in the configuration choices of states' RDFs, the part of the budget to which they apply is. In particular, the existence of more comprehensive TELs increases the likelihood that states will adopt weak deposit requirements, which suggests RDFs may be an attempt to avoid the restrictions imposed by these limits. Additional support

[24] To take into account the possibility of regional effects, we run our regressions clustering using the BEA-defined regions and included regional dummies. When including regional dummies, the variables representing the New England states (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island,

for this idea comes from the results suggesting that BSFs embedded into the state´s constitution and those that were not established by the legislature, but rather by voters, are more likely to have a strict configuration.

Further work in the empirical investigation of the determinants of the structure of rainy day funds includes the consideration of the simultaneous choice of deposit and withdrawal requirements, with measures of the overall level of stringency of the fund and simultaneous estimation of deposit and withdrawal choices.

In sum, BSFs have been found to have the potential to significantly reduce fiscal stress, but only if they are properly configured. Their impact on budget stabilization takes many forms: adequately designed BSFs improve the state's credit rating, reduce the need for hurried solutions to cash shortages (such as unplanned tax increases or cuts in spending) and significantly reduce the volatility of expenditure –in particular, social spending. Our results suggest that fiscal characteristics, such as the levels of tax effort or volatility of state spending, are important factors for the choice of the form of these funds. However, we have gathered some evidence that indicates that factors other than budget stabilization may help explain the weak –and less effective- configuration of many funds. Political factors, as well as other institutional constraints, also provide incentives that explain the configuration of the funds.

Given the importance of these rules, states reconsidering the nature of their funds may benefit from rethinking the reasons that led to the actual configuration and include them in their discussions about the possibility of reform. These lessons may also be valuable for other countries, where increased subnational government fiscal responsibilities could

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Vermont) and the South Atlantic states (Florida, Georgia, North Carolina, South Carolina, Virginia) were significantly more likely to adopt weak funds.

make instruments for budget stabilization at these levels an attractive option. As with the U.S. experience, the institutional details of these funds are likely to be of major importance. Others who may consider establishing funds like these could benefit from the awareness of considerations other than the purely economic reasons that have impacted the choices embedded in BSFs.

6. Tables

Table 1. Dates of adoption of states' Budget Stabilization Funds

State	Year of adoption	State	Year of adoption	State	Year of adoption
Alabama	.	Louisiana	1990	Ohio	1981
Alaska	1986	Maine	1985	Oklahoma	1985
Arizona	1990	Maryland	1986	Oregon	.
Arkansas	.	Massachusetts	1986	Pennsylvania	1985
California	1985	Michigan	1977	Rhode Island	1985
Colorado	.	Minnesota	1981	South Carolina	1978
Connecticut	1979	Mississippi	1982	South Dakota	1991
Delaware	1977	Missouri	1992	Tennessee	1972
Florida	1959	Montana	.	Texas	1987
Georgia	1976	Nebraska	1983	Utah	1986
Hawaii	2000	Nevada	1994	Vermont	1988
Idaho	1984	New Hampshire	1987	Virginia	1992
Illinois	2000	New Jersey	1990	Washington	1981
Indiana	1982	New Mexico	1978	West Virginia	1994
Iowa	1992	New York	1945	Wisconsin	1981
Kansas	1993	North Carolina	1991	Wyoming	1982
Kentucky	1983	North Dakota	1987		

Notes: "." indicates the state does not have a BSF, according to the proposed definition.
Source: Wagner (2004) and documents for the state of Colorado

Table 2- Deposit and withdrawal requirements in the BSFs

Deposit requirements				Withdrawal requirements			
Alabama	.	Montana	.	Alabama	.	Montana	.
Alaska	1	Nebraska	2	Alaska	1	Nebraska	2
Arizona	4	Nevada	4	Arizona	4	Nevada	2
Arkansas	.	New Hampshire	2	Arkansas	.	New Hampshire	2
California	2	New Jersey	2	California	2	New Jersey	2
Colorado	.	New Mexico	2	Colorado	.	New Mexico	1
Connecticut	2	New York	4	Connecticut	3	New York	2
Delaware	2	North Carolina	2	Delaware	3	North Carolina	1
Florida	2	North Dakota	2	Florida	2	North Dakota	4
Georgia	2	Ohio	2	Georgia	1	Ohio	1
Hawaii	1	Oklahoma	2	Hawaii	3	Oklahoma	3
Idaho[a]	1	Oregon	.	Idaho*	3	Oregon	.
Illinois	2	Pennsylvania	2	Illinois	1	Pennsylvania	3
Indiana	4	Rhode Island	1	Indiana	4	Rhode Island	2
Iowa	1	South Carolina	3	Iowa	1	South Carolina	2
Kansas	3	South Dakota	2	Kansas	1	South Dakota	2
Kentucky	2	Tennessee	3	Kentucky	1	Tennessee	2
Louisiana	2	Texas	2	Louisiana	1	Texas	2
Maine	2	Utah	2	Maine	1	Utah	2
Maryland	3	Vermont	2	Maryland	1	Vermont	2
Massachusetts	1	Virginia	4	Massachusetts	1	Virginia	4
Michigan	4	Washington	2	Michigan	4	Washington	3
Minnesota	1	West Virginia	2	Minnesota	1	West Virginia	2
Mississippi	1	Wisconsin	3	Mississippi	1	Wisconsin	2
Missouri	1	Wyoming	1	Missouri	1	Wyoming	1

Deposit requirements: (1) appropriation (2) genera fund surplus (3) required appropriation (4) formula

Withdrawal requirements: (1) appropriation (2) revenue shortfall (3) supermajority required (4) formula

[a] Idaho modified its BSF in 1999, making it stricter. Here we record the original requirements as they were established when the BSF was adopted in 1981.

Source: Wagner (2004) and documents of the state of Colorado.

Table 3- Deposit and withdrawal requirements in the BSFs

		deposit			
		1	**2**	**3**	**4**
withdrawal	**1**	7	8	2	0
	2	1	10	3	2
	3	2	5	0	0
	4	0	1	0	4

Table 4. Ordered logits. Dependent variable: deposit requirement

Description of independent variables	weak	strict	weak	strict	weak	strict	weak	strict
Number of seats in upper House	8.55E-05***	2.51E-05***						
Number of seats in lower House	-5.56E-06	-1.63E-06						
% seat gap between main parties (Upper House)			2.62E-05	8.07E-06	2.28E-05	7.02E-06	3.44E-05	1.06E-05
% seat gap between main parties (Lower House)			-1.29E-04	-3.98E-05	-1.30E-04	-3.98E-05	-1.24E-04	-3.80E-05
Democratic Governor							-1.26E-03	-3.88E-04
Appointed Supreme Court					-1.74E-03	-5.33E-04		
Limit for governor's tenancy							-3.02E-03	-9.28E-04
Deviation from average per capita personal income	-1.06E-06	-3.10E-07	-1.88E-06	-5.80E-07	-1.90E-06	-5.83E-07	-1.93E-06	-5.94E-07
Percentage of earnings - farming	-6.56E-02**	-1.92E-02**	-5.55E-02*	-1.71E-02*	-5.67E-02**	-1.74E-02**	-5.93E-02**	-1.82E-02**
Percentage of earnings - construction	-1.09E-01*	-3.19E-02*	-9.70E-02*	-2.99E-02*	-9.00E-02*	-2.77E-02*	-1.04E-01**	-3.20E-02**
Percentage of earnings - manufacturing	-3.73E-02*	-1.09E-02*	-3.25E-02*	-1.00E-02*	-3.19E-02*	-9.81E-03*	-3.63E-02**	-1.12E-02**
Percentage of earnings - mining	-4.44E-02	-1.30E-02	-3.53E-02	-1.09E-02	-3.83E-02	-1.18E-02	-3.77E-02	-1.16E-02
Percentage of tax revenue - most volatile	-1.64E-02	-4.81E-03	-5.53E-03	-1.70E-03	-7.57E-03	-2.33E-03	-7.44E-03	-2.28E-03
Percentage of tax revenue - least volatile	-2.09E-02	-6.13E-03	-1.64E-02	-5.04E-03	-1.69E-02	-5.20E-03	-1.51E-02	-4.62E-03
Percentage of expenditure - most volatile	8.14E-02***	2.39E-02***	8.13E-02***	2.50E-02***	7.80E-02***	2.40E-02***	7.83E-02***	2.40E-02***
Percentage of expenditure - least volatile	6.58E-03	1.93E-03	1.07E-02	3.30E-03	7.49E-03	2.30E-03	1.43E-02	4.40E-03
Deviation from average per capita savings	1.28E+00	3.76E-01	8.40E-01	2.59E-01	8.95E-01	2.75E-01	6.78E-01	2.08E-01
Tax effort	2.30E-05	6.75E-06	9.24E-06	2.85E-06	2.09E-05	6.43E-06	-4.96E-05	-1.53E-05
Expenditure limitation	5.00E-03	1.47E-03	5.49E-03	1.70E-03	6.02E-03	1.86E-03	4.19E-03	1.29E-03
BBR stringency	-5.30E-05	-1.55E-05	2.34E-05	7.21E-06	7.41E-05	2.28E-05	1.96E-04	6.02E-05
Deviation from average per capita debt	-7.54E-06	-2.21E-06	-4.22E-06	-1.30E-06	-4.61E-06	-1.42E-06	-3.55E-06	-1.09E-06
Population density	1.15E-06	3.39E-07	5.08E-06	1.57E-06	6.00E-06	1.84E-06	5.92E-06	1.82E-06
Constitutional BSF	6.15E-03	1.82E-03	6.77E-03	2.10E-03	7.70E-03	2.39E-03	7.43E-03	2.30E-03
Deviation from average per capita net IG revenue	1.32E-02	3.86E-03	7.18E-03	2.21E-03	8.88E-03	2.73E-03	7.26E-03	2.23E-03
Log Likelihood	-182.09951		-179.69465		-179.55244		-178.95421	

*** Significant at 1%, ** Significant at 5%, * Significant at 10%

The dependent variable equals zero in years prior to BSF adoption, in the year of adoption it equals 1 if the adopted deposit requirement is lax and 2 if it is strict

Table 5. Ordered logits. Dependent variable: withdrawal requirement

Description of independent variables	weak	strict	weak	strict	weak	strict	weak	strict
Number of seats in upper House	8.63E-05 ***	2.53E-05 ***						
Number of seats in lower House	-5.19E-06	-1.52E-06						
% seat gap between main parties (Upper House)			1.88E-05	5.74E-06	1.43E-05	4.36E-06	2.88E-05	8.80E-06
% seat gap between main parties (Lower House)			-1.36E-04	-4.16E-05	-1.36E-04	-4.15E-05	-1.30E-04	-3.98E-05
Democratic Governor							-1.40E-03	-4.28E-04
Appointed Supreme Court					-2.16E-03	-6.57E-04		
Limit for governor's tenancy							-2.91E-03	-8.87E-04
Deviation from average per capita personal income	-1.16E-06	-3.41E-07	-2.09E-06	-6.38E-07	-2.11E-06	-6.42E-07	-2.11E-06	-6.44E-07
Percentage of earnings - farming	-6.53E-02 *	-1.91E-02 *	-5.41E-02 *	-1.66E-02 *	-5.57E-02 *	-1.70E-02 *	-5.77E-02 *	-1.76E-02 *
Percentage of earnings - construction	-1.13E-01 *	-3.30E-02 *	-1.00E-01 *	-3.07E-02 *	-9.16E-02 *	-2.79E-02 *	-1.06E-01 *	-3.23E-02 *
Percentage of earnings - manufacturing	-3.80E-02 *	-1.11E-02 *	-3.32E-02 *	-1.01E-02 *	-3.25E-02 *	-9.91E-03 *	-3.70E-02 *	-1.13E-02 *
Percentage of earnings - mining	-4.62E-02	-1.35E-02	-3.69E-02 *	-1.13E-02 *	-4.11E-02	-1.25E-02	-3.95E-02	-1.20E-02
Percentage of tax revenue - most volatile	-1.48E-02	-4.32E-03	-2.70E-03	-8.24E-04	-4.99E-03	-1.52E-03	-4.82E-03	-1.47E-03
Percentage of tax revenue - least volatile	-1.48E-02	-4.32E-03	-1.63E-02	-5.00E-03	-1.70E-02	-5.18E-03	-1.51E-02	-4.62E-03
Percentage of expenditure - most volatile	8.20E-02 ***	2.40E-02 ***	8.08E-02 ***	2.47E-02 ***	7.67E-02 ***	2.34E-02 ***	7.81E-02 ***	2.38E-02 ***
Percentage of expenditure - least volatile	5.34E-03	1.56E-03	9.14E-03	2.79E-03	5.36E-03	1.63E-03	1.30E-02	3.98E-03
Deviation from average per capita savings	1.22E+00	3.57E-01	6.81E-01	2.08E-01	7.42E-01	2.26E-01	5.38E-01	1.64E-01
Tax effort	2.26E-05	6.62E-06	6.46E-06	1.98E-06	2.07E-05	6.31E-06	-4.92E-05	-1.50E-05
Expenditure limitation	5.41E-03	1.59E-03	6.26E-03	1.93E-03	6.97E-03	2.14E-03	4.77E-03	1.46E-03
BBR stringency	-5.60E-05	-1.64E-05	2.48E-05	7.60E-06	8.78E-05	2.67E-05	1.94E-04	5.92E-05
Deviation from average per capita debt	-7.18E-06 *	-2.10E-06 *	-3.56E-06 *	-1.09E-06 *	-4.07E-06 *	-1.24E-06 *	-2.94E-06	-8.96E-07
Population density	1.24E-06	3.62E-07	5.68E-06	1.74E-06	6.81E-06	2.08E-06	6.47E-06	1.97E-06
Constitutional BSF	6.27E-03	1.85E-03	7.41E-03	2.28E-03	6.81E-06	2.08E-06	7.88E-03	2.43E-03
Deviation from average per capita net IG revenue	1.38E-02	4.03E-03	8.26E-03	2.53E-03	1.04E-02	3.17E-03	8.18E-03	2.49E-03
Log Likelihood	-182.0834		-179.35376		-179.13407		-178.61558	

*** Significant at 1%, ** Significant at 5%, * Significant at 10%

The dependent variable equals zero in years prior to BSF adoption, in the year of adoption it equals 1 if the adopted withdrawal requirement is lax and 2 if it is strict

Table 6. Multinomial logits. Dependent variable: deposit requirement

Description of independent variables	weak	strict	weak	strict	weak	strict	weak	strict
Number of seats in upper House	3.79E-04 **	-8.41E-11						
Number of seats in lower House	3.87E-06	-3.09E-11 *						
% seat gap between main parties (Upper House)			-1.20E-06	6.94E-11	-5.17E-06	9.09E-12	9.47E-06	3.46E-11
% seat gap between main parties (Lower House)			-1.23E-04	-9.74E-11	-1.26E-04	-9.77E-12	-1.10E-04	-4.98E-11 *
Democratic Governor							-2.34E-03	-2.33E-10
Appointed Supreme Court					-2.98E-03	1.29E-09 *		
Limit for governor's tenancy							-3.22E-03	4.63E-10
Deviation from average per capita personal income	-7.53E-07	-1.40E-13	-1.67E-06	-1.16E-12	-1.62E-06	-1.15E-13	-1.73E-06	-5.16E-13
Percentage of earnings - farming	-3.73E-02 *	-5.73E-08	-2.17E-02	-1.39E-07 ***	-2.44E-02	-1.26E-08 ***	-2.58E-02	-6.59E-08 ***
Percentage of earnings - construction	-4.39E-02	-2.62E-08	-5.00E-02	-8.40E-08 *	-3.71E-02	-6.75E-09	-5.46E-02	-4.12E-08 *
Percentage of earnings - manufacturing	-2.78E-02	2.86E-09	-1.64E-02	6.91E-10	-1.50E-02	1.08E-09	-2.14E-02	2.50E-10
Percentage of earnings - mining	-2.63E-03	-6.12E-08 **	3.39E-03	-9.80E-08 *	-2.72E-04	-6.01E-09	-4.59E-04	-4.36E-08
Percentage of tax revenue - most volatile	-2.51E-02	5.75E-09	-8.82E-03	1.33E-08	-1.20E-02	2.59E-09	-1.23E-02	3.33E-09
Percentage of tax revenue - least volatile	-2.10E-02	1.21E-08	-1.74E-02 *	2.72E-08	-1.82E-02 *	2.88E-09	-1.57E-02	1.26E-08
Percentage of expenditure - most volatile	7.35E-02 **	1.60E-08	9.11E-02 ***	2.22E-08	8.47E-02 ***	4.31E-09	8.58E-02 ***	9.81E-09
Percentage of expenditure - least volatile	2.29E-02	1.20E-08	2.36E-02	1.12E-08	1.73E-02	3.03E-09	3.16E-02	4.12E-09
Deviation from average per capita savings	1.09E+00	-9.08E-07	6.24E-01	-7.52E-07	6.82E-01	-1.94E-07	3.97E-01	-3.60E-07
Tax effort	-1.77E-04	3.94E-11	-1.35E-04 **	1.66E-10 **	-1.15E-04 *	1.29E-11 **	-1.84E-04 **	8.81E-11 *
Expenditure limitation	9.01E-03	-5.71E-11	7.17E-03	1.89E-09	8.12E-03	1.20E-10	5.41E-03	9.10E-10
BBR stringency	1.49E-04	-8.32E-10 ***	2.15E-04	-2.34E-09 ***	2.91E-04	-2.83E-10 ***	3.81E-04	-1.11E-09 ***
Deviation from average per capita debt	-3.17E-06	-6.35E-12 ***	-4.00E-07	-1.48E-11 ***	-9.88E-07	-1.28E-12 ***	4.63E-07	-6.83E-12 ***
Population density	4.31E-06	-1.21E-11 ***	8.85E-06	-2.92E-11 ***	1.04E-05	-2.50E-12 ***	9.04E-06	-1.46E-11 ***
Constitutional BSF	-3.59E-03	1.19E-05 ***	-3.15E-03	8.39E-05 ***	-2.60E-03	2.87E-06 ***	-2.33E-03	6.38E-05 ***
Deviation from average per capita net IG revenue	1.48E-02	5.48E-09	8.87E-03	-6.48E-09	1.16E-02	-1.52E-09	8.01E-03	-3.23E-09
Log Likelihood	-153.05429		-155.28692		-153.23644		-154.11043	

*** Significant at 1%, ** Significant at 5%, * Significant at 10%

The dependent variable equals zero in years prior to BSF adoption, in the year of adoption it equals 1 if the adopted deposit requirement is lax and 2 if it is strict

Table 7. Multinomial logits. Dependent variable: withdrawal requirement

Description of independent variables	weak	strict	weak	strict	weak	strict	weak	strict
Number of seats in upper House	2.77E-04*	4.23E-06						
Number of seats in lower House	4.22E-06	-4.04E-06						
% seat gap between main parties (Upper House)			1.10E-04	-1.35E-06	1.06E-04	-1.20E-06	1.14E-04	-4.51E-07
% seat gap between main parties (Lower House)			-1.01E-04	-4.22E-06***	-1.02E-04	-3.62E-06***	-9.26E-05	-1.69E-06***
Democratic Governor							-1.19E-03	-3.52E-05
Appointed Supreme Court					-1.45E-03	-5.38E-05		
Limit for governor's tenancy							-5.09E-03	-1.02E-05
Deviation from average per capita personal income	-1.13E-06	-7.62E-08	-9.52E-07	-5.31E-08*	-9.60E-07	-4.91E-08*	-1.02E-06	-2.29E-08*
Percentage of earnings - farming	-4.49E-02*	-1.28E-03	-4.65E-02*	-1.61E-04	-4.69E-02*	-2.52E-04	-5.24E-02	-6.40E-05
Percentage of earnings - construction	-3.39E-02	-1.22E-02***	-4.78E-02	-3.65E-03***	-4.35E-02	-3.09E-03***	-6.47E-02	-1.34E-03
Percentage of earnings - manufacturing	-3.68E-02*	-8.53E-04	-3.00E-02*	-3.55E-04	-2.97E-02*	-3.17E-04	-3.70E-02**	-1.52E-04
Percentage of earnings - mining	-3.90E-03	-6.70E-03	-4.44E-03	-1.66E-03***	-5.84E-03	-1.77E-03**	-1.01E-02	-6.38E-04***
Percentage of tax revenue - most volatile	-4.27E-02*	1.42E-03*	-3.73E-02*	5.95E-04**	-3.88E-02*	4.75E-04*	-3.95E-02**	2.45E-04*
Percentage of tax revenue - least volatile	-2.11E-02	-4.86E-04	-2.42E-02*	-1.22E-04	-2.47E-02*	-1.29E-04	-2.05E-02	-5.41E-05
Percentage of expenditure - most volatile	6.49E-02**	5.12E-03	8.42E-02***	1.64E-03**	8.18E-02	1.37E-03*	7.55E-02***	6.92E-04**
Percentage of expenditure - least volatile	-2.51E-03	2.60E-03	3.37E-03	5.07E-04	3.88E-04	4.65E-04	6.10E-03	2.30E-04
Deviation from average per capita savings	1.12E+00	-1.40E-02	1.21E+00	-1.39E-02	1.25E+00	-9.67E-03	8.61E-01	-5.33E-03
Tax effort	-4.08E-05	-8.43E-06	1.79E-05	-1.98E-06	3.05E-05	-1.87E-06	-8.33E-05	-7.42E-07
Expenditure limitation	6.65E-03	4.92E-04	4.00E-03	2.88E-04*	4.54E-03	2.77E-04	2.10E-03	9.75E-05*
BBR stringency	-3.06E-04	-4.14E-05	-1.52E-04	-5.08E-06	-1.30E-04	-1.32E-06	1.39E-04	-1.09E-06
Deviation from average per capita debt	-7.03E-06	-3.23E-07*	-6.63E-06	5.32E-09	-7.02E-06	-8.91E-09	-5.53E-06	1.86E-09
Population density	4.72E-06	-5.77E-09	3.16E-06	1.72E-07	4.09E-06	1.66E-07	4.50E-06	8.93E-08*
Constitutional BSF	-1.45E-03	5.63E-03**	-1.25E-03	3.46E-03***	-8.34E-04	4.56E-03**	-9.49E-04	3.18E-03**
Deviation from average per capita net IG revenue	1.09E-02	1.49E-03**	5.31E-03	2.78E-04	7.01E-03	2.96E-04	6.17E-03	1.20E-04
Log Likelihood	-169.88079		-164.80986		-164.37042		-162.30124	

*** Significant at 1%, ** Significant at 5%, * Significant at 10%

The dependent variable equals zero in years prior to BSF adoption, in the year of adoption it equals 1 if the adopted withdrawal requirement is lax and 2 if it is strict

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