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BUDGET INSTITUTIONS AND FISCAL PERFORMANCE IN CENTRAL AND EASTERN EUROPEAN COUNTRIES

BY HOLGER GLEICH

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BUDGET INSTITUTIONS AND FISCAL PERFORMANCE IN CENTRAL AND EASTERN EUROPEAN COUNTRIES[1]

BY HOLGER GLEICH[2]

February 2003

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Abstract

This paper documents the modes of organization of the budget process in ten CEEC and examines the relationship between these institutional settings and fiscal performance. Using detailed information on the budget institutions in these countries, the national budget processes are classified according to their coordination and conflict resolution properties. Empirical results show that budget procedures that are conducive to reducing collective action problems have been associated with more fiscal discipline.

JEL classification: D70, E60, H61, P20, P30.

Keywords: Budget institutions, fiscal policy, transition countries.

Non-Technical Summary

Problems of institutional design are at the heart of the policy debate and reform agenda in transition countries. This study explores the linkage between the institutional design of budget processes and aggregate fiscal performance in ten CEEC. The objective is to provide a comprehensive cross-section account of the organizational structure and procedural rules of the budgetary decision-making processes in these countries and to investigate whether budget institutions have played a significant role in determining the governments' capability of achieving fiscal discipline during the recent fiscal adjustment process.

The issue of the design and impact of the institutional structure of the budget process has received considerable attention in the political economy literature The approach underlying this paper is the idea that budgetary decision-making bears a common pool resource dilemma when the structure of the budget process allows decentralized spending determination (von Hagen and Harden (1996), Hallerberg and von Hagen (1999), Velasco (1999, 2000)). When spending can be targeted to particular constituencies, whereas revenues are centralized and residually determined, politicians have the incentive to internalize the full benefit but only a fraction of the social costs of an increase in spending directed to their own specific constituency. Due to this negative externality, the individually rational strategies generate budgets that are sub-optimal from the perspective of the group. The predicted outcome is an inefficient excess appropriation of the common pool of revenues, both intra- and intertemporal. The literature suggests that both centralizing fiscal authority and cooperative bargaining are conducive to overcome the inefficiency and thus are able to promote fiscal discipline (von Hagen and Harden (1995, 1996) and Hallerberg and von Hagen (1997, 1999)). Several empirical studies have provided supportive evidence to the view that budget institutions have an impact on fiscal outcomes in a variety of samples of developed and developing countries (von Hagen (1992), von Hagen and Hardin (1994), Alesina et al. (1996, 1999a, 1999b), Stein et al. (1998, 1999), and Lao-Araya (1997)), but so far none of these studies has considered transition countries.

To study the fiscal effects of the complex system of interrelated rules which govern the budget process, the paper first provides on the basis of information from legal documents and answers to two questionnaires a comprehensive cross-country account of institutional characteristics of the budget process in ten CEEC. The focus is on the structure of decision-making in the executive and legislative branch of government, which includes, for example, the distribution of power between the different actors in the budget process and the existence and nature of coordination devices conducive to achieving and enforcing efficient cooperative budget outcomes. Subsequently, following the approach by von Hagen (1992), the paper develops indexes that map qualitative features of the main budget institutions into empirical measures. The indexes summarize institutional characteristics of the budget preparation, authorization and implementation stages, each classified according to its coordination properties and to the incentives it gives politicians to internalize the fiscal implications of their actions.

These indexes are then used to study the relation between the structure of budget processes and fiscal outcomes in a sample of ten CEEC over the period 1994-98. The empirical analysis tests the hypothesis that budget processes governed by institutional arrangements that promote decision-making with a more comprehensive view of the costs and benefits of government activities are associated with more aggregate fiscal discipline. The results of parametric and non-parametric estimations suggest that budget institutions indeed have had a significant effect on the capability of governments in CEEC to gain control over public finances during transition. Countries having institutional structures that are more conducive to strengthen coordination and cooperation in budget decision-making have been associated with lower budget deficits and reduced debt levels. These outcomes confirm that the institutional design of budget process can have an impact on fiscal outcomes. Budget institutions that appear to be supportive for achieving fiscal discipline are those that strengthens the role of the finance minister in the budget process and those which limit the autonomy of spending ministers and individual legislators to determine their own spending allocations without considering the fiscal implications for the collective. Hence, to restrain institutionally induced biases towards excessive deficits governments need to tackle the issue of constraining departmental ministers and individual legislators spending demands. An important conclusion is that the CEEC and the EU should pay attention to the creation of good budgeting institutions in the accession states.

1. The Political Economy of Budget Deficits

During the last decade, governments in central and eastern European countries (CEEC) have moved to adapt their public sectors to the new role of government in a market economy. The governments have had to adopt extensive fiscal adjustments to downsize the budget and to transform the structure of revenue and expenditure, while at the same time they have had to establish an institutional framework for fiscal policy-making and budget management that effectively supports the tasks of dealing with the macroeconomic and efficiency aspects of public finance in the changed political and economic environment. The institutional reform of the public sector involved altering the organizational structure of government as well as altering the processes through which governments make their decisions.

This study explores the linkage between the institutional design of budget processes and aggregate fiscal performance in CEEC. The objective is to provide a comprehensive cross-section account of the organizational structure and procedural rules of the budgetary decision-making processes in the ten CEEC that applied for membership in the EU and to investigate whether budget institutions have played a significant role in determining the governments' capability of achieving fiscal discipline during the recent fiscal adjustment process.

The issue of the design and impact of the institutional structure of the budget process has received considerable attention in the political economy literature.[1] This line of research focuses on the idea that institutional structures have a systematic impact on the behavioral incentives and strategic choices of politicians and can thereby influence the policy outcomes arising from collective decision-making processes. Accordingly, alternative modes of organization of the budget process can have different implications for the size and composition of a budget and its financing. More recent studies analyze budgeting in a game-theoretic framework as a way to explicitly model the link between behavior at the individual level and aggregate budget results. In particular, it is shown how conflict between individual and collective rationality in the political decision making process can lead to deviations from first-best policies. These positive theories of fiscal policy making depart from the fiction often assumed in economics that a government can be modeled as a monolithic benevolent unit that sets policy instruments to maximize the welfare of a representative individual, and instead recognize that budget outcomes evolve from a political process within which individuals interact to pursue their own ends.

[1] For earlier research in this area, see the seminal works of Wildavsky (1975, 1992). Von Hagen (1998), Alesina and Perotti (1999), Persson and Tabellini (2000), Drazen (2000) and Gleich (2002) provide surveys of the more recent research that explores the effect of budget institutions on fiscal outcomes.

This paper follows the idea developed by one branch of this literature, which started with Weingast et al. (1981) and includes von Hagen and Harden (1995) and Velasco (1999, 2000), to view the budget process as resembling a common pool resource situation. According to this approach, as financing is shared by all tax payers, while benefits from spending can be targeted, individual policy makers consider the full benefits from expanding projects in their districts or relevant policy areas, but take into account only that share of the social marginal costs of higher taxes or borrowing that is borne by their constituents. The incomplete internalization of the social costs of expenditures leads policy makers to demand an overspending on and/or excessive debt financing of their preferred projects compared to the social optimal level that equates social marginal costs and benefits. These strategies are individually rational, but they create negative externalities, and the aggregate effect of meeting the demands produces a collectively inefficient outcome. Based on the collective action approach, von Hagen and Harden (1995, 1996) and Hallerberg and von Hagen (1997, 1999) investigate the role of budget institutions, i.e. the set of rules governing the budget preparation, authorization, and implementation, on fiscal policy outcomes. They suggest that both centralizing fiscal authority and cooperative bargaining are conducive to overcome the inefficiency and thus are able to promote fiscal discipline. The former reduces the common pool problem by concentrating budgetary power in the hands of players that have an incentive to internalize the entire costs and benefits of public activities[2], and the latter by inducing the players to consider the externality problem when they collectively negotiate on and mutually commit themselves to budget targets. Hence, these authors argue that the extent by which the common pool problem manifest itself in fiscal outcomes depends on the degree by which the institutional structure of the policy-making process leads policymakers to internalize the fiscal costs of government spending.

Recently several empirical studies investigating the effectiveness and incentive effects of alternative institutional arrangements in a variety of samples of developed and developing countries have provided supportive evidence to the view that budget institutions have an impact on fiscal outcomes (see, for example, von Hagen (1992) and von Hagen and Hardin (1994) for the EU, Alesina et al. (1996, 1999a, 1999b) and Stein et al. (1998, 1999) for Latin America, and Lao-Araya (1997) for Asia). The main conclusion from this research is that to restrain institutionally induced biases towards excessive expenditures and deficits governments need to tackle the issue of constraining departmental ministers and individual legislators spending demands. Budget institutions that appear to be conducive to fiscal

[2] Budgetary power could also be delegated to actors outside the political process. For instance, von Hagen and Harden (1994) and Eichengreen, Hausmann, and von Hagen (1999) recommend the establishment of an independent council (which the authors call national debt board and national fiscal council, respectively) authorized to set a debt change limit at the beginning of each year's budget process.

discipline seem to be those that limit the autonomy of spending ministers and individual legislators to determine their own spending allocations without considering the fiscal implications for the collective. A further lesson to be drawn from the empirical literature is that to explore the role of budget institutions one has to consider the interaction of the rules at all stages of the process. The institutional elements that govern the budget process form a complex system of interrelated rules, and the quality of budget processes should therefore be assessed on the basis of the system of rules.

In this paper I follow the comparative cross country approach and explore empirically the impact of budget institutions on budget outcomes in a sample of ten transition countries. The focus is on the effect of the structure of decision-making in the executive and legislative branch of government, which includes, for example, the distribution of power between the different actors in the budget process and the existence and nature of coordination devices conducive to achieving and enforcing efficient cooperative budget outcomes, on fiscal performance. On the basis of detailed information from legal documents and questionnaire responses, I develop indexes that summarize institutional characteristics of the budget processes in CEEC. I classify these characteristics according to their coordination properties and to the incentives they give politicians to internalize the fiscal implications of their actions. I then use these indexes to assess the role of budget institutions in explaining cross-country variances in aggregate fiscal performance in that region. The empirical results suggest that the design of budget processes has a strong impact on the average size of budget deficits and average public debt levels, both measured as ratios of GDP, for the five year period 1994-98.

The present study contributes both to the growing empirical research on the effect of budget institutions in general, and to the more specific and gradually emerging literature that analyze the organizational structures and procedural rules of the budget processes in CEEC. To this point, most of the studies on budgeting in CEEC are single country case studies and are mainly descriptive. Nunberg et al. (1999) provide country surveys on central government decision-making structures and processes in Hungary, Poland, and Romania. LeLoup et al. (1998) analyze budgeting in Hungary since 1990, Vanagunas (1995) looks at the budget process in Lithuania, Martinez-Vazquez (1997) evaluates fiscal management in Estonia, and Caiden (1993) reviews changes in budgeting and fiscal management that took place in the Czech and Slovak Republics between 1989 and 1992. Lichnovská (1995), Horváth (1995), Owsiak (1995) analyze the fiscal systems in the Czech Republic, Hungary, and Poland, respectively, in the first half of the nineties. Thuma et al. (1998) review more recent reforms in public finance management in Hungary, in particular the establishment of the treasury system in 1996. Only a few studies provide multi-country comparisons. Straussman (1996) and Martinez-Vazquez and Boex (2000) give a general comparative overview about fiscal management in transition countries. LeLoup, Ferfila, and Herzog (2000) analyze budget systems in Hungary and Slovenia, with a focus on Slovenia. An empirical multi-country study similar to the study on hand is Branson, de Macedo, and von Hagen (1998), who examine the relationship between fiscal policy outcomes and the governance structure of governments in a sample of four CEEC in the period 1993-96. The present study distinguishes itself from this last study by using a larger and more detailed institutional data set, by covering more countries - ten instead of four - over a longer sample period, and by applying econometric techniques to investigate the relation between budget institutions and fiscal outcomes.

The study is organized as follows: Section 2 documents and quantifies the cross-country and time variation of budget institutions in CEEC in a manner that allows a statistical comparison of the national budget processes. Section 3 presents empirical results on the relationship between the institutional indicators of budget institutions and fiscal outcomes in CEEC. Section 4 concludes.

2. The Construction of the Index

This section develops empirical measures that summarize characteristics of the institutional structure of the budget processes in CEEC. Using a methodology similar to von Hagen (1992), I identify and characterize institutional elements of the budget process that strengthen the coordination and cooperation in public budgeting and construct indexes as numerical representations of these qualitative properties of budget procedures. Institutional provisions to achieve coordination of budgeting decisions vary in scope and strength. As regards the design of decision-making structures, coordination devices that move the process to more hierarchy and/or more cooperative decision-making and that introduce mechanisms for monitoring and enforcing fiscal targets are considered to promote fiscal discipline. At the budget preparation stage, procedures guided by a binding commitment on fiscal targets and/or by a strong prime minister and finance minister should keep spending pressures coming from departmental ministers at bay. Limits on the power of the parliament to increase the spending and deficit target set in the government budget draft and a centralized organizational structure of parliament that promotes coherent policy-making should mitigate the common pool problem at the budget authorization stage. Concerning the implementation stage, mechanism should exist that guarantee that the adopted budget is duly executed and that adjustments in case of economic shocks are consistent with sound fiscal policy.

The institutional data set is based primarily on information that I collected from relevant national legislation and through two questionnaires designed by myself and answered by fiscal policy experts or individuals directly involved in the budget process from the respective national ministry of finance, central bank, and parliamentary budget committee (and, if it exists, the research institute of parliament).[4] The legal norms determine the basic roles and responsibilities of the principal actors and establish the broad framework of budget processes, but they generally do not regulate in detail all institutional arrangements relevant for the present analysis. In particular, the legislation does generally not specify the detailed structure of the budget preparation process. The assessment of legal norms alone may also not accurately reflect actual practices, if informal rules have a significant influence on the process or if a common understanding of the procedure imposed by law has not yet emerged. Hence, I combined the information from the budget legislation and expert assessments gathered through the questionnaires to derive a detailed picture of the respective national budget processes. For details on the construction and the design of the questionnaires, see Gleich (2002). The legislation I evaluated include, for each country, the constitution, the organic budget law, and the rules of procedure of the parliament. For some of these legal documents, I obtained different versions, reflecting the changes made during the last decade. Gleich (2002) contains a list of the legislative documents underlying the present study. To clarify details, in particular with regard to the timetable of the preparation stage and dates and particulars of changes in budget procedures, and to avoid mistakes in the interpretation of legal provisions or answers given in the questionnaires, I also contacted several of those responding to my questionnaires via phone and/or e-mail. In addition, I used information provided in official publications of national authorities and in secondary sources such as academic journals and publications from the International Monetary Fund and the European Commission, both to increase the database and to check for consistency with the information gathered by myself. Despite these efforts, the assessment of the material obviously still reflects a certain degree of subjectivity.

Classification and coding of the components of the indexes

Table 1 lists the institutional elements used to construct the indexes and pictures the classification and coding scheme used to translate the qualitative properties of the budget institutions into numerical values. I group the institutional arrangements into three dimensions that correspond to the following three stages of the budget cycle: (1) the preparation stage, in which the draft budget is elaborated, (2) the legislative stage, in which the draft budget is reviewed and formally approved, thus becoming law, and (3) the implementation stage, where the budget act is put into effect and is possibly modified or

[4] Among the institutions that responded are the finance ministries of all sample countries (usually individuals from the budget department). In several countries I also contacted other public institutions (e.g. the state chancery, the ministry of economy, the ministry of interior, or public agencies with specific tasks in the budget process such as macroeconomic analyses).

supplemented.[5] For each institutional arrangement, I assign a value on a scale of 0 to 4, whereas a high value indicates that an institutional characteristic should promote coordinated and cohesive decision-making and thus should be more conducive to fiscal discipline. Note that due to institutional changes during the sample period, the index scores of some countries show some variation over time. I now illustrate each institutional arrangement and the coding criteria.[6]

The first phase of the budget process is the ***budget preparation stage***. In CEEC, the executive branch of government is responsible for the preparation of the budget draft. Participants in this stage include the prime minister, the finance minister, and the spending ministers.[7] The design of the budget preparation process shapes the strategic interaction between these actors and determines the quality of coordination that is established among them. Coordination failures can arise at this stage of the budget process due to horizontal interdependencies between ministries with different jurisdictions making decisions over the use of a common pool of revenues. Unconstrained decision-making by spending ministers may lead to a spending and/or deficit bias, since spending ministers fail to appropriately internalize the costs of an increase in spending of their own ministries. Coordination can be achieved through bargaining on fiscal targets that are to guide budget planning and/or the establishment of an institutional position whose occupant has an incentive to ensure that the collective dilemma is overcome. The latter refers to the role of the finance minister in the budget process (and, to a somewhat lesser extent, the prime minister), the former to the existence of statutory numerical fiscal rules and/or a government fiscal strategy that force cabinet decision-making to take macroeconomic constraints into account.

For the budget preparation stage, I consider the existence of fiscal rules that limit deficit spending, the establishment of quantitative budgetary targets based on a macroeconomic framework early in the budget process, and the relative dominance of the finance minister and the prime minister in the budget negotiations as important institutional devices to enforce fiscal discipline. Four variables represent these features of the budget preparation stage.

Variable 1 refers to the strictness of permanent constraints on budgetary parameters such as legal limits on the size of budget deficits or government borrowing. While a balanced

[5] A further stage, the financial control stage, in which the state audit office reviews the final accounts of the budget and presents a report to the parliament, formally concludes the annual budget cycle. The main role of this last stage of the budget process is to secure consistency between the budget planning phase and the budget execution. It is not analyzed in this study.

[6] Gleich (2002) provides summary tables of the information on the institutional characteristics of the national budget processes contained in the national legislation and gathered through the questionnaires and presents in more detail country-by-country descriptions and budget calendars of the preparation stage.

[7] I do not consider participants at lower levels of the executive hierarchy. Hence I do not discuss problems of vertical coordination (for example, principal-agent problems between a minister and a ministry‘s bureaucracy).

budget rule exist in none of the CEEC, which would have resulted in the highest score, there exist in three countries statutory limits on public borrowing. In Estonia, there are restrictions on foreign borrowing by the state (the total amount of foreign loans outstanding must not exceed 75% of current year's state budget revenues, and the total amount of new foreign loans taken in a year must not exceed 15% of the state budget revenues) and on state guarantees for foreign loan agreements (the total amount of loans guaranteed in a year may not exceed 15% of the state budget revenues).[7] The new Estonian organic budget law, adopted in 1999, adds a restriction stipulating that the total amount of public borrowing through entering loan contracts or issuing debt securities must not be more than planned investment expenditures, with an upper limit of 10% of state budget revenues.[8] In Latvia, public borrowing is permitted for financing capital expenditure only, but this 'golden rule' is not binding if it is deemed necessary to prevent a general economic imbalance. Poland has recently established a ceiling for the size of the public debt to GDP ratio. The Polish constitution of 1997 stipulates that the ratio of public debt to GDP must not exceed 60%. The organic budget law of 1999 provides more detailed regulations concerning the definition of public debt and the actions to be taken if the debt to GDP ratio is near the critical value. I assign zero points to those countries having no legal constraints on budgetary parameters.

Variable 2 assesses the method of determination of fiscal targets and ceilings, set during the annual budget process, as elements that guide the budget preparation. There is considerable variation, both across countries and within specific countries over time, in the way fiscal targets are determined in CEEC. All CEEC have, for example, started efforts in the past few years to introduce some form of medium-term fiscal framework[9], an element often highlighted as an important arrangement for maintaining aggregate fiscal discipline (see, for example, Campos and Pradhan (1996, 1999), Schick (1998), World Bank (1998), Potter and Diamond (1999), Allen and Tommasi (2001)). However, given that the use of multi-annual targets has started only very recently in CEEC, their potential impact on budget outcomes cannot be analyzed yet. Therefore, I concentrate here on possible effects of annual spending and deficit targets only.[10]

[7] See Foreign Borrowing by the Republic of Estonia and State Guarantees for Foreign Loan Agreements Act, enacted 1995.

[8] Funds from the newly created Stabilization Reserve can also be used to finance budget deficits.

[9] Since 1997, all of the ten sample countries (except Romania) have also developed together with the European Commission so-called *Joint Assessment of Medium Term Economic Priorities* reports that include medium-term targets for general government budget aggregates. For a summary of these reports see European Commission, Directorate General for Economic and Financial Affairs (2000).

[10] Gleich (2002) contains some information on the recently created medium-term budget planning frameworks in CEEC.

TABLE 1

CONSTRUCTION OF THE INDEX : INSTITUTIONAL ARRANGEMENTS AND THEIR INDEX PARAMETERS

Institutional characteristics	*Weighting factors*			*Numerical coding*
	Index	*Sub-index*	*Item*	
A. Preparation	0.33			
1. Existence of statutorily mandated fiscal rules		*0.25*		
a. Balanced budget rule				4.00
b. Limits on public borrowing				2.00
c. No legal limits on borrowing				0.00
2. Sequence of budgetary decision-making		*0.25*		
a. MF sets forth aggregate and specific budget targets in initial budget circular				4.00
b. MF proposes, cabinet decides on targets for budget aggregates and spending limits are assigned to each ministry before spending ministries develop budget requests				3.00
c. MF proposes, cabinet decides on targets for budget aggregates before spending ministries develop budget requests				2.00
d. Budgetary targets are set on the basis of preliminary budget requests				1.00
e. No budget targets are determined				0.00
3. Compilation of the draft budget		*0.25*		
a. Finance ministry holds bilateral negotiations with each spending ministry				4.00
b. Finance ministry only collects budget requests and compiles summary for cabinet session				0.00
4. Members of executive responsible for reconciling conflicts over budget bids		*0.25*		
a. MF or PM can veto or overrule cabinet decision				4.00
b. Senior cabinet committee, then whole council of ministers or cabinet				2.00
c. Executive collectively (e.g. council of ministers or cabinet)				0.00
B. Legislation	0.33			
5. Relative power of the upper house vis-à-vis the lower house		*0.20*		
a. No budgetary power vested in upper house or unicameral parliament				4.00
b. Lower house has prerogatives				2.00
c. Both houses have equal rights (e.g. joint sittings)				0.00
6. Constraints on the legislature to amend the government's draft budget		*0.20*		
a. Deficit provided in the draft budget cannot be exceeded, or individual amendments have to indicate offsetting changes				4.00
b. No restrictions				0.00
7. Sequence of votes		*0.20*		
a. Initial vote on total budget revenues, expenditures, and the deficit				4.00
b. Final vote on budget aggregates				0.00
8. Relative power of the executive vis-à-vis the parliament		*0.20*		
a. Cabinet can combine a vote of confidence with a vote on the budget			*0.33*	4.00
b. Draft budget is executed if parliament fails to adopt the budget before the start of the fiscal year			*0.33*	4.00
c. Parliament can be dissolved if it fails to adopt the budget in due time			*0.33*	4.00
9. Authority of the national president in the budget procedure		*0.20*		
a. No special authority				4.00
b. President has veto right (president elected by parliament)				2.67
c. President has veto right (president directly elected by citizens)				1.33
d. President has veto right (qualified majority required to override veto)				0.00

TABLE 1 (CONTINUED)

CONSTRUCTION OF THE INDEX : INSTITUTIONAL ARRANGEMENTS AND THEIR INDEX PARAMETERS

Institutional characteristics	*Weighting factors*			*Numerical coding*
	Index	*Sub-index*	*Item*	
C. Implementation	0.33			
10. Flexibility to change budget aggregates during execution		*0.25*		
a. Any increase in total revenues, expenditures and the deficit needs to be approved by the parliament in a supplementary budget				4.00
b. Revenue windfalls can be used to increase expenditure without the approval of the parliament as long as the deficit is not increased				2.67
c. Simultaneous changes in revenues and expenditures allowed without approval of parliament if budget balance is not changed				1.33
d. At discretion of government				0.00
11. Transfers of expenditures between chapters (i.e. ministries' budgets)		*0.25*		
a. Require approval of parliament				4.00
b. FM or cabinet can authorize transfers between chapters				2.67
c. Limited				1.33
d. Unrestricted				0.00
12. Carry-over of unused funds to next fiscal year		*0.25*		
a. Not permitted				4.00
b. Only if provided for in initial budget or with finance ministry approval				2.67
c. Limited				1.33
d. Unlimited				0.00
13. Procedure to react to a deterioration of the budget deficit (due to unforeseen revenue shortfalls or expenditure increases)		*0.25*		
a. MF can block expenditures				4.00
b. The cabinet can block expenditures				2.67
c. Approval of the parliament necessary to block expenditures				1.33
d. No action is taken				0.00

For the setting of fiscal targets, there are five possible ratings, reflecting differences regarding the date of setting the targets, their scope and the identity of who sets the targets. With regard to the first aspect, I distinguish budget processes that start with the determination of fiscal targets before the line ministries and other government entities (e.g., decentralized agencies and organizations) with independent budgetary authority (henceforth summarized in the term spending ministries) develop their budget requests (Estonia, Latvia, Slovenia, and since 1998, Bulgaria and the Czech Republic), and processes where fiscal targets are set only after initial budget requests are prepared (Hungary, Slovakia, Romania, and since 1999, Lithuania and Poland). I assign higher scores to the first procedure where explicit statements on objectives and priorities are made and fiscal targets are imposed right from the start of the process to guide the subsequent budget preparation. I assign a score of zero if no targets are, or have been, announced (Bulgaria and the Czech Republic before 1998, Lithuania and Poland before 1999). It is noteworthy that even in the countries where targets are set, they are not seen as binding for the spending ministries. However, they are considered as the framework for the subsequent budget preparation and the benchmark for the budget discussions. As regards the second aspect, fiscal targets are likely to have a more constraining effect on spending demands if they comprise both targets for budget totals and for major sub-aggregates, in particular limits for each ministry's spending. Targets on budget aggregates alone do not provide spending ministers with clear and direct constraints on their budget requests. Setting aggregate fiscal targets, but not targets for major sub-aggregates, could lead to a situation in which the cabinet as a whole is unable to withstand pressure to raise the totals when the individual spending requests are considered. Thus I assign a higher score if, all else equal, a country's government sets fiscal targets on ministerial budgets. The third aspect refers to the influence of the finance minister and the prime minister in the setting of fiscal targets. Since their mandate and efforts will be mostly directed towards macroeconomic matters, a procedure is presumably more conducive to fiscal discipline if it grants the finance minister and the prime minister substantial agenda-setting power in the formulation of aggregate fiscal targets and the fiscal strategy. While it is difficult to assess the real relative power between the finance minister and the spending ministries, based on my information I do not find that a finance minister in any of the CEEC has a position so strong that he/she can impose his view about budget targets on the other cabinet members. In the majority of the sample countries the cabinet agrees on fiscal targets at some point in the budget process on the proposal of the finance minister. Thus, the finance minister has proposal initiation power, but there are generally no limits on the scope of amendments, so that this power might be relatively weak.[11] In 1999 Lithuania established a senior cabinet committee responsible for strategic planning that recommends fiscal targets, but again the cabinet takes a final decision. From a first look it seems that a more centralized procedure for setting spending targets exist in Romania, where the finance minister together with the prime minister determines expenditure limits for individual ministries. However, they announce these targets not in the initial budget guidelines (which contain only technical instructions), but only after the spending ministries have submitted their budget requests. The Czech finance minister sets

[11] The type of government may explain why governments in CEEC choose not to delegate a superior status to the finance minister in setting fiscal targets. Typically, CEEC have had coalition governments, in which many issues with an economic character are usually regarded as sensitive and therefore dealt with by party leaders rather then by the finance minister. The effect is a reduction in the power of the finance minister. In contrast, for prime or finance ministers in single-party governments it is potentially easier to make use of the formal powers available and to give directives to the spending ministers who are members of their own party. For an extensive discussion of this argument, see Hallerberg and von Hagen (1997, 1999). Interestingly, the Czech finance minister obtained greater leeway in setting fiscal targets in 1998, after a one party (minority) government came into power; in the years before, there have always been coalition governments.

forth targets on budget totals and for each ministry's spending in the initial budget circular without seeking the approval of the cabinet, albeit only since 1998. A special case is Hungary, which is the only country in CEEC where the parliament is formally involved in the setting of targets already during the budget preparation stage. The Hungarian parliament decides, on the basis of a government proposal, on the overall size of general government expenditures, revenues and the deficit already several months before the actual budget deliberation in the legislature commences. As regards the informational basis for decisions on fiscal strategies, governments in all sample countries use macroeconomic forecasts to derive fiscal targets. In half of the countries (Bulgaria, the Czech Republic, Estonia, Romania, and Slovakia) the ministry of finance alone is responsible for the preparation of the macroeconomic framework. In the other five countries the relevant ministry in charge of economic affairs (henceforth: the ministry of economy) participates in the preparation. The central banks in Estonia, Hungary, Poland, and Romania are also involved in the elaboration of the macroeconomic framework in their respective country. Unfortunately I do not have sufficient information on the details of the preparation and use of macroeconomic forecasts and projections in the budget process to include an extra index item assessing this issue.

Variables 3 and 4 assess the degree of centralization of the structure of negotiations within government after the budget bids have been received. Variable 3 refers to the power of the finance minister in the compilation of the draft budget, and reflects if the finance minister engages in bilateral negotiations with the spending ministries to review the budget bids and to ensure compliance with the fiscal targets (I assign four points in this case) or if the finance minister's role is only to collect and summarize the budget bids for cabinet meetings (which would result in a score of zero). As it turns out, it is very difficult to find substantial differences across countries with respect to this issue on the basis of my information. In all CEEC, the ministry of finance is generally responsible for the compilation of the draft budget, and in all countries the ministry of finance conducts bilateral negotiations with the spending ministries about the budget bids. The finance ministry's role as central coordinator is partly restrained in Latvia and Lithuania, where the elaboration of the budget for public investments is the responsibility of the ministry of economy. In Slovenia, a couple of parliamentarians from each coalition party participate in the negotiations, but it is not clear how this influences the negotiations. The Slovenian parliamentary budget committee reports that the presence of the parliamentarians would not constrain the authority of the ministry of finance, while the ministry of finance reports the opposite. The national legislation does generally not grant the minister of finance particular authoritative powers in the budget negotiations. An exception is Estonia, where the organic budget law formally gives the minister of finance enhanced budgetary power over other ministries in the bilateral negotiations. The Estonian finance minister has the right to leave out or change expenditure amounts requested by spending ministers when he or she compiles the draft budget.

negotiations. The Estonian finance minister has the right to leave out or change expenditure amounts requested by spending ministers when he or she compiles the draft budget.

Variable 4 reflects how remaining disputes from the bilateral negotiations are reconciled in the executive. Following von Hagen (1992), I classify procedures where the whole cabinet is involved in the reconciliation as more decentralized than procedures where senior cabinet committees discuss important matters before they are send to the cabinet. The latter structure exists in the Czech Republic, Poland, Slovakia, and since 1999 also in Lithuania. In these countries, the draft budget and disagreements between the ministry of finance and the spending ministries are first discussed in senior cabinet committees before the cabinet convenes to discuss the budget. The finance minister's role is strengthened in these four countries due to his membership in the cabinet committees of budgetary relevance. In the other countries the draft budget and disputed issues are directly forwarded to the cabinet. There is considerable uniformity with regard to the voting procedure in cabinet. Only Latvia and Slovenia report that the prime minister can overrule cabinet decisions. I classify this as the most centralized mechanism to resolve conflicts. Latvia further reports that the minister of finance can veto cabinet decisions that would result in substantial amendments to the draft budget proposed by him/her. All other countries report that the minister of finance cannot veto or overrule cabinet decisions. A statutory basis that concedes the finance minister special authority in the cabinet, as it exist for example in Germany, where the finance minister can veto decisions taken by the cabinet on budgetary issues, does not exist in any of the CEEC.

After the preparation stage, the ***legislative stage*** begins, during which the parliament has to approve, amend or reject the executive budget and the president eventually signs the budget law. As spending ministers, legislators are interested in obtaining financing for specific projects that benefit their constituencies, failing to consider the fiscal externality of spending on particularistic programs whose financing is dispersed among all (current and possibly future) tax payers. Hence, legislative budgeting can give rise to a spending and deficit bias if legislators are left unconstrained to amend the executive budget proposal. One may suspect that the spending bias is stronger in parliament than in government, given the differences in the degree of fragmentation of these core decision-making bodies. Therefore, I argue that institutional regulations that limit the scope of amendments to the budget proposal enhance fiscal discipline. The five variables used to quantify the scope of amendments the parliament and the national president can make to the government budget refer to the internal structure of the parliament, the existence of explicit limits on the scope of amendments, the sequence of decision-making in the parliamentary budget process, the relative power between the executive and the parliament, and the role of the president in the legislative process.

Variable 5 reflects the dispersion of budgetary power between the houses of parliament. I assign 4 points to countries where the government budget is scrutinized only by one house of parliament and I give an intermediate score if the lower house has strategic prerogatives over the upper house. I assign the lowest score to Romania, where the Senate and the Chamber of Deputies hold joint sittings for the deliberation of the budget act and both houses have equal rights in the budget process. In Poland, the lower house (Sejm) has prerogatives over the upper house (Senate), which debates the budget bill after the lower house concludes its deliberation. The Senate cannot reject the budget adopted by the Sejm, but it can propose amendments. Once the Senate concludes its readings, the Sejm can overrule the proposed modifications by an absolute majority vote or includes the amendments in the budget.[13] A similar procedure exists in Slovenia, where the National Council can request the National Assembly to reconsider the budget after the latter has adopted a budget.[14] The National Assembly then holds another debate and adopts in a final vote the budget by a majority of its members. In the Czech Republic, the upper house is not involved in the budget process. The other sample countries have unicameral parliaments.

Variable 6 asks about formal constraints on the scope of the legislature to amend the government budget, and classifies processes as stricter if amendments are limited. In six countries, amendments are unrestricted. In Estonia, Lithuania and Slovenia, amendments have to be offsetting in the sense that motions to increase expenditures have to specify sources to finance the additional expenditures, and amendments that entail revenue cuts require to specify offsetting increases in other revenue items. This forces the proposer to recognize trade-offs between projects and limits attempts to demand additional expenditures while ignoring their costs. Amendments submitted during the readings in the Polish Senate (but not in the Sejm) must also be offsetting. Furthermore, the Polish constitution of 1997 stipulates that the parliament cannot increase the deficit planned by the cabinet in the draft state budget. The 'small constitution' of 1992 did not include such a rule.[15]

Variable 7 refers to the sequence of decision-making during the parliamentary budget deliberation, and investigates whether a decision is made on the size of budget totals before the work on the details of the budget starts. As it turns out, in all countries but Poland the

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[13] The parliamentary rules in all countries normally require the votes of the majority of the members present in the voting session to adopt amendments and the final budget.

[14] Slovenia has formally a unicameral parliamentary structure, but the constitution provides for an advisory body with limited legislative powers, the National Council, in addition the parliamentary chamber, the National Assembly. The members of the National Council are not elected by popular vote, but they are delegates of particular social, economic, professional and local interest groups. The constitution specifies which interest groups are eligible to send delegates to the National Council and determines the allocation of seats between these groups.

[15] In all countries proposals for amendments have to be channeled through the parliamentary committees before they can be subject to a vote in a plenary sitting. Because of the considerable uniformity with respect to the organization of the work of the committees, I did not include a separate variable reflecting the degree of centralization of the committee structure. See Gleich (2002) for information on committee structures in CEEC.

draft budget is directly distributed to the standing committees (in the Czech Republic only to the budget committee) and the deliberation commences accordingly with a review of the draft budget in meetings of these parliamentary working bodies (which may usually formulate amendments already at this point) before a general debate is held in the first reading. I assign the highest score to the Czech Republic, where only the budget committee initially reviews the draft budget and which is the only country where the parliament decides at the end of the general debate on the size of total revenues and expenditures and the deficit, limits that cannot be changed in the subsequent readings. The Czech government's influence on this decision is relatively strong, since it is the exclusive right of the government to revise the draft budget during the debate and to decide if it includes modification proposed by the deputies or not. The Polish parliament holds a vote at the end of the general debate to reject the government's draft as a whole (there is no vote on particular budgetary parameters), if such a vote has been requested (which has been the case in each of the years 1993 to 1999 except in 1998). In Hungary, the parliament is required to determine by 30 November the size of overall budget parameters (i.e. total expenditures, revenues and the deficit) and the total amount of expenditures for each budget study, but only after votes are taken on motions submitted by parliamentary members proposing changes to the government budget with respect to these figures. Only after the broad structure of the budget is fixed does the Hungarian parliament consider (amendments to) the amounts within the chapters. In all other countries the parliament takes a global vote on budget aggregates at the end of the legislative procedure.

Variable 8 summarizes three institutional devices that reflect the relative power of the government and the parliament during the deliberation of the budget. The budget process is considered to be more centralized if institutional arrangements exist that facilitate that conflicts between the government and the parliament concerning increases in spending or borrowing (demanded by the legislature) are resolved in favor of the executive. For each institutional arrangement strengthening the power of the government I assign 4 points if it exist, and zero points otherwise. The value for the government strength variable is then calculated as the unweighted average of the scores assigned. The first issue relates to the government's ability to call for a vote of confidence in connection with the vote on the budget. In half of the countries (Bulgaria, the Czech Republic, Hungary, Slovakia, and Slovenia) is the government's position strengthened by its ability to use this measure, forcing the members of the governing parties to face a government crisis in case of rejection or to line up to support the government. It is very likely that as a result the parliament will be prevented from adopting substantial changes to the draft budget.[16] The other two issues

[16] Regarding the influence of the government in the regular voting procedure, there exist in the parliamentary rules of three countries provisions that give the government formally the right to take part in the amendment

concern institutional arrangements applied in case that the parliament does not approve the budget within a certain time frame.[17] The first regards the rules for the budget management in case that the parliament has not adopted a budget before the start of the fiscal year. The position of the government is stronger if the provisional budget is based on the draft budget (Czech Republic, Poland, Slovakia) and not on the previous year‘s budget (Bulgaria, Estonia, Latvia, Lithuania, Romania, Slovenia), because the government's proposal making power is strengthened. In the latter case, the government might be more willing to agree to compromise solutions deviating from a prudent fiscal policy stance if it is more impatient than the parliament to secure agreement on a budget. I assign an intermediate score of 2 points to Hungary, where the parliament approves an interim budget proposed by the government. The other issue relates to the possibility that the parliament is dissolved if it fails to approve the budget in due time. A dissolution of the parliament entails large political costs for the legislators, and the bargaining power of the government may thus increase the closer the budget deliberation comes to the deadline. I assign 4 points to the three countries (Czech Republic, Estonia, and Poland) where such rules exist. The Polish president under the constitution of 1997 has the right to dissolve the lower house of parliament (Sejm) if the budget is not adopted within four month (three month under the 'small constitution' of 1992) from the time the government has submitted the draft budget. In Estonia, the president can dissolve the parliament if the parliament fails to adopt the budget until the end of February of the budgetary year. In the Czech Republic, the president can dissolve the lower house of parliament (the Chamber of Deputies) if within three month after the submission of the draft budget the budget is not adopted, provided that the cabinet has linked a vote of confidence to the passing of the budget and that the cabinet has asked at the same time the lower house to adopt the budget within these three month.

<u>Variable 9</u> captures the power of the president in the budget process. In all CEEC but Slovenia (and Poland since 1998) the president can refuse to promulgate the budget adopted by the parliament and then return it together with his/her objections to the parliament. The presidents in the political systems in CEEC are not directly responsible for economic and fiscal policy and hence, their performance is probably not judged by the voters on the basis of

reviewing process. In these countries (Latvia, Lithuania, and Slovenia) the government can submit its position to all proposed amendments before the voting procedure begins. In Lithuania and Slovenia, the cabinet also prepares a revised draft budget for the final reading, in which it offers own amendments and includes proposals by the parliament that it accepts. In the case of Lithuania, there is an even slightly more demanding majority requirement for amendments that have not the support from the government. Amendments rejected by the Lithuanian government needs the votes of a majority of *all* members of parliament to be adopted.

[17] Among the ten countries, there exist only in Lithuania a legal provision that regulates explicitly a situation in which the parliament rejects the government budget. In Lithuania, the government has to resign if the parliament rejects the budget in a final vote and subsequently rejects a revised budget again.

the economic or fiscal situation. Therefore, I assume that the presidents in CEEC may use their veto power in an attempt to pursue a more particularistic policy agenda and thus may ask for larger spending in certain expenditure categories. This might in particular be the case if a president is more independent from the other constitutional bodies, i.e. if he/she is elected directly by the citizens and not by the parliament, and if a president has constitutional powers over certain policy issues. Based on this logic, I argue that the decision-making process is more fragmented and therefore less conducive to aggregate fiscal discipline the stronger is a president's power and potential effort to veto the budget.[18] The budgetary powers of the presidents in CEE differ considerably. The Polish president under the constitution of 1992 has had a particular strong authority to influence budget decisions, since the Sejm had to pass a budget with a two-third supermajority in case the president had vetoed the initial budget (I assign 0 points in this case). The Polish constitution of 1997 eliminated this right, and since the president can only ask the constitutional court to investigate on the conformity of the budget with the constitution. In the other countries, the parliament can overrule the president's objections either with the votes of the majority of all its members (Bulgaria, Czech Republic, Lithuania) or by a simple majority vote (Estonia, Hungary, Latvia, Romania, Slovakia). Among the presidents who have (or had in the case of Poland) veto power, the presidents of Bulgaria, Lithuania, Poland, and Romania are not elected by the parliament, and the constitution give these presidents considerable influence in foreign policy (Lithuania, Poland, Romania) and/or defense policy (Bulgaria, Poland, Romania) (I assign 1.33 points to these countries, except for Poland for the reasons discussed above). For the countries where the president has veto power and is elected by the parliament, I assign 2.67 points. Slovenia (and Poland for the years since 1998) receives 4 points, since its president has no veto right.

[18] In contrast to my hypothesis, in the literature studying the U.S. presidential system it is often argued that enhancing the power of the president in the budget process should tend to improve budgetary efficiency (see, for example, Inman and Fitts (1990)). The reasoning is that since the president would have a higher incentive to internalize fiscal consequences of budget decisions than legislators (this follows from the president's needs to develop a national constituency rather than a local one), centralizing budgetary power in the president reduces the fiscal inefficiencies of legislative budgeting. However, this argument rest on the assumption that fiscal policy (or macroeconomic policy in general) plays a significant role in the considerations of voters when they elect a president. This is obviously the case in countries with presidential systems like the U.S., because there the president has (at least to a substantial part) the responsibility for fiscal policies pursued. In contrast, in parliamentary systems the cabinet (and its supporting majority in parliament) is in charge of economic and fiscal policy. A president's mandate in parliamentary systems, in contrast, does usually not include the responsibility for fiscal policies, and thus the electorate may probably not hold a president accountable for unfavorable fiscal outcomes. Hence, there is no reason to believe that a president in a parliamentary system has the incentive to act as a guardian of a prudent fiscal stance. Therefore I think that it is reasonable to assume that presidents in the political systems of CEEC may use their powers to carry out policy agendas that may not necessarily emphasize macroeconomic issues such as fiscal discipline.

Once the president signs the budget the ***budget implementation stage*** begins. Responsible for the execution of the budget is the executive branch of government. The budget authorizes the ministries to make expenditures as specified in the budget. There are two major forces that may undermine fiscal discipline at this stage. The first concerns the extent by which the budget is binding. If the government can easily modify budget parameters, the agreements made in the budget planning and authorization phases would be undermined and the authorization function of the parliament and, within the executive, the control function of the finance minister weakened. The result would be that the budget looses its commitment function, since it would not impose a hard budget constraint on spending ministers. The spending ministers, for example, may want changes during the year in the distribution of expenditures approved in the budget, or may want to shift funds between consecutive budget years. Further, the government may want to increase aggregate spending or the deficit. In terms of hierarchy, the level of approval of any of such modifications can range from the passage of a supplementary law by the parliament to the approval by individual spending ministers (or even lower levels within a ministry). More hierarchical procedure likely result in fewer changes to the original budget, thus supporting the strict implementation of the agreement derived in the planning phase. Therefore, I suspect that more rigidity in the execution of the budget is associated with more fiscal discipline. This aspect is reflected in the variables 10 to 12. The second dimension concerns the degree of flexibility to react to unforeseen revenue shortfalls or expenditure increases. Here, a fundamental problem is that the fiscal response to a negative fiscal shock may be delayed and/or less drastic measures are taken if decisions are made by the cabinet as a whole, or by the presumably even more fragmented parliament. On the other hand, a budget process that gives the finance minister the power to block expenditures if the budgetary position deteriorates (or to use other measures deemed to be necessary to improve the situation) can strengthen fiscal discipline. Hence, I regard procedures governing fiscal adjustment to changing economic circumstance that enable the finance minister to adjust quickly and flexible to negative fiscal shocks with appropriate corrective actions as more conducive to fiscal discipline than procedures in which the whole cabinet or even the parliament decides to block or cut expenditure appropriations, since the latter mechanisms may result in delays and/or a decision to take less drastic measures than would be necessary in the particular situation due to disagreements over the actions to be taken. Variable 13 refers to this issue.

Aggregation of the institutional variables

I now bring the institutional elements together and create the institutional indexes of budget processes in CEEC. I develop four indexes for each country, one for each of the three stages of the budget process and one overall index as numerical representation of the budget process as a whole. Table 1 shows the weights used to aggregate the variables into the overall index and the three sub-indexes. For each of the budget preparation, authorization and implementation stage, I construct a single index labeled PREPA, LEGIS, and IMPLE, respectively, each computed as the simple mean of the variables used to characterize the particular stage in the budget process:

(1) $$\text{PREPA} = \frac{1}{4}\sum_{i=1}^{4} v_i\ ,\ \ \text{LEGIS} = \frac{1}{5}\sum_{i=5}^{9} v_i\ ,\ \ \text{IMPLE} = \frac{1}{4}\sum_{i=10}^{13} v_i$$

where the v_i's are the values of the different institutional variables of a particular country. The overall index, INDEX, is then derived as the sum of the scores of the three sub-indexes:

(2) $$\text{INDEX} = \text{PREPA} + \text{LEGIS} + \text{IMPLE}$$

Table 2 reports the scores assigned to the ten CEEC on each of the institutional characteristics and the scores of the indexes. As mentioned before, note that some countries have dual entries due to major changes in institutional arrangements in recent years, with most of the changes resulting in higher index scores. Each sub-index has a potential range from 0 to 4, and the overall index has a potential range from 0 to 12. Higher index scores indicate that a country's budget process evolves in an institutional framework that I expect to be more conducive to providing fiscal discipline; countries are ranked from the weakest to the strongest in this regard.

TABLE 2

CONSTRUCTION OF THE INDEX: SCORES BY COUNTRY

	A. Preparation						B. Legislation							C. Implementation							
	1.	2.	3.	4.	PREPA score	PREPA rank	5.	6.	7.	8.	9.	LEGIS score	LEGIS rank	10.	11.	12.	13.	IMPLE score	IMPLE rank	INDEX score	INDEX rank
Bulgaria	0	0 *3*[1]	4	0	1.00	1	4	0	0	1.33	1.33	1.33	3	1.33	2.67	4	4	3.00	4	5.33 *6.08*[1]	3
Czech Republic	0	0 *4*[1]	4	2	1.50	2	4	0	4	4 *2.67*[3]	2.67	2.93	10	1.33	2.67	1.33	2.67	2.00	1	6.43 *7.42*[1], *7.19*[3]	6
Estonia	2	3	4	0	2.25	8	4	4	0	1.33	2.67	2.40	9	4	4	2.67	4	3.67	8	8.32	10
Hungary	0	1	4	0	1.25	3	4	0	0	2.0	2.67	1.87	5	2.67	1.33	2.67	2.67	2.34	2	5.32	2
Latvia	2	2	4	4	3.00	10	4	0	0	0	2.67	1.33	3	4	4	2.67	4	3.67	8	8.00	9
Lithuania	0	0 *1*[2]	4	0 *2*[2]	1.00	1	4	4	0	0	1.33	1.87	6	4	4	4 *1.33*[3]	1.33	3.33	7	6.20 *6.95*[2], *6.29*[3]	5
Poland	0 *2*[1]	0 *1*[2]	4	2	1.50	5	2	0 *4*[1]	0	2.67	0 *4*[1]	0.93	2	4	2.67	2.67	2.67	3.00	4	5.43 *7.53*[1], *7.78*[2]	4
Romania	0	1	4	0	1.25	3	0	0	0	0	1.33	0.27	1	4	4	2.67	4	3.67	8	5.19	1
Slovakia	0	1	4	2	1.75	7	4	0	0	2.67	2.67	1.87	6	2.67	2.67	4	2.67	2.67	4	6.62	7
Slovenia	0	3	4	4	2.75	9	2	4	0	1.33	4	2.27	8	2.67	2.67	2.67	2.67	2.67	3	7.69	8

Note: Scores in italics and with superscripts indicate recent changes in institutional characteristics. [1] indicates changes in 1998, [2] changes in 1999, and [3] changes in 2001.

An inspection of the index scores suggests that the institutional structures of the budget processes in CEEC vary widely. Estonia records the highest score on the overall index (INDEX), followed by Latvia and Slovenia. Bulgaria, Hungary, Poland and Romania have the lowest scores, with Romania appearing last in this ranking. Note that there are several countries that have increased the degree of centralization of their budget processes during the past years according to the indexes. One observes a particular large increase in the overall index score for Poland. In Poland, the adoption of the new constitution in 1997 considerably constraint the power of the parliament and the president to amend the budget proposed by the executive and introduced a limit on the size of the public debt relative to GDP, as discussed in the description of the index items. These changes strengthened substantially the executive vis-à-vis the parliament and the president.

Table 3 gives a rank order correlation matrix of the four indexes, PREPA, LEGIS, IMPLE, and INDEX. The indexes representing the three stages of the budget process are not closely correlated, which indicates that the ranks obtained from the sub-indexes differ considerably. The Czech Republic, for example, has the highest score for the sub-index LEGIS, but ranges among the two lowest ranked countries on the sub-indexes PREPA and IMPLE. Latvia ranks highest in PREPA and IMPLE, but only seventh in LEGIS. Only Estonia ranks high on each dimension, which suggest that Estonia has a high degree of centralization at all stages of the budget process. Looking at the correlations between the overall index and the sub-indexes, I find that the correlations between the indexes PREPA and LEGIS and the overall index are significant.

TABLE 3

SPEARMAN RANK CORRELATIONS BETWEEN THE SUB-INDEXES

	PREP	LEGIS	IMPLE
LEGIS	0.29		
IMPLE	0.14	-0.39	
INDEX	0.81***	0.62*	0.21

Note: *, **, ***, indicates that the correlation coefficient is significantly different from zero at the ten, five, and one percent level respectively.

Before I analyze empirically the relation of the measures of budget institutions and cross-country differences in fiscal performance in CEEC, I examine the robustness of the indexes to alternative aggregation methodologies. In principal, the choice of the aggregation method depends on whether specific institutional arrangements substitute for or complement each other. Additive aggregation is appropriate if budget institutions are substitutes, while multiplying the values of the institutional variables would be correct if the institutions are complements.

By using equal weights in the additive aggregation procedure applied above, I implicitly make the assumption that - in the first aggregation step - the components of each sub-index and that - in the second aggregation step - the three sub-indexes among one another are perfect substitutes. This implies that the indexes aggregated in this way do not differentiate between processes having intermediate scores for each institutional element and processes that have high scores in some elements and low scores in others. In order to investigate if different assumptions about the substitutability between the index elements change significantly the ranking of the countries, I construct the following indexes:

(3) $$\text{PREPA} = \frac{1}{4}\sum_{i=1}^{4} v_i^{\alpha}\ ,\quad \text{LEGIS} = \frac{1}{5}\sum_{i=5}^{9} v_i^{\alpha}\ ,\quad \text{IMPLE} = \frac{1}{4}\sum_{i=10}^{13} v_i^{\alpha}$$

(4) $$\text{INDEX} = \left(\frac{1}{4}\sum_{i=1}^{4} v_i\right)^{\alpha} + \left(\frac{1}{5}\sum_{i=5}^{9} v_i\right)^{\alpha} + \left(\frac{1}{4}\sum_{i=10}^{13} v_i\right)^{\alpha}$$

The indexes differ from the previous additive aggregation if α does not equal 1. For $\alpha>1$, the aggregate score of an index will be higher for countries that have high scores in some institutional elements and low ones in others than for those countries which have more balanced scores around medium score values. The opposite is valid for $0<\alpha<1$.

If one assumes a complementary connection between budget institutions, the appropriate method of aggregation is to multiply the scores of the institutional variables. A country having one institutional characteristic classified as very decentralized, for example, would then receive a low index score, even if other institutional characteristics are rated as highly conducive to enhancing fiscal discipline. It is quite reasonable to assume that complementary effects exist between the institutional structures of the subsequent stages of the budget process. Consider, for example, the interaction between the preparation process within the executive and the subsequent authorization stage. If the parliament can easily deviate from the government's estimates, then budgetary decisions evolving from a centralized decision-making process in the executive would have only a weak disciplining effect on excessive spending or deficits in the legislative stage. As regards the relation between elements that characterize a particular stage in the budget process, however, the assumptions of substitutability seems to be more plausible. For example, preparation procedures that either start with a negotiated agreement on fiscal target early in the budget process or that alternatively assign a strong position to the finance minister should be more conducive to fiscal discipline. To obtain an index that takes into consideration the possible complementary interaction of the structure of the stages of the budget process, I use the following formula:

$$(5) \qquad \text{INDEX} = \left(\frac{1}{4}\sum_{i=1}^{4} v_i\right) * \left(\frac{1}{5}\sum_{i=5}^{9} v_i\right) * \left(\frac{1}{4}\sum_{i=10}^{13} v_i\right)$$

The disadvantage of the multiplicative aggregation procedure is that it is very sensitive to specification errors. If, for example, I assign falsely a low score to one institutional arrangement of a country's budget process while actually all institutional characteristics possess properties which should be ranked high, multiplicative aggregation results in a larger error in the index score than additive aggregation.

TABLE 4

SPEARMAN RANK CORRELATIONS BETWEEN DIFFERENT INDEXES

	PREPA (α=1)	PREPA (α=0.4)
PREPA (α=0.4)	1.00	
PREPA (α=2)	0.99	0.99
	LEGIS (α=1)	LEGIS (α=0.4)
LEGIS (α=0.4)	0.99	
LEGIS (α=2)	0.99	0.96
	IMPLE (α=1)	IMPLE (α=0.4)
IMPLE (α=0.4)	0.99	
IMPLE (α=2)	0.99	0.97
	INDEX (α=1)	INDEX (α=0.4)
INDEX (α=0.4)	0.95	
INDEX (α=2)	0.83	0.78
	INDEX (additive, α=1)	
INDEX (multiplicative)	0.95	

Note: All coefficients are significant at the one percent level. The number of observations is N=10.

Table 4 reports rank correlations between the different indexes. Following Alesina et al. (1999a), I choose 0.4 and 2 as alternative values for α.[19] It appears that different assumptions about the substitutability between institutional characteristics of the individual stages of the budget process have hardly any effect on the ranking of the countries. As regards the overall index, INDEX, the ranking of the countries do also not change significantly depending on the

[19] Alesina et al. (1999a) show by means of some numerical examples that values for α that fall in the range between 0.4 and 2 seem to represent reasonable assumptions about substitutability between components.

specification of the index. All Spearman rank correlations displayed in Table 4 are significant at the one percent level. Thus, the country rankings are robust to changes in the specification of the indexes. In the empirical analysis, I utilize the simple additive indexes shown in line (1) and (2).[20]

3. Empirical Results

I now consider the relationship between the institutional indexes of the budget process and fiscal performance in CEEC. I focus on the period 1994-98 during which the index scores are time-invariant. As shown, the index scores of some countries increase for the years after 1998 due to considerable changes in budget institutions. Since I treat the indexes in the estimates as cross-country variables, I cut-off the reference period after 1998 in order to avoid to mix up the calculated index scores for the 1994-98 period with the (usually higher) scores resulting from these recent changes.[21] I exclude years before 1994 because the calculated index scores are partly based on information extracted from legislative documents that were not in effect during the early years of transition. In the following, I view the institutional setting of the budget processes as measured by my indexes as predetermined with respect to 1994-98 fiscal outcomes.

As indicators of fiscal performance I use the budget balance and gross public debt, both as percentage of GDP. The fiscal indicators refer to the general government. The annual data are averaged over the sample period for each country. The source of the data is the EBRD Transition Report.[22] Note that a positive value of the budget balance refers to a surplus, and a negative value to a deficit.

The empirical analysis tests the hypothesis that budget processes governed by budget institutions that promote decision-making with a more comprehensive view of the costs and benefits of government activities are associated with better fiscal performance. Therefore I expect countries ranking high on the indexes to exhibit relatively larger (lower) budget surpluses (deficits) and lower public debt levels. I test the hypothesis using regression

[20] As it turns out, replacing the simple additive indexes with the relevant indexes obtained from equations (3), (4), and (5), respectively, has no qualitatively impact on the results that follow.

[21] Changes in the index scores for the years since 1998 presented in Table 2 are therefore not considered in the present paper. In Gleich (2002) I make use of both the cross-country and time variation of budget institutions in CEEC in a panel analysis where I test the explanatory power of different political economy models of fiscal policy-making. In that study, the qualitative results concerning the effect of budget institutions are similar to those presented in the paper at hand.

[22] The data on general government balances and gross debt are taken from the EBRD Transition Report Update 2000 and the EBRD Transition Report 2000, respectively. Data on public debt is available for Romania only since 1995, and for Estonia and Lithuania since 1997. In these cases, I took averages over the years for which I have data.

analysis and non-parametric estimation methods. The non-parametric methods use the ranks of the sets of variables to calculate test statistics.

Linear Regression Analyses

Table 5 presents the results from bivariate cross-country regressions of the fiscal performance variables on the indexes. All regressions are estimated with OLS. The reported standard errors are calculated using a heteroscedasticity consistent covariance matrix (White (1980)). When the budget balance ratio is the dependent variable, INDEX enters the regression with a positive coefficient. When the public debt ratio is the dependent variable, INDEX enters the regression with a negative sign. That is, the higher the degree of centralization of the budget process, the lower the deficit and debt ratios. Both coefficients are strongly significant. This pattern of results supports the hypothesis about the association between the institutional measures and the fiscal performance variables. In economic terms, the regression coefficient for INDEX reported in column 4 suggests that an increase in the index by 100 points would improve the budget balance, in the long run, by 1.37 percentage points.

TABLE 5

BUDGETARY INSTITUTIONS AND FISCAL PERFORMANCE : EVIDENCE FROM CROSS-COUNTRY REGRESSIONS

Dependent variable in columns (1) to (4): Budget balance
Dependent variable in columns (5) to (8): Public debt

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constant	-6.28***	-5.27***	-3.88	-11.72***	85.41**	64.18*	85.54	167.02**
	(1.24)	(0.94)	(4.76)	(2.19)	(34.19)	(30.15)	(61.16)	(58.39)
PREPA	1.96**				-27.45*			
	(0.68)				(14.77)			
LEGIS		1.41**				-15.43		
		(0.48)				(12.77)		
IMPLE			0.32				-15.64	
			(1.47)				(18.28)	
INDEX				1.37***				-19.98**
				(0.31)				(7.78)
R^2	0.47	0.28	0.01	0.64	0.29	0.11	0.06	0.64

Note: Numbers in parenthesis are heteroskedasticity-consistent (White) standard errors. *, **, *** indicate significance at the ten, five, and one percent levels.

Turning to the effect of the sub-indexes, the coefficients of the sub-indexes PREPA and LEGIS are both significant and have the expected positive sign in the regressions where the dependent variable is the budget balance ratio. The regression with PREPA has an R^2 of 0.47, compared with 0.28 for the regression with LEGIS. This seems to indicate that the institutional properties of the budget preparation stage are particularly important in generating the positive correlation between the institutional index of budget processes and fiscal performance. However, the consideration of the structure of the legislative stage improves considerably the explanatory power of the indicators of budget institutions. In an estimation which is not reported here, I regressed the budget balance ratios on an index made up of the sum of PREPA and LEGIS, and obtained nearly the same results as in the regression reported in column 4 in Table 5 (the slope parameter took the value 1.34 and was significant at the one percent level; the R^2 was 0.59). The results in column 3 in Table 5 show that the coefficient for the variable measuring institutional characteristics of the implementation stage, IMPLE, is not significantly different from zero. For the case of public debt ratios, I see that while the coefficients of all sub-indexes have the expected negative sign in the respective regressions reported in columns 5 to 7 in Table 5, only the one that refers to PREPA is significantly different from zero.

Spearman Rank Correlations

In view of the limited degrees of freedom caused by the small sample of countries, the results of the regressions should be treated with caution. Furthermore, the regression results could be driven by outliers. I therefore use the Spearman rank correlation test to examine the robustness of the relationship between fiscal performance and the indexes.

TABLE 6

BUDGET INSTITUTIONS AND FISCAL PERFORMANCE: SPEARMAN RANK CORRELATION COEFFICIENTS

	Budget balance	Debt
PREPA	0.82***	-0.70**
LEGIS	0.59*	-0.61*
IMPLE	0.12	-0.30
INDEX	0.84***	-0.85***

Note: *, **, ***, indicates that the correlation coefficient is significantly different from zero at the ten, five, and one percent level.

Table 6 reports the Spearman rank correlation coefficients between the indexes and the fiscal performance variables. A high rank is associated with relatively high index values, a large average budget surplus ratio, and a high average public debt ratio. By contrast, a low rank is associated with relatively low index values, a large budget deficit ratio, and a low average public debt ratio. The results generally corroborate the earlier findings. All rank correlation coefficients have the expected sign, and many are statistically significant. The bivariate correlations between the budget balance ratios and the indexes PREPA and INDEX are positive and strongly significant. The rank correlation coefficient between the budget balance ratios and LEGIS has also the expected positive sign, but is significant only at the ten percent level. The positive rank correlation between the budget balance ratios and the index IMPLE, instead, is not high enough to be significant. The respective rank correlation between the public debt ratios and the indexes show a similar pattern as the rank correlations between the budget balance ratios and the indexes, except that the coefficients now have a negative sign, as expected, and have slightly different values. Note that the rank correlation between the public debt ratios and LEGIS is moderately significant, while the coefficient for LEGIS in the regression reported in Table 5, column 5, is not statistically significant.

Kruskal-Wallis Test

Table 7 shows the result of the Kruskal-Wallis equality of population rank test.

TABLE 7

BUDGET INSTITUTIONS AND FISCAL PERFORMANCE: KRUSKAL-WALLIS TEST

	Budget balance	Debt
	p-value	
INDEX	0.05	0.02
	sum of ranks	
'Low-index' group	12	34
'Middle-index' group	17	14
'High-index' group	26	7

Note: *, **, ***, indicates that the correlation coefficient is significantly different from zero at the ten, five, and one percent level.

The Kruskal-Wallis test is a non-parametric method for testing the hypothesis that several samples have the same continuous population versus the alternative that measurements tend to be higher in one or more populations. To apply the test, I divide the sample countries in three groups in accordance to the countries' ranking on the main index, INDEX. The 'high-index' group comprises three countries that have index values higher than 7,5, the 'middle index' group contains three countries with a score between 6 and 7, and the 'low index' group is made up of the remaining countries having index scores of less than 5.5. The null hypothesis is that budget balance (debt) ratios have the same distribution for each of the three groups. Based on the low p-values I can reject the null hypothesis for both budget balance and debt ratios. These results indicate that the classification of the countries in samples according to the index scores is associated with significant differences in the distribution in budget balance (debt) ratios. From the sums of the ranks - values of fiscal indicators are ranked in ascending order of magnitude - one sees that countries in the 'high-index' group have budget balance (debt) ratios that are more concentrated around higher (lower) values than countries in the 'middle-index' group, and that the countries in the 'middle-index' group have budget balance (debt) ratios that are more concentrated around higher (lower) values than countries in the 'low-index' group.

In sum, the results from the cross-country regressions and the non-parametric tests provide supportive evidence on the effect of budget institutions on fiscal performance. The theoretical arguments about the effect of institutional structures of the preparation and the authorization stage on the budget balance are supported by the data. A commitment to aggregate fiscal targets early in the budget process, a strong position of the finance minister and senior cabinet committees in the budget negotiations, and institutional arrangements that constrain the scope of the parliament and the president to increase spending and deficits above the levels proposed by the government appear to contribute to attaining aggregate fiscal discipline. The institutional qualities of the budget preparation stage in particular appear to have a strong explanatory power on the size of budget deficits and public debt levels. The rules governing the budget implementation, instead, do not seem to have a significant effect. These results are consistent with evidence from previous cross-country studies that I have summarized in the literature review. It is noteworthy that several of the indexes in these earlier studies (for example, von Hagen (1992) and Alesina et al. (1999)) include elements that gauge the degree of transparency of the budget process, an issue which is probably very important also in CEEC (Stepanek and Schneider (1999), Polackova Brixi (2000), Drabek and Schneider (2000)), and should be taken into account in future research. Due to the unavailability of data, I could not include items evaluating budget transparency in the construction of the indexes of budget institutions.

4. Conclusions

Problems of institutional design are at the heart of the policy debate in countries that make the transition to democracy and a market economy after the fall of communism and the abolishment of central planning. This study focuses on government decision-making structures in ten CEEC and investigates empirically the relationship between the institutional design of budget processes and fiscal performance in this group of countries.

The conceptual starting point of the approach followed in this paper is the idea that budgetary decision-making bears a common pool resource dilemma when the structure of the budget process allows decentralized spending determination (von Hagen and Harden (1996), Hallerberg and von Hagen (1999), Velasco (1999, 2000)). When spending can be targeted to particular constituencies (for example to special interest groups or to geographically based electorates), whereas revenues are centralized and residually determined, politicians have the incentive to internalize the full benefit but only a fraction of the social costs of an increase in spending directed to their own specific constituency. Due to this negative externality, the individually rational strategies generate budgets that are sub-optimal from the perspective of the group. The predicted outcome is an inefficient excess appropriation of the common pool of revenues, both intra- and intertemporal. The literature identifies two distinct coordination mechanisms as appropriate institutional solutions for mitigating the common-pool problem of budgeting (Hallerberg and von Hagen (1999)). First, the delegation of budgetary power to someone who has the incentive to internalize the costs of providing pork-barrel projects by authorizing him/her to force the other players to consider the fiscal externalities when making budget decisions. And second, the formation of institutional arrangements that transform budgeting into a cooperative game wherein the politicians can communicate, can make mutually efficient decisions, and can enter into binding agreements.

Based on information from legal documents and answers to two questionnaires, I provide a cross-country account of a number of institutional characteristics of the budget preparation, authorization, and implementation stages and develop indexes that summarize qualitative features of the main budget institutions. I use these indexes to study empirically the relation between the structure of budget processes and the fiscal outcomes over the period 1994-98. High index scores are assigned to institutional structures that are conducive to coordination and cooperation in budget decision-making, and hence should promote fiscal discipline. The results of parametric and non-parametric estimations show that countries having high scores of the cumulative institutional index of the budget process are associated with lower budget deficits and reduced debt levels. These outcomes confirm the hypothesis that the institutional design of budget process can have an impact on fiscal outcomes. I obtain similar results for the sub-indexes that summarize characteristics of the preparation and the authorization stage, respectively. The sub-index for the implementation stage is not significantly related to the fiscal performance measures. From that one might conclude that the politically more sensitive budget preparation and authorization stages, during which most of the political bargaining and decision-making takes place, are more important in determining fiscal outcomes than the implementation stage. This would imply that in designing budget institutions particular attention should be given to the institutional settings at these early steps in the budget process. However, it might also be possible that the implementation stage index does not accurately reflect the quality of institutions of the budget implementation stage. Hence, in future work one might use an implementation stage index based on a more refined classification system to investigate further the role of institutions at the implementation stage on fiscal outcomes.

Overall, the evidence suggests that budget institutions have had a significant effect on the capability of governments in CEEC to gain control over public finances during transition. An important conclusion is that the CEEC and the EU should pay attention to the creation of good budgeting institutions in the accession states.

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