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## Do Budget Institutions Matter?

### Fiscal Consolidation in the New EU Member States

*ABSTRACT: This paper studies the influence that the recently reformed budgetary institutions in the new EU member states may have had on their public finances. We test if their newly formed institutions have already started to shape their fiscal outcomes, as EU-15 institutions did in the past. To answer this question, this article develops new institutional indices and performs an empirical analysis on the sample of new EU member states—those that joined in 2004 and 2007—for the period 1993–2004. The results confirm that budgetary institutions have a similar influence in the new member states as they had in the EU-15. The role of a strong finance minister is even more important than previous studies suggest.*

Between 2004 and 2007, twelve new member states joined the European Union.<sup>1</sup> Before achieving full membership, the majority of these countries had to implement difficult and intensive economic and institutional reforms to fulfill the main requirements for accession. A considerable part of the reforms were related to the complete transition toward a market economy and their full integration into the

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EU internal market. Similarly, a majority of the new member states implemented economic and budgetary reforms aimed at progressively meeting the Maastricht criteria, with a plan for future integration into the euro.<sup>2</sup>

Despite the efforts made, advances toward fiscal consolidation were somewhat modest. Most progress was made in the second half of the 1990s, during which the average public deficit fell from 4.6 percent to 2.4 percent. Before accession, the public deficit first rose, then fell by a further percentage point by the end of the study period.

The fiscal adjustments undertaken varied considerably among countries. Most countries made significant efforts to increase their public revenue by using two main strategies. The first was the massive privatization of public companies inherited from the old planned economy model. The second was a combination of broadening the taxable base corresponding to previously established income taxes, introducing value-added taxes, improving tax collection systems, and implementing intensive plans to combat tax evasion.

With regard to public expenditures, improvement proved difficult to achieve. The strong social pressures inherent in the countries' transitions from totalitarian states to democratic societies caused expenditure on public services to double, on average. In some cases, such as those of Latvia, Slovakia, and Slovenia, social security reforms were minimal despite the repeated recommendations of the European authorities (European Commission 2001).

This paper examines the influence that the recently reformed budgetary institutions in the new EU member states may have had on budgetary consolidation, as observed through public finances. Although these newly formed budgetary institutions may not yet be completely consolidated, we want to test if such fresh institutions have started to shape fiscal outcomes in new member states, as EU-15 institutions did in the past. To answer this question, we empirically analyze a sample of new EU member states—those that joined in 2004 and 2007—for the period 1993–2004.<sup>3</sup>

### **Fiscal Consolidation Episodes in the New Member States**

This section analyses the budgetary consolidation episodes undertaken between 1993 and 2004 in the new EU member states. Tables 1 and 2 present descriptive statistics for the budget balance and the annual variation of public expenditure, both expressed as a percentage of gross domestic product (GDP), for the countries studied.

As the tables show, whereas the average budget balance has remained stable, ranging from –2.5 percent to –4.2 percent of GDP, important differences exist among the countries in the sample. Some of them, such as the Czech Republic, Bulgaria, and Slovakia, have recorded budget deficits above 10 percent of GDP. Others, such as Estonia, have experienced considerable surpluses in some financial years. This period reveals a continuous reduction in total public expenditures

Table 1

**Public Finances in the New EU Member States, 1994–2004**

Year	General government budget balance (average percent of GDP)	Standard deviation	Range (minimum/maximum)
1994	-2.9	3.8	From -8.3 (HUN) to 5.5 (EST)
1995	-3.8	4.0	From -13.4 (CZE) to 0.5 (EST)
1996	-4.2	3.9	From -13.3(BUL)a 0.3 (SLV)
1997	-2.5	2.7	From -6.2 (SLK) to 1.7 (EST)
1998	-2.4	2.2	From -5.4 (ROM) to 1.0 (BUL)
1999	-3.6	2.2	From -7.1 (SLK) to 0.1 (BUL)
2000	-3.5	3.3	From -12.3 (SLK) to -0.5(EST)
2001	-3.1	2.0	From -6.0 (SLK) to 0.3 (EST)
2002	-3.4	3.1	From -9.2 (HUN) to 1.3 (EST)
2003	-3.1	4.2	From -12.6 (CZE) to 3.1 (EST)
2004	-2.6	2.4	From -5.7 (POL) to 1.7 (BUL)

Year	Change in public expenditures (in percent of GDP)	Standard deviation	Range (minimum/maximum)
1994	-2.5	2.8	From -21 (SLK) to 6.4 (LIT)
1995	-0.1	3.7	From -6.5 (HUN) to 6.9 (CZE)
1996	-0.7	5.0	From -11.6 (CZE) to 7.4 (SLK)
1997	-1.4	4.6	From -13.5 (BUL) to 3.5 (SLK)
1998	-0.1	2.8	From -4.2 (SLK) to 4.5 (LAT)
1999	0.5	2.1	From -3.9 (SLK) to 3.3 (EST)
2000	-0.8	3.1	From -4.5 (LIT) to 4.0 (SLV)
2001	-1.0	3.4	From -8.4 (SLK) to 3.1 (POL)
2002	0.2	1.6	From -1.3 (BUL) to 3.9 (HUN)
2003	-0.7	4.7	From -11.7 (SLK) to 7.6 (CZE)
2004	-0.3	3.1	From -7.8 (CZE) to 3.7 (POL)

Sources: AMECO Database (2005) and International Monetary Fund reports.<<specific IMF reports?>>

Notes: All figures refer to public administrations as a whole. BUL: Bulgaria; CZE: Czech Republic; EST: Estonia; HUN: Hungary; LAT: Latvia; LIT: Lithuania; POL: Poland; ROM: Romania; SKA: Slovakia; SLV: Slovenia.

Table 2

## Fiscal Adjustment Episodes: Type and Intensity According to Criteria (percent of GDP)

Country	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Bulgaria				2	1						3
▽ GGBB				10.7	3.6				0.2	0.2	2.1
▽ GGPBB	3.6				0.1					0.1	1.8
▽ GGD		51.6		44.8	21.9		6.9	9.9	13.6	7.9	4.0
Czech Republic			2	3		3					2
TYPE											
▽ GGBB	18.8		10.3	0.7		1.3	0.1				7.8
▽ GGPBB	18.5		10.4	0.7		1.1	0.0				7.7
▽ GGD	1.6	3.2	2.0								
Estonia				2			2	2	1		
TYPE											
▽ GGBB				3.4			3.3	0.8	1.1	1.7	
▽ GGPBB				3.4			3.2	0.7	1.2	1.7	
▽ GGD	2.3	1.7	0.3	1.2	0.7		1.3	0.3			0.5
Hungary			2				1				
TYPE		2	2								2
▽ GGBB		3.2	2.0				1.7				2
▽ GGPBB	0.8	5.6	1.5				0.4			3.0	0.8
▽ GGD	3.1	2.2	12.6	7.3	2.3		5.5	1.9		3.1	1.0
Latvia				1			2	2			
TYPE											
▽ GGBB			1.6	1.9			2.1	0.7		1	
▽ GGPBB			1.9	1.3			2.3	0.7		1.2	
▽ GGD	0.5	1.1	1.1	1.6					0.8		
Lithuania				1			2	2	2		
TYPE											
▽ GGBB		1.7		2.4			3.0	0.6	0.5		
▽ GGPBB		1.9		2.3			3.2	0.5	0.3		
▽ GGD	0.1		3.5					0.9	0.5	1.0	0.3

Poland	TYPE															
	▽ GGBB	0.4		0.2	2	2.4		0.4					0.3			
	▽ GGPBB	3.1		0.1				0.5					0.5			
Romania	▽ GGD	21.2	16.9	2.9		5.2		1.5			1.0					
	TYPE						1						2	2	1	
	▽ GGBB					0.8	1.8			0.8			0.7	0.7	0.3	0.6
Slovakia	▽ GGPBB					0.5	2.4				2.5		0.6	0.6	0.6	0.1
	▽ GGD															
	TYPE	2		1	2			0.6								
Slovenia	▽ GGBB	25.1		1.2	2	2.5				6.3			0.3	0.3	1.9	
	▽ GGPBB	25.7		0.9	2.7					6.2			0.8	0.8	0.8	
	▽ GGD	3.5								1.2			5.4	0.7	0.7	
Cyprus	TYPE									3						
	▽ GGBB			0.2	0.2	0.4				0.7			0.4	0.4	0.4	
	▽ GGPBB			0.4	0.5	0.3				0.7			0.3	0.2	0.2	
Malta	▽ GGD				1.2											
	TYPE	1							1						2	
	▽ GGBB	1.1				1.1			2.0		0.1				2.1	
Cyprus	▽ GGPBB	1.2						2.3							2.1	
	▽ GGD	4.9														
	TYPE	3		1.7											1	
Malta	▽ GGBB	1.1					1			3			1	1	1	
	▽ GGPBB	1.1					1.9		2.2			0.7	0.7	5.3		
	▽ GGD	1.1					2.4		2.6			0.9	0.9	5.6		

Source: Authors' calculation.

Notes: TYPE of Adjustment: fiscal adjustment (+0.5 percent of GDP) based on an increase in public revenue. Fiscal adjustment (+0.5 percent of GDP) based on public expenditure cuts. Mixed fiscal adjustment (+0.5 percent of GDP); neither the increase in public revenue nor public expenditure cuts explain by themselves > 2/3 of the adjustment. ▽ GGBB: annual change in the general government budget balance (in percent of GDP, net lending [+], or net borrowing [-]) general government, ESA 95. ▽ GGPBB: Annual change in the general government primary budget balance (in percent of GDP; net lending/borrowing minus interest payment, ESA 95). ▽ GGD: Annual change in the general government debt (in percent of GDP, ESA 1995).

as a proportion of GDP between 1994 and 2004, with the exception of 1999 and 2002. Again, public expenditure behavior is highly heterogeneous, with spending cuts above 10 percent of GDP in countries such as Slovakia, the Czech Republic, and Bulgaria and increases in this ratio above 5 percentage points in Lithuania, Slovakia, and the Czech Republic.

This paper defines fiscal adjustment episodes as those years in which the budget balance improved by at least 0.5 percent of GDP against the preceding year.<sup>4</sup> Table 2 shows that, throughout the period, important fiscal adjustment episodes occurred of varying duration and intensity among countries. Together with the variation in terms of simple budget balance, this table also displays the figures for the primary deficit or surplus and the reductions in public debt, all expressed in terms of GDP.

As the data show, between 1994 and 2004, eleven fiscal adjustment episodes can be identified in our sample (thirteen including Malta) when the criterion adopted is the annual reduction of public deficit greater than 0.5 of GDP for at least two years. Table 3 shows that Slovakia and Latvia performed two adjustments each; the remaining countries only undertook one each. Cross-country comparisons show that these adjustment episodes differ in timing, duration, and size. The majority of adjustment episodes lasted for only two years, with the exception of Estonia (four years) and Lithuania (three years). On average, such adjustments reduced the deficit by 8.0 percentage points of GDP, though if we exclude Slovakia's extreme value (30.4 percent) in the early years of the period, this average value falls to 5.8 percent. However, dispersion is considerable within the sample (the standard deviation is 5.0), as both intensive and more modest adjustment processes existed.

Finally, the majority of the forty annual adjustments in our sample were expenditure based (twenty-five years, or 62.5 percent of the total), whereas ten (25 percent) were revenue based and only five (12.5 percent) followed a mixed strategy. Focusing our attention on the eleven consolidation episodes—including at least two consecutive years—we observe six pure expenditure-based adjustments. The five remaining episodes include different combinations. Whereas Bulgaria (1997–98), Latvia (1996–97), and Slovakia (1997–98) combined expenditure-based adjustments in the first year with revenue-based adjustments in the second year, the Czech Republic (1996–97) at first adopted an adjustment based on expenditure and later a mixed one. In the longest episode (2000–3), Estonia combined the three types of fiscal adjustment.

Selecting episodes according to the criteria that we have specified above turns out to provide very similar results to those of Zápál et al. (2006), though they use a slightly different sample and definition of adjustment episodes. Regardless, this experience of fiscal consolidation in the new member states differs substantially from the experience of fiscal adjustments in the EU-15, among which most consolidation episodes were based on revenue rather than expenditure (Mulas-Granados 2006). The differences in economic and welfare-state development between both groups of countries likely account for the observed divergence in fiscal adjustment strategies (Purfield 2003).

Table 3

**Characteristics of Fiscal Adjustment Processes, 1994–2004**

Country	Period	Duration	Size	Composition
Bulgaria	1997–1998	2	14.3	Based on expenditure (first year) and on revenue (second year)
Czech Republic	1996–1997	2	11.0	Based on expenditure (first year) and mixed (second year)
Estonia	2000–2003	4	8.0	Based on expenditure (first and second year), on income (third year) and mixed (fourth year)
Hungary	1995–1996	22	5.2	Based on expenditure
	2003–2004		3.8	Based on expenditure
Latvia	1996–1997	22	3.5	Based on expenditure (first year) and on revenue (second year)
	2000–2001		2.8	Based on expenditure
Lithuania	2000–2002	3	4.1	Based on expenditure
Poland		0		
Romania	2001–2002	2	1.5	Based on expenditure
Slovakia	1994–1995	22	30.4	Based on expenditure
	1997–1998		3.7	Based on expenditure (first year) and on revenue (second year)
Slovenia		0		
Total/ average	11 episodes	2.27 years	8.0	

*Source:* Authors' calculations.

*Note:* In terms of annual reduction of public deficit greater than 0.5 of GDP for at least two years.

**Fiscal Institutions in the New Member States**

The most relevant studies in the field of budget institutions identify three consecutive phases in the annual budget process:<sup>5</sup> the budget planning phase, the discussion and parliamentary approval phase, and the execution phase, which includes possible amendments to the budget approved by the parliament.<sup>6</sup> Each of these phases includes the main procedures that affect the configuration of the budget

institution of each country. The allocation of competencies and the way in which they are exercised by the finance minister, the executive, and the legislature are also crucial aspects of the budget institution. Our study quantitatively evaluates these characteristics using the indices proposed in the following section.

In the planning and design phase, the executive plays a fundamental role. From the construction of the pluriannual macroeconomic and budgetary frameworks to the allocation of funds, the decision-making capacity is held between the finance minister and the collegial body to which he belongs—more specifically, the council of ministers. The competencies allocated in this phase and, complementarily, residual decision-making powers reflect the different options for institutional design, which, at their extremes, range from a strong finance minister with the power to lead the budget project presented to parliament to a collegial system of negotiation. In this phase, technical instruments and tax regulations favoring fiscal discipline can be incorporated into the budget institution, which is especially important for new member states seeking to join the European Monetary Union (EMU). Thus, the design of preaccession economic programs similar to the stability and convergence programs required of euro countries offers a test of the quality of the instruments incorporated into the budget process.

In the discussion and parliamentary approval phase, the relevant agents are by definition the political parties. Nevertheless, we cannot ignore the residual power that the parliamentary system gives to the executive, particularly the finance minister. Thus, the evaluation of the budget process should consider the effective capacity of the finance minister to maintain the project as initially presented following its debate in parliament.

In the execution phase, the finance minister once again plays a dominant role. An accurate description of the budget institution must consider his power to control the execution of budgetary allocations, which may even include the establishment of spending limits. In recent decades, the literature regarding fiscal discipline has demonstrated the importance of this phase, as it permits last-minute amendments to the budget approved by parliament. The finance minister's veto power over parliament's proposals for increases in budget allocations and transfers between budgetary items has proven essential to guaranteeing fiscal discipline in the medium term.<sup>7</sup>

Appendix Table A1 presents an ordered list of the different variables considered in each of the three stages of the budget process. Tables 4, 5, and 6 show the values taken by all these variables for the countries studied. The existence of significant changes in the values caused by important reforms is marked with a specific reference to the year in which the reform took place.

### **Indices for the Budget Institutions in the New Member States**

Since the pioneering work by von Hagen (1992), various studies have attempted to gather together the qualitative aspects that define budget institutions, understood in their broadest sense, in a numerical index or indices. Allowing for (sometimes



Table 4

**Budgetary Planning and Programming Phase** (values of variables by country)

Country	Pluriannual fiscal frameworks						
	A.1.1. Type of regulation	A.1.2. Time horizon	A.1.3. Responsible	A.1.4. Scope	A.1.5. Review	A.1.6 Extrabudgetary F.	A.1.7 Type of Pluriannual B.
Czech Republic	2	1	2	2	3	1	1
Estonia	2	2	2	2	3	3	2
Latvia	2	3	2	2	3	2	2
Lithuania	2	4	2	1	3	2	2
Hungary	2	4	3	3	3	2	1
Poland	2	4	1	3	3	2	2
Slovenia	2	3	2	3	3	1	2
Slovakia	2	4	1	3	3	2	1
Romania	2	4	2	3	3	2	1
Bulgaria	2	4	2	3	3	2	2

(continues)

Table 4 (Continued)

Country	Fiscal rules					
	A.2.1 Contents	A.2.2. Limits	A.2.3. Adjustment of inflation	A.2.4. Binding limits	A.2.5 Punitive mechanisms	A.2.6. Financial limits
Czech Republic	0.5	1	2	1.5	0	0
Estonia	1.5	1	2	1.5	0	1
Latvia	3	1	2	1.5	0	0
Lithuania	3	0-1 (99)	2	1.5	0	0
Hungary	3.5	0	2	1.5	0	0
Poland	2	0-1 (00)	1	1.5	0	1
Slovenia	1.5	1	0	1.5	0	1
Slovakia	3	1	2	1	0	0
Romania	1.5	0-1 (03)	2	1.5	0	0
Bulgaria	1.5	0-2 (99)	1	2.5	0	0

Country	Pluriannual budgeting			Role of finance minister in planning and budgeting			
	A.3.1. Integration with pluriannual fiscal frameworks	A.3.2. Review of deviations	A.3.3. Joint designed	A.4.1. Proposal of pluriannual fiscal frameworks by finance minister	A.4.2. Negotiation in cabinet	A.4.3. Resolution of disagreements	A.4.4. Leadership of the finance minister
Czech Republic	1	0	2	3	3	0	1
Estonia	2	1	3	3	3	0	2
Latvia	2	0	1	3	1	1	1
Lithuania	2	2	2	1-2 (00)	3-2 (00)	0	2
Hungary	2	2	3	2	4-2 (98)–3 (03)	1	3-1 (98)
Poland	2	0	3	1-2 (99)	3	1	2
Slovenia	1	0	3	3	4	1	2
Slovakia	2	1	1	2	2	0	1
Rumania	2	1	0.5	1-3 (03)	3	0	2-3 (00)
Bulgaria	2	2	2	1-3 (99)	3	0	1

Sources: Information provided by the websites of the institutions of each country and by the survey performed by Yalloutinen (2004).

Note: The year in which the variable modifies its previous value is given in parentheses. <<what does F in A1.6. and B in A.1.7 stand for?>>

Table 5

**Parliamentary Discussion and Approval Phase** (values of the variables by country)

Country	Role of parliament in the legislative approval phase					
	B.1.1. Power to amend	B.1.2. Limits to amend	B.1.3. Volume of modifications	B.1.4. Voting overall bill	B.1.5. Approval time limit	B.1.6. Budget applied (nonapproval)
Czech Republic	0	1	1	1	0	1-0 (01)
Estonia	0	2	3	0	1	0
Latvia	0	2	0	0	0	0
Lithuania	0	2	1	0	1	0
Hungary	0	1	4	0	1	1
Poland	0	0-1 (99)	0	0	0	1
Slovenia	0	3	3	1	1	0
Slovakia	0	0	0	0	1	1
Rumania	0	0-1 (03)	2	0	1	0-1 (03)
Bulgaria	0	0	4	1	1	0

*Source:* Information provided by the Web sites of the institutions of each country and by the survey performed by Yalloutinen (2004).

*Note:* The year in which the variable modifies its previous value is given in parentheses.

Table 6

**Budget Execution Phase** (values of the variables by country)

Country	Role of the finance minister in the budget execution phase					
	C.1.1. Capacity of reduce allocations	C.1.2. Authorization for disposition of funds	C.1.3. Capacity to limit payments	C.1.4. Possibility of making transfers	C.1.5. Possibility of introducing modifications	C.1.6. Incorporation of unspent funds
Czech Republic	0	0	1	1	0	0–1 (01)
Estonia	1	1	1	3	0	1
Latvia	2	0	0	3	0	1
Lithuania	0	1	0	2.5	1	2–1 (01)
Hungary	0	0	0	2.5	2	0
Poland	1	1	1	2–3 (99)	0	1
Slovenia	0	0	1	1.5	2	2
Slovakia	1	0	1	2	0	1
Rumania	0	1	0	2.5	0	2
Bulgaria	2	1	1	2	0	2

*Source:* Information provided by the websites of the institutions of each country and by the survey performed by Yalloutinen (2004).

*Note:* The year in which the variable modifies its previous value is given in parentheses.

considerable) differences, all the proposals for this type of index are based on the systematization of the information available regarding the characteristics and functioning of all the processes, rules, agreements, and protocols that govern a given country's budget process. Thus, most studies have gathered together in their indices all the information available for the different phases of the budget process. Expanding upon this line of research, we propose a series of indices that incorporate into the essential formulation of von Hagen's (1992) indices some additional elements that we believe may be relevant to understanding the role of the budget institutions in the countries studied.

First, we define three indices that capture the different phases of the budget process: the budgetary planning and programming phase, the parliamentary discussion and approval phase, and the execution phase. These indices are then aggregated into an overall index that allows us to establish a ranking of budget institutions. In this aggregation, the phases considered are weighted equally. In contrast to Gleich's (2003) proposal, we have opted for an equal distribution of the weights assigned to each process because we believe that this reduces the discretionary bias that the configuration of this type of qualitative index inherently generates. Furthermore, we cannot justify placing more importance on certain aspects of the budget process, as all information is equally relevant for our analysis.

To standardize the weight, we linearly distribute the value of ten points assigned to each of the three principal budget phases among the total variables, each of which have previously been equalized at the maximum value that they can potentially attain, so that they contribute equally to each of the procedures included for each phase. The corresponding coefficient of each variable is then applied directly to the values that comprise the established quantification range. These ranges adopt higher or lower values, depending on the greater or lesser influence that each has upon budgetary discipline.

We try to reduce the variability of the values of each variable. As a general rule, in those cases with dichotomous values, we choose the pair 1–0 if the worst behavior directly contradicts budgetary discipline and 2–1 if the worst behavior does not directly oppose this essential aspect of fiscal policy. For situations in which we believe that discrimination is significant, we introduce intermediate values, even if they exceed 2. Whatever the case, we aim to minimize the discretion associated with an excessive number of categories for each variable or the unjustified differentiation of the maximum values that these may attain.

On the basis of these criteria, we define three indices; first, the institutional index for the design phase (budget planning and programming):

$$I_t^{DES} = \frac{1}{4} \left( \sum_{i=1}^7 v_i^{PFF} \cdot W_{v_i^{PFF}} + \sum_{i=1}^6 v_i^{FR} \cdot W_{v_i^{FR}} + \sum_{i=1}^3 v_i^{INT} \cdot W_{v_i^{INT}} + \sum_{i=1}^4 v_i^{ROLFM} \cdot W_{v_i^{ROLFM}} \right), \quad (1)$$

where  $v_i$  is each of the variables that intervene in the four subprocesses of the first phase of budget design (*PF* for the pluriannual fiscal frameworks, *FR* for the fiscal rules, *INT* for the integration between the pluriannual frameworks and annual budgeting, and *ROLFM* for the role of the finance minister in this phase). The value  $w(v_i)$  represents the weighting assigned to each variable within these four subprocesses, so that the sum of weights equals 10 if all the variables take their maximum value. The weight established for each of the four subprocesses is identical.

We next define the institutional index for the parliamentary discussion and approval phase:

$$I_t^{APPR} = \sum_{i=1}^6 v_i^{APPR} \cdot w_{v_i^{APPR}}, \tag{2}$$

where the weightings  $w(v_i)^{APPR}$  assign the same weights to the six variables. Finally, we define the institutional index for the budget execution phase:

$$I_t^{EXE} = \sum_{i=1}^6 v_i^{EXE} \cdot w_{v_i^{EXE}} \tag{3}$$

in which the weights assigned to the six variables considered,  $w(v_i)^{EXE}$ , are equal.

Table 7 displays the quantification obtained for the indices proposed and the entire sample. These indices are equally weighted to calculate the overall index.<sup>8</sup>

Table 8 shows the ranking of the ten countries in our sample for the two alternative indices. It also compares our ranking with those obtained by Gleich (2003) and Yalloutinen (2004).

As can be observed, there are important similarities between the three rankings, especially in that of Yalloutinen (2004). There are also some similarities with the ranking by Gleich (2003), especially if we exclude the Czech Republic, Hungary, Latvia, and Bulgaria. Our indices place the Czech Republic in the second to final and final positions, as in Yalloutinen’s (2004) study, whereas Gleich’s (2003) work places them in an intermediate position. Similar differences apply for the other countries, though none are particularly striking.

Using the information supplied by our principal indices, we test whether the characterization of each country’s budget institution matches the prediction made in the previous section regarding the form of governance of the budget process. On the one hand, as Table 4 shows, Slovenia’s and Hungary’s institutional variables clearly behave as the delegation approach predicts. If we observe the role of the finance minister, not only in the design phase (Table 4), but also in the phases of parliamentary approval (Table 5) and execution (Table 6), it is evident that both countries are paradigmatic examples of the delegation approach. This is because the most important variables that determine the strong role of the finance minister are present in both countries and coincide with those that require the ceding of authority characteristic of the delegation model. Estonia and Lithuania also display

Table 7

**Values of the Indices Defining the Budget Institution (by country; alternative 1)**

Country	Basic indices			Global INDEX(1)
	INDEX(1)(DES)	INDEX(1)(APPR)	INDEX(1)(EXE)	
Czech Republic	4.40	4.30-2.64 (01)	2.22-3.06 (01)	3.64-3.37(01)
Estonia	6.69	4.03	6.67	5.79
Latvia	5.53	1.11	4.17	3.60
Lithuania	5.99-6.20 (99)	3.19	5.56-4.72 (01)	4.91-4.98 (99)-4.70 (01)
Hungary	7.70-6.97 (98)	5.56	3.06	5.44-5.19 (98)-5.25 (03)
Poland	6.28-6.44 (99)-6.64 (00)	1.67-2.22 (99)	6.11-6.67 (99)	4.69-5.11(99)-5.18 (00)
Slovenia	6.19	6.25	5.83	6.09
Slovakia	5.22	3.33	4.44	4.33
Romania	5.12-5.32 (00)-5.85 (03)	2.50-4.72 (03)	4.72	4.11-4.18(00)-5.10(03)
Bulgaria	5.79-6.52 (99)	5.00	7.78	6.19-6.43 (99)

*Source:* Information provided by the Web sites of the institutions of each country and by the survey performed by Yalloutinen (2004).

*Note:* The year in which the variable modifies its previous value is given in parentheses.



Table 8

## Values of Indices Defining the Budget Institution (by country; alternative 2)

Country	Basic indices					Global INDEX(2)
	INDEX(2)(BPP)	INDEX(2)(ROLFM)	INDEX(2)(APPR)	INDEX(2)(EXE)	INDEX(2)(EXE)	
Czech Republic	4.34	4.58	4.31–2.64 (01)	2.22–3.06 (01)	3.86–3.65 (01)	
Estonia	7.11	5.42	4.03	6.67	5.81	
Latvia	5.43	5.83	1.11	4.17	4.14	
Lithuania	6.59–6.87 (99)	4.17	3.19	5.56–4.72 (01)	4.88–4.95 (99)– 4.74 (01)	
Hungary	7.35	8.75–5.83 (98)– 6.46 (03)	5.56	3.06	6.18–5.45 (98) –5.61 (03)	
Poland	6.15–6.43 (00)	6.67–7.29 (99)	1.67–2.22 (99)	6.11–6.67 (99)	5.15–5.58 (99)– 5.65 (00)	
Slovenia	5.41	8.54	6.25	5.83	6.51	
Slovakia	5.85	3.33	3.33	4.44	4.24	
Romania	5.43–5.71 (03)	4.17–5.00 (00)– 6.25 (03)	2.50–4.72 (03)	4.72	4.21–4.41(00) –5.35(03)	
Bulgaria	6.61–7.17 (99)	3.33–4.58 (99)	5.00	7.78	5.68–6.13 (99)	

Source: Information provided by the Web sites of the institutions of each country and by the survey performed by Yalloutinen (2004).

Note: The year in which the variable modifies its previous value is given in parentheses.

values fairly representative of the delegation model, though it seems that their electoral systems have forced them to adopt certain features typical of the compromise model. Romania, since the significant reforms in 2000 and 2003, may also be considered to be moving toward the delegation approach. At the other extreme are countries such as Estonia, which have been immersed in electoral processes resulting in continuous pacts to form coalition governments, thereby generating fiscal processes very close to the compromise approach. In the Czech Republic and Poland, the role of the finance minister also has been conditioned largely by the formation of alliances for government.

Whatever the case, our study has concentrated on a set of East and Central European countries that have all emerged from the former Soviet bloc. This has given rise to the rapid introduction of democratic political institutions and the construction, practically *ex novo*, of a public sector based on principles and criteria that have prevailed for many decades in developed market economy countries. Thus, the institutional framework of these countries is evolutionary, preventing us from undertaking a characterization as robust as that of other research, notably the recent study performed by Hallerberg et al. (2004) for the EU-15. With time, our exercise will become more robust. But we nevertheless believe that these informational weaknesses, related to the ongoing process of institution building in the new EU member states, must not impede attempts to understand the effect that these newly born institutions have had on the fiscal outcomes of the last decade.

### Empirical Analysis and Results

To evaluate the extent to which the budget institutions of the new EU member states explain the fiscal adjustments observed, we estimate the following equation:

$$Y_{i,t} = \beta_0 + \beta^1 \cdot GDP_{i,t} + \beta_2 \cdot UNEM_{i,t} + \beta_3 \cdot I_{i,t}^{BPP} + \beta_4 \cdot I_{i,t}^{APPR} + \beta_5 \cdot I_{i,t}^{EXE} + \beta_6 \cdot PAEP_{i,t} + \beta_7 \cdot DESCENTR_{i,t} + \beta_8 \cdot NEGOPEN_{i,t} + \varepsilon_{i,t}, \quad (4)$$

where the dependent variable,  $Y_{i,t}$ , represents the result of the fiscal policy implemented in country  $i$  in year  $t$ . Following the literature on fiscal adjustments, we measure this fiscal result by the annual total general government primary budget balance. Any improvement in this balance implies that a fiscal consolidation has taken place in country  $i$  in year  $t$ .

On the right-hand side of the equation, we include as independent variables the three institutional indices calculated in previous sections:  $I_{i,t}^{BPP}$ ,  $I_{i,t}^{APPR}$ , and  $I_{i,t}^{EXE}$ . In addition, we include two economic variables to control for the effect of the cycle on fiscal policy. We use those that are most common in the literature, namely, the GDP growth rate ( $GDP_{i,t}$ ) and the unemployment rate ( $UNEM_{i,t}$ ). A high inverse correlation is to be expected between the two variables, but we have opted for their simultaneous inclusion because labor market adjustments and economic growth

do not display a clear pattern of behavior in transition economies. As we shall see, the results obtained justify this decision.

Finally, we include three other important control variables to capture the context in which these countries implemented their fiscal adjustments. The first variable controls for subjection to preaccession economic programs ( $PAEP_{i,t}$ ). The basic objective of the PAEPs was not the institutional coordination of the fiscal policies of the candidate countries, but they entailed a prior commitment toward the fiscal discipline that these countries were required to enforce following accession to the European Union, in addition to presenting their convergence programs. To represent the role played by the PAEPs, we use the specific index proposed by Yalloutinen (2004).<sup>9</sup> The second variable is related to the degree of fiscal decentralization ( $DECENTR_{i,t}$ ) taken from the World Bank database on economic institutions. Finally, we include a dummy variable that takes the value 0 before the formal negotiations for EU membership started and the value 1 after.

We now present our initial hypotheses for all the variables of the model. First, as we expect the institutional indices to positively affect the budget balance, we also expect  $\beta_3$ ,  $\beta_4$ , and  $\beta_5$  to have positive signs. Second, we expect an increase in the annual rate of growth of real GDP ( $\Delta GDP_{i,t}$ ) to lead to an improvement in the budget balance through the functioning of the automatic stabilizers, regardless of the form in which it is incorporated into the model. Third, it is foreseeable that an increase in the unemployment rate ( $\Delta UNEM_{i,t}$ ) will negatively affect both public revenue from taxation and social protection expenditures, thereby worsening the budgetary balance; this will cause  $\beta_2$  to be less than zero. Fourth, we expect a positive sign for  $PAEP_{i,t}$ ; greater fulfillment of the commitments acquired in the preaccession economic programs, or greater coordination among government levels, strengthens the budget institution and encourages budgetary discipline. Fifth, we expect a negative sign for  $DECENTR_{i,t}$ , as it is usually associated with uncoordinated overspending. Finally, we expect  $NEGOPEN_{i,t}$  to have a positive sign because negotiations exerted positive pressure toward reducing previous fiscal imbalances.

Following the previous studies in the field,<sup>10</sup> we estimate Equation (4) by ordinary least squares (OLS) using all the data in our panel, with 110 observations for ten countries and eleven years (1994–2004). When performing a longitudinal analysis with this panel, we detect that, as the date of membership approaches, the economic and fiscal data behaves more homogeneously. To introduce an objective criterion to split the sample, we tested the statistical significance of  $NEGOPEN$  and decided to use it to split the sample and replicate our estimation for the subsample of years during the ongoing negotiations only. We expect the relation between fiscal variables and institutional variables to strengthen in this subsample of years because the negotiations had an important effect in improving data gathering and strengthening newly created fiscal institutions.

Table 9 presents the results of the estimation of different specifications of the basic model for the complete period 1994–2004, and for the subsample of ongoing negotiations. Results for the seven regressions with both samples show the expected

Table 9

**Ranking of Indices Evaluating the Budget Institution**

Country	INDEX(1)	INDEX(2)	Gleich index	Yalloutinen index
Czech Republic	9	10	5	10
Estonia	3	3	1	6
Latvia	10	9	2	7
Lithuania	5	7	6	8
Hungary	4	4	9	2
Poland	6	5	7	5
Slovenia	2	1	3	1
Slovakia	7	8	4	8
Romania	8	6	10	6
Bulgaria	1	2	8	3

*Notes:* In those countries displaying various values, the average weighted value has been calculated, according to the number of years. The ranking of the Gleich (2002; 2003) and Yalloutinen (2004) indices is that established by the authors in their studies.

signs for all economic and institutional variables. In the all estimations, the institutional variables linked to the design, approval, and execution phases are highly significant. The conclusion is clear: The stronger the regulatory budget framework and the stronger the role of the finance minister in all phases of the budget process, the more positive the primary budget balance.

Economic variables, such as GDP and unemployment, are statistically insignificant for the entire sample, but become strongly significant in the subsample of years under negotiations. In this case, amelioration of GDP<<not sure what you mean by “amelioration of GDP”—what about GDP?>> positively affects the primary budget balance, whereas the increase in the unemployment rate has a negative effect.

The role of preaccession economic programs (*PAEP*) is clearly positive, as the programs contributed to improving the budget balance. On the opposite side is the effect of the degree of power decentralization (*DESCENTR*), which showed a clearly worsening effect on the budget balance.

The explanatory power of the model is, in general, reasonably satisfactory. Given the lack of data for cyclically adjusted budget balances beyond the time series used in this article, we believe that using alternative institutional indices and different specifications of the baseline model have enriched the analysis, allowing us to draw important conclusions.

Table 10&lt;&lt;NEED IN-TEXT CITATION&gt;&gt;

**Preaccession Economic Programs and Influence of Decentralization on Fiscal Policy**

Country	Preaccession economic programs	Decentralization-coordination index
Czech Republic	3.0	2.0
Estonia	4.0	3.0
Latvia	4.0	2.0
Lithuania	5.0	4.0
Hungary	6.0	2.0
Poland	7.0	2.0
Slovenia	7.0	3.0
Slovakia	4.0	3.0
Romania	6.0	2.0–4.0 (2003)
Bulgaria	5.0	3.0–4.0 (2000)

*Sources:* For the PEPs, Yalloutinen (2004). Author's compilation for the decentralization-coordination index.

**Conclusions**

This paper analyzes the influence of budget institutions on fiscal policy in the countries that joined the European Union between 2004 and 2007. As very few scholars have previously reported results in this area, this study is pioneering in its field.<sup>11</sup> One of the distinctive characteristics of our article is the combination of data from various sources, ranging from the Organization for Economic Cooperation and Development, the European Union, and the International Monetary Fund to a variety of analyses from national institutions of each member state in our sample.

Our results confirm that budget institutions, even when recently formed or reformed, already have influenced fiscal outcomes significantly in the new EU member states, despite the important explanatory power shown by other economic variables (GDP growth and unemployment rate) in the second half of our sample. Regarding the mechanism through which budget institutions affect budgetary balances, our results clearly show that the role of the finance minister in the execution phase (and partially in the design phase) has been crucial to maintaining sound public finances in the new member states.

The role of the finance minister in the execution phase confirms the effectiveness of institutional designs that halt parliamentary attempts to modify the budget during the discussion and approval phase. By giving the finance minister the power

Table 11 &lt;&lt;NEED IN-TEXT CITATION&gt;&gt;

## Influence of Budget Institutions on Fiscal Policy Behavior, 1994–2004

	Dependent variable = total budget balance (GGBB)				Dependent variable = primary budget balance (GGPBB)			
	(1a)	(2a)	(3a)	(4a)	(1b)	(2b)	(3b)	(4b)
Constant	-9.403338*** (-3.83)	-9.472302*** (-3.88)	-9.69855*** (-3.49)	-9.563965*** (-3.37)	-11.61555*** (-5.08)	-11.5965*** (-5.06)	-9.85118*** (-3.87)	-9.775501*** (-3.77)
GDP	0.261116* (1.88)	0.2535578* (1.78)	0.2551103* (1.78)	0.2519457* (1.73)	-0.0825347 (-0.71)	-0.0804475 (-0.68)	-0.0466413 (-0.4)	-0.0484208 (-0.42)
UNEM	-0.2383337** (-2.56)	-0.2243094** (-2.43)	-0.2348057** (-2.41)	-0.2237558** (-2.35)	-0.0802095 (-0.86)	-0.0840824 (-0.89)	-0.1012949 (-1.12)	-0.0950813 (-1.05)
<i>I</i> <sub>PES</sub>	0.392142 (0.82)	0.5656512 (1.16)	0.4223492 (0.83)	0.5681988 (1.14)	1.241783** (2.47)	1.193867** (2.29)	1.061244** (2.00)	1.143257* (2.16)
<i>I</i> <sub>APPR</sub>	0.007429 (0.04)	0.0185888 (0.1)	-0.022669 (-0.1)	0.0084969 (0.04)	0.2619638 (1.55)	0.2588818 (1.51)	0.4418463** (2.13)	0.4593713** (2.14)
<i>I</i> <sub>EXE</sub>	1.071762*** (4.28)	1.077302*** (4.27)	1.021724*** (3.45)	1.061058*** (3.4)	0.8109224*** (3.05)	0.8093925*** (3.02)	1.109985*** (3.87)	1.132103*** (3.86)
PAEP		-0.2262821 (-1.14)		-0.2169946 (-0.99)		0.0624901 (0.33)		-0.1220189 (-0.57)
DECENTR			0.1739895 (0.49)	0.0556917 (0.14)			-1.039868** (-2.45)	-1.106389** (-2.41)
R <sup>2</sup>	0.3126	0.3187	0.3137	0.3188	0.3724	0.3728	0.4082	0.4096
Observations	110	110	110	110	110	110	110	110

Notes: *t*-student statistics are shown in parentheses. \*\*\*, \*\* Significance at < 0.01; \*\*, \* between 0.01 and 0.05; \* between 0.05 and 0.10.

Table 12 <<NEED IN-TEXT CITATION>>

**Influence of Budget Institutions on Fiscal Policy Behavior, 1999–2004**

	Dependent variable = total budget balance (GGBB)				Dependent variable = primary budget balance (GGPBB)			
	(1a)	(2a)	(3a)	(4a)	(1b)	(2b)	(3b)	(4b)
Constant	-7.138135** (-2.46)	-7.212966** (-2.49)	-7.039309** (-2.27)	-6.979829** (-2.20)	-9.358504*** (-2.89)	-9.223325*** (-2.88)	-8.716468** (-2.55)	-8.79714** (-2.61)
GDP	0.4526499*** (5.66)	0.434868*** (4.85)	0.4587565*** (5.48)	0.4474147*** (4.99)	0.2541525* (1.64)	0.2862743** (2.00)	0.2938257* (1.88)	0.3092101** (2.11)
UNEM	-0.3571759*** (-4.08)	-0.3562241*** (-4.01)	-0.3563882*** (-4.08)	-0.3541471*** (-4.01)	-0.1657357* (-1.70)	-0.1674551* (-1.72)	-0.1606182* (-1.67)	-0.1636581* (-1.68)
<i>I</i> <sub>DES</sub>	-0.5799161 (-1.16)	-0.4274885 (-0.89)	-0.5969932 (-1.13)	-0.4480613 (-0.90)	0.4863307 (0.86)	0.21098 (0.35)	0.3753856 (0.64)	0.1733721 (0.78)
<i>I</i> <sub>APPR</sub>	0.182971 (1.53)	0.1973304 (1.59)	0.197064 (1.33)	0.2341149 (1.40)	0.340486** (2.62)	0.3145461** (2.16)	0.4320461*** (2.67)	0.3817897** (2.04)
<i>I</i> <sub>EXE</sub>	1.75032*** (7.40)	1.755041*** (7.38)	1.766331*** (6.93)	1.795191*** (6.98)	1.005111*** (3.22)	0.9965841*** (3.17)	1.109128*** (3.55)	1.069981*** (3.41)
PAEP		-0.1665382 (-0.85)		-0.190073 (-0.88)		0.3008405 (1.21)		0.2578179 (0.98)
DECENTR			-0.0604896 (-0.21)	-0.1491725 (-0.45)			-0.3929849 (-1.22)	-0.272694 (-0.80)
R <sup>2</sup>	0.6571	0.6607	0.6573	0.6616	0.4836	0.4964	0.4910	0.4997
Observations	60	60	60	60	60	60	60	60

Notes: *t*-student statistics are shown in parentheses. \*\*\*: Significance at < 0.01; \*\*: between 0.01 and 0.05; \*: between 0.05 and 0.10.

Table 13 &lt;&lt;NEED IN-TEXT CITATION&gt;&gt;

**Influence of Budget Institutions on Fiscal Policy Behavior, 1994–2004** (alternative 2)

Dependent variable = total budet balance (GGBB)

	(1a)	(2a)	(3a)	(4a)
Constant	-9.034289*** (-3.67)	-9.152548*** (-7.62)	-9.998826*** (-3.54)	-9.755829*** (-5.49)
GDP	0.2492503* (1.83)	0.2485144* (1.89)	0.1864273 (1.32)	0.1880955 (1.38)
UNEM	-0.2506925*** (-2.75)	-0.2501224*** (-2.83)	-0.2088098** (-2.29)	-0.2103473** (-2.38)
<i>I</i> <sup>BPP</sup>	-0.0269056 (-0.07)		0.060459 (0.17)	
<i>I</i> <sup>ROLFM</sup>	0.3602739 ** (2.16)	0.361197 ** (2.26)	0.8540891 *** (3.34)	0.8492804 *** (3.51)
<i>I</i> <sup>APPR</sup>	-0.039556 (-0.22)	-0.0435615 (-0.28)	-0.1887558 (-0.81)	-0.1816633 (-0.85)
<i>I</i> <sup>EXE</sup>	1.171406*** (4.94)	1.163697*** (4.89)	1.107272*** (3.84)	1.120827*** (4.08)
PAEP			-0.691851*** (-2.72)	-0.6831449*** (-2.66)
DECENTR			0.7179303 (1.58)	0.7262346 (1.53)
R2	0.338	0.3379	0.3929	0.3927
Observations	110	110	110	110

Notes: *t*-student statistic in parentheses. \*\*\* Significance level < 0.01, \*\* between 0.01 and 0.05, and \* between 0.05 and 0.10.

to modify—even through simple transfers—the items initially approved by parliament, such designs guarantee the success of any budgetary consolidation episode, though it may raise some questions related to the democratic deficit in the role assigned to the legislature in those systems.

That the new member states developed their budget institutions at the same time as they consolidated their transition to democratic regimes may explain why eight out of ten states opted for forms of fiscal governance that favor compromise among the various ministers regarding expenditure capacity, instead of stimulating delegation and strengthening the role of the finance minister. This choice also explains the difficulties that all the states have experienced in maintaining their past fiscal adjustments and the sizeable statistical effect that any improvement in the index of the finance minister's power has had in reducing the public deficit.<sup>12</sup>

Although our analysis should be replicated in the future, when more fiscal data become available and institutions have been completely consolidated, we



Table 14. <<NEED IN-TEXT CITATION>>

**Influence of Budget Institutions on Fiscal Policy Behavior, 1999–2004 (alternative 2)**

	Dependent variable = total budget balance (GGBB)			Dependent variable = primary budget balance (GCPBB)				
	(1a)	(2a)	(3a)	(4a)	(1b)	(2b)	(3b)	(4b)
Constant	-8.825014** (-2.35)	-8.783718*** (-5.88)	-6.135924** (-2.00)	-8.260421*** (-4.52)	-8.78489*** (-2.71)	-6.472907*** (-3.39)	-3.391344 (-1.14)	-4.719929*** (-2.67)
GDP	0.4459663*** (5.29)	0.4273872*** (4.75)	0.4711052*** (5.92)	0.4326746*** (4.53)	0.2419086 (1.46)	0.2638387* (1.69)	0.4609646*** (5.22)	0.4369314*** (4.33)
UNEM	-0.3729827*** (-4.21)	-0.3485169*** (-3.81)	-0.3761477*** (-3.93)	-0.3431237*** (-3.52)	-0.1946926* (-1.88)	-0.2235711** (-2.23)	-0.3045873*** (-3.32)	-0.2839353*** (-3.07)
<i>I</i> <sub>BPP</sub>	-0.385594 (-0.99)		-0.3948975 (-1.09)		0.4551414 (1.05)		-0.246955 (-0.64)	
<i>I</i> <sub>ROLFM</sub>	-0.2583008** (-1.72)	-0.1764302 (-1.48)	-0.3264503 (-1.36)	-0.1132795 (-0.44)	-0.0860149 (-0.51)	-0.182652 (-1.35)	-1.330262*** (-4.83)	-1.196953*** (-4.32)
<i>I</i> <sub>APPR</sub>	0.1981372 (1.64)	0.1219454 (1.03)	0.2899823* (1.80)	0.1983728 (1.24)	0.3682697*** (3.01)	0.4582038*** (2.92)	0.739659*** (4.64)	0.6823696*** (3.75)
<i>I</i> <sub>EXE</sub>	1.782738*** (7.61)	1.629122*** (6.37)	1.890821*** (7.17)	1.708898*** (6.67)	1.064497*** (3.40)	1.245821*** (4.48)	1.682558*** (6.32)	1.56879*** (6.71)
PAEP			-0.0555973 (-0.18)	-0.2103054 (-0.60)			1.119228*** (3.52)	1.022479*** (2.95)
DECENTR			-0.3410024 (-0.96)	-0.2094827 (0.60)			-1.501498*** (-3.84)	-1.41925*** (-3.52)
R2	0.6605	0.6508	0.6644	0.6565	0.4964	0.4814	0.6272	0.6237
Observations	60	60	60	60	60	60	60	60

Notes: *t*-student statistic in parentheses.\*\*\* Significance < 0.01, \*\* between 0.01 and 0.05 and \* between 0.05 and 0.10.

believe that this article has provided abundant evidence to support the argument that recently reformed budget institutions already have had an important effect in shaping fiscal consolidations in the new EU member states. If future research were to confirm that the role of fiscal institutions in the new member states is at least as important as it has been in the EU-15, then our preliminary conclusions would become even more relevant.

## Notes

1. Countries that joined in 2004: Lithuania, Latvia, Estonia, Czech Republic, Slovakia, Poland, Hungary, Cyprus, and Malta. Countries that joined in 2007: Bulgaria and Romania.

2. To date, only three new member states have adopted the euro: Cyprus, Malta, and Slovenia.

3. Excepting Malta and Cyprus, due to their relatively small economic size and lack of consistent budgetary data throughout the period selected.

4. The threshold for selecting adjustment episodes varies in the literature, ranging from improvements in the budgetary balance of at least 0.5 percent of GDP (Gupta et al. 2005) to improvements of 1.5 percent of GDP (von Hagen et al. 2001). Following the most important studies of this question, we have defined fiscal consolidation episodes as those for which the amelioration of the budget balance was at least 0.5 percent of GDP for two consecutive years. Most Organization for Economic Cooperation and Development studies use cyclically adjusted figures to select adjustment episodes, calculating the cyclical component based on the trend output gap. Only Afonso et al. (2006) have applied the same technique to new member states. Nevertheless, other authors, such as Zápál and Schneider (2006), avoid using cyclically adjusted data, given the countries' specific characteristics. We are also reluctant to calculate cyclically adjusted figures based on trend figures calculated with the HP filter due to two factors: first, these economies came from socialist systems and the initial shock in their output at the beginning of the 1990s would potentially bias any trend estimation for the first years in the sample; and second, if we focus only on the mid-1990s onward, the time series of data are too short to apply the HP technique without biasing the estimations for the last three years (which in this case represent an important part of the sample). Therefore, we follow Zápál and Schneider (2006) and select adjustment episodes in new member states using noncyclically adjusted data. We will later use the GDP growth as a right-hand side variable to control the effect that output has on fiscal variables.

5. See von Hagen (1992), von Hagen and Harden (1994), Halleberg et al. (2001), Gleich (2003), and Yalloutinen (2004).

6. The literature on the institutional aspects of fiscal consolidations usually does not consider the control of budget execution as a specific phase. Although, from a macroeconomic point of view, this is an essential function within budget management, its influence on the development of fiscal policy lacks sufficient weight for it to be included in this approximation.

7. The interactions between the decision-making powers of the finance minister and parliament become strongly evident in this phase of execution. On occasion, the concentration of the competences of parliament regarding budgetary amendments has been argued to be positive. However, the experience of the last two decades has, in many countries, demonstrated the importance of the finance minister's power to control the budget. The principal explanation is that the assumption of responsibility for the financial panorama by members of parliament is hardly credible, given that they are not judged at the polls, at least in the short term, for the failures of budgetary policy.

8. The details of the items that constitute each index, together with the assigned values and their weightings, are available from the authors upon request.

9. This is a similarity index, which aims to reflect the degree of integration existing in each country between the PAEPs and the annual budget elaboration process. Concretely, this index measures: (1) whether the PAEP is the sole pluriannual budget framework; (2) the coincidence of the ministerial departments, which have the authority to approve both documents; (3) the coincidence of the executive organs entrusted with their preparation; (4) the coincidence of the accounting rules employed in their elaboration; (5) the integration of the respective timetables; and (6) the coincidence of objectives between the PAEP and the annual budget. The index is calculated using a total of eight points (maximum identification between the two).

10. This is the method followed by analyses that use a continuous dependent variable, such as the studies by Campos and Pradhan (1996), de Haan and Sturm (1994), Halleberg and von Hagen (1999), Hallerberg et al. (2004), and Roubini and Sachs (1989). In general, when the size of the data panel so permits, the authors use more sophisticated estimation techniques (for a review of the different possible techniques, see Gupta et al. 2004). However, the only two similar studies undertaken for new EU member countries (Gleich 2002; 2003; Yalloutinen 2004) also utilize OLS. We do not include fixed effects, as this would cancel out the effect of fiscal institutions.

11. Only Gleich (2002; 2003) and Yalloutinen (2004) have published studies to date.

12. Hallerberg (2004) summarizes the possible options to resolve the problem of fragmentation in budgetary decision-making, which basically range from solutions based upon delegation and the strengthening of the position of the finance minister to rules that reinforce compromise with the fiscal discipline of the entire cabinet. As our analysis shows, Bulgaria, Estonia, Lithuania, Latvia, Poland, Czech Republic, Slovakia, and Romania have adopted forms of budgetary governance based on compromise (due principally to their multiparty political systems); only Slovenia and Hungary have adopted mechanisms based on delegation (both have majority systems).

## References

- Afonso, A.; C. Nickel; and P.C. Rother. 2006. "Fiscal Consolidations in Central and Eastern European Countries." Working Paper Series No. 473, ECB. <<what does this stand for? Location?>>
- Alesina, A., and S. Ardagna. 1998. "Tales of Fiscal Contractions: Fiscal Adjustments. Why They Can be Expansionary." *Economic Policy* 27<<issue and/or season>>: 489–543. <<no citation for this reference / cite or delete>>
- Alesina, A.; G.D. Cohen; and N. Roubini. 1992. "Macroeconomic Policies and Elections in OECD Democracies." *Economics and Politics* 4<<issue and/or season>>: 1–30. <<no citation for this reference / cite or delete>>
- Alesina, A., and R. Perotti. 1995. "The Political Economy of Budget Deficits." *IMF Staff Papers* 42, no. 1: 1–31. <<no citation for this reference / cite or delete>>
- Balassone, F.D.; D. Franco; and S. Zotteri. 2003. "Fiscal Rules for Subnational Governments in the EMU Context." Working Paper No. 196/2003, Societa Italiana di Economia Pubblica, Pavia. <<no citation for this reference / cite or delete>>
- . 2004. "EMU, Fiscal Rules, and Fiscal Decentralization." *Presupuesto y Gasto Público* 35<<issue and/or season>>: 63–99. <<no citation for this reference / cite or delete>>

- Campos, E., and S. Pradhan. 1996. "Budgetary Institutions and Expenditure Outcomes: Binding Governments to Fiscal Performance." Working Paper No. 1646, World Bank Policy Research, Washington, DC.
- de Haan, J., and J.E. Sturm. 1994. "Political and Institutional Determinants of Fiscal Policy in the European Community." *Public Choice* 80<<issue and/or season>>: 157–172.
- European Commission. 2001. "Public Finances in EMU." *European Economy*, 3.<<is this the volume number? also need issue and/or season for this publication and the page range for the article>>
- Giavazzi, F., and M. Pagano. 1990. "Can Severe Fiscal Contractions be Expansionary?" *NBER Macroeconomics Annual*<<volume and issue and/or season>>: 75–116.
- Gleich, H. 2002. "The Evolution of Budget Institutions in Central and Eastern European Countries." Ph.D. dissertation,<<department?>> University of Bonn.
- . 2003. "Budget Institutions and Fiscal Performance in Central and Eastern European Countries." Working Paper No. 215, European Central Bank, Frankfurt.
- Grilli, V.; D. Masciandaro; and G. Tabellini. 1991. "Institutions and Policies: Political and Monetary Institutions and Public Financial Policies in the Industrial Countries." *Economic Policy* 13<<issue and/or season>>: 341–392. <<no citation for this reference / cite or delete>>
- Gupta, S.; B. Clements; E. Baldacci; and C. Mulas-Granados. 2005. "Fiscal Policy Expenditure Composition, and Growth in Low Income Countries." *Journal of International Money and Finance* 24<<issue and/or season>>: 441–463.
- Hallerberg, M. 2004. *Domestic Budgets in a United Europe: Fiscal Governance from the End of Bretton Woods to EMU*. Ithaca, NY: Cornell University Press.
- Hallerberg, M.; R. Strauch; and J. von Hagen. 2001. "The Use and Effectiveness of Budgetary Rules and Norms in EU Member States." Report prepared for the Dutch Ministry of Finance by the Institute of European Integration Studies, June 11.
- . 2004. "The Design of Fiscal Rules and Forms of Governance in European Union Countries." *Working Paper*, 419, European Central Bank.
- Halleberg, M. and J. von Hagen, 1997. "Electoral Institutions, Cabinet Negotiations, and Budget Deficits in the European Union." Working Paper No. 1555, Center for Economic Policy Research, London. <<no citation for this reference / cite or delete>>
- . 1999. "Electoral Institutions, Cabinet Negotiations, and Budget Deficits Within the European Union." In *Fiscal Institutions and Fiscal Performance*, ed. J. Poterba and J. von Hagen, pp. 209–232. Chicago, IL: Chicago University Press.
- Mulas-Granados, C. 2006. *Economics, Politics, and Budgets: The Political Economy of Fiscal Consolidations in Europe*. Basingstoke, UK: Palgrave-Macmillan.
- Perotti, R., and Y. Kontopoulos. 2002. "Fragmented Fiscal Policy." *Journal of Public Economics* 82<<issue and/or season>>: 191–222. <<no citation for this reference / cite or delete>>
- Persson, T., and G. Tabellini. 1999. "Political Economics and Public Finance." In *Handbook of Public Economics, III*, ed. A. Auerbach and M. S. Feldstein.<<page range for chapter>> Amsterdam: North-Holland. <<no citation for this reference / cite or delete>>
- Purfield, C. 2003. "Fiscal Adjustment in Transition Countries: Evidence from the 1990s." Working Paper No. WP/03/36, International Monetary Fund, Washington, DC.
- Roubini, N., and J.D. Sachs. 1989. "Political and Economic Determinants of Budget Deficits in the Industrial Democracies." *European Economic Review* 33<<issue and/or season>>: 903–938.

- von Hagen, J. 1992. "Budgeting Procedures and Fiscal Performance in the European Communities." Economic Papers No. 96, Commission of the European Communities, Bruxelles.
- von Hagen, J.; A.H. Hallett; and R. Strauch. 2001. "Budgetary Consolidation in EMU." Economics Papers No. 148, Commission of the European Communities, Bruxelles.
- von Hagen, J., and I.J. Harden. 1994. "Budget Processes and Commitment to Fiscal Discipline." *European Economic Review* 39<<issue and/or season>>: 771–779.
- Yalloutinen, S., 2004. "Fiscal Institutions in CEECs." Ph.D. dissertation, <<department?>>University of Jyväskylä, Finland.
- Zápal, J., and O. Schneider. 2006. "What Are Their Words Worth? The Political Pains of Fiscal Consolidations in the New EU Member States." *Eastern European Economics* 44, no. 5: 6–37.

Appendix Table A1

**Value Range of Variables for Budget Institution Indices in Each Country**

Institutional variables, by budgetary process phase (I.1)	Value	$W_{VAR}$	$W_{PROC}$	$W_{GLOBAL}$
A. Planning of fiscal policy and budgetary programming				0.3333
1. Pluriannual fiscal frameworks		0.4761	0.25	
1. Type of regulation of the fiscal framework				
a: Regulation by specific legislation	3			
b: Regulation by annual budget law	2			
c: No regulation	1			
2. Time horizon		0.3571		
a: 4 years (including the budget year)	4			
b: 4 years (excluding the budget year)		3		
c: 3 years (including the budget year)	2			
d: 3 years (excluding the budget year)		1		
3. Responsible body and dependence		0.4761		
a: Coordination between the centers responsible for budgeting and economic policy	3			
b: Budgeting center (ministry of finance):	2			
c: Competence divided between organs of the ministry of finance	1			
4. Territorial and functional scope of the pluriannual budgetary frameworks		0.4761		
a: All public sector levels and functions	3			
b: Central government, including social security and equivalent funds	2			
c: Central government, excluding social security and equivalent funds	1			
5. Sliding review of annual financial years		0.4761		
a: Annual review of pluriannual objectives and automatic extension	3			
b: Annual review of objectives without automatic extension	2			
c: Review of current financial year	1			

	Value	$W_{VAR}$	$W_{PROC}$	$W_{GLOBAL}$
6. Unification of the budget and its integration in the pluriannual framework		0.4761		
a: Nonexistence of extrabudgetary funds	3			
b: Existence of fully integrated extrabudgetary funds	2			
c: Existence of nonintegrated extrabudgetary funds	1			
7. Type of pluriannual budgeting		0.4761		
a: Fully effective, with control of pluriannual execution	3			
b: Orientative for principal budget lines or important programmes	2			
c: Informative	1			
Total maximum score (A.1.)		10.00		
Institutional variables, by budgetary process phase (I.2)				
2. Fiscal rules			0.25	
1. Contents of the objectives and general limitations defined in the fiscal rule		0.4166		
a: Balanced budget, debt stock, and disaggregated pluriannual expenditure objectives	4			
b: Balanced budget, debt stock, and disaggregated pluriannual revenue and expenditure objectives	3.5			
c: Balanced budget, debt stock, and annual revenue and expenditure objectives	3			
d: Balanced budget annual revenue and expenditure objectives	2.5			
e: Balanced budget and debt stock	2			
f: Balanced budget and annual expenditure objectives	1.5			
g: Balanced budget	1			
h: Budgetary revenue and expenditure levels	0.5			
2. Complementary objectives and limits defined in the fiscal rule		0.8333		
a: Nominal and real expenditure limits for each ministry/department	2			
b: Nominal expenditure limits for each ministry/department	1			
c: No limits exist	0			
3. Adjustments for inflation		0.8333		
a: No mechanism exists	2			
b: For salaries and pensions	1			
c: General review of the budget	0			

(continues)

Appendix Table A1 (Continued)

Institutional variables, by budgetary process phase (I.2)	Value	$W_{VAR}$	$W_{PROC}$	$W_{GLOBAL}$
4. Binding pluriannual, annual, and expenditure limits objectives		0.5555		
a: Binding pluriannual, annual, and expenditure limits objectives	3			
b: Binding pluriannual and expenditure limits objectives, annual objectives informative	2.5			
c: Orientative pluriannual objectives and binding annual objectives	2			
d: Binding expenditure limits	1.5			
e: Flexibility to exceed expenditure limits with the authorization of the executive	1			
5. Punitive mechanisms for nonfulfilment of objectives or expenditure limits		1.6666		
a: Exist	1			
b: Do not exist	0			
6. Limits upon financing through specific liabilities (external debt, international loans)		1.6666		
a: Exist	1			
b: Do not exist	0			
Total maximum score (A.2.)		10.00		
Institutional variables, by budgetary process phase (I.3)	Value	$W_{VAR}$	$W_{PROC}$	$W_{GLOBAL}$
3. Integration between pluriannual frameworks and annual budgetary programming			0.25	
1. Determination of the annual budget on the basis of the pluriannual framework		1.6666		
a: Used automatically	2			
b: Used as orientation	1			
c: Not used	0			
2. Review and analysis of annual deviations with regard to the pluriannual framework		1.6666		
a: Fully affects budgeting	2			
b: Deviations analyzed separately	1			
c: Does not affect budgeting	0			
3. Relation between the processes of designing the pluriannual framework and designing the annual budget (timetables, accounting criteria, and objectives).		1.1111		



a: Complete coincidence	3		
b: Sufficient coincidence	2		
c: Basic coincidence	1–0.5		
d: Independence	0		
Total maximum score (A.3.)		10.00	0.25
4. Role played by the finance minister in pluriannual planning and budgetary programming			
1. Function of the proposal of the pluriannual framework and its objectives by the finance minister to the government		0.6250	
a: Proposal by the finance minister of the objectives and full acceptance by the government	4		
b: Proposal by the finance minister of the objectives, and negotiation in cabinet, within the limits established in the initial proposal	3		
c: Proposal by the finance minister of the basic outlines and redefinition of objectives and allocations by the sectorial ministers	2		
d: Orientative proposal by the finance minister	1		
2. Model of negotiation between the finance minister and the sectorial ministers		0.6250	
a: Bilateral, subject to final approval by the finance minister, according to limits	4		
b: Bilateral, final decision made by the council of ministers	3		
c: Multilateral, in the council of ministers, without prior agreements	2		
d: External political negotiation in coalition governments	1		
3. Model for the resolution of disagreements between the finance minister and the sectorial ministers		2.5000	
a: Final decision made by the prime minister, following debate in the council	1		
b: Final decision made by the council of ministers	0		
4. Leadership of the finance minister in the budget process		0.8333	
a: Full (including powers of veto, reallocation and control of the timetable)	3		
b: Principal (power of veto and control of the timetable)	2		
c: Basic (control of the timetable and directives)	1		
Total maximum score (A.4.)		10.00	

(continues)

Appendix Table A1 (Continued)

Institutional variables, by budgetary process phase (II)	Value	$W_{VAR}$	$W_{PROC}$	$W_{GLOBAL}$
B. Parliamentary approval of the budget				0.3333
1. The role of parliament			1.00	
1. Power to amend the budget presented by government		1.6666		
a: No	1			
b: Yes	0			
2. Scope of parliamentary power to amend		0.5555		
a: Without exceeding overall expenditure limits	3			
b: Balancing any proposal for an increase in expenditure by an increase in revenue	2			
c: Without increasing the public deficit	1			
d: Unlimited	0			
3. Volume of modifications introduced in debate in Parliament		0.4166		
a: < 0.1 percent	4			
b: < 0.2 percent	3			
c: < 0.3 percent	2			
d: < 0.5 percent	1			
e: > 0.5 percent	0			
4. Voting upon overall bill by parliament		1.6666		
a: Before amendments are introduced	1			
b: Following discussion and approval, where applicable, of the amendments	0			
5. Time limit of the process which must result in the approval of the budget		1.6666		
a: A limit exists	1			
b: No limit exists	0			
6. Content of the budget to be applied in the absence of parliamentary approval		1.6666		
a: The proposal presented to parliament is applied provisionally	1			
b: 1/12 of the last budget approved is applied until the present budget is passed	0			
Total maximum score (B.1.)		10.00		

Institutional variables, by budgetary process phase (III)	Value	$W_{VAR}$	$W_{PROC}$	$W_{GLOBAL}$
C. Execution of the annual budget and modifications				0.3333
1. Control by the finance minister of the allocations approved			1.00	
1. Capacity to reduce the allocations approved by Parliament		0.8333		
a: Capacity exists	2			
b: Limited capacity	1			
c: No capacity	0			
2. Authorization of the ministry of finance for the disposition of funds in the budget		1.6666		
a: Yes	1			
b: No	0			
3. Capacity of the finance minister to limit the authorization of payments		1.6666		
a: Yes	1			
b: No	0			
4. Possibility of making transfers between approved budget items		0.5555		
a: No	3			
b: Only in specific cases and if approved by the finance minister	2.5			
c: Yes: must be approved by the finance minister	2			
d: Yes: some are approved by the government and others by the finance minister	1.5			
e: Yes: approved by the government	1			
f: Yes: decided by the ministers responsible for the expenditure sector				
5. Possibility of introducing modifications to the budget		0.8333		
a: No	2			
b: Yes, but in exceptional cases	1			
c: Yes	0			
6. Possibility of incorporating unspent funds into the following financial year		0.8333		
a: No	2			
b: Yes, but with limitations	1			
c: Yes	0			
Total maximum score (C.1.)		10.00		