Session 3

FISCAL POLICY AND BUDGETARY INSTITUTIONS

FISCAL RULES, FISCAL COUNCILS AND ALL THAT: COMMITMENT DEVICES, SIGNALING TOOLS OR SMOKESCREENS?

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Introduction

Over the past 15 years, an extensive literature has investigated the likely causes of persistent fiscal indiscipline and explored a variety of ways to alleviate it. One key conclusion is that institutional arrangements ranging from legally binding fiscal rules to enhanced transparency and procedural provisions can play a role in helping contain the widely observed penchant of policymakers for excessive deficits. The basis for this conclusion is the idea that well-designed institutions increase the costs faced by policymakers in case of deviations from sound policies. Yet the significance of the role of institutions in improving policy outcomes has been questioned on both theoretical and empirical grounds (see Schick, 2004, for an informal discussion). The main issue revolves around the extent to which institutions per se can truly alter the motivation of policymakers, and hence lead to the desirable outcome, and whether there is any robust evidence supporting this premise.

The paper explores this key issue regarding the role of institutions in determining fiscal policies and outcomes, and comprises two parts. In the first, we briefly discuss potential channels through which fiscal institutions, especially numerical budget rules and non-partisan agencies, can enhance fiscal discipline.[1] The most common view is that institutions can be "commitment devices" in the sense that their influence on fiscal behavior arises from their capacity to "tie the hands" of policymakers tempted by deviations from socially optimal choices. In addition, fiscal institutions can help reduce the asymmetry of information between policymakers and voters. To the extent that such asymmetry is a source of bias – for example because it increases political instability and shortsightedness in decision-making – institutions can be useful signaling tools with positive effect on

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[1] Kumar and Ter-Minassian (2007) provide a recent and comprehensive survey of discipline-enhancing institutions.

fiscal discipline.[2] One concern, however, is that in the absence of social consensus on fiscal discipline, they may lack credibility. Indeed, absent such consensus, institutions perceived as constituting binding constraints are likely to be ignored or circumvented, typically through creative accounting and off-budget operations that harm transparency and democratic accountability. In that sense, fiscal institutions could indeed end up being used as counterproductive smokescreens (Milesi-Ferretti, 2003; and von Hagen and Wolff, 2006).

In the second part of the paper, we exploit new survey data on national fiscal institutions compiled by the European Commission (Ayuso *et al.*, 2007), and explore the implications of these institutions on fiscal behavior in a large sample of EU countries. After a brief description of the data, we estimate a multivariate panel-data model of fiscal policy in these countries. This approach allows quantifying the relationship between fiscal institutions and outcomes. We pay careful attention to the causal nature of that relationship. Causality running from institutions to outcomes would be consistent with the hypothesis that institutions are effective commitment devices. This is indeed the way the link between institutions and performance has been investigated. However, there is a possibility that the reverse causality may hold true: that is intrinsically well-behaved governments may adopt strict rules and institutions to reveal the nature of their (unobservable) preferences, with potentially very significant policy implications. As the paper argues, there are credible theoretical reasons for positing this reverse causality, and a strong *prima facie* case for seeing if there is any empirical evidence supporting this view. The econometric analysis undertaken below is rigorous, but still subject to a number of limitations. In particular, there is a possibility that omitted variables may exert a joint influence on fiscal outcomes and institutions, giving a misleading impression of a strong causal linkage whereas institutions would in fact be a mere proxy of those omitted determinants of fiscal behavior. To refine our analysis and interpretations, descriptive evidence at the country-level is also presented.

We find that budgetary institutions and fiscal performance are strongly correlated. In particular, stricter and more encompassing numerical rules seem to contribute to fiscal discipline. However, it remains difficult to distinguish the signaling from the commitment hypothesis. While estimation with instrumental-variables techniques suggests that reverse causality may be an issue (supporting the signaling hypothesis), the results are sensitive to the choice of instruments. Also, descriptive country-level evidence indicates that panel analysis is likely to mask important cross-country variations in the role and effectiveness of fiscal rules, and that rules may turn out being important commitment vehicles in some countries but not in others.

Finally, we find only sketchy support for the smokescreen hypothesis. The link (correlation) between actual budgetary performance and fiscal indicators is robust and consistent with a discipline-enhancing effect of institutions. However, the data suggest that countries where non-partisan bodies ("fiscal councils") play a

[2] Debrun and Kumar (2007) propose a formal illustration of that argument.

greater role in the budget process are also deemed less transparent according to indicators of fiscal transparency. In addition, some countries exhibit a greater tendency to use creative accounting in the aftermath of a tightening of numerical fiscal rules, in line with the econometric work of von Hagen and Wolff (2006).

The rest of the paper is organized as follows. Section 1 provides a brief and selective survey of the key issues pertaining to the role of fiscal institutions. In Section 2, we describe empirical findings for a panel of 14 EU countries, while policy implications and conclusions are presented in Section 3.

1 The elusive link between rules and policy outcomes

While it is straightforward to set up theoretical second-best models with equilibrium deficit bias and to characterize institutions or rules that would alleviate such bias, the actual impact of institutional arrangements on policy decisions and outcomes has been the subject of intense debate. The parallel with the earlier discussions in the 1980s and early 1990s on the merits of central bank independence with regard to the design and implementation of monetary policy is worth noting. That discussion suggests that the current debate on fiscal policy issues should be framed in terms of a choice between "rules and institutions" rather than between "rules and (unchecked) discretion" (Wyplosz, 2005).

1.1 Déjà vu:[3] *central bank independence and the rules vs. institutions debate*

The adoption of fiscal rules has been considered as the instrument of choice to deal with deficit bias. A large number of studies describe in detail the coverage, nature, degree of state contingency, and the specific targets of desirable fiscal rules (e.g. Calmfors, 2005; Kopits, 2004; and Morris, Ongena and Schuknecht, 2006), and also conclude to the often beneficial role of such rules. However, the literature is far from unanimous in this, with some influential observers arguing that rules-based fiscal frameworks *per se* need not deliver: rather under quite plausible and realistic assumptions, they are likely to end up meeting the same fate as monetary rules because their effectiveness is based on the same faulty premise, namely the assumed capacity of rules to permanently suppress or constrain discretion (Wyplosz, 2005). Indeed, the argument goes, there will always be circumstances in which scrapping or ignoring rules will be preferable for policymakers, suggesting a serious credibility problem. It follows from this argument that a credible solution to biased policies cannot be to suppress discretion but to find mechanisms through which it could be exerted more wisely.

One such mechanism is the delegation of some decision-making power to an independent agency mandated to deliver socially optimal policy. Indeed, the

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[3] Or as the great American baseball player, Yogi Berra, said, in a somewhat different context, it is "*Déjà vu* all over again".

delegation of certain tasks to a non-partisan agency can help remove politically motivated bias while preserving fully the prerogative of elected policymakers' to define the agency's mandate. The success of independent central banks in dealing with the inflationary bias of monetary policy has led some to argue that nonpartisan agencies could play a similarly useful role in the fiscal realm as well.[4]

Yet, one strand of the monetary policy literature adopted a more skeptical (if not orthogonal) view on the role of central bank independence (and institutional reform in general) in shaping policy outcomes, and the arguments developed there might apply with even greater force to the current fiscal policy debate. A key element in the skeptics' thinking has been that establishing new institutions *per se* does not change the underlying motivations or preferences of the policymakers. Agents know this, and in the absence of significant changes in the environment, such institutions would thus potentially suffer from the same handicap as policies themselves, in particular a lack of credibility (McCallum, 1995).[5]

A related critique of the role of institutions is that in a democracy, institutions can only be sustained if they reflect deeper social preferences or permanent features of the political system (Posen, 1995). That argument again implies that institutions per se do not change underlying incentives. In the context of central bank independence, Posen (1995) concludes that "both central bank independence and a coalition in society committed to protecting that independence are necessary to achieve the low inflation heretofore ascribed to central bank independence; either alone is insufficient" (p. 271).

Two potential counterarguments could be put forward to suggest that institutions may be more than merely decorative, explaining why governments set up these institutions, including formal fiscal frameworks. The first is that under incomplete information (*i.e.* the public does not know the true motivation and competence of the government), institutional reform may play an important signaling role. For instance, Debrun and Kumar (2007) argue that better information on policymakers' true motivations – signalled by institutional reform – reduces the probability that voters will wrongly sanction an incumbent for adverse outcomes that were not related to policies. The result is greater political stability and a correspondingly lower deficit bias.[6] Here institutions do play a role, although a very different one from that assumed in the standard literature.

The second counterargument is less convincing, and hinges on the existence of potentially high costs, attendant on changing institutions. As a result, institutional reforms may be seen to be intrinsically more credible than policy changes. But this immediately raises the issue of the specific nature of these costs: do they result for instance from a loss of reputation; explicit sanctions, or some other

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[4] See Debrun, Hauner and Kumar (2007) for a survey of that literature.

[5] In McCallum's words, institutions *per se* "do not overcome the motivation" for biased policies but "merely relocate it."

[6] Stéclebout-Orseau and Hallerberg (2007) develop a full-fledged model of the signaling role of independent watchdogs.

political/economic costs? It does not require much to see that this argument may be overdone: after all, even constitutional provisions need not be strictly binding. For example, McCallum (1995) notes that the U.S. Constitution still lacks an amendment taking the dollar out of the metallic standard; in a different area, a superficial reading of Belgium's Constitution would suggest that the King of the Belgians is the most powerful man in the land; and who would have thought, back in 1997, that the Stability and Growth Pact would be substantially amended less than 10 years later?

1.2 Fiscal institutions in the real world: three hypotheses

To bridge the gap between theoretical discussions and the need to assess the effectiveness of real-world arrangements, we propose three hypotheses that are important to investigate empirically. These are respectively the "commitment" hypothesis, "signaling" hypothesis, and the "smokescreen" hypothesis. We discuss these in turn.[7]

As noted above, most of the literature on fiscal institutions implicitly accepts the validity of what we term the "commitment" hypothesis: that is the presumption that rules or institutions shape policymakers' incentives in a way that leads them to mimic a socially-optimal "pre-commitment solution". In other words, institutional changes, including the adoption of a rules-based framework, or the setting up of an independent agency is assumed to be followed by an improvement in fiscal performance. In practice, there is a need to nuance the notion that a choice is to be made between fiscal rules – that by themselves may not be enough – and independent agencies – that would be "bound" to be as successful with deficits, as central banks have been with inflation. In the fiscal realm, rules and institutions are more likely than not to interact in many ways, frequently reinforcing each other. The reason is simply that fiscal policy is the translation in financial terms of the democratic mandate received from voters: it involves distributive and efficiency considerations that would be difficult to map into a set of simple and measurable objectives. Fiscal rules can thus define in broad terms the boundaries of acceptable or unacceptable policies that an independent fiscal authority would be in charge of enforcing (Wyplosz, 2005; Debrun, Hauner and Kumar, 2007).

In a companion paper (Debrun and Kumar, 2007), we build a simple model *à la* Tabellini-Alesina (1991) highlighting the "signaling" hypothesis. Our model places the asymmetry of information between voters and a democratically accountable government at the center of the game. We illustrate that rules can then be employed as a useful signal of competence by a government because they reduce the risk that adverse budgetary outcomes are systematically associated by the voters with incompetence of the government, instead of recognizing for what they are – the results of idiosyncratic shocks. This raises chances of re-election of the incumbent

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[7] Although these hypotheses are not rigorously derived from a specific theoretical model, they are directly inspired by the earlier discussion.

government, which in turn reduces the incentive to run excessive deficits. We also discuss the necessary conditions for such a mechanism to operate. First, transparency is key, that is budgetary indicators must truthfully reflect actual policies. Second, the main source of deficit bias lies in electoral uncertainty so that the bias originates in the political process itself, and not in some underlying appetite for deficits by the public (also known as "fiscal illusion").

Next consider the "smokescreen" hypothesis: this relates to the relationship between fiscal institutions and transparency of fiscal accounts. It has been argued that when it becomes too costly to stick to fiscal rules, rather than abandon the rules explicitly, given the attendant costs, governments have an incentive to cheat by stealth through creative accounting (see, for instance, Milesi-Ferretti, 2003). This overtime undermines credibility of the public sector, with corrosive effects on trust and accountability in the public domain. Stéclebout-Orseau and Hallerberg (2006) go one step further in the theoretical modeling of this issue. They show, for instance, that the implementation procedure of the SGP's corrective arm (which involves political bargaining in the Council) may make the availability of information on national budgets counterproductive. The reason is that such information could facilitate the formation of blocking minorities in the European Council. Debrun and Kumar (2007) also formalize transparency and show that the lack of it may create an opportunistic deficit bias in addition to the partisan bias present in the basic model. We term the potential relationship between fiscal institutions and transparency the "smokescreen" hypothesis. von Hagen and Wolff (2006) provide econometric evidence that creative accounting has indeed increased in the aftermath of the implementation of the SGP. It could be argued, however, that national rules, because they are essentially self-imposed, may be less likely to lead to creative accounting than international or supranational rules (such as the Stability and Growth Pact).

How do we bring those hypotheses to the data? The commitment hypothesis is consistent with the expectation that institutional changes (including the adoption of a rule or the tightening of an existing rules-based framework) systematically precede improvements in fiscal performance. In a multivariate panel context, it would mean that rules indicators would cause higher primary balances on average. The signaling hypothesis would be associated with reverse causality (commitment or change in preferences comes first), and evidence (in the first stage regression) that the same broader institutional determinants simultaneously enhance rules and improve fiscal performance. Finally, the smokescreen hypothesis would suggest looking for a relationship between indicators of fiscal transparency (including creative accounting) and the fiscal institutions indices. We examine these hypotheses on their own merit, as well as relative to each other – for instance, we explore the extent to which data seem to be more consistent with the signaling relative to the commitment hypothesis.

2 Empirical evidence

This section examines whether the evidence on the impact of fiscal

institutions on fiscal performance (including transparency) allows us to reject one or more of the three hypotheses discussed above. We focus on mature European Union Member States (in fact the EU-15 excluding Luxembourg) over the period 1990-2004, relying on the fiscal institutions database described in Ayuso *et al.* (2007). The latter, based on a recent survey among member states of numerical fiscal rules at the national level, comprises quantitative, time-varying indices of fiscal rule restrictiveness and coverage. The survey also collected qualitative data on nonpartisan fiscal agencies that we summarize in quantitative indices capturing their importance in the budget process.

2.1 Fiscal rules and non-partisan agencies: the data

2.1.1 Numerical fiscal rules at the national level

As discussed in detail by Ayuso *et al.* (2007), there has been a tendency during the 1990s in the European Union to adopt more restrictive and more encompassing fiscal rules (Figure 1). The trend, noteable for all groupings of countries – the largest European countries, EU 15, the new member states – was particularly pronounced after the adoption of the blueprint for the economic and monetary union, the Maastricht Treaty, in 1992.

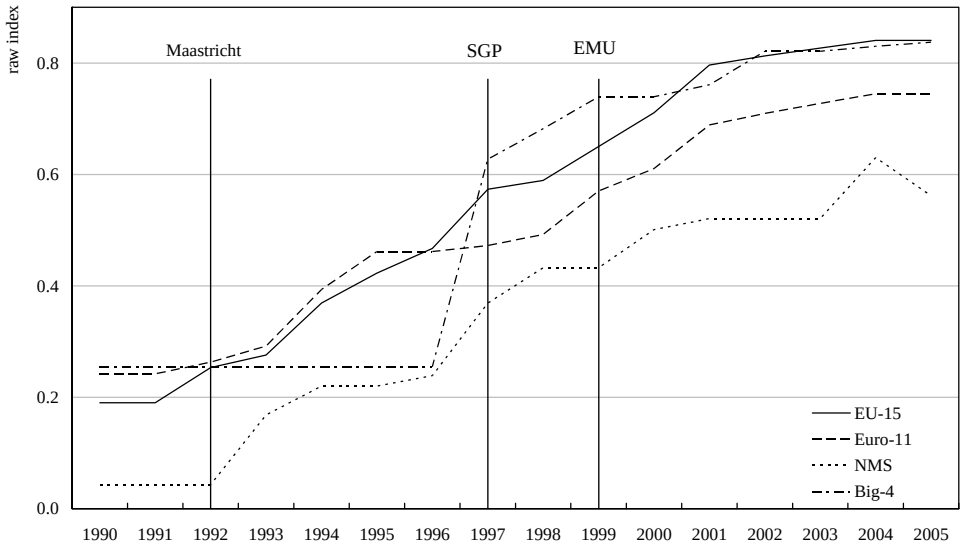
Even though it is difficult to assess precisely what a change in the index means, the time variation is significant and suggests exploration of some "visual correlations" between fiscal performance (as measured by the cyclically-adjusted primary balance of the general government) and changes in national rules over time. The results are reported in Figure 2: these indicate clearly that the relationship between budgetary performance and fiscal rules varies considerably across countries. While trend budgetary performance in Belgium appears driven by variations in the rules index (in line with our commitment hypothesis), improvements in the budgetary situation of Spain, Sweden and the Netherlands clearly precede major tightening in the national fiscal rules (in line with our *signaling* hypothesis). By contrast, fiscal outcomes in Italy and the United Kingdom do not appear linked to changes in fiscal rules.

2.1.2 Fiscal councils: main features and interaction with rules

In addition to rules, many countries have established nonpartisan agencies – "fiscal councils" in the terminology of Debrun, Hauner and Kumar (2007) – that provide independent input into the budgetary processes. In general, their purpose is to limit the scope for politicization of fiscal decisions although no explicit delegation of policymaking power is involved. The European Commission's survey covers many relevant dimensions of these institutions, including the content and legal status of their mandate, the guarantees of their independence, their potential impact on the policymaking process (including through the provision of independent forecasts), and their perceived influence on the public debate. For our analysis, we constructed a number of indices to characterize the set-up, independence, and the potential

Figure 1

Numerical Fiscal Rules at the National Level (EU Countries, 1990-2005)



Source: Ayuso *et al.* (2006).

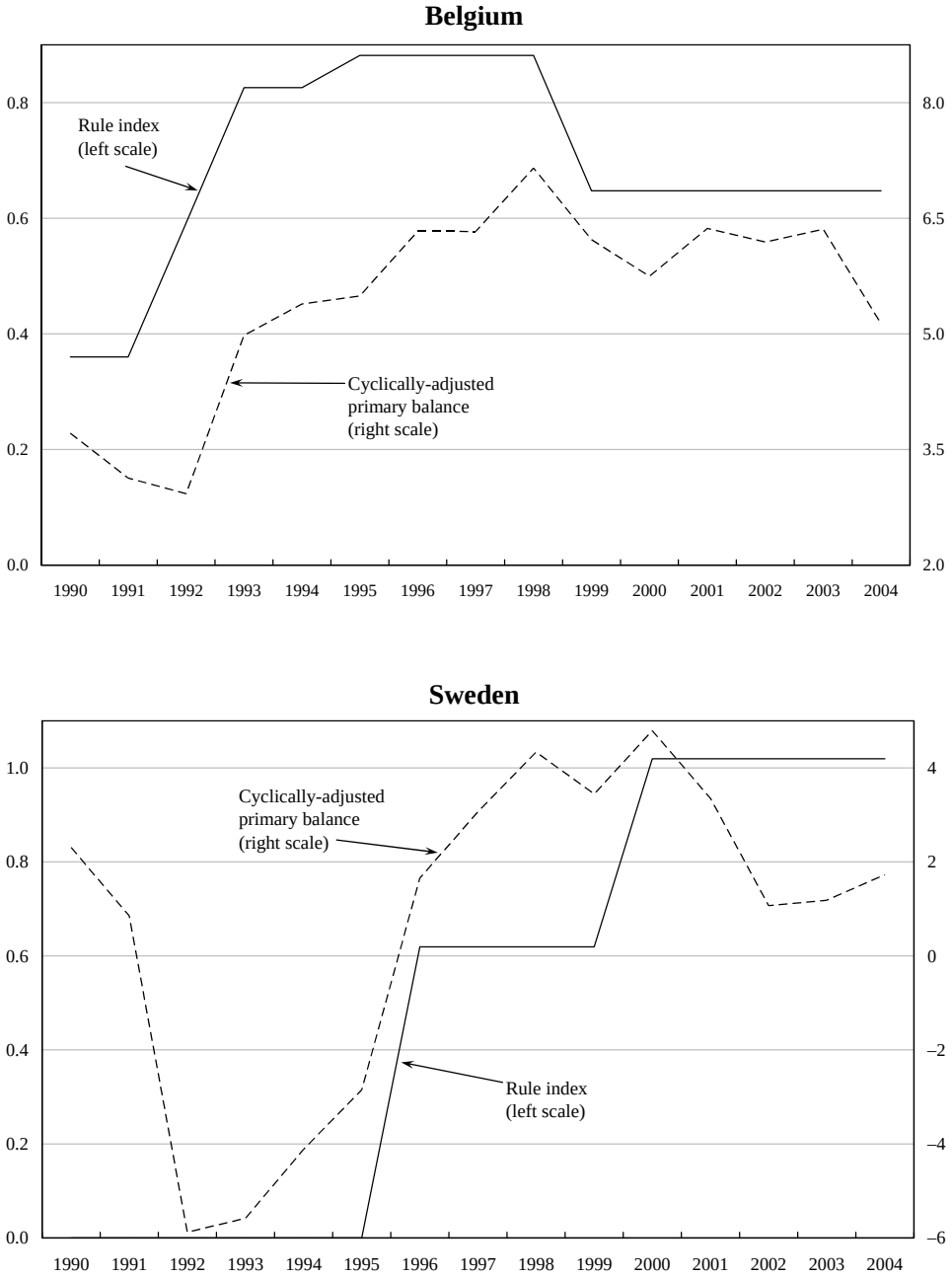
influence of these agencies on the budgetary process including via the public debate. We used a weighting scheme that explicitly emphasizes their role in preserving fiscal discipline and in facilitating the implementation of rules (see Table 1 and Appendix 1). As Table 1 indicates, there is a significant variation across countries in the de jure influence and independence of the fiscal councils in overall terms as well as specifically on the budgetary process, in the formal guarantees of political independence, and in the perceived impact on fiscal discipline.

Unlike the evidence presented in Figure 2 that focused on the relationship between rules and performance, we examine more closely the channels through which the fiscal councils potentially might have an impact, and also the relationship between the fiscal council and fiscal rules. One premise is that the greater the degree of restraint exercised by the fiscal council or the greater the guarantee of independence from political interference, the greater the likelihood of perceived or actual impact. There may also be a presumption of some complementarity between fiscal rules and fiscal councils, with the latter contributing to a more effective enforcement of the former.

The results, shown in Figure 3, are clearly quite suggestive. We see a strong positive relationship between the *de jure* influence exerted by a fiscal council and its perceived impact on fiscal performance. This is complemented by a positive relationship between formal guarantees of political independence and the perceived

Figure 2

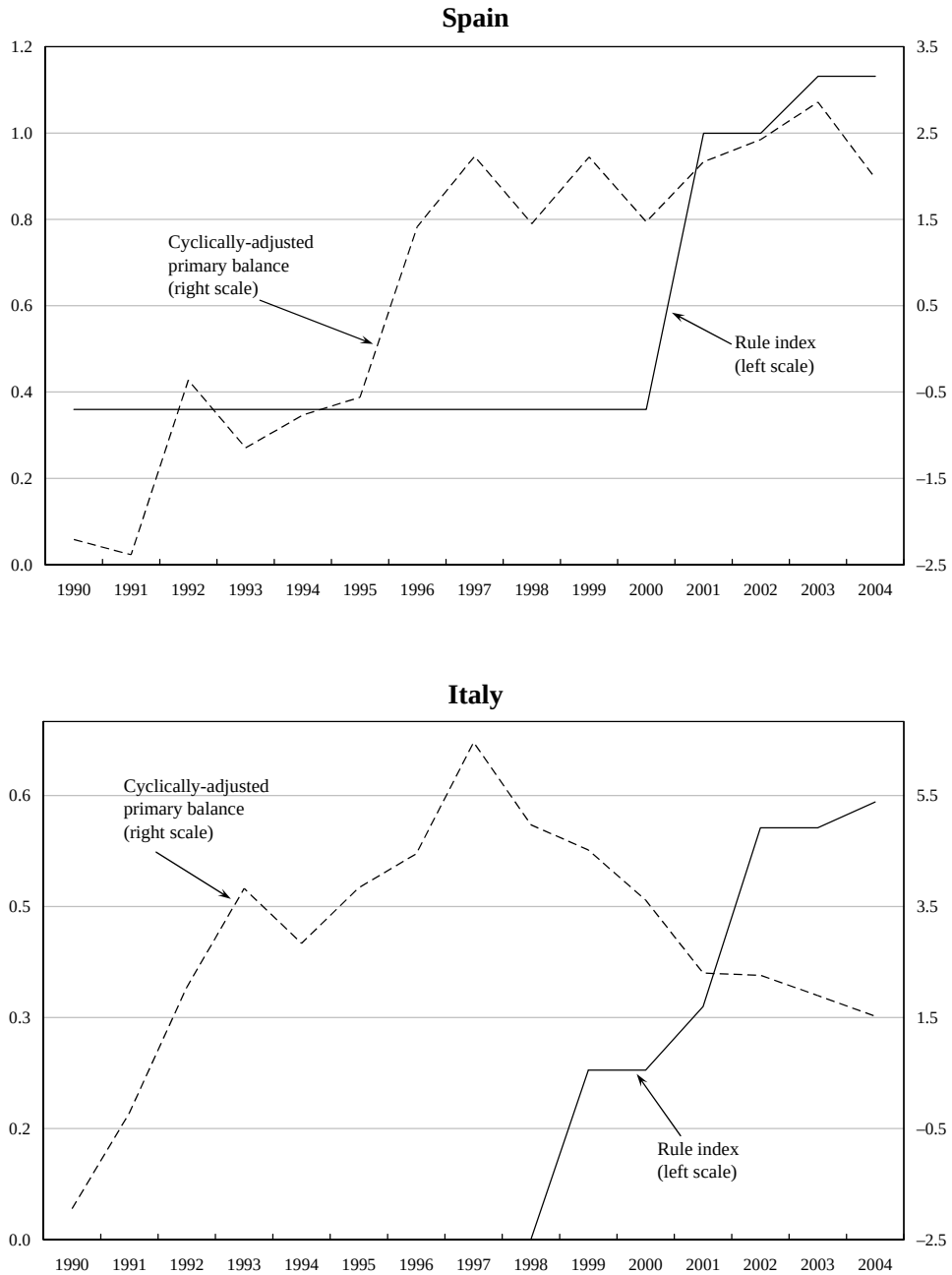
Fiscal Performance and Numerical Fiscal Rules in Selected EU Countries



Source: OECD, Ayuso *et al.* (2006).

Figure 2 (continued)

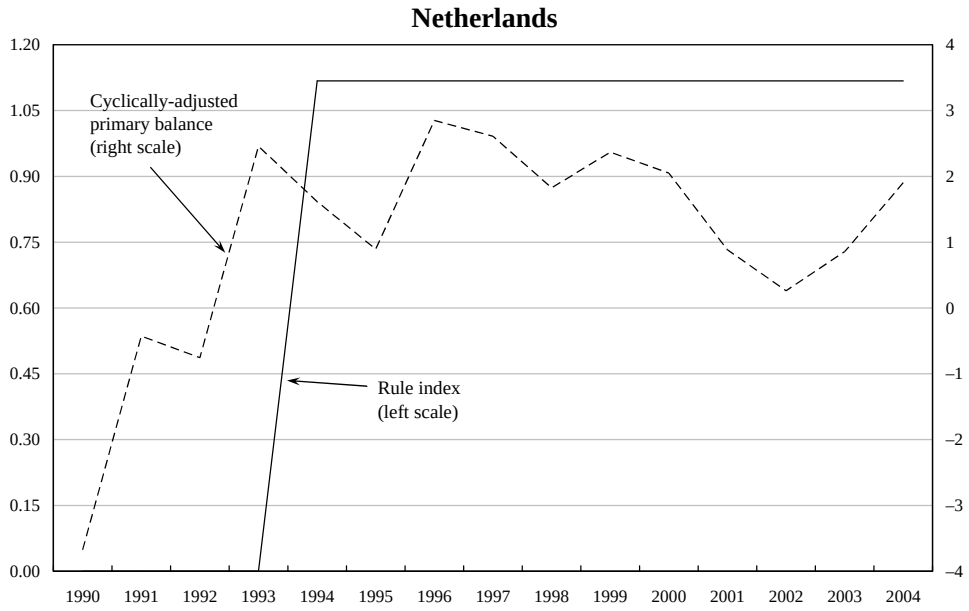
Fiscal Performance and Numerical Fiscal Rules in Selected EU Countries

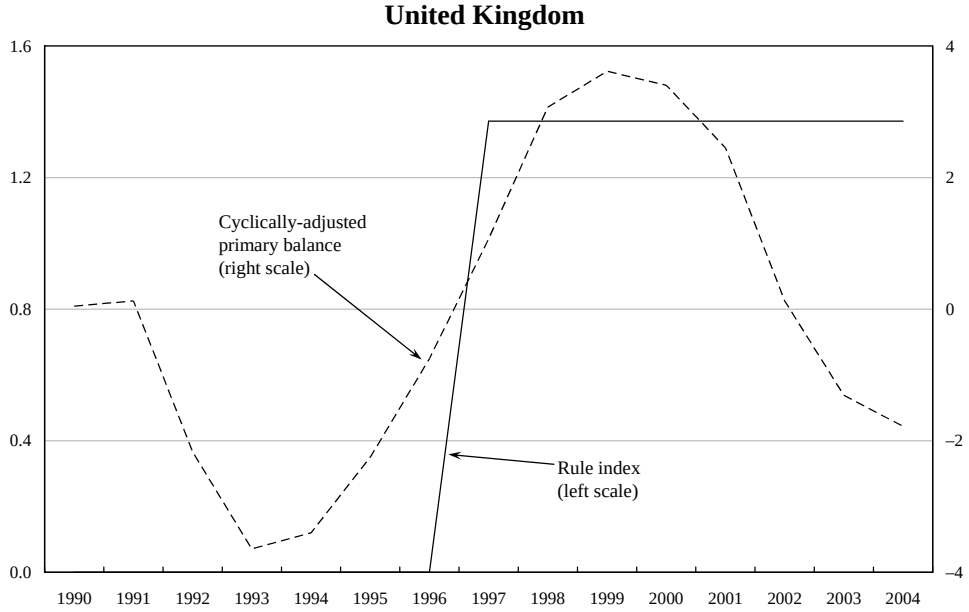


Source: OECD, Ayuso *et al.* (2006).

Figure 2 (continued)

Fiscal Performance and Numerical Fiscal Rules in Selected EU Countries





Source: OECD, Ayuso *et al.* (2006).

impact of the fiscal council. It is also interesting to note that there appears to have been some positive relationship between the index of de jure influence and the guarantees of independence, suggesting that countries instituting such agencies seemed serious in their willingness to strengthen the council's effectiveness.

By contrast, there does not appear to be any meaningful relationship between the formal influence of fiscal councils and the restrictiveness of fiscal rules. This is regardless of the nature of fiscal governance (in terms of standard classification of "commitment" versus the "delegation" form.[8] This indicates that countries with nominally more restrictive fiscal rules are not inclined to set up institutions that may potentially contribute to their enforcement.

We complement the unconditional correlations above with a careful and systematic assessment of fiscal rules and institutions in the context of a more comprehensive, multivariate model of fiscal behavior. In line with the hypotheses we want to test, we pay particular attention to the issue of reverse causality along the lines noted earlier.

2.2 Commitment vs. signaling? Modeling fiscal behavior

Fiscal behavior can be assessed by estimating "reaction functions", positing a link between fiscal outcomes and a range of policy, institutional and economic variables, similar to Bohn (1998). Because of the relatively short time series available for most fiscal variables, panel data techniques have increasingly been used despite the likely heterogeneity among individual countries' behavior. In line with the literature, the general specification is given by:

$$p_{i,t} = \alpha_0 + \rho d_{i,t-1} + \gamma \ Institutions_{i,t} + x'_{i,t}\beta + \eta_i + \varepsilon_{i,t} \qquad (1)$$

$$t = 1,...,T \qquad i = 1,...,N,$$

where $p_{i,t}$ is the ratio of the primary balance to GDP in country *i* and time *t*, $d_{i,t-1}$ is the public debt to GDP ratio at the end of period $t-1$, $Institutions_{i,t}$ is a time- and country-specific measure of fiscal institutions, $x_{i,t}$ is a vector of control variables, η_i are unobserved country effects, and $\varepsilon_{i,t}$ is a time- and country-specific disturbance. To better capture fiscal behavior, it is common to filter out the impact of automatic stabilizers on the primary balance, using the cyclically-adjusted primary balance (CAPB) as the dependent variable.

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[8] The bottom-right panel of Figure 3 identifies with a thick dot countries having adopted the commitment form of fiscal governance and with a thick square, the delegation form.

Table 1

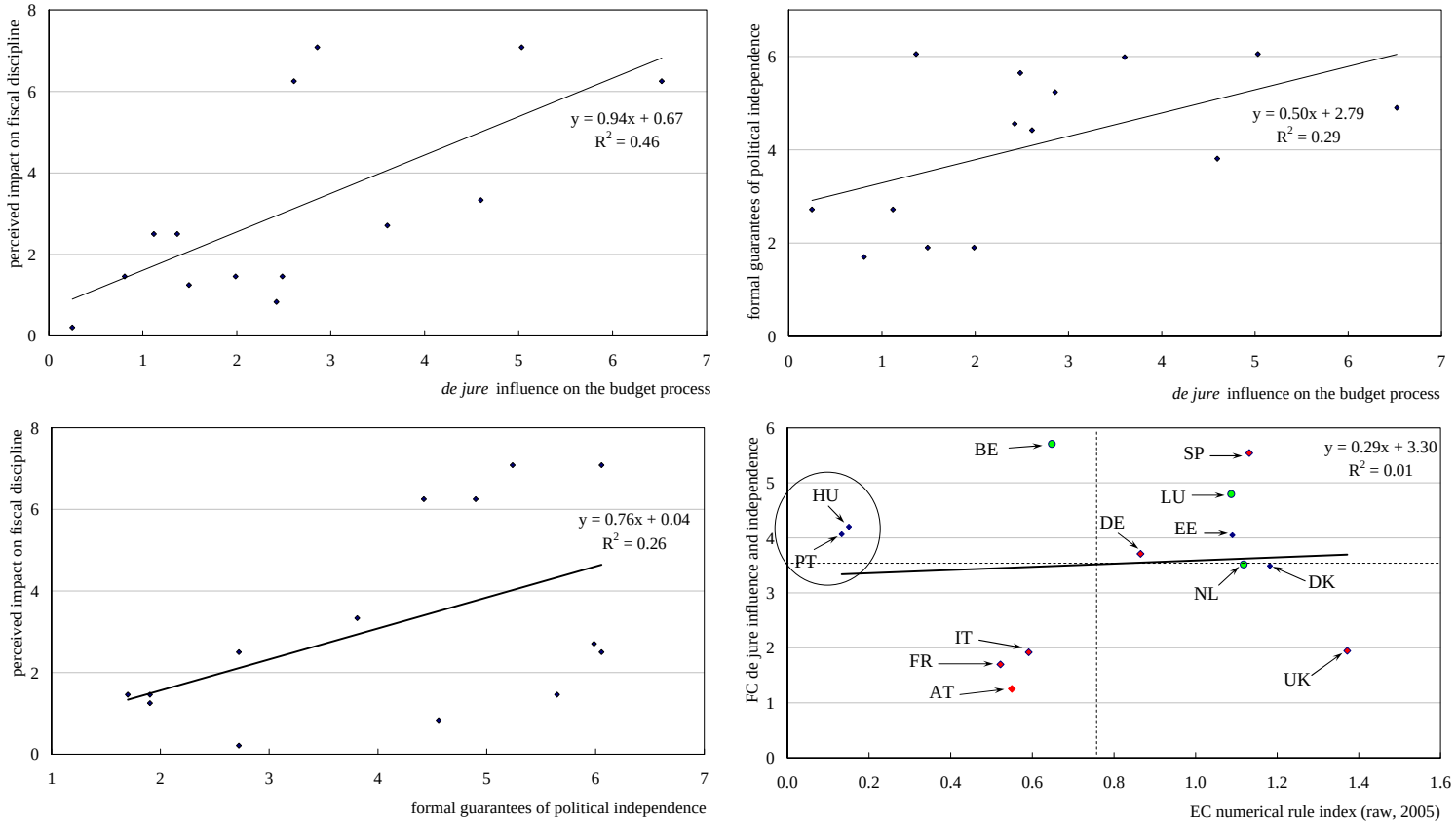
Variation in the *De Jure* Influence and Independence of the Fiscal Councils, in the Formal Guarantees of Political Independence and in the Perceived Impact on Fiscal Discipline

	Number of councils [1]	Overall (*de jure* influence and independence)	*De jure* influence on the budget process (legal)	Impact of independent forecast	Formal guarantees on political independence	Perceived impact on fiscal discipline	Fiscal rule index (raw, 2005)
Austria	1	1.3	0.8	0.2	1.7	1.5	0.5
Belgium	2	5.7	6.5	2.3	4.9	6.3	0.6
Denmark	1	3.5	2.4	0.0	4.6	0.8	1.2
Estonia	1	4.0	2.9	0.0	5.2	7.1	1.1
France	2	1.7	1.5	0.0	1.9	1.3	0.5
Germany	4	3.7	1.4	0.2	6.1	2.5	0.9
Greece	1	1.5	0.2	0.0	2.7	0.2	
Hungary	1	4.2	4.6	0.0	3.8	3.3	0.2
Italy	1	1.9	1.1	0.0	2.7	2.5	0.6
Luxembourg	1	4.8	3.6	0.0	6.0	2.7	1.1
Netherlands	1	3.5	2.6	1.1	4.4	6.3	1.1
Portugal	1	4.1	2.5	0.0	5.6	1.5	0.1
Spain	2	5.5	5.0	0.0	6.1	7.1	1.1
UK	1	1.9	2.0	0.0	1.9	1.5	1.4
Average		3.4	2.7	0.3	4.1	3.2	0.8
Average euro		3.4	2.5	0.4	4.2	3.2	0.7
Standard deviation		1.5	1.8	0.7	1.6	2.4	0.4

Sources: European Commission and author's calculations.
Note: Maximum score is 10.
[1] Excludes entities operating primarily as research institutes. In case of mutiple councils, we took the highest score.

Figure 3

Potential Channels of Impact of Fiscal Councils and Relationship between Fiscal Councils and Fiscal Rules



Source: European Commission and authors' calculations.

We proceed in two steps. First, we estimate standard reaction functions for a broader panel of 18 industrial countries, initially leaving aside the role of fiscal institutions, using a range of estimation techniques. The idea is to identify features of the political system that may cause a deficit bias in industrial countries.[9] In a second step, we build on Ayuso *et al.* (2006) to evaluate the potential for reverse causality, and the possible role of non-partisan fiscal agencies.

2.2.1 Fiscal behavior omitting fiscal institutions

The results reported in Table 2 confirm earlier findings in similar studies. First, fiscal behavior tends to exhibit a fairly high persistence, with an AR(1) term estimated to be around 0.7, and which is quite consistent across the different estimation techniques. Second, the negative sign on the output gap variable suggests that on average, over the past two decades the countries in the panel had a tendency to react in a destabilizing fashion to output fluctuations (procyclicality). Thirdly, the response of the CAPB to the level of public debt is significant, robust, and positive, which is consistent with long-term solvency (Bohn, 1998). These results are generally robust to the use of alternative estimators, including pooled OLS, LSDV (country fixed effects), IV (instrumenting the output gap only), and GMM (Arelano and Bond's dynamic panel estimator, which accounts for the possible small sample bias associated with fixed-effects estimation of an AR(1) panel data model).

One noteable finding is that the introduction of political variables – a measure of government fragmentation, an ideology variable that increases with the degree of conservatism, and an index of government stability – eliminates most of the unexplained cross-sectional heterogeneity captured by country fixed effects (see the F-test of the null hypothesis that country effects are jointly redundant, and that fixed-effect and GMM estimators are correspondingly suffering from a specification bias). In particular, the significant and positive impact of government stability on fiscal outcomes is striking.[10] To the extent that government stability is likely to be inversely correlated with electoral uncertainty (*i.e.*, the government stability variable is a plausible proxy of the risk faced by an incumbent to be voted out – higher the stability, the greater the likelihood of reelection), the result is consistent with the idea of a partisan deficit bias. The estimates suggest that a reduction in government stability by one standard-deviation reduces the CAPB by about 0.25 per cent of GDP on average. Similarly, the sample range of the index (between 3 and 11) corresponds to a difference of about 1 per cent of GDP between the CAPB of a country with a very unstable government, and that of a very stable one.

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[9] The EU-15 minus Luxembourg, plus Australia, Canada, Switzerland, and the U.S.

[10] The government stability variable is an index ranging from 0 to 12, with the highest figure indicating perfect stability. The index is taken from the International Country Risk Guide (ICRG), compiled by the PRS Group, a consultancy. Other political variables have been constructed using the World Bank's Database on Political Institutions.

Table 2

Fiscal Behavior in a Panel of Industrial Countries
(dependent variable: cyclically-adjusted primary balance)

Estimator:	**OLS**	**IV-DV**	**GMM**	**IV-DV**	**IV**	**GMM**	**IV-DV**	**IV**	**GMM**
				(Robust *t* - or *z* -statistics in parentheses)					
Lagged dependent variable	0.73 ***	0.73 ***	0.72 ***	0.68 ***	0.76 ***	0.68 ***	0.67 ***	0.72 ***	0.63 ***
	(28.79)	*(28.53)*	*(47.65)*	*(16.14)*	*(20.57)*	*(25.30)*	*(13.12)*	*(15.86)*	*(14.83)*
Output gap	–0.02	–0.01	–0.02	–0.05	–0.1 ***	–0.04	–0.06	–0.10 **	–0.07 **
	(–0.99)	*(–0.45)*	*(–0.54)*	*(–1.04)*	*(–2.64)*	*(–0.70)*	*(–1.14)*	*(–2.25)*	*(–1.72)*
Lagged public debt	0.03 ***	0.03 ***	0.03 ***	0.03 ***	0.02 ***	0.03 ***	0.03 ***	0.02 ***	0.04 ***
	(8.21)	*(8.19)*	*(5.93)*	*(4.35)*	*(4.70)*	*(4.09)*	*(3.64)*	*(4.28)*	*(5.44)*
Government fragmentation	…	…	…	–0.1	0.34	–0.1	–0.63	–0.19	–0.83
	…	…	…	*(–0.17)*	*(1.22)*	*(–0.09)*	*(0.93)*	*(–0.47)*	*(–1.44)*
Ideology (conservative)	…	…	…	–0.03	–0.03	–0.03	0.03	0.02	0.00
	…	…	…	*(–1.10)*	*(–1.15)*	*(0.75)*	*(0.78)*	*(0.62)*	*(–0.11)*
Government stability	…	…	…	0.12 ***	0.10 **	0.11 *	0.14 **	0.11 **	0.14 ***
	…	…	…	*(2.31)*	*(2.18)*	*(1.61)*	*(2.22)*	*(2.06)*	*(2.31)*
Delegation (dummy)	…	…	…	…	…	…	–0.37	–0.01	–0.15 ***
	…	…	…	…	…	…	*(–0.79)*	*(–0.03)*	*(–2.51)*
Commitment (dummy)	…	…	…	…	…	…	0.50	0.51	0.06
	…	…	…	…	…	…	*(1.35)*	*(1.44)*	*(1.13)*
Constant	–1.60 ***	–1.61 ***	…	–2.49 ***	–1.51 ***	0.01	–2.56 ***	–1.99 ***	0.02
	(–7.52)	*(–7.54)*	…	*(–3.87)*	*(–3.21)*	*(0.46)*	*(–3.41)*	*(–3.33)*	*(0.46)*
R-squared (overall)	0.75	0.75	…	0.73	0.76	…	0.75	0.77	…
F-test (country effects)	2.75 ***	2.77 ***	…	1.10	…	…	0.71	…	…
Sargan test (*p* -value)	…	…	0.98	…	…	0.98	…	…	1.00
Arellano-Bond test (*p* -value)	…	…	0.11		…	0.66	…	…	0.70
Fixed effects (country)	Yes	Yes	…	Yes	No	…	Yes	No	…
Number of observations	490	490	490	279	279	261	234	234	234
Number of cross-sections	18	18	18	18	18	18	15	15	15

The *, **, and *** superscripts indicate that the corresponding estimate is statistically significant at the 10, 5, and 1 percent level, respectively.

With regard to the other explanatory variables, we see that government fragmentation and ideology do not appear to have any *direct* effect on the fiscal balance. Finally, it is worth noting that country specific dummies characterizing the type of fiscal governance in place to alleviate common pool problems (the delegation and commitment models) have no robust impact on the average balance, which is in line with the findings of Annett (2006) for the post-1992 period, but also indicative of a potential collinearity problem between the two.

2.2.2 The role of fiscal institutions

The availability of time-varying indices of restrictiveness and coverage of fiscal rules allows for a direct statistical test of their impact on fiscal behavior. In that regard, the Commission's indices of fiscal rules are particularly useful. In addition to focusing on political control variables, one novel aspect of our analysis is to examine the role of fiscal councils. As noted earlier, there is little to guide the construction of meaningful quantitative indices summarizing features of nonpartisan agencies likely to affect fiscal policy choices. Nonetheless, using the analytical framework proposed in Debrun, Hauner and Kumar (2005), we compiled indices of different features of fiscal councils (FCs) that might be regarded as likely to be related to fiscal performance. One important observation is that, in comparison to our previous results, the new fiscal council indices yield more intuitive results.

As noted earlier, there are good theoretical reasons and some *prima facie* evidence that in some countries at least, the relationship between budgetary balances and fiscal rules may not be causal. First, it can be argued – as under our signaling hypothesis – that governments adopt rules and institutions that merely reflect their underlying preferences. Second, omitted determinants of fiscal behavior could be correlated with institutions, also causing a bias in the OLS estimates. Instrumenting the fiscal rule indices would be a natural technical response to this issue: however, there is a scarcity of good quality instruments (which have to be orthogonal to the error term but highly correlated with the endogenous explanatory variable) for institutional variables. One way to alleviate this problem is to rely on standard specification tests to exclude exogenous political variables that appear to play no direct role in fiscal behavior, and use them as instruments. In the present model, good candidates are government fragmentation and ideology. To these, we also add our country-specific fiscal council indices while taking care to systematically test for the exogeneity of this instrument.

We also introduce other excluded instruments to capture exogenous factors that may have affected the decision to introduce national fiscal rules. Ayuso *et al.* (2006) point to the role played by the run-up to EMU, which may have encouraged countries to adopt stricter national rules to accompany the fiscal adjustment process, and by the introduction of the Stability and Growth Pact. Dummy variables capturing these events are therefore used as excluded instruments as well.[11] Finally,

[11] These dummies proved highly insignificant when included in the model.

as Figure 1 illustrated, the fiscal rule indices are not stationary so that we also use a linear time trend as an excluded instrument.

A related aspect is that other explanatory variables may be endogenous and could also be candidates for instrumentation. In particular, the output gap, the lagged primary balance, and the lagged public debt may all be correlated with the error term of the primary surplus equation, making them debatable instruments.[12] However, instrumenting more than one variable raises a number of econometric difficulties, including potential problems in the overall quality of the set of instruments. (For instance, a good instrument for the output gap may prove to be very weak for fiscal institutions). In order to address this issue, we instrumented only one variable at a time, focusing on the output gap and the fiscal rule indices. In the absence of obvious instruments for the lagged public debt and the lagged CAPB, we rely on standard specification tests to check whether they are orthogonal to the error term. (The same tests are used to check for the exogeneity of the fiscal council index.) Of course, the power of these tests is still a matter of debate, and therefore the results of this exercise, provided in Table 3, should be regarded as suggestive rather than fully conclusive.

Table 3 confirms the broad patterns observed earlier (in Table 2). The first 3 columns only instrument the output gap, assuming that fiscal institutions (both rules and the fiscal council index) are exogenous. The estimates indicate that while stricter and broader fiscal rules are associated with higher CAPBs (supporting the European Commission's findings), elections also seem to play a role, with lower CAPBs being observed in election years. In contrast, the impact of government stability is less precisely estimated than earlier, and its coefficient is lower, reflecting possible collinearity with rules and elections. As expected from Figure 2, the fiscal council index has no meaningful impact on fiscal performance, suggesting that if such institutions play a role, this must be indirectly, likely through fiscal rules.

It is also worth noting that the Durbin-Hu-Hausman test does not reject the null hypothesis that the output gap is exogenous, despite the usual assumption to the contrary in most related empirical studies (e.g. Galí and Perotti, 2003). However, that result may also reflect a relatively low power of the test in the context of this panel. Finally, the introduction of fixed effects is consistently rejected by standard specification tests, and the results in column 3 indicate that country effects strongly interfere with our country-specific fiscal council index. The fit of the fixed-effects model is worse than the model without the fixed effects, and fiscal councils appear to have an implausible, adverse impact on performance.

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[12] One reason for such correlation is the possibility of time-invariant factors affecting the capacity or willingness to generate high primary surpluses in each country. Another reason is the possible persistence in the idiosyncratic shocks to primary surplus behavior. See Celasun, Debrun, and Ostry (2006) for a detailed discussion of the potential statistical biases related to the estimation of fiscal reaction functions, and Celasun and Kang (2006) for an assessment of alternative estimators.

Table 3

Impact of Fiscal Rules and Institutions on Fiscal Behavior
(dependent variable: cyclically-adjusted primary balance)

	Instrumenting the output gap only			Instrumenting fiscal rules only			
	No FC	With FC index		With time trend as omitted instrument			Without time trend
	(Robust *t* - or *z* -statistics in parentheses)						
Lagged CAPB	0.65 ***	0.65 ***	0.55 ***	0.58 **	0.66 ***	0.68 **	0.67 ***
	(13.16)	*(13.18)*	*(8.85)*	*(8.21)*	*(12.47)*	*(12.59)*	*(11.81)*
Output gap	–0.07	–0.06	0.00	–0.04	–0.08 *	–0.08 *	–0.07 *
	(–1.58)	*(–1.37)*	*(0.04)*	*(–0.89)*	*(–1.77)*	*(–1.78)*	*(–1.77)*
Lagged public debt	0.02 ***	0.02 ***	0.03 ***	0.03 ***	0.02 ***	0.02 ***	0.02 ***
	(5.48)	*(5.67)*	*(3.40)*	*(3.09)*	*(5.67)*	*(5.67)*	*(5.25)*
Government stability	0.08	0.07	0.07	0.07	0.09 *	0.10 **	0.11 **
	(1.59)	*(1.51)*	*(1.28)*	*(1.22)*	*(1.88)*	*(1.99)*	*(2.04)*
Fiscal governance ("Commitment" dummy)	0.64 ***	0.65 ***	0.82 **	0.68 *	0.56 ***	0.56 ***	0.56 ***
	(2.67)	*(2.69)*	*(2.09)*	*(1.65)*	*(2.91)*	*(2.89)*	*(2.90)*
Government fragmentation	–0.29	–0.31	–0.85	…	…	…	…
	(–0.60)	*(–0.64)*	*(–0.99)*	…	…	…	…
Ideology	0.01	0.01	0.05	…	…	…	…
	(0.31)	*(0.43)*	*(1.43)*	…	…	…	…
Election year (dummy)	–0.33 **	–0.33 **	–0.32 *	–0.32 *	–0.34 **	–0.34 **	–0.34 **
	(–1.98)	*(–1.97)*	*(–1.92)*	*(–1.92)*	*(–2.07)*	*(–2.05)*	*(–2.04)*
Fiscal council index	…	–0.04	–1 ***	…	…	…	…
	…	*(–0.82)*	*(–3.75)*	…	…	…	…
Fiscal rule overall index	0.55 **	0.62 ***	1.07 ***	0.84 *	0.39	…	0.19
	(2.48)	*(2.70)*	*(2.99)*	*(1.65)*	*(1.27)*	…	*(0.45)*
Fiscal rule coverage index	…	…	…	…	…	0.27	…
	…	…	…	…	…	*(1.16)*	…
Constant	–2.05 ***	–1.99 ***	…	…	–2.08 ***	–2.01 ***	–2.05 ***
	(–3.99)	*(–3.89)*	…	…	*(–4.02)*	*(–4.00)*	*(3.89)*
R-squared (overall)	0.78	0.78	0.64	0.62	0.78	0.78	0.78
Country fixed effects	No	No	Yes	Yes	No	No	No
F-test (country effects)	1.05	1.79 *	…	…	0.81	1.25	0.61
Hansen J statistic (*p* -value)	0.93	0.96	0.93	0.10 *	0.93	0.90	0.98
Durbin-Wu-Hausman Chi-squared (*p* -value) [(1)]	0.52	0.47	0.15	0.77	0.52	0.47	0.28
Cragg-Donald statistic (weak instrument)	…	…	…	23.2	32.38	34.9	14.10
Exogeneity of suspect instrument (C statistic, *p* -value)							
- fiscal council index	…	…	…	0.00 ***	0.50	0.51	0.95
- lagged debt	…	…	…	…	0.67	0.59	0.67
- lagged CAPB	…	…	…	…	0.95	0.85	0.93
- all of the above (joint test)	…	…	…	…	0.90	0.89	0.96

All estimates are obtained by two-stage least squares. Excluded instruments for the output gap are the lagged output gap and the average output gap in the US, France and Germany, except for France (Germany, US and UK), and Germany (US, UK and France). Instruments for the fiscal rule indices include government fragmentation, ideology, and dummies for SGP, the run-up to EMU, the delegation form of fiscal governance, and a linear time trend. In the last two columns, the fiscal council index was also used as an excluded instrument.

[(1)] For the fixed effect regression (3rd and 4th columns), the *p*-value refers to the Davidson-McKinnon F-statistic.

The *, **, and *** superscripts indicate that the corresponding estimate is statistically significant at the 10, 5, and 1 percent level, respectively.

The second panel of Table 3 shows results based on instrumenting the rules: this crucially affects estimates of their impact on fiscal behavior. As the last four columns of Table 3 indicate, now both the restrictiveness of the rules and their coverage have no statistically meaningful impact on the CAPB. More strikingly, the Durbin-Hu-Hausman tests indicate that the potential endogeneity problem with regard to the fiscal rules is as large as for the output gap. Clearly, extensive robustness checks remain needed to understand more fully the apparently strong conditional correlation between rules and fiscal councils; but if anything, these results indicate that one cannot dismiss the possibility of a causal relationship running from fiscal performance to rules. Indeed based on these results it is not implausible to suggest that on average, the signaling hypothesis may well dominate the commitment hypothesis.

Beyond the exogeneity tests, an informed discussion of a potential simultaneity bias and its consequences would not be complete without looking carefully at the overall quality (and underlying message) of the first stage regression. This is done in Table 4: it confirms the impression conveyed by specification tests that first-stage regressions for rules are of good quality. The significant role of excluded exogenous variables is particularly noteworthy. These regressions unambiguously, and strongly, support the view that more disciplined governments (*i.e.* with low public debt and high CAPB) tend to have more restrictive (or a broader coverage of) fiscal rules. Government stability – which is associated with better fiscal performance – is significantly positively correlated with the restrictiveness of the rules, but only when the time trend is removed. Rather strikingly, when controlling for all other determinants of the rules, delegation countries tend to have tightened fiscal rules by more than commitment countries over the sample period, perhaps reflecting a "catching up" effect as the former were generally less prone than the latter to have rules-based fiscal frameworks.

Government fragmentation and ideology also appear to have a significant effect on the preference for tighter and more encompassing fiscal rules. Specifically, more fragmented governments seem to find it more convenient to enact binding rules committing all parties to the same aggregate objective than to rely on presumably endless and paralyzing negotiations among coalition partners, an interpretation which may also explain why the commitment dummy has a quantitatively smaller impact on the rules indices.[13] Also, right-leaning governments seem to have an intrinsic appetite for less constraining arrangements than left-leaning governments. Importantly, the fiscal council index enters with a positive and statistically significant coefficient. Once one appropriately controls for other determinants of rules, the presence of fiscal councils would thus appear to contribute positively to either the emergence of fiscal rules or their more effective enforcement. Finally, the time trend is, of course, positive and significant but, with the exceptions of government stability, the SGP dummy and the run-up dummy, it does not change the above results.

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[13] Coalition governments typically prefer the commitment approach (Hallerberg, von Hagen and Strauch, 2004).

Table 4

First-stage Regressions for the Fiscal Rules Indices
(dependent variable: fiscal rule index)

	Fifth column in Table 3	Sixth column in Table 3	Seventh column in Table 3
Lagged public debt	–0.00 ***	–0.00 ***	–0.00 ***
	(–3.46)	*(–3.95)*	*(–2.77)*
Lagged CAPB	0.03 ***	0.04 ***	0.05 ***
	(3.25)	*(3.15)*	*(3.95)*
Government stability	0.00	–0.01	0.05 **
	(0.21)	*(–0.53)*	*(2.50)*
Delegation (dummy)	0.34 ***	0.48 ***	0.46 ***
	(6.24)	*(6.89)*	*(7.06)*
Commitment (dummy)	0.13 **	0.19 ***	0.22 ***
	(2.45)	*(2.74)*	*(3.40)*
Government fragmentation	0.50 ***	0.75 ***	0.36 ***
	(6.37)	*(7.26)*	*(3.94)*
Ideology (conservative)	–0.02 ***	–0.03 ***	–0.03 ***
	(–3.10)	*(–3.58)*	*(–3.45)*
Output gap	0.02 **	0.02 **	–0.01
	(2.03)	*(2.19)*	*(–0.96)*
SGP (dummy)	–0.44 ***	–0.47 ***	–0.09
	(–7.26)	*(–6.77)*	*(–1.24)*
Runup to EMU (dummy)	–0.09	–0.06	–0.12 **
	(–1.56)	*(0.85)*	*(–2.07)*
Elections	0.03	0.03	0.03
	(0.69)	*(0.51)*	*(0.60)*
Fiscal council index	0.07 ***	0.10 ***	0.08 ***
	(7.55)	*(7.82)*	*(7.00)*
Linear time trend	0.07 ***	0.09 ***	…
	(12.37)	*(11.97)*	…
Constant	–1.67 ***	–1.99	–0.19
	(–8.71)	*(–8.13)*	*(–1.05)*
R-squared (overall)	0.65	0.66	0.47
Partial *R*-squared of excluded instruments	0.56	0.57	0.32
F-test of excluded instruments	50.30 ***	56.17 ***	16.90 ***

The *, **, and *** superscripts indicate that the corresponding estimate is statistically significant at the 10, 5, and 1 percent level, respectively.

Overall, the results in Table 4 point to two important messages as regards the determinants of fiscal rules:

First, it is highly unlikely that fiscal rules are everywhere primarily conceived as commitment devices of naturally profligate governments. On the contrary, it appears quite plausible that in a fair number of countries, rules are simply the manifestation of an implicit contract with the electorate, a public signal of the commitment to maintain mutually agreed standards of fiscal discipline. Second, fiscal rules have a procedural dimension that reflects the preference for certain forms of fiscal governance (see Hallerberg, Strauch and von Hagen, 2004). In both cases, the adoption of rules seems to embody a conscious commitment to fiscal discipline rather than an attempt to suppress discretion and escape its potentially injudicious use.

2.3 Smokescreens?

Here, we limit ourselves to some descriptive evidence about the potential link between fiscal transparency and fiscal institutions. To do full justice to the issue, a comprehensive econometric analysis similar to that by von Hagen and Wolff (2006) – who systematically investigate the link between creative accounting and the implementation of the SGP – would be needed. However, it is beyond the scope of this paper.

We undertake three exercises: first, we look for evidence of a relationship between existing indices of fiscal transparency (specifically the one proposed by Alt and Lassen, 2006) and the range of our indices of fiscal rules and fiscal councils (see Appendix 2). Because transparency indices are only available for a small number of countries, we also investigate the possibility of a link between the creative use of stock-flow adjustments and fiscal institutions.

The results, summarized in Figure 4, do not point to any difference in terms of fiscal rules between countries with above-average transparency and those with below-average transparency. There is, however, some difference as regards fiscal councils. Less transparent countries seem to favor more active non-partisan bodies in their budgetary process. Could this mean that these institutions, far from being discipline-enhancing tools, are primarily envisaged as smokescreens? Or is it that these institutions proved too intrusive *ex post*, triggering an adverse response in terms of transparency? This obviously deserves further investigation.

A second exercise is to look for a relationship between our time-varying rules indices and changes in the correlation between key fiscal indicators (fiscal balance and public debt) and stock-flow adjustments (SFA). As noted by von Hagen and Wolff (2006), a positive correlation between the fiscal balance and SFAs would suggest that countries deliberately use accounting tricks to improve the budget balance, whereas a negative correlation would signal similar efforts to improve public debt numbers. Overall, a departure from zero-correlation feeds the suspicion of creative accounting.

In Figure 5 Spain, Denmark and the United Kingdom appear to show marked deviations from zero correlation in the aftermath of a tightening of the fiscal rules. Sweden also exhibits a high a positive correlation between SFAs and the overall fiscal balance since the implementation of the rules-based fiscal framework. Finally, Belgium appears to be operating a rapid shift from public debt embellishment operations to surplus boosting efforts.

Again, these stylized facts offer no definite proof that the revealed preference for rules-based fiscal frameworks has encouraged creative accounting. Yet, if there is no smoke without fire, these results should at least encourage us not to discard the smokescreen hypothesis and undertake more systematic research on that issue.

3 Conclusions

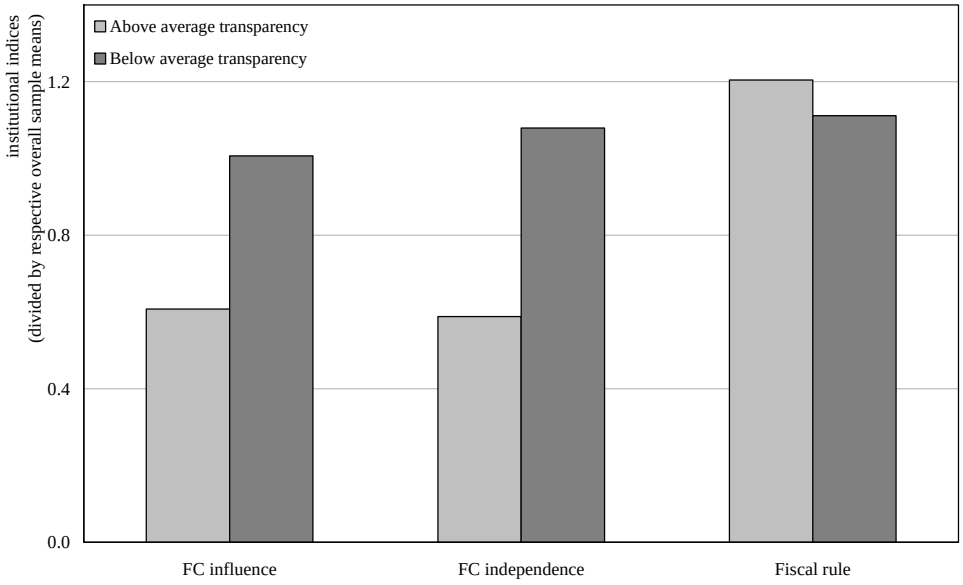
There is a significant debate raging, both in academia and in policy circles, regarding the premise that institutional arrangements can contain the widely observed tendency towards excessive government deficits. There may appear to be some valid theoretical support for this premise, and also some empirical evidence. Nonetheless, the significance of the role of institutions in improving policy outcomes has been increasingly questioned on both theoretical and empirical grounds. This is so given the uncertainty as to whether institutions per se can truly alter the motivation of policymakers, and hence lead to the desirable outcome, and whether there is any robust evidence supporting this premise. In view of its crucial importance, the main objective of this paper has been to explore how valid are its underpinnings of the premise, contribute a number of additional insights to the debate, and provide some systematic new evidence.

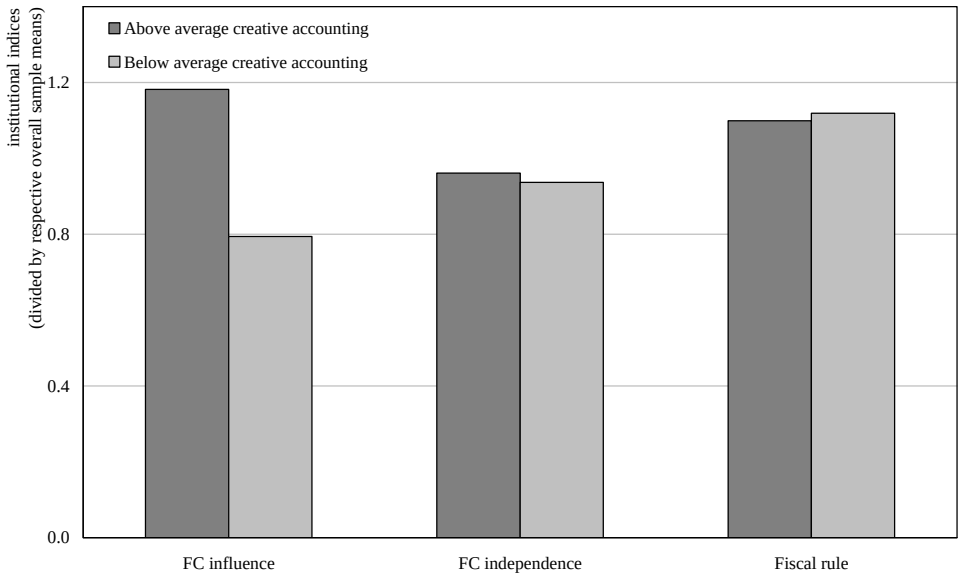
The paper first discussed potential channels through which fiscal institutions, such as numerical budget rules and non-partisan agencies, may affect fiscal discipline. It argued that their role as "commitment" devices, in "tying the hands" of policymakers may be overstated – they may do little to alter the underlying motivation of the policymakers. And that their role as "signaling" tools – that can help reduce the asymmetry of information between the electorate and policymakers – is likely to be at least as important. Given that they may not affect the motivation, there is also a concern that institutions perceived as constituting binding constraints may be circumvented, typically through creative accounting and off-budget operations, and are essentially used as counterproductive smokescreens.

The paper then formulated a series of hypotheses related to each of these three aspects – commitment, signaling and smokescreen hypotheses, and tested them using data for the industrial countries, particularly for the EU members, over the last two decades. A wide range of indices of numerical fiscal rules, and of fiscal agencies, obtained from a comprehensive survey data by the European Commission, were utilized in the analysis. A multivariate panel-data model of fiscal policy in these countries was estimated, with particular attention paid to the causal nature of the relationship between fiscal institutions and budgetary outcomes. While the

Figure 4

Fiscal Transparency and Institutions

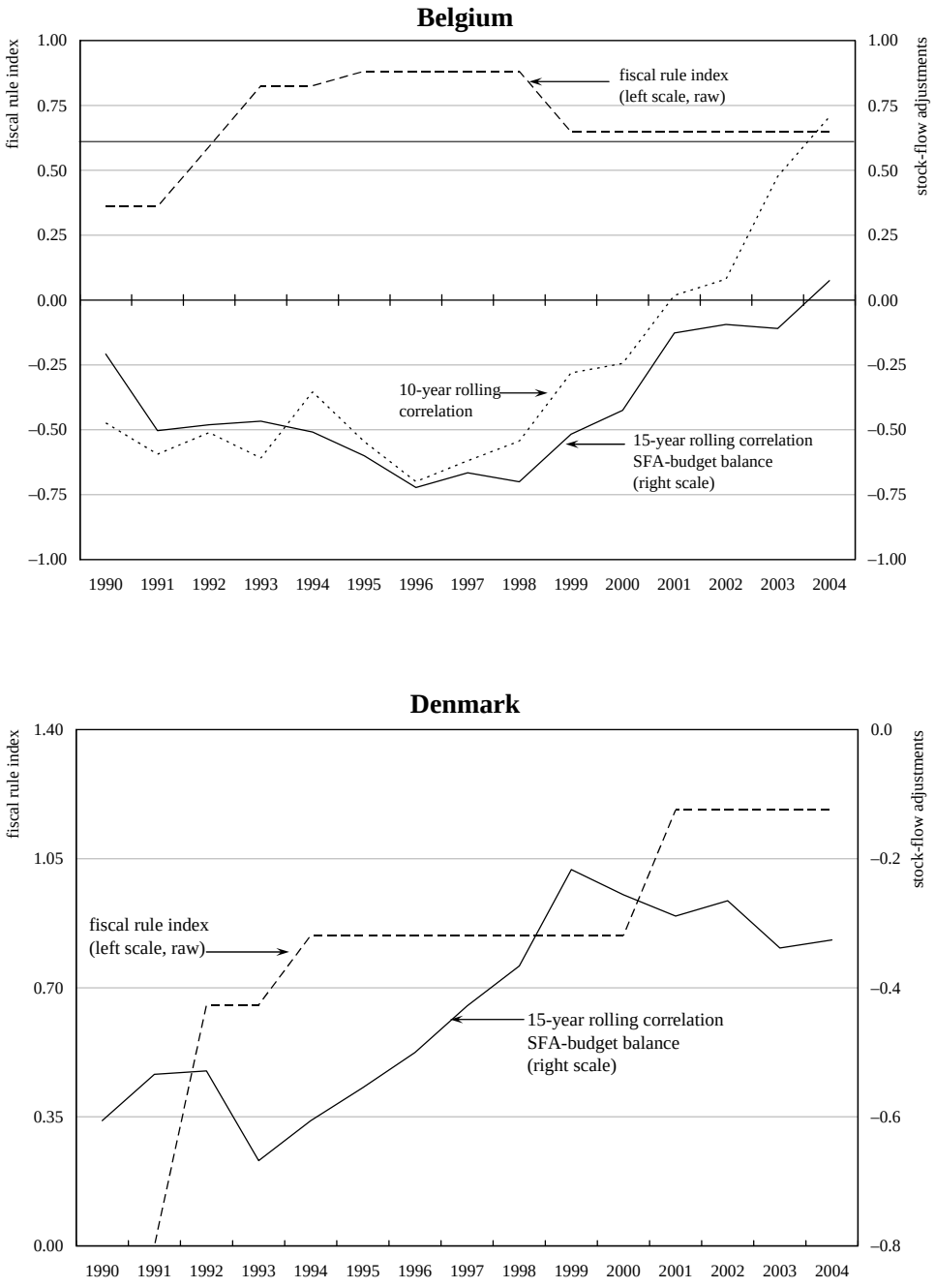




Sources: European Commission, Alt and Lassen (2006) and authors' calculations.

Figure 5

Fiscal Rule Index and Stock-flow Adjustments

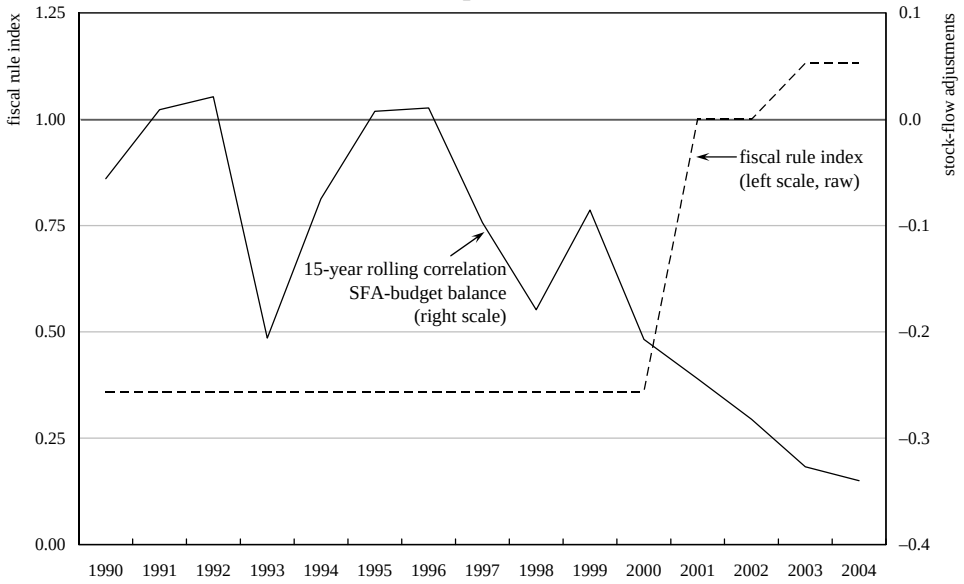


Source: Authors' calculations.

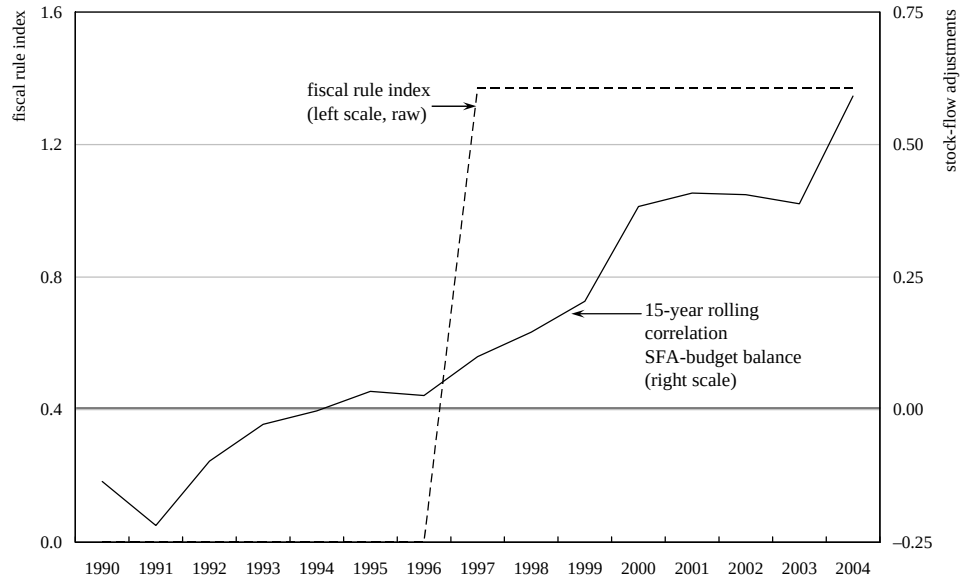
Figure 5 (continued)

Fiscal Rule Index and Stock-flow Adjustments

Spain



United Kingdom

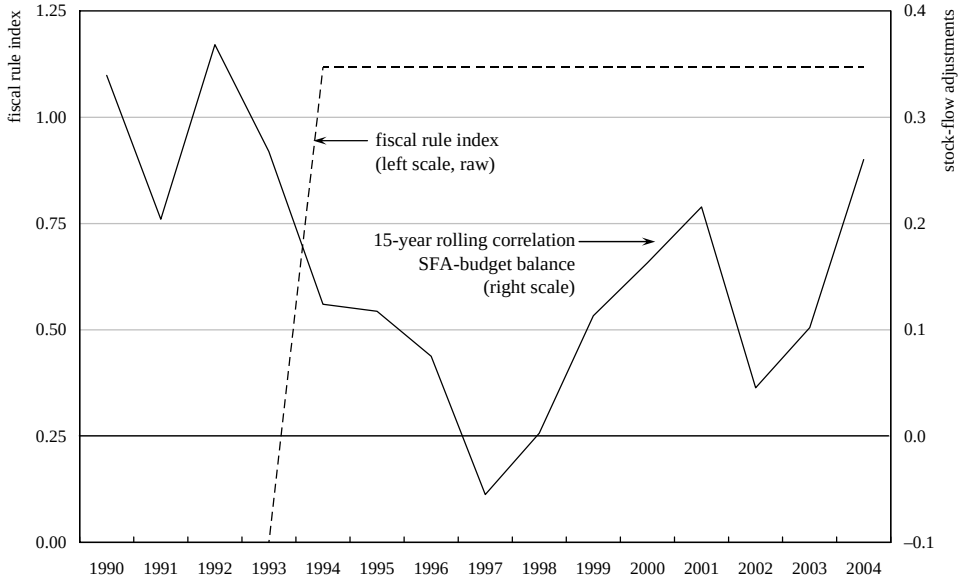


Source: Authors' calculations.

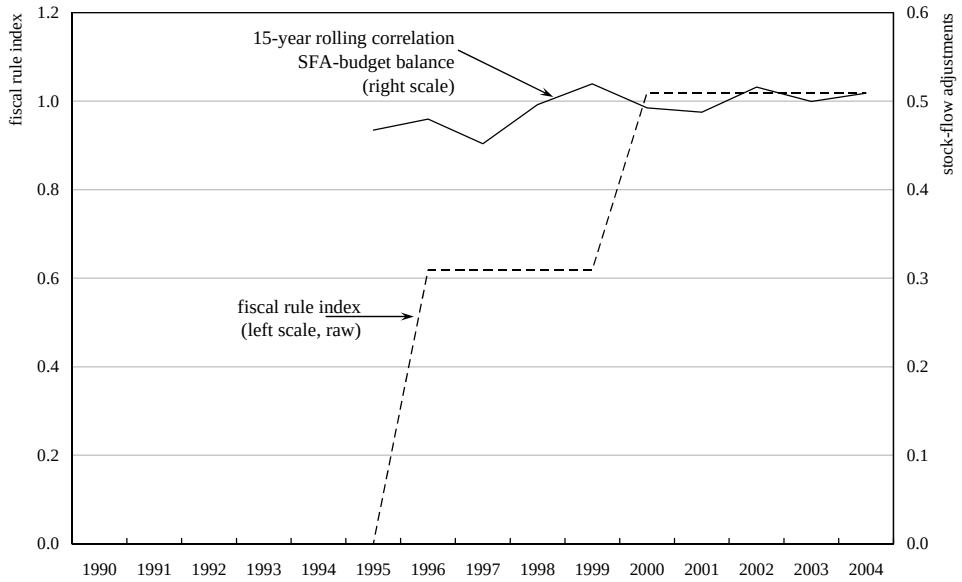
Figure 5 (continued)

Fiscal Rule Index and Stock-flow Adjustments

Netherlands



Sweden



Source: Authors' calculations.

results do indicate causality running from institutions to outcomes – underlining their role as commitment devices, we found highly suggestive evidence that the reverse causality may also hold true (supporting the signaling hypothesis): that is responsible governments may adopt strict rules and institutions to reveal the nature of their (unobservable) preferences. It was argued that this result is fully consistent with a rigorous theoretical framework, and with evidence from other areas relating to the role of institutions and economic policy (in particular the links between central bank independence and monetary policy). The premise of reverse causality was buttressed by the use of instrumental-variable techniques, although the results are sensitive to the choice of instruments.

We find only limited support for the smokescreen hypothesis. The correlation between budgetary performance and fiscal indicators is robust and consistent with a discipline-enhancing effect of institutions. However, the data suggest that countries where fiscal councils play a greater role in the budget process are also deemed less transparent according to indicators of fiscal transparency. In addition, some countries exhibit a greater tendency to use creative accounting in the aftermath of a tightening of numerical fiscal rules.

With regard to the role of fiscal councils, we found a strong relationship between the de jure influence exerted by them and their perceived impact on fiscal performance – evidence that was complemented by a positive relationship between formal guarantees of independence and their perceived impact. Although no strong unconditional relationship between the influence of fiscal councils and the restrictiveness of rules appears to exist, the econometric analysis suggests that the presence of fiscal councils is associated with tighter rules.

In sum, there is evidence to suggest that rules are primarily the manifestation of an implicit contract with the electorate, a public signal of the commitment to maintain mutually agreed standards of fiscal discipline. The adoption of rules reflects a conscious commitment to fiscal discipline rather than an attempt to suppress discretion and reduce its potentially injudicious use. Overall, both the theoretical discussion and the empirical evidence suggests at a minimum some caution in the role ascribed to fiscal rules: they are not a universal panacea – their impact is likely to vary significantly across countries, and they may well turn out to be useful commitment devices in some countries but not in others. In this context, fiscal councils – that analyze and asses budgetary developments and policies, offer advice and stimulate public debate and scrutiny while leaving the policy mandate with the elected representatives – can play a helpful role.

APPENDIX 1

Table 5

Construction of Fiscal Council Indices

Criteria	Item weights	score	Maximum score	Implied weights
A. Formal influence on the budget process				
Mandate	*10*		*90*	*0.11*
Provide analyses of the budget		1		0.01
Monitor implementation of budget plans		2		0.02
Quantify impact of measures and reforms		2		0.02
Check consistency with fiscal rules		4		0.05
Policy objectives	*10*		*90*	*0.11*
Assess sustainability of current plans		2		0.02
Assess compliance with fiscal rules		4		0.05
Assess compliance with SGP		3		0.04
Contribute to greater transparency		0		0.00
Main activities	*0*		*0*	*0.00*
Provide independent analyses of policies		0		0.00
Provide independent macro forecasts/budget projections		0		0.00
Make normative statements on fiscal policy		0		0.00
Make recommendations on fiscal policy		0		0.00
Normative functions (if any)	*15*		*165*	*0.20*
Make judgments on budget plans and consistency with fiscal rules		4		0.07
Provide alternative costing of budget plans		0		0.00
Recommend changes to budget plans		1		0.02
Make judgment on implementation and consistency with fiscal rules		4		0.07
Issue early warnings in case of deviations from budget plans		1		0.02
Recommend corrective measures in case of slippages		1		0.02
Agency of restraint	*40*		*160*	*0.20*
Governements (central, state, local) have to follow recommendations		4		0.20
Governments usually follow recommendations		2		0.10
Governments can ignore recommendations but must publicly justify deviations		1		0.05
Formal role in the budget process	*20*		*220*	*0.27*
FC has to approve the final budget		4		0.10
FC has to approve the draft budget		3		0.07
FC must be consulted during the budget process		2		0.05
FC is usually consulted (no legal obligation)		1		0.02
FC must be auditionned by Parliament during budget process		2		0.05
FC is usually auditionned by Parliament during budget process		1		0.02
Other role		0		0.00
Government response to FC's analyses	*0*		*0*	*0.00*
Government must take into account the analyses prepared by FC		0		0.00
Government has to publicly respond to such analyses		0		0.00
Access to information	*5*		*20*	*0.02*
FC has full access to inside information		4		0.02
FC has a priviledged access to information		2		0.01
Regular publication of reports on budget execution and plans	*0*	*0*	*0*	*0.00*
Legal status	*10*		*60*	*0.07*
Mandate of FC in Constitution or a Statute		2		0.02
Existence and role of FC in the Constitution		4		0.05
Existence and role of FC in a Statute		2		0.02
Maximum score of index A			805	

Table 5 (continued)

Construction of Fiscal Council Indices

Criteria	Item weights	score	Maximum score	Implied weights
B. Autonomy from Politics				
Nature of appointees	*20*		*80*	
Academics		4		*0.38*
Policy experts		4		*0.38*
Civil servants		2		*0.19*
Politicians		0		*0.00*
Central banker		3		*0.29*
Trade unionist		0		*0.00*
Others		0		*0.00*
Appointment is made by	*0*		*0*	*0.00*
Government		0		0.00
Parliament		0		0.00
Others		0		0.00
Autonomy of appointees from politics	*10*		*130*	*0.62*
FC member (top management) cannot hold political office		4		0.19
FC members serve longer terms than a typical legislature		4		0.19
Simultaneous (vs. staggered) appointments of FC members		0		0.00
Other guarantee on autonomy		1		0.05
FC is not formally attached to either government or parliament		2		0.10
FC has access to other resources than government budget allocations		2		0.10
Maximum score of index B			210	
C. Impact of independent forecasts				
Macroeconomic forecasts	1		11	0.25
FC's forecasts must be used for budget preparation		10		0.23
FC's forecasts are usually used for budget preparation		1		0.02
Deviations of budget assumptions from FC's forecasts must be justified		1		0.02
Expenditure projections	1	0	11	0.25
FC's projections must be used for budget preparation		10		0.23
FC's projections are usually used for budget preparation		1		0.02
Deviations of budget assumptions from FC's projections must be justified		1		0.02
Tax revenue projections	1	0	11	0.25
FC's projections must be used for budget preparation		10		0.23
FC's projections are usually used for budget preparation		1		0.02
Deviations of budget assumptions from FC's projections must be justified		1		0.02
Government balance projection	1	0	11	0.25
FC's projections must be used for budget preparation		10		0.23
FC's projections are usually used for budget preparation		1		0.02
Deviations of budget assumptions from FC's projections must be justified		1		0.02
Maximum score of index C			44	0
D. Perceived impact of FC				
Impact on government policies	30		120	0.25
Advice always followed by government		4		0.25
Advice generally followed by government		2		0.13
Advice generally not followed by government		0		0.00
Advice generally ignored by government		0		0.00
Impact on fiscal discipline	60		240	0.00
FC definitely had an impact		4		0.50
FC is perceived as having had a positive impact		1		0.13
Impact on public debate through media coverage	20		80	0.00
High media coverage encouraging public debate		4		0.17
Good media coverage but weak impact on the public debate		1		0.04
Reputation of FC's analytical output	10		40	0.00
Well above standard		4		0.08
Above standard		2		0.04
Standard		1		0.02
Below Standard		0		0.00
Well below standard		0		0.00
Maximum score of index D			480	

APPENDIX 2

Table 6

Alternative Measures of Fiscal Transparency

	Transparency Indices			Fiscal Institutions Indices		
	Alt-Lassen	**Hameed (ROSC-based)**	**Absence of creative accounting** [(1)]	**FC *de jure* influence index**	**FC political indepen-dence**	**Numerical rule index (raw, 2005)**
Belgium	3.00	-	0.52	6.52	4.90	0.65
Denmark	3.00	-	0.57	2.42	4.56	1.18
Germany	2.00	7.32	0.86	1.37	6.05	0.87
Spain	-	5.99	0.86	5.03	6.05	1.13
France	4.00	6.66	0.84	1.49	1.90	0.52
Ireland	3.00	-	0.66	-	-	0.62
Italy	3.00	5.65	0.77	1.12	2.72	0.59
Luxembourg	-	-	-	3.60	5.99	1.09
Netherlands	5.00	-	0.88	2.61	4.42	1.12
Austria	4.00	-	0.94	0.81	1.70	0.55
Portugal	-	5.65	0.85	2.48	5.65	0.13
Finland	4.00	-	0.84	-	-	0.93
Sweden	4.00	5.99	0.51	-	-	1.02
United Kingdom	7.00	3.00	0.85	1.99	1.90	1.37
Czech rep.	-	5.64	-	-	-	0.87
Estonia	-	-	-	2.86	5.24	1.09
Hungary	-	5.31	-	4.60	3.81	0.15
Latvia	-	-	-	-	-	0.41
Lithuania	-	-	-	-	-	0.52
Poland	-	4.99	-	-	-	0.95
Slovakia	-	-	-	-	-	0.43
Slovenia	-	-	-	-	-	0.06
Average	3.82	5.62	0.77	2.84	4.22	0.74
Median	4.00	5.65	0.84	2.48	4.56	0.76

[(1)] Defined as 1 minus the median coefficient of correlation (in absolute value, 15-year rolling correlation) between stock-flow adjustments and the overall budget balance in percentage of GDP over 2004-1990.

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DESIGN CHOICES FOR FISCAL POLICY RULES

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This article discusses issues regarding budget process rules in the context of the current pattern of rising fiscal deficits. It begins by explaining the premise that budget process rules have multiple objectives, and so must be judged according to multiple criteria. Prominent among those criteria, given the apparent economic sluggishness of the early years of the 1990s and the resulting fiscal deficits, are how any particular set of rules might facilitate economic recovery and growth, but also maintain fiscal responsibility and public credibility. This discussion is pertinent to both the euro area countries and the United States, and the article explores aspects of the European Union Stability and Growth Pact and the United States Gramm-Rudman-Hollings system. The article then proceeds to analyse alternative fiscal control measures according to these and other criteria, such as the ability to maintain sound core operations of government to attain all of its long-standing policy objectives, including the funding of public investment. The article concludes by weighing the alternative rules against these criteria.

Fiscal deficits have reclaimed their place as a pressing public policy issue around the world, as the brief respite of smaller deficits and even budget surpluses in the late 1990s has come to an abrupt end. The swing back toward large deficits is somewhat concentrated in the developed world's largest economies, with Germany, the United Kingdom and the United States all moving from surplus five years ago to deficits in excess of 3 per cent of GDP. France's deficit has swelled from well under 2 of GDP to almost 4 per cent in 2004; Japan's budget gained ground in the 1990s from its larger deficit, but has lost that ground again. The smaller OECD countries, taken as a group, have also seen a budget deterioration, but of smaller magnitude (see Figure 1).

Large sovereign credit demands on the part of the world's major developed countries are potentially destabilising, both domestically and in the global financial markets. To the extent that those demands are met by transnational borrowing, they could eventually and suddenly cause substantial drops in debtor country currency values, which could in turn increase domestic interest rates and raise prices of imports, challenging macroeconomic stabilisation policy. Over the longer term, large fiscal deficits can reduce domestically financed investment, and thus future incomes.

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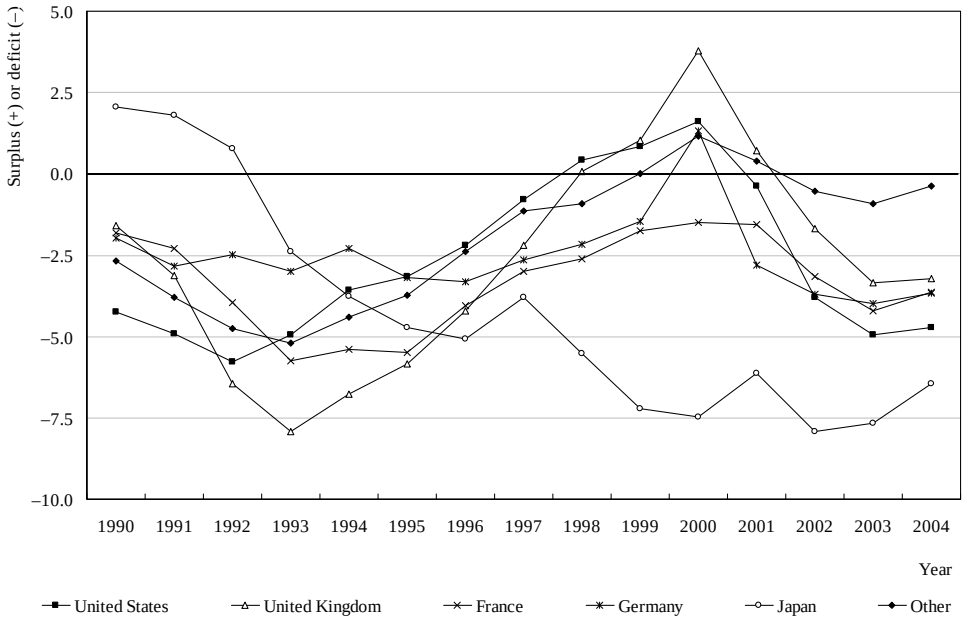
Figure 1

General Government Deficit for OECD Countries, 1990-2004
(percent of GDP)



Source: OECD, *OECD Factbook 2006: Economic, Environmental and Social Statistics*, March 2006.

Large fiscal deficits on the part of the wealthiest countries are problematic also in that they draw capital out of the world's developing countries, where it is urgently needed to raise the lowest living standards.

These pressing issues have again drawn the attention of fiscal specialists to effective budget process rules – or the lack thereof. Different OECD countries face different procedural or political issues.

In the European Monetary Union (EMU), the Stability and Growth Pact (SGP) imposes medium-term budgetary objectives to achieve and maintain a status close to balance or in surplus, and a ceiling on fiscal deficits at 3 per cent of GDP. In the early years of the SGP (and before that, the Maastricht Treaty), budget rules helped to bring the European countries toward or fully into compliance with the conditions for membership (Kopits, 2004, p. A9). However, recent developments tested the procedures for enforcement. Problems encountered in the implementation of the SGP, particularly the decisions of the ECOFIN Council in November 2005, have made it clear that the credibility of the framework to constrain deficits of member countries has been, in the words of the European Commission itself, "seriously dented" (European Commission, 2004, p. 107). Others, who are not quite

so charitable in their description of the ECOFIN Council's decision, say that the legal framework of the SGP has been "effectively suspended" (Annett and Jaeger, 2004, p. 25). Whatever words are used, it is clear that the EMU's current fiscal rules need to be revised. Whether the 2005 revisions, which were intended "to solidly re-establish the credibility of the Pact and to strengthen the enforcement of budgetary discipline" (European Commission, 2005, p. 68), will be successful or not remains to be seen.

Certain attributes of the SGP played a big role in the decision to discard the current mechanism, including:

- "[R]igid adherence to annual deficit targets can impart a procyclical bias to fiscal policy through contractionary measures to buttress revenues in a downswing and a temptation to spend windfall tax receipts in an upswing" (Dabán Sánchez *et al*., 2003, p. 1).
- In particular, the current mechanism permitted pro-cyclical loosening of fiscal policy during the good times.[1]
- The measurement uncertainties involved with the estimation of potential output and budgetary elasticity have led to confusion, not the least of which concerns what constitutes a valid one-off measure. "The basic problem is that changes in the primary CAB [cyclically-adjusted balance] may correctly measure neither the impact nor the final effect of fiscal policy on aggregate demand" (European Commission, 2004, p. 81).
- The SGP does not deal with country-specific circumstances in a consistent manner.
- "[T]he enforcement procedures of the SGP have been found wanting at critical junctures. In particular, the early-warning mechanism was not effective" (European Commission, 2003, p. 52).
- The SGP process is complicated and confusing, and it has been difficult to communicate effectively with the media, markets, and the public on how the SGP works.

The European Commission recognises that the "number of countries that experienced excessive deficit positions in the past few years, and the difficulties in the coordination and surveillance processes, have highlighted the need for improvement[s]" (European Commission, 2004, p. 113) in the SGP process. Thus, they have reviewed and promoted a number of ways to rejuvenate the SGP, including:

- Allowing for country-specific circumstances by redefining the medium-term budgetary objectives of "close to balance or in surplus".
- Placing more focus on debt and sustainability in the surveillance of budgetary positions.

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[1] See, among others, European Commission (2003, p. 52), and Gros *et al*. (2004).

- Ensuring earlier actions to correct inadequate developments to foster both prudent and symmetric-over-the-cycle behaviour, and surpluses in good times.
- Catering for protracted slowdowns and ensuring consistency with the medium-term budgetary objectives by, for example, redefining the clause on "exceptional circumstances" concerning the application of the deficit criteria.
- Allowing for country-specific elements in the enforcement of the correction of excessive deficits.

The EC recognises that by placing even more emphasis on attempting to adjust the current deficit and debt targets of the SGP for the business cycle, it may be introducing additional problems. For example, making budgetary corrections conditional on economic growth may give rise to moral hazard in forecasting GDP, because countries may have an incentive to make over-optimistic growth projections *ex ante* in order to blame lower than expected growth *ex post* for any slippage compared to plans. Likewise, the EC recognises that assessing budgetary adjustments by means of observed changes in the cyclically-adjusted balance (CAB) has proven to be problematic, because changes in the budget can result from either fiscal policy actions, or higher- (or lower-) than-expected growth. In addition to these reforms of the current SGP process, the EC reviewed two alternatives to the SGP: a permanent balance rule (Buiter and Grafe, 2002) and a golden rule. But it found even more weaknesses with these alternatives than it did with rejuvenating the current SGP (European Commission, 2004, pp. 108 and 119).

Nevertheless, the proposed changes to the deficit/debt-based mechanisms of the SGP can, at best, only mitigate some of the problematic attributes of the current process; they do not fix them. The SGP process, even with the changes proposed by the EC, does not prevent countries from taking pro-cyclical actions during the good times, does not provide for consistently applied country-specific limits, and is not measurably more enforceable than the current process. At the same time, the changes proposed by the EC would make the process more complicated, with no certainty that the additional adjustments for the cycle would be accurate. Efforts to provide for more flexibility in the current system appear particularly misguided; as was stated in a 2004 *Financial Times* op-ed: "Germany and France are on course for their fourth year of excessive deficits. What would they do if they had even more flexibility?" (Munchau, 2004, p. 11).

Budget process issues are also under scrutiny in the United States. After an extended period of compliance with that country's latest budget rules (enacted in essentially their final form in the Budget Enforcement Act [BEA] of 1990), which helped to bring about significant fiscal improvement, the rules were repeatedly waived in the fiscal years of the 1990s until they expired at the end of 2002. Despite occasional discussion and some abortive legislative attempts, they have not been renewed.

Scholars have considered the effectiveness of fiscal rules, and have concluded that countries that practice fiscal discipline without rules do not need them, and that countries that flout rules will not achieve fiscal discipline with them (Kennedy and

Robbins, 2001; Kopits, 2004). However, at the same time, some countries (those of the EMU among them) have determined that they need fiscal rules, and others (the United States prominently) have achieved favourable fiscal results when following sound fiscal rules, and have failed when ignoring those rules (or allowing them to expire). For this reason, the current authors undertake this inquiry regarding fiscal rules, and believe that it is useful.

This paper discusses issues regarding budget process rules in the context of the current pattern of rising fiscal deficits. It begins by explaining the premise that budget process rules have multiple objectives, and so must be judged according to multiple criteria. Prominent among those criteria given the apparent economic sluggishness of the early years of the 1990s and the resulting fiscal deficits are how any particular set of rules might facilitate (or at least not harm) economic recovery and growth, but also maintain fiscal responsibility and public credibility. This discussion is pertinent to both the euro area countries and the United States, because both have budget process issues on their respective policy agendas.

The paper then proceeds to analyse alternative fiscal control measures according to these and other criteria, such as the ability to maintain sound core operations of government to attain all of its long-standing policy objectives, including the funding of public investment. The paper concludes by weighing the alternative rules against these criteria.

1 Criteria for sound fiscal discipline rules

The core motivation of every fiscal policy rule is to promote stable economic growth through control of the accumulation of debt. As evidence of that fundamental point, every step in the evolution of the United States budget rules came on the heels of bad fiscal news – from the creation of the congressional budget process in the early 1970s, to the initial so-called Gramm-Rudman-Hollings deficit limit rule in the mid-1980s, to the enactment and refinement of the final stage of the rules in 1990, 1993, and 1997. Then, demonstrating the obverse, when concern about the budget faded with the achievement of a surplus in the late 1990s, the interest in the budget rules waned, and they were eventually allowed to expire.

The motivation behind the European Union Stability and Growth Pact was reportedly a variation on that same theme. Leaders of EU member countries believed firmly that the benefits of a credible common currency could be maintained only if all the members of the Union achieved fiscal credibility as well. The SGP was designed to counteract the potential motivation of each individual country to attempt to enjoy budgetary freedom while relying on all the others to endure the fiscal discipline necessary to maintain institutional credibility. A “free rider” country might assume that a single central bank for the entire EMU would not raise interest rates to punish a lack of fiscal discipline on the part of just one country.

However, even though every fiscal policy rule has one primary motivation, creating such a rule requires a multi-dimensional choice. There are at least two

proximate objectives: (a) long-term fiscal responsibility and sustainability; and (b) short-term macroeconomic stabilisation.

The first objective, fiscal responsibility, is measured most simply in terms of control over the accumulation of debt. Assuming rational financial markets and economic actors, that criterion must extend over time into the foreseeable future, raising issues about the long-term outlook and sustainability. It also requires that the fiscal authorities establish confidence in the public that future policy choices will be sound and responsible.

At the same time, control over the accumulation of debt should be achieved at the least possible cost of unemployment and economic slack in the near term, very simply for the well-being of the population at large. In the extreme, policy that needlessly prolongs an economic downturn could prove self-defeating even in the long run. It would add to the stock of debt, even if only on a one-time basis. It may deter private business investment, at least for a time, extending the period during which economic performance would be sub-par and fiscal deficits and debt accumulation would be larger than necessary.

Thus, achievement of long-term fiscal sustainability requires credibility with the financial markets and the public. Achievement of either long-term sustainability or short-term stabilisation requires that the fiscal rule be transparent and administrable, in terms of both its ongoing implementation and its enforcement, and that it be viable in the political domain. A rule that is impossible to enforce cannot have its desired effect on debt accumulation, sustainability and credibility. Likewise, credibility will not be achieved by a discipline mechanism that is not publicly accepted as politically sustainable over a meaningful time horizon. And no fiscal rule should interfere with the core functions of government as it strives to achieve all of the public sector's other long-standing objectives. This involves, among other things, predictable funding and adequate funding for public investment.

Because of the multi-dimensional objectives of fiscal rules, the apparent superiority of any rule on the basis of one criterion is not a sufficient justification for adoption. This is most obviously true regarding the need for a balance between macroeconomic stabilisation and debt restraint. However, it may be especially noteworthy with respect to real-world constraints such as administrability, credibility and political viability. Because so much of the public benefit of fiscal responsibility comes through the behaviour of financial markets, any successful budget rules must be demonstrably workable and credible.

Furthermore, because debt control is solely a function of budgeting, whereas macroeconomic stabilisation can be pursued through monetary as well as fiscal policy, any policy must have substantial advantages with respect to the secondary goal of stabilisation to offset any disadvantage with respect to the primary goal of fiscal control. There is some difference of circumstance between the European Monetary Union, with its single central bank and numerous fiscal authorities, and the United States. However, this distinction should not be exaggerated; the 50 states are not small and are quite diverse, and the EMU countries have for decades been

constrained in their fiscal and monetary policies by trade and currency considerations. The European Central Bank can be expected to respond to adverse macroeconomic shocks that are strong enough to affect the greater part of the EMU, and the SGP does provide exceptions that would apply if a significant shock should be more localised. So to a certain degree, the principle remains that monetary policy can carry at least some of the load of macroeconomic stabilisation, and that fiscal rules therefore should focus somewhat more closely on debt accumulation.

For the same reason, fiscal policy rules should be judged as well on their harmony with sound monetary policy making. Predictability and stability should be important considerations. Monetary authorities would be more confident in taking important decisions, either to act or not to act, if they could rely on the fiscal process to follow a sound and steady course. On the other hand, a fiscal rule that could respond to sharp movements in budget outcomes with abrupt changes in the fiscal stance would make monetary policy making much harder, and make monetary authorities in effect compete with fiscal policy makers, rather than cooperate with them.[2]

In sum, the choice of a fiscal rule, like fiscal policy making itself, requires perspective and judgment. The focus must extend over time and across policy making criteria. The optimal choice may not be the best by one particular standard, but must balance several important objectives and must be durable under stressful economic and political conditions.

2 Some alternative fiscal rules

Among the numerous fiscal rules that have been implemented, there are probably two distinct broad classes that may serve as potential models: (1) deficit-and-debt-based rules, and (2) expenditure rules.

Deficit-and-debt-based rules ("deficit rules", for convenience) generally operate through numerical limits on the amount of the annual deficit – either a limit denominated in terms of currency, such as zero, or a limit set as a percentage of the GDP. Examples of this type of fiscal rule include the European Union's Stability and Growth Pact, and the United States Gramm-Rudman-Hollings system (which was in effect for fiscal years 1986 through 1990).

The US system was based on statutory dollar deficit limits, gradually falling to zero, which were revised once (to ease the restrictions) before the system was replaced. The Stability and Growth Pact sets a maximum deficit of 3 per cent of GDP.

A possible alternative to this approach, to be discussed in some detail in this paper, is to adjust the deficit limit according to the state of the economy – for example, to set a deficit limit as a percentage of potential, rather than actual, GDP.

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[2] Blinder (1982) highlights this concern; Canzoneri *et al*. (2002) give this consideration less weight.

This would leave unchanged the maximum permissible fiscal deficit in currency for a country whose GDP was determined to have dropped below (or risen above) an unchanged estimate of potential. Some would argue that such a modification would be an improvement upon a fixed percentage-of-GDP limit (although the Stability and Growth Pact already allows exceptions for temporary increases in deficits).

The key characteristic of the second broad class of fiscal rules, expenditure rules (or "spending rules" for short), is that they aim to limit policy-induced increases in spending and reductions in taxes, rather than to focus directly on the deficit. Note, importantly, that the terms "expenditure rules" and "spending rules" should *not* be construed necessarily to exclude controls on revenue-losing changes in tax policy. The now-expired US system was in some respects the most elaborate model. It used dollar-denominated caps on annually appropriated spending, with pay-as-you-go (PAYGO) restrictions on the aggregation of spending mandated by permanent appropriations (mostly for programmes with important automatic stabilisation implications) *and taxes*. In the US case, it is unlikely (in the judgment of the present authors) that the rule would have succeeded without including revenues as well as spending. Other examples of spending rules use caps on all spending, or on a broader range of spending than did the United States; this is a policy choice that can accommodate the rule to different countries and institutions, as is discussed further below.

A second characteristic of the US version of a spending rule is that it has its effect *ex ante*, rather than *ex post*. In other words, the spending rule constrains policy actions as they are taken, and thus their future effects, rather than requiring remedial action for their budgetary results after those results are recorded for a past fiscal year. The enforcement of the spending caps therefore constrains appropriations as they are enacted, and the enforcement of the PAYGO rule constrains the estimated future effects of changes in tax policy and in mandatory spending programmes. The US system used across-the-board spending cuts ("sequesters") to remedy policy overages shortly after they were enacted.

The US version of an expenditure rule was enacted at the start of fiscal year 1991, to replace the prior deficit-based rule. It continued in force, having been re-enacted twice, through the end of fiscal 2002, when it expired. It was, however, overridden by statute numerous times in the last three years of its life, after helping the budget to leave fiscal deficit and enter surplus in the late 1990s.[3]

This paper will analyse an expenditure rule generally following the US model in more detail, as an alternative to a deficit rule (with or without cyclical adjustment). In keeping with the discussion above, this comparative analysis will

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[3] The failure of the United States to follow its own rule in recent years should not be seen as an inherent flaw of the rule, any more than should the SGP necessarily be indicted because the larger member countries have flouted it. Rather, the current analysis seeks to evaluate the alternative rules for their relative merits, understanding that "Although all rules, including those prescribed by legislation, are intended to apply strictly and permanently – over successive governments – they are, in practice, open to some interpretation and conceivably can be revised, suspended, or repealed through subsequent legislative action" (Kopits and Symansky, 1998, p. 8).

aim to determine which of the two alternative classes of rules might better satisfy, on balance, several criteria. To be preferred, an alternative should achieve the better mix of debt control and counter-cyclical macroeconomic policy, taking into account the administrability, political viability and credibility of the rule itself.[4]

3 Evaluating two alternatives

3.1 Background: uncertainty and fiscal rules

At the outset, it is important to discuss a possible simple misconception. A deficit rule might be assumed to be superior to a spending rule for purposes of long-term sustainability and control of debt, for the simple reason that it at least in name targets precisely the ultimate cause of additional public borrowing, the deficit, rather than the controllable proximate causes, spending increases or tax decreases. However, that assumption is incorrect; the linkage between the rule and the ultimate borrowing outcome is by no means exact. The US experience helps to explain this point.

The long-term goal of fiscal rules – sustainability – necessarily extends over time. Thus, any deficit rule, to be successful, must control future deficits – and therefore must operate through estimates. (Deficit rules can also target the deficit in an ongoing fiscal year. The US system from fiscal years 1986 through 1990 purported to limit deficits in the ongoing fiscal years, though it was never effective. In part, its ineffectiveness in constraining deficits for ongoing fiscal years arose because of the difficulty of predicting the deficit even for a fiscal year in progress). Experience shows that it is uncertainty about the future that leads such estimates to be imprecise, much more than imprecision in the relationship between the components of the budget (spending and revenues) and the deficit itself.

For example, the United States dissipated a large budget surplus and fell into substantial fiscal deficit in the last five years. However, throughout the crucial policy decisions that contributed to this adverse development, policy makers maintained that the budget would not and could not fall into deficit. Thus, a substantial part of that development arose not because of the policy changes that were undertaken, but rather because of economic and technical developments that drove the budget far below its previously estimated path in the absence of policy changes. This was true both in the sense that the unwinding of overly optimistic estimates played a major numerical role in the disappearance of the budget surplus, and in that those erroneous estimates were used to justify the policy steps that contributed still further to the fall from fiscal grace.

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[4] Kopits and Symansky (1998, p. 4) and Kopits (2001, p. 6) would characterise the US budget rule not as a fiscal policy rule, but as a procedural rule. Readers who prefer the latter characterisation may construe this paper as a comparative analysis of a deficit fiscal policy rule and a spending procedural rule. The current authors see no reason to conclude pre-emptively that either rule is necessarily superior or inferior on the basis of such a characterisation.

Figure 2 illustrates that development. It reproduces the probability map of future budget outcomes released by the US Congressional Budget Office (CBO) in January 2001, based on its statistical analysis of available prior years of data. Superimposed upon that probability map is the actual outcome – that is, the best estimate included in that same map, adjusted only for the economic and technical budget re-estimates subsequently published by the CBO. By the now-current fiscal year (2006) and over all preceding years since 2000, the outcome is approximately the 10^{th} percentile expectation (with the 50^{th} percentile being the most likely estimate, and percentile rankings below that designating more adverse outcomes), even before considering the effects of any policy changes. As is apparent from the figure, economic developments and the correction of prior technical forecasting errors would have driven the budget into deficit even before policy changes. Because US policy changes – including large tax cuts and substantial increases in defence and health-care spending – during and since 2001 have sharply increased the deficit, the actual budget outcomes have been worse still than the so-called baseline, as is shown in Figure 3.[5] (Still, had the US budget rules been obeyed, budget outcomes would have been far superior and well within the bounds of, for example, the EMU guideline of 3 per cent of GDP).

There is no reason to believe that the US experience in this respect is atypical. Countries around the world have been surprised by the strength of the descent of budgets into deficit in the 1990s.

The reality, then, is that *any* fiscal rule, whether based on deficits or spending, must be implemented through imperfect knowledge of the future. Imperfect foreknowledge is the primary source of error in any such rule. Thus, in this most important respect, the same key problem afflicts any fiscal rule, and a deficit-based rule, even though it focuses nominally on "the deficit", has no inherent superiority.

Put another way, the creation of any fiscal rule, whether based on deficits or spending, involves the selection of policies that achieve a satisfactory projected future deficit path, under conditions of uncertainty. Therefore a deficit-based rule would immediately require the choice of an economic forecast and policies that

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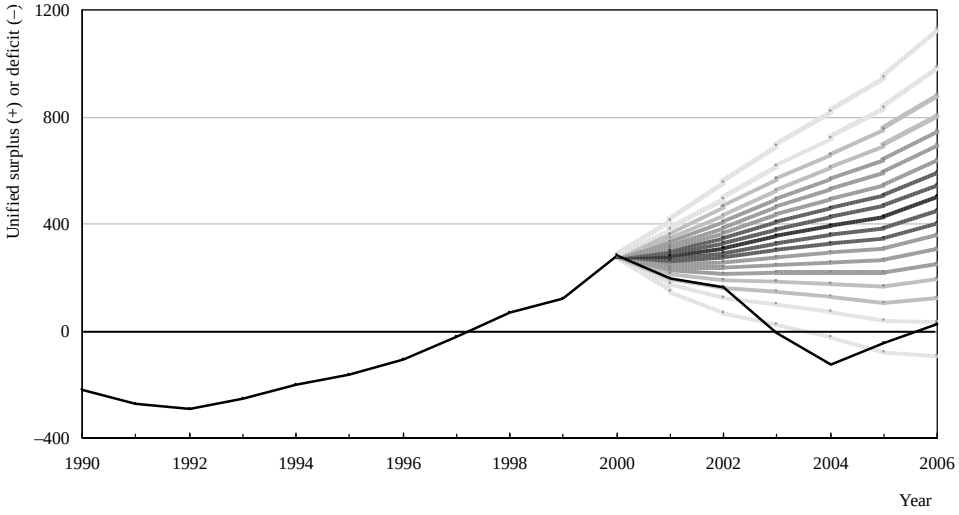
[5] Even this picture may understate the degree of uncertainty in the 2001 US budget outlook, and similarly in all other years. The US federal government, by convention, does not revisit its estimates of budgetary consequences of its policy changes; the original estimates stand into the indefinite future. Then, after accounting for the previously estimated policy effects and for the effects of errors in economic forecasts, all remaining errors in budget predictions are assigned to a residual "technical" category. Notwithstanding that policy effects are not re-estimated officially, it is generally the case that economic weakness would reduce the "true" budgetary effects of most tax cuts (certainly those based on reductions in tax rates) in an accounting sense. This is simply because the cost of a tax rate cut would be less if there were less income to tax. It is not because of any presumed effect of tax cuts on the supply of factors of production, or on productivity. Note that the relationship between the cost of entitlement spending programmes (even those with counter-cyclical purposes) and the state of the economy *ex post* is probably not so systematic and strong. Thus, if the actual budget path in Figure 2 were recalculated today, using currently known information, the cost of the policy steps would likely be lower and, as a direct result, the adverse economic and technical re-estimates would be larger, in equal dollar amount; and the "baseline" budget outcome, without the policy decisions, would have been even worse than depicted in Figure 2.

Figure 2

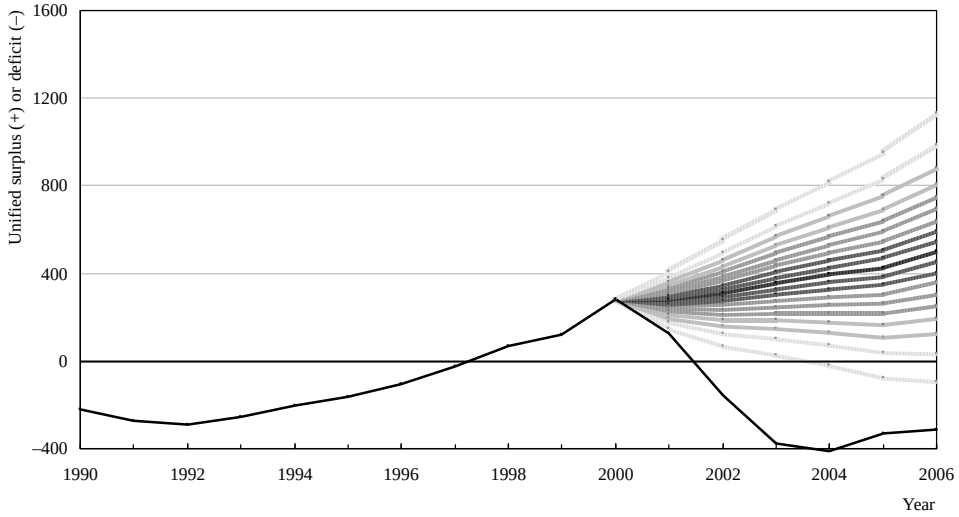
Uncertainty in CBO Projection of the US Budget Deficit: Baseline
(billions of dollars)



Source: Congressional Budget Office, *Budget and Economic Outlook: Fiscal Years 2002-2011*, January 2001.

Figure 3

Uncertainty in CBO Projection of the US Budget Deficit: Actual
(billions of dollars)



Sources: Congressional Budget Office, *Budget and Economic Outlook: Fiscal Years 2002-2011* (January 2001) and *Budget and Economic Outlook: Fiscal Years 2007 to 2016* (January 2006).

would reach a deficit below the reference level. Thus, for example, countries under the SGP would present an economic forecast and programmes that would take their budget results "close to balance or in surplus" within the requisite number of years. Similarly, a spending-based rule would likely be initiated using prospective estimates of the policies, both spending and tax levels, which would be required to achieve a target deficit level; that was the US experience. The issue is not that a spending rule is sensitive to longer-term budget forecasting, and a deficit rule is not; *both* require budget forecasts. One might argue that under a deficit rule, those forecasts must be reviewed with each budget cycle, and that this constitutes a safeguard. However, the track record of currently operating deficit rules is not encouraging. And on the other hand, a spending rule would likely keep a tighter leash on policy.

In fact, in the three instances of enactment and re-enactment of the most recent US system – in 1990, 1993, and 1997 – the rule was designed so that the budget would reach its target of balance or significant deficit reduction five years hence if annual appropriations hit their numerical caps for the next five years, and if taxes and mandatory spending taken together were precisely deficit neutral. The same structure could have been initiated to achieve greater deficit reduction if the discretionary caps were lower, and/or if the pay-as-you-go rule were programmed to achieve net savings over time, rather than to be precisely deficit neutral. That is, the same "PAYGO scorecard" that was created to keep track of subsequent policy action could have been initiated with future-year debits, rather than zeros, that would have required future policy savings. These design issues will be important in the discussions on spending rules and on all of the objectives of fiscal rules in general, to follow later.

A deficit-based rule may have one limited advantage over a spending rule, in that the public at large may be more reassured by a fiscal discipline rule that at least in name places a limit on the deficit itself. The economics and policy science professions would likely see through the nominal distinction fairly quickly, and participants in financial markets would surely engage in deeper analysis; but for immediate public relations purposes, a deficit limit might have some additional impact. Still, experience suggests that the performance of fiscal discipline rules will be the telling issue for the public over the longer term.

Thus, the use of proximate spending and tax-policy targets, rather than a target with respect to the deficit itself, might be thought an imprecision and a disadvantage. However, a deficit-based rule would be implemented through the same estimates of the effects of spending and tax policy, chosen to achieve the particular deficit target. Thus, under the EU model, fiscal authorities are expected to set policy to limit deficits to less than the reference value of 3 per cent of GDP, and to achieve the medium-term "close to balance or in surplus" objective, on the basis of economic forecasts and budget projections. At the outset, the two processes are in substance the same; policy under both rules would be made based on the same kinds of forecasts and estimates. Thus, there is no inherent precision or superiority in the deficit-based rule.

3.2 Compliance with alternative fiscal rules

An explicit deficit rule might be preferred on the belief that it would be easier to enforce if adverse budgetary developments pushed the fiscal result into deficit. The presumption would be that the measurement of the problem and the selection of a solution would be easier, again because the measure used by the rule is the deficit itself. However, again, this conclusion presumes too much.

For one thing, as was noted earlier, a deficit rule would provide policy makers with no more information than a spending rule. The excess of an historical fiscal deficit over the chosen target is a datum, available whether the rule was based on the deficit or on spending. The excess of a projected future deficit over a target is uncertain in any event.

Nor would a deficit rule provide any greater precision as to the magnitude of the solution for a fiscal problem. Corrective action would of necessity be based upon forecasts of the future, which would be uncertain in either case. Therefore, the policy remedy under either a deficit or a spending rule would be the amount of savings – spending reductions or tax increases – needed to reach a target future fiscal deficit, which would in either case be uncertain.

And finally, the policy measures needed to solve the problem would be no more palatable under a deficit rule. Whatever rule were being applied, an excess of borrowing of any given amount would require that same amount of pain to be imposed upon taxpayers and spending beneficiaries. The type of rule that had been imposed would yield no difference in the ease of accepting and enduring a remedy.

Therefore, an understanding of this choice must begin without preconceptions and with an understanding that any rule operates through an uncertain future and, in the event of trouble, through reducing government spending or increasing taxes. There is no obvious inherent advantage to either rule on these grounds; decisions must be made on the basis of a deeper analysis.

This paper will proceed with discussions on alternative fiscal rules and the criteria of fiscal responsibility, macroeconomic stabilisation, and the effectiveness of the core functions of government.

4 Alternative fiscal rules and long-term budget responsibility

For purposes of analysis, one might separate changes in the budget outlook from year to year into two classes: they may be cyclical, or they may be trend-related (as, for example, with an enduring productivity shock). If the distinction between the two were hard and fast, they would require separate analysis. However, one lesson of the economic boom of the 1990s was that what might appear to be an enduring productivity shock can in fact be short-lived. In the discussion that follows immediately, and in the later discussion pertaining to macroeconomic stabilisation, this distinction will be considered, but will not be assumed to be crucial to the argument.

4.1 Deficit rules and fiscal responsibility

A deficit rule such as that imposed by the SGP sets an upper bound on the fiscal deficit that in essence applies at all times, regardless of the cyclical condition of the economy. (There is an "early-warning system" based on the cyclically-adjusted balance [CAB], intended to head off a growing fiscal deficit that has not yet reached the 3 per cent of GDP reference limit. However, that system has not in practice led to any tangible action by the European Commission). Such a constant reference limit on the fiscal deficit might cause significant problems, and some would argue that the incentives embodied in such a rule are not conducive to fiscal discipline.

For example, assuming the most perverse motivations, one country's fiscal authorities might choose to set their budget deficit as close to the limit as possible (taking into account any effective early-warning system) when the economy is operating at its potential. That country would forecast an optimistic fiscal outlook that would bring the budget into close-to-balance status (CTB) within the time period required. If the economy should surprise and grow even further, then the percentage-of-GDP reference limit would yield even more room for fiscal deficits. If the economy weakened and thereby raised the deficit, however, policy makers might expect that those deficits could be exempted from discipline on the grounds that they were "temporary". The result would be that this country could hope to reap the benefit of monetary stability paid for through the discipline of the other EU members, while itself enjoying the fruits of public spending in excess of revenues collected. Of course, if every country were to behave in such a fashion, monetary stability would not last long; but such short-sighted policy making is not unusual.

Beyond the threat to monetary stability, the fiscal stability of the country in question would be short-lived. With fiscal deficits just within the boundaries of sound policy in the best of times, any cyclical economic weakness, or any adverse productivity shock, would see the budget in excessive and substantial deficit.

As was noted above, the country in question might well throw itself upon the mercies of the Commission, claiming that the excessive deficit was caused by recession and was temporary in nature. Frequent appeals of this sort would strain the cohesion of the EU, and also would cause the country in question to add significantly to its accumulated burden of debt by the time the procedural issues were resolved. The additional debt would make it harder for the country in question to meet the Commission's fiscal standards in the future.

4.2 Cyclical adjustment

It might be thought that a variation on the deficit rule, in which the reference value for the fiscal deficit is simply set at a percentage of potential rather than actual GDP, would solve this problem. At best, however, it would moderate the problem, not solve it. In practice, the difference in the fiscal target from such a revised rule would be too small to change incentives and behaviour; a country's fiscal authorities

would have the same incentive (and perhaps even more so; see below) to target their deficit as close to the limit as possible.

In an economy operating at its potential, for example, the reference fiscal deficit amount of 3 per cent of GDP, measured in currency, would be unchanged under such a revised rule. If the economy grew beyond its estimated potential, the deficit limit would not grow in currency terms if the rule were based on potential rather than actual GDP; but with a strong economy, the actual deficit would decline, leaving policy makers more room for spending and tax reductions in any event. And of course, this assumes that the extra spurt of growth would be recognised quickly as beyond potential. If it were interpreted as an increase in potential, then there would be still further room for pro-cyclical deficit-increasing policy.

On the other side of the coin, if the economy grew less strongly, policy makers would have more room to expand their deficit, because 3 per cent of potential GDP would be greater than the same fraction of actual GDP.[6]

Given these limited differences in the deficit rule, policy makers still might be expected to push their near-term deficit toward 3 per cent of GDP in an economy at its potential, relying on favourable assumptions for the coming years to demonstrate eventual compliance with a close-to-balance-or-in-surplus standard. Given exceptions for recession, they might expect that they would need to tighten policy even less if budget outcomes proved less favourable. In this regard, a deficit rule is no less vulnerable to long-term forecasting error than is a spending rule.

It is surely at least somewhat cynical to assume that countries would choose to manipulate a deficit-based fiscal rule to the limits of its elasticity. Policy makers are mindful of the well-being of their constituents, and understand that debt begets debt service, which can beget further debt. Even those who believe that the incentive effects of existing deficit-based rules are powerful enough to lead to some measure of fiscal irresponsibility would concede that this is in spite of policy makers' concern about the public interest, as they define it.

However, it cannot be denied that a deficit-based fiscal rule such as that described above is in the nature of a one-way instrument. It provides no meaningful, productive guidance to countries whose deficits are smaller than the reference level, allowing them to move toward that limit with impunity – thereby adding to their accumulations of debt, and their debt-service obligations. (The medium-term CTB requirement might be thought to provide such guidance, but recent practice has not been encouraging, perhaps in part because it is easy to project budget improvement beyond a current fiscal year with an economy that is forecast to grow, and with hopeful assumptions of future spending restraint). One might argue that the structure and incentives of the deficit-based fiscal rule do not require malfeasance to yield

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[6] An additional use of cyclical adjustment by the SGP is to assess the required 0.5 per cent of GDP minimum fiscal adjustment for countries out of compliance with the SGP, making references to the existing concept of cyclically-adjusted balance (CAB). This application of cyclical adjustment is fully legitimate, though it does not address the other problems of deficit rules raised here.

adverse results; the pressure of short electoral cycles against long-term interests, plus a little bad luck, will suffice.

4.3 Enforcement

Furthermore, based on experience in the United States from 1985 to 1990, there would be significant opportunities for manipulation and evasion under a deficit-based budget rule. The rule in the United States had attempted to impose spending discipline prospectively, before the beginning of a fiscal year. Alternatively, one could try to enforce the rule retrospectively, during the final months of a fiscal year. Both instances would be subject to manipulation.

A deficit-based rule does, in some circumstances, allow manipulation through the choice of an economic and budget forecast that drives a politically desirable outcome. For example, the authority responsible for the economic forecast used in the budget could forestall the need for tax increases or spending cuts by issuing a more optimistic economic forecast, and therefore a lower projected budget deficit. In the experience of the United States, such manipulation allowed different actors in the budget process to force the responsibility to recommend policies to achieve budget savings onto other actors, which presented an additional political motive to manipulate the system. Because a spending rule does not rely directly on a budget forecast (but rather involves a pre-stated appropriations cap and a pay-as-you-go requirement for mandatory spending and taxes, which are often less dependent on the underlying economic forecast), it raises less of a prospect of such a moral hazard.[7]

At present, enforcement in the EU appears to be based mostly upon retrospective views of deficits in excess of the reference amount. However, at the time of enforcement, optimistic budget projections might be used to argue that the past deficit was merely temporary. This pattern suggests that enforcement under deficit rules can often be unsatisfactory.

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[7] The United States once attempted to enforce a deficit rule for a fiscal year in progress to achieve the actual budget outcome mandated in the targets, based on estimates at the beginning of that year. The US process used only automatic, across-the-board spending reductions; in general, such enforcement could occur through tax increases as well. In practice, such enforcement could require spending cuts that would be painful and impossibly large. Because some major spending items, such as medical care and old-age pensions, could not practically be subject to substantial short-term reductions, the base for cutting spending to enforce the rule would likely be relatively small. And even annual appropriations can be difficult to cut over a time span of several months, given that some of the annual appropriations concern the fulfilment of contracts, some of which are long-term. Therefore, it is easily possible that such spending cuts would be obviated by legislation, eroding the credibility of the budget enforcement process. In practice, all of the significant attempts to enforce the US budget rules through automatic spending cuts were overridden by subsequent legislation, with only the smallest cuts enforced.

5 Spending rules and fiscal responsibility

Based on a view of incentives and experience, an alternative fiscal rule based upon spending might well be judged more conducive to responsible fiscal policy under a range of economic conditions.

As was noted above, spending rules have been initiated to achieve targeted fiscal goals over a period of years, based upon underlying economic and continuing spending programme forecasts and prescribed annual caps for appropriated spending. The underlying economic forecast has typically assumed that the economy would gradually converge to its estimated potential output. This process and its underlying assumptions are really no different than the plan that a government would need to formulate to comply with a deficit rule over time. Once such budget policy amounts have been determined, the spending rule might require that entitlement spending and tax policy changes be no worse than deficit-neutral, and that annual appropriations comply with the stated caps. However, the spending rule could be made more rigorous with lower discretionary caps and a requirement for future budget savings through mandatory spending and taxes; the opposite, of course, could also be true.

A spending rule would provide continual guidance to policy makers, under any and all economic and budget conditions. If budget results proved more favourable than expected, whether because of cyclical economic improvement or a positive productivity shock, the rule would allow no additional budgetary resources to the fiscal authorities. Therefore, unlike a deficit rule, under which a lower deficit or a higher GDP (actual or potential, depending on the formulation) would allow (some might say "encourage") greater spending or tax cuts, a spending rule would require that policy remain unchanged, and thus that the budgetary bonus be saved. Given the lesson of the 1990s – that even apparently durable positive budgetary shocks might well evaporate – this aspect of spending rules would seem advantageous and prudent; it would make it more likely that budgets would remain in balance over the macroeconomic cycle and into the long run. (It also would make sense from a counter-cyclical point of view, as will be discussed below).

A spending rule might seem well suited for the current situation of the EMU. With already high government expenditure ratios in most EU member countries, it might be desirable to put more policy focus on attaining sustainability through spending restraint. Some countries have already taken this approach. Another case for greater focus on the expenditure side is that it is where slippages have often occurred (European Commission, 2003). The European Commission noted that expenditure rules can be a national complement to the deficit rule, but given the success of expenditure rules in some countries, more focus on this issue would be valuable.

On the other side of the coin, should fiscal performance prove weak, a spending rule would tolerate the deterioration of the budget through its automatic stabilisers, but would not allow further shifts in policy. (Some might contemplate allowing inter-temporal policy shifts, in which greater spending or tax cuts in one or

two years could be offset by future spending restraint or tax increases. Going even further, a spending rule might allow a purely one-time counter-cyclical stimulus without offset. Such policy flexibility might make sense if future compliance could be assured. Whether such future discipline should be relied upon is a matter of judgment). If the fiscal deficit remained below the reference level, a deficit rule would, like the spending rule, tolerate the deterioration. However, if the fiscal deficit did cross the reference level, policy makers would have to choose between raising taxes or cutting spending, on the one hand, and seeking extraordinary relief (through, for example, an appeal to treat the deficit as temporary), on the other. Such fiscal constraint might possibly be seen as appropriate discipline, but it would raise potentially serious macroeconomic stabilisation concerns (discussed below).

Thus, one possible argument for the spending rule is that it provides continual guidance to the fiscal authorities; at all times and under all circumstances, policy changes must be deficit-neutral. In contrast, a budget rule does not bind policy makers unless the budget deficit is in proximity to the reference value. Some might argue that this limited restriction implicitly condones, or even encourages, the fiscal authorities' moving their deficit toward the reference limit in a pro-cyclical fashion in good times.

5.1 Administrability and enforcement

One potential way to strengthen the deficit rule from this perspective of fiscal responsibility might simply be to reduce the reference limit – in the EU instance, for example, to a smaller deficit or even balance rather than the reference level of 3 per cent of GDP. That would make the reference level binding in more instances, and would limit the fiscal damage even if countries chose to operate close to the reference level. Which raises the question: Why was the US spending rule aimed toward a budget in balance with the economy at potential GDP, whereas the EU deficit rule sets a reference value at 3 per cent of GDP? Why not set the reference value for the deficit rule at a smaller deficit, or at balance?

The answer might centre on administrability. A maximum fiscal deficit amount of zero would lead to more frequent episodes of apparent overstepping of the limit, which in turn would result in numerous contentious debates and inevitable instances of alleged unfair treatment of one country or another. Those disputes would rest on controversial estimates of the affected countries' entire budgets.

In comparison, questions of compliance with a spending rule would be more transparent and less disputable. Even if there were dispute with respect to an estimate of a policy change in entitlement spending or taxes, the universe in dispute would be only that one change; and because the rule would require the policy change to aim for a net effect of zero, the amount at stake would be much smaller than in controversies regarding a deficit rule. Thus, routine enforcement of a spending rule would focus more on policy changes before the fact. Enforcement of existing deficit rules has tended to arise after deficits are already excessive, and has not been notably successful.

Overall fiscal outcomes depend upon both central and sub-national government policy, especially in those countries where local government constitutes a comparatively large share of the total. This issue could be approached in several ways. One would be to impose an expenditure rule at the sub-national level. Particularly for a pay-as-you-go type rule, this could be complex for the governmental units involved. However, this course might not be necessary if those governments do not have significant counter-cyclical roles. The alternative would be to use deficit-based rules at the sub-national level. This is *de facto* the approach in the United States, where virtually all sub-national units face constitutional or statutory balanced budget requirements. Of course, even deficit rules can be problematic for sub-national governments, for all of the same reasons as for national governments.

In the end, these advantages in administrability might lead to greater compliance and cohesion among the countries involved under a spending rule.

5.2 Limits to and values of rules

Still, there are limits to the effectiveness of any fiscal rule which should be clear from experience – for example, the United States fell back into deficit while its spending rule remained nominally in place – but might still be forgotten as the advantages and disadvantages of any alternatives are weighed. At bottom, no fiscal rule should be expected to do the impossible. No fiscal rule will achieve its desired budgetary results if and when the political will of policy makers is to the contrary. A legislature's procedural rules can be changed or waived, and restrictive laws can be amended or repealed; and the recent experience of both the United States and the largest countries of Europe makes clear that these contingencies are very real, for both spending and deficit rules.

However, what a fiscal rule can do is expose steps contrary to stated fiscal guidelines. Policy makers must vote to waive or change the procedural rules, and to amend or repeal the statutory fiscal rules. These steps must usually be in addition to the enactment of the policies themselves. These additional procedural steps usually involve an explicit admission that the policies that follow do violate the budget restrictions that had hitherto been accepted rules. Such restrictions clearly are not insuperable, as recent experience again would show clearly. However, they might provide some measure of deterrence against violations of fiscal responsibility, because they are transparent, and because they can be cited later by political opponents if events go awry.

This deterrent value of fiscal rules may apply more tellingly to a spending rule than to a deficit rule. Budget deficits are incontestable only after the fact, and – long after policy actions have been taken – policy makers can argue with optimistic assumptions or estimates that their policies will not result in further deficits in excess of reference limits. In contrast, policy steps that might violate appropriations caps or pay-as-you-go restrictions are apparent as soon as they are taken and, as was noted above, the numerical results are more transparent and less subject to dispute.

Therefore, policy makers who could deny that their actions would push fiscal deficits beyond a reference limit would more likely be confronted with the certainty that their policies violated a spending rule.

5.3 Credibility

Achievement of the benefits of fiscal responsibility rests heavily on the credibility of fiscal policy. Currency will not be respected, and investment within a country's borders will not be attractive, unless fiscal policy is perceived as responsible and as likely to remain so. (The recent retroactive re-designation of the dates of an economic cycle in the United Kingdom to provide additional flexibility under a fiscal rule – a voluntarily self-imposed rule, to be sure – cannot be ignored in this regard). No fiscal rule can add to credibility if it is flouted, but a rule that is more conducive to compliance might fairly be scored more highly than one that is less so. Here again the advantage probably rests with the spending rule.

From the political perspective, there are risks to allowing fiscal targets to move up and down with some frequency. If spending targets are allowed to rise or revenue targets are allowed to drop because of improvements in the budget outlook, it may be difficult for government to reclaim those ostensibly temporary benefits if and when circumstances reverse. And should there be resistance in the budget process to any formula-induced imposition of pain, it may erode the credibility of that process.

This suggests that the difficulty of complying with and enforcing a deficit rule, which calls for continual (even if usually small) adjustment of the fiscal targets and of budget policy, might in the end raise greater concern in the financial and investment markets. This would be especially true if policy makers were eager to loosen fiscal policy when circumstances allowed, but were reluctant to tighten policy when situations required. From this perspective, a deficit rule would create more occasions for loss of credibility than would a spending rule, which would allow freedom of action for automatic stabilisers, but would limit tax and spending policy changes to deficit-neutral steps.

5.4 Productivity shocks

There could be differences in circumstances depending upon whether the changing budget fortunes were caused by a purely cyclical economy or by an enduring productivity shock.[8] As was argued earlier, the budgetary benefits of apparent favourable productivity shocks can themselves prove to be temporary.

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[8] The generic term "productivity shock" is used to denote any potentially enduring change in the rate of growth of potential output. One-time shocks to the budget, whether favourable or adverse, present a much simpler choice under any fiscal rule: their effects must be either offset or accepted (or some arithmetic compromise between the two).

However, in theory, a productivity shock could confuse the implementation of a cyclically-adjusted deficit rule, because potential GDP would be mismeasured until the shift was recognised and estimates were corrected. But in truth, any fiscal rule would be confused by an unrecognised productivity shock, and economic policy makers could be expected to search the data for productivity changes, whether a fiscal rule were cyclically adjusted or not, and to adjust their budget policy making accordingly. So it would not appear to be productive or fair to judge any fiscal rule differently because of the possibility of a change in productivity growth. If a shock can be accurately perceived under a cyclically-adjusted deficit rule, it can be accurately perceived under a spending rule. In either instance, corrective action would have to be undertaken by policy makers.

Still, theoretically, it could happen that a true, enduring productivity shock would be recognised quickly and distinguished from a cyclical movement in the economy. In that event, and should the productivity shock be adverse, a cyclically-adjusted deficit rule would perceive the lower level of potential GDP and would reduce the reference deficit limit in currency, thus requiring a reduction in the budget deficit – if, again, at that time, the deficit was already in proximity to the deficit limit. Such a development could be conducive to good policy if, yet again, the economy were not at that time sufficiently weak that an additional stimulus would be needed for reasons of macroeconomic stabilisation. On the other hand, recognition of a favourable productivity shock could lead to an increase in estimated potential GDP, and so in the reference deficit limit in currency; and the allowance of a higher deficit in currency at the time of a favourable productivity shock would likely not be helpful for reasons of either fiscal responsibility or stabilisation. Furthermore, if such a favourable shock should in time prove to be temporary rather than permanent, as was the case in several countries during and after the 1990s, the initial allowance of additional room for deficit spending could prove difficult to reverse.

A spending rule would not be affected directly by any productivity shock. Thus, in the event of a favourable productivity shock, a spending rule would not allow a higher deficit – which would likely be judged to be the preferred outcome. A negative productivity shock, similarly, would not force a fiscal tightening. This could be unfortunate if the shock in fact proved to be permanent, but not if it reversed itself in time. One might imagine formalising a looser, longer-term deficit rule to back up a spending rule, to cover instances of enduring adverse productivity shocks. Alternatively, the judgmental political process would have to step in.[9]

In sum, one might conclude that a spending rule would prove superior to a deficit rule – even one that was cyclically adjusted – in maintaining fiscal responsibility in a satisfactorily performing economy. This conclusion rests in part on the workings of the rule itself, but also on its probable greater credibility and

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[9] To avoid ambiguity, the current authors do not use the word “discretionary” (which in the United States refers to all annually appropriated spending, but elsewhere is often used to denote decisions made on fiscal policy). Instead fiscal policy decisions are described as “judgmental”.

durability in the political process. The argument for a cyclically-adjusted deficit rule is theoretically plausible, but is based on what would seem to be an unlikely combination of hypothetical circumstances.

6 Fiscal rules and macroeconomic stabilisation

Just as fiscal responsibility requires control of debt at times when the economy is strong or weak, so macroeconomic stabilisation requires sound budgeting in good times and bad. The discussion above has already suggested that a deficit rule is an imperfect instrument for macroeconomic stabilisation.

6.1 Deficit rules and macroeconomic stabilisation

Under a deficit-based rule, the stabilisation options available to fiscal policy makers depend upon the pre-existing state of the budget. If, for example, the economy softens with the budget in surplus or small deficit, the reference limit on GDP would decline in currency terms (because the amount of GDP would fall short of expectations), but there might still be budgetary room to allow the automatic stabilisers to increase the deficit, and for additional action to stimulate the economy and/or provide relief for affected persons and businesses. If, however, the fiscal deficit were already close to the reference level of 3 per cent of GDP, a lower amount of GDP would reduce the room even for operation of the automatic stabilisers, and might force policy makers to consider pro-cyclical tightening of the budget (European Commission, 2004, Graph II.10, p. 90). The affected country could contend that its deficit was temporary, because it was caused by an economic cycle, and ask for forbearance with respect to the deficit reference level until the economy recovered; this would involve uncertainty for policy makers and the affected public, and possible contentiousness with the Commission authorities.

In the case of a strengthening economy and an improving budget, the effects of a deficit rule are again, if anything, pro-cyclical. As actual GDP increases, the currency value of the 3 per cent reference level of GDP increases, and the fiscal authorities have more room to cut taxes or increase spending. If the budget began in deficit beyond the reference level, the growth of the economy would either reduce the necessary amount of fiscal rationalisation or eliminate it entirely. Although these deficit-rule effects would not themselves compel a country to act, the incentives would in fact be perversely pro-cyclical.

To summarise, the failings of a deficit rule are that it allows – perhaps encourages – countries to run excessively loose fiscal policies in good times, and may constrain counter-cyclical fiscal policy, including notably the workings of automatic stabilisers, in bad times. One frequent reaction is that the deficit rule should be cyclically adjusted to solve these problems. However, again, to solve these problems it would take a policy change far more complicated than merely using cyclically-adjusted GDP rather than actual GDP in the existing deficit rule.

6.2 Macroeconomic stabilisation: A deficit rule with cyclical adjustment

If the deficit rule were cyclically adjusted and based on estimated potential rather than actual GDP, the perverse incentives would be reduced but not eliminated. In a weakening economy, the currency amount of permissible deficit would not decline, because potential GDP would not decrease. However, the actual deficit would go up, and so it would still be possible that the affected country would find itself in excess of the deficit reference amount, facing pro-cyclical budget policy tightening. In the case of a strengthening economy, the converse would be true. The deficit reference level would not change in currency terms, because estimated potential GDP would not change; but the actual deficit would decline, and so policy makers would find that they had increased latitude to engage in pro-cyclical fiscal expansion.

So to solve the pro-cyclical tendencies of deficit rules, one would need to do more than merely substitute potential for actual GDP in the rule itself. Rather, one would need to reduce the maximum percentage of GDP allowed for a deficit in a strong economy, and increase the percentage in a weak economy. In short, reasonably speaking, one would need to make the deficit rule behave more like a spending rule.

6.3 Macroeconomic stabilisation: A spending rule

Design choices for the categorisation of spending programmes for constraint by numerical caps as opposed to pay-as-you-go procedures would affect macroeconomic stabilisation. In the US implementation, spending programmes were assigned to one or the other instrument by a fairly simple rule. Programmes subject to annual appropriation were limited by the spending caps; programmes funded by continuing law were subject to pay-as-you-go procedures. To some extent, that distinction was based on the perceived length of time needed so that programme changes could be implemented and have meaningful effect on the amount of outlays. However, an alternative criterion for this distinction could be the strength of the automatic stabiliser effects of different spending programmes. In the US context, the two criteria would yield approximately the same result.

In another governmental structure, however, a categorisation based directly on automatic stabiliser effects could be just as valid. Depending on that governmental structure, the amount of spending subject to numerical caps, as opposed to pay-as-you-go, could be comparatively large or it could be smaller. In Sweden, for example, all of central government non-interest spending is subject to a cap; there is no pay-as-you-go category. Spending rules can be accommodated to different governmental institutions in different countries through similar policy choices.

With such design choices determined, a spending-based fiscal rule would not change in character with cyclical fluctuations in the economy. That provides some significant advantages, but in some measure does constrain policy responses.

In a weakening economy, a spending rule requires continued compliance with the caps on annual appropriations. At the same time, the rule fully accommodates increases in counter-cyclical spending programmes, and decreases in revenue, that would occur without changes in the underlying law. In other words, a spending rule fully accommodates the workings of the automatic stabiliser programmes in the budget. This is in favourable contrast to a deficit rule, whether cyclically adjusted or not, that could require pro-cyclical budget tightening if the deficit approaches the reference limit. Furthermore, the spending rule is, in effect, cyclically adjusted in real time; because it unconditionally allows the workings of the automatic stabilisers, it raises no questions in the minds of policy makers, the public or the financial markets as to whether the automatic stabilisers in tax and counter-cyclical spending policies can be allowed to work.

A spending rule would have further advantages in the instance of a strengthening economy and an improving budget. Unlike a deficit rule, where a larger GDP would allow a larger pro-cyclical deficit, a spending rule would require that policy remain deficit-neutral. That would allow the automatic stabilisers in the budget to restrain a strengthening economy, in a counter-cyclical fashion.

Thus, a spending-based fiscal rule would have the appropriate effect of allowing the automatic stabilisers in the budget to work continuously, whether the economy was on the upside or the downside. In a strengthening economy, increases in revenues and declines in entitlement spending would tend to dampen any excess growth. The rule would, of course, allow the fiscal authorities to enact further restraint in a strengthening economy. The monetary authorities could also act more freely. (It is possible that monetary policy could be more effective if it could count on comparative budget policy stability, rather than continuous adjustments in fiscal policy). The spending rule would, however, prevent policy makers from enacting an additional stimulus in a weakening economy (in the absence of some extraordinary measures, such as declaring an excessive deficit under the SGP as temporary and thus permissible). A spending rule could be allowed to adjust for one-time outlays required by natural disasters and other such unanticipated needs (as was the case in the United States), which could provide a counter-cyclical stimulus under those circumstances. (The apparently weakest scenario for a spending rule – a weakening economy where the rule, strictly interpreted and enforced, does not allow judgmental stimulative fiscal policy – is of course the situation in which policy makers are most likely to take the decision into their own hands in any event).

The track records of spending-based rules thus far have been encouraging. Although at the end of the day the rule is only a part of the total system, both Sweden and the United States did perform well when spending-based rules were in place and observed. In particular the progress of the United States under its rule was striking. Finland and the Netherlands have successful expenditure rules as well. Descriptions of the systems of Finland, the Netherlands and Sweden are appended to this paper.

Questions of judgment arise regarding the preferred properties of a fiscal rule. Would the best rule be one that allows the automatic stabilisers to work at all times

and without restriction, but that prevents or at least restricts additional counter-cyclical policy in a weakening economy? Or would the best rule rather be one that sometimes constrains those stabilisers in an economic downturn and never requires their action on an economic upturn, but would with a small pre-existing deficit allow additional expansionary counter-cyclical policy? This is clearly a matter of judgment.

However, arguably, and allowing for consideration of other criteria, giving free rein to the automatic stabilisers on both the upside and the downside of the economy might be the better policy.[10] There is no reason to believe that a spending-based rule would be less conducive to a stable macroeconomy than would a deficit-based rule; in fact, the pro-cyclical tendencies of deficit-based rules would suggest that spending rules would be superior. This judgment depends in part upon the inexact nature of the economic and budget forecasting process.

6.4 Weaknesses of judgmental counter-cyclical fiscal policy

A spending rule would not allow additional judgmental changes in fiscal policy for stimulative counter-cyclical purposes; however, for that reason, it would neither overstep any counter-cyclical fiscal adjustment, nor move in the wrong direction because of false indicators in the macroeconomic data. (It should be noted that, depending on circumstances, the rule could in fact be made to allow such actions. But that is not the topic in this discussion).

When viewed purely through the lens of stabilisation policy, a fiscal rule driven in some way by a cyclically-adjusted deficit measure might seem superior. However, there are numerous problems in the implementation of judgmental counter-cyclical fiscal policy. For one thing, there are multiple lags in the data development and budgeting processes which result in a substantial delay between the occurrence of economic phenomena and the ultimate implementation of fiscal policy.

Data are collected, processed, and revised with significant lags, which might be called technical lags. As has been made abundantly clear in recent years, economic data can be misread for years, let alone quarters, and so there is no guarantee whatever that even "final" figures will be meaningful at their release.

The Congressional Budget Office summarised the inaccuracies of US real-time economic forecasting – its own, that of the Presidents' budgets, and that of the private sector consensus – as follows:

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[10] "…even governments enjoying a solid reputation may want to refrain from pursuing discretionary countercyclical fiscal policy in view of the associated implementation lags, irreversibility, and political constraints. In fact, accumulated evidence on the ineffectiveness of discretionary activism suggests that they should rely simply on a fiscal rule that allows for the operation of automatic stabilizers" (Kopits, 2001, p. 8).

As the track record shows, forecasters collectively tend to err during periods that include either turning points in the business cycle or significant shifts in the trend rate of productivity growth. For example, most forecasters overestimated the economy's growth rate in forecasts they made just before the two back-to-back recessions of the early 1980s. That pattern was repeated in the forecasts they made just before the more moderate recession of the early 1990s. In addition, during the mid- to late 1970s, forecasters continued to assume that the productivity trend of the previous two decades would prevail. In retrospect, however, the productivity trend of the 1970s and 1980s was significantly lower than that of the 1950s and 1960s. Because forecasters in the 1970s expected the previous trend to return, their forecasts of real output in the mid- to late 1970s turned out to be too optimistic. Partly for the same reason, forecasters repeatedly underestimated inflation in the late 1970s.

> The years from 1995 to 2000 were a mirror image of the forecasting experience of the late 1970s. Partly because forecasters underestimated the trend rate of productivity growth beginning in 1996, they underpredicted the economy's growth rate and overpredicted inflation.
>
> (Congressional Budget Office, 2005, p. 3)

In short, and in summary, economic forecasting has been highly accurate except when it mattered. The CBO elaborated on this point in qualifying any optimistic interpretation of the averages of forecasting errors over long periods of time:

> As noted earlier, forecast errors tend to be larger at turning points in the business cycle and when there are shifts in major economic trends. That tendency can be clearly seen in the forecasts of real output growth by comparing the large errors for 1979 through 1983 – when the economy went through its most turbulent recessional period of the post-war era – with the smaller errors recorded for the mid-expansion years from 1985 to 1987. More recently, the recession of 2001 and slow recovery in 2002 account for the overpredictions made by all three forecasters in 2000 and 2001.
>
> (Congressional Budget Office, 2005, p. 4)

There is no reason to believe that the US experience is unique in this respect. Thus, one might argue that reliance on the operation of the automatic stabilisers, rather than on judgmental fiscal policy, would be significantly less error-prone.

Even after the economic data are fully formed, they enter the policy-making process at different points in the budget cycle. And policy decisions are made with varying degrees of rapidity, involving political lags in the recognition of the data and in acting upon them. These lags can add a further measure of delay in the response of judgmental fiscal policy actions.

The European Commission recognised this problem in its 2004 summary report when it noted that requirements for pro-cyclical policy adjustments "…coupled with the traditionally long lags in identifying the growth shortfall and the slowness of the decision-making process in fiscal policy put fiscal authorities under strain" (European Commission, 2004, p. 90).

Given the annual budget cycle and the lags in collecting, processing, and acting upon economic data, the delay from real-world developments until the actual impact of fiscal policy under a deficit rule could easily be two years, or even longer. In the scale of economic cycles, that is a very long time.

For the same reasons, fiscal policy – in contrast to monetary policy – is much more difficult to reverse even should circumstances require. The annual cycle of policy making could be delayed even more. Changing the benefits of spending and tax policies in reverse is difficult politically. Thus, a shift of direction in fiscal policy would be much more difficult than, for example, the reversal of US monetary policy in the face of the international currency instabilities of 1998.

Such lags are among the reasons why economists have come over time to lean more on the monetary authorities for stabilisation policy, with or without a deficit-based fiscal rule.

Because of the problem of lags in discretionary macroeconomic stabilisation, some might argue that changes in fiscal policy could move somewhat faster if the policy-making system allowed less intervention by political decision makers. But that would require a substantial, if not complete, surrender of stabilisation policy judgment to the outcomes of a formula.

Such a quick-reaction deficit rule would require budget policy makers to yield their control over the details of spending and tax policy, so that actual policy decisions could be made in step with a mechanical formula. Policy makers could not take the time to debate the details of counter-cyclical policy choices and still remain timely. Accordingly, proposals for heavy reliance on fiscal policy for counter-cyclical purposes have sometimes suggested that limited options for policy tools be pre-selected, and perhaps chosen purely by formula. Such a mechanised process would be unlikely to yield sound budget decisions. Both economists and public sector decision makers would almost certainly prefer the freedom to exercise some judgment.

Rejecting a cyclically-adjusted deficit-based budget rule would not mean that policy makers would forsake the wisdom in calculations of cyclically-adjusted deficit estimates. Rather, those models would be used as inputs to policy-making processes instead of as determinants of the outcomes of those processes.

7 Macroeconomic stabilisation, deficit rules, and productivity shocks

As was argued in the discussion on fiscal responsibility, if a productivity or other supply shock should occur, and once it is correctly categorised as temporary or

permanent, then under any fiscal rule, the entire outlook and budget policy must be recalibrated. Until the shock is recognised, results under the fiscal rule will be sub-optimal. No fiscal rule is immune from such a problem.

Until an adverse shock is recognised, and until the necessary action is then taken, a deficit rule will be too lenient, in that GDP estimates used to compute the reference deficit limit in currency will be overstated. The reverse will be true with respect to a favourable shock; in this case, the deficit rule will be too restrictive. The excessive leniency in the case of an adverse productivity shock might be thought to be an advantage, if the lower productivity coincides with a cyclically weak economy, or if the productivity shock should prove not to be permanent.

A deficit rule using a cyclically-adjusted output measure would have only limited advantages. Recognition of a favourable productivity shock would give a larger reference deficit limit in currency, which would give more room for fiscal deficits in what would likely be an already strong economy, and thus would provide at least the potential for pro-cyclical policy. Recognition of an adverse productivity shock would reduce the reference deficit limit in currency, and thus might require pro-cyclical budget tightening in a weak economy. Recognition of any shock that proved to be temporary rather than permanent would require difficult policy readjustments in the future.

A spending rule, as in the instance of a cyclical economic movement, would allow the automatic stabilisers to work in real time. Thus, in an adverse productivity shock, the spending rule would allow counter-cyclical spending to grow and receipts to decline. In a favourable productivity shock, the automatic stabilisers would work in the opposite direction, but still counter-cyclical. But again, the spending rule would not allow further stimulative counter-cyclical policy action.

7.1 Fiscal rules, public investment, and other issues of resource allocation

There has been concern that fiscal rules might prevent the provision of adequate funding for public investment (such as human capital building, infrastructure, research, and so on). This might be thought to be a particular problem with a spending rule because it imposes a cap on annual appropriated spending, through which much of public investment occurs. However, that potential problem is readily avoided. First, the spending rule can be given parameters to achieve any given deficit goal, over any given time profile of fiscal consolidation, with higher annual appropriated spending and a requirement for lower spending and/or higher receipts under the pay-as-you-go category. (This approach could use the same technique described earlier – a "debit" on the "pay-as-you-go scorecard" – that could be used to mandate additional deficit reduction). Second, as was the case for part of the history of the spending rule in the United States, there could be separate appropriations caps for different categories of spending, which could allow more spending for investment purposes and mandate less spending for other appropriations programmes.

Similar techniques could be used to ensure adequate public investment funding under other fiscal rules. Otherwise, some might fear that any fiscal rule could distort choices of allocation of resources between public and private uses, or among alternative public uses. On the former point, there will always be difficult choices between public spending with positive societal returns, and private spending; and imposing a system of fiscal constraints only makes such choices more explicit. Those decisions can and should be addressed explicitly at the imposition of a spending rule, and the outcomes need be no less desirable than in any alternative process that achieved fiscal sustainability. And as illustrated above with respect to the allocation of resources toward public investment, a spending rule can encourage explicit debate on alternative uses of public resources, which can only be for the good; and the tools exist under a spending rule to achieve the allocation that is desired by decision makers.

7.2 Deficit rules and core government functions

In the standard theory of public finance, the levels of government spending and revenues should be determined by the marginal cost of raising an additional dollar of public funds and the marginal benefit of spending that dollar. And even in practice, spending decisions are often based upon a rough consensus on an appropriate size and role of government, which in turn presumes at least some stability in the availability of funds.

A fiscal rule that relies upon unpredictable annual upward and downward adjustments of spending and revenue amounts, based solely on fiscal projections and without reference to programmatic considerations, would inject an increased measure of uncertainty and instability in public sector decisions – surely much more instability than the most basic public finance principles would welcome. This instability would most likely reduce the efficiency and effectiveness of the core functions of government. Likewise, uncertainty with respect to tax parameters could lead to inefficient and even pro-cyclical decisions in the private sector. For example, if private decision makers perceive that the economy is strengthening and that tax parameters would therefore become less generous, they might accelerate economic activity – with pro-cyclical effect. The converse pro-cyclical impact would result from instances of economic weakening.

In this respect, a spending rule might be more conducive to the sound operation of the customary functions of government and to greater stability in the expectations held by the private sector. A multi-year spending rule, as was the pattern in the United States, would provide accurate expectations about future appropriations, allowing policy makers and programme managers to plan more effectively, and inducing them to consider the tradeoffs inherent in multi-year allocation decisions. In contrast, a deficit-based rule, which might allow an increase in spending in one year (through an increase in the allowable deficit in currency) but require a decrease in spending in the next, would make planning much more difficult and might lead government programmes to waste resources in changing course

unpredictably. In this regard, as argued above, a spending rule could improve the efficiency of the allocation of resources within the public sector.

Similarly, because a spending rule would allow receipts to fall through the workings of the automatic stabilisers during an economic downturn, the private sector could have reasonable confidence that tax policy would remain stable. In contrast, under deficit-based rules, taxpayers might have to fear tax increases, perhaps shortly after having enjoyed tax cuts, because the economy would weaken and the deficit would rise toward its reference limit. That could lead to pro-cyclical behaviour in the private sector.

7.3 Fiscal rules and monetary policy

The uncertainty in public sector planning (and in private sector planning relative to the tax system), and the potential pro-cyclical bias of a deficit-based fiscal rule, recall why economists have changed their general preference over the last 40 years away from counter-cyclical fiscal policy and toward reliance on the monetary authorities for stabilisation, with spending and tax policy aimed more toward longer-term structural goals. This trend in economic thinking suggests a preference for the greater stability and certainty that could be had in an expenditure-based rule.

The trend in economic thinking toward reliance on the monetary authorities for stabilisation policy would have to be considered in the particular circumstances of the European Union, given its single monetary authority but individualised budget policies. But as was noted earlier, the difference between the United States and the countries of the European Union – and the difference between the European countries' policy flexibility now and several decades ago – though real, should not be exaggerated.

7.4 Outlines of an expenditure rule in a multi-country monetary union

In the instance of a multi-country monetary union such as the EMU, or for other monetary unions that have been discussed in other parts of the world, the following characteristics of a possible expenditure rule would seem pertinent:

- Coverage: The PAYGO provisions of the US Budget Enforcement Act (BEA) permit both revenue collections and entitlement programmes to function as automatic stabilisers, but still provide for effective restraint on unpaid-for expansions of entitlement programmes and tax cuts. The US PAYGO appears to be more effective in providing for a counter-cyclical expenditure rule than the Swedish case with minimal – or non-existent – margins for years t and $t + 1$, leaving no scope for automatic stabilisers in a cyclical downturn.
- Time Frame: Three years has been an effective budget horizon for Sweden. Although the United States nominally sets five-year caps, the caps were actually effective for closer to three years, in that the 1991-95 caps were slightly revised

and extended in 1993, the 1994-98 caps were increased and extended in 1997, and the 1998-2002 caps were essentially disregarded in their last years. Because of the impending impacts of the retirement of the baby-boom generation, however, a longer time frame might be considered.

- Country Specificity: All aspects of an expenditure rule could be country specific: the caps; the categories used (capital investments; defence; programmes for the poor; etc.); the deficit/debt targets on which the categories are based; the enforcement procedures (see below); even many of the economic assumptions. This is not to say that some aspects could not be shared by several groups of countries; for example, caps for countries with higher debt or greater demographic problems may be set at different levels than for countries that do not have these problems to the same degree. Similarly, some aspects (treatment of natural disasters and emergencies, for example) may be the same for all countries. The point is that the expenditure rule can provide the flexibility to address most country-specific problems without surrendering the restraints on spending needed to promote long-term fiscal sustainability.
- Enforcement: Sweden and the United States provide some lessons on enforcing an expenditure rule even though the characteristics of groups of sovereign countries collectively may be very different from the characteristics for any single country.
  - Warnings do not work; laws do. National rules will never be stronger than the political commitment to keep them, because the national legislature can always change the rule. Political support will always be important, but even that will not be enough. Warnings can be ignored too easily, but caps (and enforcement provisions) that are set in law are difficult to change – procedurally and politically. This implies that caps for each country should be accepted by all the countries in the monetary union, but then also enacted into law by each country individually. The same applies to enforcement procedures. Uniformity of enforcement procedures is less important than having some kind of binding procedure that requires a change in law to ignore or overturn.
  - Statistics matter. The data on which the caps and enforcement mechanisms are based should be of high quality and consistent across countries. The sovereignty of each country can be protected through the establishment of small, nonpartisan, independent national budget agencies[11] in each country to make regular public reports of budget implementation and forecasts. Although created by law in each country, these agencies should be obliged by law to use the concepts, procedures, and definitions on budgetary matters set forth by a central authority, such as the European Commission. Also, these national bodies should be scrutinised by a central authority, to ensure that the data are accurate.

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[11] See Gros *et al.* (2004), and European Commission (2004, p. 113).

8 Conclusions

In sum, both in abstract analysis and in the practical record, there seems to be little identifiable advantage in the use of deficit rules for fiscal behaviour. If anything, the balance would seem to lean toward spending rules that are simpler and less prone to malfeasance.

The balance between deficit-based rules and spending rules is summarized in Table 1. It weighs the pros and cons of the various options, and highlights the following differences:

- With respect to fiscal responsibility, deficit-based rules that set only (in effect) a maximum limit on the deficit might be thought to encourage countries to run the largest deficits permitted, creating risks of excessive deficits under unexpected adverse conditions. In contrast, a spending rule would provide firm guidance to policy makers whether the economy and the budget are strong or weak.
- With respect to macroeconomic stabilisation, deficit-based rules provide no incentive for counter-cyclical policy in strong economies, and can limit even the operation of automatic stabilisers in the budget in weak economies. In contrast, spending rules allow the automatic stabilisers to work in full at all times and in any economic conditions.
- Violations of a spending rule are transparent and incontrovertible. In contrast, non-compliance with a deficit rule, including either a reference deficit limit or required progress toward close-to-balance-or-in-surplus status, can be hidden behind optimistic economic assumptions or unlikely plans for future spending and revenue discipline.
- The performance of the core functions of government – its ability to achieve all of the traditional objectives of the public sector – can be adversely affected if the availability of resources is subject to unpredictable decreases or increases based only upon cyclical developments, as can be the case under deficit rules. Spending rules make the availability of resources more predictable, notably with respect to annually appropriated funding for those core functions of government.
- Funding for public investment can be protected under a spending rule, by requiring additional fiscal restraint through mandatory spending or taxes, or by setting a separate appropriations limit for investment.
- In contrast to the unpredictable fiscal constraints imposed by deficit rules, the more predictable fiscal behaviour encouraged by spending rules can lead to easier coordination with monetary policy, and to greater confidence and steadier behaviour within the private sector.

Based on this analysis, and in the judgment of the current authors, policy analysts should consider this alternative approach to fiscal policy making carefully.

Table 1

Alternative Fiscal Rules

	Deficit rule	Cyclically-adjusted deficit rule	Spending rule
Fiscal responsibility:			
Expansion	Encourages larger deficit	Encourages larger deficit	Requires that surplus be saved
Recession	May require a smaller deficit	May require a smaller deficit	Allows deficit to grow
Macroeconomic stabilisation:			
Expansion	Pro-cyclical	Pro-cyclical, but less so than unadjusted deficit rule	Counter-cyclical, through automatic stabilisers
Recession	Pro-cyclical	Pro-cyclical, but less so than unadjusted deficit rule	Counter-cyclical, through automatic stabilisers
Administrability	Verification more difficult	Verification more difficult	Verification easier
Credibility	Status more contentious	Status more contentious	Status more transparent
Public investment	Can be protected	Can be protected	Can be protected, possibly better than under deficit rules
Core government functions	Volatile funding	Volatile funding	Predictable funding
Monetary policy	Cooperation difficult	Cooperation difficult	Cooperation easier

APPENDIX
EXPENDITURE RULES IN FINLAND, THE NETHERLANDS AND SWEDEN

Finland

In addition to the rules that come with being a member of the EMU, Finland has introduced further national expenditure rules. Expenditure ceilings were introduced in Finland in the late 1980s and early 1990s. The initial aim was to strengthen the budget process; in recent years the problems of an aging population have resulted in increased support for the ceilings. The Budget Law mentions in general terms that the government is to set frames for expenditures; however, the ceilings are not just a political commitment but also a customary practice of Finland's government.

The ceilings are set for four years on a rolling basis. They are set in real terms and for central government only, although they include transfers to sub-national governments. Cyclical expenditures – such as unemployment benefits and accommodation subsidies, interest on central government debt, and expenditures that are matched by revenues from the European Union – are excluded. All in all, around 75 per cent of central government expenditures are under the ceiling and account for around 20 per cent of GDP.

When the current government took office it stated a number of fiscal policy objectives, including reducing the central government debt to GDP ratio, securing balanced central government finances in national account terms, and controlling growth of central government spending in real terms. Controlling central government spending is a key feature. The ceiling is stated in real terms and adjusted to nominal terms according to price development for different expenditure items every year.

The Finnish system also includes a "brake" to avoid excessive deficits, stating that the government will take actions, even in conditions of weak economic development, if the deficit according to forecasts will be higher than 2¾ per cent of GDP.

Furthermore, there have been recent discussions about expenditure control for sub-national governments. In a country like Finland, with a high degree of sub-national decision making enshrined in the Constitution, it may be hard for the central government to impose binding rules with sanctions.

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The Netherlands[12]

In the Netherlands, after a dramatic increase in deficits in the early 1980s, the government embarked on a new policy to bring deficits down. After some success, however, a high structural deficit limited the scope for allowing automatic stabilisers to work, and required the government to take judgmental measures to meet the targets. From 1989 to 1994, budget projections were frequently overtaken by downward revisions in economic activity, forcing the government to introduce new fiscal packages with greater budget savings than the original budgets. This system of "continuous budgeting" resulted in major decisions on an *ad hoc* basis and at the last minute. As a result, it was recognised that the framework for budgeting had to be reformed.

In 1993, the minister of finance appointed a study group on the budget that recommended a new budget formulation system focused on the *level of expenditures*, rather than the *level of the deficit*,[13] and on cautious economic assumptions. This created more stability, as any extra revenue would not automatically translate into extra expenditures, and the cautious economic assumptions would help compensate for uncertainty.

In new coalition agreements between different political parties, separate caps on expenditures were to be established for each of the three sectors of the Dutch budget: the "core" budget sector; the health care sector; and the social security and labour market sector. The coalition agreements would also incorporate the multi-year expenditure projections of each ministry as the basis for sub-caps for each minister within the "core" budget sector. Caps were to be established in real terms, which serve to prevent the coalition agreements from having to be reopened during the course of the government's term of office. Transfers were to be permitted between sectors and between sub-caps established within the "core" budget sector. Surpluses in one area, however, could be used only to fund *existing* policies that are experiencing higher costs than projected. The consent of the entire cabinet would be required to finance *new* proposals.

Budget over-runs must be offset in the area of the over-run. In exceptional cases, the cabinet may decide that more than one ministry should contribute to

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12 This section is drawn from Jón R. Blöndal and Jens Kromann Kristensen (2002), "Budgeting in the Netherlands", *OECD Journal on Budgeting*, Vol. 1, No. 3, pp. 43-80.

13 This is similar to the caps on discretionary expenditure applied in the United States, except they apply to all expenditure in the Netherlands. For a discussion of the United States experience, see Barry Anderson (1999), "Budgeting in a Surplus Environment", PUMA/SBO(99)3/FINAL, OECD, Paris.

financing an over-run. There are strong "firewalls" between revenue and expenditures. If the budgetary situation turns out more favourable than anticipated, then some of the extra revenues may be used to cut taxes, depending on the size of the remaining deficit.

The new budget process has been the key to the successful turnaround of public finances in the Netherlands. The coalition agreements have proven to be an excellent instrument for control, both before and after the Netherlands joined the European Monetary Union.

Sweden

In the early 1990s Sweden experienced a recession and the most severe fiscal crisis since the Second World War. A weak budget process was identified as part of the problem.[14] A reform was initiated that led to significant changes in the budget process in the second half of the 1990s. The introduction of a nominal expenditure ceiling for the central government in 1997 was an important part of the reformed budget process. The ceilings on expenditure were accompanied by a top-down budget process and a surplus target for the general government sector of 2 per cent of GDP over the business cycle. In 2000, a balanced budget requirement was introduced for local governments. Although the expenditure ceilings are not explicitly derived from the overall surplus target, the surplus target is taken into account when setting the expenditure ceilings.[15]

Annual nominal expenditure ceilings are set three years in advance as part of the budget process, and are considered to be binding. The ceilings apply to central government primary expenditure, including transfers and grants to local governments, plus expenditures by the old-age pension system outside the central government budget. Each year, as part of a rolling budget framework, an additional ceiling is applied to expenditures three years out.[16] The ceilings for year $t + 1$ and $t + 2$ could in principle be altered, but this has not happened since the system was adopted in 1997 (except for technical adjustments). The ceilings are set with a margin over projected expenditures to allow for some policy flexibility and, more

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[14] For a more thorough description of Swedish fiscal rules, see, for example, Hansson Brusewitz, U. and Y. Lindh (2005), "Expenditure Ceilings and Fiscal Policy: Swedish Experiences" (paper presented at the Banca d'Italia Workshop on Public Finance, held in Perugia, 31 March-2 April) or Heeringa, W. and Y. Lindh (2001), "Dutch Versus Swedish Budgetary Rules: A Comparison" (paper presented at the Banca d'Italia Workshop on Public Finance, held in Perugia, 1-3 February).

[15] Or, using the words of the 2005 Spring Fiscal Policy Bill: "One fundamental factor in the Government's deliberations on expenditure ceilings is the determination to keep expenditures at a level that is compatible with the public finances surplus target, while also ensuring margins for conducting an active labor market policy and meeting unforeseen expenses, such as costs associated with climate-related and other natural disasters".

[16] Between 1997 and 2001 the ceiling for $t + 3$ was set by parliament in the spring (March-May). Since 2002 it is instead proposed in the Budget Bill and decided in the autumn (September-November). In autumn 2004 no ceiling was set for 2007. Instead, the government planned to propose ceilings for both 2007 and 2008 in the Budget Bill for 2006 (in autumn 2005).

importantly, for increases in cyclical spending during an economic downturn. An attempt by parliament to change a proposed budget has to be presented in the form of a complete package that respects the previously determined expenditure frames and ceilings. This requirement has strengthened the hand of the minister of finance in the budget process and has made it more difficult for the budget to be defeated or amended in parliament.

Nominal expenditure ceilings have been an effective means of achieving the surplus target in Sweden. In fact, the ceilings together with a prolonged economic upswing, where revenue collections continuously exceeded projections, produced surpluses that exceeded 2 per cent of GDP between 1999 and 2001. As a result of the expenditure ceilings, fiscal headroom produced by this boom was saved or used for tax cuts rather than for expenditure increases. However, the margins for cyclical fluctuations have been fully used during economic upturns even though they were intended to be only a safety cushion during unexpected downturns. As a result, the ceilings came under pressure following the 2002-03 downturn, forcing the government to scale back some expenditure commitments. The habit of using all headroom under the ceiling for expenditure increases and using the ceiling more as an expenditure target is worrisome and has contributed to a general government surplus lower than 2 per cent of GDP since 2002, but still the ceiling has been important in reducing the expenditure ratio for the central government in the late 1990s and after that keeping it at a stable level.

Apart from the tendency to use up the margins for expenditure, Sweden's fiscal framework has two potential weak spots. First, expenditure restraint has been less evident at the local level, where most government consumption takes place, than at the central government level. Second, the government has resorted to the limited use of tax expenditures to introduce new policies without breaching the ceiling or requiring balancing measures.

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THE VALUE AND REFORM OF BUDGET INSTITUTIONS

Stefania Fabrizio and Ashoka Mody[*]

In a recent paper, we presented empirical evidence to show that strong budget institutions (rules and procedures of the budget process) were associated with more fiscal discipline even when the politics was unfavorable to such discipline. What then are the conditions under which budget institutions themselves may be improved (reformed)? We find, tentatively, that fiscal deficits do not focus the attention of policymakers on undertaking reforms. To the contrary, the larger is the deficit, the lower the likelihood of reforms. It is as if large deficits imply strong claims on the budget and, hence, create unwillingness to compromise and impose self-discipline. Countries will tend, therefore, to move to two outcomes: small fiscal deficits and good institutions or large deficits and weak institutions. The findings do suggest that economic shocks (if they are large enough) can help build a constituency for improving budget institutions.

1 Introduction

We report on two themes in our ongoing research. In a recent paper (Fabrizio and Mody, 2006) that focused on countries in Central and Eastern Europe, we concluded that strong budget institutions (rules and procedures of budget formulation, authorization and implementation) can help improve budget outcomes by limiting the claims on scarce budget resources. Extension of that analysis confirms this finding for a broader sample of European countries (in line with earlier results of von Hagen and Harden, 1995; and Hallerberg and von Hagen, 1999). Our more recent research has focused on the determinants of the reforms of budget institutions.

If strong budget institutions are important, then the factors that lead to their strengthening are of obvious interest. Our preliminary findings suggest that the reform of budget institutions becomes less likely just when they are most needed, that is, when fiscal outcomes worsen.[1] This finding is consistent with the view that politics plays a central role in determining budget outcomes. In turn, the connection

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We are grateful to Mark Hallerberg for sharing his measures of fiscal institutions and to several colleagues in the European Department for helping update these measures. We draw on our earlier paper (Fabrizio and Mody, 2006) to document the relevance of budget institutions as a disciplining mechanism and report preliminary results (to be documented in a forthcoming paper) on the determinants of reforms of budget institutions**.** The paper was discussed at the 9th Banca d'Italia Workshop on Public Finance *Fiscal Policy: Current Issues and Challenges*, Perugia S.A.DI.BA. 29-31 March 2007.

[1] We report more extensive background and results in a forthcoming paper.

between politics and budgets arises through the so-called common-pool problem (Shepsle and Weingast, 1981; and Weingast, Shepsle and Johnson, 1981). When many can claim access to a valuable resource for which they pay only a part of the cost, the pressure will be to overconsume that resource. In the context of a budget, a tendency will arise for public spending in favor of interest groups that bear only a fraction of the taxes needed to finance the expenditures that benefit them. Our findings imply that, when the common-pool problem is severe, budget deficits will be large and the appetite to constrain them will be small.

As such, deficits and institutions could slide a slippery slope. In that context, we examine if economic shocks could mitigate this unpleasant dynamics. We do find that higher unemployment rates and inflation make reform of institutions more likely. Larger current account deficits also help to instigate reform. However, our evidence also points to considerable inertia in institutions in some countries, reflecting historical and societal factors that we do not explicitly account for. The role of political leadership in breaking the deadlock may, therefore, sometimes be of crucial importance.

The rest of the paper is organized as follows. The next section briefly presents the theoretical background. This is followed by a summary of the effects of budget institutions on budgetary outcomes. Finally, we describe the preliminary findings of research on the determinants of budget institutions and offer some conclusions.

2 Theoretical background

The consequences of the common-pool problem for budget outcomes have been well documented. The larger the number of interest groups, the greater the spending that will be induced. In a dynamic model, Velasco (1999) concludes that the spending pressures will, in the short run, lead to a drawdown of the national wealth (or an accumulation of debt). A country will continue to run deficits even as debt is being accumulated and will respond to the eventual need to repay that debt only when it has crossed a certain threshold – when the "writing is on the wall", at which point distortionary taxes will need to be raised.

In turn, the extent of the common-pool problem is the consequence of the underlying features of the society and its political institutions that determine the process and extent of political representation. The principal tension arises from the balance a democracy must strike between achieving broad representation while maintaining fiscal accountability. This tension is seen in the context of population diversity and electoral system design. Population diversity creates pressures for greater representation but potentially weakens fiscal discipline (Aghion, Alesina and Trebi, 2004). The electoral system, by defining the rules of political engagement, influences the formation of parties contesting elections and the eventual fragmentation of ruling coalitions, thereby establishing the balance between representation and accountability.

The feature of electoral systems that has drawn most attention is the proportionality of the electoral rule. However, electoral systems do differ in other important ways and, especially, Hallerberg and Marier (2004) caution that the relationships may be nonlinear (see Lijphart, 1994, for a classic treatment). In a majoritarian system, voters in a district elect one candidate to the legislature. Increasing proportionality (district magnitude) implies an increasing number of candidates elected per district (in proportion to the votes received) and, hence, increasing voice for an individual voter. Thus, proportional elections foster "representativeness", while majoritarian elections are thought to encourage "accountability".

Consistent with this view, Persson and Tabellini (2003 and 2004) find, in a cross-country setting, that majoritarian systems are associated with greater fiscal discipline than are proportional systems. Persson, Roland and Tabellini (2005) further conclude that electoral systems do not have a direct effect on fiscal outcomes; rather, the influence is indirect: greater proportionality induces more parties into the electoral process and into the ruling coalition, with a tendency to higher public expenditures.

However, as Persson, Roland and Tabellini (2005, p. 26) point out, "... there is considerable time variation in the type of government, which cannot be easily explained by sluggish electoral rule variables". This is true in our context, where, although, electoral rules have not changed during the sample period, the "within-country" variation in the degree of government fragmentation and government ideologies is significant. In an early contribution, Roubini and Sachs (1989) find a tendency for more fragmented government coalitions to run larger budget deficits, consistent with the proposition that more fragmentation allows greater scope for multiple constituencies to exercise claims on limited fiscal resources without their bearing the full cost of the taxation needed to cover the benefits received. Subsequent cross-country studies have validated this conclusion (Hahm, Kamlet and Mowery, 1996; and Alesina and others, 1999). Similarly, across states within the United States, greater political fragmentation has been associated with more intense public spending pressures (see Alt and Lowry, 1994; Poterba, 1994; and Besley and Case, 2003).

If a politically desirable increase in representation is accompanied by undesirable fiscal outcomes, can this unpleasant trade-off be alleviated? Fiscal institutions – the rules and procedures of budget formation – offer a possibility. These institutions, Poterba (1996, p. 47) suggests, are a form of "self control" imposed by fiscal actors on themselves. The aim, Eichengreen, Hausmann and von Hagen (1999, p. 425) note, is not to "depoliticize" fiscal decision making but rather to improve the quality of decisions. This leaves open the question of whether fiscal institutions can have real effects. In other words, even if sensible rules and procedures are set up, will self-interested political actors work around them to nullify their effectiveness? The international evidence and that from the U.S. states are that fiscal institutions do matter, as Alesina and Perotti (1999) report.

Surprisingly, given their relevance, there is, to our knowledge, no empirical examination of the determinants of budget institutions (or fiscal institutions). Our ongoing effort is to build a database that extends across a sufficient number of countries and over a large enough time period to help fill this gap. In conducting this empirical examination, we are guided by the theoretical insights of Alesina and Drazen (1991). Their analysis shows that, where the common-pool problem is severe and is, hence, the source of budget indiscipline, the attempt to consolidate will be resisted. This resistance they describe as a "war of attrition". Interest groups will hold out for their stake and thus reinforce the status quo. Such a status quo will be rendered more stable the more fractionalized the government is.

3 Self-discipline through budget institutions

In Fabrizio and Mody (2006), we constructed a quantitative index of the overall quality of budget institutions for 10 countries: Estonia, Bulgaria, the Czech Republic, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic and Slovenia. The three steps of the budget process are (i) the preparation stage, when the budget is drafted; (ii) the authorization stage, in which the draft budget is approved and formalized; and (iii) the implementation phase, when the budget is executed and may be modified/amended. A larger value of the index implies greater checks and balances in budget preparation, authorization and implementation. The proposition is that such checks and balances limit the lack of discipline that politics engenders.

Table 1 reports our principal findings. Briefly, a higher debt level apparently induces greater fiscal effort, increasing the primary balance. However, while the sign on this variable is always positive, it is not statistically significant at conventional levels. The unemployment rate, which is more often closer to statistical significance, has a negative sign, implying that an increase in the unemployment rate reduces the primary surplus (increases the deficit). A higher inflation rate is associated with a larger primary surplus, as if inflation reduces the real value of expenditures without compromising tax receipts. This result is consistent with that of Perotti and Kontopoulos (2002), although their finding is supported by a higher degree of statistical significance. Finally, country openness to external trade is sometimes significant, implying that countries that are more open also tend to greater fiscal conservatism. However, as we discuss below, and as is the case with the other economic variables, the significance tends to fall when pitted against the political variables.

With these controls in place, we add our overall index of the quality of budget institutions to the explanation of the primary balance. The results suggest that stronger budget institutions are associated with a larger primary surplus (or smaller deficit). The coefficient is significant at the 1 per cent level of significance.

Turning to political influences, we consider the time-varying variables of the "practice-of-democracy" variety rather than structural or constitutional variables,

Table 1

Economics, Politics and Fiscal Performance

	Primary balance-to-GDP ratio			
	(1)	(2)	(3)	(4)
Lagged debt-to-GDP ratio	0.05	0.04	0.02	
	(0.05)	*(0.04)*	*(0.05)*	
Unemployment rate	–0.34	–0.41	–0.31	–0.33
	(0.17)*	*(0.15)***	*(0.17)**	*(0.16)**
Inflation	0.06	0.14	0.12	0.12
	(0.06)	*(0.06)***	*(0.08)*	*(0.08)*
Openness index	4.78	7.89	8.8	8.96
	(4.91)	*(4.42)**	*(4.40)**	*(4.35)***
Fiscal Institutions index		7.52	6.2	6.15
		(2.08)***	*(2.13)****	*(2.10)****
Government fragmentation			–4.39	–4.66
			(2.84)	*(2.76)**
Government ideology:				
Fiscal centralization			0.38	0.36
			(0.24)	*(0.24)*
Nationalism			–0.46	–0.48
			(0.19)**	*(0.19)***
Left/Right			0.37	0.39
			(0.18)**	*(0.17)***
Observations	63	63	63	63
Number of nid	10	10	10	10
R-squared	0.2	0.39	0.49	0.48

Standard errors in brackets.
* significant at 10%; ** significant at 5%; *** significant at 1%.

which are considered via the nonlinear estimation in Fabrizio and Mody (2006). When considered by themselves, the fragmentation and the three ideological variables, though appearing with plausible signs, do not have especially high statistical significance (see Fabrizio and Mody, 2006). The statistical significance of all variables increases sharply when we place coalitional fragmentation alongside the three ideology variables. Since a larger coefficient on the fragmentation variable (1 minus the Herfindahl index derived from the shares of the coalitional partners) indicates more fragmentation, the negative sign on the coefficient indicates a larger surplus with reduced fragmentation.

Thus, the findings imply that fragmentation and ideology need to be examined together. Also, ideology is multifaceted. Considering these as a package

provides stronger results, consistent with priors that have long existed in the literature. The ideology variables indicate that a coalition that leans to the right, that is not highly nationalist, and that favors centralization of public finances is likely to deliver a conservative budget. In our sample, leftist coalitions have been less fragmented, and some right-wing coalitions have had nationalistic tendencies. Only when these dimensions are simultaneously considered do the results show through. Again, when we add the budget institutions index, its coefficient maintains its strong statistical significance. However, the size of the coefficient is smaller, suggesting that the budget institutions are more correlated with political than with economic factors.

In our current research, we have extended the quantitative index of the overall quality of budget institutions to cover 23 European countries: Austria, Belgium, Bulgaria, the Czech Republic, Denmark, Estonia, Finland, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Luxembourg, the Netherlands, Poland, Portugal, Romania, the Slovak Republic, Slovenia, Spain, Sweden and the United Kingdom. Once again, underlying the overall index are three phases of the budget process. While we have relied on a variety of sources of information (see Appendix), we build also on Fabrizio and Mody (2006) and Hallerberg, Strauch and von Hagen (2007) (see Appendix).[2]

Preliminary findings from this more extended sample confirm the results in Table 1.[3] Unemployment raises budget deficits, and inflation has the effect of reducing them. Government fragmentation has a more consistent and significant effect in the larger sample. Trade openness helps reduce deficits, but mainly when fragmentation is low. Larger debt appears to have a stronger effect in this larger sample. In all specifications, the budget institutions continue to play a significant self-disciplining role.

4 The determinants of budget institutions

The dependent variable is *change* in budget institutions two years ahead. Because the changes take discrete values, we categorize them into four groups: a large improvement, an improvement, no change, and a setback. For our larger sample of countries, Table 2 presents initial results on the reform of budget institutions. These are based on ordered logit regressions. As a control variable, we include the gap between the highest possible institutional quality and the country's state of fiscal institutions. This gap determines the scope of the subsequent improvements in quality of the fiscal institutions. Not surprisingly, the larger the gap in the quality of fiscal institutions at the beginning of the period, the greater the scope (and possibly the incentive) for further improvements in their quality.

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[2] We are especially grateful to Mark Hallerberg for sharing the tables from his forthcoming book and for continuing discussions on the construction of these indices.

[3] Results are available upon request.

Table 2

What Triggers Budget Institutions Reform?

	Change of Budget Institutions Quality		
	(1)	(2)	(3)
Budget institutions quality gap	6.34	10.11	9.76
	(1.53)***	*(2.54)****	*(2.69)****
Lagged primary balance-to-GDP ratio	0.49	0.74	0.62
	(0.20)**	*(0.29)***	*(0.30)***
Government fragmentation	–2.09	–4.13	–5.14
	(2.26)	*(2.97)*	*(3.07)**
Current account balance-to-GDP ratio		–0.33	–0.36
		(0.15)**	*(0.16)***
Unemployment rate		0.89	0.76
		(0.38)**	*(0.39)***
Inflation		5.55	4.94
		(2.42)**	*(3.08)*
Public debt-to-GDP ratio			0.06
			(0.07)
Observations	102	100	93

Standard errors in brackets.
* significant at 10%; ** significant at 5%; *** significant at 1%.

A more intriguing result is that a poorer fiscal deficit situation delays budgetary reforms. Alternatively, a worse fiscal balance at time t–1 is associated with a smaller likelihood of improvements in fiscal institutions quality between $(t+2)$ and t). This finding is consistent with a more intense war of attrition among policymakers when the budget situation is adverse and, by implication, the claims on the budget are large. Thus, a country experiencing large fiscal deficits will find it difficult to embark on reforms of fiscal institutions before the budget deficit itself is brought under greater control.

We find also, consistent with the war-of-attrition hypothesis, that a more fragmented government is less supportive of budget reforms. In Table 2, this is most evident when the full set of explanatory variables is included.

Thus, clearly, political influences matter, observed indirectly through large resource claims of multiple interest groups in the budget deficit or through evidence of the influence of political fragmentation. As such, the question arises whether this unfortunate possible dynamic of a worsening of the budget situation and controls can be halted and reversed. We find evidence, reported in Table 2, that a worsening of the domestic and external economic situation can raise the likelihood of reform. Note that a higher unemployment rate appears to help reform. However, as discussed above, a higher unemployment rate also raises the budget deficit, which,

in turn, hurts reform prospects. Thus, the net effect of unemployment may not be strong. Inflation both reduces budget deficits and appears to raise the likelihood of reform. To that extent, periods of inflation can be associated with a push towards reform. The taming of inflation in recent years in these countries makes it less likely that inflation will be an ally in reform. Finally, an increase in external vulnerability through an increase in the current account deficit raises the likelihood of reform, as if, facing that external vulnerability, decision makers are willing to compromise. These results would suggest that a sharp change in external circumstances can create the needed political basis for an exit from a vicious cycle of bad fiscal performance and delays in implementing needed budget institution reforms.

Finally, the statistical analysis includes country dummies, that is, it allows for the possibility that unobserved influences (unobserved by us the econometricians) contribute to the likelihood of reform. We find that, in some cases, these fixed effects are of considerable importance. In other words, historical country features create inertia in institutions. While we have not attempted to identify the sources of this inertia, the implications are clear: overcoming it will require that leadership to make a special effort to undertake reforms.

5 Some conclusions

Our findings suggest that a country could enter a fiscal "virtuous" or "vicious" cycle, depending on its fiscal stance. In "favorable fiscal times", when fiscal performance is good, reforms are easier to undertake. But in "bad fiscal times", when reforms have significant distributional implications (e.g., when imposing stronger checks and controls to reduce a large budget deficit by containing expenditures hurts particular constituencies), reforms are actually delayed. These findings are in line with Alesina and Drazen (1991), who argue that, when budgetary resources are limited and there are many claimants, there is a war of attrition, no policymaker wants to give in so no reforms are pushed forward. These results would imply that a country could enter into a virtuous cycle, in which better fiscal institutions induce better fiscal performance; this, in turn, would facilitate reforms of fiscal institutions. Alternatively, the country could be trapped in a vicious cycle, in which reforms in budget institutions are delayed because of poor fiscal performance; this, in turn, would deteriorate further because of weak fiscal institutions.

How, then, can a country emerge from a vicious into a virtuous cycle? The analysis carried out in this chapter suggests that a worsening of the general economic conditions weakens intractable opposing political positions and so helps reforms. In other words, a deterioration of the economic situation would help undertake reforms and to move the country into a virtuous cycle, in which budget institutions help improve the fiscal stance; this, in turn, creates an environment that favors fiscal reforms. However, the findings also highlight the role of the role of political leadership in breaking the logjam, especially where long-standing historical forces create inertia in the reform of institutions.

APPENDIX
VARIABLES AND DATA SOURCES

Data for the exercise in Table 1 are from Fabrizio and Mody (2006).

The rest of this Appendix focuses on the variables used in the exercise undertaken in Table 2.

Dependent variable

Following Fabrizio and Mody (2006) and Hallerberg, Strauch and von Hagen (2007), we constructed a quantitative index of the overall quality of budget institutions for 23 European countries: Austria, Belgium, Bulgaria, the Czech Republic, Denmark, Estonia, Finland, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Luxembourg, the Netherlands, Poland, Portugal, Romania, the Slovak Republic, Slovenia, Spain, Sweden and the United Kingdom. The goal is to consolidate the objective features of the budget process, such that a larger value implies greater checks and balances. Values were assigned to the three phases of the budget process:

(i) the preparation stage, when the budget is drafted;

(ii) the authorization stage, in which the draft budget is approved and formalized; and

(iii) the implementation phase, when the budget is executed and may be modified/amended.

Data sources include annual fiscal budget laws, Reports on the Observance of Standards and Codes (ROSC) Fiscal Transparency Module, produced by the International Monetary Fund, and direct contact with the countries' authorities.

Economic variables

Data for public debt as a percent of GDP, the unemployment rate, inflation, the current account balance as percent of GDP, and the primary fiscal balance-to-GDP ratio are from the IMF's World Economic Outlook. Data for the openness index (imports plus exports normalized by GDP) are also from the same source.

Political and institutional variables

Government fragmentation

This variable is constructed as 1 minus the Herfindhal index. The latter is the sum of squares of the shares of each party in the government

coalition. The variable ranges in value from 0 (if one party forms the government) to 1 (in case of very fragmented coalitions).

Data sources are *Parties and Elections in Europe* (www.parties-and-elections.de) and *Elections around the World* (www.electionworld.org).

Budget institutions quality gap

The gap between the highest possible quality of budget institutions and the state of country's fiscal institutions.

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THE FISCAL POLICY FRAMEWORK IN CHINA

Liu Lida[*]

In the last decades important economic and social changes occurred in China. In particular, in introducing a socialist market economic regime, the fiscal policy framework has been significantly reformed. In order to understand China's fiscal policy framework, it is necessary to review its experience, the present economic and social situation and its perspectives. Section 1 describes the Chinese fiscal system, Section 2 assesses the role played by fiscal policy in macroeconomic control and regulation, Section 3 reviews fiscal regulation in practice and Section 4 discusses the experience drawn from it. The last section sketches a rough outlook of the fiscal policy.

1 The tax system

1.1 The sharing of revenue and expenditure between government tiers

China has adopted a tax sharing system, whereby revenues are divided between the central government and local governments. The central government is responsible for expenditure on national defence, foreign affairs, and central government agencies, economic reforms, coordination of regional development and macroeconomic adjustment. The jurisdiction of the local governments covers the running costs of local departments, and expenditure on economic and social regional development.

Following the principle of matching tax jurisdiction with expenditure responsibility, taxes are divided into three categories: national taxes, local taxes and joint taxes (*i.e.* taxes shared between the central and local governments). National taxes are used, *inter alia*, to ensure macroeconomic stability; local taxes fund regional spending whereas joint taxes are mainly devoted to economic development. The system is illustrated in detail in Table 1.

1.2 The budgetary situation: An overview[1]

1.2.1 The budget balance and its main components

Figures 1 and 2 show total revenue as a share of GDP and the growth rate of total revenue and expenditure from 1952 to 2005. Since the late 1990s, revenue has

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[1] All data in this section are taken from *Finance Yearbook of China 2006*.

Table 1

Tax Sharing between the Central and Local Governments

Central Taxes	Local Taxes
Customs duties; VAT on imports and consumption; tax collected by customs and excise; consumption tax; enterprise income tax paid by the Ministry of Railway Transportation, China's Post Office, four wholly state-owned commercial banks, three policy banks, the Offshore Petroleum and Natural Gas Corporation, PetroChina Company Limited and the China Petroleum & Chemical Corporation; business tax; income and urban maintenance and development tax paid by the head offices of the Ministry of Railway Transportation, various banks and insurance institutions; income tax on national enterprises; vessel tonnage tax; vehicle purchase tax; special purpose tax.	Business tax (excluding the part paid by the Ministry of Railway Transportation, various banks and insurance institutions); income tax on local enterprises; urban land use tax; regulatory tax for fixed investment; urban maintenance and development tax (excluding the part paid by the Ministry of Railway Transportation, various banks and insurance institutions); real estate tax; farmland occupation tax; land appreciation tax; urban real estate tax; vehicle and vessel usage tax; licence plate tax; deed tax; stamp duty; agricultural tax and animal husbandry tax (including tax on special farming products) and State-owned land use tax.
Joint Taxes	
Domestic VAT (75 per cent to central government and 25 per cent to local governments); income tax (60 per cent to central government and 40 to local governments); resource tax (the share paid by offshore oil enterprises to the central government and the remaining part to the local governments); stamp tax revenue collected on stock transactions (97 per cent to the central government, the remaining share to local governments).	

Source: The Ministry of Finance of China.

Figure 1

Total Revenue
(percent of GDP)

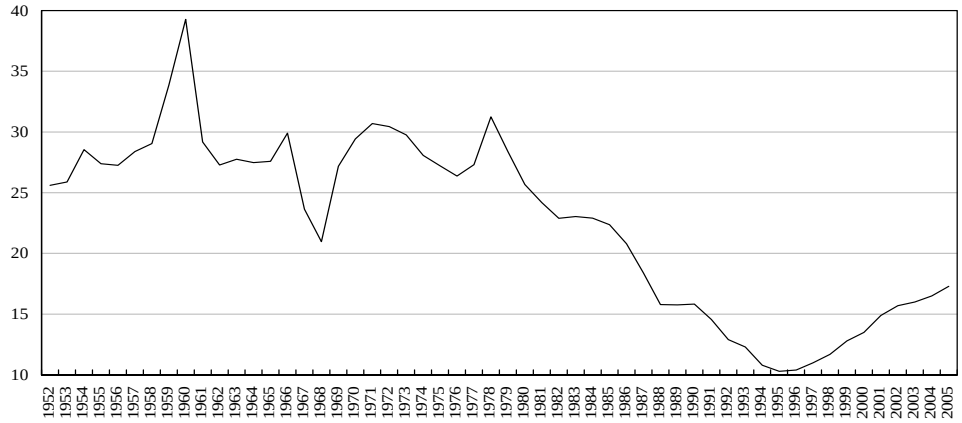
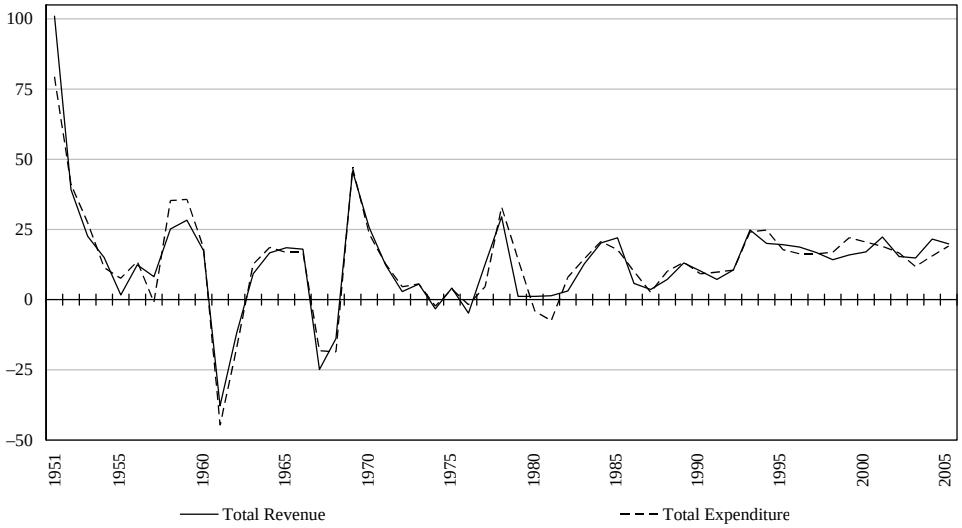


Figure 2

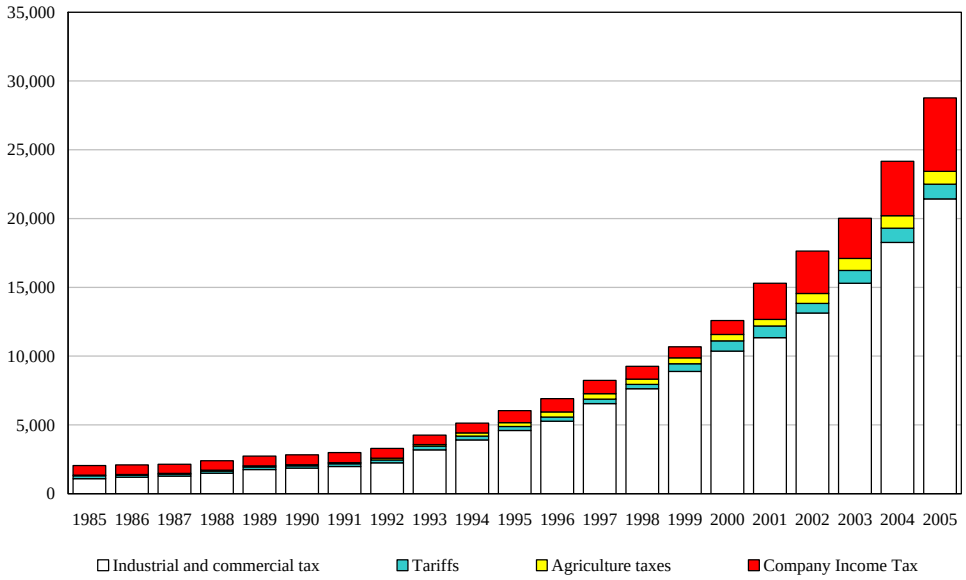
Growth Rate of Revenue and Expenditure
(percent)



Note:
For the sake of comparability, price subsidies are reported as expenditure also before 1986.
Since the year 2000, expenditure includes the interest payments on public debt.

Figure 3

Tax Revenue
(hundred million yuan)



Notes:
The agricultural taxes include agricultural tax, animal husbandry tax, tax on the use of cultivated land, the taxes on special farming products and forest products and contract taxes.
Before 2001 company income tax only applied to state-owned and collective enterprises.
Since 1994 the income taxes levied on state-owned enterprises include the income tax levied on local financial enterprises.

grown rapidly and more smoothly than in previous years.

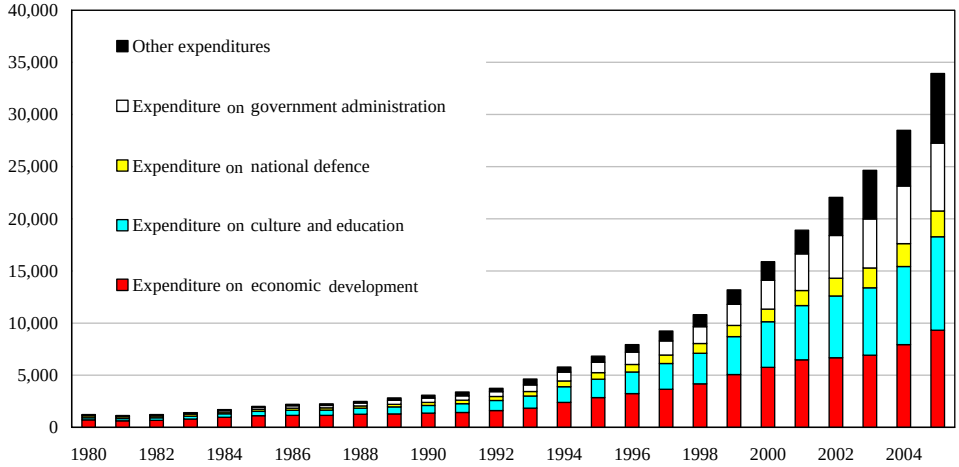
Since 1994 revenue mainly stems from taxes;[2] revenue from extra charges for education also plays an important role. Figure 3 shows that industrial and commercial taxes are the source of revenue.

Figure 4 illustrates the composition of expenditure by function over the period 1996-2005: expenditure on economic development, culture and education, and government administration are the main items. Expenditure on culture and education increased at the fastest rate, while expenditure on national defence was a small item.

[2] Prior to 1978, business tax was the largest item in total taxes. It was eliminated in the tax reform of 1994.

Figure 4

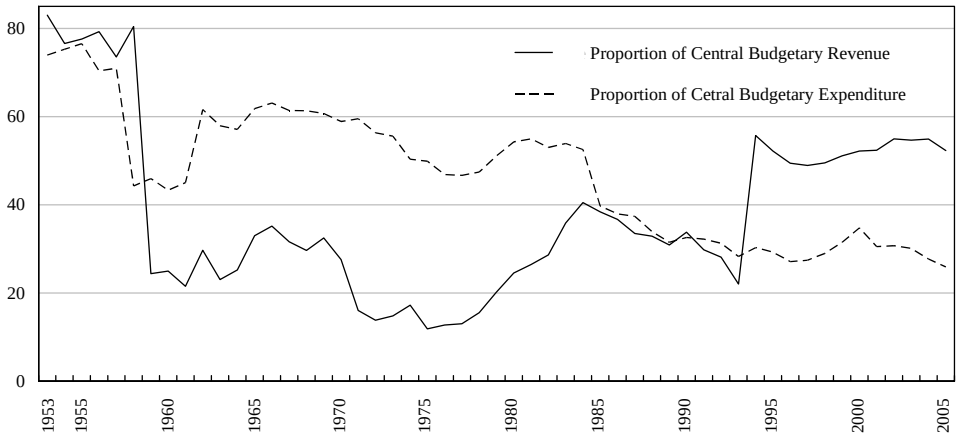
Expenditure by Function
(hundred millions yuan)



Note: Expenditure for payment of principal and interest on public debt and expenditure for capital formation financed by foreign loans are not included.

Figure 5

Share of Central to General Government Revenue and Expenditure
(percent)



1.2.2 Central versus local governments

Almost all central government revenue stems from taxes (Figure 5). On the expenditure side, a higher degree of heterogeneity can be detected (Figure 6). Among the expenditure of central government, national defence spending is the most important item, followed by capital development, interest payments and general administration expenses.

The composition of local governments' revenue and expenditure is represented in Figure 7 and Figure 8 respectively. Taxes are the main revenue source, whereas expenses on culture, education, science and health care, on government administration and on capital development are the main expenditure items.

1.2.3 Extra-budgetary revenue and expenditure

Figure 9 and Figure 10 display the composition of extra-budgetary revenue and expenditure. The largest revenue item is the revenue of administrative units and institutions. Administrative expenditure is the largest and fastest growing item.

1.3 The main functions of the Ministry of Finance

At present the Ministry of Finance has the following four main functions. First, it designs and implements strategies, policies and guidelines, medium- and long-term development plans and public finance and taxation reforms, also with reference to resource distribution between the central and local governments and between state and enterprises. The Ministry also plays a role in macroeconomic policy making and provides policy advice on macroeconomic regulation and on the allocation of public funds.

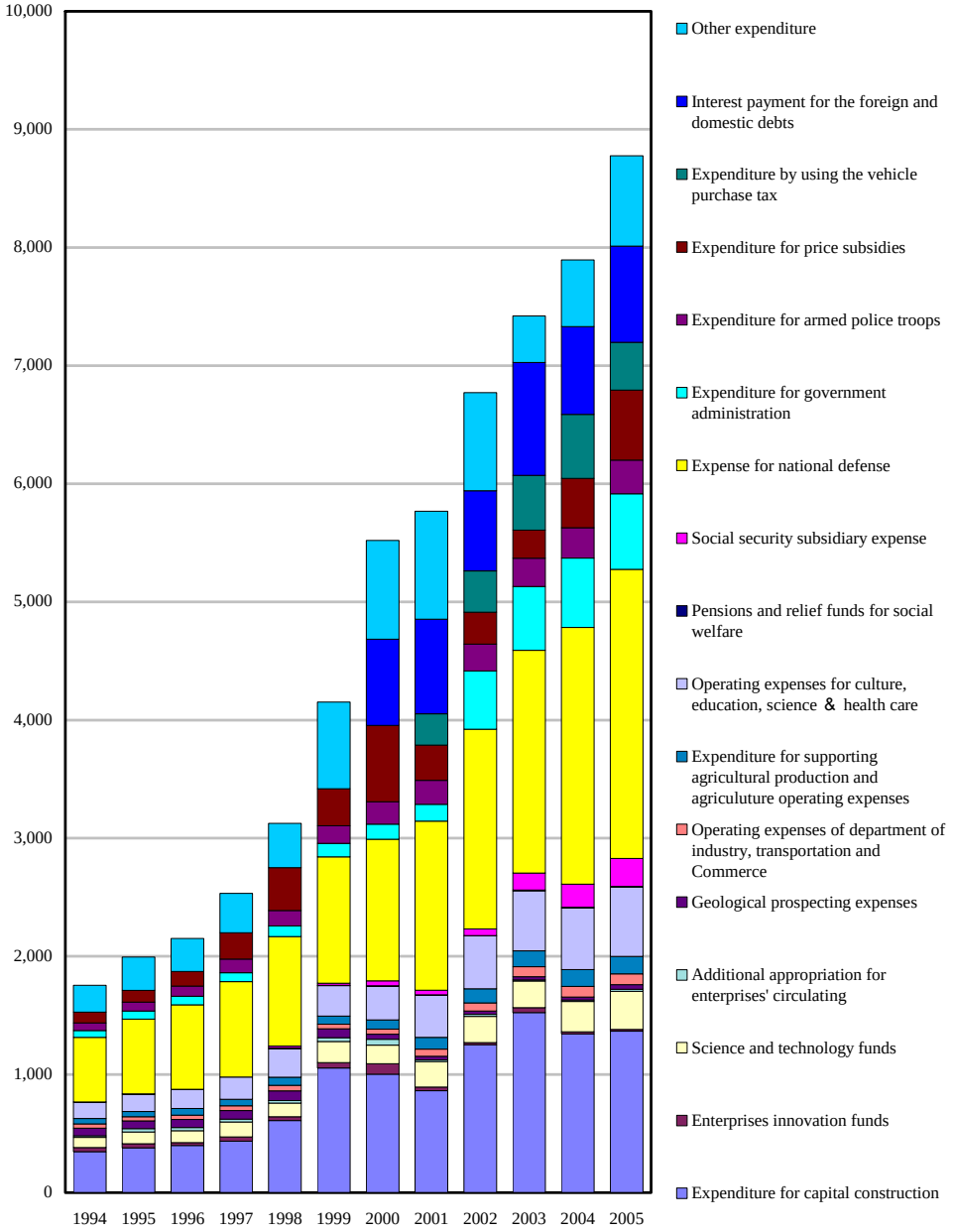
Second, the Ministry of Finance prepares the draft annual budget of the central government and its accounts, implements the budget and reports – to the National People's Congress and to the Standing Committee of the National People's Congress – on the central and local budgets and accounts. It manages public revenue, central government accounts and other governmental funds.

Third, the Ministry has to propose tax legislation plans and collection regulation, which have to be reviewed with the State Tax Administration Units and then reported to the State Council. It has to collect taxes according to the budget and can propose adjustments with respect to tax rates and tax incentives, including temporary and special regimes with a major effect on public finances.

Moreover, the Ministry of Finance administers central government expenditures, formulates and implements government procurement policies. It also manages social security and promotes the use uniform standards and policies in public good provision.

Figure 6

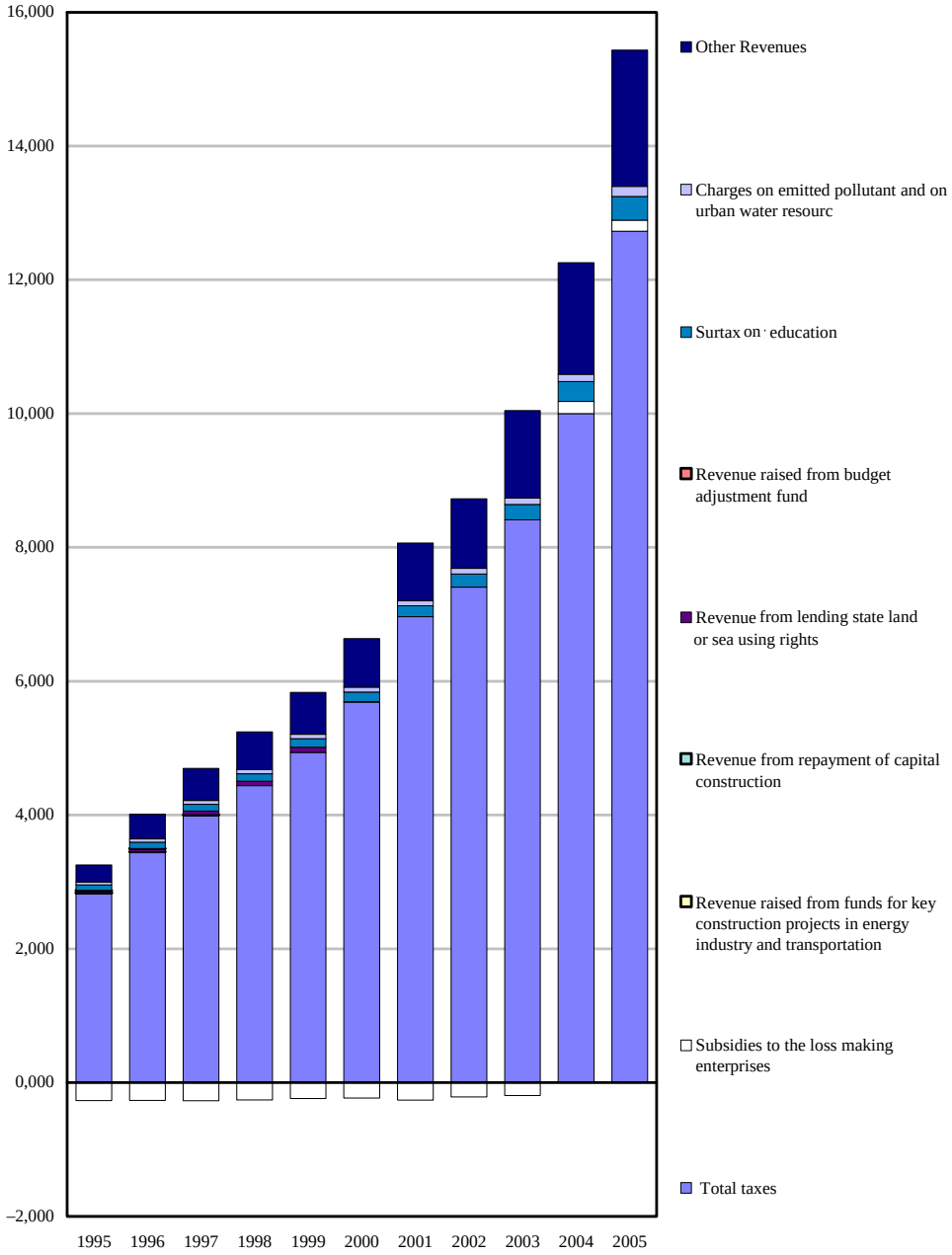
Composition of Central Government Expenditure
(hundred millions yuan)



Note:
Expenditure for government administration includes the expenditures for public security, procuratorial work and spending of the court of justice and for foreign affairs.
Since the year 2000, expenditure includes interest payments on public debt.

Figure 7

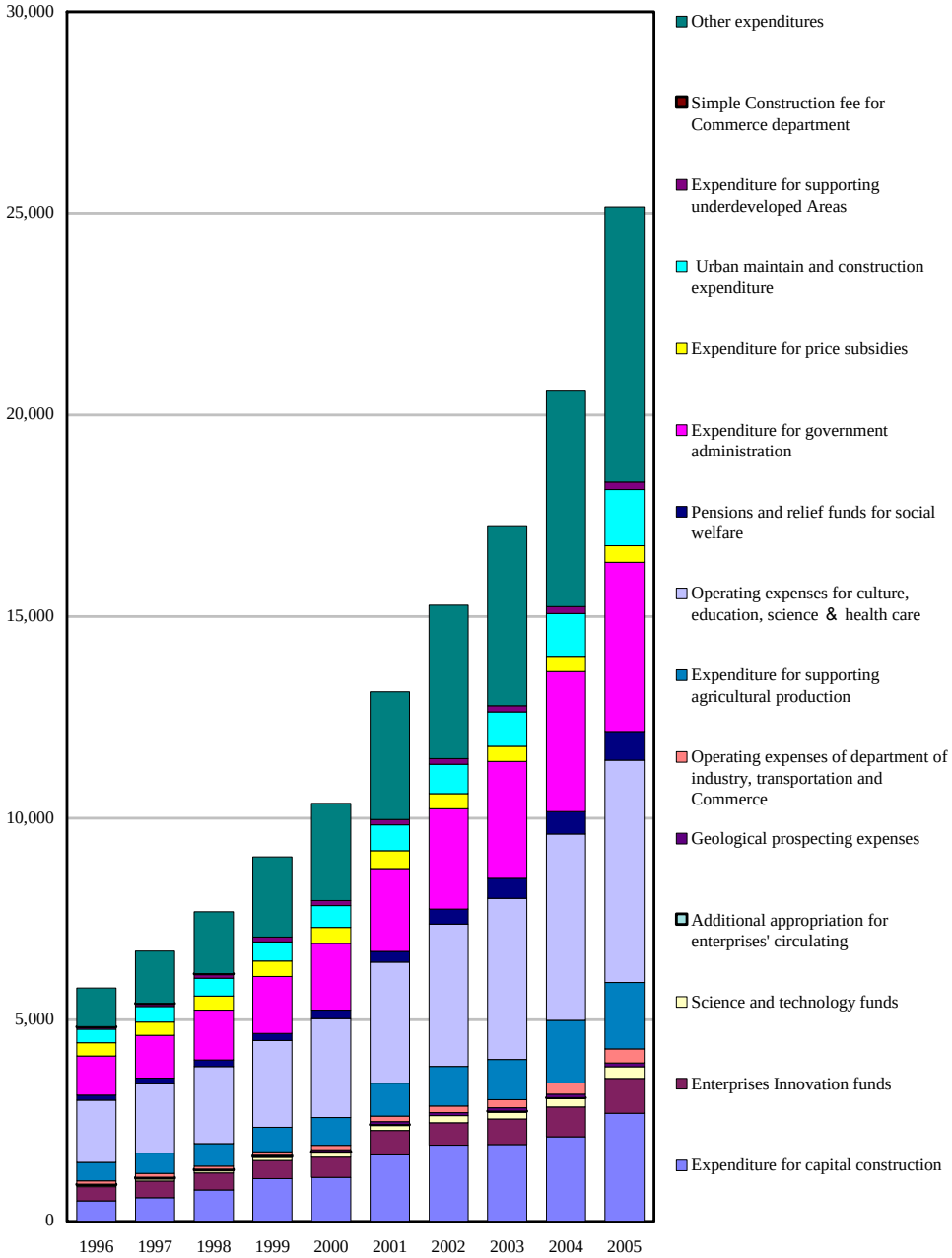
Composition of Local Governments Revenue
(hundred millions yuan)



Note: After the tax share system was adopted in 1994 (75 per cent of VAT and consumption tax belongs to central government), the local government revenue decreased.

Figure 8

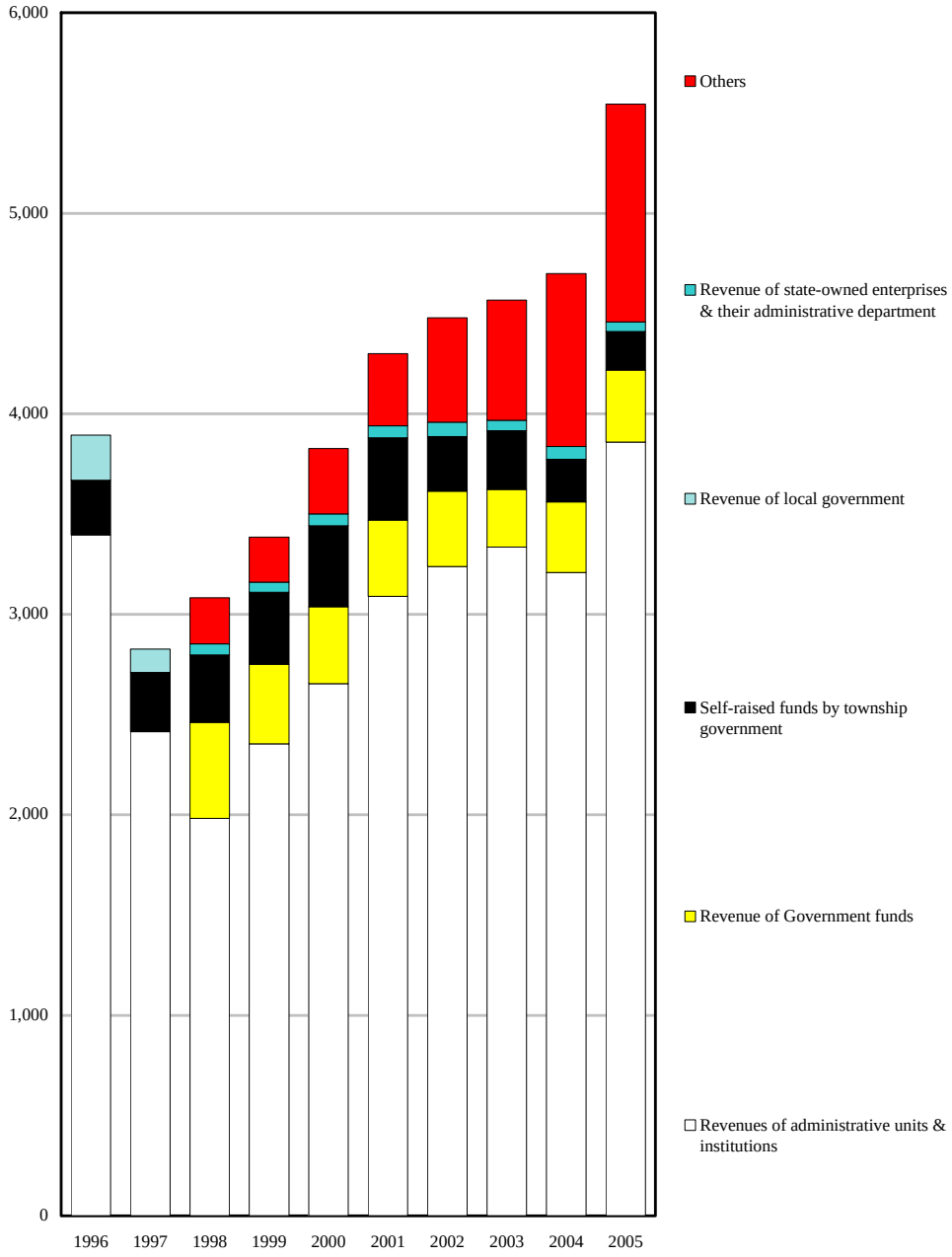
Composition of Local Governments Expenditure
(hundred millions yuan)



Note: Expenditure for government administration includes the expenditures for public security, procuratorial work and the court of justice and for foreign affairs.

Figure 9

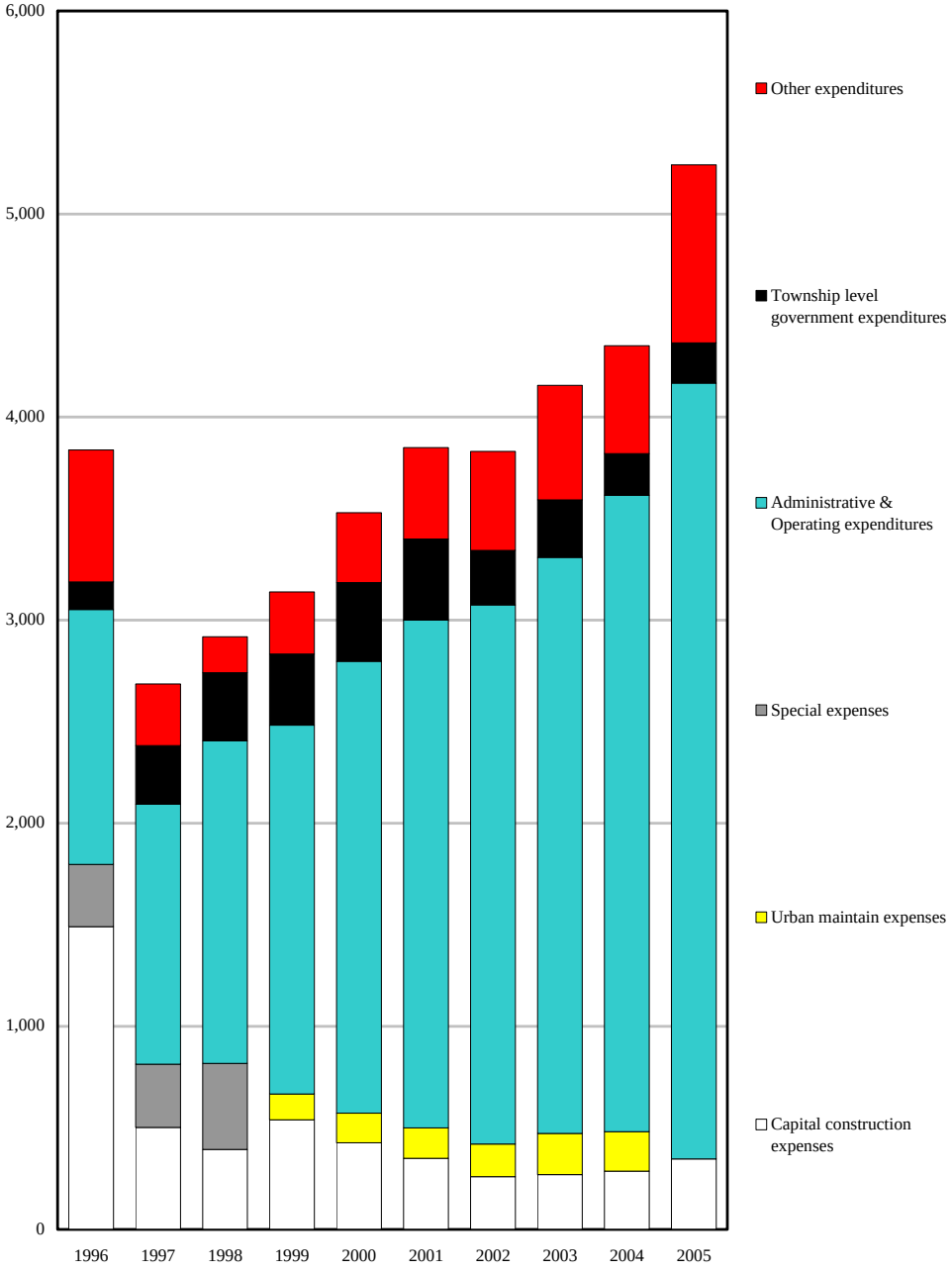
Composition of Extra-budgetary Revenue
(hundred millions yuan)



Note: For the sake of comparability, after 1997 the extra-budgetary revenue and expenditure continue not to include those funds (fees) which were excluded up to 1996.

Figure 10

Composition of Extra-budgetary Expenditure
(hundred millions yuan)



Note: For the sake of comparability, after 1997 the extra-budgetary revenue and expenditure continue not to include those funds (fees) which were excluded up to 1996.

In addition, the Ministry allocates financial resources between the state and the enterprises and defines the general principles of enterprise accounting. It also supervises the management of the publicly controlled enterprises and manages the return of state-owned funds. Finally, it consolidates and analyzes the annual financial accounts of national enterprises.

Furthermore, the Ministry of finance formulates and implements policies, rules and regulations on managing public domestic debt and prepares plans for treasury bond issuance.

Finally, it monitors the implementation of fiscal and tax policies, laws and regulations and administers resident offices of Fiscal Supervision Commissioners.

2 The role of fiscal policy in macroeconomic stabilization

Even if, in the economic literature, there is no consensus on the extent and effectiveness of public macroeconomic control, there is no doubt that the government has to be an important player in any market economy. Indeed, in the face of market failures, the government can and should play a role.

Since its reform and opening up, China has moved from being a traditional planned economy to being a socialist market economy. The market mechanism is becoming more important in the allocation of resources. Meanwhile, the Chinese government has constantly been adjusting the tools of macro control methods.

2.1 The areas in which macroeconomic control is necessary

Four main areas in which macroeconomic control is necessary can be pointed out.

First, the government has to participate and regulate resource allocation wherever there are market failures in the provision of public goods. The government will properly direct and mix existing manpower, material and capital resources in the society through revenue-generating and spending activities as well as by formulating, adjusting and implementing related policies. It will use policy signals to reasonably allocate resources between the public and the private sector and ensure effective supply of public goods. For example, the government may directly increase the supply of public goods through fiscal spending on national defence and major infrastructure projects.

Second, the government may use economic, legal and administrative measures to address externalities, especially negative ones. In this regard, the government can introduce subsides and taxes. For example, to address overproduction of a good, the government may levy higher taxes or charges so that the private marginal costs are made equal to the social marginal costs. To address

underproduction, the government may introduce such incentives as fiscal subsides and tax preference.

Moreover, a reasonable income gap is a stimulant and driving force for economic growth. If some people are richer than others, their status can spur the others to work harder in order to gain the same status. It is the case that the market mechanism widens such a gap to the point where it is too big from the society perspective.

The market itself cannot lead to a fair income distribution, which is exactly what a harmonious society needs to achieve. Therefore, the government has to rely upon external forces and find a non-market approach, which is implemented by the government's redistributive policy that includes setting a mandatory minimum wage level and income redistribution. That being said, when moderating the income gap, the government also needs to strike a proper balance between fairness and efficiency and avoid the tendency towards equalitarianism. This means that the government has to refrain from blindly redistributing, regardless of individual ability and contribution. Otherwise, economic efficiency may be lost and this will ultimately impede the improvement of social well-being.

Finally, the market can properly work only under the assumption of complete information and full competition. However, in practice, due to a variety of reasons, information is incomplete and/or asymmetric. On a more serious note, a certain degree of blindness of the market leads to economic instability, *i.e.* the economy moves from growth to recession and depression (crisis) and then back to recovery and growth. In this process, productivity is often hugely eroded and can even lead to economic stagnation and social instability.

To smooth out economic fluctuations, it is imperative that the government takes adequate measures to increase employment, contain inflation and maintain economic stability. Government fiscal policy has the purpose of stabilizing the economy.

2.2 Fiscal policy: automatic stabilizers and discretionary measures

The main tools of government macroeconomic control are fiscal policy and monetary policy. Fiscal policy can affect the economy via both automatic stabilizers and discretionary measures.

In particular, under certain circumstances, fiscal policy based on the internal mechanism of the revenue and expenditure system can smooth economic fluctuations and thus stabilize the economy. Since it automatically stabilizes the economy, this mechanism is usually referred to as "automatic stabilizer". It works mainly through the progressiveness of the personal income tax, expenditure on social welfare and the control of the price of agricultural products.

Nevertheless, it may be the case that automatic stabilizers are not sufficient to stabilize the economy. The government has to adjust its expenditure and revenue

programs on the basis of the current economic conditions so as to smooth economic fluctuations. This is usually referred to as discretionary fiscal measures. The main task of the discretionary fiscal policy is to keep the balance between total supply and demand.

Fiscal policy tools include changes to taxes, subsidies, investment programs, transfer payment and government bond policies.

3 Fiscal policy in China

3.1 Moderately tight fiscal policy (1993-97)

From 1993 to 1997, in face of the economic overheating and inflation, the Chinese government implemented a moderately tight fiscal policy. The policy has achieved its goal in stabilizing the economy and maintaining a stable growth. This can be considered the first successful experience of the Chinese government in stabilizing the economy, since China became a socialist market economy. It was characterized by the use of economic tools as opposed to administrative control measures.

3.1.1 Background

In 1991 and 1992, the GDP growth in China reached to 9.3 and 14.2 per cent respectively. In 1993, the GDP in the first quarter grew by 15.1 per cent. By the end of June, the total money in circulation increased by 54.1 per cent over the same period of the previous year.

Investment and consumption demand were increasing at a very high pace. In the first half of 1993, the overall fixed asset investment increased by 61 per cent, the highest rate after the reform. Consumption demand also expanded rapidly. From January to May, the cash expenditure of banks in wage payment and other individual withdraw increased by 36.4 per cent.

Starting in October 1992, prices accelerated. In January 1993 the increase in the consumption price index (CPI) reached 8.4 per cent, further climbed to a two-digit rate in March and to 12.5 per cent in May. From January to May, the raw material, fuel and energy price index increased by 31 per cent, and raw material prices increased by 43 per cent on a yearly basis.

Imbalances emerged in the industrial structure. The over-expanding construction industry faced constraints stemming from bottlenecks in infrastructure and primary industries. Transportation, especially railway transportation, was stretched to its limit. The gap between demand and supply in input markets was further widening. Energy products – such as electricity and oil – were in severe shortages.

Fiscal difficulties were increasing. Fiscal expenditure grew faster than fiscal revenue. Fiscal deficit continued expanding.

There were deficits in the balance of payments. Imports increased rapidly, whilst exports were sluggish, resulting in decreasing foreign reserves.

The economy was getting seriously overheated. Without timely and effective macroeconomic adjustment, the imbalance between aggregate demand and aggregate supply would have further grown and the economy would have been affected by an even more sizeable volatility.

3.1.2 Measures of moderately tight fiscal policies

The Chinese government paid great attention to problems in the economy and adopted adequate measures to address these issues.

On June 24, 1993, the government approved the document "Viewpoints on the Current Economic Situation and Strengthening Macro Economic Management", calling for sixteen measures to strengthen and improve macroeconomic policy. On that basis, the Minister of Finance introduced a series of tightening fiscal measures on the control of aggregate demand and on structural adjustment.

First, in order to ensure relatively rapid growth of fiscal revenue, tax collection and the cleaning up of tax preferential regimes have been strengthened.

Second, the strict deficit control is an important ingredient of a moderately tight fiscal policy. The government required that local governments to balance their budgets. In March 1994, the second meeting of the 8th National People's Congress approved the *Budget Law of the People's Republic of China*, which stipulates that deficit is not allowed for the current budget of the central government and for the overall budget of local governments. Indeed, local budgets should be based on the "spending according to collecting" principle, so as to achieve the budget balance. From 1994, central government's fiscal deficit was financed mainly through bond issuance, as opposed to overdraft from the central bank.

Third, regulations on performance-based salaries in enterprises were implemented in order to ensure a strict control on the purchasing power of social consortiums and on the rate of growth of consumption.

Fourth, in January 1994 the government issued the *Notice for Continuing to Strengthen Macro Management on Fixed Asset Investment* in order to clean up infrastructure construction projects and to control the fast growth of fixed asset investments.

Fifth, to accommodate socialist market economic development, the government decided to adopt a tax-sharing fiscal system that can speed up fiscal regulation reforms and foster institutional innovation.

Sixth, a new tax system was introduced and tax polices were improved. In 1994, the government implemented a comprehensive tax reform and established a new system suitable for a market economy, based on the guidelines of "unification of tax laws, fair share of tax burden, simplification of tax system and rational share of fiscal responsibility".

Borrowing from international practices, the government changed its approach from a turnover tax characterised by differentiated rates across types of products to a turnover tax system centred on VAT, complemented by a consumption tax and a business tax. Also the rule of setting income taxes according to the ownership of enterprises was changed; the income taxes of the state-owned, collective owned and private enterprises are now subject to the same tax, *i.e.* the enterprise income tax. The previous regime, according to which state-owned enterprises were required to pay a fixed income tax, is no longer in place. The income tax levied on domestic residents, the individual income tax on foreign citizens and the income tax on urban and rural private businesses were all unified into a single individual income tax.

Thanks to the reform, a tax system suitable for a socialist market economy has been established. Meanwhile, attention has been paid to the regulatory function of tax policy. For example, VAT on some agriculture products and on agriculture production materials was decreased or abolished.

Finally, moderately tight policy can lead to a structural adjustment by combing both tightening and expanding measures and by adjusting aggregate demand. Attention was also paid to adjust expenditure structure and strengthen support for the weak parts of the national economy, especially to sustain the agriculture development. From 1994, the Ministry of Finance established a national special reserve fund for grain, grain risk fund and by-products risk fund so as to protect the national grain reserves, to achieve price stability for agriculture products and to maintain farmer's production committment. Special funds have been arranged to replenish "vegetable baskets" and production bases of grain, cotton and oil.

3.1.3 Results of the moderately tight fiscal policy

The moderately tight fiscal policy implemented was counter-cyclical. Inflation was brought under effective control and the economy was back on a track of moderate growth. A "high growth, low inflation" economic situation was achieved which was a solid foundation for a sustainable, rapid and healthy development of the Chinese economy.

The Chinese economy had a successful "soft landing". The overheating was gradually eliminated and the fiscal and financial situation was improved.

Now, with hindsight, had the government failed to adopt a moderately tight fiscal and monetary policies, failed to achieve "soft-landing" of the economy and failed to establish a fiscal system to ensure stable fiscal revenue growth, the Chinese economy would have been unable to avoid a significant slowdown under the large-scale external shock that was the Asian financial crisis.

3.2 Pro-active fiscal policy (1998)

In 1998, the Chinese government decided to implement a pro-active fiscal policy, which was the second major shift in fiscal policy after China launched a socialist market economy. The pro-active fiscal policy is basically an expansionary fiscal policy. The choice to switch to a pro-active fiscal policy was important and made in a timely and resolute manner in a context characterized by an insufficient effective demand and deflation, after the outbreak of the Asian financial crisis.

3.2.1 Background

The pro-active fiscal policy was adopted in 1998 in an effort to address the impact of the Asian financial crisis on domestic economy. China had to face a very severe external and internal economic environment: foreign trade was severely attacked; consumption demand growth decreased; growth in investment demand was weak; prices were decreasing; structural imbalances became more pronounced.

3.2.2 Measures of pro-active fiscal policy

From 1998 to 2004, 910 billion yuan long-term treasury bonds for construction were issued. The development of infrastructure concerned six areas: irrigation, transportation and communication, urban infrastructure, environmental protection, construction and improvement of urban and rural power grids, and depots for national grain reserves. In the second part of the period, the government gradually increased the public investment in other areas, including western region development, technology reinforcement in main industries, high and new technology industry, returning farmland to forests (grass), education. More resources were devoted to striking the balance between urban and rural areas among different regions.

Technologically advanced enterprises which were affected by national industrial policies were allowed to deduct from the corporate income tax base 40 per cent of the domestically-made equipment they bought. In order to stimulate individual consumption, in November 1999 interest tax was resumed on resident deposits. Sales tax, contract tax and land appreciation tax for real estate have been reduced to encourage the housing market.

Other measures include: redistributing income to stimulate consumption, improving public finance and increasing transfer payments to central and western regions, optimizing non-tax revenues and expanding domestic demand.

3.2.3 Result of pro-active fiscal policy

First, investment continued to grow rapidly. Consumption demand, foreign trade and export kept growing at a fast pace. Overall, economic growth accelerated.

Second, the CPI and the Retail Price Index increased again after the deflationary period. Price indices of upstream products such as industrial products continued climbing up.

Third**,** transportation developed on an unprecedented scale. Construction of water utilities was bolstered remarkably. Infrastructure in rural areas was significantly improved. The pace of industrial upgrading and restructuring picked up speed.

In addition**,** ecological and environmental protection was increased in order to improve people's living conditions and promote the development of social undertakings. Urban infrastructure construction achieved notable results. Development of social undertakings such as education and sanitation remarkably gained ground.

Finally**,** revenue maintained the rapid growth momentum, and financial strength was significantly enhanced. The mechanism that guarantees a stable growth of revenue was further consolidated. The effectiveness of macro regulation was remarkably enhanced.

3.3 Prudent fiscal policy (2005)

In early 2005, the Chinese Government decided to implement a prudent fiscal policy, *i.e.* a neutral fiscal policy. This was the third major transition of fiscal policy in China's macroeconomic regulation since the country began to establish a socialist market economic system. It was not only an important decision made by the Chinese Government in response to new challenges, but also a way of effectively implementing the prescriptions of economic theory.

3.3.1 Background

Favourable economic conditions prevailed

After the implementation of the long-term market-oriented reform, the functioning of the market mechanism has been markedly enhanced. The prices of about 90 per cent of goods and services were determined by the market. Private sector became the main driving force of economic development. Non-governmental investments tended to be active. The income distribution mechanism started to reflect the relative role of production factors.

The economy moved from deflation and insufficient demand to a rough balance between aggregate demand and supply.

Finally, China's per capita GDP exceeded US$1,000 in 2003, and reached around US$1,200 in 2004. The focus of China's consumption shifted from foodstuff, clothing and household goods to housing, transportation and travel.

The economy stepped into the rising phase of a cycle of rapid growth

GDP increased by 9.5 per cent in 2003 and 2004. In the context of a rapid economic growth, bottlenecks and resource shortages emerged. Prices tended to increase. Increases of leading price indicators speeded up. The unemployment rate slowed down. The balance of payment recorded a surplus.

Structural problems in the economy emerged

Structural problems became conspicuous. Investments were overheated in some industries (real estate, iron and steel among them), whereas other industries were underdeveloped (agriculture, ecological and environmental conservation, education and social security). Disequilibria between urban and rural areas, between eastern and central-western regions, between man and nature became apparent. Structural contradictions became increasingly outstanding.

Economic growth pattern was in sharp contradiction with the shortages of resources and environment preservation. The transformation of the economic growth pattern was a priority on the agenda of macroeconomic regulation.

3.3.2 The implementation of the prudent fiscal policy

What the government used to define as a "prudent" fiscal policy is usually labelled in economics as a "neutral" fiscal policy. Similarly, what the government used to define as a "pro-active" fiscal policy is usually labelled in economics as an "expansionary" fiscal policy.

A neutral fiscal policy neither expands nor tightens aggregate demand. Generally speaking, under the conditions of equilibrium between aggregate demand and supply, relatively stable price and steady economic performance, it is reasonable to implement a neutral fiscal policy, reduce government's direct intervention and let the market mechanism fully play its functions. Neutrality does not imply a balance between revenue and expenditure.

The shift from pro-active (expansionary) to prudent (neutral) enables fiscal policy to better play its role in balancing social and economic development. The content of the prudent (neutral) fiscal policy can be summarized as controlling deficits, advancing reforms, increasing revenue and curbing expenditure.

Reducing the central government deficit is a way to signal the importance of macroeconomic stability and thus to prevent the renewal of inflationary pressure and the re-emergence of deflation. Keeping the deficit under control and having a good regulatory ability is necessary for the government to cope with unexpected events. A prudent fiscal policy does not imply a sudden elimination of fiscal deficits, but implies their gradual scale-down. This is consistent with the Chinese economic situation and helps to maintain economic and social stability.

The strategy of balanced development raises new requests concerning the allocation of fiscal resources. It requires a further adjustment of the orientation and structure of fiscal policy, a gradual reduction of direct public investment in commercial and competitive sectors, and an input increase in public services.

In order to create a sound and fair policy environment for the market and for economic development, the government promoted a series of reforms, such as: transforming production-based VAT to consumption-based VAT, accelerating the preparatory legislative work of unifying domestic and foreign corporate income tax systems, deepening the rural tax-for-fee reform, improving the mechanism of export tax rebate and improving income distribution, social security, education and public health.

4 Fiscal regulation in practice

Since 1993, the economy experienced three dramatic changes. Accordingly, fiscal policy underwent three adjustments. Chinese government adopted tight, pro-active and prudent fiscal policies successively, which greatly promoted sustained, rapid and healthy development of the national economy. Reviewing China's fiscal regulation in practice can help to better understand the fiscal policy framework.

4.1 Fiscal policy in a market economy

In a socialist market economy, governmental macroeconomic control has to be based on the principles and the rules of a market economy and so the market has to be the main player in determining the resources allocation. The purpose of macroeconomic control is to cope with market failures. As a major tool for governmental macroeconomic control, fiscal policy has to be performed in accordance with law of the market economy. Since 1992, when China set the goal of establishing socialist market economy, the Chinese government fully respected the working of the market in an efficient and effective way: it modified existing macroeconomic tools and introduced new ones. China's macroeconomic control system has been improving over time.

4.2 Macroeconomic control during the transition to a socialist market economy

In the course of establishing and improving a socialist market economy, fiscal management was adjusted in response to changes in the economic system. Macroeconomic control shifted from being direct to being indirect while the number of the macroeconomic tools increased.

4.2.1 Shifting from direct to indirect regulation

In the first ten years after China began to reform and open up its economic system, the macroeconomic regulation was implemented only via administrative measures, which directly affected the production activities of individuals at the microeconomic level. In the 1980s, the Chinese government began to consciously use fiscal and monetary policies as an indirect way to regulate the economic system. However, because of the constraints stemming from the administrative and planning system, at that time macroeconomic regulation failed to achieve satisfying results. It was only after 1992, when the government set the goal of establishing a socialist market economy and promoting market-based mechanisms, that macroeconomic management became effective. The three adjustments of fiscal policy since 1992 were instrumental in the successful transition from direct to indirect regulation.

To cool down the heated economy, in 1992 and 1993 China adopted a tight fiscal policy. Fiscal policy kept being tight up to 1997. Initially, direct administrative means kept playing the main role. For example, consumption of public institutions was strictly examined before being approved. But during the transition, more market-based mechanisms got more important over time.

From 1998 to 2003 the pro-active fiscal policy focused more on indirect management tools working via the issuance of Treasury bond, taxation, interest subsidy and income redistribution. Administrative tool were still used.

Since 2004 China began to adjust its fiscal policy. Though some administrative measures are still in place, indirect control measures replaced direct control as the major form of economic management.

4.2.2 Diversifying fiscal regulatory tools

Before 1993 China's fiscal management was dominated by administrative control. The available policy tools were also severely limited.

From 1993 to 1997 the Chinese government adopted tight fiscal policy while beginning to reform the fiscal and tax system. Budgetary policy generally and, in particular, the Treasury bond issuance, taxation, transfer payments and other similar measures aimed at enhancing economic growth.

From 1998 to 2003, even more tools for fiscal management became available. In fact, tax policy and income distribution policy were also used. In addition, there were both revenue and expenditure policies. Adjustment paid attention to both demand and supply. There were both development-oriented policies, that aimed at stimulating investment and consumption, and stability-oriented policies.

In 2004 attempts were made to curb the increase in fiscal deficits and to reduce the issuance of long-term Treasury bonds. Economic development targets and social development targets had the same priority. Short-, medium- and long-term strategies were combined. Tax reform and income redistribution system

reform were bushed forward. Evidence shows that fiscal policy tools are becoming more effective over time.

4.3 The key role of discretionary fiscal policy

The key to successful fiscal adjustment lies in correct forecasting, accurate analysis and good design of discretionary measures. That means fiscal policy has to take into account the circumstances and the agents that it is meant to affect.

4.3.1 Discretionary fiscal policy

In theory, fiscal policy can affect the economy either via discretionary measures or via automatic stabilizers. In practice, the turnover tax and the income tax are the main taxes in China. Direct taxation accounts for a small share of overall revenue. The opposite holds for the turnover tax. In these circumstances, the automatic stabilizers are not big enough. Therefore, the government has to closely monitor economic development and pro-actively and appropriately use fiscal policy to affect the economy. It is important to strike the right balance between the working of automatic stabilizers and discretionary measures.

4.3.2 Discretionary policy in practice

Discretionary fiscal policy has to be based on an accurate assessment of the current and perspective economic situation. Therefore, economic forecast and analysis should be improved in order to provide an adequate basis for decision-making purposes. The design of fiscal policy is decided depending on how revenue and expenditure are evolving over time and on revenue and expenditure targets. The expenditure policy has a more direct and faster impact on the economy than the revenue policy. Still, revenue policy plays an important role in sustaining economic growth. In practice, the fiscal policy tools change as the relevant economic circumstances change.

There should be coordination between fiscal policy and the other macro-management policies, such as monetary policy, land policy and industrial policy. Macroeconomic policies are those that concern both demand adjustment and supply management. Only trough coordination the various macroeconomic policies can be combined so as to be effective in achieving their goals.

5 The fiscal policy outlook

China’s fiscal policy framework can be understood only by understanding the country’s history, the present economic and social situation and perspectives. Moving further along the lines defined with the economic reforms will be very important in shaping and improving the fiscal policy framework. Some of the

reforms have already been enacted, and others will be implemented and completed in the coming years.

5.1 The role of non-fiscal revenue

The government will fully implement the tax reform and thus will create more room for using the tax leverage. The tax reform will be further developed in order to aim at "simplifying tax system, broadening tax base, lowing tax rates and enforcing tax collection". In the light of the lessons drawn from the pilot program on VAT reform in the North-Eastern area of China, the government will implement the VAT reform nationwide as soon as possible, applying the same tax regime to both domestic and foreign enterprises and improving the rural tax regime.

The government will replace some administrative fees with taxes, will levy a fuel tax and a real estate tax and will consider the possibility of converting the social insurance fee into social security tax. Depending on economic and social conditions and on the need to narrow the income gap, the government will start to levy heritage and gift taxes at an appropriate time.

The government has to assess the financial resources that could potentially stem from non-tax revenue, which played a minor role for a long time. In addition, in order to make administrative fee charges and governmental funds management more efficient, the government will increase the role played by non-tax revenue at the state level. Through these reforms, the ratio of fiscal revenue to GDP will be kept at a reasonable level.

5.2 The reform of fiscal management system

As a first step, the system of budget formulation has to be improved. This goal can be reached by: (1) improving the decision-making mechanism for budget resources allocation which is closely linked with the government macro-economic policies and the government's administrative objectives; (2) improving the system for recruitment of qualified staff which manages the budget and other projects; (3) speeding up the work to establish a standardized budget process and therefore ensuring standardized budget procedures for the National People's Congress, its Standing Committee, the government, the audit agency and other departments, in order to maintain effective budget compilation and execution.

The government will accelerate the reform which should lead to a centralized treasury account system and a centralised procurement system. The government will further strengthen the coordinated management of revenue and expenditure and will set up an appropriate monitoring system.

The government will build up and improve a system for assessing the impact and effectiveness of expenditure.

5.3 Improving the fiscal management system at the local level

At present the main public finance problem is that some provincial governments have failed to play an effective role in providing adequate financial resources to the local governments belonging to their area. Moreover, the financial difficulties at the county and township levels are worsening. Therefore, the provision of public services is getting inadequate and the development of social welfare in the rural areas is lagging behind.

In the near future the government, while continuing to improve the fiscal management of the existing tax-sharing system, will further improve the fiscal management system below the provincial level, will clarify the expenditure responsibilities of local governments below the provincial level, will appropriately classify the fiscal revenue of the local governments and will help to provide local governments with stable and adequate source of revenue.

The government will also expand the pilot program of fiscal management reform on "putting the counties under the direct administration of the provincial government" to reduce the layers of government, expand the administrative approval power at the county level and increase the effectiveness of fiscal administration and the use of funds.

In addition, the government will improve the pilot program to reform the fiscal management system at the town level. For the underdeveloped townships which have a small endowment of revenue, the approach called "township finance being administrated by the county" will be applied.

The government will also introduce a mechanism to induce provincial governments to increase transfers to their local governments and encourage the local governments to strictly limit the number of the government-paid employees and reduce administrative costs.

A budget review mechanism will be adopted. Based on the standard procedures, the provincial governments will provide guidance and review the budget of the counties under their direct administration and, in particular, the budget of those in financial distress.

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A NEW BUDGET RULE FOR GERMANY

Elke Baumann and Christian Kastrop[*]

1 Introduction

Though Germany has finally come out of its long economic stagnation in 2006, its public finances – although having become much better – are still in a "state of sorrow". Germany's public debt, meanwhile, amounts to around € 1,500 bn. The deficit was in excess of the 3 per cent deficit ceiling of the European Stability and Growth Pact from 2002 for four years in a row and was reduced only below it again in 2006. The Federation and a large number of Länder also could not comply with the respective – and quite generous – limits of net borrowing laid down in the constitutions. Looking only at the level of the Federation, debt equals to around € 900 bn. This leads to annual interest payments of almost € 40 bn or about 15 per cent of the expenditures of the federal budget. Having such a high public indebtedness narrows room for manoeuvre of fiscal policy and poses a heavy burden to future generations especially under the conditions of an ageing society and implicit debt.

As the current budget rule laid down in the Federal Constitution could not prevent the accumulation of debt which rather confines more and more the government's capacity to act, the political discussion has focused on a new budget rule since a while. First "practical" work in the Ministry started already in late spring 2006. This work has led to a central goal of Stage 2 of the Federalism Reform in Germany, carried out by the Committee on the Modernisation of the Financial Relations between the Federation and the Länder which was established in March 2007. This central goal therefore is to enact a more effective budget rule than the current one. The Federal Ministry of Finance now is still involved in the conceptual work about a new budget rule. We present here some latest principal thoughts of an internal project team of the Economics and Public Finance Department of the Federal Ministry of Finance with no means of claiming to reflect the views of the Federal Ministry of Finance as such. Now, end of 2007, the proposal presented to the Perugia Conference has passed and won several economic and political "checks" against competing models – e.g. the net-investment model of the Council of Economic Experts (CEE) – and has come close to be chosen as government proposal. Decision will be early 2008. After that the full-fledged technical preparations within the federal government and the negotiations with the Länder will go in the final phase.

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The views expressed are those of the authors and do not necessarily reflect those of the Federal Ministry of Finance.

Section 2 will deal with the status quo of the existing budget rule and the problems resulting of it. In Section 3, the two main concepts of how a budget rule can be designed are discussed. Our own proposal for a reform is formulated then in Section 4. The question, if a reform of the budget rule should be expanded also to the level of the Länder and what problems on this level might emerge, is dealt with in Section 5 before Section 6 concludes.

2 Status quo and problems of the existing budget rule

According to Article 115 of the German Constitution net borrowing is limited to the amount of (gross) public investment. Exceptions to this rule are only allowed in the case of a "disturbance of the macroeconomic equilibrium". Art. 109 II of the German Constitution has another, but similarly imprecise obligation, stating that the Federation and the Länder have to meet the concerns of the macroeconomic equilibrium in their budget management. This means that even within a macroeconomic equilibrium, public net borrowing is only allowed within the limit of expenditure for investment as long as this equilibrium is not endangered.

This budget rule was implemented at the end of the 1960s, the heyday of Germany's "Keynesian inspired" fine-tuning of fiscal policy. But the economic as well as the institutional general framework has changed since then which makes the rule in some aspects obsolete. Globalisation reduced the power of the instrument that once was seen as a global controlling mechanism. Secular decline of potential growth rates plus demographic changes lead – and most probably will do so much more in future – to challenges in the social security system concerning questions of intergenerational distribution. Last but not least, besides the Federal Constitution (and the respective constitutions of the Länder), now also the guidelines introduced by the European Stability and Growth Pact (SGP) have to be adhered to.

The changed general framework might be one of the reasons that contributed to the increase in public debt at the federal level. As the constitutions of the Länder have similar, in some cases even the same rules as the Federation, this might also have contributed to the rise in public debt at the level of the Länder and communities since the 1970s, exacerbated after German reunification when public debt increased much stronger than GDP.

One of the biggest, if not the biggest problem of this rule is that it reacts asymmetrically over the business cycle. While in situations of a "disturbance of the macroeconomic equilibrium", net borrowing is not limited any more, there is no corresponding rule for the opposite case, *i.e.* there is no obligation to reduce net borrowing or to create surpluses if the economy is in a situation with a positive output gap, defined as the difference between GDP and potential output relative to potential output. In the past, public expenditures rose and revenues decreased in economic bad times while there was no analogous behaviour in economic good times as there was no rule enforcing this.

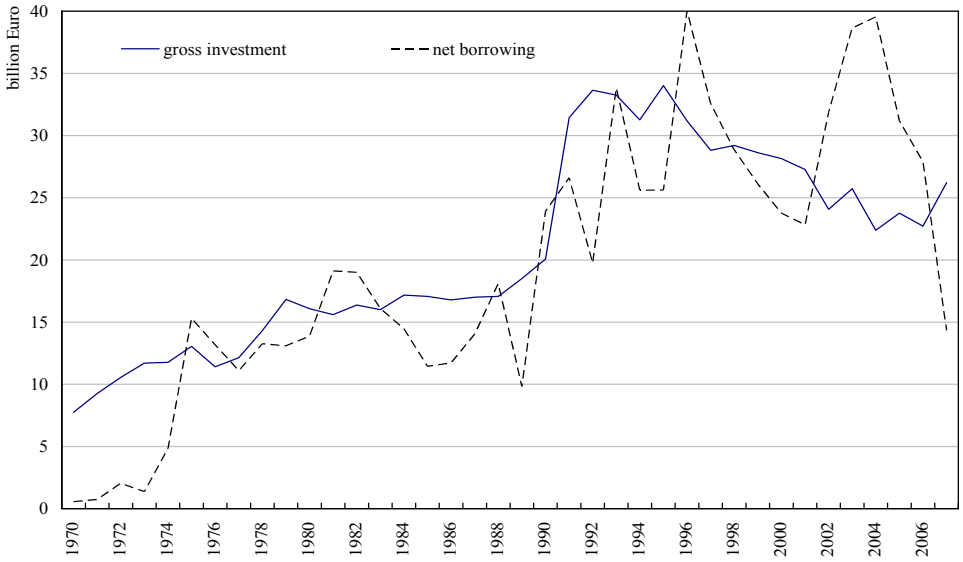
Second, the exception, *i.e.* the "disturbance of the macroeconomic equilibrium", never was clearly defined and therefore it is always difficult to decide whether – in case of referring to the exception – the macroeconomic equilibrium really is disturbed. There have been two judgements by the Federal Constitutional Court: one in 1989 about the budget in April 1981 and one in July 2007 relating to the budget in 2004. In 1989, the Federal Constitutional Court did not make a precise definition of the exception but stated that the legislator had a scope for judgemental evaluation in this question. The only obligation was that the assessment of the situation had to be based on economic data and backed by statements of the legitimated institutions of opinion making in financial and economic policy (Financial Planning Council, Business Cycle Council, Council of Economic Experts, Deutsche Bundesbank). Besides the assessment had to be traceable and justified by the perceptions of economic theory and public economics. Ultimately, in case of a dispute, it is the Federal Constitutional Court itself that has to examine and evaluate the question if the assessment of the legislator was traceable und justifiable.

All in all these "incentives" made it also relatively easy for the political class to solve political or economic pressure from all sides simply by increasing structural debt behind the veil of "macroeconomic equilibrium" and "intergenerational burden sharing". Political short term rationality here led the wrong way, a way which for some decades seemed to be without major negative impact on economy and therefore again was used to "finance" German unification. But also almost two decades later, this track was not abandoned.

Net borrowings of the Federation from 2002 until 2005 – and even in the proposed budget for 2006 – exceeded the limit defined by the investment expenditures sometimes by far; this was also true for some of the Länder in recent years. While in 2002 and 2003, net borrowings of the Federation exceeded investment expenditure only in the supplementary budget, in 2004 the excess of the limit was already in the original budget. In all cases this was officially justified by a disturbed macroeconomic equilibrium. Because the opposition parties at that time, the CDU/CSU and the FDP, reasoned that there was no disturbance of the macroeconomic equilibrium they filed an action against the 2004 budget. In 2005 the government did not have to prepare a supplementary budget, and saved to rely again on the argument of a disturbed macroeconomic equilibrium because it still had credit authorizations from former years that had not been used. Finally, in 2006 again the government justified higher net borrowing exceeding investment with the disturbance of the macroeconomic equilibrium though there had already been some signs that the economy was recovering. But also in the years before 2002, the exception to the existing budget rule was used without having a clear-cut knowledge about whether the macroeconomic equilibrium really was disturbed. In almost half of the years since 1970, net borrowing was higher than gross investment, *i.e.* the rule given by the Constitution was broken (Figure 1).

Figure 1

Gross Investment and Net Borrowing of the Central Government



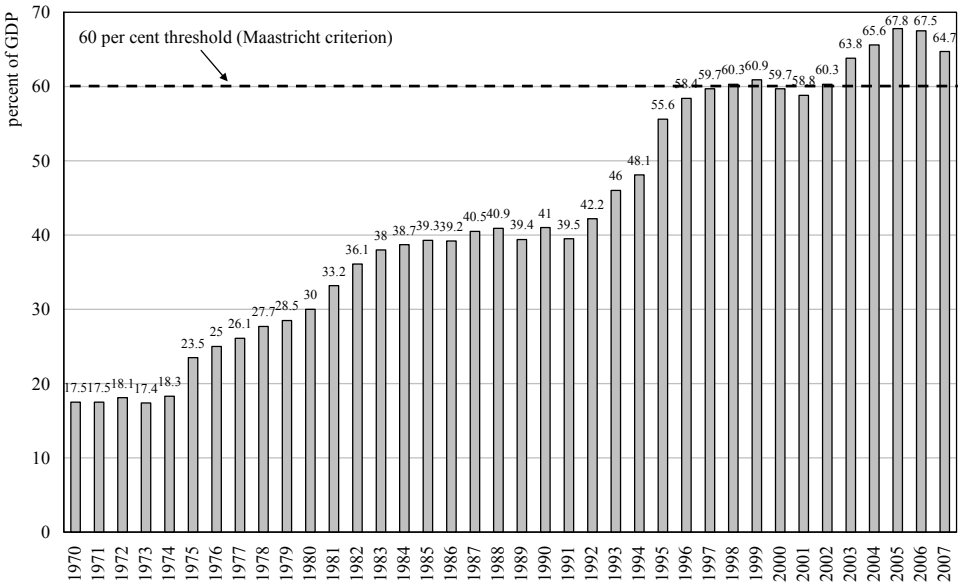
Source: Federal Ministry of Finance.

The marked increase in the central government's indebtedness from 17,5 per cent relative to GDP in 1970 to 67.9 per cent in 2006 could not be prevented (Figure 2). With rising interest payments room for manoeuvre was reduced dramatically. Moreover, a clear causality between this budget rule as a form of golden rule and investment could not be observed.

Besides, Article 115 of the German Constitution more and more turned out to be incompatible with the SGP though in some years like 2006, the deficit was below the 3 per cent criterion and therefore in line with the rules laid down in the SGP while net borrowing was still exceeding gross investment. Beyond this, the existing budget rule with rising public debt going along with it is not in line with the objective of long-term sustainability. But the current budget rule can be criticized also methodologically from different points of view. The investment concept for example relates to gross investment as the limiting factor. By neglecting depreciation of the public capital stock, the limit for net borrowing is set too high and does not make sense economically. Moreover, there is no enforcement during execution of the budget which can make the establishment of the budget to be a farce. But even in case of a definite violation of the rule, there are no direct sanctions, maybe only indirectly by the decisions in the next elections. However, as a decision by the Federal Constitutional Court is being made only with a time lag of several years, even the voters' decision is not really an indirect enforcing mechanism.

Figure 2

General Government Debt
(percent of GDP)



Source: Federal Statistical Office; own calculations.

On 9 July 2007, the Federal Constitutional Court again dismissed the action of an unconstitutional budget, this time for the year 2004. The Court acknowledged that the reasons and actions of the former government had been traceable and justifiable. But the Court also assessed that the existing budget rule was in need of a reform though not going into any detail about how a reformed rule should look like. In contrast to the decision in 1989, the Court did not give any further guidelines and it neither gave a delay until when the government must have reformed the existing rule.

As a consequence of the increasing public debt and the non-conformity with the SGP – together with the increased consciousness about the necessary consolidation that should and could not be postponed any more –, but also because of the judgment of the Federal Constitutional Court, a vivid discussion started in the public about a reform of the existing budget rule. One of the prior goals of the Committee on the Modernisation of the Financial Relations between the Federation and the Länder that was established by the Presidents of the Bundestag (Lower House) and the Bundesrat (Upper House) in March 2007 therefore is the formulation of a new budget rule. Given the economic and fiscal situation of Germany and the current majority situation of parliament, chances for a binding decision for a reform

– that needs a change of the Constitution – together with a fixed date of coming into effect are as good as never. For the short term, the cyclical improvement of the fiscal stance led to compliance with the existing budget rules (German Constitution and SGP). This allows for a structural improvement of revenues in the medium term by substituting one-off measures by tax revenues. This also guarantees broad acceptance by the public.

3 Concepts of a new budget rule: golden rule versus balanced budget in the medium term

Basically, there exist two different concepts of a budget rule. The idea of the golden rule of fiscal policy is to limit public net borrowing to the amount of public net investment. Contrary to that stands the transformation of the SGP approach on the EU level, a rule aiming for a balanced budget that enforces net borrowing to be (close to) zero in the medium term, except for automatic stabilizers in the short term.

The idea behind the golden rule is the classical and theoretically correct economic assumption that public investment is accompanied by an asset accumulation which is also of use for future generations such that it is justified that these bear a share in the costs arising in the financing. The underlying rationale is that productive public investment raises potential output per capita in future. Besides Germany that follows a modified golden rule in that gross public investment is the restraining factor, the UK, Australia and New Zealand apply the golden rule. Other countries that introduced this rule in the 1950s and 1960s, like Belgium, the Netherlands and Sweden, have given up the golden rule in the course of time. Another difference between Germany and, for example, the UK is, that while the limit of the budget has to be observed in Germany every year, the rule in the UK has to be followed over the medium term financial planning only. In order to ensure sustainable public finances, there exists a so-called sustainable investment rule in addition which states that the public debt ratio must be kept below 40 per cent of GDP.

Theoretically, a golden rule can be optimal if otherwise, *i.e.* if public debt was prohibited, public investment was below the socially optimal level; if there were – in the presence of political or institutional restrictions – incentives to cut productive public investment, or if – seen from a point of view of fairness – intergenerational redistribution in favour of today's generations and at expense of the future's generations was felt adequate. Without really knowing what the socially optimal level of public investment is, Figure 1 shows a clear downward trend of public (gross) investment since German reunification in spite of having a kind of a golden rule. One of the reasons certainly was that these expenditures are the easiest to cut. Even worse, the reduction of public investment came along with an increase of public debt, punishing future generations from two perspectives.

Not only because of this experience is the golden rule criticized. One of the major problems associated with the golden rule is the problem of how to define

investment. In practice, it turns out to be technically difficult to determine the precise depreciation rate. Besides the determination might be prone to manipulation as there is an incentive to underestimate these rates. In Germany, an additional problem is that also governmental investment grants for the private sector or for other countries are counted as investment. In neither case, however, a (direct) net wealth increase at the government level is involved. Another problem with a correct classification of the investment term is that there is some expenditure that is classified as consumptive public expenditure but it has an investment characteristic, e.g. expenditure for R&D or education. A golden rule that does not include this kind of expenditure as investment could lead to incentives to diminish these expenditures to a level below the socially optimal one.

As in Germany education is a matter of the Länder, this question is not so much of relevance for a budget rule on the level of the Federation. But counting all education expenditures as investment would widen the debt limit for the Länder considerably. On the level of the Federation this would amount largely to the non-investitve allocations of funds to the Länder for research institutions of the so-called Blue List (Scientific Community Gottfried Wilhelm Leibniz, an association of German research institutes of different specialisations) – with only about € 320 m in the budget – as well as the allocations for the support of R&D of private enterprises within the governmental programs of research and innovation.

The difficulty arising with the inclusion of education expenditure is that in order to include net investment correctly, one has to determine the depreciation of human capital. This is very difficult, and there are only a few studies trying to do so. They point to a very high depreciation rate (see examples given in Sachverständigenrat, 2007, p. 130). Together with the very low correlation with the outcome – empirical studies find no or if at best a very weak relationship between the amounts invested in the educational sector and the outcome (see the zero or even negative correlations between the PISA results and education expenditure e.g. in Sachverständigenrat, 2004, p. 578, or Hanushek, 2002) – this suggests allowing for education expenditure as investment expenditure and thereby increasing the tolerable level of net borrowing only in a very restrictive manner. These and other difficulties led the Advisory Council to the Federal Ministry of Finance (1980) as well as the Federal Constitutional Court in its judgement about Article 115 of the German Constitution (1989) to decide against including education expenditure in the investment concept.

An imminent – and again creating a political incentive to spend with "good reason" – danger involved with the question of the correct definition of the investment term is that it might open the floodgates to a discussion of including other non-investment public expenditures as, for example, in the health sector, for childcare or for security reasons as they could be interpreted as investment in the future and preconditions for economic growth. Even a narrowing of the investment term could involve a discussion and wet the appetite.

Another problem with the golden rule is that – though it follows the principle of intertemporal equivalence – it is accompanied by a growing sustainability gap in

the face of demographic changes witnessed in many industrial countries, especially in Germany. Adding to the fact is that investment is depreciated with a shrinking population. In so far, a golden rule does not obey sustainability principles in an ageing society.

These facts speaking against a golden rule have to be seen together with the robust result of economic theory which holds that debt financing of public expenditure – no matter if this is used for consumption or investment – burdens future generations and leads to lower growth. This is true at least for the plausible case in the long run that the interest rate is greater than the – secular shrinking – potential growth rate. Desired redistribution effects to the detriment of future generations are then the only justification for long-term debt financed public expenditures. These effects, however, are counteracted in an ageing society by the burden that future generations have to bear in the face of the demographic change especially in the systems of social security which is merely on a pay-as-you-go-basis.

Aside from the intergenerational problem, a golden rule neglects the productivity of the private investment being a substitute to public investment. Though public investment might encourage private investment and increase their productivity, the opposite effect is possible as well depending on the kind of investment and the existing capital stock. In this case the waiving of public investment, together with less debt and less future tax burden, might lead to more productive private investment.

Finally, the analogy to the private sector concerning return on investment is limited. While the economic profitability of an investment project of a private enterprise has to show up at least in the long run in financial returns, public investment does not have to.

In the face of all these problems with the golden rule, there are a lot of arguments in favour of a structurally balanced budget in order to guarantee sustainable public finances and to limit net borrowing. While a golden rule allows net borrowing at the amount of public investment, net borrowing with a rule following a structurally balanced budget is allowed only for cyclical reasons (automatic stabilizers), and there must be additional saving efforts in the case of a cyclical upswing. The consequence is a reduction in public debt relative to GDP. Even a budget rule that is less restrictive, but still in accordance with the SGP – e.g. the “close to balance”-rule which allows for Germany for example a minimal structural deficit of 0.5 per cent of GDP – would be much more advantageous than the current rule. Finally, the quality of public finances is also guaranteed in a structurally balanced budget rule. It might be even superior to the golden rule as it does not have a bias towards “physical” capital formation. This rule would oblige the legislator to shift the expenditures to those of “high quality” that are viable for the future, independent of them being classified as investment or consumption expenditures. Here the new deficit regime meets or is even part of the “Quality of Public Finance” Agenda, now developed in Germany, in many other countries and on the level of the EU.

4 Criteria and proposal for a new budget rule

Independent of how a new budget rule looks like, a budget rule has to fulfil certain indispensable criteria. First, there should be an effective limit for (structural) net borrowing. Second, the rule should be such that on the one hand it provides for stabilization over the business cycle and that, on the other hand, it provides for sustainability of public finances in the long run. Moreover, the budget rule has to be compatible with the SGP. Additionally, it must have an enforcement mechanism to allow for control not only *ex ante*, *i.e.* with the establishment of the budget, but also after execution of the budget. Finally, the viability of the rule has to be guaranteed by having an exception clause in case of an emergency case. These essential criteria must be embedded in a budget rule that is technically and legally feasible. Further aspects that have to be taken care of are the appointment of a starting point and the answer to the question if a transition path to the new budget rule should be defined. As a special problem of Germany's federalism, federal aspects also have to be taken account of.

As the previous Section has pointed out, there are a lot of arguments against a budget rule relying on the golden rule concept. This holds especially for the case of Germany where a necessary new definition of the investment concept might involve serious problems. This is one of the main differences to the proposal of the German Council of Economic Experts (CEE) that was published in its expertise by order of the Federal Minister of Economics and Technology on *Limiting Government Debt Effectively* (Sachverständigenrat, 2007) in Spring 2007 where it defends the (net) investment concept. A prominent supporter of a renunciation from the golden rule is the Advisory Council to the Federal Ministry of Finance which advocated its position in a letter to the Federal Minister of Finance in July 2007 (Wissenschaftlicher Beirat beim Bundesministerium der Finanzen, 2007). But besides relying on the investment concept, the CEE also introduced in its proposal a component for cyclical adjustment close to the so-called debt brake in Switzerland that was proposed in 2000 (Schweizerischer Bundesrat, 2000) and realized in 2002.

In our view, a new budget rule should be specified that is compatible with the "close to balance or in surplus" approach of the SGP – while it also shows some similarities with the Swiss debt brake – according to the following principles. First and as the main principle, the budget must be balanced in general in revenues and expenditures without net borrowing.

Second, the new rule should provide for a stabilizing role of budget policy over the business cycle. Allowing automatic stabilizers to work assures that the budget rule reacts symmetrically over the business cycle. In case of divergences from potential output, cyclical adjustments in net borrowing therefore should be allowed. A cyclically caused increase in net borrowing or a lower surplus, respectively, should be possible with a negative output gap while net borrowing is to be reduced/diminished by cyclically caused excess revenues or reduced expenditures or a fiscal surplus has to be realized in a situation with a positive output gap, respectively. This symmetry over the business cycle prevents additional room for net

borrowing in bad times to lead to a systematic increase of public debt in the long run. The symmetrical consideration of the business cycle was also demanded by the Federal Constitutional Court: "It is necessary to develop mechanisms that guarantee the necessary balance of the budget over several fiscal years... The choice and institutionalization of rules that … counteract conveniently the incentive to postpone balancing burdens on future legislations … is the task of the legislator who is able to change the Constitution".

Cyclical adjustment is already used in the application of the SGP in order to control for and evaluate the medium term objectives (MTO) of the budget, the adjustment steps leading to the MTO, and recommendations of the European Council to the member states in the dissuasive arm of the SPG concerned to correct an excessive deficit and the time frame for doing so.

While in the concept of the CEE as in the Swiss model the cyclical component is calculated with the Hodrick-Prescott filter, we propose to go hand in hand with the SGP and apply the production function approach in order to estimate potential output. This is the reference method agreed by the European Council on 12 July 2002.[1] However, as potential output is an unobservable variable, there is no single correct estimation approach and therefore neither a unique result. The Hodrick-Prescott-filter method is a purely statistical one; the production function approach is based more on economic theory. These as well as other methods in general lead to similar results though the output gaps might differ even in sign in certain periods. All methods also have the problem that values for former periods are revised where a change in the sign of the output gap might also appear here.

Cyclical adjustment then is applied as follows. The cyclical component of the fiscal balance is calculated as the product of the budgetary sensitivity and the output gap. Budgetary sensitivities, *i.e.* the elasticities of the budget deficit on a change in the output gap, have been derived for the European Commission by the OECD in a sophisticated approach (André and Girouard, 2005). Cyclical components of the budget according to the SGP are tax revenues, social security contributions, and labour market expenditures. The result for Germany has been evaluated also in a separate work by the Ifo Institute (Büttner *et al.*, 2005). The general government budgetary sensitivity obtained by the OECD for Germany of 0.5 was confirmed by the Ifo Institute. The analysis also showed that about 50 per cent of the cyclical component can be attributed to the federal budget and 50 per cent to the budgets of the social security system, the Länder and the communities. Subtracting the cyclical component from the fiscal balance leads to the cyclically adjusted fiscal balance. This means for example that an output gap of –1 per cent results in general in a cyclical component of the budget deficit of 0.5 per cent of GDP. In addition, in order to be compatible with the Maastricht definition, this amount must be corrected for net financial transactions (mainly privatization gains).

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[1] Cyclical adjustment is stipulated by law in Council Regulation (EC) No 1467/97 (OJ 1467/97, OJ 1056/2005) on speeding up and clarifying the implementation of the excessive deficit procedure.

Third, the medium-term objective of the SGP has to be observed. Therefore, net borrowing must be limited to the medium term objective of the SGP ("close to balance or in surplus") which tolerates a maximum structural deficit of 0.5 per cent of GDP for the general government. This is in order to guarantee durably sustainable public budgets and therefore to comply fully with the Code of Conduct of the revised SGP which states: "Member States should achieve a more symmetrical approach to fiscal policy over the cycle through enhanced budgetary discipline in periods of economic recovery, with the objective to avoid pro-cyclical policies and to gradually reach their medium term objective, thus creating the necessary room to accommodate economic downturns and reduce government debt at a satisfactory pace, thereby contributing to the long-term sustainability of public finances. The presumption is to use unexpected extra revenues for deficit and debt reduction".[2]

As the Federation and the social security system take about 70 per cent of the cyclical fiscal balance – as measured by tax revenues – we propose a breakdown of 70:30 between the Federation and the Länder. This would mean 0.35 per cent of GDP for the Federation, *i.e.* a tolerated Maastricht-deficit of about € 8½ bn at the moment. The allowed net borrowing ceiling or the required minimum fiscal surplus, respectively, then is the cyclical component of the budget minus the sum of 0.35 per cent of GDP and net financial transactions.

Because in the long run, public debt in percent of GDP will be reduced to far below 60 per cent, our approach – as well as that of the CEE – allows for intergenerational justice and future viability. Debt reduction can be used to cover implicit liabilities and as such makes an important contribution to long-term sustainability of public finances. Decreasing public indebtedness relative to GDP also opens room for manoeuvre such that expenditures can be shifted towards tasks relevant to the future. This improves the quality of public finances.

An exception clause to the general rule should be formulated for specific emergency cases only. In order to overcome an extreme crisis, e.g. a natural disaster, coupled with a severe economic downturn, a two-thirds majority or an even higher quorum of the Lower House might allow extra room for net borrowing.

In terms of enforcement, there is a need for monitoring and setting incentives not only for the establishment but also for the execution of the budget. Deviations from the allowed expenditure ceiling or the minimum fiscal surplus, respectively, defined by this budget rule will be put on a special account, the so-called balancing fund, which acts as memory and as buffer if non-compliance with the rule is established *ex post*. The balancing fund therefore links the establishment with the execution of the budget, a link that so far is missing in the current budget rule. But only such a link creates a real commitment and makes the budget rule credible and enforceable.

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[2] *Specifications on the implementation of the Stability and Growth Pact and Guidelines on the format and content of Stability and Convergence Programmes*, 2006, ec.europa.eu/economy_finance/about/activities/sgp/codeofconduct_en.pdf

Deviations of the actual from the minimum fiscal balance are accumulated over the years in the balancing fund. However, the minimum fiscal balance might change over the course of the fiscal year compared to the one that was forecasted at the time of the establishment of the budget due to another economic, *i.e.* cyclical development than forecasted. This must be taken into account. The logic behind the concept presented so far would be to estimate again potential output and compute the output gap by using realized GDP data. The disadvantage of this approach, however, would be that due to the uncertainty underlying this unobserved variable, there were permanently revisions that could be very huge, deviate in both directions over time and sometimes would not be plausible, at least against the background of the available information at the point of time when the budget was established. A more pragmatic approach would be to correct the cyclical component by the deviation of the actual growth rate of GDP from the forecasted one. As Figure 3 shows, deviations from targeted to actual figures go – except for 2001 and 2002 – into the same direction for both variables. A similar approach was chosen in the assessment of the excessive deficit procedure for Germany. This would mean, for example, that with a forecasted real GDP growth of 2.0 per cent, but a realization of only 1.0 per cent, the one percentage difference between these two rates would be multiplied by the budgetary sensitivity and the share of the Federation. The same is true for the opposite case if the forecasted GDP growth was more pessimistic than the realization. This so-called *ex post* additional cyclical component will then be added to the *ex ante* cyclical component and either reduces or increases the minimum fiscal balance that is not relevant for the balancing fund.

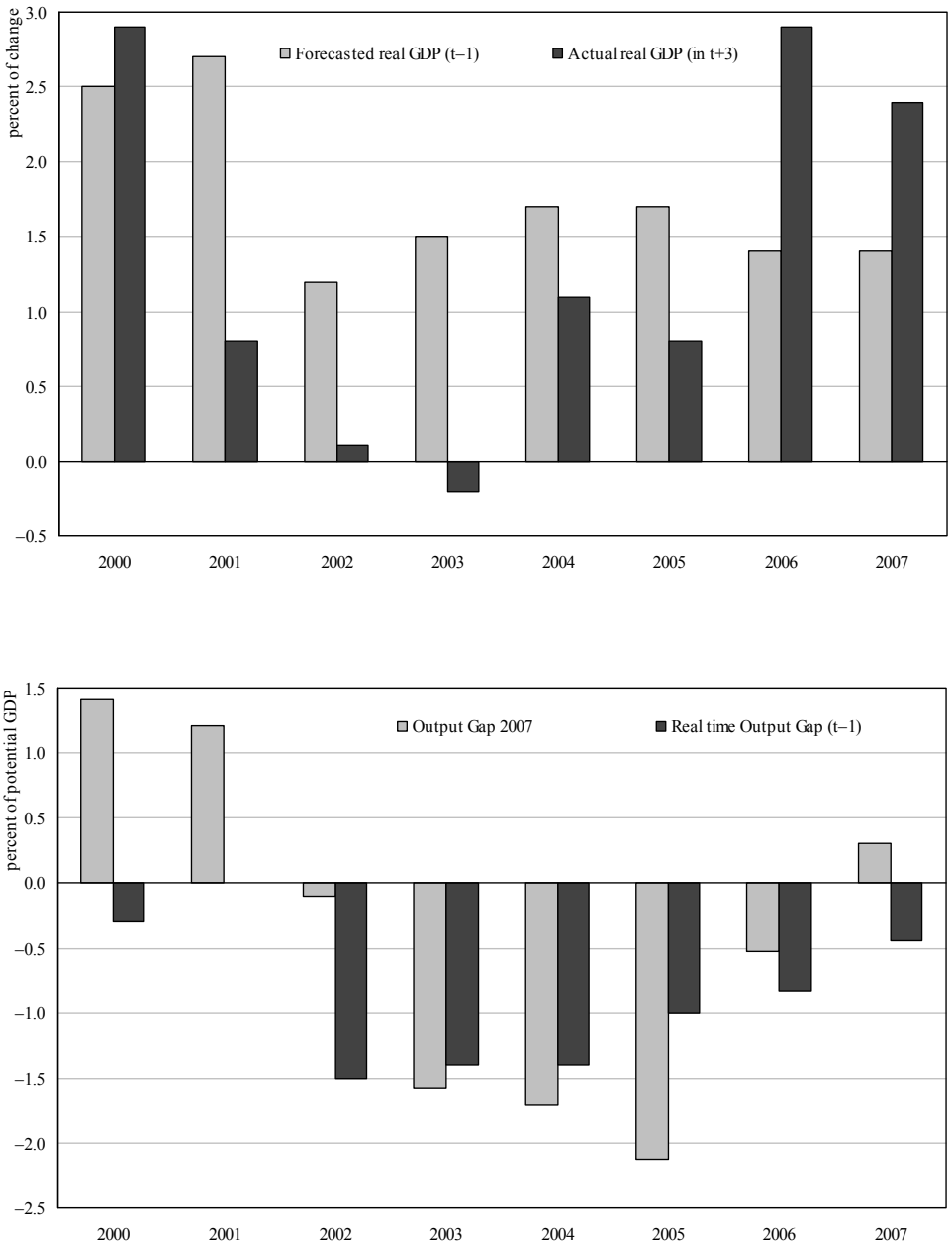
A first target-performance comparison will be made as soon as there are preliminary results for the budget and GDP growth of the fiscal year. The balancing fund, however, will be updated with the revision of GDP figures until these are final which is only three years later. Further revisions in the context of so-called big SNA revisions will not be accounted for as long as they come after the cut-off year $t + 3$. This means that the balancing fund is final for a certain fiscal year only three years later.

Nonetheless, possible policy measures in case if the debit side is in excess of a defined threshold level have to be tackled as soon as an excess is observed. Consolidation measures have to be introduced such that the debit side falls below the threshold level again in a specified time. In case of a credit in excess of the positive threshold level public debt can be reduced by this amount. The threshold amount could be set at 1 per cent of GDP, for example. A backward simulation of this rule to the years 2000 until 2007 shows, that this level would never have been exceeded on the debit side. This simulation was done under the assumptions that the allowed net borrowing was bailed out *ex ante*, *i.e.* at the time of budget establishment. Deviations between targeted and actual net borrowing equal the actual deviations in the past (taking account of net financial transactions).

However, there remains at least one problem with the cyclical adjustment: the application of constant budgetary sensitivities resulted in huge estimation errors in the past. Especially taxes on profit fluctuate at cyclical turning points much stronger

Figure 3

Deviations from Targeted to Actual Figures



Sources: Federal Statistical Office, Autumn Forecasts of the Federal Government, EU Commission for output gap.

than predicted by standardized methods of cyclical adjustment. This might lead to a higher share of non-cyclical additional tax revenues or a non-cyclical short-fall of tax revenues than justified in fact. Therefore, the balancing fund might contain also cyclical parts that in principle should not be accounted there. One solution might be to increase the threshold level of the balancing fund by an "uncertainty margin". But there still needs to be done some research in this field before deciding how to take care of this problem.

In general, however, this is no problem that should be seen as an impediment to the rule becoming effective. As pointed out above, the window of opportunity to introduce a new budget rule should be used now. And as the general government budget will be structurally balanced in 2011 according to the budget plan, there seems to be no need to think about an adjustment path until the new budget rule can work. As such, the new rule would become effective when the budget is structurally balanced.

5 New budget rules also for the Länder?

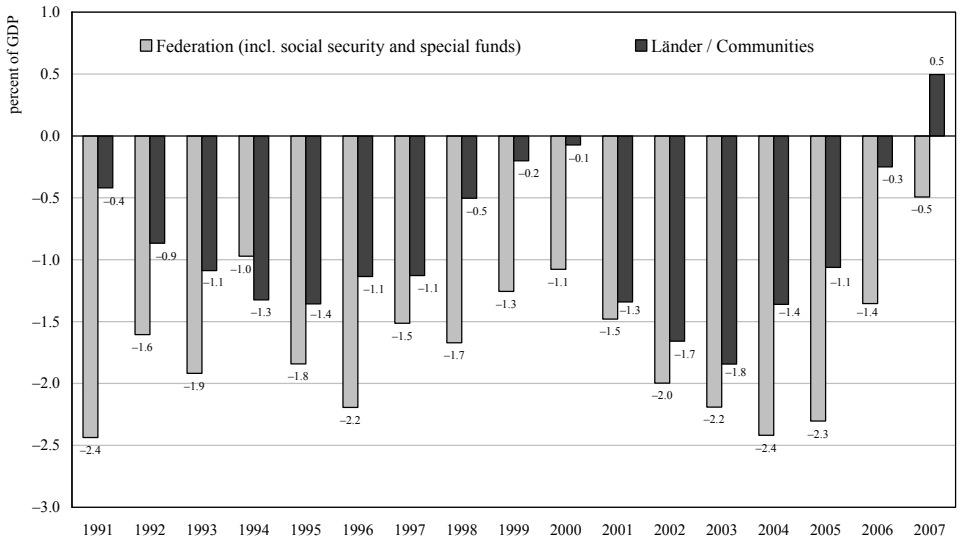
Federalism in Germany poses a special challenge on how to fulfil the requirements of the SGP. Twelve of the 16 Länder – including all of the new Länder – have copied the rule of Article 115 of the German Constitution to their own constitutions. Additionally to the problems on the level of the Federation, the isolated use of the exception in case of a "disturbance of the macroeconomic equilibrium" by the Länder is inefficient.

As the SGP demands budget discipline for the general government and the Federation takes the responsibility against the EU, it might be politically desirable to have a budget rule that covers not only the central governmental level, but also the level of the Länder (communities structurally should have no deficit). In general, there is no technical problem to translate the budget rule into all levels of government though there is no necessity for fiscal policy reasons to do so. As tax revenues among the Länder are equalized by the financial equalization scheme between the Federal Government and the Länder, there is no relation between regional GDP and regional tax revenue. The cyclical component therefore could be distributed according to the distribution of the tax revenues after financial equalization which corresponds to distribute the cyclical component by the share of the population.

Indeed, on the one hand, as shown in Figure 4, the main problem, *i.e.* the higher contribution to the deficit, is due to the central government. But on the other hand, a translation of this budget rule to the Länder could lead to problems as starting conditions and therefore also the time path to a structurally balanced budget differ throughout the Länder: While some of them have a balanced budget or even are in surplus, others have a distressed budget; the eastern Länder additionally receive special equalization payments by the Federal Government.

Figure 4

Fiscal Balances (Maastricht Definition) by Governmental Levels
(percent of GDP)*



* differences due to rounding.
Source: Federal Statistical Office; own calculations.

The Länder themselves started the discussion about a reform, voicing different proposals. The ideas for a reform of the budget rule, especially concerning its strength, differ among the Länder, some of them even advocating for a prohibition of any amount of debt while others might agree to this kind of budget rule only if they receive additional payments by the Federation or the equalization scheme between the Länder in order to achieve a balanced budget. So it seems to be difficult to find a unanimous solution. Especially it is a problem that the financial weakest Länder link this theme with a general or partly relief of accumulated "old debt" or at least to debt service assistance from the Federation or from "rich" Länder, which the Federation cannot and will not accept. In the light of the high debt of the Federation itself it is not realistic that the Federation would settle payments in order to eliminate public debt obligations of the Länder.

But in general, there is no need for fiscal policy reasons to copy the budget rule of the Federation 1:1 to the Länder. Modifications are at the Länder's discretion as long as the results are compatible with the SGP. Even now the debt limits differ over the Länder with heterogeneous formulations in the respective constitutions. As the Länder and communities in aggregate are in surplus already, it is however essentially a problem of the Federation to limit new debt. A new stricter rule for the

Federation will anyway put political pressure on the Länder not to be much looser in their debt regime.

The main task of the Länder merely is to introduce a preventive arm in order to prevent financial distress of single Länder. This could be for example an early warning system that formulates a concept of financial restructuring for a Land in distress.

If the Länder should copy the new budget rule, the CEE suggested modifications for sanctions: instead of automatic tax increases as proposed for the Federation, at the level of the Länder, revenues should to be used for repayment. Because of the fiscal equalization scheme, there should neither be an exception to the rule in case of severe economic downturns.

6 Conclusions

As the analysis has shown, a reform of the existing budget rule is inevitable. Economic and fiscal conditions as well as the political environment of a grand coalition are right now very favourable for a reform and should be used as soon as possible. As the reform of a budget rule is both one of the main topics of the Committee on the Modernisation of the Financial Relations between the Federation and the Länder and a task being given by the Federal Constitutional Court, chances of realization are good, too.

Though it seems to be clear that a new budget rule will be introduced, the question however remains about its format. The dialogue on the political level has started and ideas have already been transmitted there. The link of the budgetary process to the business cycle is not new. What is new is the link to econometric methods that would mean to tread uncharted trails in budget policy. Another innovation would be the introduction of a link between the establishment and the execution of the budget in the form of the balancing fund. The case of Switzerland shows that this is technically as well as politically feasible. But this demands great political commitment and to renounce discretionary measures.

Beyond the necessary political commitment, there remain, of course, still some unsolved questions about the technical realization if the budget rule will be reformed in the sense lined out above. These concern especially the design of the balancing fund and how it works. In case of an excessive debit side of the balancing fund, accumulated net borrowing could be reduced according to the accepted obligation of annual reduction within the SGP, for example. This would mean a reduction of the deficit by 0.25 per cent of GDP per year. An automatic tax increase as suggested by the CEE might be neither politically desirable nor making sense from an economic viewpoint nor probably marking a credible threat to politicians not being reelected. The formulation for the Constitution also poses a challenge. But we think that these all are manageable challenges. The gain of a credible commitment to sustainable public finances should by far outweigh its costs.

Last but not least all this has to be fed in the daily work of preparing, executing and controlling the budget. Parliamentarians of all colours now seem to accept Germany needs a new stricter debt rule which will also diminish or self-restrict Ministers and/or MP's power to spend. Nevertheless, it is a paradigm change, more complex and less transparent, more "economistic" than the old rule everybody is used to. So it will take time to overcome still existing scepticism, to implement the new system and of course this presented blue print will have changes and further developments. Nevertheless we are convinced that this new model will win political and public acceptance via the results it will bring for public finances and therefore also for growth and sustainability.

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DO BUDGET INSTITUTIONS MATTER? FISCAL CONSOLIDATION IN THE NEW EU MEMBER STATES

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1 Introduction

On 1 May 2004, eight central and eastern European countries (Lithuania, Latvia, Estonia, the Czech Republic, Slovakia, Slovenia, Poland and Hungary) joined the European Union. Two small island states, Cyprus and Malta, were also incorporated, while two other countries belonging to the erstwhile zone of Soviet influence, Bulgaria and Romania, joined at the beginning of 2007.

Prior to achieving full membership, the majority of these countries had to implement difficult and intensive economic and institutional reforms, aimed at fulfilling the three principal requirements for their accession: to conclude and complete the transition to a market economy, to develop institutions favouring democracy and the defence of human rights, and to fully incorporate EU legislation.

A considerable part of the reforms undertaken by these countries were, in addition, related to their complete transition towards a market economy and their full integration into the EU internal market. Similarly, the majority of the new member states implemented economic and budgetary reforms aimed at progressively meeting the Maastricht criteria, with a view to future integration into the euro, an objective which has to date only been achieved by Slovenia.

Despite the efforts made, advances toward fiscal consolidation should be considered as somewhat modest. Most progress was made during the second half of the 1990s, in which the average public deficit fell from 4.6 to 2.4 per cent. Prior to accession, the public deficit rose, to then fall by a further percentage point at the end of the study period.

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The fiscal adjustments undertaken varied considerably between countries. On the revenue side, most made significant efforts to increase their public revenue, using two main strategies. One was the massive privatization of public companies inherited from the old planned economy model, while the second was the broadening of the taxable bases corresponding to previously established income taxes, in addition to the introduction of value added taxes, the improvement of tax collection systems and the implementation of intensive plans to combat tax evasion.

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

In conclusion, it should be emphasised that while some candidate countries consolidated their public finances to an acceptable degree, others still have important reforms pending. Furthermore, significant differences can be observed in the adjustment strategies designed and applied in the different states. Thus, while various countries, such as Bulgaria, decided to make shorter, sharper adjustments, others opted to implement them more slowly and gradually. In addition, it is clear that some countries, such as the Czech Republic or Slovakia, designed their consolidation processes on the basis of strategies which were generally aimed at improving revenue collection. Others, such as Hungary, Lithuania or Poland opted instead for expenditure-based adjustments.

In order to explain the differences observed in fiscal adjustment strategies, the literature has typically referred to institutional factors related to the forms of fiscal governance,[1] or to factors of a political and economic nature. From among the latter, the literature has almost invariably highlighted the influence of the economic cycle, the accumulated level of debt and the tone of monetary policy, together with the role of the electoral calendar, the ideology of the party in government and the degree of fragmentation in decision-making.[2]

Bearing in mind that the new EU member states underwent, from the 1990s onwards, their first phases of fiscal adjustment while simultaneously consolidating their transition to a market economy and configuring their budget institutions, we believe that a first approximation to the study of fiscal adjustments in these countries should give priority to the institutional approach, since institutional factors,

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1 See Hallerberg (2004) for a review of the literature on fiscal institutions. In addition, see Hallerberg, Strauch and von Hagen (2004); von Hagen, Hallet and Strauch (2001); Persson and Tabellini (1999); and Hallerberg and von Hagen (1997).

2 See Mulas-Granados (2006) for a comprehensive review of the literature on fiscal adjustments, and for a systematic empirical analysis of the role that such factors have played in the fiscal adjustments of the EU-15. countries. See also Perotti and Kontopoulus (2002); Alesina, Cohen and Roubini (1992); Grilli, Masciandaro and Tabellini (1991); and Roubini and Sachs (1989).

predictably, were paramount in designing the various adjustment strategies throughout this period.

Consequently, the objective of the present study is to determine the influence that the recently reformed budgetary institutions in these countries may have had upon the results of budgetary consolidation, as observed in their 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 "old" EU-15 institutions did in the past. To answer this question, this article performs an empirical analysis of a sample of new EU member states (those who joined in 2004 and 2007) for the period 1993-2004.[3]

This article is structured as follows. Section 2 describes the most recent fiscal developments in the new member states. Section 3 analyses the budgetary processes which configure their fiscal institutions. Section 4 constructs the indexes associated with these budgetary institutions. Section 5 deals with the possible influence that political decentralization may have had on the budgetary institutions of these countries. Section 6 presents the econometric model, as well as the results of various estimations of the relationship between budgetary procedures and the levels of fiscal discipline achieved by the various countries considered. Finally, Section 7 provides a summary of the main results and a discussion of their most important implications.

2 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 GDP) for the countries studied.

As the tables show, while the average budget balance has remained stable, ranging from –2.5 to –4.2 per cent of GDP, important differences exist between the countries in the sample. Some of them, such as the Czech Republic, Bulgaria or Slovakia, have recorded budget deficits above 10 per cent of GDP, while others, such as Estonia, have experienced considerable surpluses in some financial years. This period reveals a continuous reduction of total public expenditure as a proportion of GDP between 1994 and 2004, with the exception of 1999 and 2002. Again, public expenditure behaviour 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.

Let us define fiscal adjustment episodes as those years in which the budget balance improved by at least 0.5 per cent of GDP with respect to the preceding

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

Table 1

Public Finances in the New EU Member States, 1994-2004

Year	General Government Budget Balance *(average) (percent of GDP)*	Standard Deviation	Range (min/max)
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 Expenditure** *(average) (percent of GDP)*	**Standard Deviation**	**Range (min/max)**
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: Authors' compilation from AMECO Database (2005) and International Monetary Fund Reports.
Notes: All the 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.

year.[4] 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 most important studies in this field indicate, any government faced with the necessity of reducing its budget deficit must design a four-dimensional fiscal adjustment strategy.[5] Thus, it must decide: 1) the size of the adjustment it wishes to undertake; 2) when the adjustment is to begin; 3) its expected duration; and 4) which budget items will be affected (*i.e.* the composition of the adjustment).

The size and duration of fiscal consolidations are very important, since short and intensive consolidations may produce a recession. This occurs when the private sector does not compensate quickly enough for the reduction in demand caused by a restrictive fiscal policy. By contrast, if fiscal consolidations are slow and sustained they may have extremely negative political results for the government responsible. Additionally, the duration of the consolidations is closely linked to their composition, insofar as adjustments which are fundamentally based on cuts in the government wage bill and public transfers are expected to last longer and be more successful than those based on an increase in public revenue and a reduction in public investment (Alesina and Ardagna, 1998).

To reduce the public deficit, any government has five options: 1) to increase public revenue more than public expenditure: 2) to increase public revenue and freeze expenditure; 3) to increase public revenue and reduce expenditure; 4) to freeze public revenue and reduce expenditure; and 5) to reduce revenue less than expenditure. Basically, consolidations founded on the first two adjustment strategies may be called "revenue-based adjustments", and those based on the last two "expenditure-based adjustments". The third possibility is, in reality, an intermediate alternative, and thus may be termed a "mixed strategy".

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[4] The threshold for the selection of adjustment episodes varies in the literature, ranging from improvements in the budgetary balance of at least 0.5 per cent of GDP (Gupta, Clements, Baldacci and Mulas-Granados, 2005) to improvements of 1.5 per cent of GDP (von Hagen, Hallet and Strauch, 2001). Following the most important studies of this question, we have defined fiscal consolidation episodes as those where the amelioration of the budget balance was at least 0.5 per cent of GDP for two consecutive years. Most OECD studies use cyclically-adjusted figures to select adjustment episodes, and they calculate the cyclical component based on the trend output gap. Only Afonso *et al.* (2006) has applied the same technique to new member states. Nevertheless, other authors as Zápal *et al.* (2006) avoid using cyclically-adjusted data given the specific characteristics of these countries. 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 nineties would potentially bias any trend estimation for the first years in the sample; and second, if you only focus on the mid-nineties onwards, the time-series of data are too short to apply the HP-technique without biasing the estimations for the last 3 years (which in this case represent an important part of the sample). Therefore, we follow Zápal (2006) and select adjustment episodes in New Member States using non-cyclically-adjusted data, and we will later use the GDP growth as a right-hand side variable to control the effect that output has on fiscal variables.

[5] Giavazzi and Pagano (1990); Alesina and Perotti (1995); Alesina and Ardagna (1998); von Hagen, Hallet and Strauch (2001); and Mulas-Granados (2006).

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	TYPE				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 Rep.	TYPE	2		2	3		3					2
	▽ 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	TYPE				2			2	2	1	3	
	▽ 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	TYPE		2	2				1			2	2
	▽ GGBB		3.2	2.0		0.4		1.7			3.0	0.8
	▽ GGPBB	0.8	5.6	1.5	0.2			0.4			3.1	1.0
	▽ GGD	3.1	2.2	12.6	7.3	2.3	0.7	5.5	1.9			
Latvia	TYPE			2	1			2	2		1	
	▽ GGBB			1.6	1.9			2.1	0.7		1.2	
	▽ GGPBB			1.9	1.3			2.3	0.7		1.2	
	▽ GGD	0.5	1.1	1.1	1.6					0.8		
Lithuania	TYPE		1		1			2	2	2		
	▽ 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					2						
	▽ GGBB	0.4			0.2	2.4		0.4			0.3	
	▽ GGPBB	3.1			0.1		0.1	0.5			0.5	
	▽ GGD	21.2	16.9	2.9	1.8	5.2		1.5	1.0			
Romania	TYPE						1		2	2		1
	▽ GGBB						1.8		0.8	0.7	0.3	0.6
	▽ GGPBB				1.6	0.8	2.4					0.1
	▽ GGD					0.5		0.6	2.5	0.6	0.6	
Slovakia	TYPE	2	2		1	2			2		2	
	▽ GGBB	25.1	5.3		1.2	2.5			6.3	0.3	1.9	
	▽ GGPBB	25.7	4.2		0.9	2.7			6.2		0.8	
	▽ GGD	3.5	1.4						1.2	5.4	0.7	
Slovenia	TYPE								3			
	▽ GGBB		0.2	0.3		0.4	0.2		0.7	0.4	0.4	
	▽ GGPBB			0.4		0.5	0.3		0.7	0.3	0.2	
	▽ GGD				1.2						0.1	

Country		1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Cyprus	TYPE	1				1		1				2
	▽ GGBB	1.1				1.1		2.0	0.1			2.1
	▽ GGPBB	1.2						2.3	0.1			2.1
	▽ GGD	4.9	1.7									
Malta	TYPE		3				1	3		1		1
	▽ GGBB		1.1				1.9	2.2		0.7		5.3
	▽ GGPBB		1.1				2.4	2.6		0.9		5.6
	▽ GGD											

Source: Own elaboration.
TYPE of Adjustment: 1. Fiscal adjustment (+0.5 per cent GDP) based on an increase in public revenue; 2. Fiscal adjustment (+0.5 per cent GDP) based on public expenditure cuts; 3. Mixed fiscal adjustment (+0.5 per cent 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).

Table 3

Characteristics of the Fiscal Adjustment Processes, 1994-2004

Country	Period	Duration	Size	Composition
Bulgaria	1997-1998	2	14.3	Based on expenditure (1st year) and on revenue (2nd year)
Czech Republic	1996-1997	2	11.0	Based on expenditure (1st year) and mixed (2nd year)
Estonia	2000–2003	4	8.0	Based on expenditure (1st and 2nd year), on income (3rd year) and mixed (4th year)
Hungary	1995-1996	2	5.2	Based on expenditure
	2003-2004	2	3.8	Based on expenditure
Latvia	1996–1997	2	3.5	Based on expenditure (1st year) and on revenue (2nd year)
	2000-2001	2	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	2	30.4	Based on expenditure
	1997–1998	2	3.7	Based on expenditure (1st year) and on revenue (2nd year)
Slovenia		0		
Total/average	11 episodes	2.27 years	8.0	

Source: Own elaboration.
Note: in terms of annual reduction of public deficit greater than 0.5 of GDP for at least two years.

Table 2 shows that 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, while the remaining countries only undertook one. When cross-country comparisons are made, these adjustment episodes differed in terms of timing, duration, size and comparison. The majority of adjustment episodes lasted for only two years, with the exceptions of Estonia (four years) and Lithuania (three years). On average, such adjustments reduced the deficit by 8.0 percentage points of GDP, although if we exclude the extreme value (30.4 per cent) displayed by Slovakia in the early years of the period, this average value falls to 5.8 per cent. However, dispersion is considerable within the sample (the standard deviation is 5.0), as both intensive and more modest adjustment processes existed.

Finally, it must be emphasised that the majority of the 40 annual adjustment in our sample were expenditure-based (25 years, or 62.5 per cent of the total), while 10 (25 per cent) were revenue-based, and only 5 (12.5 per cent) followed a mixed strategy. If we focus our attention on the 11 consolidation episodes (including at least two consecutive years) we observe instead 6 pure expenditure-based adjustments. The five remaining episodes includes different combinations. While Bulgaria (1997-98), Latvia (1996-97) and Slovakia (1997-98) combine expenditure-based adjustments in the first year with revenue-based adjustments in the second year, the Czech Republic (1996-97) firstly adopted an adjustment based on expenditure and after one mixed. In the longest episode (2000-03), Estonia combined the three types of fiscal adjustment.

Note that selecting episodes according to the criteria that we have specified above turns out to provide very similar results to those reported by Zápal *et al.* (2006), although they use a slightly different sample and definition of adjustment episodes. Any how, this experience of fiscal consolidation in the new member states differs substantially from the experience of fiscal adjustments in the EU-15, where most consolidation episodes were revenue-based rather than expenditure-based (Mulas-Granados, 2006). The differences in economic and welfare state development between both groups of countries probably account for the observed divergence in fiscal adjustment strategies (Purfield, 2003).

3 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:[6] the budget planning phase, the discussion and parliamentary approval phase and the execution phase, which includes possible amendments to the budget approved by the

[6] Von Hagen (1992); von Hagen and Harden (1994); Halleberg *et al.* (2001); Gleich (2003) and Yalloutinen (2004).

Parliament.[7] 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. These characteristics will be quantitatively evaluated, using the indexes proposed in the following section.

In the planning and design phase the fundamental role is played by the executive. From the construction of the pluriannual macroeconomic and budgetary frameworks to the allocation of funds, the decision-making capacity lies between the Finance Minister and the collegial body to which he/she belongs, *i.e.* the Council of Ministers. The competencies allocated in this phase and, complementarily, the residual decision-making powers, reflect the different options for institutional design which, at their extremes, range from a strong Finance Minister (*i.e.* 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 which favour fiscal discipline can be incorporated into the budget institution, which is especially important for those new member states whose objective is to join EMU. Thus, the design of Pre-Accession Economic Programmes, similar to the Stability and Convergence Programmes required of the 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 which the parliamentary system gives to the executive and, in particular, to the Finance Minister. Thus, the evaluation of the budget process should consider the effective capacity of the Finance Minister to maintain, following its debate in Parliament, the project as initially presented.

In the execution phase, the predominant role is once again played by the Finance Minister. An accurate description of the budget institution must take into account his/her powers to control the execution of the budgetary allocations, which may even include the establishment of spending limits. In fact, in recent decades the literature regarding fiscal discipline has demonstrated the importance of this phase, since 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 proved essential to guarantee fiscal discipline in the medium term.[8]

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[7] The literature on the institutional aspects of fiscal consolidations does not usually 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 upon the development of fiscal policy lacks sufficient weight for it to be included in this approximation.

[8] The interactions between the decision-making powers of the Finance Minister and of Parliament become strongly evident in this phase of execution. On occasion, the concentration of the competences of Parliament with regard to 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.

Table 4

Budgetary Planning and Programming Phase - Values of Variables, by Country

Pluriannual Fiscal Frameworks

Country	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 Extra Budgetary Funds	A.1.7 Type of Pluriannual Budgeting
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

Fiscal Rules

Country	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

	Pluriannual Budgeting			Role of Finance Minister in Planning and Budgeting			
	A.3.1	A.3.2	A.3.3	A.4.1	A.4.2	A.4.3	A.4.4
Country	**Integration with PFF**	**Review of Deviations**	**Joint Designed**	**Proposal of PFF by FM**	**Negotiation in Cabinet**	**Resolution of Disagreements**	**Leadership of the FM**
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

Table 5

Parliamentary Discussion and Approval Phase - Values of the Variables, by Country

	Role of Parliament in the Legislative Approval Phase					
Country	**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 (Non-approval)**
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

Note: The year in which the variable modifies its previous value is given in parentheses.
Source: Own elaboration, using the information provided by the websites of the institutions of each country and by the survey performed by Yalloutinen (2004).

Table 6

Budget Execution Phase - Values of the Variables, by Country

Country	The Role of the Finance Minister in the Budget Execution Phase					
	C.1.1 Capacity to 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

Note: The year in which the variable modifies its previous value is given in parentheses.
Source: Own elaboration, using the information provided by the websites of the institutions of each country and by the survey performed by Yalloutinen (2004).

Appendix I 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.

4 Indexes 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 which define budget institutions, understood in their broadest sense, in a numerical index or indexes. Allowing for (sometimes considerable) differences, all the proposals for this type of index are based on the systematisation of the information available regarding the characteristics and functioning of all those processes, rules, agreements and protocols which govern a given country's budget process. Thus, most studies have

gathered together in their indexes all the information available for the different phases of the budget process.

Following and expending this line of research, we propose a series of indexes which incorporate into the essential formulation of von Hagen's (1992) indexes some additional elements that we believe may be relevant to understand the role of the budget institution in the countries studied.

Firstly, we define three indexes, which capture the three phases of the budget process: the budgetary planning and programming phase, the parliamentary discussion and approval phase, and the execution phase. These three indexes are then aggregated into an overall index which allows us to establish a ranking of budget institutions. In this aggregation, the three phases considered are weighted equally. In contrast to the proposal made by Gleich (2003), we have opted for an equal distribution of the weights assigned to each process because we believe that this reduces the discretionary bias which the configuration of this type of qualitative indexes inherently generates. Furthermore, we believe there exists no justification for placing more importance upon certain aspects of the budget process, since all information is equally relevant for our analysis.

To standardise this weight, we decided to linearly distribute the value of 10 points assigned to each of the three principal budget phases among the total variables, each of which had previously been equalised at the maximum value they could potentially attain, so that they contributed equally to each of the procedures included for each phase. The corresponding coefficient of each variable is then applied directly to the values which comprise the established quantification range. These ranges adopt higher or lower values, depending on the greater or lesser influence which each has upon budgetary discipline.

With regard to the values of each variable, we tried to reduce their variability. As a general rule, in those cases with dichotomic values, the pair 1-0 was chosen if the worst behaviour is in direct contradiction to budgetary discipline, and a 2-1 pair type if the worst behaviour is not directly opposed to this essential aspect of fiscal policy. For those situations where we believe that discrimination is significant, we introduced intermediate values, even if they exceeded 2. Whatever the case, our aim was to minimise the discretionality associated to an excessive number of categories for each variable, or by the unjustified differentiation of the maximum values that these may attain.

On the basis of these criteria, we define the following indexes for each process:

a) Institutional index for the design phase (budget planning and programming):

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

where v_i is each of the variables which intervene in the four sub-processes of the first phase of budget design (*PFF* 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 played by the Finance Minister in this phase). While $w(v_i)$ represents the weighting assigned to each variable within these four sub-processes, so that the sum of weights equals 10 if all the variables take their maximum value. The weight established for each of the four sub-processes is identical;

b) Institutional index of the parliamentary discussion and approval phase:

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

where the weightings $w(v_i)^{\text{APPR}}$ assign the same weights to the six variables;

c) Institutional index of the budget execution phase:

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

in which the weights assigned to the six variables considered, $w(v_i)^{\text{EXE}}$, are equal. The values of the weightings incorporated into each of the processes we have just defined are included in the tables of Annex I.

Tables 7 and 8 display the quantification obtained for the three indexes proposed and for the whole sample. Table 7 offers information for the overall index, which results from the aggregation of the three basic indexes, each weighted at 1/3, while Table 8 disaggregates the index corresponding to the approval phase into the two indices contemplated:[9]

$$I_t^{BPP} = \frac{1}{3}\left(\sum_{i=1}^{7} v_i^{PFF}{}_t \cdot w_{v_i^{PFF}} + \sum_{i=1}^{6} v_i^{FR}{}_t \cdot w_{v_i^{FR}} + \sum_{i=1}^{3} v_i^{INT}{}_t \cdot w_{v_i^{INT}} \right) \tag{4}$$

$$I_t^{ROLFM} = \sum_{i=1}^{7} v_i^{ROLFM}{}_t \cdot w_{v_i^{ROLFM}} \tag{5}$$

Table 9 shows the ranking of the ten countries in our sample for the two alternative indexes. The number 1 corresponds to the maximum value computed in the corresponding index and represents the governance model of the budget institution which, in accordance with the criteria established, most favours fiscal discipline. Insofar as our two alternative indexes have been constructed on the basis of the concept of "the decision-making power of the Finance Minister", this maximum value reflects the budget institution design with which the Finance Minister feels strongest. This table also shows similar rankings to those obtained by Gleich (2003) and Yalloutinen (2004).

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[9] To calculate the overall index in this second alternative, we have assigned an identical weight (0.25) to the four principal indices examined.

Table 7

Values of the Indices Defining the Budget Institution, by Country (Alternative 1)

Country	Basic Indices			Global
	INDEX(1)(DES)	INDEX(1)(APPR)	INDEX(1)(EXE)	INDEX(1)
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)

Note: The year in which the variable modifies its previous value is given in parentheses.
Source: Authors' compilation, using the information provided by the websites of the institutions of each country and by the survey performed by Yalloutinen (2004).

Table 8

Values of the Indices Defining the Budget Institution, by Country (Alternative 2)

Country	Basic Indices				Global
	INDEX(2) (BPP)	**INDEX(2) (ROLFM)**	**INDEX(2) (APPR)**	**INDEX(2) (EXE)**	**INDEX(2)**
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)

Note: The year in which the variable modifies its previous value is given in parentheses.
Source: Authors' compilation, using the information provided by the websites of the institutions of each country and by the survey performed by Yalloutinen (2004).

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

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

As can be observed, there are important similarities between the three rankings, especially in the case of our second ranking and that of Yalloutinen (2004). There are also some similarities with the ranking by Gleich (2003), especially if we exclude the cases of the Czech Republic, Hungary, Latvia and Bulgaria. Our indexes place the Czech Republic in the penultimate and final position, respectively (as in Yalloutinen's study), while Gleich's work places them in an intermediate position. Similar differences apply for the other countries, although none is particularly striking.

Using the information supplied by our principal indexes, we test whether the characterisation 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 shown in Table 4, Slovenia and Hungary are the two countries whose institutional variables clearly behave as predicted by the delegation approach. If we observe the role played by 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 so because the most important variables that determine the "strong" role of the Finance Minister are present in both countries, and coincide with those which require the cession of authority characteristic of the delegation model. Estonia and Lithuania also display values fairly representative of the delegation model, although it seems that their electoral systems have forced them to adopt certain typical features of the compromise model. Romania, since the significant reforms of the year 2000 and, above all, 2003, may also be considered to be in transition towards 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. The Czech Republic and Poland are two other cases in which the role of the Finance Minister has been largely conditioned by the formation of alliances for government. In the remaining countries, the initial instability of their political systems have produced characteristics typical of what we define as the "feudal" model, with highly fragmented scenarios of budgetary decision-making and difficulties in taking into account the long term consequences of fiscal policy decisions.

Whatever the case, it must be remembered that our study has concentrated on a set of Eastern and Central European countries which 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 which have prevailed for many decades in developed market economy countries. Thus, the institutional framework of these countries is an evolutionary one, which prevents us from undertaking a characterisation as robust as that of other research, notably the recent study performed by Hallerberg, Strauch and von Hagen (2004) for the 15 countries which were members of the European Union prior to its widening in May 2005.

As time goes by, this exercise will become more robust. But we nevertheless believe that these informational weaknesses, related to the ongoing process of institution building in the new 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.

5 The impact of decentralisation on fiscal policy

The influence of public sector decentralisation on fiscal outcomes at the national level is undeniable and has been systematically confirmed in empirical studies. As a consequence, most scholars in the field affirm that the adoption of fiscal rules capable of coordinating the fiscal policy of the various levels of government is crucial for budgetary discipline (Balassone, Franco and Zotteri, 2003, 2004).

In spite of this evidence, most new member states where decentralisation of spending has taken place have not yet coordinated their fiscal policies between the different levels of government. For example, in the Czech Republic there exists no specific legal rule to coordinate the distinct levels of government with spending capacities. However, the national government retains control over the revenue of regional governments, insofar as the latter are substantially dependent upon transfers from the central government; local governments, in turn, must inform the central government every six months of the evolution of the budget. In addition, although borrowing restrictions for local councils were eliminated in 2001, a sanctions mechanism exists for cases where solvency is at risk.

The Baltic states employ different types of controls, although no explicit coordination rules exist. For example, in Estonia legal limits govern the financial obligations which subcentral governments may incur. The principal restriction is local governments' borrowing limit of 60 per cent of their annual revenue, while debt service payments must not exceed 20 per cent of the total revenue (net of transfers from the central government). Latvia introduced the legal obligation for all local councils to supply regular budgetary information to the Ministry of Finance. These local governments have full powers to assume debt, respecting the limits established in the annual Budget Law. The accumulated volumes are evaluated by a central body accountable to the central government. An internal mechanism of financing through borrowing, which provides for state loans to local councils, has existed since 1998. Finally, Lithuania established the legal obligation for local governments to provide balanced budgets (with no public deficit), although during each financial year councils with financing necessities may choose to receive loan financing from the state.

In Hungary, the Local Authorities Law established a series of restrictions upon local government borrowing. Furthermore, a series of rules exist for the incorporation of local budgets into the pluriannual budgetary framework designed by the Ministry of Finance. These rules concern the sources of financing, through both taxation and central government transfers. In general, the limitations are not particularly operative. With regard to Poland and Hungary, there exists no specific legal framework for fiscal policy coordination. The existing rules are focused on limiting local borrowing, and establish successive limits which prohibit further borrowing when the figure of 60 per cent is exceeded.

Similarly, no legal framework exists in the Republic of Slovenia for the coordination of budgetary policies between levels of government. However, the Ministry of Finance must authorize local government borrowing, the maximum level of which is also limited by law, and this practice has proved to be quite effective. Slovakia, has adopted a similar model, in which the lack of specific legal rules regarding coordination is compensated for by Finance Ministry controls over local government borrowing.

In the last two countries to join the European Union, Romania and Bulgaria, there currently exist legal frameworks designed to coordinate the budgetary policies of their various levels of government. In the case of Romania, a Local Government

Table 10

Pre-accession Economic Programmes and Influence of Decentralization upon Fiscal Policy

Country	Pre-accession Economic Programmes	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)

Source: For the PEPs, Yalloutinen (2004). Author's compilation for the Decentralization-coordination index.

Finances Law was passed in 2002; this establishes the limitations and determinants of financing via borrowing, transfers and taxation, between the central government and local authorities. Furthermore, this measure establishes a borrowing limit of 20 per cent of the total annual revenue of each local budget. Bulgaria recently formalised an agreement between the national government and subcentral levels; this established overall limits for the distribution of annual revenue and expenditure, together with legal restrictions on borrowing by subcentral governments, which must in all cases be approved by the Ministry of Finance.

Summing up, since the influence that public sector decentralization may have had on fiscal policy could be important in the countries of our sample, we decided to include in the model of the following section a variable that controls for this factor. To this end, we constructed an index which permits us to establish a ranking of the existing coordination between levels of government, using the information available and taking into account the degree of decentralization shown by the public sector in each country. The values of this variable are shown in Table 10.

6 Empirical analysis and results

In order to evaluate the extent to which the budget institutions of the new EU member states, described in the two previous sections, explain the fiscal adjustments observed, we estimate the following equation:

$$Y_{i,t} = \beta_0 + \beta_1 \cdot GDP_{i,t} + \beta_2 \cdot UNEM_{i,t} + \beta_3 \cdot I_{i,t}^{DES} + \beta_4 \cdot I_{i,t}^{APPR} + \beta_5 \cdot I_{i,t}^{EXE} + \beta_6 \cdot X_{i,t}^{INST} + \\ + \beta_7 \cdot PAEP_{i,t} + \beta_8 \cdot DECENT_{t,t} \varepsilon_{i,t} \tag{6}$$

where $Y_{i,t}$ is the dependent variable which 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 budget balance and the primary budget balance ($GGBB_{i,t}$ or $GGPBB_{i,t}$, respectively). This means that any improvement in either of these balances 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 indexes calculated in previous sections: $I_{i,t}^{DES}$, $I_{i,t}^{APPR}$ and $I_{i,t}^{EXE}$, and a generic institutional variable, $X_{i,t}^{INST}$, to capture any remaining institutional design which may influence fiscal policy outcomes. In the alternative estimations we perform we also include the components into which the index of the first phase of budgetary design, $I_{i,t}^{DES}$, can be divided, namely the "technical" index $I_{i,t}^{BPP}$ which includes budget planning and programming processes, and the index which proxies the role of the Finance Minister at this stage, $I_{i,t}^{ROLFM}$.

In addition, we include two economic variables to control for the effect of the cycle on fiscal policy. We use those which are most common in the literature, namely GDP growth rate ($GDP_{i,t}$) and the unemployment rate ($UNEM_{i,t}$). While it is true that a high inverse correlation is to be expected between the two variables, we have opted for their simultaneous inclusion, given that in transition economies labour market adjustments and economic growth do not display a clear pattern of behaviour. As we shall see, the results obtained justify this decision.

Finally, we include two other important control variables aimed at capturing the context in which these countries implemented their fiscal adjustments. The first variable controls for subjection to Pre-Accession Economic Programmes ($PAEP_{i,t}$). Although the basic objective of the PAEPs was not the institutional coordination of the fiscal policies of the candidate countries, they entailed a prior commitment towards the fiscal discipline that these countries were required to enforce following accession to the EU, in addition to presenting their Convergence Programmes. To represent the role played by the PAEPs, we use the specific index proposed by

Yalloutinen (2004).[10] The second variable is related to the existence of a framework for fiscal policy coordination between different levels of governments in the presence of fiscal decentralisation ($DECENTR_{t,i}$). The values of both control variables are given in Table 10.

We now present our initial hypotheses for all the variables of the model. Firstly, we expect the institutional indexes to have a positive effect on the budget balance. Thus, we expect β_3, β_4 and β_5 to have positive signs. Secondly, 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 stabilisers, regardless of the form in which this is incorporated into the model. Furthermore, 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 expenditure, thereby worsening the budgetary balance, which will cause β_2 to be lower than zero. Lastly, the signs of the other two control variables, $PAEP_{i,t}$ and $DECENTR_{t,i}$, should also be positive, as we expect that greater fulfilment of the commitments acquired in the Pre-Accession Economic Programmes, or greater coordination between government levels, will strengthen the budget institution and encourage budgetary discipline.

Following the previous studies in the field,[11] we estimate equation (6) by Ordinary Least Squares (OLS), using all data in our panel with 100 observations, for 10 countries and 10 years (1994-2004). It is worth noting that when performing a longitudinal analysis of this panel, we detected the significant presence of a structural change that divides the sample into two differentiated subperiods. Strictly speaking, this is not a structural change with two clearly defined behaviour patterns, but rather a two-stage change. The first of these extends from 1994 to 1998, when the economic behaviour of the countries in our sample was far more disperse, due to the ongoing processes of democratisation, institution building and transition to a market economy. The period between 1999 and 2004 shows much greater

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[10] 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: a) whether the PAEP is the sole pluriannual budget framework; b) the coincidence of the Ministerial Departments which have the authority to approve both documents; c) the coincidence of the executive organs entrusted with their preparation; d) the coincidence of the accounting rules employed in their elaboration; e) the integration of the respective timetables; and f) the coincidence of objectives between the PAEP and the annual budget. The calculation of the index is performed using a total of 8 points (maximum identification between the two).

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

homogeneity in all the economic and fiscal variables of the model. Consequently, we have opted, as other studies of this type have done, to estimate the model for the complete period and the two subperiods.

Table 11 presents the results of the different estimations of the basic model for the complete period 1994-2004. The model was estimated twice, one for each of the two alternative definitions of the dependent variable ($GGBB_{i,t}$ and $GGPBB_{i,t}$). In each case four equations were estimated: the first (1), in which neither of the two accessory institutional variables ($PAEP_{i,t}$ and $DECENTR_{t,i}$) were included; the second (2), in which only $PAEP_{i,t}$ was introduced; the third (3), in which only $DECENTR_{t,i}$ was included; and finally, equation (4) where all variables in the model were estimated at the same time.

Results for the four regressions where the total budget balance ($GGBB_{i,t}$) was the dependent variable show the correct expected signs for all economic and institutional variables. In the four estimations, the institutional variable linked to the index of the budget execution process, $I_{i,t}^{EXE}$, is highly significant, while the indexes that control for the design and parliamentary approval processes are not; also significant (but at lower confidence levels) are the effects of GDP growth and the rate of unemployment on the budget balance. Neither of the two accessory institutional variables prove significant; furthermore, in the case of the Pre-Accession Economic Programmes, the sign is the opposite of that expected. For $DECENTR_{t,i}$, however, the sign is the correct one, although its significance level is low.

Results for the four regressions where the primary budget balance ($GGPBB_{i,t}$) was the dependent variable show the following distinctive patterns. Again, the index of budget execution continues to be significant at a 99 per cent confidence level. And now the indexes for the design phase and the parliamentary approval phase suddenly become significant, at a 95 per cent confidence level. Another difference relates to the two economic variables of the model, which cease to be significant. And finally, $DECENTR_{t,i}$ turns to be also significant at a 95 per cent confidence level, thus confirming that the presence of fiscal coordination rules between different levels of government is clearly beneficial for the primary budget balance.

Table 12 reports the results of the different estimations for the period 1999-2004,[12] and shows that the estimations improve substantially for both

[12] The results of the estimations corresponding to the first subperiod (1994-98) have been omitted, since they display less significance than those obtained for the complete period. They are available from the authors upon request.

Table 11

Influence of Budget Institutions upon Fiscal Policy Behaviour, 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 ***	–9.472302 ***	–9.69855 ***	–9.563965 ***	–11.61555 ***	–11.5965 ***	–9.85118 ***	–9.775501 ***
	(–3.83)	*(–3.88)*	*(–3.49)*	*(–3.37)*	*(–5.08)*	*(–5.06)*	*(–3.87)*	*(–3.77)*
GDP	0.261116 *	0.2535578 *	0.2551103 *	0.2519457 *	–0.0825347	–0.0804475	–0.0466413	–0.0484208
	(1.88)	*(1.78)*	*(1.78)*	*(1.73)*	*(–0.71)*	*(–0.68)*	*(–0.4)*	*(–0.42)*
UNEM	–0.2383337 **	–0.2243094 **	–0.2348057 **	–0.2237558 **	–0.0802095	–0.0840824	–0.1012949	–0.0950813
	(–2.56)	*(–2.43)*	*(–2.41)*	*(–2.35)*	*(–0.86)*	*(–0.89)*	*(–1.12)*	*(–1.05)*
I^{DES}	0.392142	0.5656512	0.4223492	0.5681988	1.241783 **	1.193867 **	1.061244 **	1.143257 *
	(0.82)	*(1.16)*	*(0.83)*	*(1.14)*	*(2.47)*	*(2.29)*	*(2.00)*	*(2.16)*
I^{APPR}	0.007429	0.0185888	–0.022669	0.0084969	0.2619638	0.2588818	0.4418463 **	0.4593713 **
	(0.04)	*(0.1)*	*(–0.1)*	*(0.04)*	*(1.55)*	*(1.51)*	*(2.13)*	*(2.14)*
I^{EXE}	1.071762 ***	1.077302 ***	1.021724 ***	1.061058 ***	0.8109224 ***	0.8093925 ***	1.109985 ***	1.132103 ***
	(4.28)	*(4.27)*	*(3.45)*	*(3.4)*	*(3.05)*	*(3.02)*	*(3.87)*	*(3.86)*
PAEP		–0.2262821		–0.2169946		0.0624901		–0.1220189
		(–1.14)		*(–0.99)*		*(0.33)*		*(–0.57)*
DECENTR			0.1739895	0.0556917			–1.039868 **	–1.106389 **
			(0.49)	*(0.14)*			*(–2.45)*	*–2.41*
R^2	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

t-Student statistics in parentheses. Significance level < 0.01 (***), between 0.01 and 0.05 (**) and between 0.05 and 0.10 (*).

Table 12

Influence of Budget Institutions upon Fiscal Policy Behaviour, 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 **	–7.212966 **	–7.039309 **	–6.979829 **	–9.358504 ***	–9.223325 ***	–8.716468 **	–8.79714 **
	(–2.46)	*(–2.49)*	*(–2.27)*	*(–2.20)*	*(–2.89)*	*(–2.88)*	*(–2.55)*	*(–2.61)*
GDP	0.4526499 ***	0.434868 ***	0.4587565 ***	0.4474147 ***	0.2541525 *	0.2862743 **	0.2938257 *	0.3092101 **
	(5.66)	*(4.85)*	*(5.48)*	*(4.99)*	*(1.64)*	*(2.00)*	*(1.88)*	*(2.11)*
UNEM	–0.3571759 ***	–0.3562241 ***	–0.3563882 ***	–0.3541471 ***	–0.1657357 *	–0.1674551 *	–0.1606182 *	–0.1636581 *
	(–4.08)	*(–4.01)*	*(–4.08)*	*(–4.01)*	*(–1.70)*	*(–1.72)*	*(–1.67)*	*(–1.68)*
I^{DES}	–0.5799161	–0.4274885	–0.5969932	–0,4480613	0.4863307	0.21098	0.3753856	0.1733721
	(–1.16)	*(–0.89)*	*(–1.13)*	*(–0.90)*	*(0.86)*	*(0.35)*	*(0.64)*	*(0.78)*
I^{APPR}	0.182971	0.1973304	0.197064	0.2341149	0.340486 **	0.3145461 **	0.4320461 ***	0.3817897 **
	(1.53)	*(1.59)*	*(1.33)*	*(1.40)*	*(2.62)*	*(2.16)*	*(2.67)*	*(2.04)*
I^{EXE}	1.75032 ***	1.755041 ***	1.766331 ***	1.795191 ***	1.005111 ***	0.9965841 ***	1.109128 ***	1.069981 ***
	(7.40)	*(7.38)*	*(6.93)*	*(6.98)*	*(3.22)*	*(3.17)*	*(3.55)*	*(3.41)*
PAEP		–0.1665382		–0.190073		0.3008405		0.2578179
		(–0.85)		*(–0.88)*		*(1.21)*		*(0.98)*
DECENTR			–0.0604896	–0.1491725			–0.3929849	–0.272694
			(–0.21)	*(–0.45)*			*(–1.22)*	*(–0.80)*
R^2	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

t-Student statistics in parentheses. Significance level < 0.01 (***), between 0.01 and 0.05 (**) and between 0.05 and 0.10 (*).

Table 13

Influence of Budget Institutions upon Fiscal Policy Behaviour
Alternative 2, 1994–2004

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

t-Student statistics in parentheses.
Significance level < 0.01 (***), between 0.01 and 0.05 (**) and between 0.05 and 0.10 (*).

definitions of the dependent variable. When using the total budget balance, $GGBB_{i,t}$, the two macroeconomic variables appear as highly significant and show the expected signs.

With respect to the institutional variables, they generally show the correct signs, and they are especially significant when the dependent variable is the primary budget balance. Finally, the variables that control for Pre-accession Economic Programmes and fiscal coordination are statistically insignificant for this subperiod.

Table 13 presents the results from the estimations of the basic model when we incorporate the second set of budgetary indexes and analyse the entire study period.[13] Once again, the index for the execution phase is highly significant under all specifications. Also, when we introduce the index $I_{i,t}^{ROLFM}$ into the model, both variables prove to be significant simultaneously. This clearly confirms the hypothesis that having a strong Minister of Finance in the design and the execution phases is crucial for maintaining fiscal discipline, because it exerts control over public spending both before and after parliamentary discussions.

Table 14 presents the results from the estimations with the second set of budgetary indexes and for the subperiod 1999-2004 subperiod. Results for both definitions of the dependent variable, $GGBB_{i,t}$ and $GGPBB_{i,t}$, were now quite robust. In this subsample, the estimation of the various models improves considerably, and results resemble those already obtained with the first set of budget indexes. In all columns of Table 14, we see that the two macroeconomic variables of the model are statistically significant. As in all previous estimations, the index for the budgetary execution phase is strongly significant. But contrary to previous results, the indexes that disaggregate the design phase of the budget process show no statistical relevance. Finally, the variables that control for the presence of Pre-Accession Economic Programmes and for the coordination between different levels of government are both strongly significant.

In view of the results reported from the various estimations, 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 the use of two definitions of the dependent variable and several alternative institutional indexes has enriched the analysis. and important conclusions have been obtained.

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[13] Table 13 only reports results for the model with the budget balance as the dependent variable ($GGBB_{i,t}$). Results for the model with the primary budget balance as the dependent variable ($GGPBB_{i,t}$) showed the adequate signs, but no variable was statistically significant; however, they are available from the authors upon request.

Table 14

Influence of Budget Institutions upon Fiscal Policy Behaviour. Alternative 2 (1999-2004)

	Dependent variable = Total Budget Balance (GGBB)				Dependent variable = Primary Budget Balance (GGPBB)			
	(1a)	(2a)	(3a)	(4a)	(1b)	(2b)	(3b)	(4b)
Constant	–6.825014 **	–8.783718 ***	–6.135924 **	–8.260421***	–8.78489 ***	–6.472907 ***	–3.391344	–4.719929 ***
	(–2.35)	*(–5.88)*	*(–2.00)*	*(–4.52)*	*(–2.71)*	*(–3.39)*	*(–1.14)*	*(–2.67)*
GDP	0.4459663 ***	0.4273872 ***	0.4711052 ***	0.4326746 ***	0.2419086	0.2638387 *	0.4609646 ***	0.4369314 ***
	(5.29)	*(4.75)*	*(5.92)*	*(4.53)*	*(1.46)*	*(1.69)*	*(5.22)*	*(4.33)*
UNEM	–0.3729827 ***	–0.3485169 ***	–0.3761477 ***	–0.3431237 ***	–0.1946926 *	–0.2235711 **	–0.3045873 ***	–0.2839353 ***
	(–4.21)	*(–3.81)*	*(–3.93)*	*(–3.52)*	*(–1.88)*	*(–2.23)*	*(–3.32)*	*(–3.07)*
I^{BPP}	–0.385594		–0.3948975		0.4551414		–0.246955	
	(–0.99)		*(–1.09)*		*(1.05)*		*(–0.64)*	
I^{ROLFM}	–0.2583008 **	–0.1764302	–0.3264503	–0.1132795	–0.0860149	–0.182652	–1.330262 ***	–1.196953 ***
	(–1.72)	*(–1.48)*	*(–1.36)*	*(–0.44)*	*(–0.51)*	*(–1.35)*	*(–4.83)*	*(–4.32)*
I^{APPR}	0.1981372	0.1219454	0.2899823 *	0.1983728	0.3682697 ***	0.4582038 ***	0.739659 ***	0.6823696 ***
	(1.64)	*(1.03)*	*(1.80)*	*(1.24)*	*(3.01)*	*(2.92)*	*(4.64)*	*(3.75)*
I^{EXE}	1.782738 ***	1.629122 ***	1.890821 ***	1.708898 ***	1.064497 ***	1.245821 ***	1.682558 ***	1.56879 ***
	(7.61)	*(6.37)*	*(7.17)*	*(6.67)*	*(3.40)*	*(4.48)*	*(6.32)*	*(6.71)*
PAEP			–0.0555973	–0.2103054			1.119228 ***	1.022479 ***
			(–0.18)	*(–0.60)*			*(3.52)*	*(–2.95)*
DECENTR			–0.3410024	–0.2094827			–1.501498 ***	–1.41925 ***
			(–0.96)	*(0.60)*			*(–3.84)*	*(–3.52)*
R^2	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

t-Student statistics in parentheses. Significance level < 0.01 (***), between 0.01 and 0.05 (**) and between 0.05 and 0.10 (*).

7 Conclusions

This article aimed at analysing the influence of budget institutions on fiscal policy in the countries which joined the EU in 2005 and 2007. Since very few scholars have previously reported results in this area, this study is a pioneering work in its field.[14] One of the distinctive characteristics of our article is the combination of data from various sources, ranging from the OECD, the EU and the IMF, to a variety of analyses from national institutions of each member state in our sample.

The main results of this article confirm that budget institutions, even if recently (re)formed have already had a significant influence on fiscal outcomes in the new EU member states. This has been the case, in spite of the important explanatory power shown by other economic variables (GDP growth and unemployment rate), during the second half of our sample.

Secondly, with regard to 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 sometimes in the design phase) has been a crucial factor in maintaining sound public finances in the new member states. In fact, this variable displayed strong statistical significance in the 28 different estimations we performed.

The role of the Finance Minister in the execution phase confirms the effectiveness of those institutional designs which halt Parliamentary attempts to modify the budget during the discussion and approval phase. By giving the Finance Minister the power to modify (even through simple transfers) the items initially approved by Parliament, such design guarantees the success of any budgetary consolidation episode, although it may raise some questions related to the democratic deficit in the role assigned to the legislature in those systems.

The fact 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 opted for forms of fiscal governance which favour *compromise* between the various Ministers with expenditure capacity, instead of stimulating *delegation* and strengthening the role of the Finance Minister. This choice also explains the difficulties they have all experienced in maintaining their past fiscal adjustments and the sizeable statistical impact that any improvement in the index of the Finance Minister's power has had in terms of reducing the public deficit.[15]

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[14] Only Gleich (2002, 2003) and Yalloutinen (2004) have published studies to date.

[15] Hallerberg (2004) summarises 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 which reinforce compromise with the fiscal discipline of the entire Cabinet. As our analysis shows, Bulgaria, Estonia, Lithuania, Latvia, Poland, the Czech Republic, Slovakia and Romania have adopted forms of budgetary governance based upon compromise (due principally to their multi-party political systems), and only Slovenia and Hungary have adopted mechanisms based upon delegation (both have majority systems).

Although our analysis should be replicated in the future when more fiscal data is available and institutions have been completely consolidated, we believe that this article has provided abundant evidence to support the argument that recently reformed budget institutions have already had an important influence in shaping fiscal consolidations in the new EU member states. If future research confirms that the role of fiscal institutions in the new member states is at least as important as it has been in the "old" member states, the preliminary conclusions reached by this article would become even more relevant.

APPENDIX 1

Value Range of the Variables for the 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*			0.25	
1. Type of regulation of the fiscal framework		0.4761		
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 centres responsible for budgeting and economic policy	3			
b: Budgeting Centre (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			
6. Unification of the budget and its integration in the pluriannual framework		0.4761		
a: Non-existence of extra-budgetary funds	3			
b: Existence of fully integrated extra-budgetary funds	2			
c: Existence of non-integrated extra-budgetary 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)			Value	W_{VAR}	W_{PROC}	W_{GLOBAL}
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			
	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 authorisation of the Executive	1			
	5.	Punitive mechanisms for non-fulfilment 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 analysed separately	1			
c: Does not affect budgeting	0			
3. Relationship 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 conicidence	1 – 0.5			
d: Independence	0			
Total maximum score (A.3.)		10.00		
4. *Role played by the Finance Minister (FM) in pluriannual planning and budgetary programming*			0.25	
1. Function of the proposal of the pluriannual framework and its objectives by the FM to the government		0.6250		
a: Proposal by the FM of the objectives, and full acceptance by the government	4			
b: Proposal by the FM of the objectives, and negotiation in Cabinet, within the limits established in the initial proposal	3			
c: Proposal by the FM of the basic outlines, and redefinition of objectives and allocations by the sectorial ministers	2			
d: Orientative proposal by the FM	1			
2. Model of negotiation between the FM and the sectorial ministers		0.6250		
a: Bilateral, subject to final approval by the FM, according to limits	4			
b: Bilateral, final decision made by the Council of Ministers	3			
c: Multilateral, in the Council of Ministers, withoug prior agreements	2			
d: External political negotiation in coalition governments	1			
3. Model for the resolution of disagreements between the FM 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		

	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 per cent	4			
	b: < 0.2 per cent	3			
	c: < 0.3 per cent	2			
	d: < 0.5 per cent	1			
	e: > 0.5 per cent	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		

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BEYOND THE SGP – FEATURES AND EFFECTS OF EU NATIONAL-LEVEL FISCAL RULES

Joaquim Ayuso-i-Casals, Diana González Hernández, Laurent Moulin and Alessandro Turrini[*]

The paper provides a comprehensive overview of the numerical fiscal rules in force in the 25 countries of the European Union, examines the reasons for the growing appetite for such rules, and assesses whether they have an influence on budgetary developments. The analysis is based on a new dataset constructed from questionnaires submitted to experts in finance ministries of EU countries which report a large amount of information on the numerical fiscal rules in force in the EU countries over the 1990-2005 period. The paper shows that the number of fiscal rules in force in the EU countries has increased in the past decades. The introduction of the Maastricht Treaty and of the SGP seem to have been catalysts for the introduction of fiscal rules. The analysis, based on the estimation of augmented fiscal reaction functions, confirms the existence of a relation between numerical fiscal rules and budgetary developments. The results show that some dimensions matter particularly for the capacity of fiscal rules to influence fiscal policy. Notably, the share of government finances covered by rules and the presence of strong enforcement mechanisms seem to be particularly relevant. The analysis also shows that there is a link between the design of numerical fiscal rules and the stabilisation function of fiscal policy. These findings confirm that while numerical fiscal rules can be useful devices to ensure better policies, careful attention should be devoted to the way they are designed.

1 Introduction

Post-war economic history provides evidence that fiscal authorities in industrialised countries may be prone to a "deficit-bias", which shows up in large and persistent deficits and growing public debts (e.g., Roubini and Sachs, 1989). The behaviour of fiscal policy also appears to be often pro-cyclical, including in good times, in spite of the large agreement that a neutral or counter-cyclical stance would be preferable (e.g., IMF, 2004; European Commission, 2006).

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[*] European Commission.

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The views expressed in this paper represent exclusively the positions of the authors and do not reflect necessarily those of the European Commission.

There is growing agreement that the sources of the deficit bias and the "pro-cyclical bias" is rooted in "political economy" factors, *i.e.*, in the system of incentives and rewards that shape the behaviour of fiscal authorities (see, e.g., Persson and Tabellini, 2000; and Drazen, 2000). Governments, being unsure to be re-elected, are inherently short-sighted and do not fully take into account the longer term implications of deficits. Groups in the society that benefit from a particular type of government spending do not fully internalise the costs of this expenditure, since the financing is generally spread among a wide set of contributors through taxation. This "common pool problem" is at the source of overspending and the accumulation of deficits and debt over time. As pressures for higher spending become stronger in good times, political economy factors can also explain why fiscal authorities often behave pro-cyclically.

Policies aimed at tackling the deficit bias at the source need to redress the structure of incentives of fiscal policy-makers. Broadly speaking, such policies would concern reforms in political institutions or, less radically, measures aimed at improving "fiscal governance", *i.e.*, the overall system of arrangements, procedures, institutions that underlie fiscal policy making. Most of the measures that have been devised in practice to improve fiscal governance concern one or more of the following elements. First, the *procedural rules* laid down in law or constitution that govern the elaboration and implementation of the annual budget law and fix the respective powers of the various actors taking part in the budget process. The main objective of reforming budgetary procedures is to reduce the extent of the common pool problem. Second, *numerical fiscal rules* which fix targets and ceilings for fiscal aggregates or set benchmarks for the conduct of fiscal policy. The purpose in this case is to replace the discretion of fiscal authorities prone to deficit bias with *ex ante* rules. Third, *independent fiscal institutions* (*Fiscal Councils*) other than government and Parliament that play a role on the conduct of fiscal policy by providing inputs or recommendations on fiscal policy issues. The underlying idea is to delegate specific tasks of fiscal policy-making to independent bodies which are less likely to be affected by distorted incentives (see, e.g., IMF, 2005).

This paper focuses on the features and the effectiveness of numerical fiscal rules in EU countries. While abundant literature exists on the role of budgetary procedures in advanced economies, and especially EU countries, in fostering budgetary outcomes (e.g., Poterba and von Hagen, 1999), there is proportionately less analysis devoted to numerical fiscal rules proper.[1] In the EU case, much of the debate and the existing analyses have focused on the EU fiscal framework, *i.e.*, the numerical fiscal rules set at the EU level with the Maastricht Treaty and the Stability and Growth Pact. However, much less attention has been devoted to numerical fiscal rules set at national level (see, e.g., von Hagen *et al.*, 2006, among the few papers on the EU case), despite the growing reliance by EU countries on numerical fiscal rules at national level and the agreement among EU governments, expressed *inter alia* in

[1] A number of recent studies have discussed the potential benefits of various forms of independent fiscal institutions (often named "Fiscal Councils"). See e.g., Eichengreen *et al.* (1999), Wyplosz (2005), Wren-Lewis (2002), Jonung and Larch (2004).

the March 2005 ECOFIN Council report on the reform of the SGP, that an appropriate national-level fiscal governance is a key complement for a proper functioning of the EU fiscal framework. Another reason why further analysis on numerical fiscal rules seems deserved is that there is less than full agreement on their effects. A well-known debate regards the possible trade-off between fiscal discipline and fiscal stabilisation that may arise from the operation of fiscal rules. However, the discussion is still open on the capacity of numerical fiscal rules to effectively affect budgetary results. Doubts have especially been raised on the effectiveness of fiscal rules in absence of a strong political commitment or if not complemented by domestic budgetary institutions ensuring appropriate monitoring and enforcement (e.g., Wyplosz, 2005; von Hagen *et al.*, 2006).

The aim of this paper is threefold. First, to provide a comprehensive overview of the numerical fiscal rules in force in the European Union since the beginning of the nineties. Second, to analyse the underlying reasons for the growing appetite for such rules. Third, to assess whether national-level numerical fiscal rules have an influence on budgetary developments, both from the viewpoint of the fiscal discipline and of fiscal stabilisation. More specifically, we aim at addressing the following three sets of questions:

i) What are the features of the numerical fiscal rules currently in force in the EU countries? Are there common characteristics to rules applied to different levels of government or to different types of countries (big vs. small, contract vs. delegation, etc)?

ii) What macro-economic, budgetary, institutional and political factors have triggered the introduction of national-level numerical fiscal rules?

iii) Is there empirical evidence that national numerical fiscal rules at national level have an influence on the level of deficits? Do numerical fiscal rules have implications for the cyclical stance of fiscal policy? What characteristics of fiscal rules are important for their impact on fiscal discipline and for the stabilisation function of fiscal policy?

Compared with existing analyses, we aim to make a step forward in several respects. First, we have constructed a database on national-level numerical fiscal rules in EU countries by means of questionnaires addressed to fiscal experts in EU Finance Ministries which permit to analyse a wide range of features of a large set of different types of fiscal rules. All numerical rules conforming to the definition in Kopits and Symanski (1998) were considered: "a permanent constraint on fiscal policy, expressed in terms of a summary indicator of fiscal performance". Information was collected both on numerical fiscal rules enshrined in the constitution or law and those based on political commitment or agreement between different general governments.[2] The database contains information of the design of

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[2] If enshrined in constitution or law and having strict monitoring and enforcement mechanisms, such rules can impose binding constraints on the conduct of fiscal policy, and thereby may directly contribute to fiscal discipline. The influence of numerical fiscal rules based on political commitments or informal agreements between different tiers of general government is more indirect: by providing benchmarks

(continues)

the rules, their function, statutory basis, monitoring procedures, enforcement mechanisms, media visibility. The information collected is more updated and takes into account more recent developments compared with existing analyses. Moreover, since information is collected on a consistent basis over the whole 1990-2005 period, it permits to analyse not only the distribution across countries but also the evolution over time.

Second, we make some progress in the construction of synthetic indicators of fiscal rules. We construct distinctive indicators for the overall system of numerical fiscal rules and for expenditure rules only. We construct indicators that permit to capture the intensity in the use of fiscal rules, based on what share of government finances is covered by rules. Moreover, we construct indicators taking into account a number of qualitative features of the rules that are likely to matter for their ability to affect budgetary outcomes (which concern their statutory basis, their monitoring and enforcement procedures and their visibility in the media).

A number of messages emerge from the analysis. The number of fiscal rules in force has increased continuously over the last 15 years. This trend has been observed in all sub-sectors of general government. The introduction of the Maastricht Treaty and of the Stability and Growth Pact seem to have been powerful catalysts for the introduction of these rules. The presumption that the introduction of fiscal rules would follow major crisis, recessions and/or marked deteriorations in government finances is not confirmed by the analysis. The analysis also shows that "contract countries" rely more on numerical fiscal rules than delegation states and that the existence of an independent Fiscal Council seems to favour the development of numerical fiscal rules.

Regarding the impact of rules on budgetary outcomes, there is robust evidence that a more extensive use of numerical rules and rules with a more effective design are related contribute to reduce the size of deficits. The analysis shows that an increase in the share of government finances covered by numerical fiscal rules leads, ceteris paribus, to lower deficits. It also appears that an increase in the coverage of government finances by expenditure rules leads to a reduction in the primary expenditure-to-GDP ratio. The analysis also suggests that the characteristics of fiscal rules matter for their influence on budgetary outcomes. Some dimensions matter particularly for the capacity of fiscal rules to influence fiscal policy, notably the presence of a strong enforcement mechanism. Finally, the analysis supports the view that the nature and design of numerical fiscal rules may have an impact on the cyclical behaviour of fiscal policy. The elements of fiscal rules that are commonly perceived as relevant in terms of their impact on the stabilisation function of fiscal policy seem to indeed to be associated with a different response of fiscal authorities to the cycle.

The paper is organised as follows. The second section provides a selected survey of the literature. The third section describes the dataset, provides a

against which fiscal policy it can be assessed, such rules raise reputation cost for the conduct of unsound policies.

descriptive analysis of the numerical fiscal rules in force in the EU countries, and discusses the factors that may have triggered the introduction of fiscal rules. In the fourth and fifth section, we investigate the existence of a link between numerical fiscal rules and budgetary outcomes (discipline, stabilisation). The concluding remarks follow.

2 Literature review

2.1 The deficit bias: theory

Several different explanations have been put forward for the deficit bias. Most of them, most rigorously grounded in economic theory and empirically tested with strongest success, can be reconducted to two main lines of reasoning: governments' short-sightedness and the so-called "common pool problem".[3]

The main tenet of the explanation for the deficit bias based on governments' short-sightedness is as follows: since governments are not sure of being re-elected, they have a tendency to overlook the long-term consequences of budgetary imbalances. Persson and Svensson (1989) and Alesina and Tabellini (1990) have demonstrated that the inherent short-sightedness of governments associated with uncertain elections lead to deficits in excess of optimal outcomes and that the deficit bias is further exacerbated by a strategic element whereby incumbent governments may have an incentive to "tie the hands" of forthcoming governments by creating high deficits. It has also been demonstrated that incumbents may have an incentive to attempt to affect electoral outcomes via fiscal policy, which in turn creates "electoral cycles" and may provide an additional explanation for the deficit bias (e.g., Rogoff, 1990).

The second main set of explanations is related with the so-called "common pool problem". Since the financing of a specific type of expenditure is often shared among a wide range of agents, interest groups that benefit from given categories of public spending have a tendency to free-ride on others' contributions. This creates a bias towards overspending and the accumulation of deficits. Weingast *et al.* (1981) provide one of the first formal arguments for the common pool problem. Velasco (1999) demonstrates in a dynamic model that the common problem would, over time, lead to the occurrence of large and protracted deficits and the accumulation of debt.

It has been demonstrated that the common pool problem is expected to be stronger in fragmented and heterogeneous government coalitions. Von Hagen and

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[3] An alternative explanation that needs to be mentioned is lack of time consistency of fiscal policy (see, e.g., Persson *et al.*, 1987). In analogy with arguments originally put forward for monetary policy, promises of fiscal rigour by fiscal authorities may lack credibility. If this is the case, agents anticipate high inflation in their wage and price demands, inducing in turn fiscal authorities to run expansionary policies to offset the output effect of supply-driven inflation. Such arguments provide a general rationale to the deficit bias and the use of fiscal rules. However, they are hardly empirically testable.

Hallerberg (1999) show that the members of a given government coalition have an interest to keep taxes low on their own constituencies, which could result into a higher deficit the most numerous the enacted targeted tax cuts and allowances. Persson *et al.* (2005) provide an analogous argument regarding spending: each member of the coalition will support initiatives to increase spending on items favouring their own constituencies. Again, the more numerous the number of different groups represented by the government, the more likely is overspending and deficit bias. Alesina and Drazen (1991) demonstrate that the persistence of large deficits could be due to inefficient political equilibria where coalition members fail to agree on a consolidation package. The implication of the Alesina and Drazen (1991) model is that the higher the degree of heterogeneity of government coalitions, the higher the likelihood that consolidations are delayed. Accordingly, fragmented governments may lead to deficit bias due to a mechanism other than the common pool problem but leading to the same predictions. Finally, Tornell and Lane (1999) have shown that pressures for increased spending resulting from the common pool problem may become stronger when resources are more abundant (*i.e.*, in "good times"), since the marginal gain from lobbying becomes stronger in this phases of the cycle. The resulting outcome is a tendency to run pro-cyclical fiscal policies in good times.

2.2 The deficit bias: empirical evidence

Some papers have provided evidence in support of the explanation for the deficit bias based on governments' short-sightedness. Grilli *et al.* (1991) put in relation deficits and measures for the duration of governments across a panel of industrial countries and find that deficits are strongly related with the frequency of changes in the executive. Moderate evidence in favour of the explanation of the deficit bias based on governments' short time horizon is found in Lambertini (1996) in a study focused on the US. Petterson (1999) finds instead strong evidence in favour of the hypothesis across a large panel of Swedish municipalities. Overall, there is some evidence in favour of the explanation of the deficit bias based on short-sightedness, even if there may be difficulties with the implementation of the empirical tests and with the interpretation of results (see, e.g., Persson and Tabellini, 2000).

The common pool problem explanation for the deficit bias has received relatively strong support from empirical evidence. Three strands of empirical literature addressing the common pool problem can be identified. First, analyses putting in relation measures of government fragmentation with budgetary outcomes. Second, studies linking political institutions to fiscal variables. Third, the large and growing body of literature analysing the relation between budgetary procedures and fiscal outcomes.

2.2.1 Political fragmentation and budgetary outcomes

Poterba (1994) and Besley and Case (2004) analyse the US case and conclude that political fragmentation is associated with higher spending across US states. Roubini and Sachs (1989) analyse a panel of industrial countries and find that more fragmented governments tend to run larger deficits. Perotti and Kontopoulos (2002) find that government expenditure and debt are positively related across OECD countries with the number of members of government coalitions and with the number of spending ministries. In a recent comprehensive study, Fabrizio and Mody (2006) show that fragmented government coalitions are associated with larger deficits in a sample of Eastern European countries.

2.2.2 Political institutions and budgetary outcomes

To some extent the composition of governments, their degree of fragmentation and heterogeneity are the result of more fundamental institutional determinants, above all the electoral system. Proportional systems are expected to lead to more fragmented coalitions. Moreover, the size of the common pool problem could also be related to the way the institutional relations between the executive and the legislative are organized. The strength of check and balances are expected to be stronger in presidential rather than in parliamentary systems, thus leading to a less strong common pool problem (see, e.g., Persson, 2002). Some empirical analyses have provided support to the common pool hypothesis by putting in relation budgetary outcomes with electoral regimes. Grilli *et al.* (1991) find a relation between the size of deficits and proportional electoral systems across a panel of industrial countries. Persson (2002) finds that government spending tends be higher in countries with proportional elections and with a parliamentary system across a large sample of industrial and emerging countries.

2.2.3 Fiscal governance and budgetary outcomes

A large body of empirical literature has tackled the empirical analysis of the common problem by focusing on the impact of the procedures, arrangements and rules that surround fiscal policy making. The idea is that the common pool problem can be reduced in the presence of an appropriate system of fiscal governance. Hallerberg and von Hagen (1999) identify two broad approaches through which the common pool can be mitigated via fiscal governance. The first, *delegation* approach consists of designing institutions for fiscal policy in such a way to delegate strong powers to the finance ministry or to the prime minister. Such an approach permits to concentrate fiscal policy making in the hands of few actors and thereby to internalize the effects of spending and financing decisions on the budget. The second, *contract* approach consists of defining arrangements and procedures that ensure an agreement among spending ministries and other spending authorities (e.g., local authorities) on the total budget which is consistent with *ex ante* defined objectives. In this case, the common pool problem is addressed by means of an

ex ante contract among the various parties that participate to fiscal policy making. These two models of fiscal governance are not mutually exclusive; mixed cases are possible. The models of fiscal governance followed in practice are likely to depend on a series of more fundamental political and institutional factors. While the delegation approach is expected to be suited for countries characterised by single party governments or small homogenous coalitions, a contract approach would be more likely to prevail in countries where fragmented governments are the norm.

The papers that have analysed whether fiscal governance helps to mitigate the common pool problem generally make use of *synthetic indicators of fiscal governance*. This permits to put in relation country-level fiscal variables with variables measuring the degree to which fiscal governance permits to "centralise the budget" (*i.e.*, to solve the common pool problem) which are also defined at country level. Table 1 provides a synthesis of the main features of a series of such indexes that have been proposed so far in the literature.

Von Hagen (1992) builds for EU countries a Structural Index that captures the degree of centralisation of the budget process, the characteristics of the Parliamentary process, and the flexibility of budgetary execution. He finds that fiscal discipline is enhanced by budget procedures in which the finance minister has a strong dominance over spending ministers, the amendment power of the parliament is limited and there is little flexibility with respect to the execution of the budget law. De Haan *et al.* (1999), on the basis of a similar methodology applied to a subset of EU countries, conclude instead that while budget institutions affect fiscal policy outcomes, the effect is in general relatively quite small. Hallerberg *et al.* (2001) further develop the methodology devised in von Hagen (1992) and build different indexes, measuring the connectedness between stability programmes and budgetary procedures, the powers of the Finance Minister in the formulation stage of the budget, those of the Parliament during the approval of the budget and the role of the Finance Ministry in the implementation stage. They find that the impact of fiscal rules on budgetary outcomes differ depending on the overall strategy chosen by the countries to centralise the budget. In contract countries the presence of multiannual budgetary frameworks, especially if connected with Stability and Convergence Programmes, seem to have a significant impact on fiscal results. In delegation countries, budgetary outcomes appear to be affected mostly by the powers of the Finance Minister in the approval and in the implementation stage of the budget.

Gleich (2003) builds indicators measuring the quality of budgetary procedures of 10 Eastern and Central EU countries. His indicators capture the role of procedures at various stages of the preparation of the budget (preparation stage, legislative stage, and implementation stage). Gleich (2003) assigns higher rankings to countries in which institutions are conducive to coordination and cooperation in decision making and that should thus promote fiscal discipline and finds that the institutional design of the budget process in these countries appears to have an impact on fiscal performance. Yläoutinen (2004) follows an approach similar to Hallerberg *et al.* (2001) to build fiscal governance indices for Central and Eastern European countries and shows that most of these countries rely predominantly on

Table 1

Review of Some Fiscal Governance Indexes

Author, Country, Year	Index	Elements considered
ACIR, USA Federal States, 1987	Index of Budget Balance Rule Stringency	• Statutory base • Constitutional base • Governor only has to submit a balanced Budget • Legislature has to pass a balanced Budget • Carry over : possibility and number of years to correct
von Hagen, EU-12, 1992	Structural Index	• **Structure of negotiation within government.** General constraint; agenda setting for negotiations; scope of budget norms; structure of negotiations • **Structure of the parliamentary process.** Amendments: limited; offsetting; cause fall of government;one vote: on expenditure; on total budget size • **Informativeness of the budget draft.** Inclusion of special funds; budget in one document; transparency; national accounts; government loan • **Flexibility of execution.** Finance Minister (FM) can: block; put cash limits; approve disbursements; transfer; allow budget changes; carry over
von Hagen, EU-12, 1992	Index of Long Term Planning Constraint	• **Structure of the parliamentary process.** Amendments limited • **Informativeness of the budget draft.** Inclusion of special funds; budget in one document; transparency; national accounts; government loan • **Flexibility of execution.** FM can: block; put cash limits; approve disbursements; transfer; allow budget changes; carry over • **Long term planning constraint.** Target; horizon; nature; commitment
Inter-American Development Bank, 1997	Index of Budgetary Institutions	• Constraint on the budget deficit • Procedural rules • Transparency
	Index of Activity Decentralization	Level of government that decides on: amounts, structure of spending, subcontractors, hiring, disburses funds, supervises delivery
	Index of Political Autonomy & Participation	Types of election; existence of additional mechanisms of popular participation; political right
	Index of Discretionality of Intergov. transfers	Mechanisms to determine: amount and distribution of the transfer among jurisdictions
	Index of Borrowing Autonomy	Ability to borrow, existence of authorisations and constraints; limits on use of debt; sub level of government owns: banks, public enterprises
Alesina, Hausmann, Hommes, Stein, Latin America, 1998	Index of Budget Institution	• **Sub Index of Constraint.** Constitutional constraints on deficit, macroeconomic program required; government has: borrowing autonomy; possibility of late adjustments, decides unilaterally spending cuts • **"Agenda-setting" Sub Index.** Authority of FM vs. spending ministries; legal constraints on congress' authority to amend proposed budget; options after rejection of proposed budget • **Transparent procedures sub index.** Budget covers other public entities' debt; borrowing autonomy of sub level of government.

Table 1 (continued)

Review of Some Fiscal Governance Indexes

Author, Country, Year	Index	Elements considered
De Haan, Moessen, Volkerink, EU-15, 1999	Similar indexes as von Hagen, 1992 Indicator of Strength of Budgetary Procedure	• **Position of the FM.** Agenda setting for budget negotiations; structure of negotiations; FM can: block; approve disbursements • **Position of legislature.** Amendments: limited; offsetting; cause fall of government;one vote: on expenditure; on total budget size • **Presence of some kind of constraint.** General constraint; degree of commitment • **Transparency of the budget.** Inclusion of special funds; budget in one document; transparency; national accounts; government loan • **Flexibility during execution of the budget.** Cash limits; transfers; budget changes; carry over • **Relationship with other parts of government.** Existence of budget balance constraint in other levels of government; degree of planning autonomy
Hallerberg, Strauch, von Hagen, EU-15, 2001	Connectedness Index	• Stability or convergence programme and budget done by same department • Accounting rules and reporting • Calendar for preparing the annual budget an the stability program • Budget targets conceptually
	Finance Minister Index	• Level of discussions within the cabinet • Resolution of disagreements: Finance Minister vs. spending ministers • Possibility that Cabinet overrules FM's decisions
	Parliament Index	• Can Parliament propose separate budget? • Amendments: allowed; not limited offsetting cause fall of government • Existence of time limit to parliamentary consideration
	Finance Ministry-Implementation Index	Information on whether Finance Minister can impose expenditure and cash limits, approves disbursements, must approve transfers between chapters
Gleich, Central and Eastern European Countries, 2003	Preparation stage	• Statutory fiscal rule • Sequence of budgetary decision-making • Compilation of the draft budget • Members of executive responsible for reconciling conflicts over budget bids
	Legislative stage	• Relative power: upper house vs. lower house • Constraints on the legislature to amend the government's draft budget • Sequence of votes • Relative power of the executive vs. parliament • Authority of the national president
	Implementation stage	• Flexibility to change budget aggregates during execution • Transfers of expenditures between chapters • Carry-over of unused funds to next fiscal year • Procedure to react to a deterioration of budget deficit

Table 1 (continued)

Review of Some Fiscal Governance Indexes

Author, Country, Year	Index	Elements considered
Filc and Scartascini, Latin America, 2004	Fiscal Rule Index	Fiscal limits; medium term fiscal framework; borrowing limits; reserve funds
	Hierarchical Procedures Index	Within the executive branch; executive-legislative relations
	Transparency Index	Budget document: is comprehensive; covers extra-budgetary funds
Yläoutinen, Central and Eastern European Countries, 2004	See Hallerberg *et al.*, 2001	
von Hagen, EU-15 and Japan, 2005	Index of Budgeting Institutions	• **Budget Negotiations.** Quantitative constraint; strong agenda setting powers of FM; early fixed quantitative constraints • **Parliamentary Stage.** Executive strong agenda setting powers, overall constrain on budget; vote on total spending • **Informativeness.** Budget in one document; inclusion of: special funds, loans to non government; link to national account data; transparency of data • **Flexibility of Execution.** Budget law binding for government; instruments of FM to avoid overspending; transfers between minister years
von Hagen, EU-15 and Japan, 2005	Fiscal Rule Index	• Time horizon • Degree of commitment • Anchoring of the fiscal targets in the coalition agreement • Connection between national budget and Stability Program • Existence of clear rules dealing with shocks to exp • Strength of fiscal minister to enforce budget law
von Hagen, Hallerberg, Strauch, EU-15, 2006	Delegation Index of the Budgetary Process	• **Executive Planning Stage.** General constraint; agenda setting of FM; budget norms; structure negotiations in cabinet • **Legislative Approval.** Amendment are: limited; offsetting; can lead to fall of government; vote: all expenditure passed in one; on total size of budget • **Implementation.** FM can: block; put cash limits; approve disbursements; constraint transfer allowance; allow budget law changes; carry over
von Hagen, Hallerberg, Strauch, EU-15, 2006	Stringency Index for Fiscal Rules	• Time horizon • Degree of commitment • Nature of plan • Type of multiannual target
Sutherland, Price, Jourmard, OECD Countries, 2006	Indicator of preferred attributes of fiscal rules for sub-levels of government	• **Restraining size of the public sector.** Expenditure growth control; limit on tax autonomy; budget transparency; ratchet effect • **Supporting allocative efficiency.** Board budget coverage; board spending targets; uniform rules for investment • **Ensuring debt sustainability.** Deficit and debt control, deficit and debt monitoring • **Coping with shocks.** Protection from the cycle; escape clauses; budget balance rigidity; borrowing relief

the commitment approach and that have strengthened their fiscal governance in recent times, mainly by establishing multiannual frameworks.

Von Hagen (2005) builds a Fiscal Rule Index summarising information pertaining to numerical fiscal rules, and an Index of Budgeting Institutions, measuring the extent to which other arrangements and practices permit to centralise the budget process.[4] The analysis considers both EU countries and Japan and concludes that numerical fiscal rules have disciplinary effects provided they are designed in an effective way and are combined with a design of the budget process that enables the government to commit to the rule. Hallerberg, *et al.* (2006, 2004) focus on the interaction between fiscal rules and budgeting processes at national level and conclude that fiscal rules are more effective in contract countries than in delegation countries. Annett (2006), shows that the Stability and Growth Pact has been more effective in improving budgetary outcomes in EU countries relying on a contract approach to fiscal governance.

3 National-level fiscal rules in Europe

3.1 The data

In this section, we provide here basic information on the sample used in the following analysis. Information on fiscal rules in EU countries was collected by means of a survey conducted by the European Commission in 2006 in the context of the Working Group on the Quality of Public Finances (WGQPF) attached to the Economic Policy Committee (EPC). Questionnaires were filled out directly by fiscal policy experts in EU capitals. In contast with existing studies which generally focus on the effect of certain types of fiscal rules applied to the central and, more rarely, the general government sector, our database is more comprehensive in several respects. It includes information on all types of numerical fiscal rules irrespective of the *fiscal aggregate* concerned (budget balance rules, debt rules, expenditure rules…), of the *legal status* (rules enshrined in law or constitution, rules based on political commitment, …), of the *sub-sector of general government* to which they apply (local governments, state governments, central government, social security). The database contains information on all rules in place throughout the whole 1990-2005 period. This allows considering the dynamic dimension in the analysis of the relation between numerical fiscal rules and budgetary outcomes. We received information for all 25 EU countries. Among them, 22 have at least numerical fiscal rule; only Malta, Cyprus and Greece do not have numerical fiscal rules according to the definition used in our analysis.

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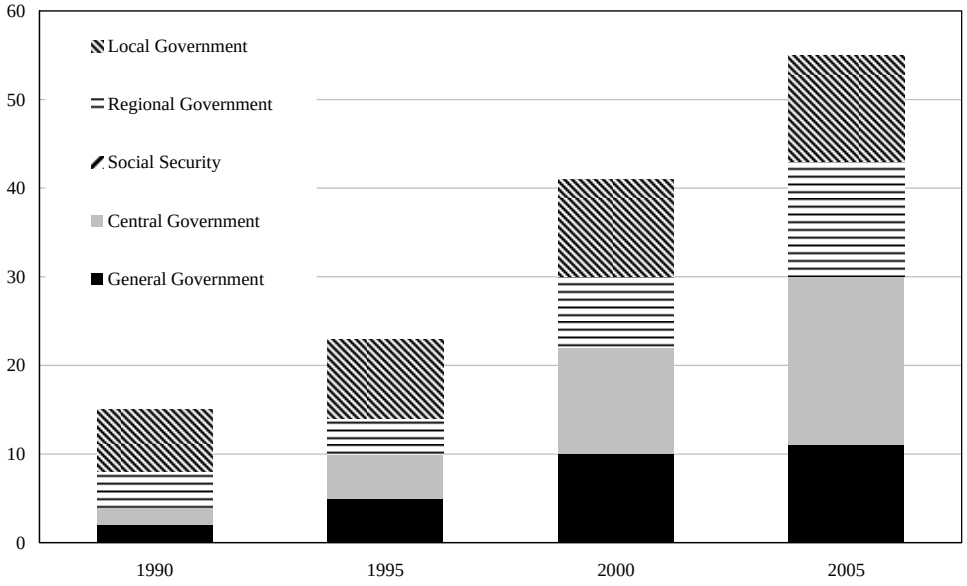
[4] The von Hagen (2005) Fiscal Rule Index takes into account a number of features, including the time horizon covered by the rule, the degree of commitment to the rule, whether the fiscal targets are anchored in a coalition agreement, the connection between the Budget and Stability and Convergence Programmes, the existence of clear rules dealing with shocks to expenditures and the strength of Finance Minister to enforce budget law.

Figure 1

Number of Numerical Fiscal Rules in Force in the EU Since 1990 by Level of Government



The following information is available for each rule: (i) the general characteristics of the rule; this covers the type of rule, the precise definition of the targeted variable, the government sectors covered by the rule, whether some types of expenditure are excluded from the coverage of the rule, the time frame, statutory basis, monitoring and enforcement procedures of the rule; (ii) the motivations for the introduction of the rule; (iii) the relevant dates for the conception and entering into force of the rule and the main changes in the period under review; (iv) finally, the database includes (subjective) information related to the perception of the track record in terms of compliance and of the reasons for possible non-compliance with the rule. It also contains questions related to the perception on whether the rule has contributed to fiscal discipline and whether non compliance generally triggered a public debate.

3.2 Stylised facts

This section provides a number of stylised facts regarding the numerical fiscal rules in force in the EU countries since 1990. The number of rules in force in the EU countries has grown continuously over the past fifteen years (see Figure 1). In the early nineties, most numerical fiscal rules were applied at local or regional levels of government. This reflected the willingness of higher levels of government to impose constraints on local entities and the need to ensure sufficient coordination among

Table 2

Distribution of Numerical Fiscal Rules in the EU by Fiscal Aggregate Targeted and Design, 2005

Budget Balance Rules	Golden rules	Balanced budget rules	Nominal ceiling	Ceiling as a percent of GDP	Rules in structural terms	Total
	5	8	5	1	3	22
Debt Rules	Debt ceiling in nominal terms	Debt ceiling as a percent of GDP	Debt ceiling related to repayment capacity	Other		Total
	5	2	7	1		15
Expenditure Rules	Nominal expenditure ceiling	Real expenditure Ceiling	Expenditure growth rate (nominal)	Expenditure growth rate (real)	Other	Total
	5	2	3	3	2	15
Revenue rules	Tax burden as a percent of GDP	Rule related to tax rates	Allocation of extra revenues	Other		Total
	0	1	3	1		5

general government tiers. Such rules continued to develop throughout the whole period covered by the survey and exist today in almost all EU countries. In parallel, the number of numerical fiscal rules applying to the central government sector has increased considerably, reflecting especially an increased reliance on expenditure rules. A relatively recent feature has been the introduction of numerical fiscal rules in the social security sector and rules covering the whole of the general government sector. These developments may be a response to the need to redirect expenditure across sub-sectors of general government, to tackle the increasing spending pressures in the social security sector, or to the introduction of the EU fiscal rules, which impose requirements for the general government deficit and debt.

The analysis of the questionnaires shows that there is a great deal of variety in the design of numerical fiscal rules as regards the type of rule and the definition of the target (see Table 2). About one third of the numerical rules currently in force in EU countries are budget balance rules, about one quarter are rules imposing restrictions on borrowing and debt, and about another quarter are expenditure rules (see also Figure 2). Most budget balance and debt rules are applied to regional and local governments (see Figure 3). In contrast, expenditure rules are more frequent in the central government and social security sub-sectors. Only few budget balance rules, all of them applying to the general and central government level, are defined in cyclically-adjusted terms. About two thirds of expenditure rules define ceilings for levels or growth rates in nominal terms, the remaining third being defined in real terms. More than half of revenue rules currently in force in the EU countries

Figure 2

Number of Numerical Fiscal Rules in the EU Since 1990 by Fiscal Aggregate Targeted

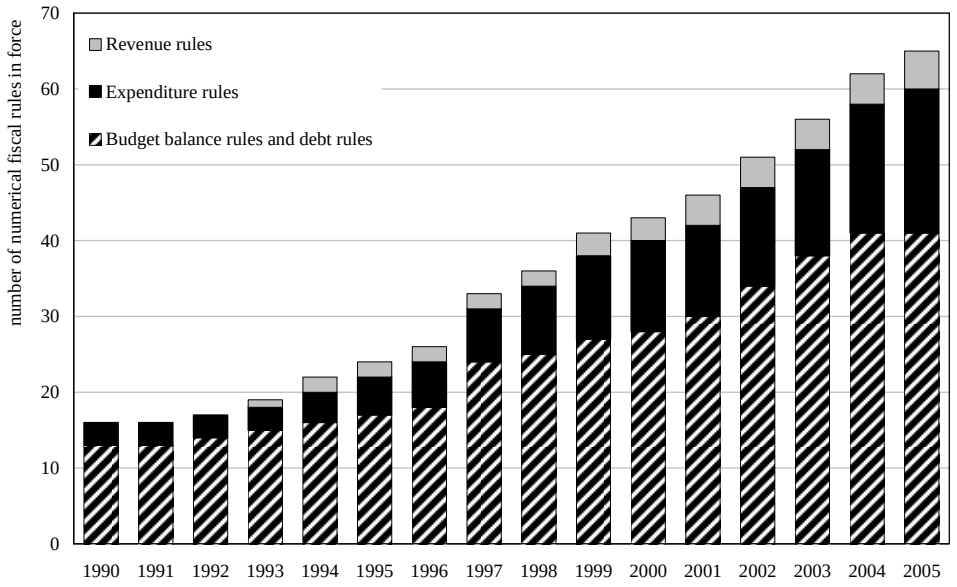


Figure 3

Distribution of Numerical Fiscal Rules in the EU by Level of Government and Fiscal Aggregate Targeted, 2005

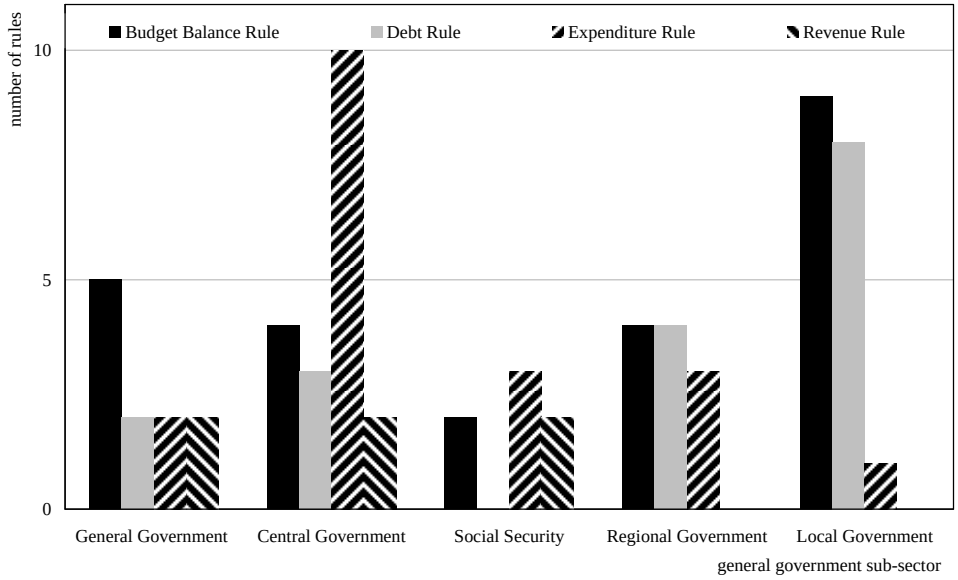
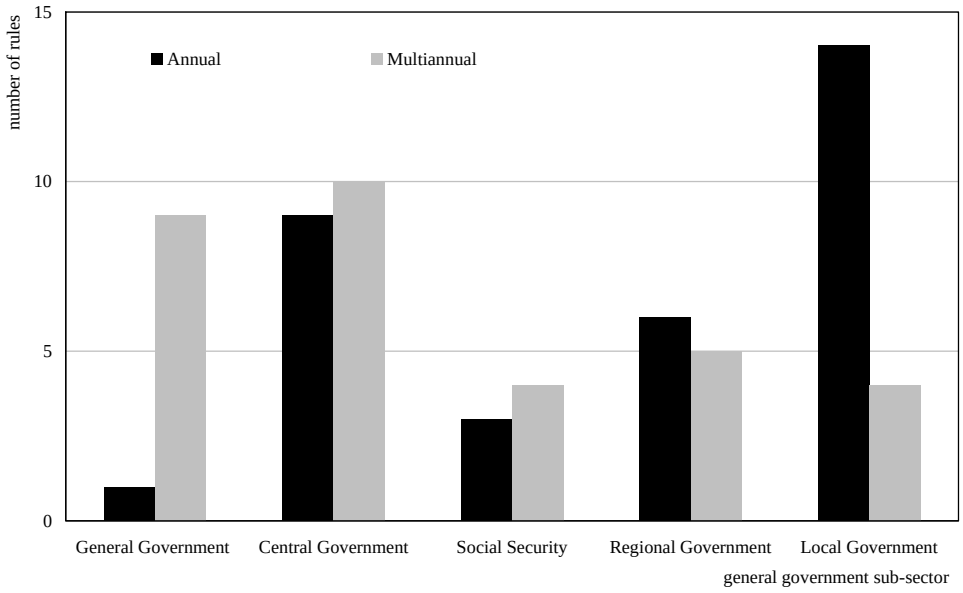


Figure 4

Distribution of Numerical Fiscal Rules in the EU by Level of Government and Time Horizon, 2005



establish pre-defined principles for the allocation of higher-than-expected revenues (Table 2).

Some characteristics of the rules vary markedly depending on the level of government to which they apply. Rules applied to regional and local governments rely preponderantly on annual schemes, while most of those concerning the general government and central government sectors have a time horizon that goes beyond the yearly budgetary cycle and are integrated into a multiannual fiscal framework (see Figure 4). This could be related to the fact that the stabilisation function of fiscal policy takes mainly place at central and general government level, so that there is a stronger need for fiscal rules at higher levels of government that are consistent with stabilisation objectives.

The large majority of numerical fiscal rules defined at sub-national levels of governments are enshrined in law or in constitution, while rules concerning central government and the whole of the general government sector tend to be more based on political agreements (internal stability pacts or other forms of political agreement or commitment). Likewise, a majority of rules applying to local and regional governments sectors foresee either automatic correction mechanisms or the obligation for the authority responsible to adopt measures in case of non compliance with the rule (see Figures 5 and 6). In contrast, most rules concerning the central government sub-sector do not include ex ante defined actions in case of non-respect.

Figure 5

Distribution of Numerical Fiscal Rules in the EU by Level of Government and Statutory Basis of the Rule, 2005

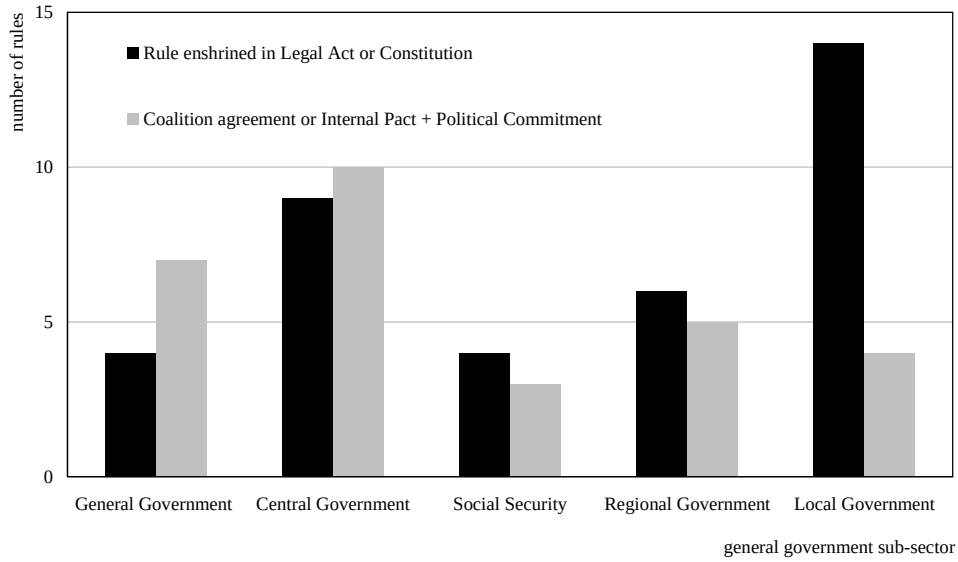


Figure 6

Distribution of Numerical Fiscal Rules in the EU by Level of Government and Enforcement Mechanism of the Rule, 2005

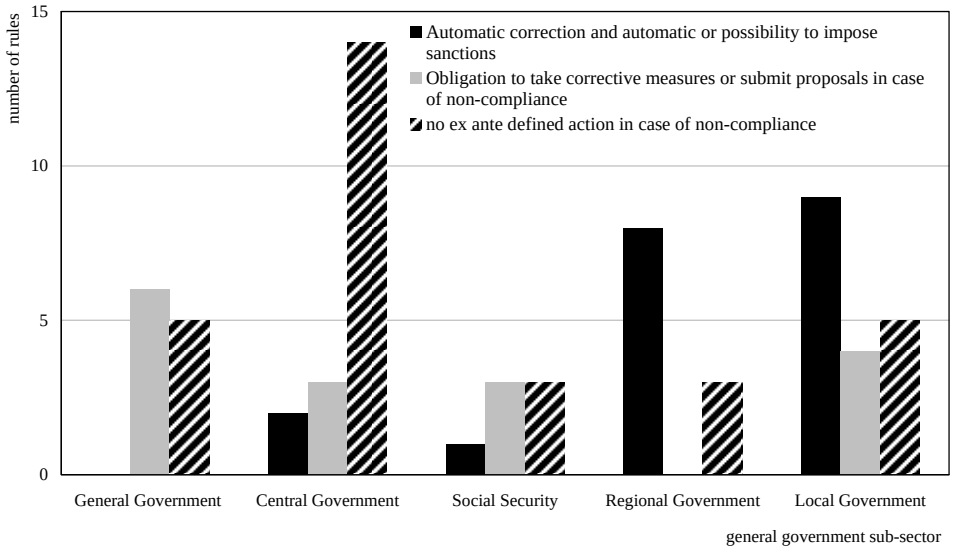
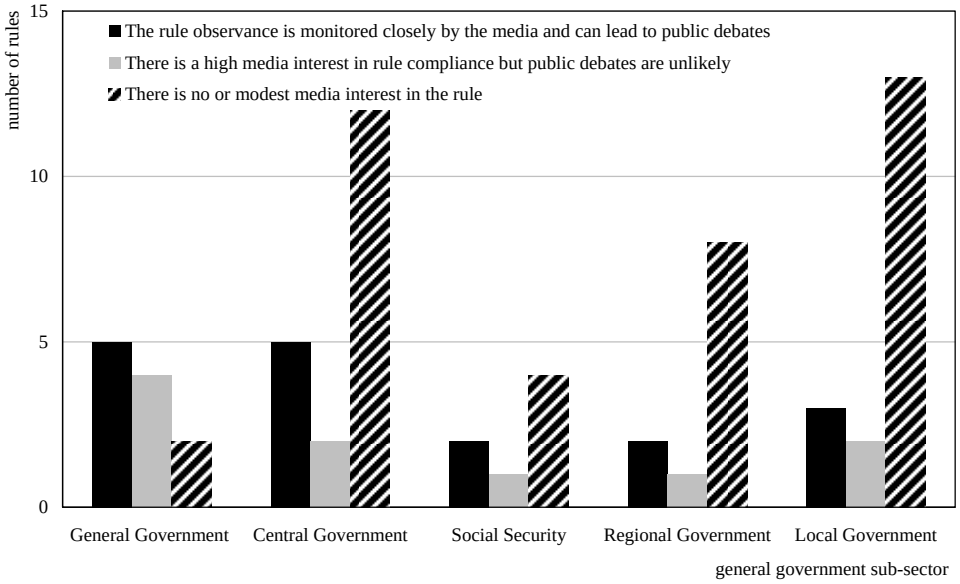


Figure 7

Distribution of Numerical Fiscal Rules in the EU by Level of Government and Media Visibility, 2005



The explanation could be that enforcement of rules applying to a wide range of actors (state and local fiscal authorities) requires stronger statutory body and tight procedures. Moreover, it appears from the replies to the questionnaire that the rules applying to central and general government level draw much more public opinion and media interest than other rules, which can be expected to contribute to the enforcement of the rule through higher reputation costs in case of non-compliance (see Figure 7).

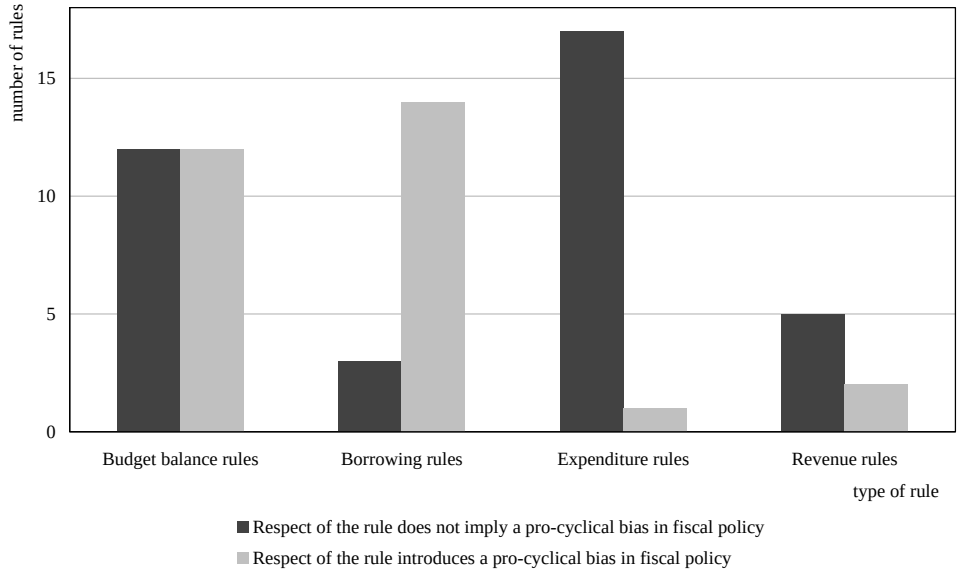
The questionnaire on fiscal rules included explicit questions on the perception of whether each of the rules in place would entail a pro-cyclical bias in the conduct of fiscal policy. The replies (see Figure 8) indicate in the majority of cases that the respect of the rule may imply the conduct of pro cyclical fiscal policy in the case of budget balance and debt rules, while expenditure rules are generally not perceived as leading to pro-cyclical outcomes. Regarding revenue rules, the majority is judged not to entail a pro-cyclical bias, which is consistent with the fact that more than half of them deal with the allocation of higher-than-expected tax revenues.

3.3 Synthetic indicators of numerical fiscal rules

The main objectives of this paper are to understand the reasons for the growing recourse to numerical fiscal rules and to assess whether such rules have an

Figure 8

Distribution of Numerical Fiscal Rules in the EU by Fiscal Aggregate Targeted and Perceived Impact on Cyclical Stabilisation, 2005



influence on budgetary developments. To this purpose, it is necessary to construct synthetic indicators summarising, for a given country and in a given year: (i) the degree of intensity in the use of numerical rules; (ii) the potential effectiveness of such rules based on their characteristics. The construction of these indicators requires dealing with several issues.

First, account needs to be taken of the fact that different type of rules may concur to the same objective of improving budget balances and may be present in the same country, in the same year. This implies that a *weighting scheme* is needed *to aggregate multiple coexisting rules* in a synthetic indicator.

Second, the analysis needs to take into account that the vast majority of numerical fiscal rules apply only to a *fraction of the general government sector*. However, most fiscal time series of interest for our analysis are available only for the general government level. It would be meaningless to link budgetary outcomes defined at general government level with rules applying at general government sub-sectors. A solution could be to take into account in the construction of a synthetic indicator that individual fiscal rules may cover different sectors of the general government in such a way to differentiate between a rule applying, say, to municipalities from a rule defining numerical ceilings for the whole of the general government sector.

Third, it must be taken into account that the effectiveness of fiscal rules may also depend on a number of *qualitative features* (see, e.g., Inman, 1996, for a discussion). A first relevant characteristic of a fiscal rule is its *statutory basis*, *i.e.*, whether the rule is enshrined in the constitution or in law or it is simply the fruit of a political agreement. The nature of the *body in charge of monitoring* the rule is another important element. When the respect of the rule is monitored by an independent body the probability that fiscal variables are adjusted to ensure compliance with the rule can be expected to be higher. The *nature of the enforcement mechanisms* also matters. In particular, the existence of sanctions mechanisms in case of non-respect of the rule, which can be enacted by an independent authority, can be expected to foster compliance. Finally, it should considered that those rules that are neither enshrined in law or constitution nor regularly monitored and for which no enforcement mechanisms is defined may nonetheless contribute to budgetary outcomes if characterised by a high degree of *media visibility*.

We built synthetic indicators for the overall set of numerical fiscal rules and for the subset of expenditure rules only. The methodology is inspired from that in existing literature (see, e.g., Deroose, Moulin and Wierts, 2005). Considering that almost all numerical fiscal rules are designed to contribute to the reduction of general government deficits, our intention is to relate the synthetic indicators for the overall set of fiscal rules with general government balances. Similarly, we intend to put in relation the synthetic indicators for expenditure rules with data on government expenditure. We did not construct a synthetic indicator for revenue rules only, the reasons being the relative low number of such rules in the sample and the variety of the purposes pursued by such rules (see Table 2).

Both for the overall set of rules and for expenditure rules only we build two synthetic indicators. The first is aimed at measuring the degree of intensity in the use of numerical rules, the second aims at capturing also the characteristics of fiscal rules which may influence their capacity to influence budgetary outcomes. We call these two indexes, respectively, *Fiscal Rule Coverage Index* and *Fiscal Rule Index*. When the indexes only consider expenditure rules we name them *Expenditure Rule Coverage Index* and *Expenditure Rule Index*. We provide in the following a brief description of the criteria followed for the construction of the Fiscal Rule Coverage Index and of the Fiscal Rule Index. Analogous criteria apply to the Expenditure Rule Coverage Index and to the Expenditure Rule Index. The Annex provides a detailed description followed for the description of the synthetic indicators.

The Fiscal Rule Coverage Index summarises the information on the fraction of general government finances that is covered by numerical fiscal rules. In absence of a strong a priori regarding which types of rules have a greater influence on fiscal outcomes, all types of rules are treated in the same way (they are given the same weight). An issue arises in case more than one rule applies to the same sub-sector of the general government. In such a case, it is likely that some rules are redundant. However, fully ignoring the fact that multiple rules are present may imply disregarding the impact of some of them. For this reason we adopt the

"rule-of-thumb" assumption that when multiple rules coexist on the same government sub-sector, those rules with the "weaker" features (e.g. rules with no legal basis, no clear monitoring and enforcement procedures, low media visibility) are given weight equal to ½.

The Fiscal Rule Index takes into account not only the information on the share of government finances covered by numerical fiscal rules but also the qualitative features of fiscal rules that matter for their effectiveness. To this aim, for each rule we calculated a composite Index of Strength aimed at capturing its potential effectiveness, on the basis of scores assigned to the five qualitative features mentioned before (the statutory base of the rule; whether there is an independent monitoring; the nature of the institution responsible for the enforcement of the rule; the existence of pre-defined enforcement mechanisms; and the media visibility of the rule).

In addition, we calculated a *Fiscal Rule Cyclicality Index* with the aim of providing synthetic information on the likely impact on the stabilisation function of fiscal policy arising from the system of fiscal rules operating in a given country in a given year. This index takes into account the share of government finances covered by fiscal rules and the properties of each fiscal rule with respect to macroeconomic stabilisation. Scores were attributed to each rule, the higher value corresponding to an *a priori* larger stabilisation function of the rule.

All indexes are calculated for the period 1990-2005, so that they permit to track the changes in the design or in the perimeter covered by the rules throughout the period. All indexes are normalised in such a way to have zero mean and unit variance.

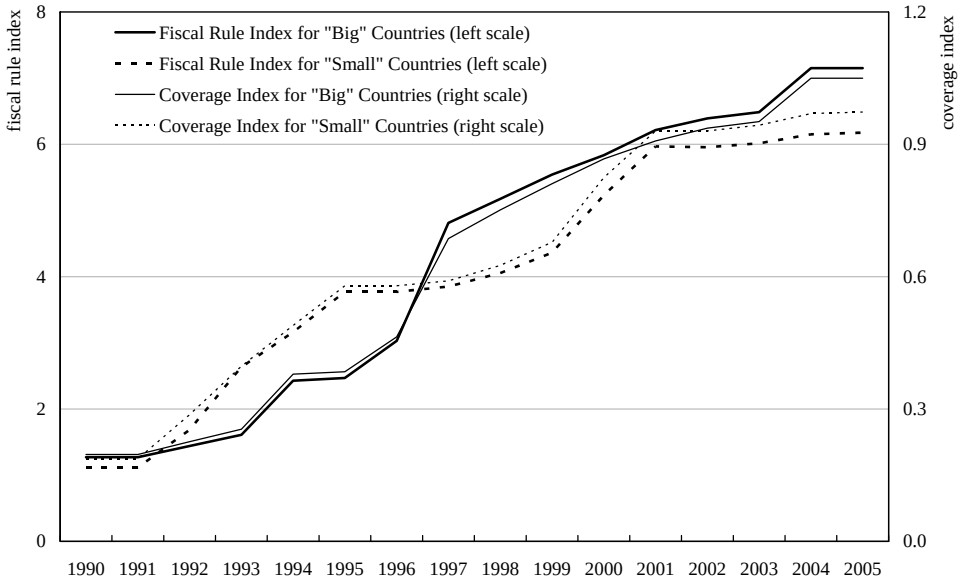
3.4 Which countries rely more on numerical fiscal rules?

In this section, we examine whether some specific groups of countries show more or less reliance on numerical fiscal rules. To assess the reliance on fiscal rules, we focus on three types of indicators: (i) the number of fiscal rules in place in the countries; (ii) the share of government finances covered by the fiscal rules in place as measured with our *fiscal rule coverage index*; and (iii) the *fiscal rule index* that takes into account both the share of government finances covered by fiscal rules and the characteristics of these rules.

We first examine whether "big" and "small" countries show a different pattern with respect to numerical fiscal rules. *Prima facie* evidence indicates that the size of the country does not seem to be a relevant dimension for the reliance on fiscal rules. When splitting the sample in two groups of countries (Germany, Italy, the UK, France, Spain and Poland on one side; other countries on the other side), it appears that large countries have on average more rules than others (3.8 rules in "big" countries, 2.7 in "small" countries). However, as shown in Figure 9, the Fiscal Rule Index exhibits a comparable evolution in the two groups of countries.

Figure 9

Evolution of the Fiscal Rule Index and the Fiscal Rule Coverage Index in "Big" and "Small" EU Countries



In a second step, we look at numerical fiscal rules in "high-deficit" countries and "low-deficit" countries (*i.e.*, to countries with an average deficit during the 1999-2005 period which is, respectively, above and below 3 per cent of GDP). It turns out that the number of fiscal rules in force is significantly higher in countries with low deficits (3 rules on average in low deficit countries, as against 2 rules in the higher deficit countries). The stronger reliance on numerical fiscal rules in low deficit countries is even clearer when looking at developments in the Fiscal Rule Index. This index is always significantly higher in these countries over the period 1990-2005 (see Figures 10 and 11). The difference is mainly related to the fact that low deficits countries have a larger share of government finances covered by fiscal rules. Interestingly, the average "strength" of fiscal rules in force seems to be equivalent in the two groups of countries. A similar conclusion is reached when splitting the sample alternatively, e.g., between countries with average deficits over the period above and below the median deficit across the whole sample (Figure 11).

"Delegation" and "contract countries" present on average a similar number of numerical fiscal rules. There are however a number of differences in the distribution of the fiscal rules in force. Countries following the contract approach hinge more on numerical fiscal rules applied at the general government, central government, and social security level. Conversely, delegation countries have a higher number of fiscal rules implemented at regional and local level (see Figure 12). This distribution seems consistent with the fact that the larger political dispersion of governments in

Figure 10

Evolution of the Fiscal Rule Index and the Fiscal Rule Coverage Index in Countries with an Average Deficit Over the 1990-95 Period Below and Above 3 Percent of GDP

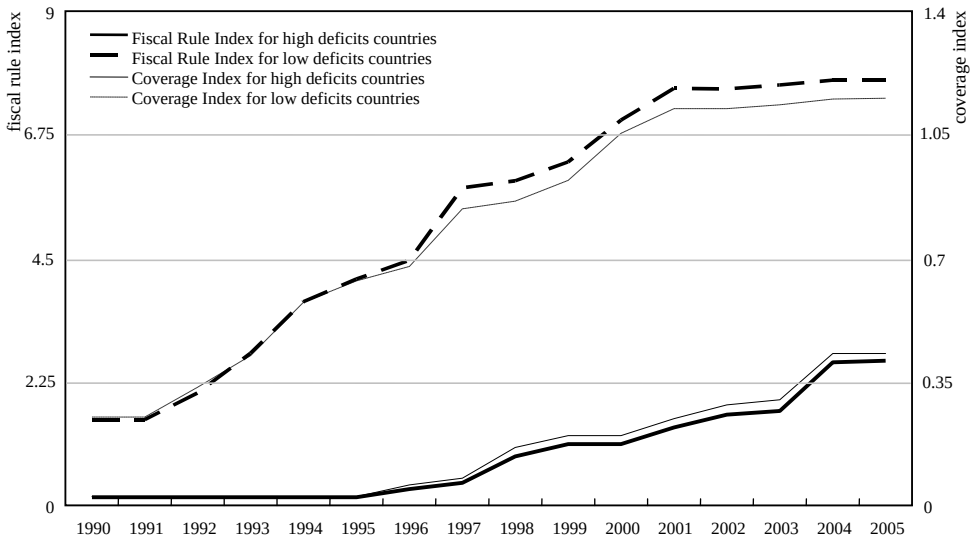


Figure 11

Evolution of the Fiscal Rule Index and the Fiscal Rule Coverage Index in Countries with an Average Deficit Over the 1990-2005 Period Below and Above the Median Deficit Over the Whole Sample

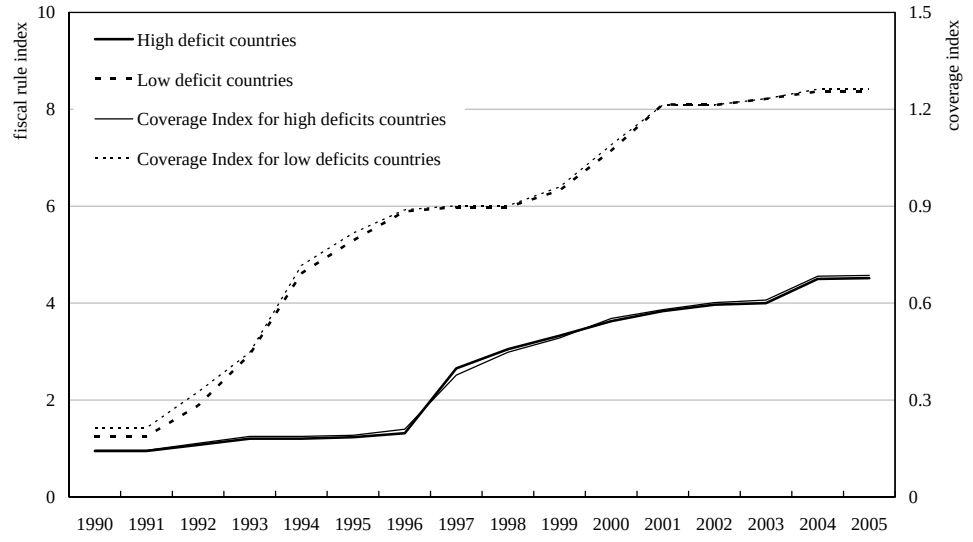
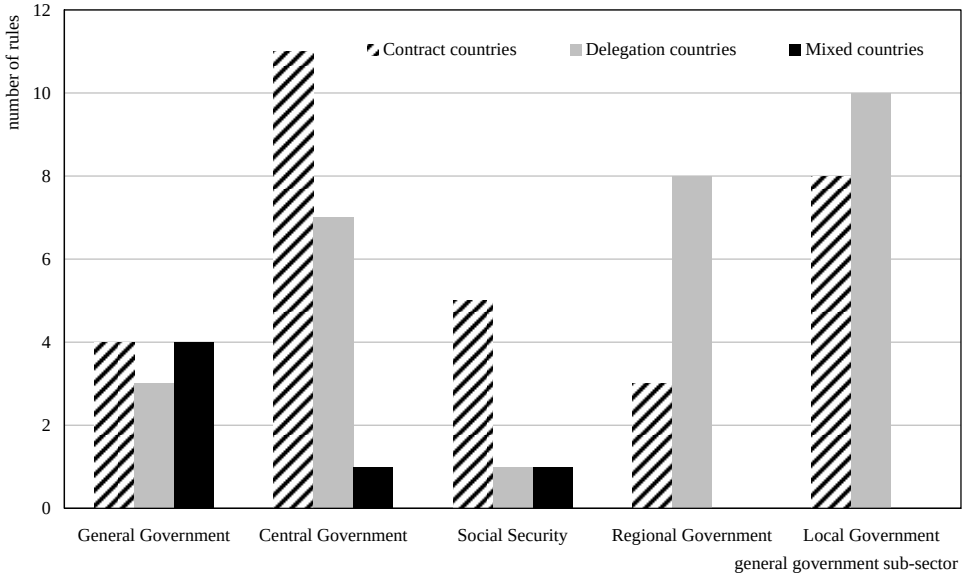


Figure 12

Distributions of Numerical Fiscal Rules in Contract and Delegation Countries by Level of Government, 2005



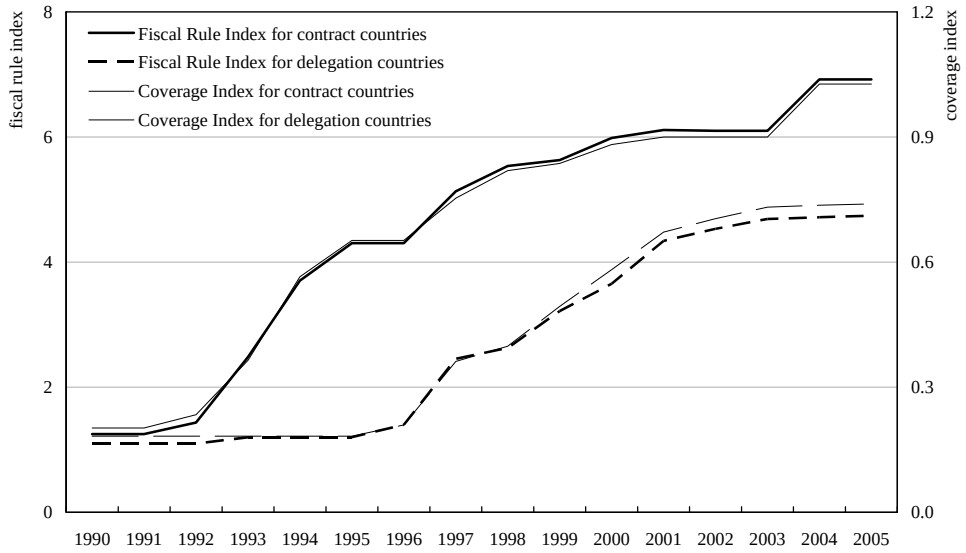
contracts countries is likely to promote fiscal rules ("contracts") at general government or central level. Stronger reliance of fiscal rules at higher levels of government in contract countries translates into a higher value of the Fiscal Rule Index in this group of countries throughout the whole sample period. Looking at the time-profile of the Fiscal Rule Index it stands out that, while the increase of the index has been particularly rapid in contract countries following the adoption of the Maastricht Treaty, an acceleration of the index in delegation countries is observed following the adoption of the SGP (see Figure 13).

3.5 What triggers the introduction of fiscal rules?

What motivations and circumstances lead countries to introduce numerical fiscal rules? There could be many factors that may be affect he willingness of countries to rely on numerical rules to facilitate the achievement of budgetary objectives. The fiscal situation of the country, its growth performance, the existing framework for fiscal governance and the overall political and institutional setting, both at a national and at a super-national level, are likely to play a role. In order to measure the impact of these different set of factors, we carried out a simple multivariate regression exercise. This would help to interpret the *prima facie* evidence presented in the previous section.

Figure 13

Evolution of the Fiscal Rule Index and the Fiscal Rule Coverage Index in Contract and Delegation Countries

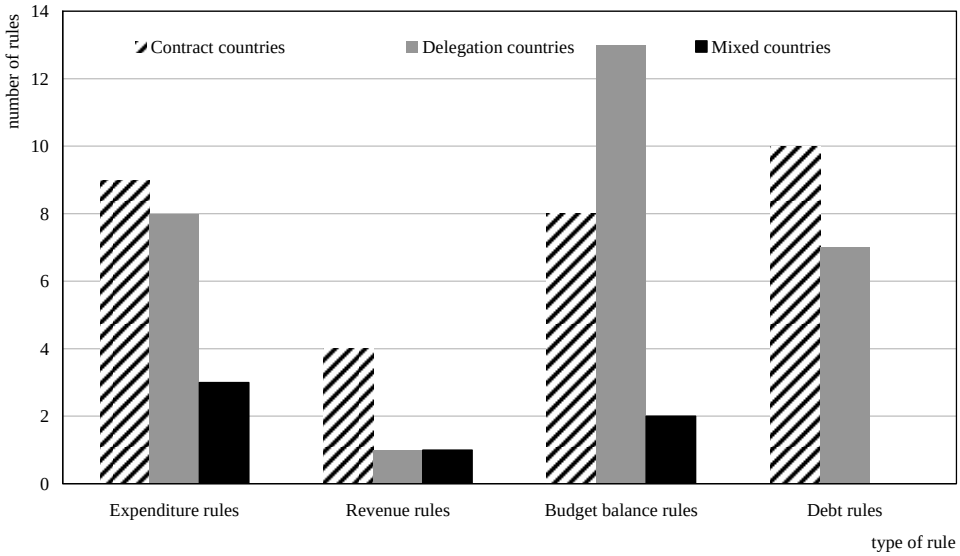


The dependent variables are our aggregate indexes for fiscal rules, alternatively the Fiscal Rule Coverage Index, the Fiscal Rules Index, the Expenditure Rule Coverage Index, or the Expenditure Rule Index. Regarding the explanatory variables, we used fiscal data (budget balance, total government expenditure, debt ratio) and data on output gap from the AMECO European Commission DG ECFIN database. The explanatory variables capturing fiscal governance are a dummy capturing the existence of a Fiscal Council during the period covered in the sample (information obtained from the Commission survey on fiscal institutions – see European Commission, 2006) and a dummy indicating whether the country follows a "contract model" of fiscal governance or a "delegation model".[5] One dummy distinguishes "small" countries from those that could be considered as "big". The choice follows the weight these countries have in the European Council; this way the dummy captures not only economic size but also the possibility of a different degree of peer pressure coming from the EU fiscal framework, due to the different ability of countries to influence the outcome of the decisions by the EU Council. A series of dummies capture the main developments in the EU fiscal framework: the start of phase II of the Economic and Monetary Union (*i.e.*, the start of the "run up to Maastricht"); the introduction of the Stability and Growth Pact; the 2004 enlargement of the Union to ten new countries. The dummies

[5] The classification used is based on von Hagen *et al.* (2001, 2002, 2005) and Yläoutinen (2004).

Figure 14

Distribution of Numerical Fiscal Rules in Contract and Delegation Countries by Fiscal Aggregate Targeted, 2005



take value 1 in the years and for the countries that are concerned with the above mentioned EU processes. Finally, we include a series of political variables: dummies to take into account the presence of elections and the nature of the electoral system (proportional or majoritarian), the degree of dispersion of seats in the Parliament as measured by the Herfindahl index, the margin of majority held by government in the Parliament, and dummies capturing the orientation of the ruling coalition along the political spectrum. The source of these data is the World Bank Database of Political Institutions (Beck *et al.*, 2001).

Table 3 shows the regression results. Data are pooled across countries and time. All time-varying explanatory variables are taken with a lag to avoid simultaneity problems. To take into account the possibility of heteroscedastic residuals, *t* tests are constructed on the basis of robust standard errors. Overall, the regressions explain a large share of the variance of the dependent variables, as measured by the *R*-square statistics. However, only few explanatory variables appear to be highly statistical significant.

Contrary to what one might expect, the evolution of fiscal rules indexes is only loosely related to the initial state of countries' public finances. Alternative specifications (not reported) have been estimated using, instead of the lagged budget balance, total government expenditure and debt ratio, the 3-year lag in the government budget balance and in the total expenditure variable, their year-on-year change, and their cumulated change over 3 years. As a further alternative, the budget

Table 3

Determinants of the Value of the Fiscal Rule and Expenditure Rule Indexes

Dependent variable	(1)	(2)	(3)	(4)
Explanatory variables	Fiscal Rule Coverage Index	Expenditure Rule Coverage index	Fiscal Rule Index	Expenditure Rule Index
Lagged index	0.87***	0.92***	0.88***	0.92***
	(26.21)	*(32.28)*	*(25.98)*	*(27.43)*
Lagged net lending	0.016	0.004	0.019	0.00
	(1.24)	*(0.65)*	*(1.60)*	*(0.62)*
Lagged expenditure	0.005*	0.00	0.00	0.00
	(1.83)	*(0.33)*	*(0.94)*	*(0.17)*
Lagged debt/GDP ratio	–0.00	–0.00	–0.00	–0.00
	(–1.21)	*(–0.92)*	*(–0.63)*	*(–0.71)*
Lagged output gap	0.00	0.00	0.00	0.00
	(0.44)	*(0.51)*	*(0.04)*	*(0.53)*
Dummy run-up EMU	0.11**	0.17***	0.07	0.16**
	(2.03)	*(2.93)*	*(1.46)*	*(2.74)*
Dummy SGP	0.13*	0.14**	0.08	0.13*
	(1.89)	*(2.10)*	*(1.26)*	*(1.80)*
Dummy enlargement	0.07	0.04	0.06	0.04
	(1.49)	*(1.08)*	*(1.37)*	*(0.91)*
Election year	0.04	0.06	0.13	0.06
	(0.60)	*(1.05)*	*(1.61)*	*(0.98)*
Dummy: contract vs. delegation country	0.09*	0.12	0.09*	0.14*
	(1.99)	*(1.89)*	*(1.77)*	*(1.98)*
Dummy Fiscal Council	0.14**	0.11	0.13**	0.13*
	(2.56)	*(1.57)*	*(2.24)*	*(1.76)*
Herfindahl index	0.11	0.11	0.24	0.22
	(0.45)	*(0.35)*	*(1.00)*	*(0.73)*
Dummy proportional representation	–0.14	–0.14*	–0.14	–0.14*
	(–1.18)	*(–1.97)*	*(–1.23)*	*(–2.01)*
Dummy country size	0.03	–0.45	0.03	–0.06
	(0.64)	*(–1.04)*	*(0.53)*	*(–1.43)*
Margin of majority	–0.06	0.06	–0.10	0.04
	(–0.30)	*(0.38)*	*(–0.46)*	*(0.27)*
Dummy political colour	–0.02	0.03	–0.02*	0.03
	(–1.59)	*(1.36)*	*(–1.79)*	*(1.44)*
Constant	–0.11	–0.12	–0.02	–0.14
	(–0.45)	*(–0.50)*	*(–0.07)*	*(–0.61)*
Number of observations	217	217	217	217
R-squared	0.88	0.92	0.88	0.92

Note: Estimations method: OLS with robust standard errors. Student's *t*-coefficients are reported in parentheses. *, **, and *** denote, respectively, significance at the 10, 5 and 1 per cent level.
All fiscal variables are expressed over potential output.
Dummy run-up to EMU: 1 for EU-15 countries and years between years 1994 and 1998.
Dummy SGP: 1 for euro-area countries and years after year 1998.
Enlargement: 1 for EU-10 countries after year 2003.
Election year: 1 if parliamentary elections took place.
Dummy contract vs. delegation country: 0 if delegation country, 1 if contract country.
Dummy Fiscal Council: 1 if a Fiscal Council was in place in the country over the sample period.
Herfindahl Index: Sum of squared seat shares of all parties in the government.
Dummy proportional representation: indicates if candidates are elected based on the percent of votes received by their party.
Dummy country size: 1 for the following countries: Germany, France, Italy, Spain, Poland, UK.
Margin of Majority: fraction of seats held by the government in the Parliament.
Dummy political colour: 2 for leftist governments; 1 for intermediate coalitions; 0 for rightist governments.

balance has been replaced by the primary cyclically-adjust budget balance both in the specifications reported in Table 3 and in the alternative specifications mentioned above. In none of these alternative cases fiscal variables appear to gain statistical significance. Overall, there is no strong evidence that national fiscal frameworks were strengthened neither when starting conditions in public finances were critical, nor following marked or protracted deteriorations in budgetary situations. The analysis also shows that macroeconomic conditions, as summarized by the output gap, do not seem to play a significant role in explaining developments in national-level fiscal frameworks. In particular, the hypothesis that the introduction of fiscal frameworks could follow protracted periods of slow growth and therefore a worsening cyclical component of the budget is not supported.

On the contrary, our results indicate that the construction of the EU fiscal framework seems to have been a powerful catalyst for the introduction of numerical fiscal rules. The dummy variables corresponding to the start of the run up to EMU and to the entering into force of the SGP are generally statistically significant in explaining the developments in the fiscal rule index. The introduction of a credible constraint at the EU level seems to have triggered the development of numerical fiscal rules in the Member countries.

Regarding the impact of national-level fiscal governance, the results in Table 3 suggest that both the presence of independent Fiscal Councils and a fiscal governance model based on the contract approach seem to favour the development of numerical fiscal rules at country level. *A priori*, Fiscal Councils could be thought as an alternative to numerical fiscal rules, since they also aim at reducing discretion on the part of fiscal authorities by eliminating possible distortions in specific aspects of fiscal policy making. The analysis rather suggests that the existence of such councils favours the development of numerical fiscal rules. This complementarity relation can be related to the fact that fiscal councils may contribute to "strengthening" fiscal rules by improving their implementation and ensuring independent monitoring of compliance. Regarding the model of fiscal governance, the analysis shows that, other things being equal, contract countries are more likely to develop an internal system of numerical fiscal rules. This result is consistent with the arguments usually put forward in the existing literature (*i.e.*, that "contract" countries are more likely to rely on explicit agreements, rules and procedures rather than on delegating strong control powers to finance ministries) and with evidence that EU contract countries seem to have strengthened their budgetary procedures (e.g., Hallerberg *et al.*, 2006).

4 Fiscal rules and budgetary discipline

4.1 Budgetary developments following the introduction of numerical fiscal rules

A first basic approach to assess the influence of fiscal rules on budgetary outcomes is to check whether budgetary developments in the years immediately

Table 4

Average Change in Budgetary Variables Following the Introduction of Numerical Fiscal Rules Across EU Countries, 1990-2005

Change in the Primary CAB	Average Over the Whole Sample	Average Over Cases in Which a Fiscal Rule is Introduced
Over the subsequent year	0.0 (–0.2; 0.2)	0.2 (–0.2; 0.7)
Over the 3 subsequent years	0.0 (–0.4; 0.3)	0.4 (–0.7; 1.5)
Over the 5 subsequent years	–0.1 (–0.5; 0.3)	0.3 (–0.9; 1.4)
Change in Primary Expenditure/GDP	**Average Over the Whole Sample**	**Average Over Cases in Which a Fiscal Rule is Introduced**
Over the subsequent year	–0.2 (–0.5; 0.0)	–1.5 (–2.8; –0.2)
Over the 3 subsequent years	–0.9 (–1.3; –0.4)	–1.9 (–3.3; –0.6)
Over the 5 subsequent	–2.1 (–1.4; –2.7)	–3.1 (–4.4; –1.3)

Note: Confidence interval values (5 per cent) are reported in brackets.

following the introduction of fiscal rules differ from those observed on average across the whole sample. Table 4 reports the average changes over different time horizons in the cyclically-adjusted primary balance (primary CABs) and in the ratio of cyclically-adjusted primary expenditure to GDP, and compares them with the changes recorded for the same variables in the years immediately following the adoption of new numerical fiscal rules. All fiscal rules were considered when comparing the changes in the primary CABs; only expenditure rules were considered instead when comparing changes in cyclically adjusted primary expenditures. The sample considered is the same as that considered in the questionnaire on fiscal rules (22 EU countries over the 1990-2005 period). Over the sample period there were episodes of very large and rarely observed changes in budgetary data, observed mostly in the countries that joined the EU with the 2004 enlargement. In order to avoid results being driven by these outliers, the sample was trimmed in such a way to exclude the observations exhibiting changes in the CAPB and in the primary cyclically-adjusted expenditure outside the 2.5 per cent and the 97.5 per cent percentiles of the overall distribution.

The results (see Table 4) indicate that the primary CAB on average improved in the years following the introduction of numerical fiscal rules. This conclusion holds for the different time horizons considered, *i.e.* one, three and five years after the introduction of the rule. It contrasts with the fact that, on average across the whole sample, the primary CAB remained roughly unchanged over the same time horizons. Analogously, while expenditures did not change significantly over the whole sample, there was on average a reduction in government spending following the introduction of fiscal rules.

Results also suggest that the marginal benefits associated with the introduction of fiscal rules tend to decrease with time: the discrepancy between the change in the primary CAB in the years following the introduction of fiscal rules and in normal times is roughly the same when considering a 3-year horizon and when considering a 5-year horizon. A similar phenomenon is observed for expenditures. Such a result could be consistent with fiscal rules mainly defining targets and ceilings for fiscal aggregates in levels rather then in terms of growth rates: once the adjustment required by the newly-introduced fiscal rule has been achieved, no further significant changes in the target fiscal aggregate are required to achieve compliance with the rule.

This preliminary analysis suggests that there may be a link between the introduction of numerical fiscal rules and budgetary outcomes. However, some caveats are in order. First, there is a need to control for other factors that may have affected government budgets and expenditure. In particular, controlling for the impact of other factors on budgets may permit to explain the apparent contradiction between positive developments in budgets following the introduction of rules and budgetary positions remaining roughly unchanged on average across the sample during a period in which the number of fiscal rules was growing in the EU. This seems to suggest that some factors may have led to a progressive budgetary deterioration after the initial improvement in budgetary positions following the introduction of rules. Second, the analysis does not take into account that the disciplinary effect of numerical fiscal rules may not only depend on their existence, but also on the share of government finances they cover and their characteristics.

4.2 Evidence from the estimation of fiscal reaction functions

To assess the link between numerical fiscal rules and budgetary outcomes, we estimated fiscal reaction functions augmented with our indexes of fiscal rules (Fiscal Rules Coverage Index, Fiscal Rules, Expenditure Rules Index and Expenditure Rules Coverage Index), thereby taking into account the information on both the coverage and characteristics of the numerical fiscal rules in EU countries.

The dependent variable is the primary cyclically-adjusted balance (CAPB). Some of the explanatory variables appear in most analogous estimations of fiscal reaction functions (see, e.g., Galí and Perotti, 2003). The lagged CAPB captures an element of inertia (positive expected sign). The lagged debt ratio captures a debt-stabilising motive on the part of fiscal authorities: the higher the outstanding stock of debt, the less likely fiscal authorities will allow loose structural budgetary positions (the expected sign is positive). All fiscal variables are expressed as shares of potential output. The output gap captures an output-stabilising motive of fiscal authorities (the CAPB is likely to stay high compared to the past level if output is perceived to be above potential). A well-known problem with the use of the output gap variable in the estimation of fiscal reaction functions is the endogeneity of the output gap, which is both a determinant and an effect of fiscal policy. Different routes have been followed to overcome this endogeneity issue. In some papers the

output gap is used with a lag, which reflects the assumption that fiscal authorities take their decisions on the basis of the cyclical conditions prevailing before the budget is actually implemented (see, e.g., Manasse, 2006); in other papers the output gap variable is instrumented with own lags and measures of an "international" output gap (e.g., Galí and Perotti, 2003); finally, other papers adopt GMM estimation methods to account for the endogeneity of the output gap (e.g., Forni and Momigliano, 2004). In this paper we are not primarily focused on the response of fiscal authorities to the cycle, hence we will normally overcome the issue of endogeneity by the use of the output gap variable with one lag. However, when analysing the impact of numerical fiscal rules on the cyclical response of fiscal authorities (see Section 5) we will also use instrumental variable estimates.

The standard specification of fiscal rules has been augmented with additional explanatory variables. First, dummies capturing the main steps of the evolution of the fiscal framework have been introduced. These variables are the same as those used in Table 3 for the analysis of the determinants of the evolution of national-level numerical fiscal frameworks: a dummy capturing the run-up to EMU, a variable summarising the effect of the entering into force of the SGP, and a dummy aimed at capturing the impact of the 2004 enlargement of the EU. In light of the strong performance demonstrated in existing analyses (e.g., Golinelli and Momigliano, 2006) an election dummy was also included among the explanatory variables, taking value 1 in the year in which Parliamentary elections were held (source Beck *et al.*, 2001). Finally, the specification of the fiscal reaction function is augmented to account also for the impact of the national numerical fiscal framework, as summarised in our Fiscal Rule Index. The index is used lagged as an explanatory variable, to avoid possible issues of reverse causation.[6] Country fixed effects are aimed at capturing all remaining country-specific determinants. The sample was trimmed to exclude budgetary developments that could be considered as outliers (see previous section).

Results of the estimations are reported in Table 5. The estimation method is OLS with robust standard errors. The CAPB results to be quite strongly persistent, as denoted by the highly statistically significant coefficient for the lagged CAPB of 0.6. In accordance with existing estimates of fiscal reaction functions for EU countries (e.g., Galí and Perotti, 2003; Turrini and in't Veld, 2004; European Commission, 2006), the estimated response of fiscal authorities to output gap results to be weak, while there is a strongly significant positive response to debt. The election year variable is highly significant and negative (big deteriorations in budget balances in election years). Regarding our Fiscal Rule Index, the coefficient is positive and significant, which indicates that an increase the share or quality of government finances covered by numerical fiscal rules leads to an improvement in

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[6] The issue of reverse causation and endogeneity of fiscal rule indexes in the estimation reaction functions is however likely to be limited in our case. As shown in Table 3 presenting the analysis of the determinants of the fiscal rule index, budgetary variables have limited explanatory power in explaining fiscal rules.

Table 5

Influence of Fiscal Rules and Expenditure Rules on Budgetary Outcomes: Evidence from the Estimation of Fiscal Reaction Functions

Dependent Variables:	Cyclically-adjusted Primary Balance (CAPB)			Primary Expenditure (PEXP)		
	(1)	(2)	(3)	(4)	(5)	(6)
Explanatory Variables	Fiscal Rule Index	Fiscal Rule Index - low	Fiscal Rule Index - high	Expenditure Rule Index	Expenditure Rule Index - low	Expenditure Rule Index - high
Lagged CAPB	0.61***	0.61***	0.61***			
	(12.77)	*(13.18)*	*(12.42)*			
Lagged PEXP				0.88***	0.88***	0.88***
				(7.99)	*(7.83)*	*(8.14)*
Lagged debt/GDP ratio	0.03**	0.03**	0.03**	–0.02	–0.02	–0.18
	(2.51)	*(2.53)*	*(2.51)*	*(–1.20)*	*(–1.20)*	*(–1.19)*
Lagged output gap	0.05	0.05	0.05	0.03	0.03	0.03
	(1.22)	*(1.22)*	*(1.22)*	*(0.70)*	*(0.67)*	*(0.72)*
Dummy run-up EMU	0.4	0.40	0.41	–0.74	–0.74	–0.74
	(1.06)	*(1.05)*	*(1.08)*	*(–1.50)*	*(–1.49)*	*(1.51)*
Dummy SGP	–0.06	–0.07	–0.06	–0.45	–0.46	–0.44
	(–0.19)	*(–0.21)*	*(–0.17)*	*(–0.89)*	*(–0.91)*	*(–0.87)*
Dummy enlargement	–0.31*	–0.31*	–0.31*	0.62**	0.62**	0.62**
	(–1.93)	*(–1.91)*	*(1.95)*	*(2.18)*	*(2.17)*	*(2.19)*
Election year	–0.45***	–0.44***	–0.45***	0.40***	0.40***	0.40***
	(–3.11)	*(–3.11)*	*(–3.11)*	*(2.79)*	*(2.81)*	*(2.78)*
Lagged Index	0.21**	0.22**	0.21*	–0.31	–0.28	–0.34*
	(2.06)	*(2.04)*	*(1.96)*	*(–1.64)*	*(–1.47)*	*(–1.77)*
Constant	–1.69	–1.66	–1.70	7.97*	7.86	8.04*
	(–1.18)	*(–1.18)*	*(–1.18)*	*(1.74)*	*(1.67)*	*(1.79)*
Number of observations	227	227	227	227	227	227
R-squared	0.86	0.86	0.86	0.97	0.97	0.97

Note: Estimations method: Fixed-effect OLS with robust standard errors. Student's *t* coefficients are reported in parentheses. *, **, and *** denote, respectively, significance at the 10, 5 and 1 per cent level.
All fiscal variables are expressed as a share of potential output.
Dummy run-up to EMU: 1 for EU-15 countries and years between years 1994 and 1998.
Dummy SGP: 1 for euro-area countries and years after year 1998.
Enlargement: 1 for EU-10 countries after year 2003.
Election year: 1 if parliamentary elections took place.
Fixed effect coefficients are not reported.

the primary CAB. The coefficient of 0.21 indicates that a 1 standard deviation increase in the value of the index improves the CAPB by 0.2 GDP points at impact.

This impact effect does not take into account the fact that CAPBs are highly persistent and adjust only partially at impact to shocks. Once the inertia of CAPBs is taken into account, the long-term impact of 1 standard deviation increase in the Fiscal Rule Index raises CAPBs by about 1/3 of GDP point.[7]

Results for the impact of the Expenditure Rule Index on government expenditure are illustrated in columns (4)-(6) of Table 5. The dependent variable is now the ratio of cyclically-adjusted primary expenditure to GDP. Most explanatory variables behave in a similar way as in the case in which the CAPBs as the dependent variable. Although the statistical significance of the Expenditure Rule Index is borderline, it appears to reduce expenditure at impact by about 0.3 GDP points for any 1 standard deviation increase in the value of the index, and the long-term coefficient is about 1.5.

Both the results in Table 3 and Table 5 do not appear very sensitive to the exclusion of country dummies, while significant changes are produced by the inclusion of year dummies (results are not reported but are available by the authors upon request). This may suggest that the impact of fiscal rules is more felt along the time series dimension than across countries.

With a view to checking the robustness of the results to the ways the Fiscal Rule Index and the Expenditure Rule Index were calculated, we have calculated the indexes in a large number of different ways, reflecting different possible weightings for the five criteria entering in the composition of the index measuring the strength of each fiscal rule (statutory base, body in charge of monitoring, body in charge of enforcement, enforcement mechanisms, media visibility of the rule). Following the method used in Sutherland *et al.* (2005), we used 10,000 sets of randomly-generated weights to calculate the synthetic indicator in 10,000 different ways.[8] In light of the lack of *a priori* information on the weight to be given to the different criteria entering the construction of the index, the production of random weights allows defining a probability distribution for the index of strength of fiscal rules. The mean value of this distribution is asymptotically equivalent to the indicator calculated using equal weights for the constituent components. This is the baseline value of the indexes that we use in our analysis (columns (1) and (4) in Tables 5 refer to this case). Columns (2)–(3) and (5)–(6) in Table 5 report benchmark regression results also for the case of, respectively, the Fiscal Rule Index and the Expenditure Rule Index when computed using different set of weights for the calculation of the index

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[7] The long-term coefficient is obtained as the impact coefficient times the speed of adjustment (namely the average number of years necessary for the CAPB to fully adjust to a shock). The speed of adjustment is computed as the inverse of the fraction of adjustment of the CAPB computed in 1 year. Hence, on the basis of the regression results reported in Table 4, the steady-state multiplier is approximately 0.2/(1–0.6)=0.33.

[8] The random weights are drawn from a uniform distribution between zero and one and then normalised to sum to one.

measuring the strength of numerical fiscal rules. To that purpose, we calculated the Fiscal Rule Index and the Expenditure Rule Index using the 1-percentile and the 99-percentile of the distribution of the indexes measuring the strength of each fiscal rule (low and high end of the vertical lines in Figure 15 in the Annex). Regression results remain qualitatively unchanged when using these alternative weighing schemes to construct the Fiscal Rule and the Expenditure Rule Index.

4.3 Which characteristics of numerical fiscal rules matter most?

The previous analysis shows that higher values in the Fiscal Rule Index and in the Expenditure Rule Index lead, respectively, to an improvement in the primary CAPB and to a reduction in primary government expenditure. However, these indexes encapsulate a broad set of information, including the share of government finances covered by fiscal rules and the various characteristics of fiscal rules. In this section we attempt to assess to what extent the various characteristics of numerical fiscal rule matter for their influence of rules on budgetary outcomes. Such an analysis could provide indications on what desirable characteristics fiscal rules should have to be effective.

Like in the previous section, we proceed by augmenting standard fiscal reaction functions with Fiscal Rule Sub-Indexes constructed in different ways, taking into account none or only one of the five qualitative features of fiscal rules (statutory base, body in charge of monitoring, body in charge of enforcement, enforcement procedures, media visibility). When no qualitative features are taken into account in the construction of the sub-indexes, then the only information reported by the index is the coverage in terms of the share of government sectors concerned by the rule. Sub-indexes constructed this way correspond therefore to the Fiscal Rule Coverage Index and to the Expenditure Rule Coverage Index described in Section 3.3.

Tables 6 and 7 report results for the estimation of fiscal reaction functions using, instead of the Fiscal Rule Index and the Expenditure Rule Index as in Table 5, the sub-indexes constructed taking into account none of the qualitative characteristics of fiscal rules (*i.e.*, the coverage indexes) and the five remaining sub-indexes where only one qualitative feature at a time is considered. Looking at Table 6, where the dependent variable is the CAPB, from the comparison of the results when the Coverage Index is used as an explanatory variable (no qualitative features at all considered) with those in which one qualitative factor is taken into account, it appears that the inclusion of qualitative information on fiscal rules improves the degree of statistical significance of the regression coefficients in three cases (when the sub-indexes take into account the statutory base of the rules, the body in charge of enforcement and the enforcement procedure). Conversely, in the case of the sub-indexes providing information on the body in charge of monitoring and on the media visibility of the rule, the degree of significance falls compared with the case in which the coverage index appears as the explanatory variable. Turning to Table 7, showing the results of fiscal reaction functions for government

Table 6

Influence of Fiscal Rules Characteristics on Budgetary Outcomes: Evidence from the Estimation of Fiscal Reaction Functions

Dependent variable: primary CAB (CAPB)	**(1) Fiscal Rule Coverage Index**	**(2) Statutory base**	**(3) Body in charge of monitoring**	**(4) Body in charge of enforcement**	**(5) Enforcement procedure**	**(6) Media visibility**
Explanatory variables						
Lagged CAPB	0.61***	0.61***	0.62***	0.61***	0.60***	0.62***
	(12.64)	*(12.59)*	*(12.42)*	*(12.98)*	*(13.13)*	*(12.61)*
Lagged debt/GDP ratio	0.02**	0.03**	0.03**	0.03**	0.03**	0.03**
	(2.48)	*(2.54)*	*(2.47)*	*(2.47)*	*(2.53)*	*(2.51)*
Lagged output gap	0.05	0.05	0.05	0.05	0.05	0.05
	(1.19)	*(1.21)*	*(1.23)*	*(1.2)*	*(1.21)*	*(1.25)*
Dummy run-up EMU	0.38	0.4	0.39	0.37	0.41	0.41
	(1.02)	*(1.06)*	*(1.03)*	*(1.02)*	*(1.09)*	*(1.09)*
Dummy SGP	–0.12	–0.09	–0.05	–0.11	–0.1	–0.01
	(–0.36)	*(–0.27)*	*(–0.15)*	*(–0.34)*	*(–0.28)*	*(–0.03)*
Dummy enlargement	–0.31*	–0.31*	–0.31*	–0.31*	–0.31*	–0.31*
	(–1.97)	*(–1.91)*	*(–1.97)*	*(–2.00)*	*(–1.86)*	*(–1.89)*
Election year	–0.49***	–0.44***	–0.46***	–0.44***	–0.43***	–0.46***
	(–3.27)	*(–3.11)*	*(–3.15)*	*(–3.11)*	*(–3.07)*	*(–3.15)*
Lagged sub-Index	0.26*	0.23**	0.17	0.24**	0.26**	0.17
	(1.76)	*(2.2)*	*(1.46)*	*(2.18)*	*(2.66)*	*(1.51)*
Constant	–1.62	–1.71	–1.68	–1.67	–1.69	–1.68
	(–1.15)	*(–1.2)*	*(–1.14)*	*(–1.18)*	*(–1.21)*	*(–1.14)*
No. of obs.	227	227	227	227	227	227
R-squared	0.86	0.86	0.86	0.86	0.86	0.86

Note: Estimations method: Fixed-effect OLS with robust standard errors. Student's *t* coefficients are reported in parentheses. *, **, and *** denote, respectively, significance at the 10, 5 and 1 per cent level.
All fiscal variables are expressed as a share of potential output.
Dummy run-up to EMU: 1 for EU-15 countries and years between years 1994 and 1998.
Dummy SGP: 1 for euro-area countries and years after year 1998.
Enlargement: 1 for EU-10 countries after year 2003.
Election year: 1 if parliamentary elections took place.
Fixed effect coefficients are not reported.

Table 7

Influence of Characteristics of Expenditure Rules on Budgetary Outcomes: Evidence from the Estimation of Fiscal Reaction Functions

Dependent variable: primary expenditure (PEXP)	Fiscal Rule Coverage Index (1)	Statutory base (2)	Body in charge of monitoring (3)	Body in charge of enforcement (4)	Enforcement procedure (5)	Media visibility (7)
Explanatory variables						
Lagged PEXP	0.88***	0.88***	0.88***	0.87***	0.88***	0.89***
	(7.96)	*(7.81)*	*(8.07)*	*(8.42)*	*(8.08)*	*(7.86)*
Lagged debt/GDP ratio	–0.02	–0.02	–0.02	–0.02	–0.02	–0.02
	(–1.10)	*(–1.22)*	*(–1.09)*	*(–1.19)*	*(–1.25)*	*(–1.20)*
Lagged output gap	0.03	0.03	0.03	0.03	0.03	0.03
	(0.69)	*(0.64)*	*(0.70)*	*(0.70)*	*(0.73)*	*(0.70)*
Dummy run-up EMU	–0.74	–0.74	–0.75	–0.71	–0.74	–0.76
	(–1.50)	*(–1.47)*	*(–1.52)*	*(–1.45)*	*(–1.50)*	*(–1.55)*
Dummy SGP	–0.44	–0.46	–0.44	–0.40	–0.46	–0.49
	(–0.85)	*(–0.91)*	*(–0.87)*	*(–0.80)*	*(–0.93)*	*(–0.97)*
Dummy enlargement	0.62**	0.65**	0.61**	0.61**	0.61**	0.63**
	(2.18)	*(2.17)*	*(2.18)*	*(2.20)*	*(2.18)*	*(2.17)*
Election year	0.39***	0.40***	0.40**	0.39**	0.39***	0.40***
	(2.81)	*(2.82)*	*(2.79)*	*(2.76)*	*(2.77)*	*(2.82)*
Lagged sub-Index	–0.30	–0.27	–0.32	–0.37	–0.34*	–0.27
	(–1.47)	*(–1.51)*	*(–1.64)*	*(–1.65)*	*(–1.69)*	*(–1.51)*
Constant	7.65	7.74	7.91*	8.51*	8.22*	7.48
	(1.66)	*(1.64)*	*(1.75)*	*(1.96)*	*(1.80)*	*(1.59)*
No. of obs.	227	227	227	227	227	227
R-squared	0.97	0.97	0.97	0.97	0.97	0.97

Note: Estimations method: Fixed-effect OLS with robust standard errors. Student's *t* coefficients are reported in parentheses. *, **, and *** denote, respectively, significance at the 10, 5 and 1 per cent level.
All fiscal variables are expressed as a share of potential output.
Dummy run-up to EMU: 1 for EU-15 countries and years between years 1994 and 1998.
Dummy SGP: 1 for euro-area countries and years after year 1998.
Enlargement: 1 for EU-10 countries after year 2003.
Election year: 1 if parliamentary elections took place.
Fixed effect coefficients are not reported.

expenditure, it emerges that the inclusion of information relating qualitative features of expenditure rules improves the performance of Expenditure Rule Sub-Indexes compared with the case in which no qualitative factors are taken into account (the Expenditure Rule Coverage Index). Also for the case of fiscal reaction functions for government expenditure, it turns out that features of rules relating to their enforcement (body in charge of enforcement and enforcement procedure) are the most significant in triggering expenditure reductions.

Overall, these results provide an indication that the characteristics of fiscal rules matter for their influence on budgetary outcomes. There is an indication that the most important features of the rules to ensure an effective impact of numerical fiscal rules on budgetary outcomes regard the nature of the enforcement mechanisms. Both the consideration of the characteristic of the rule in terms of the body in charge of the enforcement and in terms of enforcement procedure improves the fit of the sub-index when no qualitative features are accounted for. This result suggests that enforcement-specific design aspects are key elements for the effectiveness of numerical fiscal rules.

5 Fiscal rules and the cyclical stance of fiscal policy

There is agreement that in the EU pro-cyclical policies were quite common in past decades (see, e.g., IMF, 2004; and European Commission, 2006, for recent assessments and surveys of existing literature). There is also wide agreement that the presence of numerical fiscal rules and their design may have an impact on the capacity of fiscal authorities to stabilise the economy via an appropriate stance of fiscal policy over the cycle.

In the case of budget balance or debt rules, there is a common presumption that numerical rules could induce pro-cyclical behaviour in bad times. This was always one of the major concerns with the SGP, and most of the efforts carried out by EU policy makers in recent times were aimed at revising the letter and the interpretation of the original SGP in such a way to reduce the risk of induced pro-cyclical behaviour in bad times (especially after having breached the 3 per cent reference value for deficits, *i.e.*, during the so-called Excessive Deficit Procedure) and to strengthen the incentives to run an appropriate fiscal stance in good times (see European Commission, 2005). The problem with the pro-cyclicality of deficit and debt rules is not related only to the existence of the SGP. A number of EU countries had in place deficit or debt rules for the lower tiers of government since years or decades. The extent to which deficit and debt rules interfere with the stabilisation function of fiscal policy depends to some extent on their design. As illustrated in Section 3 of this paper, while most deficit and debt rules applied at sub-national level are applied yearly and do not allow for special provisions for cyclically sensitive items, those applied at the central or general government level more often are defined over a multiannual horizon and exclude cyclically sensitive items.

The case of numerical expenditure rules is quite different. Such rules are not likely to prevent the operation of automatic stabilisers. Moreover, they could help curbing a possible pro-cyclical bias in good times related with the presence of implementation and identification lags and strong pressures for additional spending in the presence of budgetary windfalls (European Commission, 2006). Of course, as in the case of deficit and debt rules, also the impact of expenditure rules on the cyclical stance of fiscal policy depends on the way the rules are designed, notably on whether all government expenditures are targeted or cyclical items are excluded, on the time-frame for the application of the rule, and on the specification of the expenditure ceilings (whether in levels or in growth, and whether defined in nominal or in real terms).

Although *a priori* there are clear arguments why deficit and debt rules could induce a pro-cyclical bias in fiscal policy in bad times, providing empirical support to such arguments does not seem trivial. In a large panel of developed and developing countries, Manasse (2006) finds that the presence of numerical fiscal rules reduces the extent of pro-cyclicality of fiscal policy. Regarding the EU fiscal framework, Galí and Perotti (2003) show that after the run up to EMU fiscal policy across euro area countries has become less, not more pro-cyclical on average. The evidence is also not strongly conclusive on the impact of deficit and debt rules applied at lower levels of government. Although there is evidence that budget balances at lower level of government seems to exhibit a more pro-cyclical behaviour than general government budget balances (e.g., Bayoumi and Eichengreen, 1995; Sorensen *et al.*, 2001; Rodden and Wibbels, 2006), the evidence is not strongly conclusive concerning the impact on the cyclical behaviour of budget balances of borrowing restrictions a lower tiers of government.[9] Regarding expenditure rules, European Commission (2006) provides evidence that the episodes of pro-cyclical expenditure behaviour were less frequent in countries endowed with strong expenditure rules.

These difficulties in detecting an impact of numerical fiscal rules on the cyclical stance of fiscal policy could be related to several causes. First, the need to satisfactorily take into account not only the presence of rules but also their design (whether rules are defined over an annual or a multiannual framework, whether they exclude cyclically-sensitive items…). Second, the necessity to capture the way multiple fiscal rules interact to produce an overall impact on the cyclical stance of fiscal policy. Finally, a proper analysis of the impact of fiscal rules on the fiscal stance requires controlling for all the other factors that may have an impact of the behaviour of fiscal authorities over the cycle.

Taking into account these difficulties, our analysis proceeds in two steps. The first step consists of the construction of a Fiscal Rule Cyclicality Index which provides information on the likely impact of the whole set of numerical fiscal rules

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[9] While Alesina and Bayoumi (1996) do not find a significant relation between the degree of stringency of borrowing constraints and the cyclicality of budget balances across EU states, Sorensen *et al.* (2001) find a positive relation between the degree of stringency and the degree of pro-cyclicality.

in place in a given country in a given year. As mentioned in Section 3.3. and explained in the Annex, this index permits to take into account both which type of rules (*i.e.*, targeting which fiscal aggregate) are present and how they are designed (e.g., whether they apply on an annual basis, on a multiannual basis, "over the cycle", ...). A higher value of the index signals a less likely pro-cyclical impact on the stance of fiscal policy.

The second step consists of assessing whether high values of the index are indeed associated with a less pro-cyclical behaviour of fiscal authorities. A customary way to measure the output stabilisation response of fiscal authorities is by means of the estimation of fiscal reaction functions. Whenever the coefficient of the output gap variable appears to be significantly negative (resp., positive), then there is an indication that the behaviour of fiscal authorities is pro-cyclical (resp., counter-cyclical). Our aim is to check whether high or low values of the Fiscal Rule Cyclicality Index matter for the output gap coefficient in fiscal reaction functions estimated across our sample of EU countries.

To that purpose, we re-estimate fiscal reactions adopting the same specification used in our baseline regressions (Table 5). However, we now perform separate regressions for two sub-groups of countries: countries with high and low values of the Fiscal Rule Cyclicality Index. The countries with high (resp., low) values for the index are defined as those with a Fiscal Rule Cyclicality Index which is on average equal or above (resp., below) the median value of the index across the whole sample.

Table 8 reports the results. It appears that while the coefficient of the output gap is not statistically different from zero for the countries with a low value of the Fiscal Rule Cyclicality Index, the output gap coefficient is significantly positive for the countries with a high index, denoting a counter-cyclical behaviour of fiscal authorities. The estimates have been carried out both using OLS and the lagged output gap and the instrumental variables estimation method, instrumenting the output gap variable with its own lag and with the lag of a measure of the "international" output gap, consisting of the export-weighted output gap of the three major export markets of each country. Results appear to be qualitatively similar. Also in the case of instrumental variables estimation the output gap coefficient is significantly positive for countries with fiscal frameworks *a priori* less likely to induce pro-cyclicality, while it is not significantly different from zero for the countries with a low value of the Fiscal Rule Cyclicality Index.

The analysis confirms the *a priori* expectation that some type of numerical fiscal rules and some design features are more likely to be associated with an induced pro-cyclical behaviour of the fiscal stance. A relevant related question is whether there is a trade-off between the "strength" of fiscal rules in inducing fiscal discipline and their possible pro-cyclical effects. Such an issue is a complex one, and a full-fledged answer is beyond the scope of this paper. However, some suggestive *prima facie* evidence can be derived from the comparison of the Fiscal Rule Index with the Fiscal Rule Cyclicality Index. Across the whole sample, the Spearman rank correlation between the two indexes appears small but positive

Table 8

Influence of Fiscal Rules on the Cyclical Stance of Fiscal Policy: Evidence from the Estimation of Fiscal Reaction Functions

	Least squares		Instrumental variables	
Dependent variable: primary CAB (CAPB)	**Countries with low values for Cyclicality Index**	**Countries with high values for Cyclicality Index**	**Countries with low values for Cyclicality Index**	**Countries with high values for Cyclicality Index**
Explanatory variables	**(1)**	**(2)**	**(3)**	**(4)**
Lagged CAPB	0.54***	0.63***	0.54***	0.63***
	(10.54)	*(12.15)*	*(10.32)*	*(11.82)*
Lagged debt/GDP ratio	0.00	0.03**	0.00	0.02*
	(0.28)	*(2.04)*	*(0.41)*	*(2.01)*
Lagged output gap	–0.01	0.09*	0.02	0.16*
	(–0.16)	*(1.87)*	*(0.11)*	*(1.76)*
Dummy run-up EMU	–0.10	0.68*	0.02	0.83*
	(–0.35)	*(1.78)*	*(0.05)*	*(1.86)*
Dummy SGP	–0.05	–0.17	0.04	–0.13
	(–0.16)	*(–0.57)*	*(0.14)*	*(–0.44)*
Dummy enlargement	–0.24	–	–0.26	–
	(–1.57)		*(–1.31)*	
Election year	–0.65**	–0.35**	–0.63***	–0.35**
	(–2.92)	*(–2.45)*	*(–3.06)*	*(–2.43)*
Lagged Fiscal Rule Index	0.51*	0.30*	0.48*	0.27*
	(1.98)	*(2.08)*	*(2.06)*	*(1.89)*
Constant	1.78	0.34	1.68	–1.16**
	(0.81)	*(0.64)*	*(1.08)*	*(–2.97)*
No. of obs.	91	147	91	147
R-squared	0.88	0.86	0.88	0.86

Note: Estimations methods: (1)-(2): Fixed-effect OLS regression with robust standard errors; (3)-(4): Instrumental variables regression and robust standard errors. The output gap is instrumented with its own lag and a lagged indicator of foreign output gap. The foreign output gap indicator is the export-weighted output gap of the 3 major export markets of each country.
Student's *t* coefficients are reported in parentheses. *, **, and *** denote, respectively, significance at the 10, 5 and 1 per cent level.
All fiscal variables are expressed as a share of potential output.
Dummy run-up to EMU: 1 for EU-15 countries and years between years 1994 and 1998.
Dummy SGP: 1 for euro-area countries and years after year 1998.
Enlargement: 1 for EU-10 countries after year 2003.
Election year: 1 if parliamentary elections took place.
Fixed effect coefficients are not reported.

(0.016) and a *t* test rejects the hypothesis of independence of the two indexes at the 90% level. Looking at the average value of the Fiscal Rule Index in the two country groups, the one with a high and that with a low Fiscal Rule Cyclicality Index, it turns out that the in the former group the Fiscal Rule Index is significantly higher than in the latter (0.11 versus –0.09, with a *t* test excluding the equality of the two indexes at the 90 per cent level).

Overall, the analysis supports the view that the nature and design of numerical fiscal rules may have an impact on the cyclical behaviour of fiscal policy. The analysis also confirms that the elements of fiscal rules that are commonly perceived as relevant in terms of their impact on the stabilisation function of fiscal policy (namely, those considered in the construction of our Fiscal Rule Cyclicality Index, see Annex) seem to indeed to be associated with a different response of fiscal authorities to the cycle. This evidence, however, does not imply necessarily a strong trade-off between the disciplinary role of fiscal rules and their properties from the viewpoint of the stabilisation function of fiscal policy. There is no significant negative relation between the Fiscal Rule Index and the Fiscal Rule Cyclicality Index.

6 Conclusions

The aim of this paper is to provide a comprehensive overview of the numerical fiscal rules in force in the 25 countries of the European Union and to analyse their determinants and their impact on budgetary outcomes. The analysis is based on a new dataset of existing numerical fiscal rules in the EU, including details on their characteristics and evolution over time. Synthetic indicators are constructed to measure the intensity in the use of numerical fiscal rules across countries and over time, to provide a quantification of the factors that are likely to be related to the effectiveness of rules on budgetary outcomes, and to measure the likely impact of these rules on the cyclical behaviour of fiscal policy.

There is clear evidence that over the past decades there has been an increasing reliance on numerical fiscal rules in the EU countries. The introduction of the Maastricht Treaty and of the Stability and Growth Pact seem to have been powerful catalysts for the introduction of these rules. The presumption that the introduction of fiscal rules would follow major crisis, recessions and/or marked deteriorations in government finances (government deficit, cyclically-adjusted primary balance or debt) is instead not supported by the analysis. A framework for fiscal governance conforming with the "contract approach" (Hallerberg and von Hagen, 1999) and the presence of independent Fiscal Council seem also to favour a more extensive use of numerical fiscal rules.

The analysis confirms the existence of a link between numerical rules and budgetary outcomes. The analysis shows that an increase in the share of government finances covered by numerical fiscal rules leads, ceteris paribus, to lower deficits. The analysis also suggests that the characteristics of fiscal rules matter for their

influence on budgetary outcomes. Some dimensions matter particularly for the capacity of fiscal rules to influence fiscal policy. Notably, the presence of strong enforcement mechanisms seems important to maximise the effect of fiscal rules. Finally, the analysis supports the view that the nature and design of numerical fiscal rules may have an impact on the cyclical behaviour of fiscal policy. In countries where numerical fiscal rules are designed in such a way not to hamper the stabilisation function of fiscal policy the fiscal stance appears to behave more counter-cyclically.

ANNEX
THE CONSTRUCTION OF THE SYNTHETIC FISCAL RULES INDEXES

The fiscal rule coverage index

The purpose of this index is to summarise information on the degree of reliance on numerical fiscal rules at country level. This index provides information on the number of rules in place and on what part of general government finances is covered by each rule. The construction of the indicator is based on the following assumptions.

- **Aggregation of rules of different type** (e.g., an expenditure rule and a budget balance rule). In absence to a strong prior regarding which types of rules have a greater influence on fiscal outcomes, equal weighting was used as a transparent and straightforward criterion.
- **Information on rules' coverage**. Taking into account that the purpose of the analysis is to assess the impact of numerical fiscal rules on fiscal discipline, all numerical fiscal rules have been aggregated on the basis of the share of general government they cover. In other words, if a part of government finances is covered by an expenditure rule, and another part is covered by a budget balance rule, the part of government finances covered by numerical fiscal rules can be considered to be the sum of both.
- **Overlapping**. In order to take into account the possible redundancy among rules, the "fiscal rule coverage index" was constructed following this simple approach: when more than one rule apply to the same sub sector of general government, the index gives a weigh of 1 to the rule with the "stronger" features as measured by the Index of Strength (see next section of this Annex) and a weight of 0.5 to any additional rule. For instance, if in a given country, in a given year, coexist a strong expenditure rule applied to the whole of the general government and a weak budget balance rule for local governments (10 per cent of government finances), the Fiscal Rule Coverage Index will be equal to 100% + 10% * 0.5 = 1.05.

A time-varying "Expenditure rule coverage index" measuring the share of government finances covered by expenditure rules was constructed following the same methodology, but restricting the sample to numerical expenditure rules.

The index of strength of numerical fiscal rules

With a view to take into account the characteristics of the individual fiscal rules, an index of "strength" of numerical fiscal rules was calculated for each rule. The index takes into account five criteria: the statutory base of the rule; whether there is an independent monitoring of the rule; the nature of the institution responsible for the enforcement of the rule; the existence of pre-defined enforcement mechanisms; and the media visibility of the rule. The methodology followed is akin

to that in existing literature (e.g. Deroose, Moulin and Wierts, 2005). For each criterion, scores were attributed as follows.

Criterion 1: statutory base of the rule

The score of this criterion index is constructed as a simple average of the two elements below:

Statutory or legal base of the rule

4 is assigned for a constitutional base
3 if the rule is based on a legal act (e.g. Public finance Act, Fiscal Responsibility Law)
2 if the rule is based on a coalition agreement or an agreement by different general government tiers
1 for political commitment by a given authority (central or local government, Minister of Finance)

Room for setting or revising objectives

3 if there is no margin for adjusting objectives (they are encapsulated in the rule)
2 there is some but constrained margin in setting or adjusting objectives
1 there is complete freedom in setting objectives (the statutory base of the rule only contains principles)

Criterion 2: Nature of the body in charge of monitoring respect of the rule

The score of this criterion index is calculated as follows:

3 monitoring by an independent authority (Fiscal Council, Court of Auditors…) or national Parliament
2 monitoring by the Ministry of Finance or any other government body
1 no regular public monitoring of the rule (there is no report systematically assessing compliance)

The score of this variable is augmented by 1 point in case there is a real time monitoring of compliance with the rule ('alert mechanisms')

Criterion 3: Nature of the body in charge of enforcement of the rule

The score of this criterion index is calculated as follows:

3 enforcement by an independent authority (Fiscal Council or any Court) or the National Parliament
2 enforcement by the Ministry of Finance or any other government body
1 no specific body in charge of enforcement

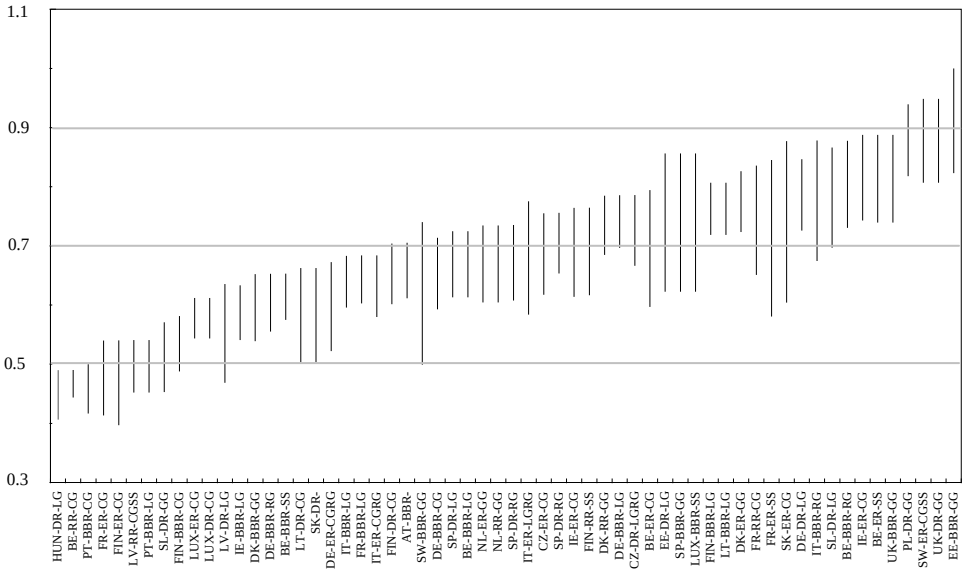
Criterion 4: Enforcement mechanisms of the rule

The score of this criterion index is calculated as follows:

4 automatic correction and sanction mechanisms in case of non-compliance
3 automatic correction mechanism in case of non-compliance and the possibility of imposing sanctions
2 Obligation to present corrective proposals to the relevant authority
1 there is no *ex ante* defined actions in case of non-compliance

Figure 15

Index of Strength of the Fiscal Rules in Force in the EU, 2005
(ordered according to the average value)



(1) The figure shows, for all the numerical fiscal rules considered in the study, the range containing 98 per cent of the values of the index of strength of the fiscal rule concerned. Rules were classified in an ascending order. The scores of the individual criteria taken into account in the calculation of the overall index were normalised to one. The size of the vertical line provides an indication of the heterogeneity of the scores related to the five criteria considered in the calculation of the synthetic index.
(2) When the characteristics of a rule have evolved over time, the figure only present the index consistent with the most recent features. Three rules presented in the figure are not anymore in force in 2005. For Belgium, the expenditure rule and the revenue rule were implemented for the convergence process leading to EMU qualification. For Slovenia, the debt rule was in force over 2000-2004.

The score of this variable is augmented by 1 point in case escape clauses are foreseen and clearly specified.

Criterion 5: Media visibility of the rule

The score of this criterion index is calculated as follows:

3 if the rule observance is closely monitored by the media, and if non-compliance is likely to trigger a public debate
2 for high media interest in rule-compliance, but non-compliance is unlikely to invoke a public debate
1 for no or modest interest of the media

In absence of strong theoretical base or preference regarding the weight to be given to each criterion, the Index of Strength was computed in a large number of

different ways, reflecting different possible weightings for the five criteria. The scores of the five criteria were first standardised to run between 0 and 1. A random weights technique was used following the method used by Sutherland *et al.* (2005). 10,000 sets of randomly-generated weights were used to calculate the synthetic indicator in 10,000 different ways. The random weights are drawn from a uniform distribution between zero and one and then normalised to sum to one. The resulting distribution for the synthetic indicator reflects the possible range of values given no a priori information on the weight to be given to each component of the index. The mean value of the synthetic indicator is asymptotically equivalent to the indicator calculated using equal weights for the constituent components (unweighted arithmetic average). The figure below shows, for all the fiscal rules considered in the study, the range containing 98 per cent of the values of the index of strength of the rule calculated with 10,000 different sets of random weights (we eliminated the 1 per cent lowest and highest values of the synthetic index).

The fiscal rule index

The purpose of this index is to summarise information on the degree of the intensity in the use of the rules and on the average degree of strength of the rules. The indicator is constructed in two steps. First, the potential contribution of each rule to the Fiscal Rule Index is computed by multiplying the share of government finances covered by the rule by the Index of Strength of the rule. Second, these rule-specific indicators are summed up over all the rules in place in a given country in an given year. For example, take the case of a country *C* having three fiscal rules in year *t*: an expenditure rule to contain developments in health care spending (index of strength *x*) covering a percentage of general government expenditure equal to *a*; a budget balance rule for local governments (index of strength *y*) covering a fraction of general government finance equal to *b* and an expenditure rule at central government level (index of strength *z*) covering a fraction of total general government expenditure equal to *c*. The indicator for country *C* in year *t* is therefore determined as follows:

$$I_{C,t} = ax + by + cz$$

In case several rules apply to the same general government sub-sector, we follow the same methodology as for the calculation of the Fiscal Rule Coverage Index. Weight 1 is given to the rule with the highest Index of Strength and a weight 0.5 is given to all the other rules.

Following the same approach but taking into account only expenditure rules, a time-varying "expenditure rule index" was constructed for each Member State.

The fiscal rule cyclicality index

The purpose of this index is to summarise the likely impact of the system of numerical fiscal rules prevailing in a given country in a given year on the cyclical stance of fiscal policy. The index is constructed in the same way as the Fiscal Rule Index, except that in this case the information on the strength of individual fiscal rules is replaced by information on the properties of each fiscal rule with respect to stabilisation. Positive numbers imply a counter-cyclical impact; negative numbers a pro-cyclical impact (note that as opposed to the Fiscal Rule Index, the effect of different fiscal rules may offset each other as far as their impact of on cyclicality is concerned). In case several rules of the same type apply, we take into account only the most binding one, as measured by the Index of Strength. The scoring assigned to different types of rules is as follows.

Expenditure rules

1 is assigned for a rule capping expenditure growth or level (in nominal or real terms)

–1 if the rule is defined in terms of an expenditure to GDP ratio

Budget balance rules

0 if the rule is defined in cyclically-adjusted terms or if the period for assessing compliance is a full business cycle

–1 for budget balance rules defined over a medium-term horizon

–2 for budget balance rules with a short time horizon (1 year)

Borrowing and debt rules

0 if the period for assessing compliance is a full business cycle

–1 for other debt or borrowing rules

Revenue rules

1 is assigned if the rule ensures that cyclical revenues are used for debt reduction, or favours it (the government has to specify in advance how cyclical revenues will be used)

0 is assigned if the rule targets a given revenue-to-GDP ratio

–1 is assigned if the rule targets an amount of revenue in nominal terms.

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ECONOMIC AND POLITICO-INSTITUTIONAL VARIABLES APPLIED TO THE ANALYSIS OF SUBNATIONAL PUBLIC SPENDING IN ARGENTINA

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The econometric analysis based on a fixed effect panel data model for the period 1993-2004, aimed at ascertaining whether the public spending of Argentine provinces was influenced by economic and fiscal variables and also by politico-institutional variables such as provinces' political sign, governors' possibility of reelection, structure of legislatures and provisions limiting public spending and public debt or conditioning the use of credit.

While estimated regression coefficients for fiscal effort, financial sufficiency, transfers and public debt were significantly different from 0, results fell short of being conclusive for the other variables, except for provincial political alignment with the central government, possibility of reelection and limits upon debt.

1 Introduction

According to the national constitution,[1] Argentina is a federal country with three levels of government: the national one, the provinces and the municipalities, each of which counts with fairly wide spending faculties and the power of raising their own fiscal revenues. Likewise, there is a national revenue sharing system whereby the central government transfers to the provinces and the autonomous city of Buenos Aires about the half of VAT, Income, Personal Goods and Oil Taxes' yield while, in turn, provinces transfer to municipalities a part of what they raise in terms of Property and Turnover Taxes and Stamp Duties.

The institutional framework clearly favours an interjurisdictional fiscal relation in line with what R. Bird (1996) called "federal finances", closer to a public choice-like approach in which provinces are constitutional entitled to negotiate on a par with the central government, as the 1853 Constitution and successive amendments reassure ample fiscal and spending powers to provinces and municipalities and place in provincial hands the responsibility of preserving the municipal autonomy within their jurisdictions. Nevertheless, the actual relation between the national government and the provinces – according to overwhelming statistical evidences – points in a different direction in so far as it shows that Argentina stands today as a centralized federation, in which intergovernmental fiscal

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[1] By being a federal country, each of the 23 provinces and the autonomous city of Buenos Aires have their own constitutions.

relations are better depicted by an agency relationship in which the national government performs the role of the Principal and provinces that of Agents.[2]

In analyzing reasons for that, Rezk, Capello and Ponce (1997) pointed out the marked concentration of tax collection at the central level, which in turn reflected the effective assignment and exercise – mainly via the Revenue Sharing System[3] – of fiscal faculties in the country. Suffice it in this connection to mention that the central government, provinces and municipalities at present respond for approximately 80, 16 and 4 per cent respectively of collected total fiscal revenues.

In the spending side, and owing to a process of spending decentralization dating from the nineties, provincial public spending amounts now to almost 40 per cent of all levels' consolidated public spending, being the provinces responsible for almost all Educational[4] and Health Expenditures and for a substantial share in Housing, Welfare and Economic Expenditures. Nevertheless, and as mentioned above, the decentralizing process highly relying on conditioned transfers (earmarked funds represented in 2003 more than 35 per cent of central government's transfers to provinces) not only fell short of exhibiting a devolving feature but it did not either meet the 1994 constitutional amendment mandating that transfers of competences, services and functions to provinces would be effective only if the corresponding resource allocation,[5] approved by the National Congress, and accepted by the provinces, occurred in due time.

Finally, the present secondary distribution of shared tax resources, whose coefficients for each province were arbitrarily set by the Law 23548, on the basis of coefficients for 1988 resulting out of diverse modifications in the existing Revenue Sharing Regime,[6] and the attitude of provinces against deepening the use of their own tax sources, explain why national transfers (either shared revenues or earmarked funds) range between 75 and 95 per cent of most provinces' total resources.[7] An immediate unwanted effect caused by this situation is the scarce accountability of the government level in charge of spending given that the principle of financial autonomy (upon which accountability in part rests, as the literature

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2 A similar situation in turn occurs between provinces and local governments within the jurisdiction.

3 The point can not be plaid down of provinces' lack of interest in using some other tax bases.

4 Except for the funds for national universities, which still remain as a part of the central government budget.

5 It must be emphasized that this mandate basically sought to guarantee that transfers of competences to provinces were accompanied by sufficient resources for the service's effective provision (in quantity and quality), which in fact did not occur when provinces were given the total responsibility of running primary and secondary schools in their jurisdictions.

6 It is still pending the new Revenue Sharing Regime, notwithstanding that the 1994 Constitution set 31 December 1996 as the deadline for its approval by the Congress. The Regime will have to be subject to a "convenio" law between the Congress and the provinces and it will have to guarantee, among other requirements, the automatic fund remission to provinces.

7 The important weight of the four richest provinces: Buenos Aires, Córdoba, Santa Fé and Mendoza, plus the autonomous city of Buenos Aires, places provinces' own resources between 40 and 50 per cent of total subnational revenues. It is worthmentioning however the total dependence from national transfers of provinces such as Formosa, La Rioja, Catamarca, Santiago del Estero and Jujuy.

stresses it) is far from being fulfilled, let alone difficulties in meeting also the principle of financial sufficiency.

Following this line of reasoning, the paper's main objective is to empirically verify, for the 23 Argentine provinces and the autonomous city of Buenos Aires, whether provincial public spending levels relate to the existing degrees of financial autonomy and sufficiency. Assuming in turn that economic and budgetary variables are also related to subnational public spending, the impact of the gross geographic product, the stock of public debt and transfers upon spending will also be assessed, the assumption being here that different reactions should be expected for the diverse categories of public expenditure.

Likewise, in acknowledging points debated in the more recent literature as to whether constitutional arrangements, or determined politico-institutional situations, affected or were neutral with respect to public spending level, the matter will be dealt with by resorting to categorical and dummy variables standing for the following hypotheses: possibility of reelection of provincial governors (and exercise of the right), provincial political sign *vis-à-vis* that of the central government, constitutional limits upon deficit spending, public debt and credit use (as opposed to the case in which these limits do not exist) and unicameral *vis-à-vis* bicameral provincial legislatures.

Results of the empirical analysis, obtained from a panel data model, are valuable not only in that they permit to explain with econometric fundaments and solvency the mechanics of expenditure and the fiscal performance of Argentine provinces, but in clearing also the way to conclusions with strong policy implications for economic recommendations, on the basis of the combined contribution of fiscal variables of control and other variables standing for constitutional and politico-institutional constraints.

As for the structure of the paper, Section 2 presents a brief survey of recent articles related to the matter, Section 3 highlights some stylized facts of provincial spending, Section 4 develops the used econometric methodology, Section 5 shows econometric estimations with panel data and Section 6 concludes.

2 Brief survey of the recent literature

In a very interesting econometric study of 105 Spanish municipalities over 50,000 inhabitants, Bosch and Suárez-Pandiello (1995) aimed at testing a set of seven hypotheses concerning the political and financial behaviour of local governments in relation to their public spending. The model constructed assumed a "democratically-based" institutional system, political pluralism, electoral competition and authorities whose performance and activities were directed towards the fundamental objective of succeeding in being reelected.

By framing public choice and local public spending hypotheses within an analytical model Bosch and Suárez-Pandiello held that ideology was important, that

political negotiations increased spending, that per capita expenditure was higher the greater the population´s participation in elections, that per capita local spending grew as local fiscal effort was enhanced, that local spending was lower when the "political colour" of local and central governments coincided and that a greater proportion of noticeable taxes yielded a lesser per capita local public spending.

In testing the validity of held assumptions, the authors found results significantly different from zero for the hypothesis that municipalities largely financed with visible individual taxes tended to spend less, whereas those local governments with greater financial liabilities (subject also to the burden of interest payments) or ruled by political parties without an absolute majority tended to spend relatively more. Unsatisfactory results were however found when the hypotheses somehow linking the level of expenditure to the municipal fiscal effort, the ideological sign, the electoral participation the political sign concordance between the local and the upper government level were tested.

Persson and Tabellini (2004) also investigated the effect of electoral rules and forms of government upon fiscal policy; more precisely, they contributed with an empirical paper whose objective was to analyze the impact of electoral rules and government forms on the size and composition of government spending; that is, to contrast fiscal outcomes under proportional and majoritarian elections as well as with presidential and parliamentary governments. The authors used information for 80 democracies[8] for the period 1990-98, although they also reported results in a subset of 60 democracies for which data were available for a longer period.

Results obtained led the authors to conclude that presidential regimes induced smaller government sizes (lower public spending) than parliamentary democracies whereas majoritarian elections resulted in turn in smaller governments and smaller welfare programs (social spending) than in the cases of elections based on proportional representation regimes.

In an article very much related to the matter being studied in this paper, Bercoff and Nougués (2005) analyzed also the incidence of determined constitutional constraints upon the fiscal performance of governments; in particular, they assessed the possible links between a set of institutional variables and the provincial public spending in Argentina for the period 1991-2001. In highlighting the main findings in their empirical analysis, the authors concluded that while a strict budgetary design (*i.e.* legislatures were not given the faculty of raising spending levels submitted by the executive) stood as an efficacious mechanism to moderate expenditure levels, governors' possibility of reelection (contrariwise to what it would have been expected) did not show any impact upon spending. Results were statistically significant when political sign was tested: when governors and central government shared the same political sign, provinces seemed to face more effectively spending reductions; the same conclusion extended to bicameral

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[8] For the definition of democratic governments, the authors resorted to Gastil Indexes of political rights and civil liberties, varying from 1 to 7. They included countries not exceeding 5 in the average of the two indexes in the period 1990-1998.

legislatures deducing that bicameral system successfully operated checks and balances. Finally, and in relation to the impact of fiscal variables, Bercoff and Nougués found a strong negative correlation between accountability and spending levels: the higher the proportion of own resources the smaller the levels of per capita current spending (and also the proportion between current spending and the gross geographic product).

Fridrij (2006) in turn analyzed the response of the Argentine provincial public spending to control and fiscal variables in the two following periods: 1963-2001 and 1984-2001; the author also included the consideration of the impact upon spending of diverse institutional restraints made effective by constitutional amendments taking place in the periods mentioned. Concerning budget and control variables, the empirical exercise permitted Fridrij to assert that public spending positively reacted to a better economic performance (increases in gross geographic product) and to provinces' higher degree of economic opening whereas, on the other side, a growing fiscal independence and population increases tended to reduce spending, in the latter case as a result of scale economies.

With respect to institutional variables, Fridrij found firm econometric evidence that, while governors' possibility of reelection tended to increase public spending,[9] bicameral legislatures and identical political sign for provinces and the central government worked in the other direction and favoured an expenditure reduction. Finally, the author pointed out the scarce or null statistical relevance found with respect to institutional variables standing for constitutional restraints, such as limits to debt and conditions for the use of credit by governments.

3 Stylized facts of provincial public spending

The performance of total, current and capital public spending of Argentine provinces for the period 1993-2006, as shown by Figure 1, exhibits features deserving several comments. As can be seen, lines in the graphic reflect the three situations that characterized the Argentine economy in the period considered; that is, the convertibility regime[10] (1993-2001), the crisis of the convertibility, the default of external debt and the devaluation of the national currency (2002) and the post convertibility period (2003-06).

It is also worth emphasizing that all categories of provincial public spending showed a remarkable stability during the convertibility – in percent of gross domestic product – at least until 1997; inspection of figures in the ensuing Table 1

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[9] Let it be emphasized that this conclusion runs counter the evidence presented by Bercoff and Nougués (2005) but it coincides with econometric findings quoted in the present paper.

[10] Convertibility refers to the currency board scheme implemented as of 1991 and by which the national currency (the peso) exchanged 1 by 1 with the U.S. dollar.

Table 1

Argentina – Provincial Public Spending
(percent of GDP)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Tot. Exp.	11.5	11.5	11.6	11.1	11.1	11.7	12.8	12.6	13.5	10.9	10.9	11.8	13.1	13.4
Curr. Exp.	9.9	9.7	9.8	9.4	9.4	10.0	11.2	11.4	12.3	10.1	9.7	10.0	10.9	11.0
Cap. Exp.	1.6	1.8	1.8	1.7	1.7	1.7	1.6	1.2	1.2	0.8	1.2	1.8	2.2	2.4

Source: Own estimates on the basis of data from the National Direction of Fiscal Relations with Provinces, Ministry of Economy, Argentina.

avails this assertion as total, current and capital expenditure averaged 11.3, 9.6 and 1.7 per cent respectively.

However, total and current public expenditure experienced a marked rise during the last four years of convertibility, as their share of gross domestic product climbed to average values of 12.7 and 11.2 per cent, respectively, from 1998 through 2001. Such a pattern seems to coincide with the time in which provinces, unable to satisfy their budgetary needs with dwindled shared revenues[11] or with their own tax resources, resorted massively to debt in order to somehow meet the principle of fiscal sufficiency.

The fall of provincial total and current public spending in 2002-03 was a direct consequence of the post convertibility crisis (default and devaluation) in which the gross domestic product underwent a loss of more than 15 per cent;[12] with relation to capital expenditure, the fall began earlier (in 1999) and responded rather to a crowding out effect caused by current public spending feeding on debt than to the effects of the economic crisis of 2001-02.

Finally, the economic recovery taking place as of 2002 and the declared policy goals of the new government that took office in 2003, in the sense that public investment and public and social services should reach higher levels, explain the catching up experienced by provincial public spending in 2004-06. However, it is important to point out that provinces acceded to increased national funds through transfers rather than through the revenue sharing system, as it could have been expected;[13] let it in this regard be pointed out that while transfers amounted to 2.4

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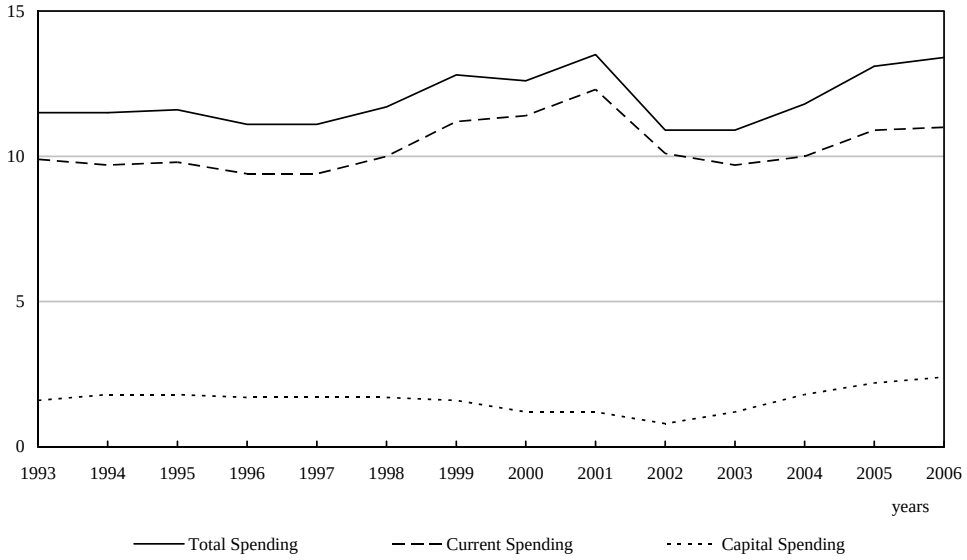
[11] One of reasons explaining the fall in share revenues accruing to provinces was the economic recession affecting the country since 1998 and lasting until 2002.

[12] The exact figures were 4.4 per cent in 2001 and 10.9 per cent in 2002.

[13] As mentioned above, not only that the new revenue sharing system has not been enacted yet but also the transfer of national funds takes place on an increasingly discretionary basis.

Figure 1

Argentina – Provincial Public Spending
(percent of GDP)



Source: Figures in Table 1.

per cent of total provincial current revenues in 1993, they reached 7 per cent by 2005.

Figures in Table 1 and their representation in Figure 1 bring about another interesting possibility of analysis in so far as they are viewed in the light of the Downsian vote-maximising model and the political business cycle extensively treated in the literature of Public Choice. Whereas Downs (1957) developed the idea of a political market[14] based on the assumptions that voters sought to maximize their utility and political parties the number of votes,[15] it also enabled other analytical extensions to be possible as for instance its use to explaining the over expansion of public expenditure and to ascertaining whether – in pursuing vote-maximisation – governments could be causing macroeconomic cycles to happen, as suggested by diverse authors.

By examining carefully Table 1 and Figure 1, a preliminary conclusion is that a Downsian-like behaviour by provincial governments can not be ruled out at once.

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[14] Similar in its functioning to an economic market where goods were traded.

[15] As Brown and Jackson (1983) pointed out, the median voter was the key subject as its preferences played a central role in the Downsian model of competition between political parties.

Table 2

Argentina – Provincial Tax Revenues and Transfers
(percent of current revenues)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
PT/I	40.0	41.3	40.7	40.5	40.1	41.2	40.4	39.9	38.7	41.1	41.4	39.1	36.8	39.2
PT/T	35.5	37.3	35.4	35.1	36.7	36.5	35.7	31.3	33.4	33.4	34.2	32.4	32.1	32.7
TR/I	2.4	3.0	3.8	3.2	3.6	3.8	3.5	4.3	3.8	6.6	5.5	6.6	7.1	6.5

Source: Own estimates on the basis of data from the National Direction of Fiscal Relations with Provinces, Ministry of Economy, Argentina.
References:
PT/I = Provincial Taxes/Provincial Current Revenues
PT/T = Provincial Taxes/Total Taxes
TR/I = Transfers received from the national level/Provincial Current Revenues

Let it be pointed out, in the first place, that provinces have had three elections throughout the period considered (1995, 1999 and 2003) and in each most of governors runned for reelection. In the first two cases (1995 and 1999) total and current public expenditure underwent a rise in the year of election while they dwindled (in percent of gross domestic product) the year immediately after the election. The figures for 2003 appear to be contradicting what one would have been expecting although the situation was in that case much more complex, as the country was leaving the 2001-02 crisis and experiencing an economic recovery while, at the same time, the newly elected government made it clear its objective of gaining a higher state participation in determined fields such as public investment and social expenditure.

It is also clear that capital spending had a more stable pattern during the period and not always accompanied current spending swings, what is in fact reasserting that the latter's greater suitability for political aims and uses can not be paralleled by the former's at least on one account: the longer period required for a public investment to be available for voters' use or enjoyment.

Another of the article's objectives was to find out whether a major participation of own taxes enhanced provinces's accountability and differently affected public spending categories; in line with it, Table 2 summarizes the evolution of the following three ratios in the period considered: provincial own taxes/total current revenues, provincial own taxes/total tax revenues and transfers received/total current revenues, whose performance deserve the following two features to be pointed out.

Despite an assumedly stability in the first ratio, except for the years 2001 and 2005, provinces' performance in raising their own taxes has clearly worsened as the average fell from 36 per cent in 1993-99 to 32.8 per cent in 2000-06. Reasons explaining the loss of almost 10 per cent in share include a certain sluggishness or lack of effectiveness in provincial tax administrations as well as provinces' weak

commitment to furthering their tax bases; last but not least, the Congress delay in enacting the new revenue sharing system placed in the national government's hands the important instrument of non automatic discretionary transfers, which doubled their participation in provincial budgets (see Table 2) and for which access provincial governments permanently strive.

4 The econometric analysis with panel data

As pointed out above, the empirical assessment of the impact of economic, fiscal and politico-institutional variables upon provincial public spending was carried out by resorting to a panel data econometric approach, as it permitted to analyze the 24 Argentine provinces' spending performance (cross section units) during the period 1993-2004 (time series analysis).

The basic analytic framework consisted of a regression model with the form indicated by the following expression:

$$y_{i\,t} = \alpha_i + B' x_{i\,t} + \varepsilon_{i\,t} \tag{1}$$

where vector *y* embodied the dependent variable for the 23 provinces and the city of Buenos Aires and vector *x* the *K* used regressors. Two alternatives were in turn resorted to in relation to the individual effect represented by α: one consisting in considering it constant all throughout the period, but specific for the unit or province (fixed effects) and another one in which the α same applied to all provinces (pooled regression).[16] In the fixed effect model, with specific α for each province, differences between units were captured by the differences in the constant term and interpreted as a parametric displacement of the regression function.

The decision to privilege the fixed effects variant, instead of a single constant term for all provinces (pooled estimation), was based on results for ratio *F* which precisely determines group effect's significance by contrasting the null hypothesis that all α are similar.[17]

Although the fixed effect approach includes the case in which the regressor (or regressors) have different slopes for each of the cross section units, it was here taken that slopes of functions (estimated coefficients) were the same for all 24 jurisdictions. The econometric program used was Stata, that computes constant terms and regressors with a least square dummy variable (LSDV) model in which expression (1) becomes:

$$y_i = i\alpha_i + X_i\beta + \varepsilon_i \tag{2}$$

where *i* becomes now a matrix of dummy variables of order *i x i*.

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[16] Greene (2000) pointed out that, even in this case, ordinary least squares still rendered consistent and efficient estimates of the common α as well as of regression coefficients.

[17] Greene (2000) pointed out that, under the null hypothesis, the efficient estimate coincided with pooled least squares.

Problems of heteroskedasticity and autocorrelation turned up once the model was run as tests confirmed that the variance of errors was not constant for all cross section units and that errors were serially correlated. As is known, heteroskedasticity may respond to a set of causes, the most common being an erroneous functional formulation of equations, asymmetries in the distribution of model's regressors or atypical factors; nevertheless, the point must be borne in mind that this problem is fairly common when dealing with cross section information in which the units (in this case the provinces) markedly differ in size.

The literature stresses that in both the problems mentioned linearly unbiased, consistent and asymptotically distributed coefficients can still be obtained by using ordinary least square estimation methods; however, and in reason of theirs not exhibiting minima variances, estimations will not yield efficient or BLUE and larger confidence intervals will be called for making *t* and *F* values imprecise.

The lack of satisfaction with heteroskedasticity and autocorrelation in random errors led to the possibility of jointly tackling both problems (once identified) by resorting to Feasible Generalized Least Squares, run in stata with the command *xtgls*.[18] For checking the correction, the Modified Wald[19] Test for groupwise heteroskedasticity and the Wooldridge[20] Test for autocorrelation in panel data were implemented within Stata with the commands *xttest3* and *xtserial*, respectively, operating after the fixed effect panel data model was estimated.

In ruling out the use of a random effect model (or error component model) it is recalled here that this approach assumes that cross section units represent a random sample taken from a larger population whereas, in this case, all the 24 provinces were included (that is, the total population).[21]

The list and definition of used variables follow below, and their series for the period 1993-2004 were built on the basis of data obtained from the National Direction of Coordination with Provinces (www.mecon.gov.ar/hacienda):

PBP: Geographic Gross Product
GPT: Total Provincial Public Spending
GC: Current Public Spending
GCO: Consumption Public Spending
GCAP: Capital Public Spending
GA: Administrative Public Spending
GS: Social and Welfare Public Spending
GE: Economic Public Spending
DP: Provincial Stock of Public Debt

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[18] As this command does not automatically compute fixed effects, dummy variables were introduced with *xi*.

[19] In spite that tests checking for heteroskedasticity strongly rest on the assumption of normality of errors, Greene (2000) stressed that the Modified Wald Test would work even though the assumption did not hold.

[20] See Wooldridge (2002).

[21] Random model's estimations were obtained, for the sake of verification, but results were not satisfactory.

IT: Total Revenues
T: Total Tax Revenues
PT: Provincial Tax Revenues (levied within the jurisdiction)
NT: National Tax Revenues (from the Revenue Sharing Regime)
TRANSF: Received Current Transfers

The above series were expressed in per capita pesos of 2004 and calculated for each of the 24 Argentine provinces. The following two variables, accounting for fiscal performance, were also obtained:

PARTTRIB: It measures each province's degree of financial autonomy (as a proxy for its accountability level); the series results from the quotient between Own Tax Revenues and Total Tax Revenues
SUFIN: Measures provinces' degree of financial sufficiency on the basis of their Annual Total Tax Revenues
SUFIN1: It measures provinces' degree of financial sufficiency on the basis of their Annual Total Revenues

In order to assess whether variables *PARTTRIB* and *SUFIN* somehow influenced the structure of total public spending the following series, showing relations between public spending categories and total public spending, were also computed:

GC_GPT: Current spending in percent of total public spending
GCO_GPT: Consumption spending in a percent of total public spending
GA_GPT: Administrative spending in percent of total public spending
GS_GPT: Social spending in percent of total public spending
GE_GPT: Economic spending in percent of total public spending
GCAP_GPT: Capital spending in percent of total public spending

The following categorical variables were also included with the object of inferring whether provinces' constitutional arrangements and institutional performance somehow affected the various categories of provincial public spending:

D1: Province's political sign: it takes value 1 when provincial and national ruling political parties coincide (or share a coalition) and value 0 in the opposite case[22]
D2: It stands for the governor's constitutional possibility of being reelected: it takes value 1 when the constitution allows the reelection and 0 in the opposite case
D3: It stands for the case in which governors exercise the right to be reelected: it takes value 1 in the last year of the governor's term (the fourth) and value 0 in the rest

[22] This variable was used by J. Bercoff and J. Nougués (2005, op. cit.) and taken in turn from M. Jones *et al.* (1999).

D4: It stands for the case in which governors exercise the right to be reelected: it takes value 1 in the last two years of the governor's term (the third and the fourth) and value 0 in the rest
D5: Reelection right exercised: it takes value 1 in the first year of the new term and value 0 in the rest

Other possibilities of ascertaining the impact of constitutional arrangements upon provincial public spending, by using dummy variables, were also suggested and used by Fridrij (2006), from whom the following ones were borrowed:

D6: Budget amendments: it assumes value 1 when legislatures can – without restrictions – the project sent by the provincial executive and 0 when the opposite holds
D7: Budget amendments: it assumes value 1 when legislatures are constitutionally or legally entitled to enact budgets in which the level of expenditures (but not the deficit) been increased with relation to the project sent by the executive and 0 when the opposite holds
D8: Provincial debt: it takes value 1 when constitutional limits exists and 0 when they do not exist
D9: Provincial public spending: it takes value 1 when constitutional limits exist and 0 when they do not exist
D10: Limits in the use of credit: it takes value 1 if limits exist and 0 otherwise
D11: Limits in public spending: it takes value 1 if the limits do not exist and 0 otherwise

Finally, and in line with the widespread idea found in the literature (Tsebelis, 1995, Bercoff and Nougués, 2005) that a bicameral system introduced check and balance mechanisms in the functioning of both chambers, the ensuing dummy variable was also considered in the econometric analysis:

D12: Bicamerality: it assumes value 1 in provinces with two chambers and 0 in single provinces.

4 Analysis of econometric results

The econometric estimation of equation (2) above, using a fixed effect panel data model, yielded statistically significant and not significant results for the variables defined in the preceding Section. In this connection, some of main results concerning the effect of used variables upon the performance of provincial public spending (both in levels and in percent) are summarized in the ensuing tables and will be used to draw important preliminary conclusions.

Starting with variables in levels Table 3, including Total Provincial Public Spending as the dependent variable, shows the striking result that – conversely to what one might have expected – an increase in gross geographic product induced a spending reduction and, as will be shown, the same result applies to the rest of

estimations, although in most of cases the variable coefficient falls short of being statistically significant. Notwithstanding the fact that this feature deserves a deeper analysis, it might tentatively be argued that, on the one side, the product increase could be reducing the need for certain public goods[23] to be provided and, on the other, that product could be rather affecting spending via budgetary and fiscal variables such a fiscal effort and financial sufficiency as both are expected to increase following a raise in product.

According to figures in Table 3, three fiscal variables positively affect total public spending: the stock of public debt (*DP*), provinces' success in meeting their financial sufficiency targets (*SUFIN*) and transfers received from the central government (*TRANSF*). In relation to *DP*, its positive impact upon expenditure should be regarded as the consequence of the major financial burden (interest payments) as much as for the use given to funds captured by governments.[24] Surprising as it may appear, higher fiscal effort (*PARTTRIB*) by provincial governments did not result significant in any of the carried out estimations.

The point deserves been mentioned that, save for two cases, econometric estimations of constitutional and politico-institutional variables showed coefficients not significantly different from 0; the two exceptions were provincial governments' political sign (*D1*) and the exercise of the reelection possibility by governors (*D3*). In this connection, the negative sign and the statistical significance of *D1* confirmed Jones' hypothesis (1999), mentioned by Bercoff and Nougués (2005), that central governments' efforts to induce spending reductions in the subnational level held more chances of getting through when government levels shared the same political sign. Positive sign and significance of *D3* clearly indicate, in line with findings by Fridrij (2006), a raise in expenditures (political spending?[25]) in the last year of governors' term[26] and, at the same time, the occurrence of a Downsian behaviour at the subnational level.

It is finally worthmentioning that, contrariwise to what has been asserted in other articles dealing with the subject (*i.e.* Bercoff and Nougués, 2005), the variable *D12* standing for bicamerality yielded neither in this case nor in the rest of estimations results significantly different from 0, for what the assumption of check

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[23] An example of this is parents' attitude to send children to private primary and secondary schools once economic conditions make this possible.

[24] In general, apart from the fact that debt funds are used to defray current spending, many a provincial government customarily issued debt compulsory placed among civil servants, as is explained below.

[25] It is well known that certain budgetary categories of current spending, as for instance Goods and Non Personal Services, are used to channel expenditures whose reasonability and urgency is debatable, to say the least, as they respond to what is customarily considered political spending.

[26] This result differed from Bercoff and Nougués' (2005) who, apart from finding estimations not significantly different from 0, faced also negative coefficients; that is, governors able to be reelected would have more fiscal discipline in order not to endanger the fiscal sustainability of their next term.

Table 3[1]

Argentina – Impact of Diverse Viariables upon Provincial Total Spending

H0: sigma(i)^2 = sigma^2 for all i
chi2 (24) = 3080.50
Prob>chi2 = 0.0000
Wooldridge test for autocorrelation in panel data
H0: no first-order autocorrelation
F(1, 23) = 4.659
Prob > F = 0.0416
Cross-sectional time-series FGLS regression
Coefficients: generalized least squares
Panels: heteroskedastic
Correlation: common AR(1) coefficient for all panels (0.3255)
Estimated covariances = 24 Number of observations = 264
Estimated autocorrelations =1 Number of groups = 24
Estimated coefficients = 31 Time periods = 11
Wald chi2(30) = 3803.87
Log likelihood = 76.62934
Prob > chi2 = 0.0000

GPT |	**COEFFICIENT**	**STD. ERR.**	***Z***	***P>|Z|***	**(95% CONF.**	**INTERVAL)**
PBP |	–.0262136	.0117652	–2.23	0.026	–.0492731	–.0031542
DP |	.5995481	.1983562	3.02	0.003	.2107772	.9883191
SUFIN |	1.241492	.0580698	21.38	0.000	1.127678	1.355307
TRANSF |	.6405429	.1487578	4.31	0.000	.348983	.9321027
D1 |	–.0933396	.0247195	–3.78	0.000	–.1417889	–.0448902
D3 |	.0585004	.0283648	2.06	0.039	.0029064	.1140943
D10 |	.2759107	.1139945	2.42	0.016	.0524856	.4993358
I2 |	–.5416421	.1628066	–3.33	0.001	–.8607371	–.2225471
I3 |	–.2435578	.0992707	–2.45	0.014	–.4381247	–.0489909
I4 |	.8297282	.117431	7.07	0.000	.599566	1.05989
I5 |	.2795203	.2583435	1.08	0.279	–.2268237	.7858643
I6 |	–.097306	.0800755	–1.22	0.224	–.2542512	.0596391
I7 |	–.2978892	.0761615	–3.91	0.000	–.4471629	–.1486154
I8 |	–.1437649	.0877632	–1.64	0.101	–.3157777	.0282479
I9 |	–.3977195	.138359	–2.87	0.004	–.6688982	–.1265407
I10 |	–.0222543	.1289005	–0.17	0.863	–.2748945	.230386
I11 |	.2216774	.1552906	1.43	0.153	–.0826866	.5260414
I12 |	.2004958	.2365889	0.85	0.397	–.26321	.6642016
I13 |	.1757379	.0859684	2.04	0.041	.0072429	.3442329
I14 |	–.0676224	.074419	–0.91	0.364	–.2134821	.0782373
I15 |	1.809171	.1624894	11.13	0.000	1.490698	2.127644
I16 |	.1364567	.091735	1.49	0.137	–.0433406	.316254
I17 |	–.1866368	.0756852	–2.47	0.014	–.3349771	–.0382966
I18 |	–.0006261	.254101	–0.00	0.998	–.4986549	.4974027
I19 |	–.1567681	.0932255	–1.68	0.093	–.3394866	.0259505
I20 |	2.59634	.2737979	9.48	0.000	2.059706	3.132974
I21 |	–.1268332	.0681529	–1.86	0.063	–.2604103	.006744
I22 |	–.5051935	.1160708	–4.35	0.000	–.7326881	–.277699
I23 |	1.355789	.26042	5.21	0.000	.845375	1.866202
I24 |	–.2007965	.0876577	–2.29	0.022	–.3726025	–.0289905
_CONS |	.281256	.1091654	2.58	0.010	.0672957	.4952162

[1] For limitation of space complete sets of information on top of the table will not be provided for the rest of estimations. However, these can be obtained from the author on request (ernerezk@eco.unc.edu.ar).

Table 4

Argentina – Impact of Diverse Variables upon Provincial Current Spending

gc |	**Coefficient**	**Std. Err.**	***z***	***P*>|*z*|**	**(95% Conf. Interval)**	
DP |	1.247633	.1410467	8.85	0.000	.9711866	1.524079
SUFIN |	.8727302	.0402535	21.68	0.000	.7938348	.9516257
TRANSF |	.4422955	.1184037	3.74	0.000	.2102285	.6743624
D1 |	–.0719928	.0201797	–3.57	0.000	–.1115443	–.0324412
D3 |	.0584488	.0208182	2.81	0.005	.0176458	.0992518

and balances played by double chambers could not be verified with the estimation of the panel data econometric model.[27]

In spite that figures in Table 4, showing the impact of different variables upon current provincial spending, rendered similar results to the already mentioned in Table 3, the feature that deserves being pointed out is the higher positive impact of public debt upon current spending, which falls in line with a traditional distorting practice of subnational governments in Argentina; that is, to resort to debt for wage payments any time the economic cycle reduces tax revenues[28] or when fiscal resources fall short of needed due to the incorporation of temporary personnel to the public sector staff on a permanent basis.

The analysis carried out in the case of current spending is almost straightforwardly applicable to consumption public spending (Table 5), except for the fact that the estimate of the coefficient of constitutional limits to public spending (*D9*) resulted significantly different from 0. As before, public debt stocks, financial sufficiency, transfers and governors' reelection possibility had the effect of expanding public consumption spending whereas political alignment with the national government and constitutional limits to expenditure had a clear contractive effect upon spending; at the same time, results so far confirmed the almost null impact of geographic domestic product, financial autonomy and bicamerality upon expenditure levels.

Despite apparent similarities in results figures in Table 6, depicting the impact of economic and institutional variables upon social public spending, present a couple of worth emphasizing subtleties. Let it be noticed that gross geographic

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[27] In the light of results, one may be led to test the opposite assumption; that is, whether the political trade off between both chambers will not cause expenditure to increase.

[28] As quoted above, an illustration of this was provinces' common practice of issuing public bonds that were compulsory placed among their civil servants under the form of wage payments. Those bonds were later channeled into the economic circuit via goods and services purchases and ended their cycle when the central government was forced to bail out provincial governments with serious financial strains.

Table 5

Argentina – Impact of Diverse Variables upon Provincial Consumption Spending

gco |	Coefficient	Std. Err.	*z*	*P*>|*z*|	(95% Conf. Interval)	
DP |	.0231569	.0030968	7.48	0.000	.0170873	.0292265
SUFIN |	.013861	.0009152	15.14	0.000	.0120672	.0156548
TRANSF |	.0064905	.0019705	3.29	0.001	.0026284	.0103527
D1 |	–.0023943	.0005717	–4.19	0.000	–.0035149	–.0012738
D3 |	.001397	.0004799	2.91	0.004	.0004563	.0023376
D9 |	–.0062527	.0030611	–2.04	0.041	–.0122523	–.0002531

Table 6

Argentina – Impact of Diverse Variables upon Provincial Social Spending

gs |	Coefficient	Std. Err.	*z*	*P*>|*z*|	(95% Conf. Interval)	
PBP |	–.0130482	.0067582	–1.93	0.054	–.026294	.0001975
SUFIN |	.5950752	.0281897	21.11	0.000	.5398243	.6503261
TRANSF |	.2340367	.0821124	2.85	0.004	.0730992	.3949741
D1 |	–.0423325	.0142338	–2.97	0.003	–.0702302	–.0144349
D3 |	.0473994	.0148756	3.19	0.001	.0182438	.07655

product had now a negative, though statistically significant, coefficient which could be indicating that the higher the product (as a proxy to welfare) the smaller the amount jurisdictions must devote to social spending needed to assist the poor;[29] also, the fact that public debt ceased here to be a significant variable falls in line with the already mentioned argument that governments mostly resorted to credit markets (or issued compulsory debt) to make up financial needs linked to current, administrative or consumption expenditure.

Inspection of figures summarized in Table 7 (the dependent variable is now capital public spending), brings to surface five elements clearly highlighting provincial governments' performance with regards to this spending category. First, the inverse relationship between product increase and capital formation; second, the hardly noticed incidence of constitutional and politico-institutional

[29] One might also think of an inverse ultrarationality sequence; that is, as gross geographic product expands people substitute some public goods (*i.e.* education, health) for private goods.

Table 7

Argentina – Impact of Diverse Variables upon Provincial Capital Spending

gcap **|**	**Coefficient**	**Std. Err.**	***z***	***P*>|*z*|**	**(95% Conf. Interval)**	
PBP |	–.0083714	.0041741	–2.01	0.045	–.0165525	–.0001903
PARTTRIB |	.5361989	.2804761	1.91	0.056	–.0135241	1.085922
SUFIN |	.2287	.0254745	8.98	0.000	.1787708	.2786292
TRANSF |	.1693215	.0910274	1.86	0.063	–.0090889	.3477318
D10 |	.2707979	.0938426	2.89	0.004	.0868698	.454726

variables upon public capital spending (except in one single case); third, the statistical relevance and positive sign of fiscal effort (*PARTTRIB*), that implies that capital spending is a linear function of provinces' own fiscal revenues; fourth, the statistical significance and negative sign of public debt stock indicating that provinces do not use debt funds for capital formation and fifth, and for similar reasons, transfers' poorer performance in the case of public investment.

Not surprisingly, the lack of correlation between product and public capital formation had already been noticed by Kamps (2005) in a study for 22 OECD countries but in the context of the relationship between private and public capital, the results of which led him to suggest that both were close substitutes and crowded out each other, at least in the short run.

It should by no means be strange that politico-institutional variables, such as *D3* whose performance was robust in the preceding estimations, did not result now statistically significant: in reason of their complexities, long construction periods and resources required, capital outlays did not properly fit political needs of governments intending reelection in the same quick way as current spending did. A remarkable exception was however the coefficient of *D10* whose positive sign and significance implied that limits placed on the use of credit worked in the direction of correctly favouring capital formation.

The sign and statistically relevance of provinces' fiscal effort (*PARTTRIB*) brings here out a result of undeniable policy content: the more provinces covered their expenses with own resources the higher capital outlays were. Another implication can be that greater financial autonomy in turn enhanced provincial governments' accountability as they tended to devote resources to spending categories other than administrative and consumption expenditure.

In pointing out next that the coefficient of public debt (*DP*) resulted not statistically significant it must be recalled that the performance of this variable followed in Argentina the pattern of resources needed by provincial governments mainly for their use in current public spending.

Table 8

Argentina – Impact of Diverse Variables upon Provincial Current Spending
(share of total spending)

gc_gpt **|**	**Coefficient**	**Std. Err.**	***z***	***P>|z|***	**(95% Conf. Interval)**	
DP |	.1427064	.0411776	3.47	0.001	.0619998	.2234129
PARTTRIB |	–.2627773	.1522056	–1.73	0.084	–.5610949	.0355402
D8 |	–.0882975	.035305	–2.50	0.012	–.157494	–.019101

Finally, transfers showed here a poorer performance than in the preceding case; this been the result of theirs being largely and normally used by provinces for current spending and social expenditure of the "assistential" type.

The model's econometric estimation has so far been carried out in levels and it sought to determine whether and how the selected economic, budgetary and politico-institutional variables impacted upon the different spending categories. It could be revealing whether the exogenous variables also influenced spending categories' share of the total provincial expenditure and for that a set of estimations was performed, the most important being summarized in Tables 8 through 12.

Results shown in Table 8 permitted to confirm the expected assumption that both debt stock and fiscal effort, with different signs, respectively increased and reduced the participation of current public spending within total public spending. Conversely to what has already been shown, when current public spending (taken in levels) seemed not to respond to provinces' major fiscal efforts, results here indicate that the greater the fiscal effort the higher the degree of accountability and visibility of governments' decision on public spending was and that would be explaining why *gc_gpt* fell following rises in *PARTTRIB.*

The above results resulted also coherent with the sign and statistical significance of *D10* (limits on the use of credit) as it would be expected that the ratio *gc_gpt* decreased as constraints were imposed on the use of credit.[30]

As *PARTTRIB* and *SUFIN* did not yield good results when jointly estimated, the estimation in Table 9 excluded the former and included the latter variable. As can be seen, results stressed the impact of public debt and financial sufficiency upon the ratio *gc_gpt*. Far from being contradicting, the value and significance of the coefficient of *SUFIN* also acknowledged the enhanced accountability feature; let it be mentioned here that, by construction, *SUFIN* resulted from adding

[30] In all cases, the value, sign and statistical significance of D8 and D10 coincided for what it was clear that both measured the same thing.

Table 9

Argentina – Impact of Diverse Variables upon Provincial Current Spending
(share of total spending)

gc_gpt **|**	**Coefficient**	**Std. Err.**	***z***	***P>|z|***	**(95% Conf. Interval)**	
DP |	.2262747	.0405518	5.58	0.000	.1467947	.3057548
SUFIN |	–.0588137	.0094178	–6.24	0.000	–.0772723	–.0403551
D10 |	–.0728448	.0334996	–2.17	0.030	–.1385027	–.0071869

Table 10

Argentina – Impact of Diverse Variables upon Provincial Social Spending
(share of total spending)

gs_gpt **|**	**Coefficient**	**Std. Err.**	***z***	***P>|z|***	**(95% Conf. Interval)**	
DP |	–.1177668	.0239671	–4.91	0.000	–.1647414	–.0707922
PARTTRIB |	–.2872668	.1036961	–2.77	0.006	–.4905074	–.0840262
SUFIN |	–.0120527	. 0063941	–1.88	0.059	–.0245848	.0004795

provincial tax revenues and fiscal funds from shared revenues. Another interesting feature is the negative impact of *D10* upon *gcd_gpt* showing that current spending participation in total spending got smaller as provinces had effective limits or constraints upon the use of public debt. Although it is not shown here, the same result would be obtained if *D8* (constitutional limits to debt) were used in place of *D10*.

Table 10, that summarizes results for *gs_gpt*, shows that increases in all the three variables whose estimated coefficients were statistically significant tended to reduce social expenditure share of public expenditure. In this connection, what is really reasserted by figures is that public debt was directed to current spending and that provinces' major fiscal effort and financial sufficiency made governments more accountable when taking decisions upon spending categories.

Figures summarized in Table 11 account also for a very interesting case as variable ge embodies not only capital outlays but also current public spending oriented towards all economic sectors in provinces. As may be seen, the percent of economic public spending in total public spending increased following enhanced financial sufficiency and the existence of constraints upon the use of credit while

Table 11

Argentina – Impact of Diverse Variables upon Provincial Economic Spending
(share of total spending)

ge_gpt **|**	**Coefficient**	**Std. Err.**	***z***	***P>|z|***	**(95% Conf. Interval)**	
DP |	–.1705062	.0280256	–6.08	0.000	–.2254353	–.1155771
SUFIN |	.0339266	.0062561	5.42	0.000	.0216649	.0461884
D10 |	.0551933	.0266332	2.07	0.038	.0029932	.1073933

Table 12

Argentina – Impact of Diverse Variables upon Provincial Capital Spending
(share of total spending)

gcap_gpt **|**	**Coefficient**	**Std. Err.**	***z***	***P>|z|***	**(95% Conf. Interval)**	
PBP |	–.0050534	.0016749	–3.02	0.003	–.0083361	–.0017707
DP |	–.2518335	.041141	–6.12	0.000	–.3324683	–.1711987
SUFIN |	.0725986	.0104155	6.97	0.000	.0521846	.0930125

decreased with public debt.[31] The fact that *PARTTRIB* resulted here, and in other previous estimations, not significant might be implying that accountability was better represented by the variable *SUFIN* which somehow accounted for fiscal effort, as provincial tax revenues were resorted to in computing the series.

The magnitude of the ratio *gcap_gpt* was assessed using two different equation formulations, both of which rendered robust results. In the first case (Table 12), results backed the assumption that provincial public debt seldom went to capital formation whereas increased financial sufficiency (based on own taxes) in fact encouraged non current outlays. The impact of gross geographic product upon capital spending share of total spending, if any, was negative for reasons already given when results in Table 7 were analyzed.

In the second case, (Table 13) figures indicate that the ratio *gcap_gpt* was not only, and as expected, strongly and positively influenced by the two fiscal variables:

[31] The sign in this case should not cause surprise as it depicts the several mentioned feature of provincial public debt, whose end is not capital outlays but current expenditure.

Table 13

Argentina – Impact of Diverse Variables upon Provincial Capital Spending
(share of total spending)

gcap_gpt |	**Coefficient**	**Std. Err.**	***z***	***P*>|*z*|**	**(95% Conf. Interval)**	
DP |	–.1427064	.0411776	–3.47	0.001	–.2234129	–.0619998
PARTTRIB |	.2627774	.1522056	1.73	0.084	–.0355401	.561095
D10 |	.0882975	.035305	2.50	0.012	.019101	.157494

Table 14

Signs of Statistically-significant Estimated Coefficients

	PBP	***DP***	***PARTTRIB***	***SUFIN***	***TRANSF***	***D1***	***D3***	***D8***	***D9***	***D10***
gpt	–	+		+	+	–	+			+
gc		+		+	+	–	+			
gco		+		+	+	–	+		–	
gs	–			+	+	–	+			
gcap	–		+		+					+
gc_gpt		+	–	–				–		–
gs_gpt		–	–	–						
ge_gpt		–		+						+
gcap_gpt	–	–	+	+						+

Source: Tables 3 through 13 above.

fiscal effort and financial sufficiency, but also by effective limits upon the use[32] of credit; that is, when standing legal limits existed they caused public debt to be directed towards capital formation instead of current spending.

It is also noticeable that, contrariwise to what occurred when the econometric estimation was performed in levels, neither *D1* (political alignment) nor *D3* (reelection of governors) yielded coefficients significantly different from 0.

[32] And, as mentioned, by constraints on the volume of credit (D8).

Table 14 above, summarizing results of all estimations, helps in visualizing which variables resulted statistically different from 0 (meaning that they impacted in fact total public spending and its different categories) and what signs they held.

5 Conclusions

The research carried out permitted to obtain conclusions which help to understand the mechanics of provincial public spending and subnational governments' behaviour in Argentina. Results can be extended to other federal countries undergoing a marked spending decentralization and also to unitary-like countries in which local governments have elected authorities.

The empirical analysis for the period 1993-2004, for which the fixed effect panel data econometric approach was resorted to, considered the impact of economic, budgetary and politico-institutional variables upon diverse spending categories and enable to arrive at the following preliminary conclusions:

1) Strikingly, and contrariwise to what was generally assumed, gross geographic product and provincial public spending appeared inversely related, possibly due to a proportionally lesser public goods demand (scale effects) as product grew or for the reason that gross geographic product was in this context better represented by budgetary variables, as for instance tax collection.
2) While provinces' higher financial sufficiency induced larger total public spending levels (in all categories), provincial tax revenues' large share within total tax revenues (major fiscal effort) was seen to dwindle current, consumption and social public spending in percent of total spending. That is, the more provinces' fiscal effort deepened the more visible provinces' use of resources (accountability enhancement) seemed to become.
3) Transfers received from the central government clearly led to increasing total public spending, although this was much more marked with regard to current spending than to capital outlays.
4) Increases in the stock of public debt boosted total public spending, current, consumption and administrative public spending while in turn shrank capital and economic public spending. This brings to surface not only the impact of the financial burden (represented by payment of interests) but also the fact that the use of credit by provincial governments did not accomplish the expected role of forming capital stocks.
5) Increases in gross geographic product negatively impacted upon social public spending. This can be interpreted as provinces been able to switch resources from attention to the poor to other areas as the expansion of the product helped to reduce poverty.
6) Major fiscal efforts by provinces led to more capital formation and to an increased participation of capital outlays in total public spending. In this case, results availed the idea of higher accountability and transparency in spending decisions stemming from a greater weight of own taxes in total fiscal revenues.

7) The negative relation between gross geographic product and public capital formation, despite what could normally be expected, had already been observed in the analysis for other countries and seemed to be depicting a situation in which – in the short run – private and public capital formation crowded out each other as they behave like substitutes.
8) The downsian-like behaviour and economic business cycle patterns, resulting from expansive spending programmes, found support in estimations as the coefficients of the variable standing for governors' reelection possibility resulted statistically significant in all spending categories, except for capital public expenditure. Likewise, the assumption was also proved that provinces tended to reduced their total spending when they shared the same political sign with the central government.
9) With regard to other categorical variables' econometric performance, statistical evidence was found that operating limits on public spending served the purpose of reducing consumption public spending. Likewise, the empirical analysis showed that constitutional and legal constraints placed upon the use and ends of resources from credit clearly tended to favour capital formation and boosted economic public spending to the detriment of current expenditure.
10) However, and contrariwise to what was asserted in preceding papers, only very weak evidences were found of the impact of bicameral legislatures upon public spending, for what the assumption of checks and balances could not be verified at the provincial level.

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COMMENTS ON SESSION 3
FISCAL POLICY AND BUDGETARY INSTITUTIONS

Marco Buti[*]

Fiscal rules and budgetary institutions have been the subject of keen political interest in Europe and elsewhere and given rise in the past several years to a growing economic literature. The papers I comment on ask three fundamental questions:

1) Do fiscal rules really help to enhance budgetary discipline? (paper by Xavier Debrun and Manmohan S. Kumar);
2) What triggers the introduction of a fiscal rule? (paper by Stefania Fabrizio and Ashoka Mody);
3) How to design a robust fiscal rule? (paper by Barry Anderson and Joseph J. Minarik).

I will comment on the three papers in turn.

1 "Fiscal Rules, Fiscal Councils and All That: Commitment Devices, Signaling Tools or Smokescreens?" by Xavier Debrun and Manmohan S. Kumar

The paper shows by means of a simple theoretical model that in a context of asymmetric information between policy makers and voters, electoral uncertainty is a key source of deficit bias. Specifically, voters are assumed to be rational and only re-elect the incumbent government under certain conditions: namely, re-elections depends on the ability of the current administration to deliver a quantity of public goods that is deemed "fair" by voters in terms of taxes paid. However, policy makers themselves face uncertainty as to whether their actions will be successful in delivering enough public goods, which in turn leads to a deficit bias in the conduct of fiscal policy.

According to the model, a balanced budget rule with strong enforcement mechanisms could discourage policymakers to run deficits. In the model, this is possible because rational voters are assumed to hold policymakers accountable for sticking to the rule since this rule is expected to deliver an optimal policy: an appropriate balance between public goods (expenditure) and taxes to finance them (revenues). Thus, if voters can perfectly observe budgetary outcomes – which means that there is perfect transparency – compliance with the budgetary rule is rewarded by a re-election, which in turn eliminates electoral uncertainty and any incentive to deviate from the rule. In this context, the credibility of the rule stems from the existence of high political costs in case of non-respect, which are possible due to the

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existence of transparency and accountability in the budgetary and political process. These two elements allow rational voters to "punish" incompetent governments.

However, voters' rationality can be blurred by fiscal opacity related to budgetary developments. The paper emphasises that the lack of budgetary transparency is an obvious obstacle for the final effectiveness of fiscal rules and institutions. In this case, the paper argues that under incomplete budgetary transparency, accountable governments may also use institutions as a signal of competence to increase their re-elections chances, which in turn helps limit the deficit bias. Governments acting in this way will be those more pre-committed with fiscal stability.

The main conclusions and policy implications stemming from the development of this model may be summarised as follows:

1) The model shows how electoral uncertainty may be a key source of deficit bias due to the perceived risk by policy makers of not being re-elected.
2) According to the model, a balanced budget rule can suffice to tackle the deficit bias stemming from electoral uncertainty; effective enforcement mechanisms are key for the rule's credibility.
3) Transparency and democratic accountability play an important role in the existence of reputational costs. If transparency and accountability are complemented by fiscal rules reflecting social consensus on what constitutes an optimal fiscal policy, then these rules may be used by voters to assess government's fiscal conduct and to decide whether this government is re-elected or not.
4) The model accounts for the possible existence of reverse causality between fiscal rules and institutions and budgetary outcomes (*i.e.* the causality runs from budgetary developments to fiscal rules rather in the other way round).

The main objective of this empirical research is to assess the reverse causality running from budgetary results to fiscal rules. The reverse causality is tested by applying panel data econometrics and using standard fiscal reaction functions augmented by the fiscal rule indexes of the European Commission's database on budgetary institutions. Some evidence of reverse causality is found on the basis of the Durbin-Hu-Hausman test that indicates that fiscal rules could indeed be endogenous. In the same line, the author finds a significant correlation between the lagged cyclically-adjusted primary balance (CAPB) and the fiscal rules indexes, which is interpreted as evidence of the reverse causality running from fiscal outcomes to stricter fiscal rules. This potential simultaneity bias could weaken significantly the estimated impact of fiscal rules on budgetary outcomes.

The paper tackles the issue of the interplay between fiscal behaviour and political incentives in an innovative and insightful way. It covers a wide a range of issues. A narrower coverage would have helped the reader to better understand the links between the underlying theoretical model, the empirical findings and the policy conclusions.

The model is based on a number of assumptions that narrow its empirical and policy relevance. First, voters are rational and punish those governments that do not respect fiscal rules. Policy experiences suggest that voters may suffer very often from fiscal illusion (or what George Kopits called "fiscal alcoholism"). Second, the only source of the deficit bias is electoral uncertainty, and therefore, other usual sources of deficit bias (e.g. the common pool problem) are not considered in the model, which obviously restricts the validity of some of the conclusions to a particular case. Finally**,** the assumption that voters perfectly observe budgetary outcomes and have full ownership of the rule in force (since it incorporates the optimal fiscal policy) appears particularly restrictive.

The empirical analysis aims at checking whether political instability is associated to higher deficits. Whilst the results are intuitively appealing, they provide only limited and weak evidence of reverse causality between fiscal outcomes and fiscal rules. First, the descriptive analysis based on the median values of primary balances and debt ratios showing that these variables had already improved before the implementation of fiscal rules is far from being robust. For instance, if instead of the median and the primary balance, one uses the average and the cyclically-adjusted primary balance, the conclusion obtained is the opposite: in the period preceding the setting up of fiscal rules the CAPB barely changes, while after the implementation of rules it increases. Second, the econometric evidence supporting the possible existence of reverse causality is limited and far from being conclusive. While reverse causality cannot be excluded, it is clear that further econometric research is needed to reach more robust conclusions.

2 "The Value and Reform of Budget Institutions" by Stefania Fabrizio and Ashoka Mody

This very interesting paper examines the conditions under which fiscal rules are introduced or budget institutions are improved. The analysis is based on empirical analysis looking at the determinants of an index measuring the quality of national budget institutions. The construction of the index is well explained in a previous paper by the same authors: "Can Budget Institutions Counteract Political Indiscipline?" (*Economic Policy*, 2006). In fact what is meant by "budgetary institutions" is mainly the budgetary process. The three main steps of budgeting are taken into account in the index: (i) the preparation stage; (ii) the authorization stage; (iii) the implementation phase. The methodology used in constructing the index is close to the initial studies by von Hagen (1992) which had considered the stages of: (i) budget formulation (restrictions on the budget and the relative position of the Minister of Finance *vis-à-vis* the spending ministers) (ii) budget approval (degree to which amendments in Parliament may increase the size of the budget) and (iii) budget implementation. The construction of the index on the quality of the budgetary process takes into account a large number of variables. A total of 15 sub-dimensions are considered, which is more than in most other studies of the same type. The time-varying feature of the index allows putting in relation fiscal and

economic variables with developments in the features of the budgetary process in a meaningful way.

Much in line with the findings of reverse causality of the Debrun-Kumar paper, the main conclusion of the paper is that fiscal deficits are not conducive to institutional reforms. To the contrary, the larger the deficit, the lower is the likelihood of reforms. It is as if large deficits imply strong claims on the budget and hence create unwillingness to compromise. A consequence of this result is that countries seem to tend to move to two outcomes: low fiscal deficits and good institutions or high deficits and weak institutions. Economic shocks (higher unemployment rates and inflation, larger current account deficits) can help build a constituency for improving budget institutions. However, there is considerable inertia in institutions. Therefore strong political leadership is necessary to impose reforms and enter a virtuous cycle.

The paper carries out a sound econometric analysis. The authors control for a large number of variables (not only economic but also political) and conclusions appear robust. A number of improvements could nevertheless be considered. First, the standard EU dummies (Maastricht and the Stability and Growth Pact, SGP) are absent from the analysis. This could be an important missing variable. Analysis on numerical fiscal rules carried out by the European Commission (see the *Public Finance Report*, 2006) find that the EU and SGP seem to have acted as a catalyst for the introduction of numerical fiscal rules at national level. It would be interesting to see if these variables have the same influence on budget institutions (procedures). Second, the study looks at the influence of the quality of the budgetary process (*central government*) on developments in *general government* finances. Arrangements and rules in force in local governments or social security sectors (most of the time not covered – or less directly covered – by the budgetary process) are not taken into account in the analysis. This limitation also applies to most of von Hagen's school papers. This could be solved easily in adding dummies capturing the existence of fiscal constraints applying to lower levels of governments. Third, in the analysis, the deficit bias implicitly only stems from the common pool problem. Time inconsistency is not mentioned as a cause for the deficit bias. It would be interesting to add variables capturing time-inconsistency effects in the relations (e.g. elections dummies). This would also allow answering the question: do reforms of fiscal institutions come after/before elections? Finally, in the construction of the indexes, only legal constraints on deficits or government borrowing are taken into account. In practice, there are many other soft constraints (internal pacts, contracts, coalition agreements, etc.) that can also be considered "institutions" and that may have an impact on the conduct of fiscal policy. Taking into account these elements would however mean considerable further work.

3 "Design Choices for Fiscal Policy Rules" by Barry Anderson and Joseph J. Minarik

The *leitmotiv* of the paper is that expenditure rules are good while deficit rules are bad. Deficit rules that set a maximum limit on the deficit might encourage countries to run the largest deficits permitted; spending rules on the contrary provide firm guidance to policy makers whether the economy and the budget are strong or weak. With respect to stabilisation, deficit-based rules provide no incentive for counter-cyclical policy in strong economies, and can limit even the operation of automatic stabilisers in the budget in weak economies; in contrast, spending rules allow stabilisers to work fully. While expenditure rules are easier to monitor, non-compliance with a deficit rule, including either a reference deficit limit or required progress toward close-to-balance can be hidden behind optimistic economic assumptions or unlikely plans for future spending and revenue discipline. Spending rules make the availability of resources more predictable for pubic managers, notably with respect to annually appropriated funding for those core functions of government. Finally, funding for public investment can be protected under a spending rule whilst tends to be the first victim in case of adjustment under a deficit rule.

In general the paper would gain from taking a more balanced approach. This is not to deny that expenditure rules are very useful in several circumstances. Actually, the paper ignores (or is very short on) two additional advantages of expenditure rules: (i) they ensure a high degree of accountability of fiscal authorities, as expenditure is the part of government finances that is the most under the control of the government; (ii) they can be instrumental in limiting the size of the government and improving the composition and efficiency of government expenditure.

The paper argues that expenditure rules should be implemented at EU level, possibly substituting the current EU fiscal rules. While agreeing that expenditure rules can contribute to sound fiscal policies, there are good arguments to consider that such rules should not substitute current EU rules based on debt and deficits.

First, the use of expenditure rules in a multinational context can be problematic. *De facto*, introducing spending limits in all EU countries would carry the risk to impose homogeneous (or quasi-homogeneous) social preferences to all EU countries. As reflected in the large differences and fluctuations of the expenditure-to-GDP ratio among Member States, EU countries have different and time-varying preferences as regards the role and the appropriate size of the government. Second, implementing expenditure rules at EU level could be inconsistent with the principle of subsidiarity between EU institutions and Member States (*i.e.* level and composition of public expenditure are issues of national responsibility). Finally, in the euro area, there is a need for a fiscal policy framework that ensures that excessive budget deficits are avoided over the medium term and that national fiscal policies are effectively coordinated. The problem with expenditure norms is that they do not refer to the fiscal variable which can entail

negative externalities across countries and between fiscal and monetary policies. While a rising deficit or debt level in one country can create area-wide problems, a rising expenditure level as such does not have "first order" negative repercussions on other countries or on the common monetary policy, if it is matched by a corresponding increase in taxes.

The paper expresses a number of criticisms concerning the SGP and its implementation. It argues that deficit rules like those of the SGP do not provide sufficient guidance to Member States which are respecting the deficit reference value of 3 per cent of GDP. The paper also maintains that deficit rules hamper the stabilisation function of fiscal policy and that, in good times, they encourage a softening of fiscal policy.

The authors' assessment of the past performance under the SGP is very negative. It is true that the SGP was not successful in preventing the occurrence of excessive deficits in several EU countries. However, budgetary developments in the recent economic downturn compare favourably to the large and persistent deficits observed in similar episodes of low growth in the 1980s and the 1990s.

The paper argues that the SGP does not provide sufficient guidance/provisions for countries below 3 per cent of GDP. This may have been the case for the SGP "Mark I", but the 2005 reform introduced very clear provisions for Member States which have not yet reached their MTO. Member States of the euro area or participating to ERM-II not yet at MTO have to pursue an annual improvement in their cyclically-adjusted balance, net of one-off and temporary measures by at least 0.5 per cent of GDP as a benchmark. In addition, they committed to make additional efforts in good times. The fact that a number of countries introduced rules pre-defining the allocation of extra-revenues/tax windfalls, is a potentially important development triggered by a deficit rule such as the SGP.

The paper argues that the SGP rules hamper the stabilisation function of fiscal policy. This may be the case in a transition phase, but respect of the medium-term objectives by the Member States is consistent with a high cyclical smoothing while safeguarding the 3 per cent deficit ceiling. Moreover, at the time of the SGP reform governments committed to pursue active consolidation of the budget when the economic conditions are favourable, *i.e.* in "good times", and to use windfall revenues for the reduction of government deficit and debt.

COMMENTS ON SESSION 3
FISCAL POLICY AND BUDGETARY INSTITUTIONS

David Heald[*]

I have been asked to speak about two papers – one on Germany and the other on China. I know a limited amount about these countries: rather more about Germany so I will start with the paper by Baumann and Kastrop.

There is an obvious question as to whether fiscal rules are enunciated at the European level or at the national level, or at both. In my view, it is likely that different countries will make different decisions about whether they need their own national rules as well as European Union rules. One of the issues about fiscal rules is whether, and under what circumstances, governments will game those rules. Quite a lot of discussion at this conference has appeared to work on the assumptions that rules would be respected and that the measurement issues are clear-cut. In contrast, I believe the measurement issues are not clear-cut. For example, governments may position activities, assets and liabilities just outside the general government boundary and devise mechanisms such as Public-Private Partnerships which – whatever their claimed efficiency benefits – allow borrowing to be classified as private and therefore outside the fiscal rules. So the general question is whether fiscal rules lead to connivance about gaming behaviour. In my view, discussion of fiscal rules is often accompanied by an underestimation of the potential for creative accounting.

There is also the question of the substitutability of regulation for direct public expenditure. Economists tend to have a preference for government not to do things by regulation but by explicitly paying for things through market transactions. However, the more one emphasises explicit rules on expenditure, tax and/or borrowing, the more one encourages the search for substitute instruments. This is particularly the case if political commitment to those rules does not exist; the situation is worse if the rules are seen to be externally imposed and are perceived to lack legitimacy.

A key contextual factor about Germany is the federal system, which means that the federal government must work through negotiation and not imposition. I have some notion of how the Germany federal system works, but I would not want to take a firm position on the institutional alternatives proposed in the paper by Baumann and Kastrop. On the basis of the presentation, my instinct is to favour the option of the Council of Economic Advisers, but I would want more information and time for reflection before arriving at a considered judgement.

Reference was made in the presentation to government accounting reform. I strongly agree that Germany should pay close attention to how it does its

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government accounting. Germany had an enormous shock through the impact of unification. In this context, and with its tradition of cameral accounting, it is no surprise that Germany was not one of the leaders in the move to accruals accounting in government. Leadership in that project was given by Australia and New Zealand, with the United Kingdom following somewhat behind. However, the kinds of question that arise in the context of fiscal rules – such as how one measures net investment and how one measures depreciation – are much easier to address when government accounts have already moved to an accruals basis.

The window of opportunity for constitutional change in Germany clearly exists, and I would not suggest delaying it until government accounting can be changed. However, I do think that reforms to government accounting should be on Germany's planning horizons, a project on which the Federal Ministry of Finance will need to give clear leadership. In the United Kingdom, the original move to accruals accounting was seen primarily in terms of financial reporting and financial management. However, since the change of government from Conservative to Labour in 1997 and the subsequent adoption of UK fiscal rules, the accruals accounting system – known as Resource Accounting and Budgeting – has been seen as connected to the fiscal rules, particularly in terms of the plan to produce Whole-of-Government Accounts.

When designing fiscal rules, their implications need to be thought through. If a country has a golden rule that applies over the economic cycle, practical difficulties can be encountered towards the end of economic cycles, particularly if these are long. Towards the end of the cycle there are temptations to redetermine the cycle in a way that is advantageous to policy: for example, to avoid being forced by the fiscal rules to engage in pro-cyclical policy in trying to meet the numbers. Creative accounting is not done just for reasons of political presentation or manipulation: it might be seen by decision-makers as beneficial to the economy, in the sense of avoiding damage caused by inappropriate policy dictated by rules. But, once unleashed, creative accounting is difficult to rein in.

Turning to the paper by Lida on China, I find it difficult to say much because I do not know enough about China. Before the paper is published in the Conference Proceedings, it would be very helpful to have basic data about the Chinese public sector – about the structure of the public sector in terms of the central government and the local governments, and in terms of the composition of tax revenues and of expenditures.

It is conventional wisdom in OECD countries to regard discretionary fiscal policy as not particularly effective. However, this paper emphasises discretionary fiscal policy. It may be that the institutional context of China is so different because of its incomplete transition to being a market economy. I found it difficult to see exactly what was the role of monetary policy, the role of fiscal policy, and the role of administrative controls. One has to be careful about describing an economy like China in the language that one applies to an OECD economy, because the impression conveyed by such terminology may oversimplify and misrepresent reality.

One issue that is common to the German paper and the Chinese paper is that of relationships within the state, between the federal/central government and sub-national governments. Important legitimacy questions arise. External fiscal roles can lead to further centralisation of fiscal power within a particular country. Coming from the United Kingdom, which has persistently been over-centralised in a fiscal and governmental sense, I am particularly sensitive to that consideration.

In its published form, the Lida paper on China requires a more extensive description and justification of the periodisation. The periodisation that I understand is: 1993-97: contractual fiscal policy; 1998-2004: pro-active fiscal policy; and from 2005: prudent fiscal policy. More data are required to support both the distinctiveness of each fiscal policy "style" and the actual periodisation.

There are issues about the extent to which fiscal policy in China is pro-cyclical or counter-cyclical, and whether/how the automatic stabilisers work. China does not have the kind of tax and benefit structure that is closely associated with automatic stabilisers in a typical OECD economy. A supplementary question, arising from my own research interests in comparative budgetary systems, is the extent to which the budget in China is comprehensive in the sense that it covers the full range of general government activities.

COMMENTS ON SESSION 3
FISCAL POLICY AND BUDGETARY INSTITUTIONS

Álvaro Manuel Pina[*]

1 Comments on "Do Budget Institutions Matter? Fiscal Consolidation in the New EU Member States" by Carlos Mulas-Granados, Jorge Onrubia and Javier Salinas-Jiménez

The paper presented by Jorge Onrubia deals with a number of important fiscal policy issues in the 10 central and eastern European countries that joined the EU in 2004 and 2007. Starting with an analysis of fiscal consolidation episodes, the study then presents original, comprehensive indices of budgetary institutions for the countries concerned. Finally, the paper assesses the influence of institutions (proxied by these indices) on fiscal policy aggregates (total and primary budget balance), controlling for other potentially important policy determinants, such as cyclical conditions, subjection to Pre-Accession Economic Programmes and the degree of coordination between different levels of government. I will focus my comments on the indices themselves, as well as on the estimated fiscal reaction functions.

In recent years there have been several attempts to compile numerical indicators that summarize budgetary institutions in the new EU member states. The authors mention the indices proposed by Gleich and by Yläoutinen, and in future versions of their study might also wish to take into account work by Fabrizio and Mody (2006), who construct a fiscal institutions index for the same set of countries and analyse its impact on the primary balance. The existence of different indices begs the question of whether the ensuing results are essentially the same. Onrubia and co-authors take some steps in this direction by comparing the country rankings derived from four indices (Table 9 in the paper[1]), and broadly conclude that similarities outweigh divergences. Taking the analysis a bit further, I have computed Spearman rank correlation coefficients based on the same Table 9.

The results are striking insofar as one of the indices (Gleich's) is clearly at odds with the others. This suggests that there may be scope for a systematic comparison of different indices, as regards the institutional variables considered, the interpretation/codification of actual national arrangements, and the weighting schemes used (see Mangano, 1998, for a similar exercise applied to measures of central bank independence).

From the estimated fiscal reaction functions, the authors conclude that institutions matter for fiscal outcomes, and that the discretionary powers of the Finance Minister (FM) in the execution phase (and to some extent also in the design

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[1] Here and elsewhere, numbering refers to the version presented at the workshop.

Table 1

Rank Correlation Coefficients between Different Indices

	Index (1)	Index (2)	Gleich	Yläoutinen
Index (1)		0.92	–0.05	0.73
Index (2)			–0.09	0.88
Gleich				–0.23
Yläoutinen				

Source: Own calculations based on Table 9 of Mulas-Granados *et al*.

phase) are particularly important. However, this prominence of the FM seems to some extent contradictory with the fact that most countries in the sample (eight out of ten, according to note 15) are regarded as having adopted the "contract" form of fiscal governance, rather than the "delegation" form – an issue deserving further discussion.

The very high volatility of the underlying fiscal data, especially in the early years of the sample (see Table 2 for several examples), calls for prudence in the interpretation of results. Caution is also urged by the fact that some coefficients present the "wrong" sign with high statistical significance – for example, the index ROLFM (role played by the FM in the design phase) in the sub-period 1999-2004 (Table 14). Finally, there is scope for further sensitivity analysis: for instance, it would be interesting to include in the reaction function some commonly used regressors – such as the lagged debt-to-GDP ratio or election dummies – and check whether the main results still hold.

2 Comments on "Beyond the SGP – Features and Effects of EU National-level Fiscal Rules" by Joaquim Ayuso-i-Casals, Diana González Hernández, Laurent Moulin and Alessandro Turrini

This paper makes several valuable contributions to our understanding of numerical fiscal rules and how they influence budgetary policy. Drawing on a new comprehensive dataset of national-level numerical fiscal rules in 25 EU countries over the 1990-2005 period, the authors propose a number of time-varying indices summarizing the coverage, strength and expected stabilization properties of such rules. More specifically, the paper constructs

(i) a *Fiscal Rule Index* (FRI), which measures coverage (share of public finances governed by the rules) weighted by strength (assessed with reference to the rules' statutory basis, monitoring and enforcement provisions and media visibility); and

(ii) a *Fiscal Rule Cyclicality Index* (FRCI), quantifying coverage weighted by stabilization properties.

The several "components" of the FRI (coverage and strength, the latter subdivided into several items) are also available as autonomous indices. Finally, restricting the attention to expenditure rules, the paper constructs an *Expenditure Rule Index* (ERI) along the lines of the FRI.

Joaquim Ayuso and co-authors then proceed to use their set of indices in econometric analyses of what prompts the adoption of numerical rules and of their effects on fiscal discipline and cyclicality. Before discussing the ensuing results, I would like to underline that the preparation of the indices is in itself a major contribution of this paper to the empirical study of fiscal policy.

The paper finds that public finance crises do not particularly favour the introduction or strengthening of numerical rules (Section 3.5 and Table 3), echoing a similar conclusion in the contribution of Fabrizio and Mody to this conference (regarding the reform of budgetary institutions). Yet some other papers (e.g. the study prepared by Kumar, Leigh and Plekhanov – Session 2 of this conference) argue that bad initial fiscal conditions tend to stimulate consolidations. Putting both results together, it seems that consolidation episodes and the adoption of rules are not simultaneous, and it may be the case that the former generally leads the latter – a hypothesis the authors might wish to explore in the future.

Through the estimation of fiscal reaction functions, the authors conclude that numerical rules exert a disciplining impact on fiscal policy: higher values of the FRI are associated to an improvement in the cyclically-adjusted primary balance, and the ERI also seems to restrain, to some extent, primary expenditure (Table 5). Leaving aside the problem of rules being potentially endogenous (an issue dealt with in the paper presented by Xavier Debrun), the econometric results are somewhat fragile in what concerns which characteristics of the rule (*i.e.*, coverage and components of its overall "strength") matter the most for fiscal discipline: in Tables 6 and 7, the numerical and statistical differences between the coefficients of the several sub-indices are often marginal. Hence the authors' suggestion that enforcement mechanisms are particularly important (Section 4.3), though entirely plausible, has limited empirical support.

To further analyze this issue, one may take into account that the evidence reported in Section 4.1 and in Table 4 of the paper is compatible with the possibility that certain monitoring and enforcement mechanisms tend to "depreciate", losing effectiveness over time. If such an effect exists, then taking it on board when computing indices of strength could change, and possibly clarify, some of the paper's results.

My final remarks concern the impact of numerical rules on fiscal cyclicality. The paper presents in Table 8 some evidence that in countries with "stabilization-friendly" rules (such as expenditure ceilings defined in monetary units, either at current or at constant prices) fiscal policy responds to the output gap in an anti-cyclical way, whereas in countries with a priori pro-cyclical rules (such as

deficit or debt rules) the feedback on the output gap is rather muted. There being many different specifications that can be used to measure cyclicality (as shown in the study presented by Roberto Golinelli and Sandro Momigliano in this conference), the paper would benefit from some sensitivity analysis in this area.

However, it may be difficult to detect a "linear" relationship between higher values of the FRCI and a stronger anti-cyclical stance (e.g., running for the whole sample fiscal reaction functions and obtaining a positive coefficient for the FRCI interacted with the output gap). The reason is that the proposed FRCI implicitly assumes that the absence of rules is "neutral" in terms of the cyclical stance: if a country with no previous rules adopts a deficit or a debt rule, its FRCI worsens (*i.e.*, decreases). This may not be the case: if the absence of rules corresponds to a fragmented budgetary process, with unrestrained "voracity effects" (Tornell and Lane, 1999), then reinforcing fiscal discipline could actually alleviate pro-cyclicality – even if discipline is associated to "stabilization-harmful" deficit or debt rules.

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