3. Numerical fiscal rules in the 25 EU Member States

3.1. Introduction

This section provides an overview of the numerical fiscal rules in force in the EU Member States and assesses whether these rules effectively influence budgetary outcomes. The definition of 'fiscal rules' followed in this chapter is that proposed by Kopits and Symanski (1998), i.e. *a permanent constraint on fiscal policy, expressed in terms of a summary indicator of fiscal performance, such as the government budget deficit, borrowing, debt or a major component thereof.* What distinguishes a numerical rule from the usual budget appropriations in the yearly budget cycle is therefore that there should be a *constraint* on one of the aggregates mentioned and that this constraint should be *permanent*. Numerical fiscal rules specify numerical targets for key budgetary *aggregates* such as annual budget balance, expenditure, revenue, or debt.

This section first reviews the different types of numerical fiscal rules and their properties with respect to various objectives assigned to fiscal policy. Then, it provides a descriptive analysis of the numerical fiscal rules in force in the EU Member States. Finally, the analysis investigates the existence of a link between numerical fiscal rules and budgetary outcomes.

3.2. Various types of numerical fiscal rules and their respective properties

The following broad categories of rules can be distinguished:

— *Budget balance, borrowing and debt rules.* Provided that targets are properly set, respect of such rules over time ensures the sustainability of government finances. These rules have been criticised for possibly introducing a pro-cyclical bias in the conduct of fiscal policy. Common ways to address this problem are to extend the time-horizon of the rule or exclude the cyclically-sensitive items of the budget from the rule coverage. Another well-known potential drawback is the risk that respect of these rules might be achieved through cuts in the most productive expenditure items (investment, R & D expenditure), which may be less politically-sensitive. To avoid this problem some items may be excluded from the coverage of the rule (e.g. golden rules). However, this can in turn lead to monitoring difficulties and may facilitate circumvention of the rule.

— *Expenditure rules.* The main objective of these rules is to ensure fiscal discipline through improved expenditure control. Such rules directly target the part of the budget that the government controls most directly, making the authority responsible fully accountable for the respect of these rules. Expenditure rules can also be part of a strategy for redirecting public expenditure according to the priorities of the government by allowing increases above or below baseline for specific components. They can be instrumental in limiting the size of the government and hardly prevent automatic stabilisers from operating.

— *Revenue rules* can pursue different objectives. They can notably be designed to limit the increase in the tax burden or the size of the government, or on the contrary to ensure a sufficient amount of revenues for the government to finance its priorities. They can also aim at avoiding the conduct of pro-cyclical policies by pre-defining the allocation of possible higher-than-expected revenues.

Table III.1 below provides a review of the respective properties of various 'families' of fiscal rules with respect to different possible economic objectives.

3.3. Existing numerical fiscal rules in EU Member States

With a view to having a comprehensive picture of *numerical fiscal rules* in place in the EU Member States and to investigate the existence of a possible link between the design of these rules and budgetary outcomes, a questionnaire was prepared (see box III.3) and submitted to the national authorities of the 25 EU countries. Both numerical fiscal rules enshrined in the constitution or law and those based on political commitment or agreement between different general government tiers were included in the survey. As already mentioned, the procedural rules governing the annual budget process are not covered.

The survey covers the period 1990-2005. Sixty numerical fiscal rules were considered in the analysis ([1]). Replies by Member States pointed to a larger number of rules, but some of them were not considered in the study because they did not meet the pre-defined conditions to be considered genuine numerical fiscal rules. The reasons justifying these exclusions were notably that:

(i) some questionnaires concerned policy measures (e.g. freeze in the number of civil servants over a number of years) rather than genuine numerical fiscal rules;

(ii) some replies were related to procedural rules governing the budget process (relative powers of Parliament and government) and, therefore, could not be regarded as numerical fiscal rules;

(iii) some questionnaires concerned fiscal policy targets rather than numerical fiscal rules: the annual budgetary targets included in documents such as the Budget Law and the Stability and Convergence Programmes cannot be considered as numerical fiscal rules;

(iv) some rules were excluded to ensure a sufficient homogeneity of the sample ([2]).

The analysis of the questionnaires shows that there is a great deal of variety in the design of numerical fiscal rules as regards their coverage, the type of rule and the definition of the target. Likewise, the statuses of the rules as well as the monitoring and enforcement mechanisms vary considerably. The interesting messages emerging from the descriptive analysis of the questionnaires are summarised below.

Distribution of rules by sub-sectors of general government

A first result is that the number of fiscal rules in force in the EU Member States has grown continuously over the past twenty years (see Graph III.3) ([3]). At present, almost all EU Member States have numerical fiscal rules. The number of rules varies widely across countries: Germany and Finland have five numerical fiscal rules; Hungary and Austria have one (see Annex 1 for more details).

There has been an interesting evolution in terms of the government sub-sectors covered by numerical fiscal rules. In the early 1990s, most numerical fiscal rules were applied at local or regional levels of government (see Graph III.3 above). This reflected the willingness of higher levels of government to impose constraints on local entities and the need to ensure sufficient coordination among general government tiers. Such rules continued to develop in the 90s and exist today in almost all EU Member States. A large and increasing number of numerical fiscal rules are found at the central government level. A relatively recent feature is the introduction of numerical fiscal rules in the social security sector and rules covering the whole of the general government sector. This may be a response to the increasing spending pressures in the social security sector and to the introduction of the EU fiscal rules, which impose requirements for the general government deficit and debt.

Distribution of the various types of numerical fiscal rules by fiscal aggregate

More than one third of the numerical rules in force in the EU Member States are budget balance rules (including golden rules) whereas expenditure and debt rules each represent about 25 percent of the total rules. Revenue

([1]) If those rules applied to more than one general government tier are counted according to number of sub-sector concerned (e.g. a balanced budget rule for regional and local governments would represent two rules), the sum of fiscal rules considered in the study would amount to 69 (66 in force in 2005). This figure is however attained by keeping rules for the whole of the general government as single rules.

([2]) An example of such rules consists of arrangements foreseeing minimal expenditure increases for some strategic items or rules governing transfers among general government tiers.

([3]) Obviously, the growing number of national fiscal rules in the EU is partly explained by the enlargements occurred since the 90s.

Table III.1

Properties of various 'families' of numerical fiscal rules with respect to different economic objectives

	Effect on the deficit bias [1]	Effect on macroeconomic stabilisation	Effect on the quality of government finances	Other properties
Budget balance rules	**Direct and positive** Efficiency in addressing the deficit bias depends on the degree of ambition of the numerical targets and on the design (time-horizon, definition of the objective, coverage) and characteristics of the rule (in particular monitoring and enforcement procedures).	**Possibly negative – depends on the design of the rule** Budget balance rules defined in nominal terms (in levels and as a % of GDP) introduce a pro-cyclical bias in fiscal policy. The bias is reduced in case the rule has a multiannual perspective. Budget balance rules targeting a cyclically-adjusted balance or to be respected over the cycle do not have such a bias (subject to uncertainties on the quality of the cyclical adjustment).	**Positive or negative, depending on the design of the rule** A negative effect is possible in case no item is excluded from the coverage of the rule, due to the political temptation to cut expenditure categories that are less politically-sensitive, including 'productive' expenditure (expenditure on R & D, infrastructure and education). Positive effect in case selected 'productive' items are subject to less strict constraints or excluded from the scope of the rule. This may however imply risks of inefficient allocation of public resources. Additionally, exclusion of selected items can raise monitoring difficulties and facilitate circumvention of the rule.	Such rules are frequently applied at regional and local levels of government. They are subject to a trade-off between, on the one hand, simplicity and straightforward monitoring of the rule and, on the other hand, stabilisation/quality aspects.
Expenditure rules	**Indirect and positive** Efficiency in addressing the deficit bias depends on the degree of ambition of the numerical targets, on the design and characteristics of the rule, but also on tax developments.	**Likely positive, but depends on the design of the rule** Expenditure rules contribute to macroeconomic stabilisation if the aggregate targeted by the rule is defined in level or growth rate of expenditure. Counter-cyclical contribution is maximal when the rule is defined in nominal terms (larger-than-expected budgetary adjustment in case of demand-pull inflation) and when the coverage excludes cyclically-sensitive items. Expenditure rules can however entail a pro-cyclical bias if they are defined in terms of an expenditure-to-GDP ratio (this is rarely observed in practice).	**Positive or negative, depending on the design of the rule** Same as for budget balance rules.	Such rules are relatively rare at local government level and frequent at central government level. They may contribute to contain the size of the public sector. High accountability of the government for the respect of the rule since such rules directly target the part of the budget that the government controls most directly. Accountability is maximal if specific items not fully under the control of the government are excluded from the coverage of the rule (e.g. interest payments, unemployment benefits).
Revenue rules	**Positive or negative** Rules imposing limits on revenues (e.g. aiming at stabilising or reducing the tax burden) may have a negative impact on the deficit bias if they are not coupled with other rules, e.g. budget balance or expenditure rules. Indeed, stringent tax limits may have a negative impact on borrowing costs (markets might consider that the risk of default becomes higher if constraints are imposed on the capacity of the authority to increase taxes). On the contrary, rules pre-defining the allocation of higher-than-expected revenues generally help lessen the deficit bias by avoiding a relaxation of the fiscal stance in good times (depends on the allocation rule).	**Positive or negative** Such rules can be slightly pro-cyclical in case the rule targets a given revenue-to-GDP ratio (due to the progressivity of the tax systems). They can be strongly pro-cyclical if the rule targets a given amount of revenues in nominal terms (such rules are rare). Revenue rules pre-defining the allocation of higher-than-expected revenues may limit the conduct of pro-cyclical policies in good times (if all additional cyclical revenues are allocated to deficit reduction).	**Uncertain** No evident influence on the quality of government finances. However, in case only some categories of taxes are covered by the rule there can be an impact on the structure of the tax system.	Revenue rules pursue a wide variety of objectives. Rules imposing limits on revenues may contribute to contain the size of the public sector.
Debt rules	**Direct and positive** Efficiency in addressing the deficit bias depends on the degree of ambition of the numerical targets and on the design and characteristics of the rule (in particular monitoring and enforcement procedures).	**Possibly negative – depends on the design the rule** Depends on the design and time-horizon considered by the rule (see budget balance rules). In case the rule has to be respected over the business cycle, the stabilization objective is not hampered.	**Positive or negative — depends on the design the rule** Same as for budget balance rules.	Borrowing constraints are generally applied at sub-central levels of government. However, in some countries debt limits for the general government sector are enshrined in the law or constitution.

[1] Positive (negative) effect on the deficit bias means a decreasing (increasing) effect.

Graph III.3: **Number of numerical fiscal rules in force in the EU Member States**

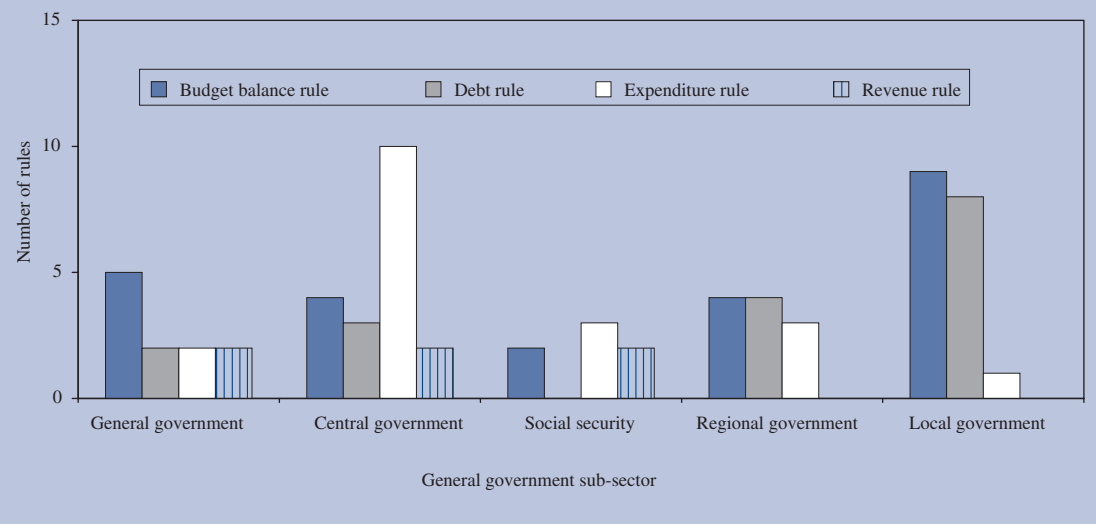
N.B.: Data for EU are the weighted average by all the old 15 Member States, data for BE are available since 1971, for DK since 1971, for NL since 1975 and for PT since 1973

rules account for less than 10 percent. Most of budget balance and debt rules are applied to regional and local governments and, to a lesser extent, to the central government. In contrast, expenditure rules are more frequent in the central government and social security sub-sectors (see Graph III.4 below) ([1]).

([1]) In the following graphs, the total number of fiscal rules does not always coincide since some replies did not answer all the questions included in the survey.

There is also a large diversity as regards the aggregates targeted by the various types of rules (see Table III.2). One third of budget balance rules in force target a balanced budget while one quarter are golden rules. Interestingly, only few budget balance rules, all of them applying to the general and central governments, are defined in structural (or cyclically-adjusted) terms. About half of debt rules, generally applied to local governments, establish debt limits depending on the repayment capacity (e.g. limit to total indebtedness in relation

Graph III.4: **Number of numerical fiscal rules by sub-sector of general government**



to current revenues). Expenditure rules are evenly distributed between those defining ceilings and those targeting expenditure growth rates. While ceilings are generally expressed in nominal terms, targeted growth rates are equally divided between nominal and real increases. Finally, more than half of revenue rules establish predefined principles for the allocation of higher-than-expected revenues.

The characteristics of the rules depending on the level of government to which they apply

Numerical fiscal rules in EU Member States are evenly divided between those that are incorporated into a multi-annual budgetary framework and those applied on an annual basis. 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 multi-annual fiscal framework (see Graph III.5). This provides an indication that fiscal rules applied at higher levels of government pursue medium-term policy objectives while those concerning local governments focus on short-term budgetary considerations.

Interestingly, the large majority of numerical fiscal rules applied to local and regional levels of governments are enshrined in law or in constitution, while rules concerning central 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, enforcement mechanisms are generally stronger for those rules applied at local and regional government levels than for rules applying to the central government (see Graph III.7). 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. In contrast, most of rules concerning the central government sub-sector do not include ex ante defined actions in case of non-respect of the rule.

The apparent weaker status and enforcement mechanisms of rules in force at the central government and general government levels may be linked with the fact that such rules draw much more public opinion and media interest than other rules (see Graph III.8). A high media visibility of the rule can, *ceteris paribus*, be expected to contribute to the enforcement of the rule, through higher reputation costs in case of non-compliance.

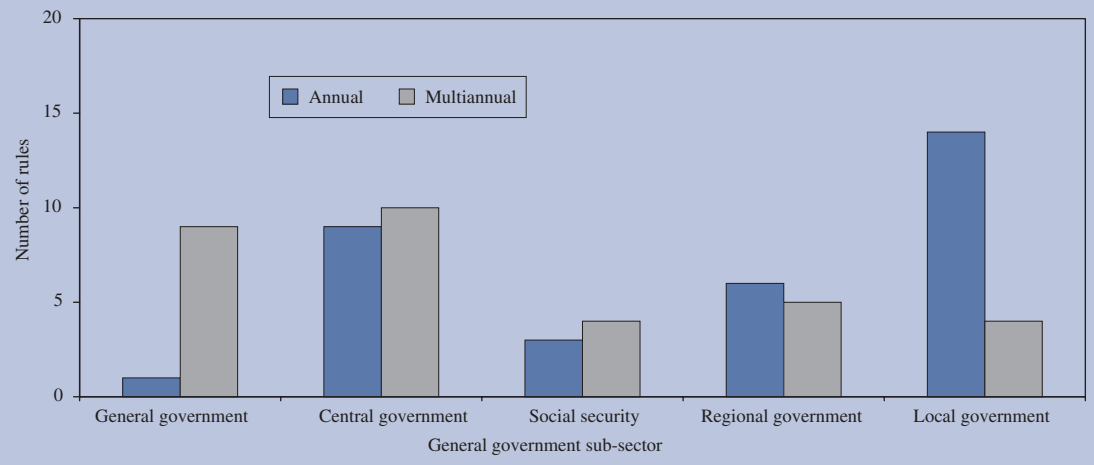
Table III.2

Target definitions by type of rule ([1])

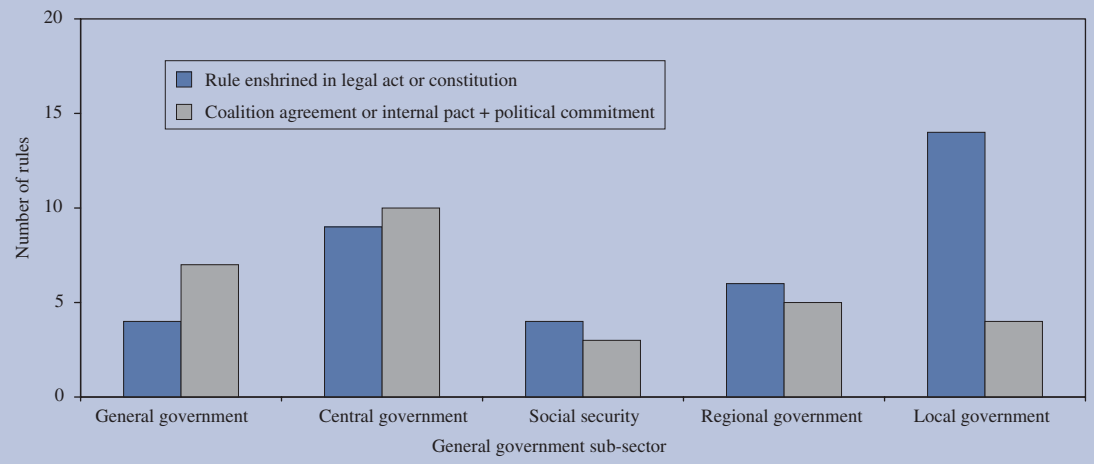
Budget balance rules	Golden rules	Balanced budget rules	Nominal ceiling	Ceiling as a % GDP	Rules in structural terms	Total	
	5	8	5	1	3	22	**38.6**
Debt rules	Debt ceiling in nominal terms	Debt ceiling as a % of GDP	Debt ceiling related to repayment capacity	Other		Total	
	5	2	7	1		15	**26.3**
Expenditure rules	Nominal expenditure ceiling	Real expenditure ceiling	Expenditure growth rate (nominal)	Expenditure growth rate (real)	Other	Total	
	5	2	3	3	2	15	**26.3**
Revenue rules	Tax burden as a % GDP	Rule related to tax rates	Allocation of extra revenues	Other		Total	
	0	1	3	1		5	**8.8**
						Total	**100.0**

([1]) Without disaggregating fiscal rules according to number of sub-sectors concerned. Only rules in force in 2005 were considered in this table (57 rules).

Graph III.5: **Time horizon of fiscal rules by sub-sector of general government**



Graph III.6: **Statutory base of fiscal rules by sub-sector of general government**

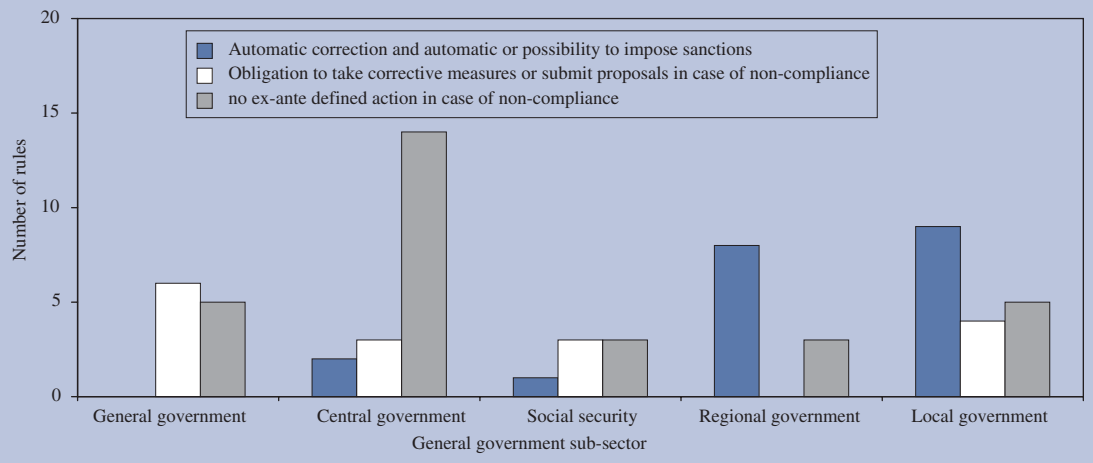


Different arrangements in contract *and* delegation *countries*

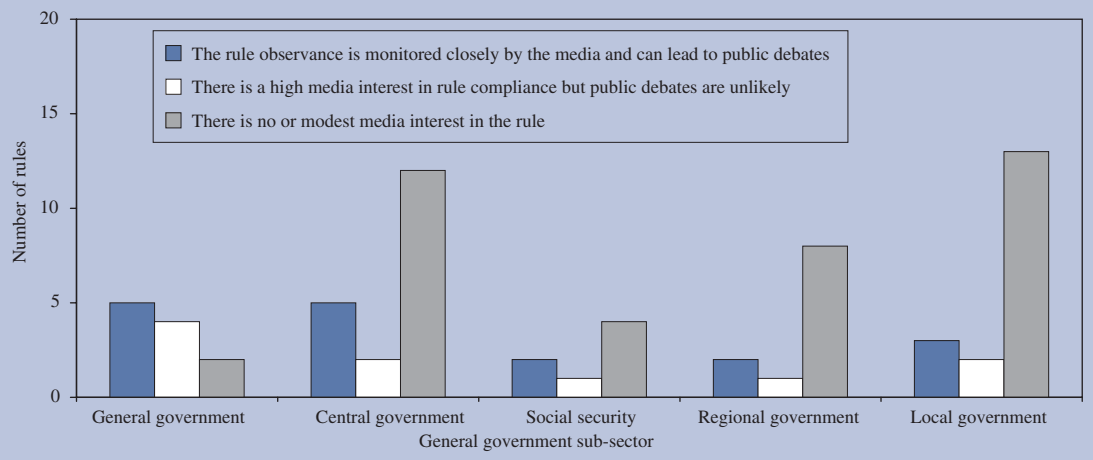
An interesting exercise consists of analysing whether there is a pattern in the distribution of different types of fiscal rules in EU Member States depending on the approach chosen by the country concerned for centralising its budget process. In other words, we examine whether the fact that a particular country adopts a *delegation* or *contract* (or commitment) approach yields specific results in terms of the numerical fiscal rules in force.

Broadly speaking, delegation countries (examples are the UK, France and most countries generally relying on single-party governments or on coalitions of ideologically aligned parties) tend to centralise their budget process by relying on the discretionary powers of a strong finance minister. In the contract or commitment countries (for instance Belgium and the Netherlands) all ministries take part in the negotiation process leading to a binding agreement on a set of key fiscal figures, often in a medium-term perspective. In practice, there are in some specific cases difficulties in distinguishing

Graph III.7: **Enforcement mechanisms of numerical fiscal rules by sub-sector of general government**



Graph III.8: **Media activity and numerical fiscal rules in different sub-sector of general government**



between commitment and delegation countries: some countries combine features of both approaches (e.g. Denmark and Sweden) and reforms of fiscal institutions may change the classification of some countries over time ([1]).

One would expect a priori countries following the contract approach to have a greater number of fiscal rules than those Member States that base their budgetary procedures on the delegation scheme. Table III.3 shows the existing fiscal rules in EU countries classified by type of rule and general government sub-sector, and distributed according to the approach chosen by the country concerned for centralising its budget process.

This table shows that delegation and contract countries present a similar number of fiscal rules (29 and 31 respectively), which departs from what could have been expected. In fact, rather than the number of rules by

([1]) The classification used in our analysis is based on relatively recent papers (Von Hagen et al. (2001, 2002, 2005) and Yläoutinen (2004)).

Table III.3

Classification of numerical fiscal rules depending on the approach followed to centralise the budget process (only rules in force in 2005, disaggregated as explained in footnote No 12)

Sector	General government				Central/ Federal government				Social security				Regional government				Local government				Totals
Rule	Contract	Deleg.	Mixed	Total	Contract	Deleg.	Mixed	Total	Contract	Deleg.	Mixed	Total	Contract	Deleg.	Mixed	Total	Contract	Deleg.	Mixed	Total	
ER	NL		DK	2	FI CZ IE IE LU SK	FR IT DE	SE	10	BE BE	FR	SE	4		IT IT DE		3		IT		1	**20**
RR	NL		DK	2	LV	FR		2	FI LV			2				0				0	**6**
BBR	EE	ES UK	SE DK	5	FI	PT AT DE		4	LU			1	BE	AT DE IT		4	FI LT BE IE	FR PT AT DE IT		9	**23**
DR	PL	UK		2	FI LT LU			3				0	CZ SK	ES ES		4	CZ EE LV SK	HU SI ES DE		8	**17**
Totals	**4**	**3**	**4**	**11**	**11**	**7**	1	19	**5**	1	**1**	7	**3**	**8**	**0**	**11**	**8**	**10**	**0**	**18**	**66**

ER: expenditure rules; RR: revenue rules; BBR: budget balance rules; DR: debt rules

Notes: (i) Those countries not included in the table do not have numerical rules; (ii) Due to changes in the budgetary process over time, some countries are difficult to be assigned to the delegation or contract approach (e.g. Italy); (iii) Germany has also numerical rules applied to the social security sub-sector but the relevant information about them could not be collected on time before the publication of this report.

type of country, the real difference is found in the distribution of fiscal rules among general government sub-sectors. Countries following the contract approach hinge more on numerical fiscal rules applied to central government and social security sectors, which contrasts with the few rules applied to these sub-sectors in delegation States. Conversely, delegation countries have a higher number of fiscal rules implemented at regional and local level than Member States relying on the delegation approach.

This distribution seems consistent with the fact that the larger political dispersion of governments in contracts countries is likely to promote fiscal rules ('contracts') at central level, while territorial sub sectors are likely to enjoy fewer restrictions imposed by central authorities. Likewise, delegation countries having a strong minister of finance and more homogeneous political majority in the Parliament are expected to enact relatively few fiscal rules for central levels of government and more rules (constraints) on regional and local governments in order to implement a more effective control on the whole of general government finances.

3.4. Do numerical fiscal rules improve budgetary performance?

In this section, the detailed information from the questionnaires on fiscal rules in the EU Member States is used to analyse whether there is link between numerical fiscal rules and budgetary outcomes. The analysis is conducted in three stages:

- In a first step, the analysis focuses on the link between the *existence* of numerical fiscal rules and budgetary outcomes. It notably looks at whether budgetary developments in the years immediately following the introduction of rules differ from those typically observed on average during the sample period 1990-2005 considered in the survey.

- In a second step, the analysis takes into account the *coverage* of fiscal rules and tests the existence of a link between the share of government finances covered by numerical fiscal rules and budgetary developments. In order to carry out such a test, a time-varying 'fiscal rule coverage index' is constructed, for each Member State, which summarises the information on the share of government finances covered by numerical fiscal rules.

- In a third step, the analysis takes into account the *characteristics* of fiscal rules along with their *coverage*. To this aim, an index on the *strength* of individual fiscal rules is constructed based on the desirable characteristics of fiscal rules defined in the literature (i.e. statutory base, body in charge of monitoring, body in charge of enforcement, enforcement mechanisms and media visibility of the rule) ([1]).

3.4.1. Relation between the introduction of numerical fiscal rules and budgetary outcomes

A first and simple way to assess the influence of fiscal rules on budgetary outcomes is to see whether budgetary developments in the years immediately following the introduction of fiscal rules differ from those observed on average during the sample period 1990-2005.

Table III.4 reports the average changes for different time horizons in the cyclically-adjusted primary balance (primary CABs) and in the ratio of cyclically-adjusted primary expenditure to GDP (over 1990-2005), and compares them with the changes recorded for the same variables in the years immediately following the adoption of new numerical fiscal rules ([2]). All fiscal rules were considered when comparing the changes in the primary CABs and only expenditure rules when changes in the cyclically-adjusted primary expenditure were analysed ([3]). Major changes in the design of rules were treated in the same way as the introduction of new fiscal rules.

The results 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 the primary CAB has on average been unchanged over the same time-horizons in the period

([1]) Although there is a close relationship, these characteristics do not have to be confused with the eight criteria listed in footnote 10 on the design of fiscal rules.

([2]) For instance, the change in the cyclically-adjusted primary deficit in the year immediately after the introduction of a rule is compared to the average yearly change registered during the whole of the sample period. Similarly, the average change in the cyclically-adjusted primary deficit in the three years following the implementation of a rule is compared to the average three-year change over the sample period. An identical comparison is carried out for a five-year time horizon.

([3]) A third possibility would have consisted of looking at developments in cyclically-adjusted revenue after the implementation of revenue rules. However, the relatively low number of revenue rules and their heterogeneity would have prevented from drawing any meaningful interpretation.

Box III.3: **The questionnaire on numerical fiscal rules**

In order to collect the most comprehensive and accurate information on the existing numerical fiscal rules in the EU, a questionnaire was sent to all EU Member States in the context of the Working Group on the Quality of Public Finances (WGQPF) attached to the Economic Policy Committee (EPC). The questionnaire covers all types of numerical fiscal rules such as budget balance rules including golden rules, debt rules, expenditure rules and rules concerning the revenue side of the budget. Member States were invited to fill out one questionnaire per fiscal rule. The questionnaire considers rules applied to all levels of government. The time frame covered by the questionnaire is the period from 1990 to 2005. Member States were invited to signal changes in their definition and/or contents during the period under review. Likewise, Member States were also requested to fill out the questionnaire for those fiscal rules that had prevailed for a certain period between 1990 and 2005. The survey is made up of 24 questions, which are grouped in 6 sections:

1. **General description of the rule.** This section required Member States to provide information on the general characteristics of the rule (targeted variable, coverage), the motivations for its introduction, and the relevant dates of introduction and entering into force of the rule, and concerning the main changes in the period under review.
2. **Design, time frame coverage, exclusions and target definition of the rule.** This section includes questions concerning the time span covered by the rule (annual/multiannual), specification on the aggregate targeted (definition of the variable and accounting system in which it is expressed, exclusions from the coverage of the rule, ratios vs. level and growth rates, aggregates defined in nominal vs. real term). This section also contains questions related to the properties of the rule.
3. **Statutory base of the rule.** This section allows to make a distinction between rules based on political commitments (coalition agreements, agreement reached by different levels of government), and those based on legal acts (law, constitution).
4. **Monitoring of compliance with the rule.** This section requests information on the body responsible for the monitoring of the rule. Answers provided by Member States give important indications on whether the rule is monitored by a partisan or a non-partisan institution and whether monitoring of compliance with the rule is ensured in real time or only ex post.
5. **Enforcement procedures.** This section contains questions related to the body in charge of ensuring enforcement of the rule (partisan vs. non-partisan) and the description of actions in case of non-compliance (obligation to propose corrective measures for the relevant authority, automatic correction mechanisms, possibility of imposing sanctions, existence of well-defined escape clauses). This section also contains questions related to the media visibility of the rule.
6. **Experience with the rule.** The last section of the questionnaire asks questions related to the track record in terms of compliance, and to the reasons for possible non-compliance with the rule. It also contains subjective questions related to the perception on whether the rule has contributed to fiscal discipline (definitively / significantly / modestly).

1990-2005. There seems to be also a link between developments in general government expenditure and expenditure rules. The decline in the ratio of primary government expenditure adjusted for the cycle is significantly larger in the years following the introduction of numerical expenditure rules than the average change in the period 1990-2005. Nevertheless, the results for expenditure rules have to be taken with caution given the relatively small number of expenditure rules in the sample.

This preliminary analysis suggests that there may be a link between the introduction of numerical fiscal rules and budgetary outcomes. However, this result should be considered cautiously since the analysis does not take into account the coverage and characteristics of fiscal rules and does not control for other factors that may have affected government budgets and developments in primary expenditure in the last fifteen years (e.g. position in the economic cycle, level of the government debt…).

3.4.2. Relation between the share of government finances covered by numerical fiscal rules and budgetary outcomes

One major difficulty in assessing the influence of numerical fiscal rules on budgetary outcomes is that a large number of these rules apply to lower levels of governments while detailed budgetary data (notably estimates of budgetary aggregates corrected for the effect of the cycle) are only available for the general government. In order to overcome this difficulty, there is a need to take

Table III.4

Average change in budgetary variables following the introduction (or major changes) of fiscal rules in the EU-25 Member States (1990-2005)

	A fiscal rule is introduced (or strengthened)	Average over the sample
Change in the Primary CAB		
— In the following year	0.2 (– 0.2; 0.7)	0.0 (– 0.2; 0.2)
— In the following three years	0.4 (– 0.7; 1.5)	0.0 (– 0.4; 0.3)
— In the following five years	0.3 (– 0.9; 1.4)	– 0.1 (– 0.5; 0.3)
	An expenditure rule is introduced (or strengthened)	**Average over the sample**
Change in Primary Exp/GDP		
— In the following year	– 1.5 (– 2.8; – 0.2)	– 0.2 (– 0.5; 0.0)
— In the following three years	– 1.9 (– 3.3; – 0.6)	– 0.9 (– 1.3; – 0.4)
— In the following five years	– 3.1 (– 4.4; – 1.3)	– 2.1 (– 1.4; – 2.7)

NB: Extreme values from the sample were eliminated. For all time-horizons, the 2.5 % highest and lowest changes in the primary CAB and cyclically-adjusted primary expenditure-to-GDP ratio were removed from the sample. Confidence interval values (5 %) are in brackets.

Source: Commission services.

into account what part of government finances is covered by fiscal rules. To this aim, a 'fiscal rule coverage index' was constructed, for each Member State, which summarises the information on what fraction of general government finances is covered by numerical fiscal rules. This index was calculated for all the years covered by the study, i.e. the period 1990-2005. Details on the construction of the 'fiscal rule coverage index' are provided in box III.4 below.

As seen in section 3.2, the number of numerical fiscal rules in the EU Member States has continuously increased over the last two decades. The share of government finances covered by fiscal rules has naturally followed the same evolution. On average, less than 25 percent of government finances of EU Member States were covered by numerical fiscal rules in the beginning of the 1990s. This proportion today approaches 75 percent, with considerable differences across Member States ([1]).

Relation between the time-varying 'Fiscal rule coverage index' and budgetary outcomes

Graph III.10 reports the average value of the primary cyclically-adjusted balance observed in EU Member States over the period 1995-2005 for different groups of countries classified according to the value of the 'Fiscal rule coverage index'. This graph suggests that there may

([1]) In 2005, about 30 percent of Hungarian Government finances were covered by numerical fiscal rules. This percentage reaches about 70 percent to 80 percent of general government finances in some countries (e.g. Belgium, France). In some other EU Member States (Sweden, the Netherlands, United Kingdom) 100 percent of general government are covered by one or more numerical fiscal rules.

Box III.4: **Construction of a time-varying 'Fiscal rule coverage index' and a time-varying 'Expenditure rule coverage index'**

In order to analyse the existence of a possible link between the share of government finances covered by fiscal rules and budgetary outcomes, a time-varying 'Fiscal rule coverage index' was constructed. This index summarises, for each Member State, the information on what part of general government finances is covered by numerical rules (measured as the share of government expenditure of the general government sub-sector to which the rule applies in total general government expenditure). When constructing this indicator, two main issues had to be addressed.

(Continued on the next page)

Box III.4 (continued)

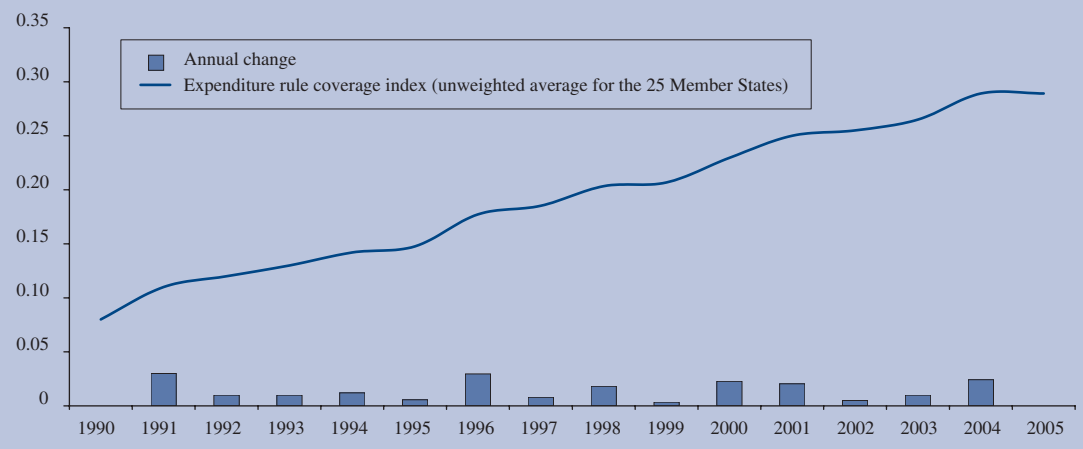
- **The *first* one concerns how to deal with the fact that some Member States rely on different types of rules** (e.g. a country can have an expenditure rule for the central government and a budget balance rule for regional governments). Taking into account that the purpose of the analysis is to assess whether numerical fiscal rules can contribute to fiscal discipline, it was considered that all numerical fiscal rules – i.e. all expenditure, budget balance, borrowing, debt and revenue rules – could be aggregated in terms of coverage. 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. A specific 'Expenditure rule coverage index', taking into account only expenditure rules, was calculated to assess the influence of expenditure rules on developments in primary expenditure.

- **The *second* issue is how to treat cases in which several rules apply to the same sub-entity of the general government sector**, e.g. the case of a Member State in which an expenditure rule at general government level (100 % coverage) coexists with a budget balance rule for local governments (for instance 10 % coverage, i.e. in a case where local governments' spending represent 10 % of total general government expenditure). In this situation, a possible approach would have been to consider that the coverage is 100 % since the whole of general government finances are covered by fiscal rules. However, this would not have allowed to take into account that the existence of several fiscal rules applying to the same sub-sector could potentially bring more benefits in terms of fiscal discipline than one single rule (in our example, local government finances are subject to an expenditure and a budget balance rule), even if the marginal benefit of the second rule can be assumed to be lower than for the first one. In order to take these considerations into account, the 'Fiscal rule coverage index' and the 'expenditure rule coverage index' were constructed following this simple approach: when more than one rule apply to the same sub-sector of general government, the index gives a weight of 1 to the coverage of the first rule considered (in practice, the rule with the wider coverage). In our example, the expenditure rule has 100 % coverage since it applies to the whole of the general government sector; the contribution of this rule to the 'Fiscal rule coverage index' is therefore equal to 1. The coverage of the second fiscal rule is given a lower weight of 0.5. In our example, the second fiscal rule is a budget balance rule for local governments covering 10 % of government finances. The contribution of this rule to the 'fiscal rule coverage index' equals to 10 % multiplied by 0.5 that gives 0.05. Therefore, the 'fiscal rule coverage index' for the country considered reaches 1.05 in the year considered.

A time-varying 'Expenditure rule coverage index' measuring the share of government finances covered by *expenditure* rules was constructed following exactly the same methodology, but restricting the sample to numerical expenditure rules.

Graph III. 9 below plots the 'fiscal rule coverage index' and the 'Expenditure rule coverage index' for the EU-25 (unweighted averages) since 1990.

Graph III.9: **'Fiscal rule coverage index' and 'Expenditure rule coverage index' – EU-25 (unweighted average)**



Source: Commission services.

be a link between the share of government finances covered by fiscal rules and the underlying position of government finances. However, such a static analysis does not allow to conclude on a possible relation between the two variables, and there is a need to control for other factors that may have an impact on government budgets.

A way to perform such control, and to infer more robust conclusions on the relation between fiscal rules and budgetary outcomes, is to estimate relations describing the reaction of fiscal authorities (in terms of chosen levels of budget balances or developments in government expenditure) to key macroeconomic and budgetary developments, such as those related to the cycle and the level of debt. The strategy followed consists of augmenting traditional forms of fiscal reaction functions with our indicator measuring the share of government finances covered by numerical fiscal rules in the 25 EU Member States. In such a relation, the influence of the coverage of numerical fiscal rules on budgetary policy can be gauged by looking at the sign of the regression coefficient of the 'Fiscal rule coverage index' and its statistical significance.

Table III.5. below reports the results for panel data estimation of a fiscal reaction function for the 25 EU Member States. The dependent variable is the primary cyclically-adjusted balance (CAPB). The explanatory variables are the lagged CAPB, the lagged debt, the output gap, two dummy variables, taking value 1, respectively, after 1992 and after 1999, and our fiscal rule coverage index. The CAPB and the debt level capture the fiscal stabilisation motive of fiscal authorities. The two dummy variables are aimed at capturing possible behavioural changes occurred in correspondence with, respectively, the signing of the Maastricht Treaty (1992) and the completion of the EMU project (1999). The constant term captures the portion of the fiscal stance not explained by the chosen explanatory variables. The output gap is instrumented with its own lag and a lagged indicator of foreign output gap in order to avoid endogenity problems. All fiscal variables are expressed as shares of potential output. The period chosen for the estimation reflects the time frame considered in the questionnaire on fiscal rules, which includes all rules into force starting from 1990. The sample includes episodes of very large and rarely observed changes in budgetary data, observed mostly in New Member States. 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 percent and the 97.5 percent percentiles of the overall distribution.

In accordance with existing estimates of fiscal reaction functions for EU countries, results indicate a non-significant response of fiscal authorities to output gap and a significant positive response to debt ([1]). As for our 'Fis-

([1]) This would mean that EU countries attached more importance to the objective of fiscal consolidation that to stabilisation purposes during the period 1990-2005. This finding is consistent with the results obtained by others studies (see for instance Ballabriga and Martinez-Mongay, 2002).

Graph III.10: **Fiscal rule coverage index and average primary CABs in the EU-25 countries**

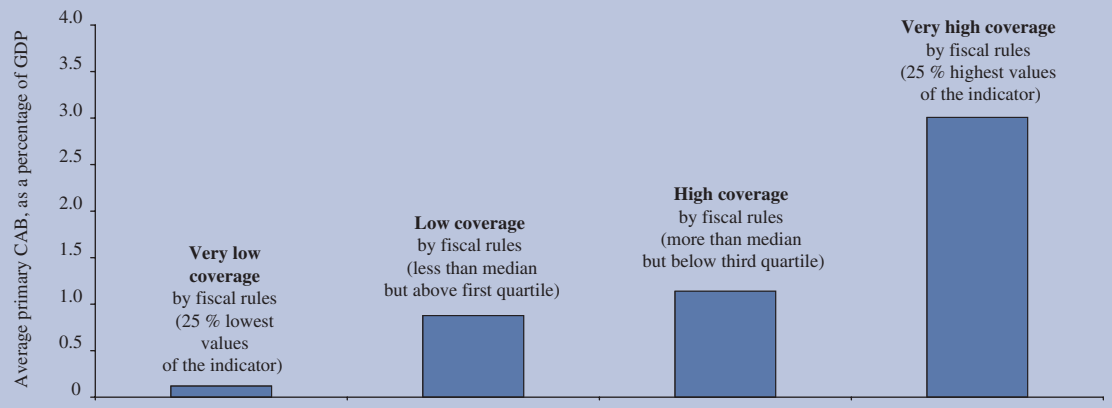


Table III.5

Coverage of fiscal rules and developments in the primary CAB (EU-25, 1990-2005)

Explanatory variables	Dependent variable: primary CAB (CAPB)
OG	0.09 (1.5)
Constant	– 0.93 (– 2.1)**
Lagged CAPB	0.63 (15.8)***
Lagged debt/GDP ratio	0.02 (3.0)***
Fiscal rule coverage index	0.19 (1.6)*
Dummy 1992	0.68 (2.2)**
Dummy 1999	– 0.51 (– 2.7)***
N. obs.	260
R sq. within	0.59
R sq. between	0.93
R sq. overall	0.80

NB: Estimations method: fixed effects, instrumental variables regression. 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 market. All fiscal variables are expressed as shares on potential output. 't' values are reported in parentheses. *, **, and *** denote, respectively, significance at the 10, 5 and 1 percent level. Coefficients for country fixed effects are not reported.

Source: Authors' calculation and DG ECFIN AMECO database.

Table III.6

Coverage of expenditure rules and developments in primary expenditure (EU-25, 1990-2005)

Explanatory variables	Dependent variable: primary CAE (PCAE)
OG	0.10 (1.5)
Constant	6.28 (4.0)***
Lagged PCAE	0.90 (25.4)***
Lagged debt/GDP ratio	– 0.02 (– 2.7)***
Expenditure rule coverage index	– 0.24 (– 1.7)*
Dummy 1992	– 0.51 (– 1.5)
Dummy 1999	0.01 (0.2)
N. obs.	260
R sq. within	0.77
R sq. between	0.99
R sq. overall	0.96

NB: Estimations method: fixed effects, instrumental variables regression. 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 market. All fiscal variables are expressed as shares on potential output. 't' values are reported in parentheses. *, **, and *** denote, respectively, significance at the 10, 5 and 1 percent level. Coefficients for country fixed effects are not reported.

Source: Authors' calculation and DG ECFIN AMECO database.

cal rule coverage index', the coefficient is positive, which indicates that an increase in the share of government finances covered by numerical fiscal rules leads to an improvement in the primary CAB. The coefficient is significant at the 10 percent level.

The same analysis was carried out focusing on the relation between expenditure rules and developments in general government expenditure. The dependent variable is now the ratio of cyclically-adjusted primary expenditure to GDP. The 'Fiscal rule coverage index' is replaced by the 'Expenditure rule coverage index'. The coefficient of this variable in the regression is negative and significant at the 10 percent level. This provides an indication that an increase in the coverage of government finances by expenditure rules leads, ceteris paribus, to a reduction in the primary expenditure-to-GDP ratio. Again, the results concerning expenditure rules must be interpreted with care, due to the relatively low number of expenditure rules considered.

3.4.3. Relation between the characteristics and coverage of numerical fiscal rules and budgetary outcomes

The previous sections examined the link between the *existence* and *coverage* of numerical fiscal rules and budgetary outcomes. However, economic literature stresses that the effectiveness of fiscal rules also depends on their properties (see notably Inman, 1996), i.e. their statutory base and whether there are independent and efficient monitoring and enforcement mechanisms to ensure the respect of the rule.

An index on the strength of numerical fiscal rules

A fiscal rule is generally considered to be 'stronger', in the sense of having a higher likelihood to be respected and to influence developments in the targeted fiscal variables, if it has a strong *statutory base*, i.e if the provisions related to the existence of the rule are enshrined in the constitution or in law. While not ruling out discretionary policy, such rules impose binding constraints on the conduct of fiscal policy, thereby addressing the deficit bias in a direct way. The statutory base also provides an indication of the difficulty to amend or derogate the rule and of the importance given to the rule in the Member State concerned, at least at the moment of its introduction ([1]).

([1]) A distinction should be made between situations where the rule itself is enshrined in law or constitution (i.e. higher-than-expected revenues should be allocated to the reduction of the deficit) and cases where only the principle of the rule is considered in the relevant legal text (i.e. the government has to specify *ex ante* the use of possible higher-than-expected revenues). In the first case, the rule can be considered 'stronger' than in the second one.

The nature of the *body in charge of monitoring* the respect of the rule is another important element. When respect of the rule is monitored by an independent body, which has the possibility to send alert signals in case a risk of non-compliance is identified, 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. The existence of automatic correction mechanisms or the possibility to impose sanctions in case of non-respect of the rule can be expected to foster compliance. Enforcement of the corrective measures and sanctions should preferably be ensured by an *independent authority*. Finally, it is worth noting that those rules that are neither enshrined in law or constitution nor regularly monitored and for which no enforcement mechanisms have been defined ex-ante may also contribute to the conduct of sound fiscal policies. As a matter of fact, such rules can be useful in providing benchmarks against which fiscal policy can be monitored and assessed by the public. Therefore, the effectiveness of fiscal rules in ensuring fiscal discipline can be expected to be stronger when the rule benefits from a large *media visibility* and when not compliance is likely to trigger a public debate.

In order to assess whether the design of fiscal rules has an impact on their effectiveness, the country-specific 'Fiscal rule coverage index' constructed in section 3.4.2 was augmented to take into account the characteristics of the individual fiscal rules. To this aim, an index of the 'strength' of numerical fiscal rules was calculated, for each of the rules considered in the sample. The index takes into account the five criteria mentioned above: 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. For each criterion, scores were attributed, the higher value corresponding to the characteristic that is presumed desirable for a strong/effective rule. Details on how the scores were attributed depending on the characteristics of the rules and on the calculation of the synthetic index measuring the strength of each fiscal rule are provided in Box III.5.

Box III.5: Calculation of an index of strength of fiscal rules

The index of strength of numerical fiscal rules was calculated taking 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 was inspired by the previous work by Deroose, Moulin and Wierts (2005). This box provides details on how the scores were attributed for each of these criteria and on the calculation of the synthetic index measuring the strength of individual fiscal rules.

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 reached by different general government tiers (and not enshrined in a legal act)
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 document underpinning 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 merely contains broad principles or the obligation for the government or the relevant authority to set targets)

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 if there is a monitoring by an independent authority (Fiscal Council, Court of Auditors or any other Court) or the 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)

(Continued on the next page)

Box III.5 (continued)

The score of this variable is augmented by one point in case there is a real time monitoring of compliance with the rule (e.g. existence of alert mechanisms in case there is a risk of non-respect of the rule).

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 there are automatic correction and sanction mechanisms in case of non-compliance
3 there is an automatic correction mechanism in case of non-compliance and the possibility of imposing sanctions
2 the authority responsible is obliged to take corrective measures in case of non-compliance or is obliged to present corrective proposals to Parliament or the relevant authority
1 there is no ex-ante defined actions in case of non-compliance

The score of this variable is augmented by 1 point in case escape clauses are foreseen and clearly specified.

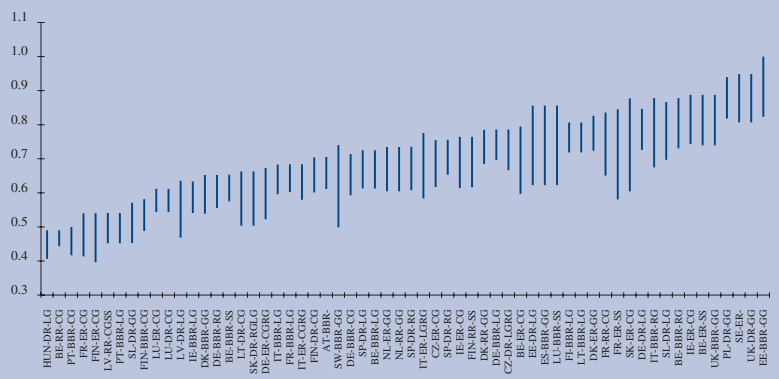
Criterion 5: Media visibility of the rule

The score of this criterion index is calculated as follows:

3 is assigned 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, it was decided to calculate the synthetic index 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. Then, a random weights technique was used following the method used by Sutherland and al. (2005). This technique uses 10 000 sets of randomly-generated weights 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. Given that the weights are drawn from a uniform distribution, 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 chart below shows, for all the fiscal rules considered in the study, the range containing 98 % of the values of the index of strength of the rule calculated with 10 000 different sets of random weights (we eliminated the 1 % lowest and highest values of the synthetic index).

Graph III.11: **Index of strength of the fiscal rules in force in EU Member States in 2005 (classified according to the average value)**



NB:

1. The chart shows, for all the numerical fiscal rules considered in the study, the range containing 98 % 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 chart only present the index consistent with the most recent features. Three rules presented in the chart 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.

A country-specific 'Fiscal rule index', taking into account the coverage *and the* characteristics *of numerical fiscal rules*

By combining the information contained in the 'Fiscal rule coverage index' and the information of the strength of each fiscal rule, a time-varying 'Fiscal rule index' was constructed, for each Member State, which takes into account all the available information on the national numerical fiscal rules. The indicator is calculated in two steps. *First*, we calculate the potential contribution of each rule to the 'Fiscal rule index' by multiplying the share of government finances covered by the rule by the indicator of the strength of the rule. *Second*, we sum these indicators by country, taking into account their changes over time ([1]). In case two rules apply to the same general government sub-sector, we follow the same methodology as for the calculation of the 'Fiscal rule coverage index'. We give a weight of 1 to the rule which can be considered as the strongest one, based on the index of strength of fiscal rules, and a weight of 0.5 to the weaker rules. Following the same approach but taking into account only expenditure rules, a time-varying 'Expenditure rule index' was constructed for each Member State ([2]).

The influence of fiscal rules on budgetary outcomes depends on their characteristics

Like in section 3.4.2, we augment standard fiscal reaction functions with our 'Fiscal rule index', which incorporates information on the coverage and characteristics of the numerical fiscal rules in the EU-25 Member States ([3]). Table III.7 reports the results of the econometric analysis.

A remarkable result is that the inclusion of information on the strength of the individual fiscal rules improves the quality and robustness of the relation between fiscal rules and budgetary outcomes. When comparing this regression to the one including the 'Fiscal rule coverage index', it appears that the coefficient measuring the influence of fiscal rules on budgetary outcomes is clearly more significant ([4]). The level of this coefficient is also higher, suggesting that a change in the coefficient has a larger impact on budgetary outcomes (all 'Fiscal rule indexes' and 'Fiscal rule coverage indexes' were standardized, so that the size of the coefficients in the various regressions can be compared). Overall, these results provide a strong indication that the characteristics of fiscal rules matter for their influence on budgetary outcomes.

In order to test the robustness of the results, we estimated other regressions including alternative calculations of the 'Fiscal rule index' using different weighing for the calculation of the index of strength of fiscal rules (in practice we used the low and high values of the brackets in Graph III.11). It appeared (regressions results are not reported here) that weighing differently the various components of the index of strength of fiscal rules does not change the results significantly, suggesting that the relation is not strongly sensitive to the choice of the weights for the aggregation of the criteria taken into account in the calculation of the index on the strength of fiscal rules.

The same analysis was made for assessing the influence of expenditure rules on developments in cyclically-adjusted primary government expenditure (results are reported in Table III.8). The conclusions are very much the same as for the analysis considering all fiscal rules. Taking into account the characteristics of expenditure rules in the calculation of the index leads to a stronger relation between expenditure rules and budgetary outcomes. The coefficient of the 'Expenditure rule index' is higher and more significant than in the regression considering only the coverage of expenditure rules. Like for the regression on the 'Fiscal rule index', robustness tests confirm that results are not significantly affected by a change in the coefficients to calculate the index measuring the strength of expenditure rules.

3.4.4. Main conclusions from the study

The survey on numerical fiscal rules shows that the number of fiscal rules in force in the EU Member States has increased continuously over the past twenty years. At

([1]) For example, take the case of a country having three fiscal rules in year n: an expenditure rule to contain developments in healthcare spending (index of strength x) covering about a percent of general government expenditure; a budget balance rule for local governments (index of strength y) covering about b percent of general government finance and an expenditure rule at central government level (index of strength z) covering about c percent of total general government expenditure. The indicator for that country in year n equals to a*x + b*y + c*z.

([2]) In order to test the sensitivity of the results to different choices for the weighting of the five criteria used in the calculation of the index of strength of fiscal rules, we calculated the 'Fiscal rule index' in two alternative ways, taking into account the low and high values of the possible index as illustrated in Graph III.11.

([3]) In the analysis, the 'Fiscal rule index' is calculated using an index of strength of fiscal rules that gives an equal weight to the five criteria entering in the calculation of the indicator.

([4]) The coefficient becomes significant at the 5 percent level as against 10 percent in the regression including an index taking into account only the share of government finances covered by fiscal rules.

Table III.7

Influence of fiscal rules on the primary CAB (EU-25, 1990-2005)

Explanatory variables	Dependent variable: primary CAB (CAPB)
OG	0.09 (1.4)
Constant	– 0.90 (– 2.0)**
Lagged CAPB	0.63 (15.8)***
Lagged debt/GDP ratio	0.02 (3.1)***
Fiscal rule index	0.25 (2.1)**
Dummy 1992	0.63 (2.0)**
Dummy 1999	– 0.53 (– 2.9)***
N. obs.	260
R sq. within	0.59
R sq. between	0.94
R sq. overall	0.81

NB: Estimations method: fixed effects, instrumental variables regression. 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 market. All fiscal variables are expressed as shares on potential output. 't' values are reported in parentheses. *, **, and *** denote, respectively, significance at the 10, 5 and 1 percent level. Coefficients for country fixed effects are not reported.

Source: Authors' calculation and DG ECFIN AMECO database.

Table III.8

Influence of expenditure rules on developments in primary expenditure (EU-25, 1990-2005)

Explanatory variables	Dependent variable: primary CAE (PCAE)
OG	0.10 (1.6)
Constant	6.43 (4.1)***
Lagged PCAE	0.89 (25.2)***
Lagged debt/GDP ratio	– 0.02 (– 2.8)***
Expenditure rule index	– 0.28 (– 2.0)**
Dummy 1992	– 0.44 (– 1.3)
Dummy 1999	0.01 (0.1)
N. obs.	260
R sq. within	0.77
R sq. between	0.98
R sq. overall	0.95

NB: Estimations method: fixed effects, instrumental variables regression. 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 market. All fiscal variables are expressed as shares on potential output. 't' values are reported in parentheses. *, **, and *** denote, respectively, significance at the 10, 5 and 1 percent level. Coefficients for country fixed effects are not reported.

Source: Authors' calculation and DG ECFIN AMECO database.

present, almost all EU Member States rely on such rules. This growing number of rules during the latest years has also undergone an interesting evolution in terms of the government sub-sectors covered by rules. In the early 90s, fiscal rules in EU countries were mostly to applied to territorial (local and regional) governments. A relatively recent feature has been the introduction of fiscal rules for the whole of the general government sector and for the social security sub-sector. This may be a response to the increasing spending pressures in the social security sector and to the introduction of the EU fiscal rules, which impose requirements for the general government deficit and debt.

The characteristics of fiscal rules vary depending on the sub-sector to which they apply. Fiscal rules applying to higher levels of government are usually incorporated into a multi-annual budgetary framework whereas most rules applied to regional and local governments rely preponderantly on annual schemes. Most of the numerical rules applied to regional or local levels of governments are enshrined in law or constitution, while rules applying to the whole of the general government sector are more frequently based on coalition agreements or political commitments. Similarly, while rules for regional and local governments seem to have relatively strong enforcement mechanisms, rules applying to general and central governments generally do not envisage *ex ante* defined actions in case of non-compliance.

An interesting finding appears when taking into account the type of budgetary governance, namely the distinction between the so-called *contract* and *delegation* countries. Both sets of countries have a similar number of fiscal rules. However, contract countries tend to a have more numerical fiscal rules applied to central government and social security sectors while delegation countries have a higher number of fiscal rules implemented at regional and local level. This seems consistent with the fact that the (a priori) larger political dispersion of governments in contracts countries is likely to promote fiscal rules at central level, while territorial sub sectors are likely to enjoy fewer restrictions imposed by central authorities. Likewise, delegation countries are expected to enact relatively few fiscal rules for central levels of government and more rules on regional and local governments in order to implement a more effective control on the whole of general government finances.

Statistical and econometric exercises suggest the existence of a link between numerical rules and budgetary outcomes. A simple analysis of data shows two interest-

ing results. Firstly, the primary CAB improved in the years following the introduction of fiscal rules while on average it remained broadly stable over the period under consideration (1990-2005). Secondly, the decline in the ratio of primary government expenditure adjusted for the cycle has been significantly larger in the years following the introduction of numerical expenditure rules than the average change observed over the sample period. When enriching the analysis to take into account the coverage and characteristics of fiscal rules and control for various factors that may affect government budget balance and developments in primary expenditure, the presumption of a link between numerical fiscal rules and budgetary outcomes is strengthened. The analysis suggests that an increase in the share of government finances covered by numerical fiscal rules leads, ceteris paribus, to an improvement in the structural position of government finances. In the case of expenditure rules, it 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. Strong rules, enshrined in law or constitution and foreseeing automatic enforcement mechanisms, seem to have a larger influence on budgetary outcomes.