National Expenditure Rules in the EU: An Analysis of Effectiveness and Compliance

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Abstract

This study reviews national expenditure rules currently in force in the EU, examining their design, effectiveness and the extent to which they have been complied with. Based on evidence from the Commission's Fiscal Governance Database and using a novel database on compliance and econometric estimation, this study finds that out of the 14 expenditure rules covering general and central governments, half mirror the EU expenditure benchmark while four rules are multi-annual expenditure ceilings, with varying binding force. Empirical estimates over the 1999-2016 period confirm that while fiscal policy is indeed pro-cyclical in the EU, the magnitude of the pro-cyclical bias is lower in presence of expenditure rules. Moreover, the better the expenditure rule design in terms of legal base, independent monitoring, consequences for non-compliance or coverage, the stronger the mitigating effect. Finally, we find that expenditure rules were complied with in about 78 percent of cases, with compliance being better for multiannual expenditure ceilings than for rules specified as growth rates.

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1.   INTRODUCTION

As more Member States have adopted domestic expenditure rules in recent years, a close look at the way these rules have performed in the EU is warranted. Drawing on the evidence provided by the Commission's Fiscal Governance Database, this paper seeks to address several analytical questions. First, it provides some details on the expenditure rules adopted in the Member States, looking at their adoption over time, their design and in particular the specification of the numerical target. The analysis also looks at additional design features, such as the legal basis, the monitoring of compliance, the existence of a correction mechanism and escape clauses. Second, through a review of the relevant literature, the pros-and-cons of expenditure rules vis-'a-vis other fiscal rules are examined, both on theoretical and empirical grounds. The emerging consensus on the fact that these rules seem to contribute to a reduction of pro-cyclicality of public spending is also statistically tested. Finally, this paper complements the analysis on the design with information on compliance, looking exclusively at numerical compliance, namely the deviation from targets of plans (for ex-ante compliance) and outturns (for ex-post compliance).

Overall, the analysis provides the following findings. 20 expenditure rules are in place in 14 Member States, and within these 14 rules cover general and central governments. Out of these 14 rules, about half mirror the EU expenditure benchmark, and four are multi-annual expenditure ceilings. Expenditure rules are found to mitigate the pro-cyclical bias of fiscal policy. Moreover, the better their design in terms of legal base, independent monitoring, consequences for non-compliance or coverage, the stronger the mitigating effect. Finally, expenditure rules were complied with in almost 80 percent of cases, with compliance being slightly better ex-ante than ex-post. Multiannual expenditure ceilings tend to be better complied with than rules specified as growth rates, both ex-ante and ex-post.

The paper is structured as follows. Section 2 reviews the theoretical and empirical literature surrounding expenditure rules. Section 3 illustrates some stylised facts on existing expenditure rules in the EU. In Section 4, the impact of expenditure rules on the pro-cyclicality of public finance is tested empirically, while section 5 provides some findings of a preliminary analysis of compliance. Section 6 concludes.

2.   LITERATURE REVIEW

2.1.   ANALYTICAL FRAMEWORK

Expenditure rules display sound properties that make them an appealing tool for policy making. According to Ayuso-i-Casals (2012), expenditure rules may be more appealing than other rules as they can promote a better balance between budgetary discipline and macroeconomic stabilisation objectives. At the same time, they tend to be more transparent and easier to monitor. However, if poorly designed they can exacerbate pro-cyclicality over the cycle, compress public investment, and reduce incentives for revenue mobilisation and reforms. Hence, their design is key to enhance countercyclical fiscal policies while preserving growth-enhancing expenditure targets.

Expenditure rules can be an effective tool to reduce the deficit bias. By targeting the budget item that is more directly under the control of the policy maker (i.e. expenditure as opposed to the budget balance or debt), expenditure rules can ensure compliance and hence reduce the deficit bias more effectively. Furthermore, as expenditure overruns are found to be a major factor behind large deficits

and increasing debt ratios in the EU, expenditure rules play an important role inasmuch they address the main source of the deficit bias (Ayuso-i-Casals 2012).

Expenditure rules have the potential to reduce the pro-cyclical bias. While a large part of revenue is sensitive to economic fluctuations and would hence react in a pro-cyclical way during shocks, many expenditure components are not. As a consequence, an expenditure rule can better protect expenditure from the economic cycle, and through this confer either an a-cyclical or a counter-cyclical behaviour to the fiscal balance. This important role played by expenditure in addressing the pro-cyclical bias is also confirmed by Turrini (2008), who found pro-cyclicality largely associated with the expenditure side of the budget. A counter-cyclical response implies that a revenue windfall would trigger some savings, while a downfall would be accommodated by higher expenditure. As pointed out by Holm-Hadulla et al. (2012), there is an intrinsic asymmetry in the way expenditure adjusts to the cycle in a countercyclical way. This is because an expansionary fiscal stance during a negative shock is only feasible if revenue windfalls (during a positive shock) have generated some savings or fiscal space. The counter-cyclical property of expenditure rules is enhanced if automatic stabilisers on the expenditure side are excluded from the targeted indicator; hence, they are let free to accommodate a shock.

Compared to other rules, expenditure rules are more transparent and they can be easily monitored and translated into policy guidelines. Contrary to alternative indicators, such as the structural balance, most expenditure aggregates tend to be more easily understood. It relies less on estimated and unobservable variables, making expenditure rules more transparent and easier to monitor in real time. As argued by Ayuso-i-Casals (2012), expenditure rules can provide operational guidance to policy makers more immediately than other rules. This is because their targets can be easily translated into spending limits of budgetary plans. This policy-oriented feature is reinforced when the targets of the rule are embedded in a medium-term fiscal framework.

The specification of the expenditure rule target matters for the rule's properties.[1] As widely documented by Ayuso-i-Casals (2012), each specification of the target has its own pros and cons.

- The expenditure rule target can be expressed as a ratio to GDP, in numerical terms or as a growth ratio. It can refer to nominal expenditure or real expenditure, and can exclude some specific items from the expenditure aggregate. If the aim is to avoid a pro-cyclical bias, a target specified in percentage of GDP is not advisable, as it will encourage higher expenditure at times of economic expansion and lower expenditure during contractions. Conversely, a ceiling with a numerical target or reference to a growth rate (e.g. GDP, nominal output) would be less pro-cyclical and be perceived, at least in the case of a numerical target, as more observable and hence binding objective.

- Spending targets specified in nominal terms can be more transparent and hence easier to monitor. They can also require a higher-than-expected adjustment in case of positive inflation surprises. On the other hand, a specification of the target in real terms can ensure that compliance is not affected by inflation and can be a valid target if the government intends to keep the volume of goods and services stable. Yet, a real target could be prone to revisions of the deflator, making the target less visible and firm.

- The target can refer to different coverages of expenditure. Interest payments are often excluded since they are not under the direct control of the government; this makes the rule easier to comply with. In some instances, public investment is also excluded, to avoid a composition bias against the important growth-oriented item of public investment. Cyclically sensitive items are also usually excluded, as they are not under control of the government in the short run. This applies to unemployment benefits, for example.

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[1] This part draws largely on Ayuso-i-Casals (2012).

Drawbacks of expenditure rules include, among others, a change in expenditure composition and reduced incentives for revenue mobilisation. Expenditure rules also have some less desirable properties. As mentioned, a target specified in terms of expenditure as a percentage of GDP would confer a pro-cyclical behaviour to expenditure; hence, an alternative specification is warranted. In raising the fiscal effort on the expenditure side, these rules can trigger undesired incentives. First, they can cause a change in the composition of spending, in favour of those items that are politically harder to cut (wages and public consumption) to the expense of the much more growth-inducing capital investment. Second, the introduction of these rules can result in a slack in revenue mobilisation and reforms. For example, a report by the OECD (2010)[2] showed how in some countries the adoption of expenditure rules coincided with a sharp increase in the number of tax expenditures. Taking into account these shortcomings, the literature often advise to complement these rules with a budget balance rule or revenue rules (Ayuso-i-Casals 2012, IMF 2018).

Finally, the same elements of national fiscal frameworks that contribute to strengthening national fiscal rules in general, do strengthen expenditure rules. These include i) a statutory basis that makes them hard to modify (Inman 1996); ii) the enforcement and monitoring by an independent body; iii) mechanisms to correct for past deviations from the target or the adjustment path to it; iv) and consistency with medium-tem budgetary plans. In addition, and as put forward by Kopits and Symansky (1998) fiscal rules would benefit from a large set of properties, including simplicity, transparency, flexibility (i.e., the possibility for the rules to adapt to changing conditions), coherence with their final goal, and compatibility with structural reforms. Finally, fiscal rules and fiscal frameworks more in general need a strong political commitment and social consensus, transparency and comprehensiveness.

2.2.   EMPIRICAL EVIDENCE

The empirical literature has mostly assessed the effectiveness of expenditure rules in reducing the pro-cyclical bias, and, to a smaller extent, the composition bias of public expenditure. Studies on expenditure rules are relatively recent and mainly focus on assessing these rules' specific properties vis-à-vis other fiscal rules. Most studies assess the effectiveness in reducing pro-cyclicality of public spending, and only few studies focus on the effect of these rules on the composition of expenditure, with a focus on public investment. In most cases, the expenditure rule index compiled on the basis of the Commission's Fiscal Governance Database (FGD) is used. While the expenditure rule index covers *the design* of the rule, only very few studies look at *compliance*. Not many studies explore the interaction between expenditure rules at the national level and those at the supranational level. All studies acknowledge caveats in the analysis raised by the possible omitted variable of political preferences, which may indeed affect estimation results.

Expenditure rules are associated with lower expenditure volatility and higher investment efficiency. An analysis of 33 expenditure rules in 29 advanced and developing countries between 1985-2013 shows that these rules are associated with spending control, counter-cyclical fiscal policy and improved fiscal discipline (Cordes et al. 2015). The study also finds evidence that these rules are associated with a decrease in public investment, but only for emerging economies. Yet, at the same time, it finds that expenditure rules are associated with lower expenditure volatility and higher public investment efficiency.

Evidence shows that expenditure rules are associated with lower pro-cyclicality. By using different specifications of pro-cyclicality,[3] Turrini (2008) finds evidence of pro-cyclical expenditure in the Euro Area in the period 1980-2005. Pro-cyclicality displays an asymmetric pattern along the cycle as it tends to be higher during bad times. By comparing fiscal reaction functions with strong and weak expenditure rules, based on the expenditure rule index of the FGD, the study also finds that countries

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[2] OECD (2010), 'Tax expenditure in OECD countries', OECD 2010

[3] Reaction of the fiscal stance to the output gap (i.e. fiscal reaction functions), also done for good and bad times separately; average fiscal impulse during periods of positive or negative output gaps.

with strong expenditure rules are less likely to run pro-cyclical expenditure policies.[4] Similarly, examining 15 countries over 1998-2005, Wierts (2008) presents evidence that national expenditure rules can limit procyclical expenditure, especially at times of revenue shortfalls. More precisely, the study examines expenditure responses to revenue shocks, expressed as the revenue forecast error (i.e. subtracting the outturn data from the forecast data). Relying on a forecast error specified with respect to the output gap (and not revenue), Holm-Hadulla et al. (2012) find that for EU countries during 1998-2005 expenditure rules reduce the procyclical spending bias. Considering different expenditure aggregates (total, primary, subsidies, investment and interest payments), the study finds that the pro-cyclical bias is higher for spending items with a high degree of budgetary flexibility (subsidies and investment).

Some studies point to a change in the composition of expenditure as expenditure rules are introduced. A study by Dahan and Strawczynski (2013) addresses the question around possible composition bias triggered by expenditure rules. As mentioned, a composition bias identifies a change in the composition of expenditure usually in favour of public consumption. The study examines whether the rate of change between public investment and transfer payments relative to government consumption has changed with the introduction of expenditures rules in 22 OECD countries over the period 1960-2006. The analysis finds that expenditure rules, while reducing budget deficits and the rate of increase in total government expenditure, are associated with a more rapid decline in the ratio of social transfers to government consumption. Yet, the study finds no stable effect of fiscal rules on public investment. The composition bias is also tested in a study by Bedogni and Meaney (2017), who looking at 14 advanced economies over 1985-2014 find a negative correlation between public investment and expenditure rules, suggesting that - as predicted by the theory - a rule, as a binding constraint, generates a shift towards maintaining more politically-sensitive items and reducing less politically-sensitive ones (like investment).

Only few studies examine the interaction between national and international rules with different results. Looking at 74 developing countries over the period 1990-2007, Tapsoba (2012) finds that the effect of fiscal rules is reduced by the presence of supranational rules, an impact explained by the weak enforcement usually displayed by supranational rules in these countries. On the contrary, Heinemann et al. 2018 in their metadata analysis of fiscal rules include studies where supranational rules have been inserted as control variables. They find that when the model controls for supranational rules, then the impact of national rules has higher levels of statistical significance.

Expenditure rules tend to be more complied with than other rules, especially when the targeted aggregate is directly under government control. Most of the analysis on expenditure rules, and on fiscal rules more in general, covers design features and assesses the impact of the existence of fiscal rules on the economy, irrespective of whether these rules are complied with or not. Given the challenges related to the assessment of fiscal rules' compliance, only few studies provide evidence of compliance. Among these are Cordes et al. (2015) and Reuter (2015). The study by Cordes et al. (2015) provides the first examination of compliance of expenditure rules, in which compliance is expressed as a dummy variable (taking values 0 and 1 for non-compliance and compliance, respectively). Information on compliance has been gathered using quantitative and qualitative data from various sources, including the IMF World Economic Outlook database, national budgets and assessments by fiscal councils. The study finds that countries comply more often with expenditure rules than with other fiscal rules and that compliance is higher if the expenditure target is directly under the control of the government and if the rule is enshrined in law or in a coalition agreement. Reuter (2015) examines compliance for 23 national numerical fiscal rules in force between 1994-2012. The study finds compliance for about 50% of the observations (years). It also shows that national numerical fiscal rules have a strong and positive impact on budgetary discipline, even if they are not always complied with. More on Reuter's methodology will be discussed further below in the section regarding the analysis of compliance.

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[4] As the dataset has data only from 1990, the analysis here refers to the period 1990-2005 only.

3. STYLISED FACTS

Expenditure rules in the EU mostly cover the general government. In 2017, 14 Member States had expenditure rules in place, making up a total of 20 rules. As illustrated in Graph 3.1, 11 expenditure rules cover the general government, 3 rules cover the central government (FI, SE, LT), 4 rules cover the social security sector (BE, two rules in LT, and SE), and 2 rules concern regional governments (BG and IT). The remaining part of this section focuses exclusively on rules at the central and general government level, and examines the pace at which these rules have been adopted and their key design features, including target specification, legal arrangement and monitoring practices.

Graph 3.1. **Coverage of expenditure rules in the EU (2017)**
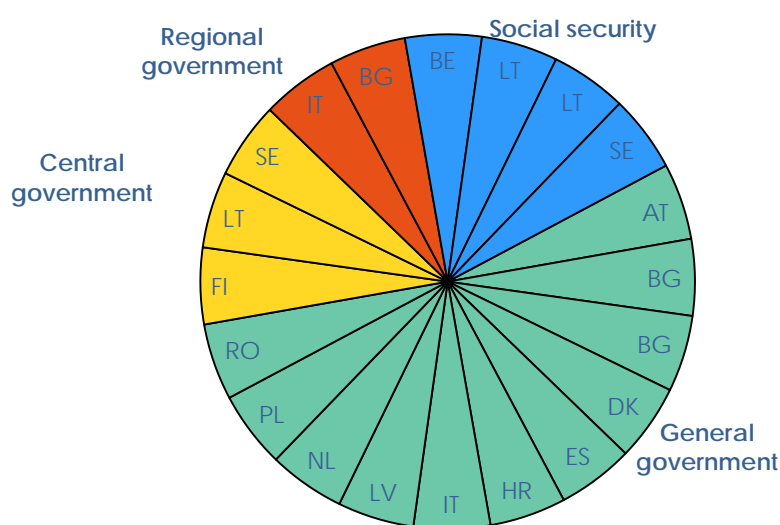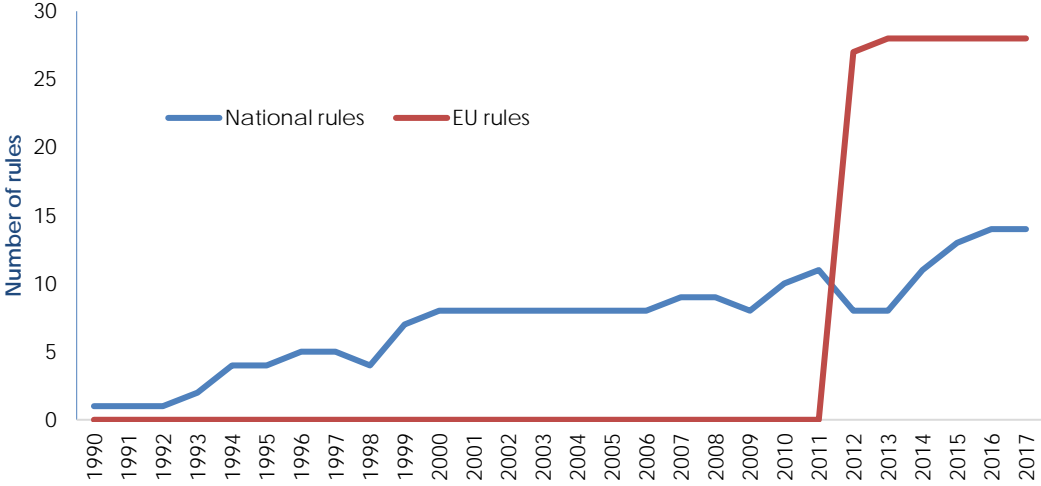

Source: Commission's Fiscal Governance Database.

Over the last 20 years, the adoption of expenditure rules has proceeded at an uneven pace, with changes clustered around the time of the financial crisis and after the introduction of the EU expenditure benchmark. Similarly to other types of national rules, Member States started adopting national expenditure rules already in the 1990s (Graph 3.2). By the early 2000s, expenditure rules were in place in eight Member States.[5] Over the 2000s, while new rules are introduced (BG in 2006, AT in 2009, SI in 2010 and HR in 2011), some are abandoned (DE in 2009, SI in 2011, IE in 2012 and LU in 2013) or modified (LU 2010, DK in 2011, NL and PT in 2012), usually in response to the financial crisis and its ensuing strains on public finances. In Denmark for example a rule on public consumption growth was then replaced in 2011 by the expenditure ceiling. After this period, expenditure rules display a marked increase, in particular in 2014 when four new rules are introduced (BG, IT, LV and RO). Also, some rules are revised (NL in 2013, DK in 2014, LT in 2015). In many cases, new or revised rules mirror either fully or in some aspects the EU expenditure benchmark introduced in 2012 (ES, AT, IT, BG, RO).

National expenditure rules coexist in the EU with supranational expenditure rules as well as other national rules. With the entry into force of the Six-pack, adopted in 2011, all Member States must comply with an expenditure rule at the supranational level since 2012 (Graph 3.2), namely the so-called 'expenditure benchmark'. According to this rule, spending increases can go beyond a country's medium-term potential economic growth rate only if matched by additional discretionary

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[5] These are Germany (1990), Denmark (1994), the Netherlands (1994), Sweden (1996), Finland (1999), Luxembourg (1999), Austria (1999) and Ireland (2000). Belgium adopted an expenditure rule in 1993, but then abandoned it in 1998.

revenue measures. The targeted aggregate of expenditure excludes the following items: interest spending, expenditure on EU programmes fully matched by EU funds revenue and cyclical elements of unemployment benefit expenditure. In addition, investment spending is averaged over a four-year period to smooth the impact of any large investment projects. At the same time, in many Member States expenditure rules are in place and operate jointly with other national rules, such as budget balance rules and debt rules (Graph 3.3).

Graph 3.2. **Adoption of expenditure rules in the EU**

Note: National rules include those covering the general government (GG) and central government (CG).

Source: Commission's Fiscal Governance Database.

Graph 3.3. **National expenditure rules in 2017**
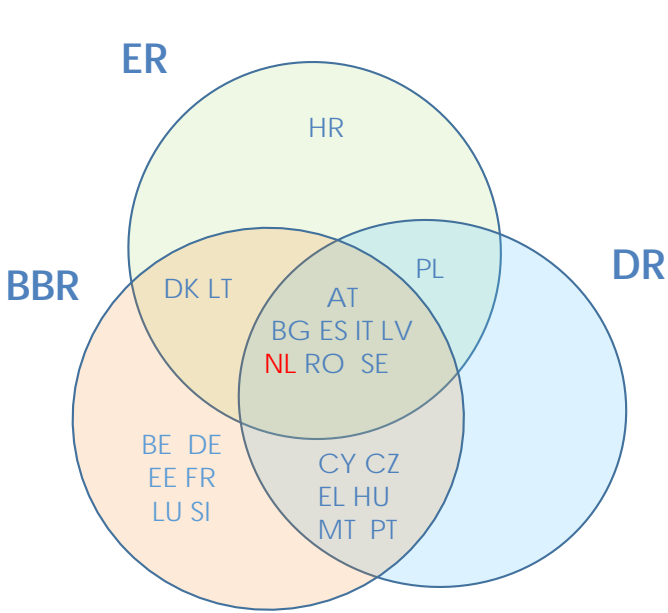
Note: National rules include those covering the general government (GG) and central government (CG). BBR stands for budget balance rules, ER stands for expenditure rules and DR for debt rules. NL has a revenue rule.

Source: Commission's Fiscal Governance Database.

National expenditure rules have various specifications (Graph 3.4). Out of the 14 rules at the general and central government levels, seven national rules mirror the expenditure benchmark introduced in the EU legislation through the Six-Pack (AT, BG, ES, HR, IT, LV, RO); four rules are multiannual expenditure ceilings (DK, FI, NL, SE) and three others (BG, LT, PL) are rules with own specific design.

Some expenditure rules mirror the EU expenditure benchmark, but not quite… Inspired by the EU expenditure benchmark, general government rules in Austria, Bulgaria, Croatia, Italy, Latvia, Romania and Spain require expenditure to grow in line with (or below) potential growth, according to their structural balance's distance to the Medium Term Objective (MTO). While the required growth rate of expenditure is usually in line with the one specified in the EU law, the targeted expenditure aggregate may differ.[6] Both Austria and Spain, for example, exclude social security spending from the aggregate; the exclusion corresponds to about 38% of total expenditure in Austria and 40% in Spain. In the latter, the aggregate also excludes transfers to Autonomous Communities and local entities. In Croatia, besides the exclusions foreseen in the EU fiscal framework, the targeted aggregate excludes annual changes in expenditure that are due to changes in the institutional scope of the general government.

Graph 3.4. **Geographical distribution of expenditure rules in the EU (2017)**

Note: National rules include those covering the general government (GG) and central government (CG).

Source: Commission's Fiscal Governance Database.
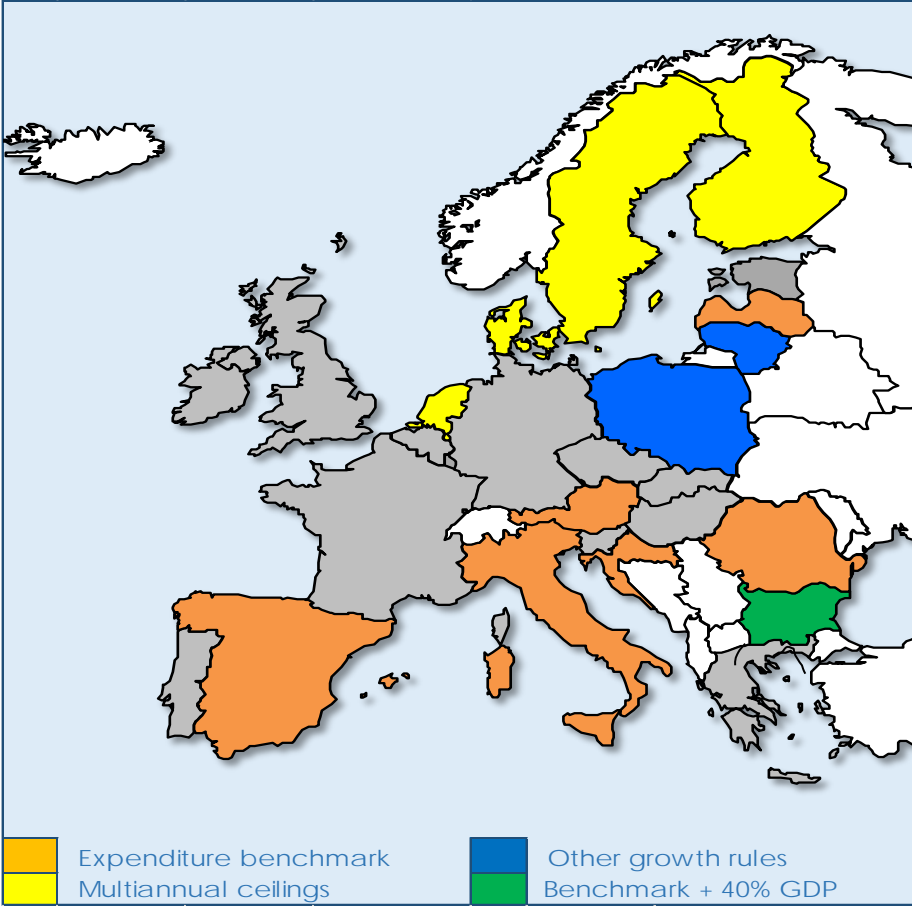
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[6] As a reminder, the EU expenditure benchmark targets an aggregate of expenditure which excludes the following items: interest spending, expenditure on EU programmes fully matched by EU funds revenue and cyclical elements of unemployment benefit expenditure. In addition, investment spending is averaged over a four-year period to smooth the impact of any large investment projects.

In some cases, the expenditure rules imply ceilings set for a multi-year horizon and covering a large part of expenditure. Denmark and the Netherlands have multi-annual ceilings for the general government, Finland for the central government, and Sweden for the central government and social security. These ceilings do not always cover the totality of expenditure, and they exclude at times items not directly under the control of the government. The Danish ceilings exclude interest payments, unemployment benefits and investment. The Dutch ceilings, instead, net out the cyclical share of social assistance and unemployment benefits; however, they include interest payments. In Sweden, the ceilings exclude interest payments while including off-budget expenditure in the pension system. In Finland, interest payments and cyclical expenditure (including automatic stabilisers, such as unemployment security expenditure, housing allowance and the central government contribution to the cost of social assistance expenditure) are netted out from the spending limits.[7]

The degree of bindingness of the multi-annual ceilings varies. While formally set to apply for a multi-year horizon, which could span up to five years (the Netherlands), some revisions to the expenditure ceilings are possible by law. The ease with which ceilings can be modified and the type of modifications gives a good sense of the binding nature of the rule. In Denmark, expenditure ceilings are set for four years on a rolling basis, and can be adjusted on a year-to-year basis due to changes in the allocation of expenditure or tasks across level of governments, price and wage developments and other technical corrections. They can also be adjusted due to discretionary changes in expenditure that are not covered by the ceilings. Discretionary increases in tax expenditure and expenditure related to unemployment have to be counterbalanced by decreases of the expenditure ceiling. In Finland, ceilings are set for four years at the beginning of each government and parliamentary cycle. Revisions of the annual ceilings are possible due to changes in price and cost level, as these ceilings are expressed in real terms, and minor structural corrections, due for example to changes in classifications or in the time in which a transaction is reported. In the Netherlands, nominal expenditure ceilings are set for five years at the beginning of the government and parliamentary cycle and inserted in the coalition agreement, and are then indexed annually based on price and wage developments. No revisions are allowed, although minor statistical corrections are possible. In Sweden, nominal ceilings are set for the third year ahead on a rolling basis, and can only be modified following the creation of a new government and minor technical adjustments.[8]

Spending ceilings that are set on a yearly basis, while useful in guiding fiscal policy in the short-term, do not exercise a permanent numerical constraint on fiscal policy and are therefore excluded from the analysis. Annual expenditure ceilings, especially if set-up at the same time with the annual budgetary plans, allow for some discretion on the part of the policy makers who can freely adjust their levels without much concern for fiscal discipline. By lacking the essential feature of actually constraining fiscal policy they are not very effective in addressing the deficit bias. Several Member States have such ceilings in place, including France (at the central government level), Ireland (at the general government level) and Slovakia (at the central government level). This analysis takes into account only those multi-annual ceilings whose design can be deemed close to a "permanent constraint on fiscal policy", according to the definition of Kopits and Symansky (1998).

Other countries have more specific targeted aggregates and formulae for expenditure growth. In Poland, the expenditure aggregate, while netting out spending matched by EU funds and other grants, also excludes all expenses of government units that do not generate high deficits. This aggregate is then set to grow in line with medium-term growth. Bulgaria targets a 40% of GDP ceiling for total nominal expenditure. In Lithuania, the expenditure rule establishes that if the general government balance is in deficit on average over the last five years, the annual growth rate of total expenditure should not exceed half of the average multiannual growth rate of potential GDP. Based on the items

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[7] The Finnish expenditure ceilings also exclude value-added tax expenditure, financial investment expenditure and expenditure corresponding to technically transmitted payments by central government.

[8] More on changes to the ceilings will be discussed in section 4, when assessing compliance vis-à-vis targets.

excluded from the expenditure aggregates, Graph 3.5 illustrates the coverage of expenditure rules in each Member State.

Graph 3.5. **Coverage of national expenditure rules**
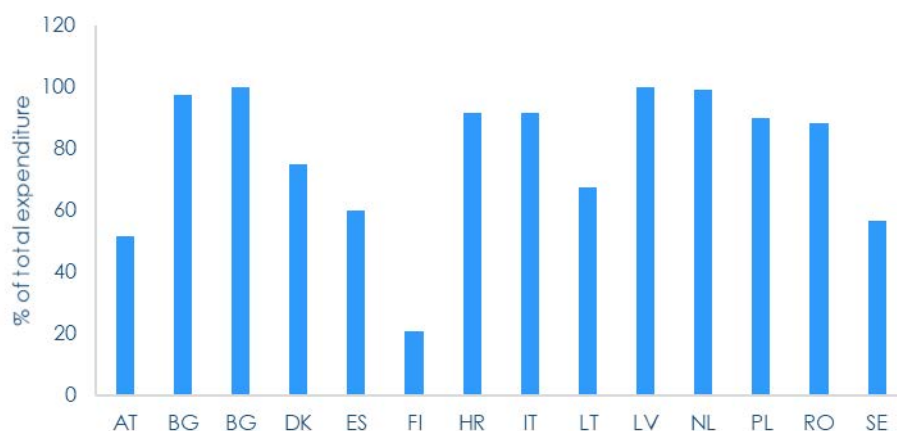
Note: National rules include those covering the general government (GG) and central government (CG).

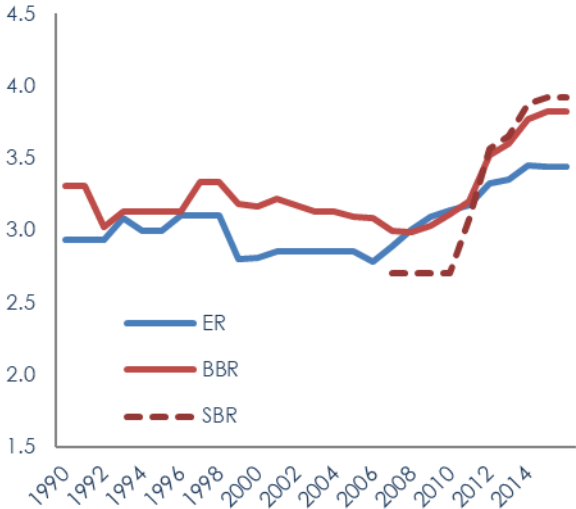Source: Commission's Fiscal Governance Database.

Expenditure rules tend to be legally binding and subject to independent monitoring, while the endowment with escape clauses is limited. As documented in the Commission's FGD, expenditure rules, like other fiscal rules, are introduced along with a series of institutional features aimed at strengthening their performance. Among these features are: (i) the legal status of the statutory basis, (ii) the existence of a monitoring body, (iii) a correction mechanism in case of non-compliance, and (iv) the option to invoke escape clauses in some difficult conditions to enhance resilience to shocks while not compromising the credibility of the rule. For 10 out of the 14 rules in force which cover the general and central government, the statutory basis is at the highest possible level, either at a constitutional level or at a higher level than ordinary law. Other three rules are established by ordinary law (LV, PL, SE), and one by a coalition agreement (FI). As regards the existence of a monitoring body, domestic independent fiscal institutions (IFIs) monitor almost all rules, with only one rule monitored by the Court of Auditors (PL). Regarding the existence of a correction procedure in case of non-compliance, for four rules (FI, LV, PL, RO) there is no legally pre-defined correction action and for two rules the action is not automatic but it is legally defined (IT, NL). For all other rules, the correction is triggered automatically after non-compliance is detected. Regarding the definition of escape clauses, only two rules allow the option to invoke them (LV, PL).

Considering these features of a numerical fiscal rule and based on the information available in the Fiscal Governance Database, it appears that budget balance rules feature a stronger design than expenditure rules; the binding nature and monitoring stand out as the strongest features of expenditure rules in force in the Member States. On the basis of some of the features just discussed, indexes compounding the strength of each feature have been calculated for expenditure rules, budget balance rules and, starting from 2007, for structural balance rules. More precisely, the index dimensions consist of (1) the statutory base of the rule, (2) the binding nature of the rule, (3) the mechanisms for monitoring and enforcement, (4) the existence of pre-defined enforcement mechanisms, and (5) media visibility of the rule.[9] Box 3.1 provides an explanation of the scoring used for each dimension. Graph 3.6 shows how, except for the years of the financial crisis (2008-12), the

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[9] The expenditure rule index was revised in 2015, when the media visibility dimension was replaced with a new dimension measuring resilience to shocks outside the control of the government. The media visibility dimension reflects scoring assigned to self-reported assessment by the authorities in response to the European Commission's survey. For more details, see European Commission (2019b).

design of expenditure rules has always been less strong than the one of budget balance rules. Within the latter, since 2012 structural balance rules have been the best performer, indicating a stronger design for these rules. Graph 3.7, instead, illustrates the behaviour of the different components of the expenditure rule index. Over the last five years, the binding nature of expenditure rules and their monitoring appear to be the strongest features.

Graph 3.6. **Fiscal rules design indexes**   Graph 3.7. **Components of the index**
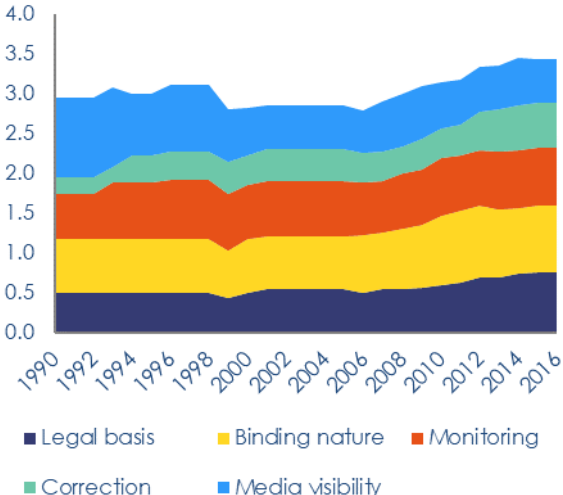
Note: the index represents the sum over all dimensions for the expenditure rules at the general and central level.

Source: Commission's Fiscal Governance Database.

The design index featured in the Fiscal Governance database is a compound indicator calculated for each rule which combines scores for five specific dimensions: 1- statutory and legal base, 2- binding nature of the rule, 3- body in charge of monitoring and enforcement; 4- correction mechanism; and 5- media visbility. These dimensions are seen as important in enhancing the strength design of the rule. Following Deroose, Moulin and Wierts (2006), the following scores are attributed to each dimension.

Criterion 1: Statutory/legal base of the rule
  – 4 constitutional base
  – 3 the rule is based on a legal act (e.g. Public finance Act, Fiscal Responsibility Law)
  – 2 the rule is based on a coalition agreement or an agreement reached by different general government tiers (and not enshrined in a legal act)
  – political commitment by a given authority (central/local government, minister of finance)

Criterion 2: Binding nature of the rule
  – 3 there is no legal margin for adjusting objectives
  – 2 there is some but constrained margin in setting or adjusting objectives
  – 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 3: Nature of the body in charge of monitoring and enforcement
The score of this criterion index is constructed as a simple average of the two elements below:

  Nature of the body in charge of monitoring respect of the rule
  – 3 monitoring by an independent authority or the national Parliament
  – 2 monitoring by the ministry of finance or any other government body
  – no regular public monitoring of the rule (there is no report systematically assessing compliance)

  Nature of the body in charge of enforcement of the rule
  – 3 enforcement by an independent authority or the national Parliament
  – 2 enforcement by the ministry of finance or any other government body
  – no specific body in charge of enforcement

Criterion 4: Correction mechanism
  – 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
  – there is no ex-ante defined actions in case of non-compliance

Criterion 5: Media visibility of the rule
  – 3 observance of the rule is closely monitored by the media; non-compliance is likely to trigger
  – public debate
  – 2 high media interest in rule compliance, but non-compliance is unlikely to invoke public debate
  – no or modest interest of the media

4. EFFECTIVENESS OF EXPENDITURE RULES IN REDUCING THE PRO-CYCLICAL BIAS

As indicated in Section 2, expenditure rules have the potential to reduce the pro-cyclical bias of fiscal policy. An ample body of empirical evidence highlights the pro-cyclical nature of fiscal policy, which is primarily an expenditure-driven phenomenon (e.g. Turrini, 2008). What this means is that spending tends to increase in good times and to decrease in bad times to a larger extent than planned. Expenditure rules can be a powerful tool in mitigating this pattern and enhancing fiscal policy stabilisation (e.g. Wierts, 2008; Holm-Hadulla et al., 2012).

From simple descriptive statistics, expenditure rules in the EU seem to help create fiscal buffers in good times, which can then be used to mitigate the impact of revenue shortfalls in a downturn. To investigate this mechanism, Graphs 4.1 and 4.2 show the evolution of expenditure and revenue surprises over time averaged distinctly for EU countries with expenditure rules in place versus no expenditure rules. Expenditure and revenue surprises are calculated by subtracting the forecast (at t-1 for t) from the outturn (as observed at t+1), where both variables are expressed as a share of GDP. Thus, positive values indicate either overspending or higher-than-expected revenues. The graphs illustrate a different pattern between the two sets of countries, with fiscal policy seeming less pro-cyclical in countries with expenditure rules than in those without such rules. In countries with expenditure rules, expenditure developments during boom periods tend to be less pronounced than those of revenues (this is particularly visible during the 2004-2007 period). This helps create some fiscal buffers that could be used as a cushion during downturns (e.g. the one that started in 2008), thus allowing for expenditure to considerably exceed planned values despite negative revenue surprises. No such pattern is displayed by countries without expenditure rules (Graph 4.2). Quite to the contrary, developments in expenditure tend to display a clear pro-cyclical pattern, showing larger positive deviations when revenues surprise on the upside, followed by larger negative deviations when revenues surprise on the downside (except for the downturn that started in 2008).

Graph 4.1. **Expenditure and revenue surprises <u>in the presence</u> of expenditure rules**
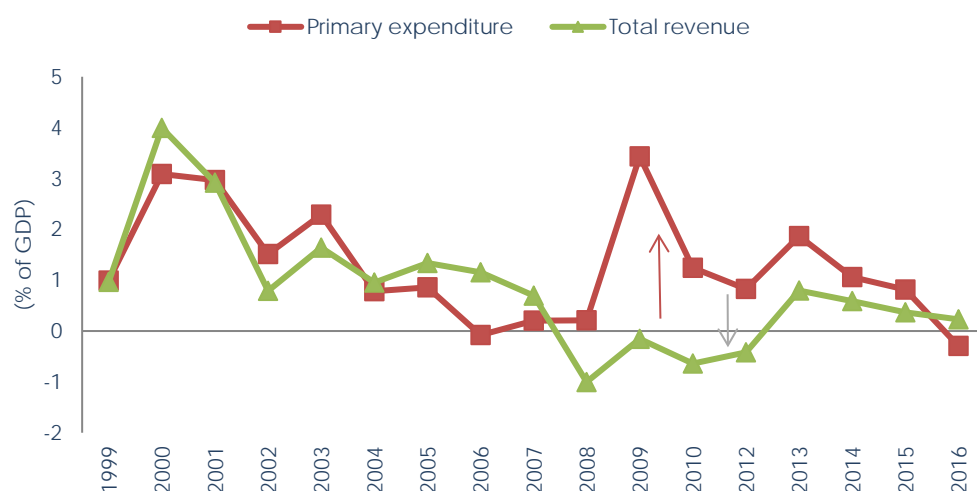
Note: Expenditure and revenue surprises are calculated by subtracting the forecast (at t-1 for t) from the outturn (as observed at t+1), where both variables are expressed as a share of GDP. Positive numbers indicate either overspending or higher-than-expected revenues. Primary expenditure and total revenues are expressed as ratio to GDP.

Source: SCPs, AMECO Spring vintages and Commission's Fiscal Governance Database, 2016 vintage.
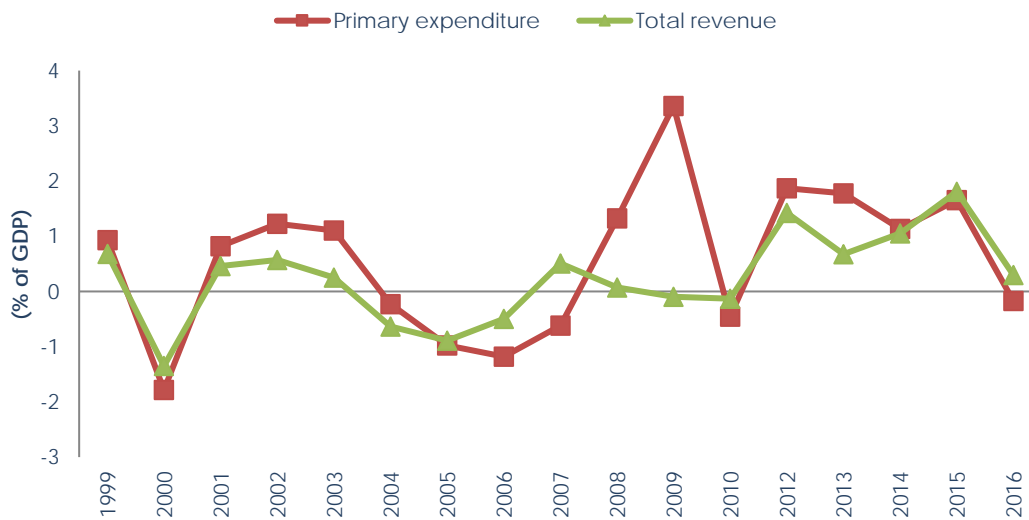
16

Graph 4.2. **Expenditure and revenue surprises <u>in the absence</u> of expenditure rules**

Note: Expenditure and revenue surprises are calculated by subtracting the forecast (at t-1 for t) from the outturn (as observed at t+1), where both variables are expressed as a share of GDP. Positive numbers indicate either overspending or higher-than-expected revenues. Primary expenditure and total revenues are expressed as ratio to GDP.

Source: SCPs, AMECO Spring vintages and Commission's Fiscal Governance Database, 2016 vintage.

To empirically test this hypothesis, a standard path in the academic literature has been pursued, whereby a typical model for the pro-cyclicality of fiscal policy is augmented with a proxy for expenditure rules. In line with Wierts (2008), the model used herein explains the response of surprises on the expenditure side to macroeconomic shocks as captured by total revenues, while controlling for a large number of standard variables suggested by the literature (see below). The baseline model specification can be expressed as:

$$FE\ ChangeExpenditure\ Ratio_{i,t} = \beta_0 + \beta_1 FE\ Change\ RevenueRatio_{i,t} + \beta_2 FE\ ChangeRevenue\ Ratio_{i,t} * ER\_Fiscal\ Rules\ Index_{i,t} + \beta_3 ER\_Fiscal\ Rules\ Index_{i,t} + \beta_4 X_{i,t-1} + \delta_i + \tau_t + \varepsilon_{i,t} \quad (1)$$

Where $t = 1, ..., T\ years, i = 1, ..., 28$ EU countries

The budgetary aggregates of interest are the planned *change* – or adjustment – in the primary expenditure and the planned *change* in the total revenue in year *t+1* with respect to year *t*, both expressed as a percentage of GDP. Focusing on the *change* in the ratios rather than the ratios themselves helps to neutralise base effects and the influence of statistical revisions (Moulin and Wierts, 2006). Expenditure surprises and shocks to revenues – also called forecast errors– are then calculated as the difference of plans from outturns for these budgetary aggregates. Specifically, the dependent variable $FEChange\ ExpRatio_{i,t}$ is the forecast error in the change in primary expenditure ratio for country *i* at year *t* (with respect to year *t-1)*, while the explanatory variables include: $FE\ Change\ RevRatio_{i,t}$, the forecast error in the change in total revenue ratio and $FE\ Change\ Rev\ Ratio_{i,t} * fri\_ER_{i,t}$, the interaction term of the revenue forecast errors and the expenditure rule index, measuring the strength of the design of the expenditure rules in force (or a

dummy variable taking values of 1 in the presence of expenditure rules and 0 in their absence).[10] Forecast errors are measured as the difference between outturns and plans/forecasts, where positive values indicate overspending (or higher-than-projected revenues). Finally, the model is augmented with standard country-specific effects – δ_i – capturing the institutional and cultural preferences that are specific to each country and do not vary over time, while τ_t measures the year-specific effects which are common to all countries in the sample.

The selection of control variables follows the academic literature. Primarily inspired by Wierts (2008) and Holm-Hadulla et al. (2012), several explanatory variables (the $X_{i,t-1}$ variables in the model specification above) are needed to control for possible confounding effects on the relationship between expenditure and revenue surprises and consist of (the expected sign of the relationship with surprises to expenditure is shown in brackets):

- the *forecast error in real GDP growth rate* (-): to capture the role of automatic stabilisers on the expenditure side of the budget (mainly unemployment expenditure).

- the *initial level of total expenditure* (-): the lagged total expenditure, given that countries with high expenditure ratios may be more under pressure to respect the expenditure plans.

- the *initial level of the headline balance* and *debt to GDP ratio* (-): the lagged headline balance as a ratio to GDP and the lagged stock of government debt as a ratio to GDP, given that the overall fiscal position may influence the extent to which external fiscal surveillance and the financial market force government to comply with their expenditure targets.

- the *initial level of inflation* (-): the lagged GDP deflator, as inflation may affect government expenditure and nominal GDP differently thus giving rise to a "mechanical correlation" between the denominator of the dependent variable and revenue surprises.

- the *election cycle* (+): a dummy variable which equals 1 in years of parliamentary elections and 0 otherwise, to take into account that upcoming elections may reinforce the incentive to "buy political support" in the short-run.

- the existence of *other fiscal rules than expenditure rules* in force (-): a dummy variable taking the value of 1 in case of other fiscal rules in force such as budget balance rules and debt rules, and the value of zero otherwise, to control for the possible downward pressure on expenditure stemming from these other fiscal rules.

To best approximate the information known by policy makers when implementing their fiscal plans, real-time fiscal data is used to estimate the model. All projected data is available from the Stability and Convergence Programmes (SCPs)[11], while the outturn data is obtained from the real-time Spring vintages of the AMECO database; the expenditure rules data derives from the Commission's FGD. Projected data for year *t+1* is obtained from the SCPs submitted in year *t*, while outturn data for year *t+1* is derived from the year *t+2* Spring vintages of the AMECO database.[12] Based on these data, forecast errors are computed by subtracting the forecast value from the outturn data (i.e. positive

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[10] The expenditure rules considered here cover all levels of the general government. The fiscal rules index is calculated as the average over the five dimensions defined in the Fiscal Governance Database (see Box 3.1), multiplied by the sector coverage of the rules and by a penalty for the second and third rule covering the same government sector.

[11] The SCP data comes from the SCP dataset published on DG ECFIN's homepage https://ec.europa.eu/info/business-economy-euro/indicators-statistics/economic-databases/database-stability-and-convergence-programmes_en and discussed in European Commission (2014).

[12] For example, the forecast error for year 1999 is the difference between the outturn data as reported in the 2000 Spring AMECO vintage and the planned value as reported in the 1998 SCP.

values indicate spending overruns relative to the objective or that total revenues as a share of GDP turned out higher than expected). While all EU Member States are required to submit SCPs, lack of data availability regarding some variables reduces the sample to 349 observations during the 1999-2016 period.[13] This fiscal dataset is complemented with the expenditure and other fiscal rule index/dummies based on the FGD, and a dummy for election years obtained from the World Bank's Database of Political Institutions.[14]

Descriptive data statistics confirm the well-established fact that while Member States typically plan to consolidate through expenditure restraint, budget execution results in higher-than-planned expenditure and also slightly higher-than-planned revenues. At the planning phase, primary expenditure for the next year is envisaged to decrease by 0.4pp of GDP, on average, compared to the previous year (first row in Table 4.1). However, after budget execution, it tends to be higher by 0.7pp of GDP, on average, in year *t* compared to what had been foreseen the year before (in line with European Commission, 2014). Conversely, Member States are usually prudent when they plan their revenue developments as in year *t* the change in the revenue-to-GDP ratio is on average about 0.2 pp of GDP higher than planned the year before. At the same time, the data also confirms the so-called "optimism bias" in growth forecasts, with real GDP growth being on average overestimated by 0.7pp. In terms of fiscal rules, the dummy variables indicate that expenditure rules have generally been much less common over time than other types of rules, in particular budget balance rules. For every expenditure rule in force in a year there are, on average, more than 3 debt rules and 6 budget balance rules across countries and time in this sample (see Table 4.1).[15]

Table 4.1. **Descriptive statistics**

	Obs.	Mean	Standard Deviation	Min	Max
Planned change primary expenditure to GDP ratio (pp of GDP)	349	-0.41	1.25	-8	4.2
Planned change total revenue to GDP ratio (pp of GDP)	349	-0.2	1.2	-10	3.5
Forecast errors change primary expenditure to GDP ratio (pp of GDP)	349	-0.68	2.0	-17.6	6.6
Forecast errors change total revenues to GDP ratio (pp of GDP)	349	-0.25	1.4	-9.0	4.4
Forecast errors real GDP growth rate (in pp)	348	0.74	2.4	-5.1	13.0
Lagged total expenditure (levels)	423	1167.00	3713.0	0.9	40224.8
Lagged headline balance (pp of GDP)	434	-2.40	3.7	-32.4	6.7
Lagged Debt-to-GDP ratio (pp of GDP)	428	58.00	32.1	2.9	177.1
Lagged GDP deflator (in pp)	461	2.92	4.3	-3.2	48.6
Electoral Dummy	531	0.26	0.4	0.0	1.0
Index of expenditure rules	529	0.10	0.2	0.0	0.8
Dummy expenditure rules	529	0.33	0.5	0.0	1.0
Dummy budget balance rules	529	0.66	0.5	0.0	1.0
Dummy debt rules	529	0.40	0.5	0.0	1.0

Source: SCPs, AMECO spring vintages and Commission's Fiscal Governance Database 2016 vintage. Unweighted statistics over the time period 1999-2016.

Panel regression results confirm that government spending in the EU is indeed procyclical. The positive coefficient on the forecast error in revenues in Table 4.2 points to pro-cyclical behaviour in primary expenditure. Specifically, a surprise in total revenues of one pp of GDP translates into a

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[13] As detailed data requirements for the SCPs were formulated only in 2001, format and content of the SCPs varied quite substantially during their first years, which explains the missing data. In addition, the SCPs submission deadline changed in 2009, from the end of the year to April. The transition between these two submission dates implied that no SCP was submitted in 2010.

[14] The last available outturn data concerns year 2018 (reported in the 2019 SCPs). However, the sample size is limited to 2016, the last year for which the expenditure rule data was available by the cut-off date of the analysis.

[15] The numbers also capture the time dimension and as such they are higher than those for expenditure rules, simply because for the period under consideration there are very few expenditure rules in place.

deviation between spending outcomes and plans of about 0.6 pp of GDP during the same period. This finding is in line with the literature, in particular Wierts (2008) and European Commission (2019a). In other words, these results suggest that fiscal policy in the EU has an estimated pro-cyclical bias of 0.6pp of GDP. In addition, most of the control variables have the expected sign, although not all are statistically significant in this specification. [16] In addition, country-specific features and specific events over the period of the sample are found to be statistically significant and therefore relevant for the estimated relationship of interest. All these estimates are broadly in line with Wierts (2008) and Holm-Hadulla et al. (2012).

However, the model suggests that the existence of expenditure rules reduces the pro-cyclical bias by strengthening expenditure control. As mentioned above, the specific impact of expenditure rules is introduced in the model as an interaction term between the revenue shocks variable and a measure of expenditure rules, which is either a dummy indicating the presence of an expenditure rule or an index which also measures the strength of the rule design. This specification allows modelling the reaction of expenditure surprises to revenue shocks as the sum of two components: an unconditional response of expenditure surprises to revenue shocks and the expenditure response to revenue shocks conditional on the presence (or, alternatively, the strength) of expenditure rules. While pro-cyclicality in fiscal policy prescribes a positive reaction of expenditure to revenue shocks (i.e. the first impact is positive), this impact is expected to be lowered in the presence of expenditure rules (captured by a negative coefficient of the second term, i.e. the interaction term). The negative coefficient on the interaction term between forecast errors in revenues and the expenditure rule dummy (Table 4.2, Column 1), which is statistically significant, indicates that indeed expenditure rules help to mitigate the pro-cyclicality of fiscal policy. Specifically, the pro-cyclical bias mentioned above of 0.6pp of GDP decreases by more than half to 0.25pp of GDP when expenditure rules are present.[17]

Moreover, stronger expenditure rules (better designed and with large coverage) contribute more to the reduction of the pro-cyclical bias than weaker rules, while the strongest rules appear to eliminate it fully. *Do better-designed expenditure rules (in terms of stronger legal base, an independent monitoring of compliance or specified consequences for non-compliance) help achieve stronger expenditure control?* To answer this question, an alternative specification is used that allows estimating how the pro-cyclical bias varies as a function of the strength of the expenditure rules.[18] Rather than measuring the presence or absence of an expenditure rule, an index measuring the strength of the rule design along five dimensions (see Box 3.1) as well as the coverage of the rule is used instead. Graph 4.3 shows how the pro-cyclical bias varies as a function of the expenditure rule index values, which are listed along the X axis. It suggests that the stronger the expenditure rules (either through better design features or through a wider coverage) the lower the pro-cyclical bias of fiscal policy. Interestingly, the best designed rules and with a wide coverage, which represent just 10% of the country-year observations (and reflected in an index higher than 0.5), can reduce the pro-cyclical bias to essentially zero when taking the uncertainty around it into account.[19] However, most of the Member States manage to reap only a tiny fraction of such benefits most of the time, as in 75% of the

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[16] Only two control variables are consistently statistically significant across all specifications (Table 4.2, Columns 1-3). The first is the forecast error of real GDP which indicates an immediate strong response in the form of lower (higher) primary expenditure for a positive (negative) surprise in real GDP, which possibly captures a denominator effect (i.e. higher GDP implies a lower expenditure to GDP ratio, all else being equal) and the role of the automatic stabilisers on the expenditure side of the budget (mainly unemployment benefits). The second is a high initial level of debt, which is indeed found to put pressure towards more expenditure control.

[17] This estimated impact of the national expenditure rules is robust to the crisis period. Specifically, results remained largely unchanged when controlling for the specific impact of the 2008-2012 recession (and ensuing consolidation) through a dummy variable.

[18] When the interaction term includes a continuous variable (the expenditure rule index) rather than a discrete variable (a dummy variable), the estimated impact conditional on that variable will be a function of the continuous variable (Brambor et al., 2006).

[19] For values of the expenditure rule index higher than 0.5, the confidence intervals around the estimated pro-cyclicality coefficient include the value of zero. Therefore, the pro-cyclicality coefficient is no longer statistically different from zero.

country-year observations the values of the expenditure index is lower than 0.1 (either because of no expenditure rules in force – in the vast majority of these cases – or because of a poorly designed or low coverage rule), in which case the pro-cyclicality bias remains considerably close to its maximum value.

Table 4.2. **Panel regressions for the period 1999-2016**

Explanatory variables \ Dependent Variable:	Forecast error change in expenditure ratio			
	Column (1)	Column (2)	Column (3)	Column (4)
	Baseline	with ER dummy	with ER index	with ER dummy and BBR dummy
Forecast error change in revenue ratio	**0.45*****	**0.59*****	**0.57*****	**0.74*****
	(7.93)	**(7.93)**	**(7.68)**	**(4.1)**
Interaction ER Dummy and forecast error change in revenue ratio		**-0.34***		**-0.03**
		(-1.79)		**(-0.06)**
Interaction ER Index and forecast error change in revenue ratio			**-0.58****	
			(-2.32)	
Interaction BBR Dummy and forecast error change in revenue ratio				-0.2
				(-0.96)
Interaction BBR Dummy, ER Dummy and forecast error change in revenue ratio				-0.35
				(-0.85)
Forecast error real GDP growth rate	-0.30***	-0.29***	-0.29***	-0.29***
	(-5.11)	(-5.24)	(-4.97)	(-5.14)
Lagged total expenditure (levels - standardized)	-0.15*	-0.12	-0.12	-0.11
	(-1.78)	(-1.18)	(-1.19)	(-0.85)
Lagged debt to GDP ratio	-0.01	-0.01*	-0.01**	-0.01**
	(-1.52)	(-2.06)	(-2.31)	(-1.91)
Number of observations	366	339	339	339
R^2 ('within' for fixed-effects estimator)	0.4	0.41	0.41	0.42
Number of countries	28	28	28	28
Fraction of variance due to country fixed effects	0.13	0.16	0.15	0.13
F- test Time fixed effects	**6.23*****	**6.32*****	**8.92*****	**6.23*****

Note: ER refers to expenditure rule while BBR refers to budget balance rule. Estimates are based on the fixed effects panel estimator with robust standard errors, as in Wierts (2008).*, **, *** denote, respectively, significance at the 10, 5 and 1% level. T-values in parentheses. Other control variables (lagged inflation, headline balance, election year dummy and the level of initial total expenditure) are included in all specifications but not reported due to lack of significance. Each variable that is part of the interaction terms was also included as stand-alone variable in each specification but not reported in the table. Three outliers of the expenditure rules index (i.e. the three years during which Bulgaria has had two expenditure rules targeting the general government with exactly the same coverage) were excluded from the estimation sample.

Source: SCPs, AMECO Spring vintages and Commission's Fiscal Governance Database, 2016 vintage.
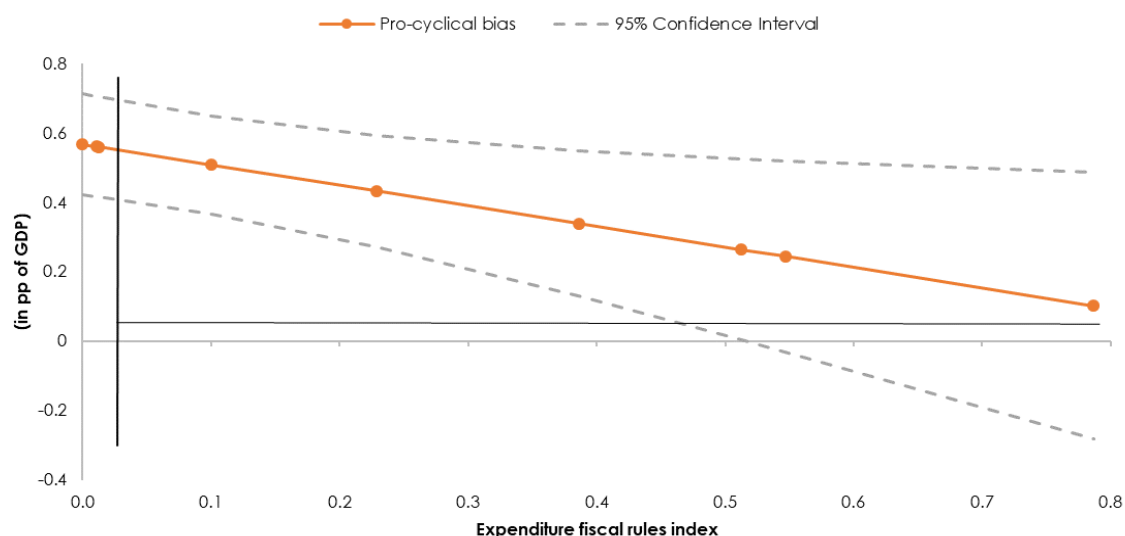
Source: SCPs, AMECO Spring vintages and Commission's Fiscal Governance Database, 2016 vintage.

Furthermore, fiscal policy is even less pro-cyclical when expenditure rules operate in combination with budget balance rules. Well-functioning fiscal frameworks typically consist of several fiscal rules targeting different budgetary aggregates and with different time horizons, thus reinforcing each other. To investigate this issue, an alternative specification is set-up, which allows estimating the differentiated impact of different types of rules, such as budget balance rules or debt rules. First, results suggest that in the absence of both expenditure and budget balance rules, fiscal policy would be even more pro-cyclical than what was observed in the absence of expenditure rules, with a pro-cyclicality coefficient of 0.7pp of GDP (Table 4.2, Column 3). Then, the presence of expenditure rules helps reduce this pro-cyclical bias only marginally, but, when the expenditure rule operates together with a budget balance rule, this pro-cyclical bias decreases further to 0.2pp of GDP.[20] Further adding a debt rule to the fiscal rule mix does not appear to impact the pro-cyclicality bias (unreported results).

These results provide an illustration of the effectiveness of expenditure rules in mitigating the pro-cyclicality bias of fiscal policy, although further work would be required to fully control for endogeneity. Endogeneity derives from two sources. First, since government expenditure is an important component of aggregate demand, simultaneity problems might arise with the variables measuring the cyclical conditions, namely the surprises in revenues. Specifically, a spending rise would lead to an increase in GDP and consequently to a rise in revenues within the same period, thus implying that both the left-hand and right-hand side variables would be determined simultaneously. A second source of endogeneity originates from the expenditure rule variables. Related literature argues that numerical fiscal rules may not be treated as exogenous variables since unobserved country-specific preferences might be positively associated with both fiscal accuracy and the propensity to implement these restrictions (e.g. Debrun et al., 2010). Moreover, self-commitment implied in binding numerical fiscal rules provides for governments with higher ability or willingness to achieve fiscal targets an incentive to implement stricter fiscal rules (see European Commission, 2019b; Holm-Hadulla et al., 2012). This analysis controls only for the impact of country-specific preferences in the form of country-specific effects, hence further work is required to fully address the remaining concerns.

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[20] The pro-cyclical bias conditional on the presence of both expenditure and budget balance rules (which is the sum of three coefficients: that of the forecast errors of revenues and the two interaction terms) is statistically significant at conventional levels even though the coefficient of the interaction term between the budget balance rule dummy and the forecast errors in the change of revenues to GDP ratio is not.

5. ASSESSING COMPLIANCE

A comprehensive assessment of numerical compliance of national fiscal rules is provided in Reuter (2015). Reuter (2015) examines compliance for 23 national numerical fiscal rules in 11 EU Member States over the period 1994-2012. The analysis covers rules at the central and general government levels. Differently from the compliance dummies in Cordes et al. (2015), Reuter (2015) provides values of numerical compliance, namely the deviation of plans from targets (ex-ante compliance) and outturns from targets (ex-post compliance). The targets, namely the numerical limits on a specific aggregate of expenditure, are obtained from official documents (budgetary plans, fiscal councils' reports) or are calculated using the formula stated in the relevant legal documents. Data on the outturns and plans are obtained or calculated from semi-annual vintages of Ameco. To provide some information on *legal* compliance, the study also takes into account escape clauses. Overall, about 20% of required data for the numerical limits, outturns and plans are not available.

Drawing partly on Reuter (2015), this analysis gathers data on simple and numerical compliance for national expenditure rules over the period 2011-17, based on national sources. First, this analysis focuses on simple compliance, which provides an indication on whether targets have been met. It does not look at legal compliance, where instead additional information plays a role, like escape clauses of flexibility. Also, the analysis is primarily focused on *national* fiscal rules, making reference to *EU* rules only loosely. Hence, no implications on EU fiscal surveillance can be drawn.. Second, the discussion on simple compliance is complemented with data on numerical compliance, which provide an indication of the magnitude at which a rule has been complied or non-complied with. As an exploratory exercise, this study covers only the period 2011-17. Rules not in force in 2017 are not included, but previous versions of rules currently in force are included (DK, LT and NL).[21] In line with Reuter's, this analysis provides values of numerical compliance, but with no reference to escape clauses nor flexibility. As the monitoring of *national* numerical rules implies examining *national* variables, rather than using Ameco data, this analysis relies on Member States' data collected from documents of the Ministry of Finance and IFIs (i.e. budgetary reports, reports on compliance with rules).

Relying on multiple sources, data on compliance both ex-ante and ex-post was gathered for 13 Member States, with a total of 103 observations over the period 2011-17. In most cases data were retrieved from the Ministry of Finance or information on compliance was retrieved from self-reported information on compliance from the Fiscal Governance Database (FGD) available for 2017 or the Stability and Convergence Programmes (SCPs). In accordance with their mandates, many IFIs do in fact monitor these rules by producing reports on compliance (AT, BG, DK, HR, IT, LV and SE). As far as the Romanian expenditure benchmark is concerned, the target, plans and outturns have been calculated following the formula indicated in the law. Table 5.1 summarises the sources used to gather information on compliance for each rule. Given the specificity of each rule, the assessment of compliance faced some challenges, which are discussed in Box 5.1. Overall, data has been gathered on ex-ante compliance for 9 Member States, for a total of 42 observations, and on ex-post compliance for 13 Member States, for a total of 61 observations. In both cases, most observations are concentrated in the years 2014-2017.[22]

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21 While revisions in the Lithuanian and Dutch rules did not imply major changes to the rule, the Danish rule in force from 2007 to 2011 had an operational target set in growth rates, while its revised version, currently in force, is set as a ceiling.

22 In the case of the Netherlands and Slovenia, data on plans coincide with targets, hence ex-ante compliance could not be established. For Spain, data on plans could not be found. For Finland, data could not be found.

Table 5.1. **Sources for compliance information**

AT	IFI	LT	MoF
BG	SCP (2015-6); FGD 2017	LV	IFI
DK	MoF (2015-17); FGD (2011)	NL	MoF
ES	MoF	PL	MoF
FI	IFI	RO	Calculated
HR	SCP (2015-17)	SE	MoF
IT	SCP		

Note: IFI=Independent Fiscal Institution; SCP=Stability/Convergence Programme.

FGD=Fiscal Governance Database; MoF=Ministry of Finance.

Box 5.1. **CHALLENGES IN ASSESSING COMPLIANCE**

Gathering information on compliance for national fiscal rules faces challenges that could affect data comparability. Obtaining data on targets, plans and outturns presents some challenges which call for some judgement in the assessment of compliance. As a consequence, comparability of the data cannot be always ensured. A few examples of faced challenges are provided below:

- Lack of data is a major constraint in assessing compliance. Despite monitoring of these rules being mandated by EU and national law, such monitoring is missing or is not systematic and at times the information reported does not match what is expected to find based on legislation.

- When a national rule mirrors a EU rule, reports on compliance provide sometimes an assessment of the rule as designed at the EU level. In Austria, for example, the fiscal council provides an assessment of compliance with the EU rules. Hence, the monitored expenditure aggregate includes social security, which is instead excluded from the national rule.

- Multi-annual expenditure ceilings may be amended within the multi-annual horizon. When the law allows for frequent and easy-to-do revisions, expenditure ceilings do not qualify as numerical fiscal rules (i.e., in Ireland, Slovakia). In some cases, however, the law allows for revisions in few and well-specified cases; for example, to accommodate changes in inflation (Denmark) or a change in government (Sweden). However, it is not always possible to determine whether target revisions are done according to the legal specification or not. If this is the case, then compliance should be assessed vis-à-vis the revised targets, otherwise it should be assessed vis-à-vis the initially set targets. For consistency with the treatment of other rules, in this exercise ceilings are considered as set in the SCP at t-1 (the revised targets) and not at the beginning of the multi-annual period (the initial targets). Graph A reports the two series for these ceilings for Sweden.

Graph A. **Target revisions in Sweden**
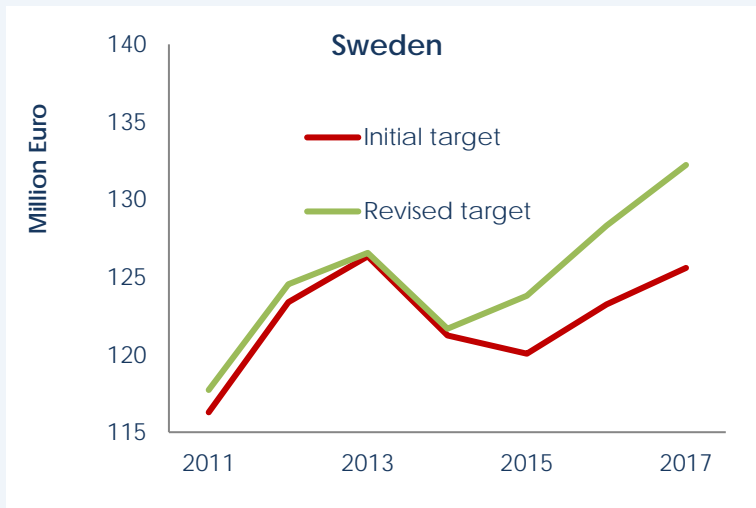
Source: National budgetary documents.

▪ When the target is calculated based on a formula including several variables, the numerical target can change over time, and also ex-post. This is the case for example for the rules mimicking or based on the EU expenditure benchmark, where some of the variables are frequently updated and revised. As a result, at t+1, when compliance is assessed by the budgetary authorities or the fiscal council, the target is different from the target at t-1. In Italy and Latvia, for example, the authorities and the fiscal council, respectively, assess compliance vis-à-vis the ex-post targets. However, for consistency with other rules, this exercise uses targets as expected at t-1. Graph B shows ex-ante and the ex-post targets for Italy and Latvia.

Graph B: **Targets of Italy and Latvia**
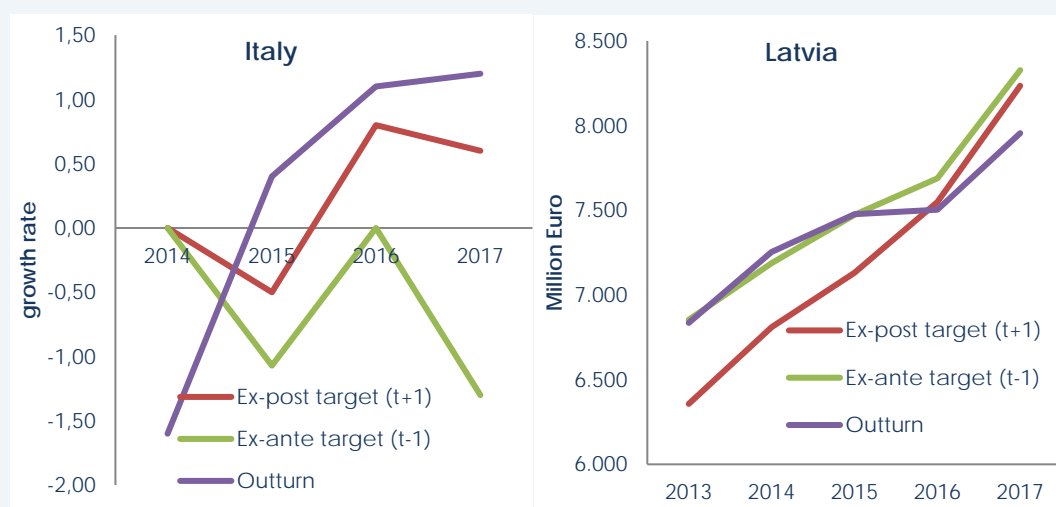
Source: SCPs and IFI reports.

Based on the sample used for the present analysis, expenditure rules were complied with in almost 78 percent of cases. Expenditures rules are always complied with between 2011 and 2013 and mostly complied with between 2014 and 2017 (Graph 5.2). This applies to both ex-ante and ex-post compliance, although rules appear to be more complied with ex-ante than ex-post. *How is compliance distributed across Member States? Are some countries systematically compliant and others systematically non-compliant?* Table 5.2 groups Member States according to their compliance patterns over time; namely, if they display more cases of compliance than non-compliance (mostly complied), or viceversa (mostly non-complied). Most Member States feature compliance with their expenditure rules for most years both ex-ante and ex-post. Yet, in Austria, expenditure rules are mostly non-complied with both ex-ante and ex-post; while in Bulgaria, the expenditure benchmark is mostly non-complied with ex-ante, and in Italy and Romania expenditure rules are mostly non complied with ex-post.

Graph 5.2. **Simple compliance**
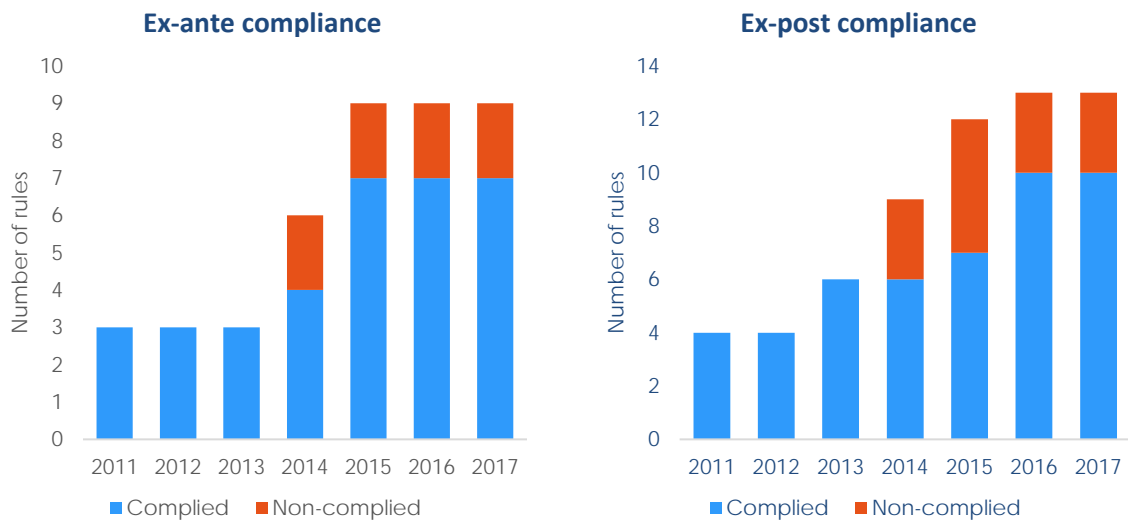
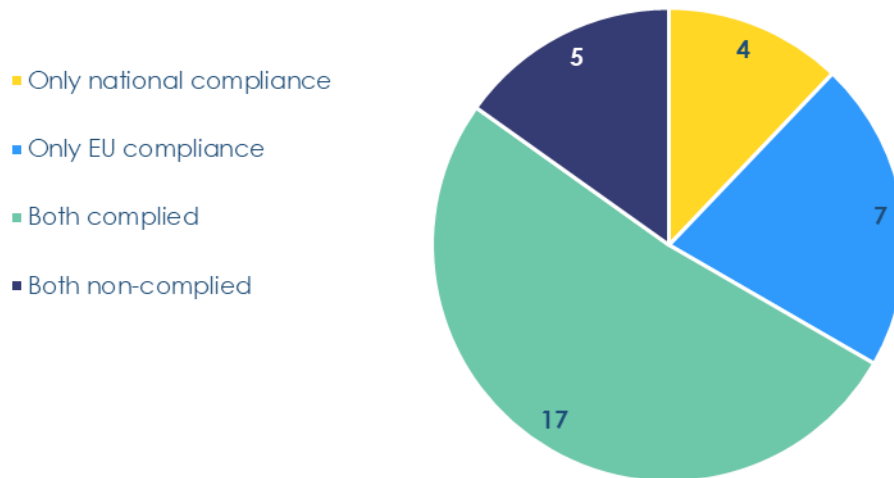Source: Commission staff calculations from various sources.

Table 5.2. **Member States' compliance**

	Mostly complied	Mostly non-complied
Ex-ante	BG, DK, FI, HR, IT, RO, SE	AT, BG
Ex-post	BG, BG, DK, ES, FI, HR, LT, LV, NL PL, SE	AT, IT, RO

Source: Commission staff calculations from various sources.

In most cases of national rule compliance, the EU expenditure benchmark is also complied with. Graph 5.3 shows that when compliance could be ascertained for the EU and national expenditure rules, both rules were in most cases complied with at the same time. In addition, when only one rule has been complied with, in 7 cases this is the EU expenditure benchmark and only in 4 cases this is a national rule. Finally, in only 5 cases, both rules were not complied with. Compliance with both rules is protracted over time, and this is particularly the case for expenditure ceilings (DK, NL, SE), where both rules were always complied with throughout the 2014-17 period. On the contrary, in Romania both rules were never complied with over the period 2015-17. Overall, in Austria, Italy and Latvia the EU expenditure benchmark is more frequently complied with than national rules; while it is less frequently complied with in Bulgaria and Poland.

Graph 5.3. **Compliance for EU and national expenditure rules**

- Only national compliance
- Only EU compliance
- Both complied
- Both non-complied

Numerical compliance points to larger values of compliance than of non-compliance. *When a rule is not complied with, how much is the deviation from target?* The panel chart below (Graph 5.4) displays numerical compliance for expenditure rules with targets specified as growth rates (i.e. the expenditure benchmark) and with targets specified as ceilings (expressed as percentage of GDP). Compliance is defined by subtracting the planned data (ex-ante) or outturn data (ex-post) from the target value. Thus, a positive numerical value corresponds to compliance, while a negative number suggests non-compliance. The analysed data point to the following information:

- The total average of compliance for all the examined rules is higher than the average non-compliance, in absolute terms, suggesting that negative deviations from targets (non-compliance) are more than compensated on average by positive deviations (compliance).

- Expenditure ceilings tend to be better complied with than rules specified as growth rates, both ex-ante and ex-post (which is in line with the findings in Cordes et al. (2015)).

- For rules specified in terms of growth rates, compliance ex-post has been more challenging than ex-ante. On average these rules were not complied with ex-post from 2014 to 2017.

Graph 5.4. **Numerical compliance**
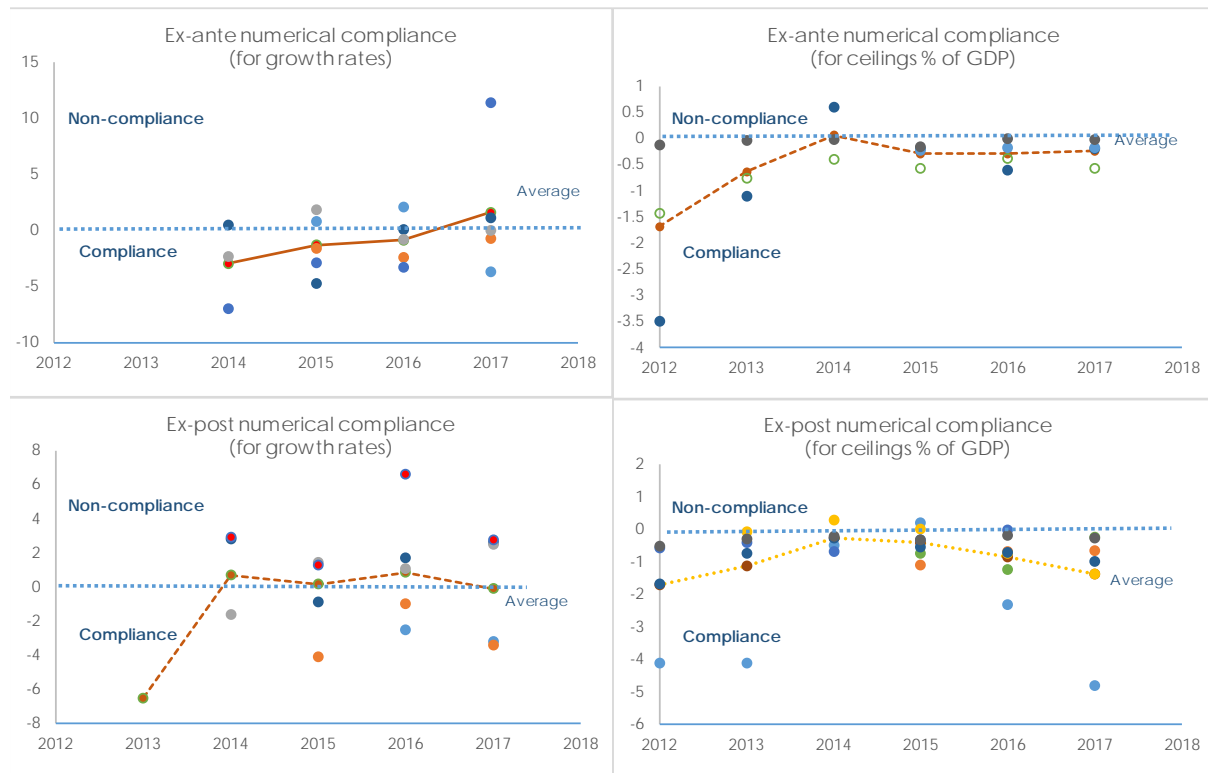
Source: Commission staff calculations from various sources.

Numerical non-compliance with expenditure rules is typically larger than the degree of non-compliance. With the exception of rules in Austria, Italy and Romania, numerical compliance (negative deviations) is larger than non-compliance (positive deviations) on average per rule over the sample period. This implies that when a rule is not complied with in a specific year, this non-compliance is more than compensated by an overshooting of the target in the other years. Tables 5.3 and 5.4 report information on the extent of compliance per rule at each given year. It distinguishes among rules complied with, those slightly non-complied with and those largely non-complied with. The latter two groupings include deviations below and above the median, respectively.[23] Ex-ante, rules were largely non-complied in Italy in 2015 and Romania in 2017; they were slightly non-complied in Austria for three years and in Denmark in 2017. In Bulgaria, at different points in time, the expenditure benchmark was either largely or slightly non-complied. Ex-post and at different points in time, rules were either largely or slightly non-complied with in Austria, Italy and Romania; the rule was largely non-complied with in 2015 in Spain and slightly non-complied in Bulgaria (ceiling) in 2015 and Latvia in 2014-2015.

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[23] The median has been calculated for both ex-ante and ex-post deviations. To make the two samples comparable, deviations of growth rates and deviations of ceilings have been standardised.

Table 5.3. **Degree of ex-ante compliance**

	2011	2012	2013	2014	2015	2016	2017
Largely non-complied				BG	IT	BG	RO
Slightly non-complied				AT	BG	AT	AT, DK
Complied with	DK, FI, SE	BG, FI, SE	BG, FI, SE	FI, IT, RO, SE	AT, BG, DK, FI, HR, RO, SE	BG, DK, FI, HR, IT, RO, SE	BG, BG, FI, HR, IT, SE

Source: Commission staff calculations from various sources.

Table 5.4. **Degree of ex-post compliance**

	2011	2012	2013	2014	2015	2016	2017
Largely non-complied				AT, RO	ES	RO	AT, IT, RO
Slightly non-complied				LV	BG, IT, LV, RO	AT, IT	
Complied with	DK, FI, LT, SE	BG, FI, NL, SE	BG, ES, FI, LV, NL, SE	BG, ES, FI, IT, NL, SE	AT, DK, FI, HR, NL, PL, SE	BG, BG, DK, ES, FI, HR, LV, NL, PL, SE	BG, BG, DK, ES, FI, HR, LV, PL, SE

Source: Commission staff calculations from various sources.

6. CONCLUSION

Expenditure rules are a key plank of the reinforced EU and national fiscal frameworks. While they are outnumbered by other types of numerical fiscal rules such as budget balance rules, national expenditures rules have a considerable influence on the direction of public finances, which motivates a closer scrutiny of their design, effectiveness and the extent to which they are complied with. The analysis presented in this paper brings out several key findings, which can feed the policy reflection on national numerical fiscal rules and their impact on public finances. In terms of design, the analysis looks at the 20 expenditure rules in place in 14 Member States, of which 14 rules cover general and central governments. Out of these 14 rules, about half mirror the EU expenditure benchmark, and four rules are multi-annual expenditure ceilings. Expenditure rules tend to be legally binding and subject to independent monitoring. Moreover, these rules are equipped with escape clauses only to a limited extent.

Expenditure rules are effective in mitigating procyclicality; the stronger the design the stronger is the mitigating impact. Being endowed with *inter alia* a strong legal base, independent monitoring or having well-specified consequences of compliance enhances the ability of the rules to mitigate more effectively the pro-cyclical bias and even fully eliminate it in certain circumstances. This finding re-confirms a long-standing assertion put forward by the empirical literature in support of expenditure rules. While the design of national expenditure rules has come a long way in recent years, there is certainly room for improvement, which varies by country and type of rule.

According to preliminary findings, the type of expenditure rule might matter for compliance as multiannual expenditure ceilings tend to be better complied with than rules specified as growth rates, both ex-ante and ex-post. Prima facie, this may be due to the fact that multiannual ceilings provide for a better operational target that is easier to implement and monitor. Indeed, information on implementation is relatively easier to find (from the ministries of finance and/or the national IFIs) for multiannual ceilings than for other types of rules. However, the analysis also suggests that multiannual ceilings may be easier to amend. While the legal base of the rule provides for the precise circumstances justifying a revision of the target, in practice it is not always clear whether the changes are fully in line with the legal provisions or not.

Further investigation is warranted to understand better the strengths and weaknesses of national expenditure rules and how compliance with them can be improved. Longer time series, especially with respect to the actual performance, would increase the robustness of the analysis. So would improved availability of information from national sources with respect to the performance of these rules. Among others, understanding how various expenditure rules have been performing, what properties seem to make them more effective and the way they interact with other rules can serve as a useful input into the ongoing reflection about the architecture of EU and national fiscal frameworks.

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ANNEX

Table Annex 1. **National expenditure rules in the EU in 2017**

Country	Coverage	Since	Description
AT	GG	2009	The respective increase in expenditure by the federal government, the provinces and the municipalities must be in line with the provisions of Regulation (EC) No 1466/97.
BE	SS	2016	Real growth of health care expenditure for federal government ought to be equal or lower than 1,5%.
BG	GG	2006	The annual expenditure growth shall not exceed the reference growth of potential GDP. The scope of expenditure and the methodology for calculating the reference growth shall be set according to the requirements of Council Regulation (EC) No 1466/97 on the strengthening of the surveillance of budgetary positions and the surveillance and coordination of economic policies.
BG	GG	2014	Expenditure under the consolidated fiscal programme shall not exceed 40% of GDP.
BG	LG	2014	The average growth rate of expenditure for local activities under municipal budgets for the forecasted medium-term period shall not exceed the average growth rate of the reported expenditure for local activities for the past four years.
DK	GG	2014	Nominal expenditure ceilings for three main areas (CG, RG, LG) of the budget set in accordance with the lower limit for the structural balance (as specified in the Danish Budget Law) and legally binding for 4 years on a rolling basis.
ES	GG	2011	The annual growth of the eligible expenditure cannot exceed the average medium-term growth rate of GDP (over a period of 10 years), in nominal terms.
FI	CG	1999	At the beginning of the parliamentary term, the Government decides on the parliamentary term spending limits, i.e. a ceiling for budget expenditure, as well as the rules governing the spending limits procedure for the entire four-year parliamentary term. Around 4/5 of CG budget appropriations are allocated in accordance with the spending limits, which are binding for the parliamentary term. The annual GG Fiscal Plan reviews the spending limits allocations for each administrative branch and updates the spending limits to correspond with changes in price and cost level as well as changes in the structure of spending limits expenditure.
HR	GG	2011	The annual growth rate of total GG expenditures (excluding expenditures on EU programmes fully matched by EU funds, interest expenditures and annual change of expenditures as a consequence of changes in the institutional scope of the general budget) cannot be higher than the annual growth rate of nominal GDP.

Country	Coverage	Since	Description
IT	GG	2014	Expenditure benchmark: the rule requires the growth rate of the reference expenditure aggregate to be equal or below the expenditure benchmark (reference rate as calculated in accordance with EU Law). The aggregate is the same as in the EU law.
IT	RG	2013	Expenditure ceilings for pharmaceutical products (including patient co-payments, so-called "tickets") expressed as a percentage of the financing level for the national health service contributed by the State.
LT	CG	2015	The growth of expenditures of the large budgets (i.e appropriations exceeding 3% of GDP) attributable to the GG can grow at up to ½ of the average multi-annual growth rate of potential GDP. When the average of GG net lending of the past five years is negative, the aggregate growth of the appropriations of these budgets (with the exception of net of EU financial support) cannot be higher than 1/2 of the average multi-annual growth rate of potential GDP at current prices.
LT	SS	2015	Where the arithmetic average of GG balance for the 5 five years is in deficit, the annual growth rate in percentage of the total expenditures of the State budget , Social Insurance Fund budget and Health insurance fund budget should not exceed one half of the average multiannual growth rate in percentage of potential GDP.
LT	SS	2015	The growth of expenditures of the large budgets attributable to the GG can grow at up to ½ of the average multi-annual growth rate of the potential GDP.
LV	GG	2014	Expenditure, excluding GDP deflator (inflation), shall not increase faster than growth of potential GDP.
NL	GG	2013	The multiannual expenditure ceilings are defined at the coalition agreement and prevent that income windfalls are used for extra expenditures. Any setbacks against the expenditure ceilings must be compensated within the sector. Windfalls cannot be used to finance new expenditures or are automatically used to lower the debt.
PL	GG	2016	The dynamics of the expenditure under the scope of the rule is limited to the medium-term real GDP growth multiplied by the inflation target, with the inclusion of the discretionary measures and the correction mechanism.
RO	GG	2014	The annual increase of public administration expenditures complies with the provisions of EC Council Regulations no. 1466/97, as subsequently amended and supplemented.
SE	CG	1996	All expenditure in the central government budget is subject to the expenditure ceiling, apart from expenditure for interest on the central government debt. Moreover, off-budget expenditure in the old-age pensions system is also covered by the expenditure ceiling.
SE	SS	1996	All expenditure in the central government budget is subject to the expenditure ceiling, apart from expenditure for interest on the central government debt. Moreover, off-budget expenditure in the old-age pensions system is also covered by the expenditure ceiling.

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