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Catania, Moira; Baimbridge, Mark J.; Litsios, Ioannis

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Legislative budgetary power and fiscal discipline in the Euro Area

Dr Moira Catania, Institute for European Studies, University of Malta, Msida, Malta

Dr Ioannis Litsios, Plymouth Business School, University of Plymouth, Cookworthy Building, Plymouth, PL4 8AA

Dr Mark Baimbridge, School of Management, Faculty of Management, Law & Social Sciences, University of Bradford, Bradford, BD7 1DP

Abstract

Purpose – The objective of this study is to understand the budgetary role of national legislatures in Euro Area (EA) countries and to analyse implications for fiscal discipline.

Design/methodology/approach – Building on the budget institutions literature, a legislative budgetary power index for all the 19 EA countries is constructed using OECD and European Commission data as well as data generated from questionnaires to national authorities. A two-way fixed effects panel data model is then used to assess the effect of legislative budgetary power on the budget balance in the EA during 2006-15.

Findings - Overall, in the EA, formal legislative powers vis-à-vis the national budgetary process are weak but there is more legislative involvement in SGP procedures and legislative budgetary organisational capacity is generally quite good. In contrast to the traditional view in the budget institutions literature, our empirical findings show that strong legislative budgetary power does not necessarily result in larger budget deficits.

Research limitations/implications – Data on legislative budgeting was available from different sources and timeseries data was very limited.

Practical implications – There is scope to improve democratic legitimacy of the national budgetary process in the EA, without necessarily jeopardising fiscal discipline.

Originality/value – The constructed legislative budgetary power index covers all the 19 EA countries and has a broad scope covering various novel institutional characteristics. The empirical analysis contributes to the scarce literature on the impact of legislative budgeting on fiscal discipline.

1. Introduction

The legislature, as the representative body of citizens, has a key role to ensure that budgetary decisions are democratically legitimate. In the Euro Area (EA), democratic accountability of budgetary policy is more challenging and complex. The supra-national fiscal framework – the Stability and Growth Pact (SGP) – implies that the European Union (EU) institutions prescribe the national budgetary policy, but voters can only sanction their national governments. At the same time, the European Parliament does not have any effective power in the implementation of the SGP and national budgetary matters (Crum, 2018). Thus, democratic legitimacy for budgetary decisions remains within national parliaments. However, their role and relevance in the budgetary process has become increasingly more limited with the tighter constraints and increased surveillance by EU institutions implemented in response to the EA sovereign debt crises[1]. Indeed, the need to strengthen democratic accountability and legitimacy of the EU's economic governance through more involvement of national parliaments has been highlighted in the European Commission's (2014) review of the implementation of the 'Six-Pack' and the 'Two-Pack' as well as in its communication on completing EMU (European Commission, 2017a).

Meanwhile, strong legislative budgetary power, especially powers to amend the draft budget presented by the executive, is associated with large budget deficits (von Hagen, 2002). Through higher spending, legislators can favour their constituency and increase their chances of re-election. But its costs are borne by the general public if it is financed through higher taxation or on future generations if it is deficit-financed. Indeed, Alesina and Perotti (1996, p.7) explicitly refer to a "trade-off" between fiscal discipline and democratic accountability of the budget process. However, the effect of legislative budgetary power is complex as legislators can also face political consequences, for example if the budget is not approved in time. Additionally, the involvement of the legislature in other aspects of the budgetary process, for example to approve medium-term budgetary plans, can improve their credibility and ownership, thus possibly contributing to more fiscal discipline.

This paper aims to improve the understanding of the budgetary role of national legislatures in EA countries and to examine implications for fiscal discipline. Specifically, it seeks to address the following two research questions: what is the budgetary power of national legislatures in the EA?; and what is the impact of legislative budgetary power on fiscal discipline in the EA?

Since the 1990s, various studies have measured the overall quality of budget institutions by using composite numerical indices which capture various institutional aspects governing the budgetary process. These indices generally include medium-term budgetary frameworks (MTBFs), fiscal rules, budgetary procedural rules as well as budget transparency. von Hagen (1992) and Hallerberg *et al.* (2007, 2009), amongst others, have applied these indices to EU countries. But these indices have a broader scope than legislative budgeting and only measure some elements of the legislature's role in the budgetary process, mostly focusing on the budget approval stage. On the other hand, few studies have produced comprehensive measures of legislative budgetary power, namely Lienert (2005), Wehner (2006, 2010) and Ríos *et al.* (2018). However, these indices do not include all the EA countries whilst at the same time they include also other countries which are more diverse. This contribution adds to the scarce literature on legislative budgeting by producing a comprehensive legislative budgetary power index for all the 19 EA member states, which provides more analytical relevance since these countries are subject to a common supra-national fiscal governance framework. This index captures the role of the legislature throughout the preparation, approval and implementation stages of the budgetary process, as well as its involvement in the implementation of the SGP. Novel features of the index include the legislature's involvement in fiscal rules and its relationship with independent fiscal councils, which, following the reforms implemented in response to the sovereign debt crises, now constitute a prominent feature of budget institutions in EA countries. The index also uses unique data on various aspects of legislative budgetary power generated through questionnaires to national authorities.

The positive relationship between the quality of budget institutions and the fiscal balance is well established in the literature. Studies covering EU countries include for instance Hallerberg *et al.* (2007, 2009) and De Haan *et al.* (2013). However, since the explanatory variable is a measure of the overall quality of budget institutions, it is not possible to draw conclusions on the impact of legislative budgeting from these studies. On the other hand, very few studies test empirically the effect of legislative budgetary power on the fiscal balance. These mainly comprise Wehner (2010) and Ríos *et al.* (2018), with the former focusing only on the effects of amendment powers. Furthermore, these studies comprise large and diverse samples which include the United States, where Congress' decisive influence over the budget is probably unique (Wehner 2010) and may distort the analysis. This paper makes an important contribution to the understudied topic of the impact of legislative budgeting on fiscal outcomes in the EA, by using the constructed index as an explanatory variable and analysing its effect on the budget balance during 2006-2015.

In terms of policy implications, this contribution can inform reforms to budget institutions, by identifying specific areas where there is scope to improve the role of the legislature in the budgetary process and by highlighting those aspects of legislative budgeting which do not impact negatively on the fiscal balance. Thus, democratic accountability in the budgetary process can be strengthened without jeopardising fiscal discipline.

This paper is structured as follows. Section 2 provides a review of the literature on legislative budgeting. In Section 3, the methodology used to construct and compile the legislative budgetary power is described. The empirical model used and the estimation methods applied to assess the effect of legislative budgetary power on the budget balance are discussed in Section 4. The results for the legislative budgetary power index and of the empirical analysis are presented and discussed in Sections 5 and 6, respectively. Finally, Section 7 includes conclusions and policy implications derived from the findings.

2. Literature Review: legislative budgeting and fiscal discipline

The vast and established literature on budget institutions covers, to some extent, the role of the legislature in the budgetary process, but this has a broader scope and only captures particular aspects of legislative budgeting. On the other hand, there are only a few studies focusing on legislative budgeting, which analyse it in a more comprehensive manner.

2.1 Measuring legislative budgeting

Since the 1990s, various studies have produced composite numerical indices to measure the quality of budget institutions, which comprise "all the rules and regulations according to which budgets are drafted, approved and implemented" (Alesina and Perotti, 1996, p.401). Among the more prominent studies which capture some aspects of legislative budgeting and cover EU countries, one finds the seminal contribution by von Hagen (1992) for the twelve countries that were members of the European Economic Community at the time; Hallerberg *et al.* (2007, 2009) for the 15 countries that were members of the EU before 2004 and Gleich (2003), Yläoutinen (2004), Fabrizio and Mody (2006), Hallerberg *et al.* (2009) for central and eastern European countries that joined the EU since 2004.

These quality of budget institutions indices capture legislative budgeting mainly through its formal powers during the budget approval stage, by considering characteristics such as whether any restrictions apply to legislative amendments to the executive's draft budget, whether an amendment can cause the fall of the government, the reversionary budget that enters into force if a new budget is not approved on time, and whether government can call a vote of confidence when the vote of the budget takes place. Most of these indices also include whether parliament's approval is required for budget changes during the implementation stage, whilst the indices by von Hagen (1992) and Yläoutinen (2004) also take into account other aspects of the legislature's role in monitoring budget performance. In contrast, the involvement of the legislature during the budget formulation stage is hardly captured by these indices. Moreover, legislative budgetary organisational capacity is included in some of the quality of budget institutions indices, but only in a limited manner: von Hagen (1992) and Yläoutinen (2004) include the time available for budget scrutiny whilst Hallerberg *et al.* (2009) capture the comprehensiveness of the budget document presented to the legislature.

More recently, in an index which focuses on budgetary analytical capacity in the 15 EA countries that are members of the OECD, Kasperskaya and Xifré (2020) measure legislative budgetary organisation capacity more broadly, by including comprehensiveness of information available to the legislature, whether the legislature can rely on a specialised budget research office to undertake budget analyses and time for budget scrutiny. However, this index does not include elements of formal legislative budgetary power.

Finally, the European Commission (2020) produces indices focusing on medium-term budgetary frameworks (MTBF) and fiscal rules for all the EU member states, which capture a limited aspect of legislative budgeting. In particular, these indices capture characteristics such as parliament's role vis-à-vis these numerical budgetary constraints, such as whether the MTBF is presented in parliament and whether there is a vote; and whether parliament is involved in monitoring respect of the MTBF in the annual budget and in monitoring compliance with the fiscal rule.

There are very few available measures dedicated exclusively to the measurement of legislative budgetary power, which Wehner (2006, p.768) defines as: "the power to scrutinise and influence budget policy and to ensure its implementation". Lienert (2005) and Wehner (2006, 2010) use survey-based data from the OECD/World Bank to produce legislative budgetary power indices, which cover around 30 countries. On the other hand, Ríos *et al.*'s (2018) legislative budgetary oversight index, uses data from the Open Budget Survey by the International Budget Partnership and covers a larger and more diverse sample of 75 countries. However, this index focuses more on aspects concerning budget transparency. All these indices include legislative amendment powers, some measure of legislative control during budget implementation and some aspects of the legislature's budgetary organisational capacity. Lienert's (2005) and Ríos *et al.*'s (2018) indices also include some elements relating to the legislature's role during budget preparation. However, Wehner's (2006, 2010) index has the broadest scope and also distinguishes between the legislature's formal budgetary power and its organisational capacity[2]. Moreover, by adopting a multiplicative approach to aggregate formal powers and organisational capacity, Wehner (2006, 2010) assumes that a certain degree of both is required for the legislature to influence the budget process. On the other hand, the other indices involve a linear aggregation method, thus assuming substitutability between all institutional characteristics. For example, strong amendment powers can compensate for a lack of technical support to the legislature from a specialised budget research office. A more recent index by Stapenhurst *et al.* (2019) focuses on ex-post parliamentary budgetary oversight, i.e. legislative budgetary scrutiny during budget implementation, and covers 60 countries, using Inter-Parliamentary Union Parline database between 2015 and 2016.

These studies have found considerable variation in the degree of legislative budgetary power among the countries included in their respective samples, which has been mainly attributed to whether a country has a presidential or parliamentary system and to other political factors, namely minority governments and party discipline. It is relevant to point out that these indices measure legislative influence over the budget through its institutional characteristics, rather than through direct measures of policy influence, such as the actual amendments made by the legislature to the executive's budget proposal and their magnitude. However, data constraints limit the possibility of measuring this. Furthermore, other legislative influences over the budget, for example using informal contacts with the executive and anticipatory behaviour by the executive during budget formulation, are very difficult to quantify.

2.2 The impact of legislative budgetary power on fiscal outcomes

Legislators, like spending ministers, face the fiscal commons problem: they enjoy the full benefits of higher public spending, in terms of constituency support and electoral success, but they do not take full account of its financing cost, since the burden of increased taxation falls on the general public (Weingast *et al.* 1981). Additionally, if the higher public spending is financed through borrowing, the cost of debt falls on future generations, which creates an incentive for deficit-financed spending (Velasco, 2000). The incentive for deficit-financed spending is exacerbated during electoral periods (Alesina and Perotti, 1996), as legislators become more concerned with their electoral chances and discount more the future tax burden of financing higher current spending. Since the common pool problem intensifies as the number of decision makers increases, the fiscal commons problem is accentuated in the legislature, as the number of members in a legislature is higher than the number of spending ministers in cabinet whilst legislatures also contain more political parties than the executive (von Hagen, 2002). Thus, strong legislative budgetary power, such as unrestricted amendment powers, is expected to result in higher public spending and larger budget deficits.

However, legislators may also face political consequences from proposing amendments to, or rejecting the executive's budget proposal, such as when, in parliamentary systems, this is considered as a vote of no confidence in the government (Wehner, 2006). Moreover, some characteristics of legislative budgeting can possibly contribute to more fiscal discipline. For example, legislative approval of the MTBF (Lienert, 2010) as well as its involvement in monitoring compliance with the medium-term budgetary targets and with the fiscal rules can improve its ownership and commitment to these numerical budgetary constraints. Another example involves stronger legislative power during budget implementation: a more binding budget law can prevent expenditure slippages over and above the appropriated amounts (Lienert, 2010). Thus, the relationship between legislative budgetary power and fiscal discipline is complex and can vary across different institutional characteristics.

The positive relationship between the overall quality of budget institutions and fiscal discipline is well established in the literature. Empirical studies covering EA countries include, amongst others, Hallerberg *et al.* (2007, 2009) and De Haan *et al.* (2013). However, few studies attempt to disentangle the effect of legislative budgeting, from other institutional characteristics. In small sample studies comprising ten central and eastern European countries during 1994-2004, Gleich (2003) and Fabrizio and Mody (2006) assess the effect of legislative budgetary amendment powers by using a component of their quality of budget institutions indices: they find that strong legislative budgetary amendment powers conflict with fiscal discipline. In contrast, using a more comprehensive measure for the role of the legislature during the budget approval process, Yläoutinen (2004) does not find comparable results for a similar sample of countries.

Meanwhile, using a more comprehensive measure of legislative budgetary power in a cross-sectional analysis of 28 OECD countries during 2001-05, Wehner (2010) finds that an increase in legislative budgetary power results in higher levels of public spending. When testing for the separate effect of the different aspects of legislative budgeting, the amendment powers sub-index was found to have a significant effect. The relevance of amendment powers was confirmed when this constituted the only institutional explanatory variable in a cross-sectional analysis for a larger and more diverse sample of 80 countries during 1990-98.

Giurato *et al.* (2016) use Wehner's (2010) index to assess the impact of legislative budgetary power on forecast errors in the budget balance for 13 EU countries during 1999-2013. Using a panel data model, with fixed (time) effects, they find that stronger legislative budgetary powers negatively influence the fiscal forecast accuracy, which they attribute to executive strategic behaviour, whereby it presents more favourable economic and fiscal forecasts when anticipating legislative amendments or possibly even the rejection of the proposed budget.

Finally, Ríos *et al.* (2018) use their legislative budgetary oversight indicator to assess simultaneously its impact on the budget balance and on budget transparency. Using cross-sectional analysis covering 75 countries for 2009, they find a negative and significant relationship with the budget balance, but a positive effect on budget transparency.

3. A legislative budgetary power index for the EA countries

The legislative budgetary power index presented in this paper expands on the index developed by Wehner (2006, 2010). It similarly distinguishes between formal powers and organisational capacity. However, the constructed index has a broader scope as it measures legislative budgetary power in a detailed manner throughout the budget formulation, approval and implementation stages. Furthermore, it also captures the legislature's involvement in the implementation of the SGP procedures, as well as its involvement in fiscal rules and its relationship with the fiscal council, which all constitute novel features in the literature on legislative budgeting.

The index consists of two main components: formal legislative budgetary power, which in turn comprises the involvement of the legislature in the national budgetary process and in SGP procedures; and legislative budgetary organisational capacity. Formal legislative power in the national budgetary process is measured through six sub-indices, comprising 24 variables, whilst legislative involvement in SGP procedures involves three sub-indices with 19 variables. Finally, the legislative budgetary organisational capacity component consists of five sub-indices comprising 16 variables. A detailed description of these variables is provided in Table I in the Appendix.

For formal powers vis-à-vis the national budgetary process, the first legislative role considered concerns the budget preparation stage through legislative involvement in the MTBF and fiscal rules. This includes whether parliament approves the MTBF and its role in monitoring and enforcing compliance of the numerical budget constraints. Such characteristics can possibly contribute towards more fiscal discipline through wider ownership and improved credibility of the numerical budgetary constraints (Lienert, 2010).

Formal legislative budget amendment powers constitute the most prominent role for legislative budgeting. However, such powers can be constrained by restrictions, such as a deficit or spending constraint (Wehner, 2006). They can also be weakened if rejecting the draft budget is considered as a vote of no-confidence in the government (von Hagen, 1992) and also if the executive has veto powers. The reversionary budget can also diminish legislative budgetary power, particularly if there is reversion to the executive's draft budget if the budget is not approved (Wehner, 2006).

During budget implementation, executive flexibility to cut or cancel, re-allocate or increase spending can further undermine legislative amendment powers. On the other hand, a more binding budget law can prevent expenditure slippages during budget implementation, thereby contributing to more fiscal discipline (von Hagen, 1992). Similarly, required legislative authorisation for off-budget expenditures and contingent liabilities not only imply more comprehensive legislative control over the budget but also contributes towards more budget transparency, thus providing another example of how legislative budgetary power can result in more fiscal restraint.

Strong legislative involvement in SGP procedures can also contribute to more fiscal discipline, through more national ownership and commitment to the relevant budgetary constraints. The legislature's role in the implementation of the SGP is measured by considering the following procedures: the Stability Programme (SP), which comprises medium-term budgetary targets; the Excessive Deficit Procedure (EDP), which sets binding ceilings on the budget balance and government debt; and the Draft Budgetary Plan (DBP), which constitutes the more recently added direct scrutiny by the European Commission before the budget is approved by the national parliament. Drawing on Hallerberg *et al.* (2011), who examine more broadly legislative involvement in the European Semester[3] in six EU countries, the index measures legislative involvement in the SGP through whether the relevant national and EU documents are presented to and/or discussed in the legislature. Legislative influence is considered to be stronger if it is involved before a document is sent to the EU institutions and before a relevant Council meeting. Similarly, due to its specialised expertise, involvement at a budget committee level is expected to result in more effective engagement of the legislature in the implementation of the SGP.

Despite extensive formal powers, the legislature's influence over the budget may be hindered by weaknesses in its budgetary organisational capacity. A key requirement is having sufficient time to scrutinise the budget. Moreover, a specialised budget committee contributes to legislative budgetary power through the development of specialised expertise and through its centralised structure can result in a more comprehensive view of the budget (Wehner, 2006). In addition, comprehensive budget documentation and access to budgetary information (von Hagen, 1992) as well as the establishment of an independent and non-partisan fiscal analysis capacity within the legislature can reduce the information asymmetry between the legislature and the executive (Lienert, 2010). Finally, as shown by case studies involving five EU countries, fiscal councils can also provide the legislature with another source of budgetary information, independent from the executive (Fasone and Griglio, 2013), thus strengthening its ability to undertake scrutiny and oversight of the budget. Parliament can also become more aware of fiscal sustainability issues through interaction with the IFI, for example by having parliament auditioning the fiscal council during the budgetary process and by summoning the leadership of the IFI to respond to legislative questions.

3.1 Data sources and methodology used to construct the index

The legislative budgetary power index was compiled using data from the OECD's (2012) budgeting practices and procedures database and the European Commission's (2016a, 2016b) fiscal governance databases as well as a minor input from the International Monetary Fund's (IMF) (2015) fiscal councils dataset (Table I in the Appendix). Most of this data was available online but other data, providing unique, detailed information on the budgetary process in EA countries, from the European Commission's fiscal governance databases was obtained in May 2016 following requests to the relevant officials in the Directorate-General for Economic and Financial Affairs. In addition, data for various components of the index was generated through a questionnaire directed to the national authorities of each EA member state. For the non-OECD EA countries (Cyprus, Lithuania, Latvia and Malta), the questionnaire was also used to generate matching data to that available for the OECD countries from the OECD budgeting practices and procedures database. The participants mainly included officials from budget offices and finance ministries, from fiscal councils, parliamentary budget offices and parliamentary budget or finance committees. Other data sources, namely finance ministries, parliamentary and fiscal councils websites, legal texts and official documents, were also used to fill some gaps in the datasets and also, where possible to corroborate the data.

The data was compiled during May-December 2016, with the cut-off date being 31 December 2016. The OECD data refers to 2012, that from the European Commission and the IMF refer to 2014 whilst the data generated through questionnaires refers to 2016. Thus, this data captures the new EA fiscal governance framework introduced between 2010 and 2013.

The scoring scheme applied to the different characteristics of legislative budgeting has a range from zero to ten, with ten indicating the strongest legislative budgetary power and zero the weakest. The maximum score of ten is equally distributed over the range of possible responses for each variable. With few exceptions, equal weights are generally assigned to the different components (Table I in the Appendix). This has the advantage of simplicity and reflects the fact that there is no theoretical or empirical basis for assigning more importance to particular institutional characteristics. The sensitivity of the results to alternative weighting schemes was tested using Spearman rank correlations.

To aggregate the different components into a single index score, a blended additive and multiplicative approach, as in Wehner's (2006, 2010) index is used. Formal legislative budgetary powers and organisational capacity are aggregated using a multiplicative approach, thus assuming that a certain degree of both is required for legislative influence over the budget. On the other hand, as established in the budget institutions literature, substitutability is assumed between different institutional characteristics: thus for the different sub-indices for formal powers and organisational capacity.

4. Empirical model – legislative budgetary power and fiscal discipline in the EA

The empirical analysis involves a panel data model for the EA countries during 2006-2015. In order to introduce some time-variation in the legislative budgetary power explanatory variable, another index was constructed, mostly referring to 2007, thus before the sovereign debt crises in the EA. However, this index has a narrower scope since it was compiled using only secondary data from the OECD 2007 budgetary practices and procedures database and from the European Commission (2016a, 2016b) fiscal governance databases. Thus, whilst the composition of formal legislative power vis-à-vis the national budgetary process is similar, data for the involvement of the legislature in the SGP was not available and the legislative budget organisational capacity does not include the relationship of the legislature with the independent fiscal council[4]. This index also has more limited geographical coverage since data for Cyprus, Estonia, Latvia, Lithuania and Malta is not available from the OECD 2007 survey. Whilst these factors and other differences in the OECD and European Commission databases imply that the two indices are not directly comparable[5], there is sufficient similarity between the two and their use allows two data readings for legislative budgetary power for most EA countries, one applied from 2006 to 2011 and the other from 2012 to 2015[6].

The panel data model takes the following general form:

$$\text{FISCAL}_{it} = \beta_0 + \beta_1\text{ECON}_{it} + \beta_2\text{POL}_{it} + \beta_3\text{PRESSURE}_{it} + \beta_4\text{INDEX}_{it} + \mu_i + \nu_t + \varepsilon_{it}$$

The dependent variable is the general government budget balance as a ratio to the Gross Domestic Product (GDP) and the explanatory variable of interest is the legislative budgetary power index. Following the literature on the fiscal impact of budget institutions, the model also includes economic and political control variables. A description of these variables together with their relevant data sources is presented in Table II in the Appendix.

As in various empirical models which assess the impact of budget institutions on the fiscal balance, for example Yläoutinen (2004) and Hallerberg and Yläoutinen (2010), real GDP growth and the unemployment rate capture the effects of economic fluctuations on the fiscal balance. Economic growth improves the fiscal balance through automatic stabilisers, whilst a high unemployment rate results in a worsening of the fiscal position. The first political control variable captures the effect of the electoral cycle: the fiscal balance is expected to deteriorate in the year when elections take place as the incumbent uses the budget to increase the likelihood of re-election (Mink and De Haan, 2006; Efthyvoulou, 2012). Secondly, reflecting the common pool resource problem, government fragmentation, as found in coalition governments comprising different political parties, is also expected to affect negatively the fiscal balance as bargaining on the budget within cabinet is more difficult and less centralised (von Hagen, 2002). The third political control variable refers to government's margin of majority in parliament, which is expected to have a positive effect on the budget balance. Firstly, a stronger parliamentary majority strengthens the executive's power vis-à-vis the legislature, so that it is less likely to give in to amendments involving higher spending. Furthermore, in the case of a coalition government, a stronger parliamentary majority also weakens the influence of any member of the coalition which facilitates control over spending demands by coalition partners (Volkerink and De Haan, 2001). The last political control variable concerns government's ideological orientation to test for the traditional partisan view that left-wing governments are associated more with larger budget deficits than right-wing governments. Debrun and Kumar (2007) and Nerlich and Reuter (2013), amongst others, similarly include an ideological variable in their empirical models testing for the effect of budget institutions on the fiscal balance. In addition, as in Hallerberg *et al.* (2007, 2009), the model also includes the lagged government debt ratio, which provides a proxy for the long-term fiscal sustainability to which the budget balance reacts. Finally, the last control variable involves a dummy variable to indicate whether a country was subject to a financial assistance programme. Both imply more pressure for governments to implement fiscal consolidation and are thus expected to result in an improved budget balance.

We estimate the model using two-way fixed effects with country and time dummies[7]. The time dummies can account for common shocks to all countries in a given year, although cross-sectional correlations are constrained to be the same for all units (Hoechle, 2007). On the other hand, the country fixed effects capture time-invariant social, political and other country-specific determinants of the budget balance. To test for the robustness of the results, we also estimate the model using alternative methods and also use different fiscal indicators for the dependent variable.

Finally, whilst the use of a composite index as an explanatory variable has the advantage of combining different indicators into a single measure, it may mask offsetting elements. This is particularly relevant for legislative budgetary power where the effect on fiscal discipline may vary across different institutional characteristics. Thus, the analysis is extended through a more disaggregated approach where the overall legislative budgetary power index is replaced with its different sub-indices.

5. Results for the legislative budgetary power index

The score results for the legislative budgetary power index and its sub-indices are presented in Table I and Figure 1. In Table I, the 19 EA countries are grouped into three categories: top, medium and low score categories, referring to the top, second and third, and bottom quartiles, respectively. The results were tested for robustness by using alternative weighting structures, namely that using expert opinion in Kim's (2015) index and another option using different weights for the legislative involvement in the national budgetary process and in the implementation of the SGP. The sensitivity of the results was also tested by using an alternative linear additive approach to aggregate the formal legislative budgetary power and organisational capacity components. In all cases, the Spearman rank correlation coefficient is 0.9 or higher and significant[8].

[insert Table I around here]   [insert Figure 1 around here]

The results for the legislative budgetary power index were also compared to those in previous studies where country scores are available, namely Lienert (2005), Wehner (2010) and Kim (2015), by adjusting the samples to have the same geographical coverage. However, the Spearman rank correlation coefficients are low (0.3 or less) and not significant. This probably reflects the limited comparability with the indices as the constructed index has a much broader scope and also the different time periods covered by the indices.

Our results show that the median EA score for the legislative budgetary power index is at just below 3. The scores range from a high of 4.2 to a low of 0.6. The only two countries with presidential systems (Lithuania and Cyprus) fall within the top and medium score categories, respectively. On the other hand, the country with the lowest score (Malta) is the only member state which had a single-party majority government throughout the period under review. However, the index scores for other countries which had a single-party majority government for part of the period under review differed considerably – for instance France had the highest score, Spain, Greece and Portugal had medium scores and Slovakia had a low score. Thus, it is difficult to draw conclusions on how the political and government systems affect legislative budgetary power from the small sample of EA countries.

The findings show that legislative budgetary power is particularly weak for formal powers in the national budgetary process (median value of 2.9). On the other hand, overall legislative involvement in SGP procedures is rather strong whilst legislatures have a fair degree of budgetary organisational capacity (median values of 7.3 and 5.9, respectively). Organisational capacity is quite malleable and can be reformed more easily than formal powers, which tend to be enshrined in a country's legislation or even its constitution (Wehner, 2010). Indeed, the findings indicate that some legislatures may be countering their limited formal powers through strong organisational capacity, for example France and Finland in the top score index category and Spain and Italy in the medium score category.

At a sub-index level, as shown in Figure 1, legislative budgetary power is particularly lacking during the budget formulation stage. This contrasts with the OECD's (2015, p.8) Recommendation on Budgetary Governance which calls for parliamentary engagement in the budget process also ex-ante. The results show that there is legislative involvement in monitoring respect of the MTBF targets in the annual budget in only two member states (Netherlands and Portugal) and the legislature monitors compliance with the fiscal rule only in Portugal. In addition, although the MTBF is discussed in parliament in 16 member states, there is a vote in only nine of them. As highlighted by Lienert (2010), legislative endorsement of the medium-term budgetary targets can improve their credibility and ownership.

On the other hand, during the budget approval stage, EA countries have strong formal amendment powers. All but two member states (Greece and Ireland)[9] have the power to amend the executive's budget proposal and such powers are unrestricted in nine countries. Nevertheless, such formal legislative power can be mitigated in practice, particularly in the 12 member states (including six with unrestricted amendment powers), where a vote on the budget is considered as a vote of confidence in the government. Furthermore, in Finland and Latvia, the reversionary budget further weakens their unrestricted amendment powers, because if the budget is not approved in time, the executive budget's proposal takes effect.

During the implementation stage of the budgetary process, in the EA, the executive generally has strong power to re-allocate spending among different budget items and also to cut or cancel expenditures. Moreover, for spending increases, the requirement of ex-ante legislative approval is only found in five member states[10]. Such executive flexibility to depart from the approved budget further dilutes legislative budgetary power.

As regards involvement in SGP procedures, there is generally a good degree of engagement of the parliamentary budget or finance committee, with all or most of the documents considered discussed regularly. On the other hand, whilst the Stability Programme is presented and discussed in parliament in 14 member states, there is a vote in only two countries (Italy and France). Finally, there is considerable scope to improve the timeliness of legislative discussions on the opinions, recommendations or decisions by EU institutions on the different SGP procedures, since such discussion takes place before the relevant Council meeting in only four countries, thus limiting the scope for legislative influence.

Budget committees also constitute a strong feature of legislative budgetary organisational capacity in most EA countries: in 13 countries, this committee co-ordinates the whole budgetary process. Members of budget/finance committees generally have long tenures (of four years or more or equal to the electoral term), which facilitates the development of expertise in the committees. Strong parliamentary budget committees not only facilitate legislative budgetary influence, but at the same time, through their centralised structure, can possibly have a role akin to a strong finance minister, thus contributing to more fiscal discipline.

Lack of budgetary information can constitute a disadvantage for the legislature vis-à-vis the executive. Our findings show that this does not constitute a particular challenge in the EA as legislatures generally have good access to budgetary information. In particular, in the annual budget documentation presented to the legislature, new revenue-raising measures are always distinguished in 14 EA countries; and the legislature is informed automatically on the implementation of the budget and explanations of deviations from the budget are provided in 17 countries. Most EA countries also perform well in terms of financial information included in the budget documentation and the public availability of budgetary information and methodologies applied. Our results also show that legislatures in the EA generally have adequate time available for budget scrutiny with eleven countries allowing two months, which corresponds to the minimum suggested by Lienert (2010), whilst four countries allow more time, with a maximum of four months.

On the other hand, specialised budget research offices are not a common institutional feature in the EA, being found in only eight countries and these tend to be rather small, with half of them having less than ten staff. However, our findings suggest that fiscal councils have become an alternative source of budgetary expertise for legislatures in EA countries. In fact, despite being a recent institutional development, in 16 member states, reports by the fiscal council are submitted to the legislature and these generally constitute an important input in legislative budget debates. Furthermore, in 14 countries, the legislature and/or its budget or finance committee summons the fiscal council's leadership at least once a year.

6. Results of the regression analysis

The results of the two-way fixed effects panel data model with the legislative budgetary power index as the main explanatory variable of interest are shown in Table II (column 1).

[insert Table II around here]

As expected, stronger real GDP growth is associated with an improved fiscal balance, whilst the unemployment rate exerts a negative effect. However, only the unemployment rate has a significant influence. Turning to the political determinants of the budget balance, the results do not provide any evidence of an electoral budget cycle. This contrasts with previous findings by von Hagen (2003) and Buti and van der Noord (2004) for the EU15 and by Mink and De Haan (2006) for the EA countries, for the few years around and after the launch of the monetary union; as well as by Efthyvoulou (2012) for the EU27 countries during 1997-2008. The divergent findings could reflect the different period covered in the analysis, with electoral manoeuvring possibly being more difficult to implement during and in the aftermath of the economic and financial crisis. We also find that the other political variables do not exert a significant effect on the fiscal balance. The coefficient of the bailout dummy is also not significant.

On the other hand, the lagged government debt ratio has a significant positive effect on the budget balance. Debrun and Kumar (2007) and Nerlich and Reuter (2013) find similar results for the lagged debt variable for their samples of EU countries during 1990-2004 and 1990-2012, respectively. Moreover, as in this study, they also do not find significant budgetary influence from political variables.

Turning to the legislative budgetary power index, its coefficient is positive, which does not support the general view of a conflict between more democratic budgetary procedures and fiscal discipline. However, it is not statistically significant. When testing for robustness of the results by using alternative measures of the budget balance, the results were generally confirmed with a positive but insignificant relationship. In addition, the coefficient of the legislative budgetary power index remains generally positive when using alternative estimation methods and with some methods, it is also statistically significant[11].

This finding contrasts with the results in Ríos *et al.* (2018), whereas in Wehner (2010) and Giuriato *et al.* (2016) stronger legislative budgetary power is also associated with higher public spending levels and less fiscal forecast accuracy. Whilst the specification of the empirical model and the timeframe covered by the analysis differ, the divergent results can be attributed to the more comprehensive measure of legislative budgetary power, which also includes institutional characteristics that can contribute to fiscal discipline.

Finally, the analysis is extended with a more disaggregated approach where the legislative budgetary power index is replaced by individual sub-indices[12]. Given the sample size, the different sub-indices are included separately in the model (Table II - columns 2 to 9). The results for the control variables are broadly similar to those of the main empirical model. Meanwhile, most of the coefficients of the legislative budgeting sub-indices are insignificant. In particular, in contrast with the traditional strong view in the literature on budget institutions of a trade-off between strong legislative amendment powers and fiscal discipline, the coefficient of the variable which specifically captures restrictions on legislative budget amendment powers, albeit being negative, is not statistically significant (column 5 in Table II). On the other hand, there is a positive influence on the budget balance from legislative involvement in the MTBF, which is significant at the 10% level. A strong role for the legislature in the MTBF can improve its credibility, through more respect of the medium-term budgetary targets. Legislative budgetary power through the reversionary budget (for instance, through government shutdown or limited access to budgetary funds) is also found to contribute significantly to fiscal discipline. This could be due to strategic anticipatory behaviour by the executive to make sure that the proposed budget is accepted. However, this merits further study. Finally, legislative budgetary organisational capacity also exerts a significant positive effect on the fiscal balance (albeit only at the 10% level). However, this impact cannot be attributed to a particular institutional feature since at a sub-index level, although all the coefficients of the respective organisational sub-indices are positive, none is significant[13].

7. Policy implications and conclusions

This paper presents a new comprehensive legislative budgetary index for all the 19 EA member states, covering the formulation, approval and implementation stages of the budgetary process. It comprises formal legislative budgetary power, both vis-à-vis the national budgetary process and the implementation of SGP procedures, as well as budgetary organisational capacity. This index is used in a two-way fixed effects panel empirical model for the EA countries during 2006-2015 to assess the effect of legislative budgetary power on the budget balance.

The index score results show that overall, legislatures in EA countries have relatively weak budgetary power, especially for formal legislative power vis-à-vis the national budgetary process. On the other hand, countries fare better as regards legislative involvement in the implementation of SGP procedures and organisational budgetary capacity is also generally quite good. Furthermore, the results from the empirical model show that strong legislative budgetary power does not necessarily result in worse fiscal balances. This corroborates with the findings from Wehner's (2001) case study on the German parliament during 1998-2001, where strong parliamentary budgetary influence, as reflected in the numerous amendments to the executive's draft budget, either maintained or even improved the budget balance through expenditure cuts. Thus, democratic accountability in the budgetary process can be improved without jeopardising fiscal discipline.

In particular, our findings show that there is considerable scope for a stronger legislative role vis-à-vis the national MTBF and national fiscal rules. These numerical budgetary constraints not only constitute prominent elements in the EA fiscal governance framework, but our empirical findings also show that legislative involvement in the MTBF contributes positively to fiscal discipline. Political commitment to the MTBF can be strengthened by requiring a parliamentary vote on the MTBF and particularly if this is complemented with a role in monitoring respect of the medium-term budgetary targets. This can involve requiring a monitoring report to be presented in parliament, as found in France and Luxembourg, for example.

Meanwhile, although EA countries perform rather well as regards legislative involvement in the implementation of SGP procedures, our results show that, legislative influence can be improved through more timely discussion. This would strengthen democratic accountability of the EA fiscal governance, which constitutes a priority for the reform process to complete the economic and monetary union (European Commission, 2017a).

There is potential to strengthen legislative budgetary power through improved organisational capacity since this can be reformed more easily than formal legislative powers. In particular, developing further relations with independent fiscal institutions can strengthen the legislature's ability to scrutinise and carry out oversight of the budget. This can also contribute to more fiscal discipline as our empirical results show a significant positive relationship between legislative budgetary organisational capacity and the budget balance.

Finally, there is scope for further research on legislative budgeting, for example as regards the political determinants of legislative budgetary power, but this would require extending the sample beyond the EA countries, since these mostly comprise parliamentary systems with coalition governments. The study of legislative budgeting could also be deepened through qualitative case studies, which provides the possibility for more in-depth comparative analysis among different EA countries.

[1] These comprised the 'Six-Pack' and 'Two-Pack' legislative packages and the Fiscal Compact, which is contained within the Inter-Governmental Treaty on Stability, Co-ordination and Governance in the Economic and Monetary Union. Further details are available at: https://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/eu-economic-governance-monitoring-prevention-correction/stability-and-growth-pact_en.

[2] Kim (2015) has developed further Wehner's (2006, 2010) index by using an alternative weighting structure, based on expert opinion, and applying it to a broader and more diverse sample of 60 countries.

[3] The European Semester is the EU process for policy coordination among the member states as regards both macroeconomic (including budgetary) policy as well as structural reforms.

[4] Further details on the composition of the 2007 legislative budgetary power index are available from the authors upon request.

[5] It is not possible to estimate the model separately with the different indices because data constraints imply that there is no time variation in the indices during 2006-2011 and 2012-2016 respectively.

[6] When analysing the fiscal impact of the quality of budget institutions, De Haan *et al.* (1999), Fabrizio and Mody (2006), Hallerberg *et al.* (2007, 2009), Hallerberg and Yläoutinen (2010) and De Haan *et al.* (2013) have all worked with similar data constraints.

[7] Although shocks to the budget balance are expected to persist, a dynamic specification to the model was not adopted, in view of the limited sample size available.

[8] The results of these tests are not being reported due to limits of space but are available from the authors upon request.

[9] In these two countries, the legislature can only approve or reject the draft budget.

[10] On the other hand, in the EA, legislatures have more control over off-budget items and contingent liabilities, since legislative authorisation is generally required.

[11] The alternative fiscal measures used are the primary budget balance, the cyclically adjusted balance, the cyclically adjusted primary balance (all as a share of GDP) and the annual change in the government debt ratio to GDP. The alternative estimation methods used are pooled ordinary least squares, random effects, one-way fixed effects, first-differencing and fixed effects with Driscoll and Kraay corrected standard errors. The results are available from the authors upon request.

[12] The impact of legislative involvement in SGP procedures and the relationship between the legislature and the fiscal council cannot be estimated since there is only a single data reading of these variables.

[13] The results for the individual organisational sub-indices are available from the authors upon request.

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Table I: Legislative budgetary power index – results

	Top score category					Medium score category									Low score category				
	FR	LT	FI	AT	NL	CY	ES	DE	EL	IT	EE	PT	IE	LV	LU	BE	SI	SK	MT
Legislative budgetary power index	**4.2**	**3.6**	**3.3**	**3.3**	**3.2**	**3.0**	**3.0**	**2.9**	**2.8**	**2.8**	**2.7**	**2.7**	**2.3**	**2.2**	**2.0**	**1.6**	**1.4**	**1.3**	**0.6**
Legislative budgetary formal powers	***5.3***	***6.0***	***4.6***	***5.7***	***5.9***	***4.4***	***3.6***	***4.6***	***4.9***	***3.5***	***4.2***	***4.2***	***4.5***	***3.9***	***3.7***	***3.4***	***3.9***	***2.9***	***2.4***
Involvement of legislature in national budgetary process	3.8	5.2	2.2	4.0	4.1	2.5	2.7	2.8	2.7	4.1	2.6	4.1	2.6	3.1	3.4	2.5	3.4	2.9	2.9
Involvement of legislature in MTBF	6.3	3.8	0.8	2.5	5.8	0.8	1.3	2.5	4.2	5.4	0.8	6.3	0.8	3.8	5.0	0.8	3.3	1.7	0.0
Involvement of legislature in fiscal rules	0.0	6.7	0.0	3.3	3.3	0.0	0.0	0.0	0.0	0.0	3.3	1.7	0.0	0.0	0.0	0.0	0.0	0.0	5.0
Legislative budgetary amendment powers	3.3	7.5	6.7	10.0	4.2	5.6	7.5	6.7	3.3	4.2	2.5	8.3	1.7	6.7	6.7	5.0	6.4	8.3	5.0
Reversionary budget	6.7	6.7	0.0	6.7	6.7	6.7	6.7	6.7	6.7	10.0	6.7	6.7	10.0	3.3	6.7	6.7	6.7	6.7	6.7
Legislative authorisation for changes to the budget during implementation	6.5	6.7	5.8	1.3	4.6	1.9	0.8	1.1	1.8	5.0	2.1	1.7	3.0	5.2	2.2	2.2	4.2	0.8	0.8
Legislative authorisation of off-budget expenditures and contingent liabilities	5.0	10.0	7.5	10.0	10.0	5.0	10.0	10.0	2.5	7.5	10.0	2.5	10.0	10.0	10.0	10.0	10.0	5.0	0.0
Involvement of legislature in SGP procedures	8.2	7.6	9.2	9.0	9.6	8.3	5.4	8.2	9.3	2.4	7.3	4.4	8.5	5.3	4.3	5.2	4.9	2.8	1.3
Discussion of SGP documents in the legislature	6.6	4.9	7.7	7.1	8.8	4.9	4.5	6.5	7.8	2.0	4.7	4.0	7.4	4.2	3.6	5.3	5.5	2.1	0.5
Discussion of SGP documents in legislative committees	8.0	8.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	2.0	10.0	6.0	8.0	5.0	5.0	7.0	6.0	3.0	0.0
Legislature informed on implementation of EDP	10.0	10.0	10.0	10.0	10.0	10.0	6.7	n/a	10.0	3.3	n/a	3.3	10.0	6.7	n/a	3.3	3.3	3.3	3.3
Legislative budgetary organisational capacity	7.9	6.0	7.2	5.8	5.4	6.7	8.3	6.4	5.9	7.9	6.6	6.4	5.1	5.7	5.4	4.6	3.5	4.5	2.4
Time available for budget scrutiny	5.0	5.0	10.0	5.0	0.0	5.0	10.0	10.0	0.0	5.0	10.0	5.0	5.0	5.0	5.0	5.0	0.0	5.0	0.0
Characteristics of legislative budget committees	8.8	8.5	8.3	7.3	4.5	7.5	10.0	10.0	9.5	8.8	9.5	9.5	5.0	7.0	10.0	7.5	9.5	8.3	0.0
Specialised budget research office	10.0	0.0	0.0	5.0	7.5	7.5	5.0	0.0	5.0	10.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Access to budgetary information	8.9	9.0	9.0	7.8	8.7	7.4	6.3	8.1	7.3	6.9	8.5	7.4	8.1	7.5	7.0	7.4	5.3	7.5	7.0
Relationship of legislature with IFI	6.9	7.5	8.8	3.8	6.3	6.3	10.0	3.8	7.5	8.8	5.0	5.0	7.5	8.8	5.0	3.1	2.5	1.9	5.0

Data refers to 2012, 2014, 2016.

Source: Results are produced by authors

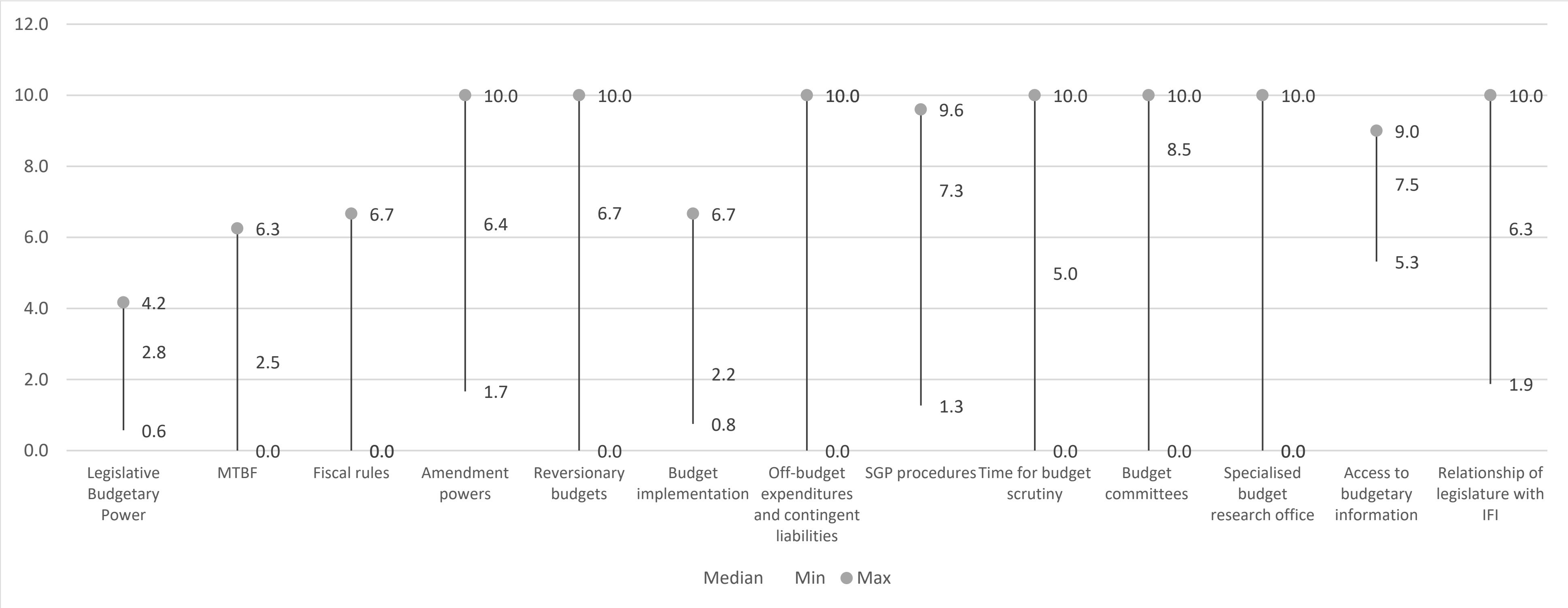
Table II - Empirical model for legislative budgetary power and its sub-indices (dependent variable – general government budget balance % of GDP)

Explanatory variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
% change in real GDP	0.044	0.073	0.090	0.060	0.068	0.047	0.058	0.068	0.024
	(0.623)	(0.362)	(0.305)	(0.463)	(0.411)	(0.543)	(0.466)	(0.390)	(0.782)
Unemployment rate	-0.362**	-0.211	-0.203	-0.360**	-0.351**	-0.309**	-0.353**	-0.349**	-0.363**
	(0.018)	(0.156)	(0.160)	(0.023)	(0.028)	(0.045)	(0.035)	(0.037)	(0.024)
Govt debt ratio in year t-1	0.086***	0.075***	0.075**	0.100***	0.100***	0.084***	0.093***	0.109***	0.092***
	(0.002)	(0.009)	(0.015)	(0.001)	(0.000)	(0.000)	(0.002)	(0.001)	(0.001)
Legislative Election Held	0.022	-0.128	-0.109	-0.005	-0.016	0.021	0.002	-0.072	0.018
	(0.931)	(0.626)	(0.674)	(0.983)	(0.945)	(0.931)	(0.992)	(0.771)	(0.942)
Margin of Majority	3.345	4.852	4.059	2.677	2.896	1.164	2.908	2.536	2.843
	(0.445)	(0.183)	(0.265)	(0.503)	(0.459)	(0.765)	(0.514)	(0.541)	(0.473)
Government Fractionalization Index	0.504	0.374	0.664	1.641	1.334	1.729	1.420	1.630	0.159
	(0.835)	(0.824)	(0.721)	(0.496)	(0.599)	(0.510)	(0.569)	(0.487)	(0.948)
Government ideology	0.137	0.180	0.170	0.384	0.349	0.349	0.268	0.318	0.109
	(0.761)	(0.551)	(0.619)	(0.389)	(0.382)	(0.318)	(0.549)	(0.472)	(0.825)
Bailout dummy variable	-1.387	-1.952	-2.101	-1.383	-1.223	-1.282	-1.241	-1.736	-1.957
	(0.566)	(0.315)	(0.275)	(0.569)	(0.642)	(0.586)	(0.598)	(0.467)	(0.419)
Legislative budgetary power index	0.747								
	(0.315)								
Legislative involvement in MTBF		0.524*							
		(0.084)							
Legislative involvement in fiscal rules			-0.031						
			(0.688)						
Legislative budgetary amendment powers				0.158					
				(0.354)					
Restrictions on amendment powers					-0.261				
					(0.450)				
Reversionary budgets						0.564**			
						(0.014)			
Legislative control - budget implementation							0.179		
							(0.487)		
Authorisation of off-budget expenditures								-0.195	
								(0.217)	
Legislative budgetary organisational capacity									0.918*
									(0.058)
Constant	-6.556*	-7.457**	-5.847**	-6.890*	-3.929	-8.037***	-6.097*	-4.838	-9.295**
	(0.054)	(0.014)	(0.045)	(0.067)	(0.332)	(0.008)	(0.054)	(0.126)	(0.032)

F	1861.7	777.5	385.2	2209.6	27426.4	8155.1	2802.9	12172.7	439.6
Observations	146	171	171	146	146	146	146	146	146

p-values in parentheses * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$
Sample period: 2006-2015
Source: Results are produced by authors

Figure 1 – Legislative budgetary power index and its sub-indices



Source: Results are produced by authors

Appendix

Table I. The legislative budgetary power index – indicators, weights and data sources

Sub-indices	Variables	Scoring scheme (on scale 0-10)	Weight		Data sources
Formal legislative budgetary power			***0.50***		
Involvement of the legislature in national budgetary process				***0.67***	
Legislative involvement in MTBF	• Is the national parliament involved in establishing the budgetary objectives/targets and/or projections arising from medium-term budgetary framework?	- only parliament is involved (10); involved with other entities (5); not involved (0)		0.17	European Commission's MTBF database
	• Is the medium-term plan formally sent, discussed or voted upon by parliament? Can parliament approve, reject or amend it?	- sent, discussed and voted upon by parliament, which may approve, reject or amend it (10); sent, discussed and voted upon by parliament, which may approve or reject, but not amend it (6.7); sent and discussed but no vote taken (3.3); sent to parliament but no discussion/not sent to parliament (0)			
	• Is parliament in charge of monitoring respect of the budgetary objectives/targets established according to the medium-term budgetary framework in the draft budget?	- only parliament is involved (10); involved with other entities (5); not involved (0)			
	• Is the monitoring report presented to parliament?	- Yes (10); No (0)			
Legislative involvement in fiscal rules[1]	• Is the national parliament in charge of monitoring compliance to the fiscal rule?	- only parliament is involved (10); involved with other entities (5); not involved (0)		0.17	European Commission's Fiscal rules database
	• Is the national parliament in charge of enforcing compliance with the fiscal rule in case of non-compliance?	- only parliament is in charge (10); in charge with other entities (5); not in charge (0)			
	• Is a corrective plan presented to parliament in case or risk of non-compliance with the targets implied by the fiscal rule?	- Yes (10); No (0)			
Legislative budget amendment powers	• Can parliament propose the annual budget independent from the government?	- Yes (10); No (0)		0.17	
	• What are the formal powers of the Legislature to amend the budget proposed by the executive?	- unrestricted amendment powers (10); amendments subject to budget balance constraint (7.5); legislature may only decrease existing expenditures/revenues (5); legislature can only approve or reject the budget as a whole (0)			
	• Notwithstanding the formal powers of the legislature to modify the budget, is a vote on the budget considered a vote of confidence in the government?	- Yes (10); No (0)			

	• Does the executive have the power to veto the budget approved by the legislature?	- No (10); Yes, line item veto power (6.7); Yes, package veto power (3.3); Yes, both line item and package veto powers (0)			OECD Budget Practices and Procedures Survey Authors' questionnaire for non-OECD EA countries
Reversionary budget	• What are the consequences If the budget is not approved by the legislature before the start of the fiscal year?	- government shutdown (10); last year's budget takes effect on interim basis (6.7); executive's budget proposal takes effect on interim basis (3.3); executive's budget proposal takes effect (0)		0.17	
Legislative authorisation to changes to the budget during implementation	• Executive authority to cut/cancel/rescind spending	- No (10); Yes (score reflects whether authority applies to all types of spending; whether thresholds apply and whether legislative approval is required and if such requirement applies ex-ante or ex-post)		0.17	OECD Budget Practices and Procedures Survey Authors' questionnaire for non-OECD EA countries
	• Power of line ministries to re-allocate funds within their budget envelope •	- No (10); Yes (score reflects whether thresholds apply and whether legislative approval is required and if such requirement applies ex-ante or ex-post)			
	• Restrictions on executive authority to increase spending	- No (10); Yes (score reflects whether authority applies to all types of spending; whether thresholds apply and whether legislative approval is required and if such requirement applies ex-ante or ex-post)			
Legislative authorisation of off-budget expenditures and contingent liabilities	• Is legislative authorisation required for off-budget expenditures and contingent liabilities?	- Required for all (10); for most (7.5); for some (5); for few (2.5); not required (0)		0.17	
Legislative involvement in SGP procedures				***0.33***	
Discussion of SGP documents in the legislature	• Degree of involvement of legislature in the preparation of the Stability Programme	- sent, discussed and voted upon by parliament, which may approve, reject or amend it (10); sent, discussed and voted upon by parliament, which may approve or reject, but not amend it (8); not formally sent but derived from a document that has been previously approved by parliament (6); sent and discussed but no vote taken (4); sent to parliament but no discussion (2); not sent to parliament (0)		0.33	Authors' questionnaire to all EA countries
	• Are the following documents discussed in the legislature? Does this discussion take place before the discussion in Council or after the Council meeting? - European Commission/Council Recommendations and Opinions on the Stability Programme; - European Commission Opinion on the Draft Budgetary Plan; - European Commission Opinion/Council Decision on the existence of an excessive deficit and the European	- Yes (score reflects whether discussion is on a regular basis; whether it takes place is legislative committee/s or in plenary; and whether it takes place before or after the relevant Council meeting); No (0)			

	Commission/Council Recommendation to end the excessive deficit situation; - Recommendation/Decision on the abrogation of the excessive deficit procedure.				
Discussion of SGP documents in legislative committees	Are the following documents discussed in legislative committees? Is the budget/finance committee/s involved? • the Stability Programme; • the European Commission/Council Recommendations and Opinions on the Stability Programme; • the European Commission Opinion on the Draft Budgetary Plan; • the Opinion/Decision/Recommendation on the excessive deficit; • Recommendation/Decision on the abrogation of the Excessive Deficit Procedure.	- Yes (score reflects whether discussion is on a regular basis and the committee involved – higher score if budget/finance committee is involved); No (0)		0.33	
Legislature informed on implementation of Excessive Deficit Procedure	• Is the Legislature informed on the implementation of Council's recommendations to end the excessive deficit situation in your country?	- Yes, informed automatically and any deviations or risks thereof are explained (10); informed only in case of deviations or risks thereof (6.7); informed only if it requests information (3.3); No (0)		0.33	
Legislative budget organisational capacity			***0.50***		
Time available for budget scrutiny	• Months between submission and approval of the budget by parliament	- more than two months (10); two months (5); less than two months (0)		0.20	European Commission's MTBF database
Characteristics of legislative budget committees	• Type of committee structures for dealing with the budget	- single committee coordinates process, reviews and decides on recommendations by sectoral committees (10); single committee coordinates process but members from sectoral committees can attend meetings (7.5); single committee considers budget aggregates and sectoral committees consider spending for sector specific appropriations (5); budget committee only provides technical assistance or not in place (0)		0.20	OECD Budget Practices and Procedures Survey Authors' questionnaire for non-OECD EA countries
	• Length of tenure of legislators sitting on budget/finance committee • Does the budget/finance committee have the power to request witnesses and to question ministers or senior civil servants?	- Score is sum of the following elements: - five years or more (5); electoral term/four years (4); two to four years (3); less than two years/variable (2); no budget committee in place (0) - Yes (5); No/no budget committee in place (0)			Authors' questionnaire to all EA countries
Specialised budget research office	• Is there a specialised budget research office/unit attached to the legislature to conduct analyses of the budget? • The number of full-time equivalent staff employed by this office/unit	- Score is sum of the following elements: - Yes (5); No (0) - more than 20 (5); more than 10 but less than 20 (2.5); less than 10 (0)		0.20	OECD Budget Practices and Procedures Survey

Access to budgetary information	• Distinction of new expenditure and revenue measures in budget documentation	- always distinguished (10); sometimes (6); rarely (4); never (0)		0.20	Authors' questionnaire for non-OECD EA countries
	• Comprehensiveness of budget documentation approved by the legislature	- Inclusion of all of the following (10): financial liabilities and assets, state and municipal transfers/guarantees, tax expenditures, off-budget expenditures and contingents liabilities; most included (7.5); some included (5); few included (2.5); none included (0)			
	• Public availability of budget information, assumptions and methodologies	- Inclusion of various information relating to fiscal and macroeconomic projections used in the budget, budget circulars, executive budget proposal to the legislature and budget approved by legislature, medium and long-term fiscal, comprehensive annual financial plan including off-budget expenditures and extra-budgetary funds and covering all levels of government, citizens' budget and budget guide - Most of the above (10); some (6.7); few (3.3); none (0)			
	• Is the Legislature informed on implementation of the budget?	- Yes, informed automatically and explanations of deviations from budget provided (10); yes but only in case of deviations from budget (6.7); informed only if it requests information (3.3); No (0)			Authors' questionnaire to all EA countries
	• Is a year-end fiscal report audited by the supreme audit institution released within six-months of the end of the fiscal year? • Is the audited year-end fiscal report discussed in the legislature?	- Score is sum of the following elements: - Yes (5); No (0) - Yes (5); No (0)			
Relationship of legislature with independent fiscal institution	• How does parliament interact with the fiscal institution in the planning stage of the budgetary process?	- parliament has to audition fiscal council during budgetary process (10); generally auditions fiscal council but no obligation (5); no interaction (0)		0.20	IMF Fiscal Councils Dataset
	• Is parliament involved in the appointment and dismissal of governing high-level management members of the fiscal institution?	- Yes (score reflects whether appointment and/or dismissal is by parliament only or together with government or other entity); No (0)			
	• Are reports by the fiscal institution submitted to the legislature?	- Yes and they constitute an important input in legislative budget debates (10); yes but they do not constitute an important input in legislative budget debates (5); only some reports are submitted/reports not submitted but still constitute an important input in legislative budget debates (2.5); not submitted to the legislature and do not			Authors' questionnaire to all EA countries

		constitute an important input in legislative budget debates (0)				
	• Can the legislature or its budget/finance committee request the leadership of the fiscal institution or its senior staff to provide responses to legislative questions?	- Yes and this takes place at least once a year (10); yes but this takes place less than once a year (5); No (0)				
	[1] Refers to fiscal rule with the largest coverage of general government finances.					

Table II. Empirical analysis – variables description and data sources

Variable Name	Variable description	Source
$FISCAL_{it}$		
budget balance as a ratio to GDP	General government net lending (+) or net borrowing (-); % of GDP	European Commission (2017b) *Annual macro-economic database (AMECO online)*
$ECON_{it}$		
% change in real GDP	annual change in GDP at constant prices - 2010 reference levels	Authors' calculations from *AMECO online*
unemployment rate	unemployment rate; % of civilian labour force	*AMECO online*
POL_{it}		
legislative election held	dummy variable indicating that legislative elections were held in country *i* in year *t*	
margin of majority	number of parliamentary seats held by government divided by total (government plus opposition plus non-aligned) seats	

government fractionalization index	the probability that two deputies picked at random from among the government parties will be of different parties	Inter-American Development Bank (2015) *Database of Political Institutions*
Government ideology	dummy variable indicating government's ideological orientation with respect to economic policy: 1 for right, 2 for centre, 3 for left and 0 where no information is provided (and for countries with technocrat governments - Italy 2012, 2013; Greece 2012)	
$PRESSURE_{it}$		
bailout dummy variable	dummy variable indicating that country *i* was subject to economic adjustment programme/balance of payments assistance programme during year *t*, starting in year when country concerned made request for assistance until the country exited the programme	Authors' calculations from European Commission (2017c) *EU Financial Assistance*; and European Stability Mechanism (2017) *Financial Assistance*
government debt ratio	general government consolidated gross debt; % of GDP	*AMECO online*
$INDEX_{it}$		
legislative budgetary power index	composite index measuring legislative budgetary power	Produced by the authors
legislative involvement in MTBF	sub-index measuring legislative involvement in MTBF	
legislative involvement in fiscal rules	sub-index measuring legislative involvement in fiscal rules	
legislative budgetary amendment powers	sub-index measuring legislative budgetary amendment powers (includes whether vote on the budget is considered as a vote of confidence in the government and executive veto powers)	
restrictions on amendment powers	component in legislative budgetary amendment powers sub-index – captures whether legislature has powers to amend the executive's draft budget and whether any restrictions apply	
reversionary budgets	sub-index measuring reversionary budgets	
legislative control – budget implementation	sub-index measuring legislative authorisation for changes to the budget during implementation	
authorisation of off-budget expenditures	sub-index measuring legislative authorisation of off-budget expenditures and contingent liabilities	
legislative budgetary organisational capacity	sub-index measuring legislative budget organisational capacity	