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Ioannis Litsios *Plymouth Business School*

M Ctania

Mark Baimbridge

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# Forms of fiscal governance in the Euro Area – An update

Moira Catania[1] | Mark Baimbridge[2] | Ioannis Litsios[3]

[1]Institute for European Studies, University of Malta, Msida, Malta

[2]Faculty of Management, Law and Social Sciences, University of Bradford, Bradford, UK

[3]Faculty of Arts, Humanities and Business, Accounting, Finance and Economics, University of Plymouth, Plymouth, UK

**Correspondence**
Ioannis Litsios, University of Plymouth, Faculty of Arts, Humanities and Business, Accounting, Finance and Economics, Plymouth, UK.
Email: ioannis.litsios@plymouth.ac.uk

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## Abstract

Despite the common Euro Area (EA) requirements, we find notable differences in the quality of fiscal governance among the 19 member states. Moreover, characteristics of the delegation approach, which have been largely ignored in the EA fiscal governance framework, remain important in various member states. Using a two-way fixed effects panel data model for the EA countries during 2006–2018, we find that the delegation approach can be effective to improve the fiscal position. On the other hand, the imposition of centrally mandated common rules-based reforms has not taken into account the national political, social and institutional setting, and this may have also affected their effectiveness to achieve fiscal discipline. Our findings thus suggest a reconsideration of the one-size-fits-all, rules-based approach to fiscal governance in the EA.

KEYWORDS
budget balance, budget institutions, euro area, fiscal governance, government debt

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E62, H61

## 1 | INTRODUCTION

The fiscal governance framework in the EA involves a rules-based approach to instil fiscal discipline among the member states. This approach, also referred to as a contracts approach, requires commitment by budgetary decision-makers to numerical fiscal targets for a multi-year period (Hallerberg & von Hagen, 1999; von Hagen & Harden, 1995). The Stability and Growth Pact (SGP) comprises supra-national fiscal rules with limits on the size of the budget deficit and government debt, enforced through the Excessive Deficit Procedure (EDP), whilst its preventive arm emphasises the role of medium-term budgetary frameworks and targets. Reforms introduced in response to the sovereign debt crises[1] have not only strengthened the SGP but have also given further prominence to the rules-based approach by requiring all member states to introduce, at a national level, fiscal rules which reflect the SGP obligations and to establish independent fiscal institutions (IFIs) with common mandates, including amongst others, to monitor compliance with these fiscal rules. This thrust towards a homogenous rules-based approach to fiscal governance in the EA ignores differences in the member states' institutional, political and social characteristics. Indeed, findings from case studies in European as well as in other countries show that countries adopt different fiscal governance arrangements and their effectiveness depends on how well they are embedded in a country's political and social context and whether they are supported by broad-based political ownership (Kopits, 2012; Wyplosz, 2012).

Indeed, besides this rules-based approach, there is an alternative delegation or hierarchical approach, which has been largely ignored in the EA's fiscal governance framework. This emphasises strong procedural rules governing the budgetary process, namely centralised budgetary decision-making, by assigning strong powers to the finance minister vis-à-vis spending ministers during budget negotiations and implementation, whilst legislative amendment powers are restricted during budget approval (Alesina & Perotti, 1999).

Both the delegation and the contracts approaches aim to address the deficit bias that characterises budgetary policies in democratic countries. According to the well-established literature on the political economy of budget deficits,[2] firstly, electoral motives result in excessive budget deficits, as the incumbent spends more as an election approaches to improve the chance of being re-elected and this is deficit-financed so that the cost of the relative tax burden falls on future generations rather than present voters. Secondly, reflecting the common pool property of public budgeting, individual politicians or political parties support higher targeted spending which favour their constituencies, but does not internalise its full cost since this is financed from general taxation. This happens especially when budgetary decision-making is fragmented, for example in coalition governments (von Hagen & Harden, 1995). In a dynamic context, this spending bias is also reflected in excessive budget deficits and high levels of government debt (Battaglini & Coate, 2008; Velasco, 2000). Budget institutions, which can be defined as "the mechanisms and rules governing the budget process that create checks and balances over public finances" (Albuquerque, 2011: 2545), can address this deficit bias. In a rules-based approach, fiscal discipline is enforced externally through commitment to numerical budgetary constraints; whereas with the delegation approach fiscal discipline is instilled internally through centralised budgetary decision-making by a strong finance minister.

Against this background, our contribution provides a comprehensive analysis of both the contracts and delegation approaches to fiscal governance in all the EA countries. Despite the nature of the EA's fiscal framework, we hypothesise that the role of the finance minister remains relevant also in the EA. We also analyse empirically the effects of both forms of fiscal governance on the budgetary position of the EA member states during 2006–2018. In this manner, this contribution can help to critically assess the emphasis on the rules-based approach in the EA fiscal governance framework and to explore the relevance of the delegation approach. It can thus provide an input into the

[1]These reforms 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 on the SGP 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/.

[2]For a comprehensive review of the literature on the political economy of budget deficits and government debt, see, for example, Eslava (2011) and Alesina and Passalacqua (2016).

debate on future reforms to the EA fiscal framework, which has resumed more actively after the activation of the general escape clause from the SGP in response to the COVID-19 pandemic. Indeed, in November 2022, the European Commission presented orientations for reforms in this area (European Commission, 2022a), which were followed by legislative proposals in April 2023 (European Commission, 2023).

Following the prevailing approach in the literature, composite numerical indices are used to measure the quality of the contracts and delegation approaches to fiscal governance. Since the early 1990s, various indices have been developed to measure the overall quality of budget institutions. Examples for European countries include von Hagen (1992) for 12 EU countries, Gleich (2003) and Fabrizio and Mody (2006) for the 10 central and eastern European countries (CEECs) that joined the EU in 2004 and 2007 and Darvas and Kostyleva (2011) for EU and OECD countries. Other indices capture only specific aspects of budget institutions in EU countries, for instance the European Commission's (2020a) indices for MTBFs, fiscal rules and the scope of the tasks discharged by fiscal councils and the fiscal council indices by Debrun and Kumar (2007a), Maltritz and Wüste (2015) and Horvath (2018). Hallerberg et al. (2007, 2009) have produced separate measures of the quality of the contracts and delegation approaches to fiscal governance for the 15 countries that were members of the EU in 2004 (EU15) whilst similar measures for the 10 CEECs were produced by Yläoutinen (2004) and Hallerberg and Yläoutinen (2010). Whilst this paper similarly constructs two separate indices to measure the quality of the delegation and contracts approaches to fiscal governance, we contribute to the literature firstly by covering all the 19 EA member states, secondly by capturing reforms implemented following the EA sovereign debt crises and thirdly, the indices also have a broader scope. In particular, the contracts index also comprises characteristics of IFIs, which now constitute an important aspect of national budget institutions in the EA, and both the delegation and contracts indices comprise a more comprehensive and detailed description of the relevant institutional characteristics than in previous studies.

We also examine the effect of both the contracts and delegation forms of fiscal governance on the budgetary position, namely the annual change in the government debt ratio as well as in the budget balance. The positive effect of the quality of budget institutions on the fiscal balance in European countries is well established in the literature (De Haan, Moessen, & Volkerink, 1999; De Haan, Sturm, & Beekhuis, 1999; Fabrizio & Mody, 2006; Gleich, 2003; Mulas-Granados et al., 2009; von Hagen, 1992; Yläoutinen, 2004). Other studies focus on specific aspects, namely fiscal rules, MTBFs and fiscal councils (for example, Bergman et al., 2016; Debrun & Kumar, 2007a; Nerlich & Reuter, 2013; Maltritz & Wüste, 2015). Meanwhile, Hallerberg and von Hagen (1999), Hallerberg et al. (2007, 2009), Hallerberg and Yläoutinen (2010) and De Haan et al. (2013) assessed the effect of the delegation and contracts approaches on the fiscal position.[3] These studies generally use a composite numerical index measuring the overall quality of budget institutions index as the explanatory variable.[4] There is some supporting evidence that the contracts approach has a significant effect on fiscal discipline, but the samples used are rather small, both in terms of geographical coverage as well as the timeframe covered, and furthermore, they mostly comprise countries with coalition governments. Whilst our empirical analysis similarly assesses the impact of the two forms of fiscal governance on the budgetary position, the focus on all the 19 EA member states results in more analytical relevance since they are subject to the same fiscal governance framework, which has become more differentiated following the sovereign debt crises. Furthermore, we also contribute to the literature by capturing reforms in national budget institutions implemented following the sovereign debt crises and since the explanatory variables constitute broader institutional measures.

Our results are as follows. Despite the thrust towards a more homogenous rules-based fiscal framework, there is considerable variation in the quality of national budget institutions among the EA member states, also for

[3]Albuquerque (2011) carries out a similar analysis in 23 EU countries during 1980–2007, but the dependent variable is public spending volatility and the measure used for the contracts approach is limited to fiscal rules.

[4]However, Hallerberg and von Hagen (1999) and Nerlich and Reuter (2013) use dummy variables to indicate the presence of specific institutional characteristics.

characteristics associated with the contracts approach. Furthermore, based on the scores in our indices, the prevailing form of fiscal governance in some countries is the delegation approach, whilst a notable number of member states adopt a 'hybrid' form of fiscal governance with strong elements of both approaches. We also find that reforms to budget institutions over the period under review were largely triggered by supra-national obligations concerning fiscal rules and IFIs. Indeed, we find various mismatches between the prevailing form of fiscal governance, based on the countries' scores in the delegation and contracts indices, and the expected form reflecting the type of government. Furthermore, our empirical findings show limited effectiveness of the contracts approach to improve the fiscal position in the EA, both overall, as well as separately for fiscal rules, MTBFs and IFIs. On the other hand, we find that overall, the delegation approach can be effective to improve the budgetary situation, although at a more disaggregated level, our results do not indicate the relevance of any specific characteristics. Thus, the supra-nationally mandated nature of rules-based institutional reforms not only ignored the national political, social and institutional setting in the different EA member states, but also seems to have affected their effectiveness to achieve fiscal discipline. We thus suggest a reconsideration of the one-size-fits-all, rules-based approach to fiscal governance in the EA.

The remainder of the text is organised as follows. The next section describes the delegation and contracts indices, whilst Section 3 explains our empirical strategy. In Section 4, we present the results of the two indices and discuss the forms of fiscal governance in the member states and developments between 2006 and 2018. Section 5 presents and discusses the results from the estimation of the main model. We also conduct some robustness tests and present results from extensions to the main model. Finally, Section 6 concludes with the main findings and policy implications, whilst also identifying some avenues for future research.

## 2 | FISCAL GOVERNANCE INDICES

Our delegation and contracts indices expand on those developed by Yläoutinen (2004) and Hallerberg et al. (2009). The delegation index similarly comprises the strength of the finance minister and the degree of centralisation in decision-making during budget negotiations, approval and implementation. However, for the approval stage, our index also includes information on the parliamentary committee structure dealing with the budget. It also provides a more detailed description of executive flexibility during budget implementation, in particular by taking into account, whether thresholds apply and whether any approval is required ex-ante or ex-post. In addition, for the implementation stage, our index also includes some information on supplementary budgets. On the other hand, our contracts index has a much broader scope, in particular as it also includes an additional element, that relating to independent fiscal councils. Furthermore, our description of MTBFs and fiscal rules is more comprehensive and detailed. For example, as regards fiscal rules, it also captures the institutions responsible for monitoring compliance, the type of correction mechanisms and escape clauses, whilst for MTBFs, account is also taken of the involvement of national parliaments and IFIs in the preparation of the medium-term fiscal plans and the level of detail included in these plans. A description of the different components of the delegation and contracts indices is provided in Tables A1 and A2 in the Appendix.

The delegation index comprises of three components. The first refers to the strength of the finance minister vis-à-vis line ministries during budget negotiations. The second captures the executive's power relative to those of the legislature during budget approval, including parliament's power to amend the draft budget presented by the executive, as well as other aspects relating to the voting procedure and the parliamentary committee structure dealing with the budget. Finally, the third component measures executive flexibility during budget implementation. Executive discretion to cut spending and to shift funds from one budget item to another can help to contain potential slippages from the budgetary targets and is thus consistent with the fiscal discipline associated with the delegation approach. On the other hand, when spending ministries have flexibility to increase spending during the implementation stage, including the possibility of supplementary budgets, this weakens the finance ministry's control over budget appropriations.

The delegation index is compiled using data from the OECD's (OECD, 2012) budgeting practices and procedures database. Since the geographical coverage of this database does not include Malta, Cyprus, Lithuania and Latvia, matching data for these member states was generated by requesting officials in national authorities (namely budget directors or officials from fiscal councils, parliamentary budget offices or parliamentary budget committees) to respond to the relevant questions of the OECD survey.[5] Data from websites of finance ministries, parliamentary and fiscal councils, legal texts and other official documentation were used to address some gaps in the datasets and also to corroborate the data. The data were compiled during May–December 2016.

In order to introduce some time-variation in the data for the delegation index, another index was constructed, using data from the OECD's (OECD, 2007) budgeting practices and procedures database, thus referring to before the EA sovereign debt crises. This index has a more limited geographical coverage since data for Cyprus, Estonia, Latvia, Lithuania and Malta is lacking; and a narrower scope as information on the structure of budget negotiations is also not available. On the other hand, the scope of the budget approval and implementation sub-indices is more similar. Thus, although the two indices are not directly comparable, a meaningful comparison can still be made and their use allows two data readings for the delegation index for most EA countries, one applied from 2006 to 2011 and the other from 2012 to 2018.

Meanwhile, the contracts index is constructed using the fiscal rules strength index, the index on the quality of MTBF and the scope index of independent fiscal institutions, produced by the Directorate General for Economic and Financial Affairs of the European Commission (2020a).[6] These indices are compiled from data generated from questionnaires to national authorities in the EU member states. They offer the advantage that timeseries data are available for these indices, albeit only from 2006 for the MTBF index[7] and being even more limited—from 2015—for the IFI index.[8] Debrun and Kumar (2007a), Nerlich and Reuter (2013) and Maltritz and Wüste (2015) also use data from the European Commission's fiscal governance databases in their empirical analysis, but they analyse the effect of different elements of the contracts approach separately and their sample refers to before the sovereign debt crises.

The European Commission's fiscal rules strength index reflects the number of fiscal rules in place, their coverage of the general government sector as well as their strength. The MTBF index also captures the coverage of targets or ceilings included in the national medium-term fiscal plan as well as the connectedness with the annual budget, the involvement of national parliament and of IFIs in the preparation of the national medium-term fiscal plans and their level of detail. Lastly, the European Commission's IFI index focuses on the mandate of fiscal councils and takes into account whether tasks are stipulated in the IFI's legal remit or carried out on the institution's own initiative. Whilst this measure of the quality of IFIs involves some limitations, as it excludes their degree of independence and organisational capacity, it provides some timeseries data.

Since there is no theoretical or empirical basis for assuming that any of the components of the delegation and contracts indices is more important to ensure fiscal discipline, equal weights are assigned to their respective components. Furthermore, the indices are aggregated using a linear additive approach, thus assuming that there is full and constant compensability among them. For example, a strong delegation approach can equally come from centralised decision-making process during budget negotiations, restricted amendment powers during the budget approval stage, or strong control by the finance minister during budget execution. Similarly, a strong contracts approach may reflect strong fiscal rules, binding MTBFs or an IFI with a broad mandate. Further details on the scoring schemes, weighting structures and the relevant data sources used to compile the two indices are provided in Tables A1 and A2 in the Appendix.

[5]Information on the structure of budget negotiations in all EA countries was also generated through a questionnaire as this was not available from other sources.

[6]Further information on these indices is available at: https://ec.europa.eu/info/business-economy-euro/indicators-statistics/economic-databases/fiscal-governance-eu-member-states_en.

[7]The two separate datasets for the European Commission's MTBF index (based on different methodologies), covering 2006–2014 and from 2015 onwards, were linked using the common 2015 data.

[8]The 2015 data was extended back to 2006 or, for IFIs that were established more recently, to the year when they were set up. Whilst this ignores possible reforms, the implications are limited as most IFIs were set up since 2010, with eight being established since 2014.

## 3 | THE EMPIRICAL MODEL

The empirical analysis involves a panel data model for the EA countries during 2006–2018. Similar to the literature on the fiscal impact of budget institutions (for example, Debrun & Kumar, 2007a; Fabrizio & Mody, 2006; Hallerberg et al., 2007, 2009; Maltritz & Wüste, 2015 and Nerlich & Reuter, 2013), this model adopts the specification in Roubini and Sachs (1989), which comprises economic and political explanatory variables. However, in our model, we include a separate category of explanatory variables to capture pressure on government to implement fiscal consolidation, as follows:

$$\text{FISCAL}_{\text{it}} = \beta_0 + \beta_1\text{ECON}_{\text{it}} + \beta_2\text{POL}_{\text{it}} + \beta_3\text{PRESSURE}_{\text{it}} + \beta_4\text{INDEX}_{\text{it}} + \mu_{\text{i}} + \nu_t + \varepsilon_{\text{it}} \quad (1)$$

In the main empirical model, the dependent fiscal variable is the annual change in the ratio of general government debt to Gross Domestic Product (GDP). The SGP has generally focused on the budget balance as the main indicator used in EA fiscal surveillance, but governments may have incentives to undertake accounting manoeuvres to underreport the fiscal balance. Moreover, the government debt ratio provides a better measure of fiscal sustainability. However, the data for the debt ratio exhibit more volatility,[9] reflecting the effect of various bank bailouts on government debt during the period under review. Thus, we also estimate the empirical model with the annual change in the general government budget balance as a share of GDP as the dependent fiscal variable. We use the first difference of the budget balance ratio, rather than the level, in view of possible stationarity in the data.[10]

The explanatory variables of interest are the delegation and contracts indices. The model also includes the standard time and country-specific errors. A description of the different variables together with their relevant data sources is presented in Table A3 in the Appendix.

As in Yläoutinen (2004), Mulas-Granados et al. (2009) and Hallerberg and Yläoutinen (2010), real GDP growth and the unemployment rate capture the effects of the economic cycle on the fiscal position. Economic growth is associated with an improved fiscal situation, reflecting the effect of automatic stabilisers, whilst an increase in the unemployment rate is expected to worsen the fiscal position. The first political control variable constitutes a dummy variable to indicate the year when elections take place, reflecting the literature on the electoral budget cycle (see, for example, Mink & De Haan, 2006 and Efthyvoulou, 2012). The second political variable reflects the common pool problem and refers to government fragmentation, as found in coalition governments comprising different political parties. Similar measures were included in the empirical models by Fabrizio and Mody (2006), Debrun and Kumar (2007a) and De Haan et al. (2013). The third and last political control variable refers to government's margin of majority in parliament. A larger parliamentary majority weakens the influence of individual members of government and thus facilitates control over demands for larger allocations during the different budgetary phases (Volkerink & De Haan, 2001). The last two variables imply more pressure for governments to implement fiscal consolidation. As in Hallerberg et al. (2007, 2009), the model includes the lagged government debt ratio, which provides a proxy for the long-term fiscal sustainability to which government's fiscal policy is expected to react. Finally, we also include a dummy variable to indicate whether a country was subject to a financial assistance programme.

The main empirical model, using the annual change in the government debt ratio as the dependent variable, is extended by replacing the two indices with their respective components. This disaggregated approach enables drawing out conclusions on specific institutional features.

[9]The data for the budget balance ranges from a minimum of −32.1% to 5.1% of GDP, whereas the annual change in the government debt ratio has a wider range from −27.5% to 27.7% of GDP. The standard deviation of the latter is also higher (6.6, compared to 4.0).

[10]Whilst the Levin-Lin-Chu test showed that the budget balance ratio series can be considered as stationary, the Hadri LM test showed that at least one of the panels' series contains a unit root. Caution should be exercised when using panel-unit root tests, because due to cross-unit cointegration and long-run relationships among countries, such tests can reject the null hypothesis that the panels' series contain unit roots, even when this is not true (Banerjee et al., 2005).

Another extension of the main model aims to assess whether the form of fiscal governance affects government spending restraint. This involves using the annual change in government expenditure as a share of GDP as an alternative dependent variable. Control of government spending has been assigned importance in the EU's fiscal governance framework with the introduction of the expenditure benchmark as part of the 'Six-Pack' reforms in 2011.[11] Furthermore, in its proposed review of this framework, the European Commission (2022a, 2023) presents a single expenditure indicator to be used as the basis for fiscal surveillance. We use both total and current government expenditure, excluding interest payments, so that the spending variables are within government control.

### 3.1 | Estimation of the model and some econometric issues

The model is estimated using two-way fixed effects with country and time dummies. Fabrizio and Mody (2006) use a similar approach to estimate their panel data model for the 10 CEECs over a relatively short timeframe (1997–2003). Using Pesaran's CD test, no evidence of the presence of cross-sectional dependence was found. Nevertheless, given the strong interdependence among the EA countries resulting from economic and financial integration, time dummies were included to account for any common shocks to all countries in a given year. Meanwhile, the country fixed effects capture time-invariant social, political and other country-specific determinants of the budgetary position.

Similarly to other studies (e.g. De Haan et al., 2013; Fabrizio & Mody, 2006; Hallerberg et al., 2007, 2009; Hallerberg & Yläoutinen, 2010), the lack of a complete timeseries data was a challenge. This constrained the estimation of the effect of the delegation index and its sub-indices on the fiscal variables.

The robustness of the results was tested by using different fiscal indicators for the dependent variable and by estimating the model with alternative methods. Furthermore, since shocks to the budget balance are expected to persist, the model with the annual change in the budget balance ratio as the dependent variable is also estimated with the lagged budget balance ratio included as an explanatory variable.[12] This model specification thus captures the expected impact of the level of the budget balance in year *t-1* on the change in the fiscal balance in year *t*. A positive coefficient would indicate persistence of fiscal shocks. Meanwhile, all the other model specifications include the lagged annual change in the government debt ratio, which is also a proxy for the fiscal balance in year *t-1*.

Since budgetary reforms generally involve different institutional aspects, there may be correlation among the two indices and their respective components. In particular, the common EA requirements introduced in response to the EA sovereign debt crises required reforms to both fiscal rules and IFIs. Thus, in the extension to the model involving a more disaggregated approach, the different components of the contracts sub-indices are introduced separately in the model, to avoid problems due to multicollinearity.[13]

Studies on the fiscal impact of budget institutions also face the possibility of endogeneity bias, due to possible feedback from fiscal developments onto budget institutions. Incumbents may also strengthen budget institutions to signal their commitment to fiscal discipline (Debrun & Kumar, 2007b). This problem of endogeneity has not really been resolved in the literature mainly due to the scarcity of good quality instruments for budget institutions variables.[14] Fabrizio and Mody (2006) and Nerlich and Reuter (2013) test for endogeneity using Arellano-Bond,

[11]This benchmark is part of the preventive arm of the SGP and it complements the attainment of a country's medium-term budgetary objective by requiring the net growth rate of government spending to be at or below the medium-term potential economic growth rate, unless matched by additional discretionary revenue measures (European Commission, 2022b).

[12]In this specification, the lagged government debt ratio is not included as an explanatory variable in order to avoid estimation complications due to the inclusion of two lagged variables in the model.

[13]The pairwise correlation coefficients for the contracts sub-indices have a value between 0.5 and 0.6 and are all significant at the 5% level. On the other hand, the correlation coefficients for the delegation sub-indices are smaller in magnitude (ranging between −0.1 and 0.1) and they are not statistically significant.

[14]A few authors have attempted to account for the possibility of reverse causality by instrumentalising their budget institutions variables: Hallerberg et al. (2007), Debrun and Kumar (2007a) and Albuquerque (2011).

Keviet-bias or Arellano-Bover/Blundell-Bond procedures, but these have limited reliability in small samples. De Haan et al. (2013) adopt the working assumption that budget institutions are pre-determined, at least in the short to medium term, since they are costly and complex to change. We follow the approach in Maltritz and Wüste (2015), who test for reverse causality by running a simple panel regression with the budget institution variable as the dependent variable on the lagged fiscal variable.

## 4 | RESULTS FOR THE FISCAL GOVERNANCE INDICES

The score results for the contracts and delegation indices and their respective sub-indices are presented in Table 1 and Figures 1 and 2. The sensitivity of the results to alternative weighting schemes was tested using Spearman rank correlations, and in all cases, the coefficients are very close to 1.

Our findings show that, notwithstanding the thrust towards a homogenous rules-based approach, there is considerable variation in the scores for the contracts index, ranging from a maximum of 1.6 for Netherlands to a low of 0.7 for Slovenia.

At a sub-index level, variation in the scores is notably higher for fiscal rules, despite the common requirements particularly of the Fiscal Compact Treaty, reflecting differences both in the number of fiscal rules in place as well as in their respective strength. Overall, in 2018, there were around 80 fiscal rules in place in the EA. Most member states have more than one fiscal rule in place, although some have a relatively narrow scope, applying only to local government or the social security sector. Strong features of fiscal rules in the EA include the legal basis of the rules and strong actions in case of non-compliance: around 50 rules have either a constitutional basis or one that is higher than ordinary law as well as automatic triggering of corrective mechanisms. On the other hand, there is scope to improve further monitoring by independent bodies, as this takes place in only around 25 of the rules.

Regarding MTBFs, 16 countries have frameworks with a broad coverage of the general government sector (of at least 90%) as well as coordination between sub-levels of government when setting multi-annual fiscal targets. A parliamentary vote on the medium-term fiscal plans is taken in 12 member states, which enhances their national ownership. On the other hand, there is scope for further involvement of IFIs as they endorse or produce both the macroeconomic and budgetary forecasts in only three member states. The binding nature of MTBFs can also be strengthened, by improving their connectedness with the annual budget, as this can deviate from the limits set in the medium-term fiscal plan in 13 countries. The level of detail included in the medium-term fiscal plans could also be improved in various member states.

IFIs are mainly involved in monitoring of compliance with fiscal rules and in macroeconomic forecasting, which constitute common EA requirements. These tasks are generally stipulated in their legal remit. However, whereas IFIs produce their own macroeconomic forecasts in 14 member states, only five countries use macroeconomic forecasts which are produced independently.[15] Moreover, only five countries have in place a reconciliation procedure in case of diverging views between government and the independent endorser (Jankovics & Sherwood, 2017). On the other hand, it is notable that even though this does not constitute a common EA requirement, in 16 member states, IFIs are also involved in budgetary forecasting, with this being part of the council's legal remit in 13 of them. More than half of the IFIs also carry out active promotion of fiscal transparency, analysis of long-run fiscal sustainability and normative recommendations on fiscal policy, but only five IFIs carry out quantitative policy costing.

Moving to the delegation index, the average score value of 6 out of a maximum of 10 shows that delegation characteristics remain prominent in the EA. As expected, there is more diversity than in the contracts approach, since institutional characteristics of the delegation approach reflect national preferences rather than common EA requirements.

[15] In the other countries, the independent forecasts are only used by the IFI to assess the forecasts produced by the finance ministry.

**TABLE 1** Contracts and Delegation Indices – results.

| | AT | BE | CY | DE | EE | EL | ES | FI | FR | IE | IT | LT | LU | LV | MT | NL | PT | SI | SK |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Contracts index** | **1.00** | **0.94** | **0.90** | **0.98** | **0.96** | **0.75** | **1.22** | **0.86** | **0.77** | **0.90** | **1.43** | **1.46** | **0.80** | **0.91** | **1.05** | **1.59** | **1.21** | **0.66** | **0.98** |
| Fiscal rules | 1.63 | 1.54 | 1.42 | 1.78 | 1.66 | 0.90 | 2.12 | 1.44 | 1.16 | 1.36 | 2.77 | 3.09 | 1.04 | 1.46 | 1.60 | 3.22 | 2.35 | 0.66 | 1.75 |
| MTBF | 0.55 | 0.68 | 0.62 | 0.63 | 0.72 | 0.87 | 0.83 | 0.78 | 0.70 | 0.67 | 0.78 | 0.73 | 0.68 | 0.75 | 0.77 | 0.85 | 0.62 | 0.73 | 0.75 |
| Scope of IFI | 0.84 | 0.60 | 0.67 | 0.52 | 0.51 | 0.49 | 0.69 | 0.38 | 0.46 | 0.68 | 0.74 | 0.56 | 0.67 | 0.53 | 0.77 | 0.71 | 0.66 | 0.59 | 0.45 |
| **Delegation index** | **5.89** | **4.37** | **6.56** | **6.13** | **6.35** | **7.45** | **8.27** | **4.64** | **6.65** | **6.35** | **5.69** | **6.46** | **5.64** | **6.32** | **4.83** | **4.41** | **5.21** | **8.15** | **5.24** |
| Budget negotiations | 7.50 | 4.73 | 8.33 | 8.33 | 7.50 | 10.00 | 10.00 | 7.50 | 5.83 | 9.17 | 9.17 | 7.50 | 7.50 | 8.33 | 8.33 | 7.50 | 5.57 | 9.17 | 6.67 |
| Budget approval | 2.50 | 1.67 | 4.17 | 3.33 | 5.00 | 6.67 | 8.33 | 2.50 | 8.33 | 3.33 | 4.17 | 5.00 | 3.33 | 5.00 | 0.00 | 1.67 | 3.33 | 8.33 | 2.50 |
| Budget implementation | 7.66 | 6.72 | 7.19 | 6.72 | 6.56 | 5.69 | 6.47 | 3.91 | 5.78 | 6.56 | 3.75 | 6.88 | 6.09 | 5.63 | 6.15 | 4.06 | 6.72 | 6.94 | 6.56 |

*Note*: Data for the contracts index and its components refers to 2018; data for the delegation index and its components refers to 2012 (OECD data) and 2016 (data generated from questionnaires).

*Source*: Results are produced by authors.

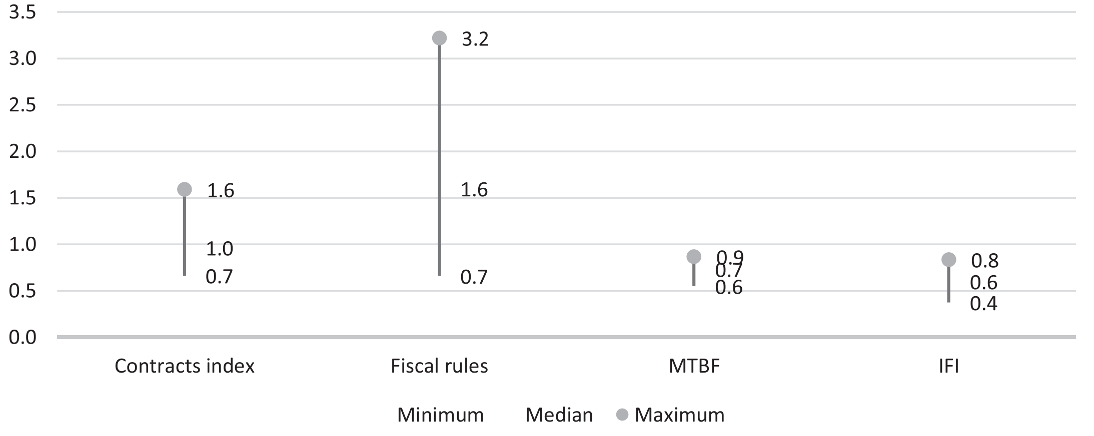


**FIGURE 1** Contracts index and its sub-indices.
*Source*: Results are produced by the authors.

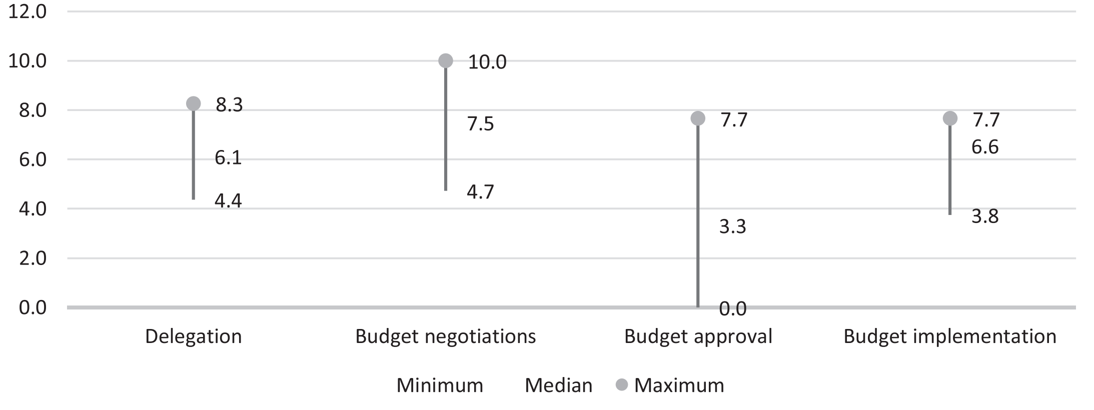


**FIGURE 2** Delegation index and its sub-indices.
*Source*: Results are produced by the authors.

Overall, in the EA, the stronger elements of the delegation approach concern the negotiations and implementation stages of the budgetary process. On the other hand, there is weak centralisation in the budget approval stage and this also exhibits the highest degree of variation among the member states.

During the budget negotiations stage, the strongest element of centralisation is the imposition of budget ceilings on the initial total expenditure requests of line ministries, which is found in 16 EA countries. On the other hand, reflecting the fact that most member states have coalition governments, budget negotiations take place bilaterally between the finance minister and the spending ministers and the final decision-making power to resolve or settle disputes is centralised (at the Prime Minister or Minister of Finance level) in only six countries.

During the budget approval stage, in nine EA countries, the legislature has unrestricted powers to amend the draft budget presented by the executive. Restricted amendment powers apply in eight other countries, whereas in the remaining two member states, the legislature can only approve or reject the draft budget, but not amend it. There is also a general lack of centralisation in the voting procedure, with the legislature voting first on the total amount of expenditure before voting on specific appropriations in only four countries. On the other hand, a positive institutional feature in the budget approval stage is a centralised parliamentary budget committee structure, which is found in 13 EA countries. This facilitates a comprehensive view of the budget during the approval stage, similar to the role of the finance minister during budget negotiations.

| **Delegation index** | | | |
|---|---|---|---|
| Top Quartile | Strong hybrid<br>*ES* | Delegation<br>*CY* | Strong delegation<br>*EL, FR, SI* |
| Middle Quartiles | Contracts<br>*LT, IT* | Hybrid<br>*AT, DE, EE, IE, LV, SK* | Weak fiscal governance<br>*LU* |
| Bottom Quartile | Strong Contracts<br>*NL, PT* | Weak fiscal governance<br>*MT, BE* | Very weak fiscal governance<br>*FI* |
| **Contracts index** | Top Quartile | Middle Quartiles | Bottom Quartile |

FIGURE 3 Forms of fiscal governance in EA countries.
*Source*: Results are produced by the authors.

Lastly, as regards the budget implementation stage, executive authority to cut or cancel spending and for line ministers to re-allocate funds within their own budget envelope is quite strong, which facilitates adjustment to unforeseen developments during budget execution, whilst keeping within the approved budgetary allocations. On the other hand, in 16 countries, the executive also has some power to increase spending and to use supplementary budgets, which make it easier to sanction expenditure slippages. However, in several member states, this flexibility is mitigated by allowing this for only some types of spending (nine countries), applying thresholds (six countries) or requiring approval, either by the ministry of finance (six countries) or by the legislature (eight countries).

## 4.1 | Forms of fiscal governance in the EA countries

In order to identify the prevailing form of fiscal governance at a country level, we compare the countries' ranking in the contracts and delegation indices[16] (Figure 3). A prevailing form of fiscal governance is established if a country falls in the top quartile for one approach and in a lower quartile for the other approach. Thus, Netherlands and Portugal are considered as having a strong contracts approach, whereas Greece, France and Slovenia have a strong delegation approach. A prevailing contracts approach can also be discerned for Lithuania and Italy, whereas the form of fiscal governance in Cyprus is predominantly delegation.

On the other hand, the form of fiscal governance is less clearly identifiable in the other EA countries. In the literature, the contracts and delegation approaches are presented as alternative approaches to fiscal governance and indeed, for the EA overall, the simple correlation between the two indices is negative (−0.2) and statistically significant at 5%. However, at an individual level, some countries perform strongly in both the delegation and contracts approaches, suggesting a 'hybrid' form of fiscal governance. In particular, Spain falls within the top quartile for both the contracts and delegation index, whereas Austria, Germany, Estonia, Ireland, Latvia and Slovakia fall within the middle quartiles for both indices.

Thus, the role of the finance minister remains an important characteristic of national budget institutions in several EA countries. Yet, the EA fiscal governance framework ignores this aspect of budget institutions, with the SGP and the common EA requirements reflecting a rules-based approach on the assumption that 'the Scandinavian and Dutch frameworks should be an example for all countries' (Hallberberg et al., 2011: 136).

This classification of the form of fiscal governance in the different EA member states is based on the prevailing budget institutions in place, reflecting the countries' scores in our delegation and contracts indices, without taking into account the underlying political dynamics in the countries' governments. However, Hallerberg and von Hagen (1999) postulated that the delegation approach is more appropriate for countries with a single-party

[16]Being based on different scales, the score values of the contracts and the delegation indices are not comparable.

majority government whilst the contracts approach is more suitable in countries with coalition governments, since partners would be reluctant to delegate strong budgetary powers to a finance minister coming from a different political party. They presented some evidence for the EU15 during 1981–1994 that countries had the expected form of fiscal governance, based on their type of government. Subsequently, Hallerberg et al. (2007, 2009) further elaborated that the contracts approach is particularly fitting when there is wide ideological dispersion among the political parties forming the coalition. In support of this hypothesis, they presented an updated classification for 1985–2004, where the countries' scores in their delegation and contracts indices were compared to the expected form of fiscal governance, established according to their type of government. Yläoutinen (2004) and Hallerberg and Yläoutinen (2010) also present similar findings for 10 CEECs.

In order to test this hypothesis, we compare the prevailing form of fiscal governance as shown in Figure 3, to the expected form, based on the type of government (coalition/single-party majority/minority government) whilst taking into account the ideological range among political parties forming part of a coalition government, as postulated by Hallerberg et al. (2007, 2009) (Table A4 in the Appendix). However, the prevailing and expected form of fiscal governance correspond in only three of the 19 EA member states. In particular, the two countries with a prevailing strong contracts approach (Netherlands and Portugal) are expected delegation states as they had coalition governments with narrow ideological dispersion. Moreover, the only EA country with a single-party majority government (Malta) does not have a prevailing delegation approach. Thus, in contrast to previous studies, in our sample, we find various mismatches between the prevailing form of fiscal governance and the expected form, based on the type of government, with potential implications for their effectiveness to achieve fiscal discipline. There are also no discernible patterns relating the form of fiscal governance to country size, years of EU membership or whether the country has received financial assistance during the sovereign debt crises. Thus, there is scope to analyse further the determinants of the form of fiscal governance adopted by individual EA countries.

### 4.2 | Developments in fiscal governance during 2006–2018

A comparison of the contracts and delegation indices and their components during the period under review is presented in Table 2. As expected, there was a very marked improvement in the average score values for the contracts index between 2006 and 2018, as countries implemented reforms to comply with the EA common rules-based requirements, which were introduced in response to the EA sovereign debt crisis. Indeed, all the member states registered a notably stronger performance in the contracts index, with marked increases noted for most of the bailed-out countries (Portugal, Cyprus, Ireland, Latvia, Greece), where reforms were implemented as part of the conditions of their respective economic adjustment programmes.

At a sub-index level, the largest improvement was in fiscal rules, reflecting the introduction of new rules and reforms to existing ones to extend their scope and make them more binding so as to comply with the provisions of the Fiscal Compact Treaty. Indeed, around 80 per cent of the rules in force in 2018 were introduced since 2010. Again, reflecting the common requirements introduced in response to the EA crisis, there were also extensive institutional developments regarding IFIs since only four member states had such institutions in place in 2006. On the other hand, the improvement in the MTBF sub-index was more subdued and less widespread, with six countries registering either no or only marginal improvement.

The increase in the average score for the delegation index is more modest. The reforms implemented mostly concerned the budget negotiations stage, as seven countries introduced budget ceilings or more stringent ceilings on the initial spending requests of line ministers. Somewhat more executive flexibility, both to cut, cancel and shift spending as well as to increase it, is also noted. On the other hand, the structure of the budget approval process was more resistant to change, which is expected since institutional features such as amendment powers tend to be enshrined in a country's constitution (Wehner, 2010).

**TABLE 2** Developments in fiscal governance in the EA – descriptive statistics.

| | Median | | Standard deviation | | Range | |
|---|---|---|---|---|---|---|
| | 2006 | 2018 | 2006 | 2018 | 2006 | 2018 |
| Contracts index | 0.18 | 0.96 | 0.29 | 0.25 | −0.25 – 0.64 | 0.66–1.59 |
| Fiscal rules | −0.19 | 1.60 | 0.63 | 0.70 | −0.97 – 1.05 | 0.66–3.22 |
| MTBF | 0.42 | 0.73 | 0.21 | 0.08 | 0.13–0.75 | 0.55–0.87 |
| IFI | 0.00 | 0.60 | 0.28 | 0.12 | 0.00–0.84 | 0.38–0.84 |
| | 2007 | 2012/16 | 2007 | 2012/16 | 2007 | 2012/16 |
| Delegation index | 5.59 | 6.13 | 1.05 | 1.13 | 4.17–8.11 | 4.37–8.27 |
| Budget negotiations | 6.25 | 7.50 | 1.69 | 1.42 | 5.00–10.00 | 4.73–10.00 |
| Budget approval | 3.33 | 3.33 | 2.67 | 2.37 | 0.00–8.33 | 0.00–7.66 |
| Budget implementation | 5.97 | 6.56 | 1.21 | 1.10 | 4.52–8.63 | 3.75–7.66 |

*Note*: The sample size for the delegation index and its sub-indices for 2007 and 2012/16 differs as data from the 2007 OECD budgetary practices and procedures survey is only available for 14 EA countries. On the other hand, data are available for 15 EA member states from the 2012 OECD survey whereas for the remaining four countries, data was generated from a questionnaire to national authorities in 2016. Data for the contracts index and its sub-indices refers to the 19 EA countries for both 2006 and 2018. Detailed data for the contracts and delegation indices for 2006 and 2007, respectively, is available from the authors upon request.

*Source*: Results are produced by the authors.

Reforms affecting the delegation approach were also not that widespread at a member state level, with only five countries recording notable improvements. The largest increase was registered by Greece, where conditions of its bail-out programme included the introduction of binding expenditure ceilings for each ministry and strengthening the position of the finance minister vis-à-vis line ministers during budget preparation and implementation (European Commission, 2010).

Summing up, the reforms implemented during the period under review largely reflected the common EA requirements introduced in response to the EA sovereign debt crisis. This resulted in increasing emphasis on the contracts approach, as new fiscal rules were introduced and existing ones strengthened, whilst new independent fiscal councils were established. On the other hand, reforms involving the delegation approach have been much more muted. Thus, due to the supra-nationally imposed common rules-based requirements, budget institutions may no longer reflect the underlying political dynamics, resulting in discrepancies between the prevailing form of fiscal governance and the expected one based on the type of government, as discussed in the previous section.

### 4.3 | Comparison to previous indices

Our 2006 results for the contracts and delegation indices were compared to those from previous studies, namely Hallerberg et al. (2009) and Hallerberg and Yläoutinen (2010), which refer to a broadly comparable timeframe – 2000/04 and 2007, respectively. The Spearman correlation coefficients are 0.4 for both contracts and delegation indices for Hallerberg et al. (2009) and 0.3 for the contracts index in Hallerberg and Yläoutinen (2010).[17] These relatively low correlations reflect the considerable differences in the scope of the indices, highlighted in Section 2.

[17]There is limited comparability between our sample and that of Hallerberg and Yläoutinen (2010), with only five common countries for the contracts index. Correlation for the delegation index is not computed since only two countries are included in both samples.

Comparing forms of fiscal governance at a country level with those in Hallerberg et al. (2009), which has a broader similar geographical coverage, some similarities are noted: for example, in both studies, France features as a strong delegation country and Netherlands is classified as a strong contracts country. However, there are also some contrasting findings, for example as regards Ireland, Luxembourg and Spain.

Ireland is a delegation country in Hallerberg et al. (2009) but, based on its ranking in our indices, we categorise it as having a prevailing 'hybrid' form of fiscal governance. This difference mainly reflects institutional reforms implemented since 2012, including a strong improvement of fiscal rules and MTBFs as well as the establishment of an IFI in 2015. Whilst political developments involving a wide ideological range within the coalition government could have contributed to this strengthening of the contracts approach in Ireland, given the nature of the reforms, these were more likely triggered by the common EA requirements introduced during the period under review, as well as by conditions in the bailout programme for Ireland.

Another notable shift in the form of fiscal governance concerns Luxembourg, which is a contracts country in Hallerberg et al. (2009) but we classify its fiscal governance as 'weak'. The underlying type of government has remained unchanged, with coalition governments having a wide ideological range. Meanwhile, although Luxembourg did improve aspects of its contracts approach during the period under review, reforms were not as extensive as in other countries. Furthermore, other reforms weakened its delegation approach, in particular due to less centralisation in the voting procedure to approve the budget as well as more executive flexibility to increase spending during budget implementation.

Finally, Spain has weak fiscal governance in Hallerberg et al. (2009) but has top scores in both our delegation and contracts indices and we categorise its fiscal governance as strong 'hybrid'. During the period under review, the political scenario in Spain has changed from a single-party majority government to coalition and minority governments. However, the improvement in Spain's fiscal governance also reflects strong and widespread institutional reforms. Regarding the contracts approach, Spain strengthened considerably its fiscal rules during 2011–2015, improved its MTBF in 2012 and also set up an IFI in 2015. Whilst these reforms reflect common EA requirements introduced in response to the EA sovereign debt crisis, Spain implemented deep reforms so that its scores for fiscal rules, MTBF and IFI are all above the EA average. Furthermore, Spain also strengthened its delegation approach during the period under review, for example with the introduction of budget ceilings on the initial spending requests of line ministries during budget negotiations.

These country examples show that there were considerable shifts in the form of fiscal governance among the EA member states during the period under review and there is scope for further research, through case studies on individual countries, to understand the determinants of these institutional reforms, including the role, if any, of political factors.

## 5 | RESULTS OF THE REGRESSION ANALYSIS

The results of the two-way fixed effects empirical model are shown in Table 3. In the main model, the annual change in the government debt ratio is the dependent variable (column 1). Other specifications of the model have the annual change in the budget balance as the dependent variable (columns 2 and 3).

### 5.1 | Estimation of the main model

As expected, real GDP growth exerts a positive effect on fiscal outcomes, whereas a higher unemployment rate is associated with a worsening of the fiscal position. Both economic control variables have a significant effect in the main model specification, but there is not such a strong influence on the annual change in the budget balance. Moving on to political determinants, we do not find any evidence of an electoral budget cycle.

TABLE 3 Empirical model for contracts and delegation indices.

| Dependent variable (% of GDP) | (1) Annual change in general government gross debt | (2) Annual change in general government budget balance | (3) Annual change in general government budget balance | (4) Annual change in total government expenditure (excl. Interest payments) | (5) Annual change in current government expenditure (excl. Interest payments) |
|---|---|---|---|---|---|
| % Change in real GDP | −0.758*** | 0.062 | 0.168*** | −0.180** | −0.202*** |
| | (0.004) | (0.369) | (0.000) | (0.010) | (0.004) |
| Unemployment rate | 0.671*** | −0.097 | −0.220 | 0.076 | −0.037 |
| | (0.000) | (0.309) | (0.142) | (0.437) | (0.361) |
| Government debt ratio in year *t-1* | −0.198*** | 0.089*** | | −0.088*** | −0.023** |
| | (0.000) | (0.001) | | (0.003) | (0.020) |
| Budget balance ratio in year *t-1* | | | −0.667*** | | |
| | | | (0.000) | | |
| Legislative election held | −1.380* | −0.038 | 0.157 | −0.167 | −0.004 |
| | (0.050) | (0.910) | (0.357) | (0.620) | (0.972) |
| Margin of majority | 3.007 | −2.628 | 1.268 | 2.107 | 0.715 |
| | (0.429) | (0.210) | (0.563) | (0.366) | (0.583) |
| Government fragmentation | 2.504 | 2.072*** | −3.356 | −2.299*** | −1.278** |
| | (0.277) | (0.002) | (0.109) | (0.007) | (0.010) |
| Bailout dummy | 6.076** | 0.607 | 0.343 | −0.647 | −0.262 |
| | (0.030) | (0.475) | (0.806) | (0.490) | (0.485) |
| Contracts index | −3.526 | −0.535 | 2.101 | 1.708** | 0.167 |
| | (0.211) | (0.468) | (0.179) | (0.048) | (0.672) |
| Delegation index | −2.144 | 0.058 | 1.253 | 0.314 | 0.091 |
| | (0.090)* | (0.811) | (0.068)* | (0.305) | (0.512) |

(Continues)

**TABLE 3** (Continued)

| Dependent variable (% of GDP) | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| | **Annual change in general government gross debt** | **Annual change in general government budget balance** | **Annual change in general government budget balance** | **Annual change in total government expenditure (excl. Interest payments)** | **Annual change in current government expenditure (excl. Interest payments)** |
| Constant | 18.000** | −2.698 | −6.639** | 1.606 | 1.441 |
| | (0.039) | (0.134) | (0.016) | (0.484) | (0.209) |
| *F* | - | - | - | - | - |
| Observations | 197 | 197 | 197 | 197 | 197 |

*Note*: $p$-values in parentheses.

$^{*}p<0.10$; $^{**}p<0.05$; $^{***}p<0.01$.

*Source*: Results are produced by the authors.

The coefficient of the election dummy is only significant at the 10% level in the main model with the change in the government debt ratio as the dependent variable; but contrary to a priori expectations, its negative sign suggests more, rather than less, fiscal discipline in an election year. This contrasts with previous findings, for example by Mink and De Haan (2006), Efthyvoulou (2012) and Maltritz and Wüste (2015). This may reflect the more recent time period covered by our analysis, with the sovereign debt crises in the EA and their aftermath making it more difficult for incumbents to carry out electoral manoeuvring. The other political variables generally do not have a significant effect on the fiscal position. Government fragmentation has a significant influence in one of the model specifications, but contrary to expectations, it is associated with an improved budget balance ratio. The coefficient of the bailout dummy is significant only in the model with the annual change in the debt ratio as the dependent variable. However, the coefficient has a positive sign and thus this reflects the effect of rising government debt levels during the sovereign debt crises, rather than pressure for more fiscal consolidation from the bailouts.[18] Meanwhile, a higher lagged government debt ratio results in an improved fiscal position, both when the dependent variable is the annual change in the government debt ratio as well as in the budget balance. This indicates that a larger amount of outstanding debt provides higher incentives for fiscal discipline in order to contain fiscal sustainability risks. Lastly, the lagged budget balance has a strong significant effect on the annual change in the budget balance ratio. Its negative sign shows that rather than persistence of budgetary shocks, this coefficient may be capturing fiscal pressure effects, similar to those exerted from high levels of government debt.

Turning to the fiscal governance variables, we find that the contracts index does not have any significant influence neither on the annual change in the government debt ratio nor on the budget balance. On the other hand, the delegation index has a significant effect on the annual change in the government debt ratio, albeit only at the 10% level. Similar results are obtained in one of the model specifications with the annual change in the budget balance as the dependent variable. Contrastingly, for the EU15 countries during 1985–2004, Hallerberg et al. (2007) found that their delegation index had a significant impact on the fiscal position only in the sample of expected delegation states (based on their type of government) and similarly for the contracts index. In a similar sample, De Haan et al. (2013) found that both forms of fiscal governance result in more fiscal discipline only when there is strong ideological fragmentation within a coalition government. On the other hand, our results, covering more recent years, show a more general relevance of the delegation approach to fiscal governance to achieve fiscal discipline in the EA, despite the increased emphasis on the rules-based approach.

## 5.2 | Robustness tests and the question of endogeneity

The sensitivity of the results was tested by estimating the main model with alternative methods: pooled ordinary least squares, random effects, one-way fixed effects, first-differencing and fixed effects with Driscoll and Kraay corrected standard errors. The coefficients of both the delegation and contracts indices are generally significant, albeit in most cases only at the 10% level. On the other hand, when testing the results for robustness by using alternative fiscal indicators for the dependent variable, namely the annual change in the primary budget balance, in the cyclically adjusted budget balance and in the cyclically adjusted primary budget balance, neither the coefficient of the delegation index nor that of the contracts index are significant.

As regards concerns of endogeneity, our findings that reforms to budget institutions during the period under review were mainly supra-nationally mandated, rather than nationally driven, indicate that this issue should be limited in our analysis. Nevertheless, we still investigate possible endogeneity through a simple test as in Maltritz and Wüste (2015), by regressing the contracts and delegation indices on the lagged fiscal indicators in a simple panel

[18]The austerity measures implemented as conditions of the financial adjustment programmes in bailed-out countries generally resulted in deep recessions, which, through a denominator effect, resulted in higher government debt as a share of GDP.

setting, without any additional control variables. The results indicate that there is generally no Granger causality from the fiscal indicators to the contracts and delegation indices. For completeness, we also estimate these regressions with changed roles, where the dependent variables are the fiscal indicators which are regressed on the lagged institutional indices. The coefficients of both indices have the expected signs, but only the delegation index is significant (at the 10% level) with the annual change in the budget balance as the dependent variable, and only the contracts index is significant in the model with the change in the debt ratio as the dependent variable.[19]

### 5.3 | Extensions of the main model

The analysis is extended in two ways. Firstly, in the main model with the annual change in the government debt ratio as the dependent variable, a more disaggregated approach is applied where the contracts and delegation indices are replaced with their individual sub-indices (Table 4). Secondly, the model is estimated using the annual change in total and current primary expenditure as a ratio of GDP, to assess whether fiscal governance results in government spending restraint (columns 4 and 5 in Table 3).

In the different model specifications where the delegation and contracts sub-indices are used as explanatory variables, the results for the control variables are broadly similar to those in the main model.

As regards the delegation form of fiscal governance, whilst the overall delegation index has a significant effect on the annual change in the government debt ratio (at the 10% level), none of the sub-indices have a significant effect individually. Meanwhile, for the contracts approach, the different components are introduced separately in the model to account for potential collinearity problems. But none of the sub-indices has a significant effect on the annual change in the government debt ratio. The lack of a significant effect particularly for fiscal rules contrasts with previous evidence (e.g. Bergman et al., 2016; Debrun & Kumar, 2007a; Maltritz & Wüste, 2015; Nerlich & Reuter, 2013). These divergent results could be attributable to the fact that various member states introduced national fiscal rules to comply with supra-nationally mandated requirements. Thus, these rules may lack national ownership and political commitment, which impinges on their effectiveness to instil fiscal discipline (Kopits, 2012; Wyplosz, 2012). In contrast, previous empirical studies largely covered timeframes where the fiscal rules in place were established following nationally driven reforms. As regards IFIs, the lack of a significant effect may reflect the fact that many fiscal councils in EA countries are relatively young institutions and it takes time for such institutions to build up their reputation and establish an effective role in a country's fiscal governance (Calmfors & Wren-Lewis, 2011).

Turning to the alternative specifications of the model where the change in total and current primary expenditure as a share of GDP are used as dependent variables, our findings do not suggest that fiscal governance results in any government spending restraint. The coefficient of the delegation index is not significant and the contracts approach has a significant effect only for the change in the total expenditure ratio, but not for the change in current expenditure as a share of GDP. Moreover, all the coefficients have a positive sign, which contrasts with a priori expectations that stronger fiscal governance should contribute to lower public spending ratios.

## 6 | POLICY IMPLICATIONS AND CONCLUSIONS

In this paper, we assess the quality of, and differences in the forms of fiscal governance adopted by EA countries by constructing comprehensive delegation and contracts indices for all the 19 member states, which capture the reforms implemented in response to the sovereign debt crises. These indices are then used in a two-way fixed effects panel empirical model for the EA countries during 2006–2018 to assess the effect of these forms of fiscal governance on fiscal outcomes.

[19]The results of the different estimations and robustness checks discussed in this Section are available from the authors upon request.

**TABLE 4** Empirical model for contracts and delegation sub-indices (dependent variable – annual change in general government gross debt % of GDP).

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| % Change in real GDP | −0.627*** | −0.628*** | −0.625*** | −0.719*** |
| | (0.002) | (0.002) | (0.002) | (0.001) |
| Unemployment rate | 0.219 | 0.206 | 0.207 | 0.706** |
| | (0.337) | (0.357) | (0.363) | (0.010) |
| Government debt ratio in year *t-1* | −0.199*** | −0.186*** | −0.207*** | −0.213*** |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| Legislative election held | −1.120 | −1.113 | −1.124 | −1.293* |
| | (0.138) | (0.153) | (0.139) | (0.067) |
| Margin of majority | −2.352 | −4.494 | −4.006 | 1.121 |
| | (0.522) | (0.209) | (0.298) | (0.793) |
| Government fragmentation | 0.528 | 1.104 | 1.216 | 3.396 |
| | (0.776) | (0.573) | (0.525) | (0.287) |
| Bailout dummy | 7.039** | 7.261** | 6.934** | 6.001** |
| | (0.018) | (0.021) | (0.016) | (0.028) |
| Fiscal rules | −0.966 | | | |
| | (0.275) | | | |
| MTBF | | −4.775 | | |
| | | (0.253) | | |
| IFI | | | 0.0147 | |
| | | | (0.565) | |
| Budget negotiations | | | | −1.067 |
| | | | | (0.354) |
| Budget approval | | | | −0.465 |
| | | | | (0.619) |
| Budget implementation | | | | −0.010 |
| | | | | (0.993) |
| Constant | 11.25** | 14.09*** | 12.38** | 15.23* |
| | (0.012) | (0.002) | (0.010) | (0.070) |
| *F* | - | - | - | - |
| Observations | 227 | 227 | 227 | 197 |

*Note*: *p*-values in parentheses.

$^{*}p<0.10$; $^{**}p<0.05$; $^{***}p<0.01$.

*Source*: Results are produced by the authors.

Despite the supra-national thrust towards a common fiscal governance framework, we find considerable variation in the quality of national budget institutions among the member states, not only as regards the delegation approach, but also for the contracts approach. We also find that, based on the countries' scores in our indices, the delegation approach remains relevant in the EA with some countries having a predominantly delegation form of fiscal governance. Furthermore, the two approaches are not necessarily alternative options, with a notable number of member states having hybrid systems, comprising strong elements from both. These findings conflict with the increasing thrust towards a one-size-fits all, rules-based approach to fiscal governance in the EA, which ignores the diverse social, political and institutional set-ups of the member states. Rather, our results show that there can be different models for strong budget institutions, which can include a key role for the finance minister.

Over the period under review, there has been a strong improvement in the quality of national fiscal governance frameworks, but these were mainly triggered by the need to comply with the common requirements introduced in response to the EA debt crisis, rather than more broad-based reforms driven by national policy agendas. Moreover, in some countries, institutional reforms were part of the conditions imposed as part of their financial assistance programmes during the sovereign debt crises. These developments contributed to our findings of various mismatches between the prevailing form of fiscal governance, based on the countries' scores in our indices, and the expected one, based on the type of government. Moreover, our empirical results show limitations to the effectiveness of both the contracts approach overall, as well as at a more specific level including fiscal rules, MTBFs and IFIs, to improve the fiscal position. On the other hand, we find that overall, the delegation approach can be effective to improve the budgetary situation, but from our results, we could not highlight any specific characteristic as being particularly relevant. Thus, our results show that the imposition of common rules-based requirements for budget institutions in the EA countries has not only ignored the national political, social and institutional setting, but may have also affected their effectiveness to achieve fiscal discipline.

In the context of the debate on the revised EA fiscal governance framework, based on our findings, we suggest a reconsideration of the centrally mandated, common EA requirements for national budget institutions, which involve a one-size-fits-all, rules-based approach. Instead, we commend a more nationally driven and broader approach, comprising also elements of the delegation approach. We, however, note that, in the reforms proposed by the European Commission, the focus remains on a rules-based fiscal governance approach.

Finally, there is scope for further research on national budget institutions in the EA. In particular, the availability of more comprehensive data for IFIs would enable empirical studies using a broader measure to include other institutional characteristics besides their mandate. The empirical analysis can also be strengthened through more comprehensive timeseries data for institutional aspects related to the delegation approach. The scope of the empirical analysis can also be extended by assessing whether the forms of fiscal governance have an effect on whether countries stick to their multiannual fiscal targets. Moreover, qualitative case studies offer the potential for more in-depth comparative analysis of different forms of fiscal governance among the member states as well as within the same country over time and possibly also for understanding their determinants.

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## APPENDIX

**TABLE A1** The contracts approach index – indicators, weights and data sources.

| Sub-indices | Variables | Scoring scheme | Weight | | Data sources |
|---|---|---|---|---|---|
| Fiscal Rules | Legal base | • Constitutional or higher than ordinary law (3)<br>• Ordinary law (2)<br>• Coalition agreement or other government agreement/programme which is not a law (1)<br>• Political commitment by central/local government or minister of finance, or annual budget law (0) | 0.33 | 0.2 | European Commission fiscal rules database |
| | Binding character | • The target of the rules, as defined in its establishing act, cannot be changed or temporarily suspended by the Government except in well-defined situations (i.e. escape clauses) (3)<br>• Government can temporarily change the target, subject to parliamentary approval (1)<br>• The government can change the target of the rule at any time without parliamentary approval (0) | | 0.2 | |
| | Bodies monitoring compliance and the correction mechanism | Nature of the body in charge of monitoring the rule and of the correction mechanism<br>• Independent body (i.e. fiscal council type of institution) (3)<br>• Court of auditors (if not hosting an independent fiscal council) and/or parliament (2)<br>• Ministry of finance or other government body (1)<br>• No regular public monitoring (0)<br>Real-time monitoring<br>• Quarterly or more frequent monitoring and the statutory base of the rule specifies corrective actions to be taken during budget execution in case a risk of non-compliance of the rule is detected (1)<br>• Quarterly or more frequent monitoring but statutory base of the rule does not specify corrective actions to be taken during budget execution in case a risk of non-compliance of the rule is detected (0.5)<br>• No real-time monitoring (0)<br>Nature of the body in charge of monitoring the correction mechanism in case of deviation from the rule<br>• Independent body (e.g. fiscal council or court of auditors endowed with appropriate mandate) (1.5)<br>• Court of auditors and/or parliament (1)<br>• The ministry of finance or other government body; no specific body in charge of monitoring the corrective mechanism; no correction mechanism in place (0) | | 0.2 | |

(Continues)

**TABLE A1** (Continued)

| Sub-indices | Variables | Scoring scheme | Weight | Data sources |
|---|---|---|---|---|
| | | Independent body providing/endorsing macro/budgetary forecasts<br>• Independent body provides or endorsees the official macroeconomic and budgetary forecasts on which the annual budget is prepared (2)<br>• Independent body provides or endorses the official macroeconomic or budgetary forecasts on which the annual budget is prepared (1)<br>• Neither the official macroeconomic nor budgetary forecasts on which the annual budget is prepared are provided or endorsed by independent body (0) | | |
| | Correction mechanisms in case of deviation from the rule | • Correction mechanism is triggered automatically and there are pre-determined rules framing the nature/size and/or timeline of the correction (4)<br>• Correction mechanism is triggered automatically or there are pre-determined rules framing the nature/size and/or timeline of the correction (2)<br>• Government is obliged to take or present corrective measures before the parliament or relevant authority, but there is no predefined timeline for such action and there are no pre-determined rules framing the nature/size and/or timeline of the correction (1)<br>• Government is not obliged to take or present corrective measures and there are no pre-determined rules framing the nature/size and/or timeline of the correction (0) | 0.2 | |
| | Resilience to shocks | The score is the sum of the following dimensions:<br>• Does the rule contain clearly defined escape clauses which are in line with the SGP? (1/0)<br>• Is there a budgetary margin defined in relation to the rule or a safety margin linked to the medium-term budgetary objective enshrined in national legislation? (1/0)<br>• Are targets defined in cyclically adjusted terms or are they defined over the cycle? (0/1)<br>• Are there exclusions from the rule for items that fall outside the authorities' control at least in the short term (e.g. interest payments, unemployment benefits)? (0/1) | 0.2 | |

**TABLE A1** (Continued)

| Sub-indices | Variables | Scoring scheme | Weight | | Data sources |
|---|---|---|---|---|---|
| A fiscal rule strength index is calculated for each fiscal rule in place on the basis of the above criteria. The composite fiscal rule strength index (for each country and for each year) is obtained by multiplying the fiscal rule index for each rule by its coverage of the general government sector. The products are then summed up. If more than one rule applies to the same general government sub-sector, higher weights are assigned to those with the higher fiscal rules strength index score, to reflect decreasing marginal benefit of multiple rules applying to the same general government sub-sector. Further details are available at: https://ec.europa.eu/info/business-economy-euro/indicators-statistics/economic-databases/fiscal-governance-eu-member-states/numerical-fiscal-rules-eu-member-countries_en. | | | | | |
| Medium-term budgetary framework | Coverage of the targets/ceilings included in the national medium-term fiscal plans | • Covers more than 90% of the general government sector (3)<br>• Covers between 70% and 90% of the general government sector (2)<br>• Covers between 50% and 70% of the general government sector (1)<br>• Covers less than 50% of the general government sector (0)<br>Score is supplemented by 1 if there is some form of co-ordination between sub-levels of government when setting the multi-annual targets (applies only when medium-term plan covers several sectors of the government) | 0.33 | 0.2 | European Commission MTBF database |
| | Connectedness between the targets/ceilings included in the national medium-term fiscal plans and the annual budgets | • By law or in practice, the annual budget respects the limits set (deficit/surplus, expenditure ceilings etc) in the medium-term fiscal plans which cannot be exceeded in any circumstances (4)<br>• The annual budget can only deviate at a disaggregated level from the medium-term fiscal plans provided that the nominal budget balance is unchanged or the structural budget balance objective is not revised (3)<br>• The annual budget, including headline balance objectives, can only deviate from the medium-term fiscal plans in a specific set of pre-defined circumstances (2)<br>• The annual budget can deviate from the medium-term fiscal plans, but possible deviations must be publicly explained (1)<br>• The medium-term plans are only indicative and possible deviations need not be explained (0)<br>Score is supplemented by 1 in case the objectives/ceilings included in the national medium-term plans are fixed in advance for a number of years and are not changed.<br>Score is further supplemented by 1 in case there are well-defined actions to be taken in case of deviations from plans. | | 0.2 | |
| | Involvement of national parliament in the preparation of the national medium-term fiscal plans | • The medium-term plans are voted by the parliament (3)<br>• No vote in parliament, but there is a formal presentation by the government and/or a discussion on the medium-term plans in parliament (2)<br>• No formal presentation in parliament, but the medium-term plans are sent for information to the parliament (1)<br>• No interaction with parliament (0) | | 0.2 | |

(Continues)

**TABLE A1** (Continued)

| Sub-indices | Variables | Scoring scheme | Weight | | Data sources |
|---|---|---|---|---|---|
| | Involvement of independent fiscal institutions in the preparation of the national medium-term fiscal plans | • An IFI produces/endorses both the macroeconomic and budgetary multi-annual forecasts (4)<br>• An IFI produces/endorses either the macroeconomic or the budgetary multi-annual forecasts (3)<br>• An IFI assesses both the macroeconomic and budgetary multi-annual forecasts (2)<br>• An IFI assesses either the macroeconomic or budgetary multi-annual forecasts (1)<br>• There is no IFI involvement in the preparation of the fiscal plans (0) | | 0.2 | |
| | Level of detail included in the national medium-term fiscal plans | • The score is the sum of the following dimensions:<br>• There is a detailed breakdown of the total expenditure and revenue projections based on unchanged policies by main components (1/0)<br>• There is a dedicated section/chapter analysing the policies underlying both total expenditure and revenue projections and/or their main components (1/0)<br>• The impact of the main policies and reforms on the unchanged policy scenario is quantified over the time-span of the plan (1/0)<br>• The medium-term fiscal plan provides detailed explanations on the budgetary impact of alternative macroeconomic scenarios (1/0) | | 0.2 | |
| Scope of Independent Fiscal Institutions | Tasks | • Monitoring compliance with fiscal rules<br>• Macroeconomic forecasting<br>• Budgetary forecasting and policy costing<br>• Analysis of long-run sustainability of public finances<br>• Promotion of fiscal transparency<br>• Normative recommendations on fiscal policy<br>Scores for the last three tasks take the value of 0 (no activity in the field) or 1 (active in the field). Scores for the first three tasks take account of further considerations and allow for more granularity. Further details are available at: https://ec.europa.eu/info/publications/fiscal-institutions-database_en | 0.33 | 0.30<br>0.25<br>0.20<br>0.10<br>0.05<br>0.10[a] | European Commission fiscal institutions database |
| | Legal force coefficient | • Tasks stipulated in legal remit of IFI (1)<br>• Own-initiative tasks with proven and regular output (0.5)<br>• Own-initiative tasks with sporadic output (0.25) | | | |

[a]This is the default weighting scheme, referred to as EU-oriented, which assigns higher weights to mandatory tasks for EA member states. Other weighting schemes are available, namely a neutral scheme with equal weights, an advisory body scheme which assigns higher weights to consultative tasks; and a fiscal authority scheme which assigns higher weights to tasks more directly linked to fiscal-policy making. Further details on these scoring schemes and on the methodology to compile this index are available at: https://ec.europa.eu/info/publications/fiscal-institutions-database_en.

Source: European Commission (2020a).

**TABLE A2** The delegation approach index – indicators, weights and data sources.

| Sub-indices | Variables | Scoring scheme | Weight | | Data sources |
|---|---|---|---|---|---|
| Budget negotiations | Place where negotiations take place | • Bilaterally between the finance minister and spending ministers (10)<br>• Full cabinet participates in the negotiations (5)<br>• Outside cabinet between the political parties (2.5)<br>• Other (0) | 0.33 | 0.33 | Authors' questionnaire to all EA countries |
| | Imposition of budget ceilings on the initial spending requests of each line ministry | • Budget ceilings are imposed for total/overall expenditure of the line ministry (10)<br>• Budget ceilings are imposed for other aggregate levels (e.g. by programme or sector) (6.7)<br>• Budget ceilings are imposed for agency levels or other organisational level (3.3)<br>• No such limits are imposed (0) | | 0.33 | OECD EA countries – OECD Budget Practices and Procedures Survey (question 31)<br>Authors' questionnaire to non-OECD EA countries |
| | Final/ultimate decision-making power to resolve/settle disputes during the budget negotiation process | • President/Prime Minister/Minister of Finance (10)<br>• Combination of chief executive, cabinet, finance minister (7.5)<br>• Cabinet (5)<br>• Ministerial committee (2.5) | | 0.33 | OECD EA countries – OECD Budget Practices and Procedures Survey (question 33)<br>Authors' questionnaire to non-OECD EA countries |
| Budget approval | Formal powers of the legislature to amend the budget proposed by the executive | • The legislature may not make any changes, it can only approve or reject the budget as a whole (10)<br>• The legislature may only decrease existing expenditures/ revenues (i.e. the legislature cannot increase existing items or create new ones) (7.5)<br>• The legislature may make amendments but only if it does not change the total deficit/surplus proposed by the executive (5)<br>• The legislature has unrestricted powers to amend the budget (0) | 0.33 | 0.33 | OECD EA countries – OECD Budget Practices and Procedures Survey (question 64)<br>Authors' questionnaire to non-OECD EA countries |
| | Sequence of voting procedure | • The legislature first votes on the total amount of expenditure before it votes on specific appropriations (10)<br>• The legislature does not first vote on the total amount of expenditure before it votes on specific appropriations (0) | | 0.33 | OECD EA countries – OECD Budget Practices and Procedures Survey (question 63)<br>Authors' questionnaire to non-OECD EA countries |

(Continues)

**TABLE A2** (Continued)

| Sub-indices | Variables | Scoring scheme | Weight | | Data sources |
|---|---|---|---|---|---|
| | Type of committee structures for dealing with the budget | • A single budget/finance committee co-ordinates a process in which sectoral committees make recommendations to the budget/finance committee. The budget/finance committee then reviews and accepts or rejects these recommendations and formally considers all budget-related matters (10)<br>• A single budget/finance committee formally considers the budget, but members from sectoral committees attend meetings of the budget/finance committee when expenditures in their specific areas are discussed (7.5)<br>• A single budget/finance committee formally considers budget aggregates (total level of revenue and spending and their allocation to each sector) and sectoral committees formally consider spending for sector specific appropriations (5)<br>• Sectoral committees formally consider appropriations for each respective sector/no budget/finance committee is in place or it provides technical assistance only/no formal committee involvement, but committees may choose to consider aspects of the budget (0) | | 0.33 | OECD EA countries – OECD Budget Practices and Procedures Survey (question 59)<br>Authors' questionnaire to non-OECD EA countries |
| Budget implementation | | | 0.33 | | |
| Executive authority to cut/cancel/rescind spending | Whether executive can cut/cancel/rescind spending once the budget has been approved by the legislature | • Yes (*score is the average of the scope of executive authority to cut/cancel/rescind spending and thresholds and approval that apply)*<br>• No (0) | | 0.25 | OECD EA countries – OECD Budget Practices and Procedures Survey (questions 72–84)<br>Authors' questionnaire to non-OECD EA countries |
| | Whether executive has authority to cut/cancel/rescind all types of spending | • Authority applies to all types of spending (10)<br>• Authority applies to three types of spending only (7.5)<br>• Authority applies to two types of spending only (5)<br>• Authority applies to one type of spending only (2.5)<br>• Executive does not have authority to cut spending (0) | | | |
| | Whether there are any thresholds that apply to the executive's authority to cut/cancel/rescind spending | *Score is summation of the following two components*<br>• No (5)<br>• Yes (0) | | | |

**TABLE A2** (Continued)

| Sub-indices | Variables | Scoring scheme | Weight | Data sources |
|---|---|---|---|---|
| | Whether approval is required for the executive to cut/cancel/rescind spending | • No (5)<br>• Yes (*calculated as the sum of the following elements)*<br>• Approval by Ministry of Finance/Economy required (1.25)<br>• Approval by legislature required (0)<br>• Ex-post approval required (1.25)<br>• Ex-ante approval required (0) | | |
| Power of line ministries to re-allocate funds within their budget envelope | Whether line ministers can re-allocate funds within their own budget envelope | • Yes (*score is summation of the following elements)*<br>• No (0) | 0.25 | OECD EA countries – OECD Budget Practices and Procedures Survey (questions 72–84)<br>Authors' questionnaire to non-OECD EA countries |
| | Whether there are any thresholds that apply to line ministers' re-allocation of funds within their own budget envelope | • No (5)<br>• Yes (0) | | |
| | Whether approval is required for line ministers to re-allocate funds within their own budget envelope | • No (5)<br>• Yes (*calculated as the sum of the following elements)*<br>• Approval by Ministry of Finance/Economy required (2.5)<br>• Approval by legislature required (0)<br>• Ex-post approval required (1.25)<br>• Ex-ante approval required (0) | | |
| Restrictions on executive authority to increase spending | Whether executive can increase spending once the budget has been approved by the legislature | • Yes (*score is the average of the scope of executive authority to cut/cancel/rescind spending and thresholds and approval that apply)*<br>• No (10) | 0.25 | OECD EA countries – OECD Budget Practices and Procedures Survey (questions 72–84)<br>Authors' questionnaire to non-OECD EA countries |
| | Whether executive has authority to increase all types of spending | • Authority applies to all types of spending (0)<br>• Authority applies to three types of spending only (2.5)<br>• Authority applies to two types of spending only (5)<br>• Authority applies to one type of spending only (7.5)<br>• Executive does not have authority to cut spending (10) | | |
| | Whether there are any thresholds that apply to the executive's authority to increase spending | *Score is summation of the following two components*<br>• Yes (5)<br>• No (0) | | |

(Continues)

TABLE A2 (Continued)

| Sub-indices | Variables | Scoring scheme | Weight | Data sources |
|---|---|---|---|---|
| | Whether approval is required for the executive to increase spending | • No (5)<br>• Yes (*calculated as the sum of the following elements)*<br>• Approval by legislature required (2.5)<br>• Approval by Ministry of Finance/Economy required (1.25)<br>• Ex-ante approval required (2.5)<br>• Ex-ante approval required (1.25) | | |
| Supplementary budgets | Top reason(s) why the supplementary budget/s were necessary | • No supplementary budgets/recession or cancellation of planned spending/formal approval of appropriations carried forward from one fiscal year to the next/transfer of funds from one appropriation to another (no net increase) (10)<br>• Ad hoc emergency needs (e.g. natural disaster) (7.5)<br>• Changing economic forecasts resulting in lower/higher expenditure/increase of estimates of mandatory spending or stimulus measures (5)<br>• New policy initiatives (0) | 0.25 | OECD EA countries – OECD Budget Practices and Procedures Survey (question 86)<br>Authors' questionnaire to non-OECD EA countries |

**TABLE A3** Empirical analysis – variables description and data sources.

| Variable name | Variable description | Source |
|---|---|---|
| $FISCAL_{it}$ | | |
| Annual change in government debt ratio | Annual change in general government consolidated gross debt, % of GDP | Authors' calculations from European Commission (2020b) Annual macro-economic database (AMECO online) |
| Annual change in budget balance ratio | Annual change in general government net lending (+) or net borrowing (−); % of GDP | Authors' calculations from AMECO online |
| Annual change in total government primary expenditure ratio | Annual change in total government expenditure excluding interest, % of GDP | Authors' calculations from AMECO online |
| Annual change in current government primary expenditure ratio | Annual change in current government expenditure excluding interest, % of GDP | Authors' calculations from 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* | Inter-American Development Bank (2017) The Database of Political Institutions 2017 |
| 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 | |
| $PRESSURE_{it}$ | | |
| 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 (2021) Financial Assistance in the EU |
| Government debt ratio | General government consolidated gross debt; % of gdp | AMECO online |

(Continues)

**TABLE A3** (Continued)

| Variable name | Variable description | Source |
|---|---|---|
| Budget balance as a ratio to GDP | General government net lending (+) or net borrowing (−); % of GDP | AMECO online |
| $INDEX_{it}$ | | |
| Contracts index | Composite index measuring the quality of the contracts approach to fiscal governance | Produced by the authors |
| Fiscal rules sub-index | European Commission fiscal rules strength index | European Commission (2020a) |
| MTBF sub-index | European Commission MTBF index | |
| Scope of IFI sub-index | European Commission Scope index of independent fiscal institutions<br>The earliest value for this index was extended up to the year when an IFI was established in the country or up to 2006 (if the IFI was in place in that year). A value of 0 was applied if an IFI was not in place in a particular year. | |
| Delegation index | Composite index measuring the quality of the delegation approach to fiscal governance | Produced by the authors |
| Budget negotiations sub-index | Sub-index measuring the quality of the delegation approach during the budget negotiations stage | |
| Budget approval sub-index | Sub-index measuring the quality of the delegation approach during the budget approval stage | |
| Budget implementation sub-index | Sub-index measuring the quality of the delegation approach during the budget implementation stage | |

**TABLE A4** Prevailing and expected forms of fiscal governance in EA countries.

| Country | Prevailing form of fiscal governance[a] | Expected form of fiscal governance[b] | Type of government (2017)[c] |
|---|---|---|---|
| AT | Hybrid | Contracts | Coalition, wide ideological range |
| BE | Weak | Contracts | Coalition, wide ideological range |
| CY | Delegation | Contracts | Single-party, minority |
| DE | Hybrid | Contracts | Coalition, wide ideological range |
| EE | Hybrid | Delegation | Coalition, narrow ideological range |
| EL | Strong delegation | Contracts | Coalition, wide ideological range |
| ES | Strong hybrid | Contracts | Single-party, minority |
| FI | Very weak | Contracts | Coalition, wide ideological range |
| FR | Strong delegation | Contracts | Single-party, minority |
| IE | Hybrid | Contracts | Coalition, wide ideological range |
| IT | Contracts | Contracts | Coalition, wide ideological range |
| LT | Contracts | Contracts | Coalition, wide ideological range |
| LV | Hybrid | Contracts | Coalition, wide ideological range |
| LU | Weak | Contracts | Coalition, wide ideological range |
| MT | Weak | Delegation | Single-party, majority |
| NL | Strong contracts | Delegation | Coalition, narrow ideological range |
| PT | Strong contracts | Delegation | Coalition, narrow ideological range |
| SI | Strong delegation | Delegation | Coalition, narrow ideological range |
| SK | Hybrid | Contracts | Coalition, wide ideological range |

[a]The prevailing form of fiscal governance is based on the countries' ranking in the delegation and contracts indices. For example, if a country's score in the delegation index is in the top quartile, but its score in the contracts index is in a lower quartile, the prevailing form of fiscal governance is considered as delegation, and conversely for the contracts approach. On the other hand, the prevailing form of fiscal governance is considered as 'hybrid' if countries' scores are in the top or middle quartiles for both indices. When countries' scores in the two indices are in the bottom and middle quartiles, they are considered as having weak fiscal governance.

[b]Following Hallerberg and von Hagen (1999) and Hallerberg et al. (2009), a country's expected form of fiscal governance reflects its type of government, with the delegation approach more appropriate for countries with single-party majority government or with coalition governments where there is narrow ideological dispersion among the political parties forming the coalition. On the other hand, the contracts approach is more suitable for countries with coalition governments involving political parties with a wide ideological range. We also consider the contracts approach as more fitting in countries with minority governments as this results in commitment from opposition parties to budgetary targets and thus facilitates obtaining required parliamentary support.

[c]The ideological range within a coalition government is considered as wide if the coalition was composed of political parties with different party orientation with respect to economic policy (namely right, left and centre). If the political parties making up the coalition had the same party orientation, the ideological range was considered as narrow.

*Source*: Database of Political Institutions, 2017; results produced by the authors.