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# The shape of the budget. European countries' public expenditure through crises

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## ABSTRACT




Budget policy exemplifies the Punctuated Equilibrium Theory, where changes are predominantly hyper-incremental, with rare instances of extreme shifts triggered by crises. It is well established that domestic institutional frictions and the cognitive limitations of decision-makers contribute to the punctuated pattern of budget changes. However, with its expanding powers, the European Union has become a key player in monitoring and shaping Member States' budget policies and providing instruments to manage crises. This study examines the extent of punctuated changes in European countries' budget policies over a period (1995–2022) marked by profound national political transformations, supranational developments, and external shocks. The findings confirm that budget policies across all European countries exhibit a punctuated pattern. Using a quantile regression model, which estimates the impact of domestic and supranational frictions, crises, and economic indicators across different quantiles of the budget change distribution, this work highlights the positive role of multilevel governance in mitigating budget punctuations. National political and institutional variables primarily explain minor and moderate budget adjustments (both positive and negative) and major expansions but only faintly elucidate severe budget cuts. While the Eurozone crisis had a clear impact on budgetary changes, driving significant reductions, the role of the COVID-19 pandemic appears negligible.

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**KEYWORDS** Budget; European economic governance; Crisis; COVID-19; Punctuated equilibrium

## Introduction

Public budgeting has always gathered a large amount of curiosity from scholars, interested in understanding and explaining the overall pattern of change and the political and institutional factors that determine policymakers' choices about public expenditure. The public budget has a crucial role both in ensuring the sustainability of public finances, and thus the functioning of the state machinery, and in responding to citizens' necessities. Several

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studies on fiscal and budget policies have treated the subject as determined exclusively by domestic political, institutional, and economic conditions with no impact from the external environment. In fact, the sole exogenous input which has started to be taken into account mostly in economic research regards the openness of a country's economy and its position within the global economy. Public policy scholars, most of the time, neglect external factors and focus uniquely on national characteristics and settings.

However, in the European continent, it is no longer possible to treat a country's budget policy as a private national matter. In recent years, two main factors have stood out at the European level as capable of shaping national budgets: the occurrence of crises and European Economic Governance (EEG). On the one hand, countries appear to be at the mercy of sudden shocks, which find them almost completely unprepared and demand an immediate response, as in the case of the Eurozone crisis and the COVID-19 pandemic. On the other hand, with expanding powers gained especially after the recession, the European Union has emerged as a fundamental actor in monitoring Member States' budget policy and providing instruments to face crises.

The study applies the concepts of the Punctuated Equilibrium Theory, which predicts that policy processes are marked by inertia and disproportionate information processing, both of which obstruct a rational review of inputs, ultimately leading either to no policy updates or to extreme policy changes, i.e., punctuations (Jones & Baumgartner, 2005a). In contrast, policy processes that lead to incremental outcomes (i.e., moderate and progressive adjustments) mirror a rather efficient system in which policies are carefully updated, based on proportional information processing. The study assesses and compares the level of inefficiency (i.e., the degree of punctuated changes) of European countries' budgets over a period of about thirty years (1995–2022), which encompasses profound changes in terms of the ideological position of national governments across Europe, the reinforcement of the EEG, and the occurrence of external shocks. The main aim is to detect which are the most important drivers of European countries' budget policy and whether the enhanced role of the EEG can make MS budget policies more rational, and thus less punctuated.

The paper is structured as follows: Section 1 presents the main argument of the study and previous works related to it. Section 2 reviews different threads of research about the many factors that shape a country's budget policy, presenting the hypotheses to be tested later. Section 3 describes the dependent variables, namely budget changes in European countries. Section 4 illustrates the independent variables and the method used to test the hypotheses in Section 5. The last part discusses the main findings and draws some conclusions.

## The budget policy of European countries

Departing from the incremental model which states that the budget is made mostly of small adjustments to the previous year's decisions (Wildavsky, 1964), Punctuated Equilibrium Theory (henceforth, PET) (Baumgartner & Jones, 1993; Jones & Baumgartner, 2005a) demonstrated that even large modifications, certainly not frequent, are still possible and likely when specific conditions are met. In 'normal' times, institutional and cognitive frictions lock policy decisions into the existing pattern and do not allow a rational update of incoming information, thus an efficient decision-making process. The process of adaptation in these periods is hyper-incremental. On rare occasions, changes can become excessively massive, mostly because of a crisis that suspends the pattern of stability. This regularity is valid across countries and venues and its strength increases as far as institutional frictions grow stronger, i.e., as we move from inputs (e.g., congressional hearings and bills) to outputs (e.g., budget) (Bevan & Jennings, 2014; Jones et al., 2003). This is precisely why budget policy is the perfect representation of PET.

While cognitive limits caused by actors' bounded rationality and shortcomings in information availability are always present, the institutional design, which creates a set of operating rules for the decision-making process, varies significantly across venues and countries. Attention shifting, which may be driven by external inputs, sudden shocks, and/or the growth of pressure after a long period of error accumulation (Baumgartner & Jones, 1993; Jones & Baumgartner, 2005a) can prevail, on rare occasions, even over institutional frictions. However, a change of focus is a necessary but not sufficient condition for policy punctuations to occur (Baumgartner & Jones, 2002). In addition, the incorporation of signals weakens moving from the agenda-setting stage to the decision-making stage (Jones et al., 2019). Instead, institutional factors and variations in government commitments are more powerful determinants of major changes.

While budget policy has been considered for a long time a purely domestic issue, in Europe it is increasingly evident that supranational institutions have started to play a crucial role, penetrating the national level. The 'external constraint' imposed by the Economic and Monetary Union (EMU) on Member States (MS) (Dyson & Featherstone, 1996; Moschella, 2017) is not a recent phenomenon. From the signing of the Maastricht Treaty in 1992, which set a ceiling of 3 per cent for the deficit-to-GDP ratio and 60 per cent for the debt-to-GDP ratio, European countries have pursued fiscal responsibility and sound public accounts under the surveillance of European institutions. Years of development of the EEG reinforced supranational monitoring over MS policies, with the period after the Eurozone crisis being particularly harsh, in terms of vigilance, for MS severely hit by the recession (Karremans &

Lefkofridi 2020). In almost three decades, the European Commission has gained increasing relevance *vis-à-vis* national parliaments (Majone, 2014).

National budgetary processes have been placed within the common framework of the European Semester, which sets a shared timeline for all EU countries to prepare and review their national budget based on supranational guidelines. The development of a series of instruments (i.e., the Six-Pack [2011], the Treaty on Stability, Coordination and Governance in the Economic and Monetary Union (TSCG; known as Fiscal Compact) [2012], the Two-Pack [2013]) and their implantation at the national level – notably, the TSCG led many EU national legislations to introduce a balanced budget rule (BBR) at constitutional level – have further bound governments to supranational targets and fiscal rules.

In April 2024, a new economic governance framework entered into force as part of a comprehensive reform of EEG rules, marking the largest reform since the aftermath of the Eurozone crisis.<sup>1</sup> With the Pandemic Emergency Purchase Programme and the recovery plan called Next Generation EU, the Commission made available an unprecedented amount of funds, granted conditionally on the execution of National Recovery and Resilience Plans. In this case, the targets themselves have been agreed upon at the EU level, based on what are considered the future challenges for the European economies.<sup>2</sup> The recent reform establishes that the Commission issues country-specific adjustment plans for those countries that do not comply with debt and deficit criteria, but these countries are allowed an extension of four to seven years for their plans in cases where reforms and investments are undertaken to meet EU priorities.

With balanced budget rules and the improved federalisation of EMU (Borriello & Crespy, 2015) that followed the two crises, the EU lends itself to comparison with other federal systems. Although there is no consensus on whether the EU qualifies as a federal state, since it lacks elements of state sovereignty (Bolleyer, 2017; Costa Cabral da, 2016), many works in fiscal federalism literature have compared it with Canada and the US (among others, Csehi, 2020). In fact, when both the level of decentralisation and the level of interdependence between the different levels of government are considered, the EU enforces the most stringent BBRs, which have improved MS budgetary compliance (Csehi, 2020).

Although it is not yet clear whether the significant change after the COVID-19 pandemic represents a paradigmatic shift in EEG principles (Buti & Fabbrini, 2023), there is no doubt that the EU has become a fundamental driver of national budget policy, both in fiscal decisions and policy ideas. The pattern of development of EEG has been found to obey the PET. The actual change of policy idea driving the European economic approach, with its repercussions on MS budgetary policy, was triggered specifically by the outbreak of the pandemic, after years of discussion about the reform of

the EEG rules, which started already in the 2014–2019 period (Cavalieri & Karremans, 2024).

In this regard, several works have found that a crisis serves as a moment of opportunity (Kingdon, 1984), an occasion for decision (Rosenthal & Kouzmin, 1997), or a critical juncture for diverting the original path and engaging in radical policy and/or institutional reforms. At the same time, punctuations indicate inefficient decision-making and actors' cognitive limits, which hinder rational information gathering and processing that would otherwise lead to moderate budget changes (Jones & Baumgartner, 2005b). However, as mentioned, sudden shocks alone can't be blamed for this inefficiency. Institutional frictions, shaped by institutional design, represent a major cause of inefficiency. Based on these premises, the next section examines the impact of different factors on budgetary changes and develops the hypotheses to be tested later.

## **Factors affecting the degree of changes in the budget: Hypotheses**

### ***Partisan ideology***

Early research focused on the role of partisan ideology in explaining policy choices and, thus, national public accounts. Departing from the perspective that left – and right-wing parties can be placed on a scale of preferences regarding state intervention into the economy (Downs, 1957) and that they try to implement their constituencies' preferred policies to maximise electoral returns (Schmidt, 1996), scholars posited that partisan ideology affects the size of public expenditure (Blais et al., 1993; Hibbs, 1977), the level of debt and deficit (Hallerberg et al., 2007), and expenditure in specific policy sectors (Swank, 1988). These results have been contested by studies showing that left-wing governments were more successful than their right-wing counterparts in cutting expenditure in the 70s and 80s (Ross, 1997) and that partisan politics ceased to influence social expenditure in the 90s (Potrafke, 2009).

In fact, several challenges limit parties' and governments' ability to fully align with their policy preferences. Among these, ideological budgeting is considerably constrained by multi-annual spending commitments, mandatory spending programmes, and inherited policies (Rose & Davies, 1994). Evidence from the UK and the US budget until the 2000s informs us that the budget policy appears almost nonresponsive to public priorities and swings of attention (Bevan & Jennings, 2014). Evidence from the UK and US budgets until the 2000s suggests that budget policy was almost unresponsive to public priorities and shifts in attention (Bevan & Jennings, 2014). As a result, budget choices were not ideologically driven. The partisan link

becomes particularly weak in the case of an event or shock that demands an urgent response (Breunig, 2011), forcing governments to act regardless of their ideological stance, as observed in several countries during the economic crisis (Epp et al., 2014; Russo & Verzichelli, 2016).

Recent works, however, have detected a renewed partisan effect on social spending after the economic crisis (Savage, 2019), reviving the left-wing tendency toward welfare expansion (McManus, 2019). Given the conflicting evidence on ideological budgeting, I reassess the impact of partisan ideology on the magnitude of budget changes. Thus, the first hypothesis is:

H1: Leftist governments produce higher budget increases, while rightist governments produce substantial budget decreases.

### ***Domestic institutions***

The government's ability to steer the budget towards its ideological preferences is strongly influenced by institutional design (Epp et al., 2014; Russo & Verzichelli, 2016).

The veto points theory explains that the opportunities to modify the budget diminish as the number of veto players increases (Tsebelis, 1999). The necessity to compromise among multiple actors with differing policy preferences makes it more difficult for multi-party coalition governments to reach agreements on policies to be implemented (Tsebelis & Chang, 2004) and to control policy outcomes – a problem that does not arise in single-party governments, where ideological alignment and power concentration facilitate decision-making (Weaver & Rockman, 1993). In addition, the literature on models of democracy suggests that majoritarian democracies, dominated by single-party governments, tend to produce 'stop-and-go' policies because they lack coalition partners to moderate the degree of change (Crepaz, 1996), while consensus democracies implement more stable, continuous, and predictable policies (Lijphart, 1999). The strategic interaction between coalition members is also affected by their ideological position: ideological closeness within the executive reduces divergences that could emerge in governments with a high number of members, thereby increasing the likelihood of implementing the government's spending decisions (Breunig, 2006).

On these premises, and considering that deviating from an already established path requires either approval – or at least the absence of obstruction – from all veto players, I hypothesise that:

H2: Governments with more frictions produce fewer budget punctuations, whether increases or decreases.

In parliamentary democracies, legislative authority and budgetary power are shared between the executive and the legislature (Wehner, 2006). Parliament is a powerful actor in the decision-making process, capable of substantially

modifying government bills, especially those affecting multiple policy areas (Pedrazzani & Zucchini, 2013). However, the extent of parliamentary control over budget policy varies considerably across Europe. In some countries, such as Italy, parliament has traditionally held extensive budgetary powers (Verzichelli, 1999), whereas in others, such as France and the UK, its influence on budget figures is minimal (Schick, 2002).

Institutional arrangements characterised by distributed and fragmented political power tend to produce more stable policies and smaller policy shifts, as seen in bicameral legislative assemblies (Riker, 1992). Representing a significant institutional friction, this rigidifies policy and makes hyper-incremental adjustments the norm for most programmes, most of the time. Such rigidity leads to mounting pressure for change, but institutional strictness prevents proportional policy updates. Once policymakers can no longer ignore the demands for adjustment, they are compelled to undertake an immediate and massive policy revision (Jones & Baumgartner, 2005b). Institutional frictions and disproportionate information processing prevent moderate adjustments, allowing only minimal changes or drastic punctuations. It follows that:

H3: A higher number of veto players in parliament produces either minimal or punctuated budget changes, whether increases or decreases.

Previous research has also examined institutional frictions in democratic and authoritarian regimes, finding that non-democracies experience more punctuated budgetary shifts than democratic countries, both in Central and Eastern Europe (Sebók & Berki, 2018) and beyond the European continent (Baumgartner et al., 2017). The new global wave of autocratization, which has not spared Europe (Lührmann & Lindberg, 2019), along with the 'disfigured' face of liberal representative democracies (Urbinati, 2014), calls for further investigation into how European countries perform in terms of budgetary policy. Given that democratic regimes outperform non-democratic ones in information processing and policy formulation, I expect that:

H4: Liberal democracies produce fewer budget punctuations, whether increases or decreases, than other regimes.

### ***Supranational institutions***

Beyond the national institutional framework, European countries are increasingly bound by supranational regulations. From a punctuated equilibrium (PE) perspective, which builds on Simon's analysis of hierarchical systems (1962, 1996), the addition of a new governmental level that imposes stricter rules on Member States' (MS) budgetary processes increases systemic complexity. A supranational authority with expanding powers strengthens hierarchical structures, which are expected to heighten contagion risks and

generate top-down budgetary punctuations (Jones & Baumgartner, 2012; True et al., 2007). This dynamic mirrors the characteristics of federal systems, where the greater distance between policymakers and the public weakens policy demands and reduces information-processing capacity, ultimately leading to more budget punctuations (Fagan et al., 2017).

However, systems characterised by a high number of agencies, departments, and institutions addressing the same issues – i.e., those with higher institutional capacity – and those that adopt a collective decision-making approach seem better equipped to gather and process multiple streams of information, allowing them to respond to emerging signals more rationally (Epp, 2018; Epp & Baumgartner, 2017). In fact, in some countries, European Commission oversight has fostered more rational budgetary policies, compensating for the limited rationality and information-processing capabilities of national decision-makers (Cavaliere, 2023). These findings raise an important question: has the increasingly hierarchical structure of the European Economic Governance exacerbated cognitive and institutional frictions, or has the collective, multilevel decision-making approach improved budgetary efficiency in MS? This leads to two contrasting hypotheses:

H5(a): Greater EEG stringency produces either minimal or punctuated budget changes, whether increases or decreases.

H5(b): Greater EEG stringency produces moderate budget changes, whether increases or decreases.

## **Crisis**

Over the past three decades, European countries have faced two major shocks: the Eurozone crisis and the COVID-19 pandemic. The two crises have been handled, in terms of economic choices, in very different ways, particularly because of the opposite reactions of the European Union. In the first case, the EU prescribed austerity measures (Bremer & McDaniel, 2020), whereas in the second, it adopted an investment-oriented approach (Cavaliere & Karremans, 2024). This divergence is plausibly explained by the nature of the crises: while the Eurozone economic and debt crisis was endogenously generated, the pandemic was an exogenous shock (Buti & Fabbri, 2023). As a result, the principle guiding EU intervention shifted from responsibility – enforced through implicit conditionality and the risk of sanctions for non-compliance with Maastricht economic parameters – to solidarity (Ioannidis, 2020). In both cases, whether the direction was to pursue budget reductions or expansions, the urgency of the situation significantly reduced the time available for bargaining processes. Consequently, the next hypothesis predicts that:

H6: Crisis moments produce budget punctuations, whether increases or decreases.

The hypotheses are tested in Section 5, following an analysis of how budgetary policies in European countries have evolved over time and the key drivers behind these changes.

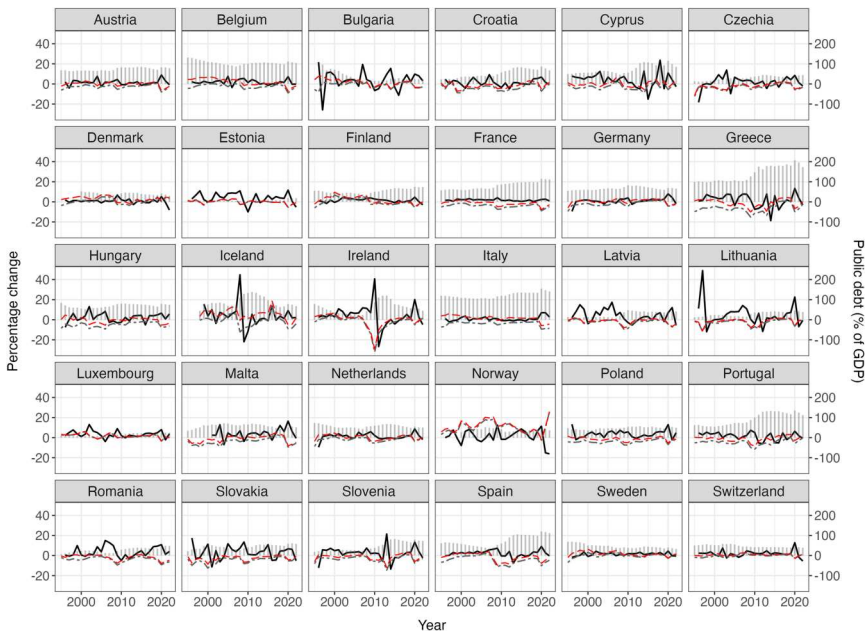
## The shape of budget changes in European countries

Scholars studying public budgeting do not always rely on the same data for the dependent variable, primarily due to availability and reliability issues. Since spending figures are not considered policies per se, public expenditure data are typically used to analyze policy outcomes rather than government commitments. When focusing on governmental priorities, more detailed budgetary policy data – such as budget authorities, obligations, and outlays – are preferred, as they offer greater insight into the decision-making process (Wlezien & Soroka, 2003). However, budgetary data are not consistently available across countries. Many governments fail to publish comprehensive records detailing actual spending commitments, often making only expenditure figures publicly accessible.<sup>3</sup> This limitation has posed a significant challenge for comparative studies covering all EU Member States.<sup>4</sup> Despite this obstacle, Eurostat provides comparable public expenditure data for European countries, though these data have received limited attention from political science scholars (with a few exceptions, such as Brender & Drazen, 2013; Enkelmann & Leibrecht, 2013).

To examine European countries' budgets, this study utilises general government expenditure data,<sup>5</sup> classified according to the Classification of the Functions of Government (COFOG), a common European scheme that enables cross-country and longitudinal comparisons. The dataset categorises expenditure into 10 macro-categories and 69 micro-categories, covering the period 1995–2022 for thirty countries.<sup>6</sup> To ensure comparability, original spending values were adjusted for inflation, and the year-to-year percentage change was calculated for each spending category (both macro and micro levels) as well as for total expenditure (Jones and Baumgartner 2005a). [Figure 1](#) illustrates the annual percentage change in total public expenditure for each country from 1995 to 2022.

Most annual percentage changes in public expenditure appear relatively stable, although some outstanding changes stand out, particularly in Bulgaria, Ireland, and Lithuania. The left y-axis ranges from a maximum increase of 44 per cent (Iceland, 2008) to a maximum decrease of 26 per cent (Ireland, 2011). Some countries, such as Cyprus, Greece, Lithuania, and Slovakia, exhibit significant variations in both directions, whereas others – Finland, France, Italy, and Sweden – show minimal adjustments over time.

To preliminarily assess whether Member States' (MS) budgets conform to the so-called 'general punctuation hypothesis' – which suggests that budget changes are primarily stable and hyper-incremental, occasionally



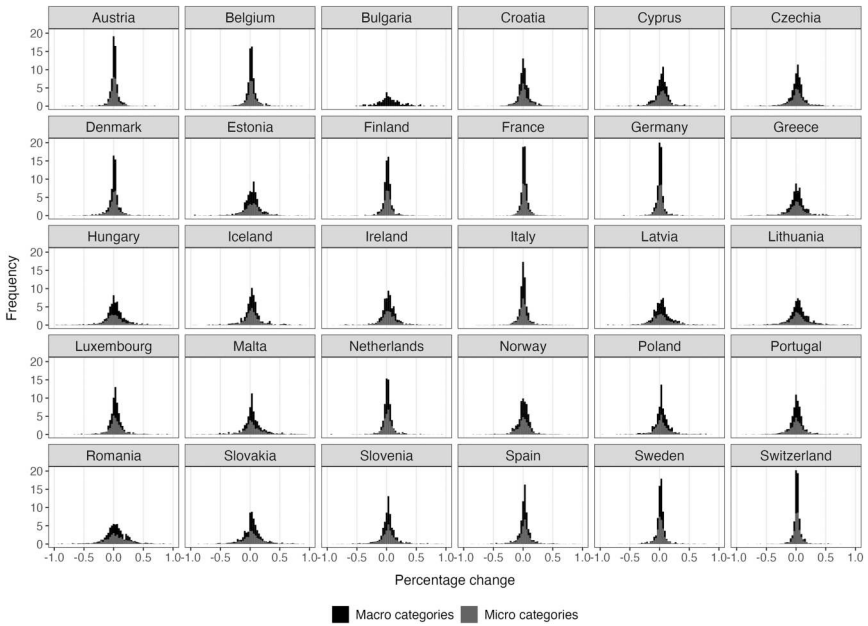
**Figure 1.** Percentage change of public expenditure in European countries (1995–2022).

Note: the black solid line represents the annual percentage change in public expenditure, the grey dashed line displays the fiscal balance (as % of GDP), and the red dashed line represents the primary balance (% of GDP) (i.e., fiscal balance net of interests); the grey bars indicate the level of public debt (as % of GDP) (right axis). Source: author's own elaboration (Eurostat data).

disrupted by sudden and dramatic modifications – **Figure 2** illustrates the pooled distribution of annual percentage changes across macro- and micro-categories in each country. Table A4 in the Appendix provides statistical evidence confirming the non-normal distribution of budget changes in European countries.

The shape of the distributions visually indicates the frequency of both major changes and minor adjustments. The more leptokurtic the distribution (fat tails, weak shoulders, and a slender peak), the more punctuated the budget. Most changes cluster around the central peak, representing small or negligible adjustments, while several outliers appear in the distribution tails, indicating that tiny annual modifications are occasionally and abruptly interrupted by punctuations.

The L-kurtosis values,<sup>7</sup> which estimate the shape of the distribution (see Table A4 and Figure A1 in the Appendix), are all above the reference threshold for a normal distribution (0.123; according to Breunig & Jones, 2011), confirming that budget changes are not normally distributed. In general, macro-categories exhibit fewer punctuations than micro-categories, with lower L-kurtosis scores – typically around 0.46 for budget data (Breunig



**Figure 2.** Frequency distribution of percentage changes in European countries (1995–2022).

Note: For visual clarity, positive changes exceeding 100% have been capped at 100%, while negative changes are naturally bounded at –100%, signaling the elimination of a programme. Data for Bulgaria on micro-categories is unavailable, and some countries have a lower number of micro-categories (see Appendix for details). Source: author’s own elaboration (Eurostat data).

& Jones, 2011). However, some countries, such as Latvia, Hungary, Romania, and Slovakia, display lower degrees of leptokurtosis even for micro-categories. The L-kurtosis values for macro-categories range from a minimum of 0.211 (France) to a maximum of 0.828 (Estonia) – from the least to the most punctuated budget. Even in France, which exhibits the lowest level of leptokurtosis, the L-kurtosis value remains higher than that of a normal distribution, indicating a significant level of inefficiency, consistent with PET.

Having established that European countries’ budgets have a leptokurtic distribution, characterised by a punctuated pattern of budget changes, this study aims to identify the factors driving these dynamics. Section 4 introduces the independent variables and the methodology used to test the hypotheses.

## Data & Methods

The main purpose of this study is to assess the impact of multilevel governance on MS’ budgetary policies, among other factors. To the best of our knowledge, it remains an empirically unanswered question whether the

hierarchical structure of the EEG induces dependency and adds friction to national budgets – thus leading to more punctuations – or, conversely, whether its enhanced institutional capacity, made possible by the involvement of multiple agencies and institutions in drafting and reviewing MS' budgets, reduces inefficiencies, resulting in more moderate and rational budget adjustments. The role of supranational institutions must be considered within a broader framework, where domestic institutional settings, political variables, and major crises that have severely impacted Europe over the past three decades shape the budgetary policies of European countries.

To test this hypothesis, along with others, I use multiple independent variables from different data sources and estimate a quantile regression model. This approach accounts for the nonlinear impact of the selected factors on extreme budgetary increases and decreases, as well as on small and minor adjustments.<sup>8</sup>

### ***Partisan ideology***

The ideological position of the government is measured on a left-right scale using the government composition variable from the Comparative Political Dataset (CPDS; Armingeon et al., 2024). Specifically, I focus on the relative power of left-wing parties in government. The variable ranges from 0 to 100 per cent, where 100 per cent indicates a government entirely composed of left-wing parties.

### ***Domestic institutions: Government's strength***

The government's ability to control budgetary outcomes is assessed by considering both the type of governing coalition and its ideological homogeneity. On the one hand, an ordinal variable distinguishes between single-party majorities, minimal-winning coalitions, surplus coalitions, single-party minorities, multi-party minorities, caretaker governments, and technocratic governments (CPDS). The sequence has been adjusted to reflect an ascending order, from governments with the least friction (caretaker) to those with the most (multi-party minority). The most common type is a minimal-winning coalition (39.8 per cent), followed by surplus coalitions (19.4 per cent) and single-party majorities (15.3 per cent). On the other hand, the ideological distance between governing coalition partners is measured as the difference between the two most ideologically extreme parties in the coalition, following previous studies (Cavalieri, 2023; Russo & Verzichelli, 2016). Considering that ideology is measured on a 0–10 scale, polarisation ranges between these two limits, with higher values indicating greater ideological divergence within the coalition.

### ***Domestic institutions: Parliamentary veto players***

*Parliamentary veto players.* The number of veto players in parliament is captured by the effective number of parties in parliament on the seat level (Laakso & Taagepera, 1979). Additionally, a three-point bicameralism variable classifies systems as unicameral or weak bicameralism, medium strength bicameralism, and strong bicameralism. Most of the countries have a unicameral or weak bicameral system (asymmetrical and congruent chambers, 66.3 per cent), while very few are considered strong bicameralism (symmetrical and incongruent, 6.7 per cent); the remaining have an asymmetrical and incongruent or symmetrical and congruent bicameral system (26.9 per cent). Both measures are drawn from Lijphart's classification (2012) and derived from the CPDS.

### ***Domestic institutions: Regime***

To classify political regimes, I use the Regimes of the World measure from V-Dem (Coppedge et al., 2024), which ranges from closed autocracy to liberal democracy on a 10-point scale. While most European countries are liberal democracies (62.9 per cent), there are also examples of electoral autocracies, such as Croatia (1995–1999) and Hungary (2018–2021, with further deterioration in 2022), as well as several electoral democracies (11.7 per cent).

### ***Supranational institutions: The European Union's strength***

The power and regulatory influence of the European Union are measured using a standardised fiscal rules index provided by the European Commission. This index considers fiscal rules regarding budget balance, debt, expenditure, and revenue at all levels of government. Its value extends between a minimum of  $-1.04$  to a maximum of  $2.72$ , showing an upward trend over time. Since Iceland, Norway, and Switzerland are not part of the EMU and are therefore not subject to the same fiscal regulations, they are excluded from the analysis.

### ***External factors: Crisis***

The occurrence of major crises is captured through three dummy variables: one for the Eurozone crisis (2009–2013), one for the COVID-19 pandemic (2020–2022), and a general crisis indicator covering 28.6 per cent of the observed period, which combines both events. These variables are used separately in different models: one includes only the general crisis indicator, while another distinguishes between the Eurozone crisis and the pandemic.

### **Control variables**

Other factors are also relevant in determining the occurrence and magnitude of budget changes. Previous studies have highlighted the strategic incentives linked to the electoral cycle (among others, Li & Feiock, 2020). However, these incentives appear to weaken when fiscal rules designed to limit expenditure, such as balanced budget requirements (BBRs), are enforced in presidential systems like the US (Alt & Rose, 2007) or in parliamentary democracies where early elections can be called (Kayser, 2005). Given the institutional diversity among European member states, further investigation is required. Election timing is not always fixed, and some systems allow for early elections. For this reason, recent studies have shifted their focus from the constitutional inter-election period to the government's expected survival and risk of parliamentary dissolution. Findings suggest that less stable governments tend to increase public spending compared to more durable ones and exhibit greater fiscal irresponsibility (Fortunato & Loftis, 2018), although supranational oversight can mitigate this effect (Franchino, 2024). To account for this, I consider the number of consecutive budget laws issued by a government, which averages two.<sup>9</sup>

Beyond the timing of elections, the appointment of a new government may be even more significant. Studies on the US budget composition suggest that changes are more likely during the honeymoon period (Krehbiel, 1998), whereas, in other systems, newly elected governments require more time to alter the budget (Brender & Drazen, 2013). To capture this effect, a dichotomous variable indicates whether the ideological composition of the newly elected government differs from that of its predecessor, which occurs in 28.8 per cent of cases. This measure also accounts for ideological shifts that do not result directly from elections.

Finally, the general economic conditions of the state are considered using indicators such as annual GDP growth, public debt, and fiscal balance, drawn from Eurostat and AMECO. The Appendix provides a detailed description of each variable and presents summary statistics (Table A5).

### **Explaining the frequency and magnitude of budget changes in European countries**

The distribution of budget changes in [Figure 2](#) shows that the dependent variable is not normally distributed, leading us to hypothesise a varying effect of the predictors on dramatic cuts, huge increases, and modest and small positive or negative changes. For this reason, following previous studies (among others, Breunig & Jones, 2011; Breunig & Koski, 2020), I estimate a quantile regression model that assesses the effect of the independent variables at various percentiles of the distribution of budget changes. By

doing so, we can determine whether some predictors successfully explain only the occurrence of punctuations and progressively weaken their influence toward the center of the distribution (or vice versa). The effect of the predictors is tested at the 5th, 25th, 50th, 75th, 95th percentile of the frequency distribution of budget changes,<sup>10</sup> thereby accounting for the different impacts across all sections of the distribution. Using macro-categories, at the 5th percentile, the measure of budget change takes on value  $-12.86$  per cent, at the 25th it is  $-1.75$  per cent, at the median  $2.14$  per cent, at the 75th  $6.52$  per cent and at the 95th percentile it is  $22.09$  per cent. Considering micro categories, which are more volatile and also have lower allocated funds, the measure of budget change takes on value  $-24.16$  per cent at the 5th percentile, at the 25th it is  $-3.54$  per cent, at the median  $1.93$  per cent, at the 75th  $8.38$  per cent and at the 95th percentile it is  $42.57$  per cent.

Three different models are estimated using both macro and micro categories (Table A6 and Table A7 in the Appendix), each focusing on different dynamics that predict the magnitude of budget changes while progressively adding independent variables. Table 1 presents the full model, while Figure 3 graphically illustrates the results.

Regression results and Figure 3 confirm that the effect of the predictors is not linear across different quantiles of the dependent variable (both using percentage change in macro and micro-categories) and that their influence varies from reductions to increases.<sup>11</sup> This is also supported by the evident contrast with the simple OLS regression model, which considers the entire distribution as a whole, where no predictor but a single one is statistically significant.

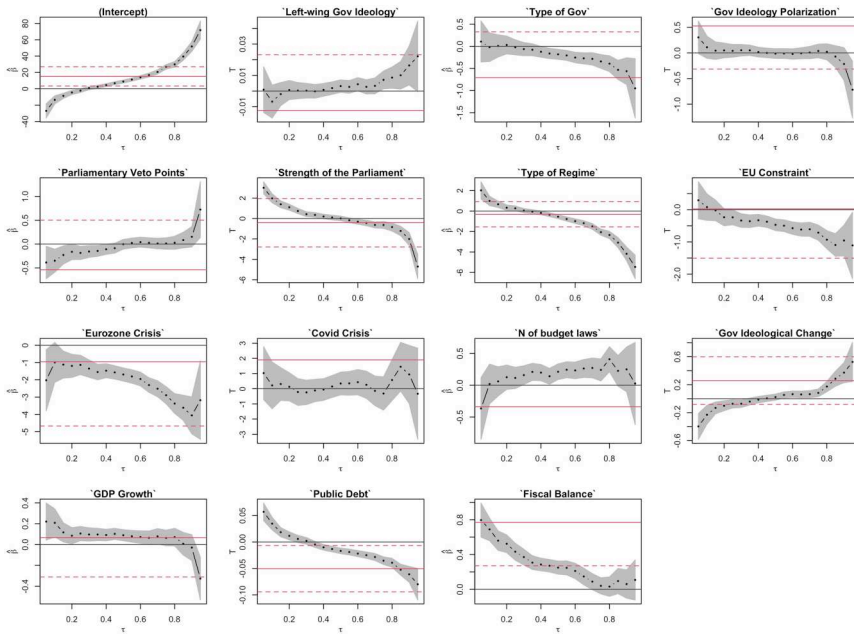
The first hypothesis aimed to test whether left-wing governments are more inclined to expand the budget, given their preference for state intervention in the economy. The quantile regression confirms that leftist governments amplify large budget increases, starting from tiny ones – those at the median of the distribution (around a  $2.14$  per cent change) – although this effect is statistically significant only from the right shoulder of the distribution, meaning moderate growth. The negative coefficient at the 5th and 25th quantiles indicates that left-wing governments also intensify reductions. In line with previous studies that found left-wing governments cut expenditures more than right-wing ones in the 1970s and 1980s (Ross, 1997), these results do not fully confirm the first hypothesis.

The influence of the type of government is consistently negative across quantiles, meaning that as we move from governments with fewer frictions (caretaker, technocratic, single-party majorities) to those with more frictions (multi-party minority governments), there is a limiting effect on budget increases and a deepening effect on reductions. Regarding the ideological heterogeneity of the majority, more polarised coalitions – i.e., governments

**Table 1.** Quantile regression results (DV: percentage change in macro categories).

Covariates	5th percentile	25th percentile	50th percentile	75th percentile	95th percentile	OLS
<i>Constant</i>	-31.70 (5.68)***	-2.48 (1.37)†	9.22 (1.10)***	27.06 (1.66)***	79.48 (5.92)***	17.36 (7.02)*
<i>H1: Left-wing ideology of the government</i>	-0.004 (0.01)	-0.001 (0.003)	0.002 (0.002)	0.006 (0.003)†	0.02 (0.01)*	-0.01 (0.02)
<i>H2: Type of government</i>	-0.001 (0.29)	-0.05 (0.10)	-0.16 (0.06)**	-0.31 (0.09)***	-0.58 (0.38)	-0.57 (0.62)
<i>H2: Government ideological polarisation</i>	0.18 (0.19)	0.03 (0.07)	-0.01 (0.05)	0.03 (0.07)	-0.55 (0.33)†	0.52 (0.51)
<i>H3: Effective number of parties in parliament</i>	-0.17 (0.20)	-0.15 (0.08)†	-0.01 (0.06)	-0.003 (0.07)	0.65 (0.39)†	-0.55 (0.63)
<i>H3: Bicameral system</i>	3.43 (0.34)***	0.79 (0.15)***	-0.001 (0.13)	-0.69 (0.20)***	-4.84 (0.66)***	-0.55 (1.43)
<i>H4: Type of regime</i>	2.27 (0.58)***	0.25 (0.14)†	-0.57 (0.11)***	-2.03 (0.18)***	-6.33 (0.68)***	-0.40 (0.74)
<i>H5: EU external constraint</i>	-0.04 (0.39)	-0.24 (0.14)†	-0.47 (0.10)***	-0.61 (0.14)***	-1.49 (0.53)***	0.12 (0.92)
<i>H6: Recession</i>	-2.26 (1.19)*	-1.19 (0.34)***	-1.68 (0.23)***	-2.94 (0.30)***	-3.22 (1.35)**	-0.76 (2.25)
<i>H6: Pandemic</i>	2.67 (1.19)*	0.04 (0.52)	0.30 (0.43)	-0.73 (0.65)	-0.43 (2.04)	0.69 (3.38)
<i>Number of budget laws issued by the same government</i>	-0.19 (0.34)	0.14 (0.10)	0.18 (0.08)**	0.24 (0.11)*	0.05 (0.42)	-0.47 (0.74)
<i>New ideological composition of the government</i>	0.09 (0.76)	-0.15 (0.5)	-0.06 (0.20)	0.001 (0.28)	1.68 (1.20)	-0.70 (1.81)
<i>GDP growth</i>	0.17 (0.12)*	0.09 (0.04)**	0.08 (0.03)**	0.08 (0.04)†	-0.26 (0.12)**	0.08 (0.22)
<i>Public debt</i>	0.04 (0.008)***	0.002 (0.003)	-0.01 (0.003)***	-0.03 (0.004)***	-0.05 (0.01)***	-0.04 (0.02)
<i>Fiscal balance</i>	1.00 (0.11)***	0.46 (0.05)***	0.24 (0.04)***	-0.01 (0.05)	-0.08 (0.10)	0.65 (0.28)*
N	8020	8020	8020	8020	8020	8020
AIC	59445.49	52852.47	52374.98	56255.88	69380.01	75668.15

Note: statistical significance with  $p$  – value < 0.1 (†), 0.05 (\*), 0.01 (\*\*), 0.001 (\*\*\*).



**Figure 3.** Quantile regression plot (DV: percentage change in macro categories)

Note: the x-axis represents different quantiles  $\tau$  of dependent variable (budget changes), ranging from severe decreases to substantial expansions. The y-axis shows the estimated effect of each predictor. The dotted lines display the impact of a one-unit change in the covariate on the dependent variable, holding other variables constant, with the 95% confidence interval represented by the grey area. The red horizontal line represents the OLS regression coefficient for the same covariate, which remains constant across quantiles, unlike the dotted line. The red dashed lines indicate the 95% confidence intervals of the OLS regression line.

with higher bargaining costs – are less successful at significantly expanding the budget but also less effective at slightly increasing it. The type of government and its ideological polarisation have distinct effects on the magnitude of budget changes; thus, the second hypothesis is only partially confirmed. The former primarily affects tiny and moderate increases (the center and right shoulder of the distribution, as expected, although an impact on small decreases was also anticipated), reducing their size. The latter influences both minor and larger expansions, once again with a dampening effect. Both findings confirm that internal frictions within the government represent a significant constraint on budget growth.

On the side of parliamentary frictions, the number of parties in parliament has a negative effect across percentiles until the right tail of the distribution, which points to positive punctuations. This means that a higher number of veto players in parliament supports budget reductions and incentivizes substantial increases, with a significant effect only at the 25th percentile (moderate reductions) and the 95th percentile (large expansions). The strength of

parliament, measured by its structure, shows that stronger parliamentary systems significantly tone down the magnitude of budget changes across all percentiles. Although its impact is the exact opposite of the number of parties in parliament, the explanatory power of this predictor is greater. The overall picture regarding the role of parliament suggests that more distributed political power has a transformative impact on the budget. This transformative nature may manifest either as a reinforcement of budget choices – encouraging modest cuts and notable expansions, likely to distribute both losses and gains – or, in the case of a strong bicameral system, as friction against dramatic and uncontrolled budget transformations. In fact, only at the 50th percentile is this predictor not statistically significant.

Liberal democracies mitigate both large decreases and increases (whether minuscule, moderate, or substantial), confirming previous findings that budgets in autocratic regimes tend to be more punctuated (Baumgartner et al., 2017; Sebők & Berki, 2018) and validating our fourth hypothesis.

The role of European institutions becomes evident from the 25th percentile onward, starting from temperate budget cuts. A higher score on the fiscal rules index reinforces modest budget reductions and moderates micro changes, medium-sized adjustments, and large budget expansions. The fact that stricter supranational constraints have the power to curb budget punctuations suggests a more rational and improved decision-making process, precisely due to the EU's heightened oversight. This result confirms H5(b), indicating that the EEG does not produce the same outcome as federal systems.

In the full model (Table 1), I use two dichotomous variables for the occurrence of the Eurozone crisis and COVID-19, rather than a single dummy variable indicating a general crisis, as in the second model, which focuses on external frictions and crises (Table A6 in the Appendix). This choice is driven by the fact that these two crises were managed with opposite policy approaches and led to very different policy outcomes. In the first case, governments were required to implement cost-containment and austerity policies, whereas the pandemic prompted an investment-oriented policy response (Cavalieri & Karremans, 2024). The recession variable is statistically significant and negative across all percentiles, indicating that the Eurozone crisis intensified budget reductions – both large and medium-sized – but also restrained spending increases, from minor to extreme. In contrast, the pandemic variable is statistically significant only at the 5th percentile, where it indicates some relief from extreme budget cuts. For this reason, the sixth hypothesis is not fully validated.

Among the control variables, the positive and significant effect at the 50th and 75th percentiles of the increasing number of consecutive budget laws issued by the same government reveals that governments that remain in office for a longer time are more active in producing tiny and moderate

budget increases. This may be because they have the opportunity to progressively adapt the budget without the need to immediately engage in massive expansions. Variables related to the economic condition of the country all have a statistically significant effect. An improved economic situation, measured by GDP growth, mitigates both large and small cuts as well as substantial increases, while it supports moderate expansions, again at the 50th and 75th percentiles. Higher public debt tempers reductions and affects little, moderate, and large budget expansions. While the effect of GDP growth on curtailments and small budget increases is expected, its negative impact on budget enlargements, as well as the positive effect of public debt on reductions, raises open questions. A better fiscal balance (i.e., a lower deficit) softens both large and small curtailments while supporting slight increases around the median values.

Results largely hold when using the percentage change in micro-categories as the dependent variable (Table A7 in the Appendix), with very few predictors behaving differently compared to macro categories. The type of government and European constraints change signs and become statistically significant at the lower end of the distribution (5th and 25th percentiles for the former, only the 5th for the latter), indicating that governments with higher frictions, as well as stricter EU oversight, reduce the magnitude of severe budget cuts. Governments with more internal frictions produce smaller budget changes, while stronger multi-level governance encourages a more rational budget policy. Government ideological polarisation and parliamentary strength become positive and statistically significant at the center of the distribution. The number of parliamentary veto points also becomes statistically relevant when dealing with severe budget cuts to micro-categories, with a positive coefficient, meaning that more parties in parliament lead to smaller budget decreases at both the left tail and the left shoulder of the distribution, likely resulting in across-the-board cuts rather than severe reductions in a single (or very few) budget categories.

## Discussion and conclusion

This study aimed to uncover the main drivers of budget changes in European countries during the period 1995–2022, characterised by the extensive development of European Economic Governance and two severe shocks: the Eurozone crisis and the COVID-19 pandemic. Drawing on Punctuated Equilibrium Theory, I first demonstrated that the budget policies of all European countries are punctuated, with clear signs of decision-making inefficiency. Using a quantile regression model, I tested the impact of domestic institutional and political factors, the EU's external constraints, the occurrence of the two crises, and the economic conditions of the state on the magnitude of budget changes across European countries. The goal was to determine

which of these predictors drive massive cuts, medium-sized and small negative and positive adjustments, and substantial budget expansions.

To begin with, I found that left-wing governments are associated with significant increases in public expenditure, in line with studies that observed a resurgence of ideological budgeting after the Eurozone crisis (McManus, 2019). However, there are also mild indications of the influence of leftist governments on budget cuts, which may suggest responsible behaviour in certain circumstances. This calls for new country-specific investigations into the reasons and timing behind leftist governments' decisions to engage in spending curtailments. Powerful executives with fewer coalition parties and greater ideological cohesion, as well as technocratic governments, have an advantage when it comes to increasing public expenditure. In contrast, multi-party coalitions and ideologically polarised governments, which must typically balance both costs and benefits, face greater constraints. Meanwhile, more durable executives that issue consecutive budget laws appear to successfully implement long-term budget policies characterised by moderate adjustments, demonstrating greater fiscal responsibility, as previously identified by research (Fortunato & Loftis, 2018).

Regarding the institutional setting, the strongest obstacle to budget change appears to be a robust bicameral system, which reduces the magnitude of budget changes, particularly punctuations. This evidence underscores the necessity of continuing to grant parliaments sufficient power to counter executive dominance, despite the declining reputation of traditional representative institutions (Flinders & Kelso, 2011) and the increasing challenges posed by technocratic governance (Bertsou & Caramani, 2021). Similarly, the more rational budget design observed in liberal democracies, where extreme budget changes are significantly restrained, serves as a warning against the dangerous path that some European countries have begun to follow by showing signs of autocratization (Papada et al., 2023).

Economic indicators play a crucial role in determining both the likelihood and extent of budget changes, whether increases or decreases, with the Eurozone crisis producing an identical effect. In contrast, the COVID-19 pandemic did not have the same pronounced impact on budget changes as the recession. This should not come as a surprise. While the former crisis had an immediate and devastating effect on national accounts, the pandemic initially had a completely different focus. Additionally, and perhaps most importantly, European institutions adopted two opposing economic approaches to address these shocks. That said, the EU's external constraint appears to be consistent with the approach in place at least until the mid-2010s – one that was more oriented towards fiscal discipline and austerity. This is reflected in the quantile regression model results, which show that a higher score on the fiscal rules index deepens moderate budget reductions and tempers budget expansions. The effect of the unprecedented boost to

member states' national economies after the pandemic may not be visible in the available data for two reasons: either European countries allocated resources through laws other than the budget, or the funds, which are spread over several years, do not produce a sudden increase linked to the occurrence of COVID-19.

Yet, the power of the EU to hinder budget punctuations confirms previous studies' findings regarding the improved management of national budget policies within the framework established by the EEG (Cavaliere, 2023). This finding represents a significant advancement in our understanding of the similarities and differences between European multilevel governance and federal systems, where punctuations intensify due to the weak linkage with public preferences (Fagan et al., 2017), greater institutional frictions that hinder rapid adaptation to contextual changes (Fagan, 2023), and the hierarchical nature of these systems, which transmits punctuations in a top-down manner (True et al., 2007). Since the Eurozone crisis, the EEG has evolved into a more integrated system featuring continuous negotiation and review of member states' budgetary policies throughout the year. This process has increased the accountability of national agencies and institutions towards the European Union, sometimes conflicting with national governments' claims before their electorate. The enhanced institutional capacity and collective approach between MS and supranational institutions have reduced certain inefficiencies, suggesting potential positive repercussions in the event of further policy integration and EEG development. However, thus far, this reinforcement process has only been triggered by crises, and it remains unclear whether recent improvements will be sufficient to prevent dramatic changes in response to future external shocks.

To conclude, while this study clarifies the role of domestic and supranational factors in shaping the budget policies of European countries, it remains challenging to find strong explanations for massive budget retrenchments. In contrast, all the political and institutional variables examined influence minor, moderate, or significant budget increases. This finding reminds us that budget cuts and increases follow very different dynamics, with the former being implemented through various divergent strategies. Although previous research has shown that the left (negative) tail of a budget change distribution is less punctuated than the right one (Breunig & Jones, 2011; Jones et al., 2003), scholars still face difficulties in empirically identifying significant variables to predict substantial budget reductions. Based on our results, we are inclined to believe that budget cuts are generally spread across multiple spending categories, producing several small decreases rather than a single massive reduction, aligning with a 'shared pain' logic (Clarke & Newman, 2012). However, how political and institutional factors shape retrenchment strategies and address the occasionally unavoidable necessity of severe budget cuts remains an open question.

## Notes

1. [https://economy-finance.ec.europa.eu/economic-and-fiscal-governance/evolution-eu-economic-governance/new-economic-governance-framework\\_en](https://economy-finance.ec.europa.eu/economic-and-fiscal-governance/evolution-eu-economic-governance/new-economic-governance-framework_en)
2. [https://ec.europa.eu/commission/presscorner/detail/en/ip\\_24\\_711](https://ec.europa.eu/commission/presscorner/detail/en/ip_24_711)
3. In some cases, this issue arises from the rules of procedure adopted in a given country, particularly where the budgetary process is largely informal. This is, for instance, the case of the United Kingdom (although not analysed in this paper), where public spending data have been used as a proxy for budgetary policy due to the lack of available budget figures.
4. Some exceptions can be found in studies that have tested PET in the United States or in a small set of countries where budget data could be extrapolated. These studies have relied on the Comparative Agendas Project's shared coding scheme (Breunig, 2006; Jones et al., 2009).
5. In general, general government expenditure data present fewer issues than central government expenditure data. However, even the use of expenditure data is not without challenges, particularly due to modifications in the coding scheme and shifts in fiscal responsibilities between different levels of government – issues that are especially pronounced in federal states (Enkelmann & Leibrecht, 2013).
6. For further details on the dataset, the COFOG classification scheme, and data availability for each country, see the Appendix.
7. L-kurtosis measures the peakedness of a frequency distribution, offering an improved alternative to traditional kurtosis as it is less sensitive to extreme values and remains reliable even with relatively small sample sizes (Hosking, 1990). A higher score (ranging from 0 to 1) indicates a greater degree of kurtosis.
8. Summary statistics per each independent variable in each country are shown in Table A5 in the Appendix.
9. I did not add a variable about the occurrence of elections because it is highly correlated with the number of budget laws.
10. The 5th and 95th are typically used to investigate the tails of the distribution, while the 25th and 75th percentiles, which correspond to  $+1\sigma$  (first standard deviations) in a normal distribution, are considered the shoulders. The 50th represents the center of the distribution, i.e. the median.
11. ANOVA test, with  $p$ -value  $<0.001$ , corroborates the finding that coefficients are significantly different along percentiles and that their impact becomes stronger moving towards higher percentiles.

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