

International Oversight of Fiscal Discipline

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Abstract

Extant works on the political causes of fiscal discipline poorly account for the oversight of national budgets via the European Union's excessive deficit procedure. These studies emphasize three mechanisms: political fragmentation, national budgetary rules, and proximity to elections. The impact of the first has diminished since the 1990s and that of the second is inconsistent. Unlike skeptical views, I argue that this EU regime displays several features international relations scholars deem important to ensure compliance. I extend the work of Fortunato and Loftis (2018) to the 1994-2019 period and show that a eurozone government under surveillance for a full year reduces, on average, its deficit by 0.46% of GDP. This almost fully offsets the impact on the deficit of a two-year shortening of the expected duration of a government. Considering the three-percent deficit ceiling, this is quite a substantial effect and it has important implications for the fledgling EU-wide fiscal policy.

Introduction

Fiscal discipline, the sustainable balancing of government outlays with revenues, is a long-established field of inquiry in political science and political economy. Scholars have paid attention primarily to two explanatory mechanisms. The first rests on the idea that politically fragmented executives or legislatures would find it hard to maintain discipline unless budgetary rules that facilitate the curtailing of profligate tendencies are in place. The second asserts that governments engage in strategic timing of deficit spending in the proximity of elections, hence engendering political budget cycles. More sophisticatedly, Fortunato and Loftis (2018) argue that governments ramp up deficits in the *expectation* of parliamentary dissolution, rather than in advance of scheduled elections.

Empirical support for the former claim is, however, hard to come by in works on Western European countries, which make up a large proportion of this literature. Executive fragmentation, taking, for instance, the form of large government coalitions, does not appear to be associated with higher deficits as we move into the 1990s, and the interaction with budgetary rules is not consistent across studies. In this article, I will argue that the works on budgetary politics in Western European countries fail to take properly into account the influence of a European Union (EU) oversight procedure of fiscal discipline which has been operating since the early 1990s. Perhaps because it has never led to the imposition of sanctions, this excessive deficit procedure has been considered irrelevant or failing. I will argue instead that this regime displays several features international relations scholars deem important to ensure compliance. Supranational scrutiny generates enough costs and protracted noncompliance engenders serious enough risks of undermining the monetary union that governments under scrutiny adjust their fiscal policies to accommodate its requests. My analysis shows that, if a government of a eurozone country has been under procedural inspection during the year when the budget is drafted, it reduces its deficit by, on average, 0.46% of the gross domestic product (GDP). This is quite a substantial effect, considering that the Treaty of Maastricht sets a three-percent ceiling of the deficit-GDP ratio. This oversight strongly attenuates the dynamics of political budget cycles by fully offsetting the impact on the deficit of a two-year shortening in the expected duration of a government. On the other hand, if no oversight is ongoing, a eurozone government remains free to strategically time its fiscal policy.

To produce this result, I first extend the recent work of Fortunato and Loftis (2018) to the 1994-2019 period and, then, I assess the impact on fiscal discipline of the periods of supranational oversight that eurozone countries have been subject to. The results are robust to alternative specifications as well as to the conditionality associated with the financial assistance that some countries have received during the European sovereign debt crisis. On the other hand, these dynamics do not still extend yet to the younger democratic regimes of Central and Eastern European EU countries. I conclude by discussing how these results have major implications for the ongoing attempts at expanding the fiscal capacity of the EU.

Public Spending and Fiscal Discipline

A well-established research tradition in political science and economics sees public spending from the perspective of the tragedy of the commons. Although there are several themes developed in the literature, the variant that is relevant for my inquiry argues that parties have priorities for

spending programs that provide, at least in part, disproportionate benefits to their supporters. Parties are primarily held electorally accountable for spending decisions in these domains of interest of their voters and can successfully shift the blame on coalition partners for fiscal outcomes in other policy areas. As a result, their demand for spending will fail to fully internalize the costs of these programs. Since the benefits are concentrated on their supporters while the costs are shared across the electorate through taxation, the demand will be excessive, spending will increase and deplete the tax base.

Coalition governments are more severely beset by this common pool resource problem than single-party governments. In the latter circumstance, the party as a whole is held accountable by the electorate for all its spending decisions since voters do not distinguish among party factions. For coalition governments instead, the possibility to discriminate and hold electorally accountable individual parties create an electoral common pool problem (Persson, Roland, and Tabellini 2007: 157). Moreover, smaller parties internalize these costs even less than large parties because they represent a smaller portion of the electorate. Spending, therefore, increases with the number of parties in government (Bawn and Rosenbluth 2006). Evidence indeed indicates that coalition governments and larger coalitions are associated with more public spending (Bawn and Rosenbluth 2006; Bräuning 2005; Perotti and Kontopoulos 2002; Persson, Roland, and Tabellini 2007; Volkerink and De Haan 2001). However, a larger public sector does not imply less fiscal discipline. Studies on OECD or Western European countries which cover up to the mid-1990s, report an association between executive fragmentation and budget deficits (Balassone and Giordano 2001; Perotti and Kontopoulos 2002; Roubini and Sachs 1989; Volkerink and De Haan 2001). But other works, that extend further into the 1990s, fail to unearth this relation (Harrinvirta and Mattila 2001; Fortunato and Loftis 2018).¹

Perhaps these differences can be explained by the rules of the budgeting process that operate within each country. Maintaining fiscal discipline may be easier if the budgetary powers are centralized in actors with incentives to internalize costs, and if constraints to limit the size of the budget are in place. For instance, the minister of finance may explicitly set, at the formulation stage, budgetary limits for the spending ministers; or the possibility to amend the budget during parliamentary approval may be severely curtailed. Earlier works on EU countries focus on the direct impact of such rules on fiscal outcomes (von Hagen and Harden 1995)² but, as Wehner (2010b) points out, their effect is likely to be conditioned by the nature of the political environment. In a study covering 57 countries over the 1975 to 1998 period, Wehner (2010b) finds that, if there are

¹ Unless the geographical coverage is expanded beyond Europe (Jalles, Mulas-Granados, and Tavares 2020; Wehner 2010a).

² A similar approach is followed by Woo (2003)'s study of 57 countries and by Fabrizio and Mody (2006)'s work on ten Central and Eastern European countries. Von Hagen (2010) finds that rules may also explain deviations from budgetary plans.

limits on parliamentary amendments, partisan fragmentation at the legislative level is no longer associated with higher deficits. Focusing on Western Europe, Martin and Vanberg (2013) show how the expansionary effect of the number of government parties on public spending is weakened when budgetary procedures are more restrictive.

Results, however, are not consistent when focusing on fiscal discipline. For instance, in a seminal work on budget rules in Western European EU countries between 1985 and 2004, Hallerberg, Strauch, and von Hagen (2009: 89-93) find that, in some states, a budgetary process with more delegating features improves fiscal discipline, in case of ideologically homogenous governments. However, De Haan, Jong-A-Pin, and Mierau (2013) cover the same countries and time period and they show that, if the full set of countries is considered, greater delegation attenuates deficit spending, but, actually, only for ideologically *divided* governments.³

The last political factors that should affect fiscal discipline are electoral contests. The pressure to accrue electoral support should intensify with the prospect of new elections. Since voters tend to reward government parties for good economic performance in the more recent past, the executive may be tempted to stimulate the economy by increasing deficit spending, preferably targeted on its electoral base, in the period closer to the elections. This dynamics engenders political business cycles. Evidence from OECD or Western European countries indeed indicates that governments run higher deficits in election years (Harrinvirta and Mattila 2001; Hallerberg, Strauch, and Hagen 2009: 83; von Hagen 2010; Mink and De Haan 2006).⁴ But results appear less robust in other geographical contexts. For instance, Fabrizio and Mody (2006) do not find an association between elections and deficits in their study of ten Central and Eastern European countries between 1997 and 2003.

Recently, Fortunato and Loftis (2018) have shed new light on this dynamics. They argue that election timing is not fixed and known in advanced in parliamentary democracies.⁵ They, therefore, argue that governments begin to ramp up spending in the *expectation* of parliamentary dissolution and, if they outlive their expected duration, they keep up spending until the elections in order to maintain such support, accumulating deficits as a consequence. Focusing on Western European

³ The result holds also if a different set of rules, which comprise a so-called contracts index, is used.

⁴ Results hold also in studies covering a larger set of countries (Wehner 2010b; 2010a; Jalles, Mulas-Granados, and Tavares 2020). On the other hand, Brender and Drazen (2005), covering 106 countries between 1960 to 2001, argue that political deficit cycles occur primarily in new democracies.

⁵ This also applies to semi-presidential systems where government survival depends on a legislative majority to exist and early legislative elections are possible. A possible criticism is that the timing of the elections may be a function of the cabinet's strategic considerations, in which case spending and parliamentary dissolution decisions would be codetermined. Fortunato and Loftis (2018: 942, 950) provide evidence that this is hardly the case.

countries between the early 1970s to the late 2000s, they find shorter expected government duration to be associated with higher deficits.

In sum, a set of important political factors appear to shape budgetary outcomes, from the nature of the political competition to the rules of the budgetary process and the proximity to new elections. However, the results concerning Western European countries are not consistent, especially if we zero in on the more recent period.⁶ As I argue below, the extant studies pay limited attention to the contextual and country-specific effects of the supranational fiscal oversight these countries are subject to.

International Oversight of Fiscal Discipline

With the entry into force of the Treaty of Maastricht, EU member countries established an oversight regime of fiscal discipline, designed as a policy flanking the planned monetary union. Starting in 1994, states have to report to the European Commission twice a year their planned and actual (or estimated) levels of government deficit and debt for the current year and the preceding four years. If the Commission considers that an excessive deficit exists in a member state,⁷ it recommends the EU Council of ministers to adopt a decision to that effect. An excessive deficit procedure is then opened and the Council issues recommendations to the member state concerned with a view to reducing the deficit within a given period. Failure to act leads to a ratcheting up of the pressure with further decisions, up to the imposition of fines. The procedure is terminated once the Council abrogates its initial decision.

Between 1994 and 2019, the Council has established the existence of an excessive deficit fifty-two times. The government deficit of every country, except for Estonia and Luxembourg, has been deemed excessive at least once, and in some cases twice or thrice. A procedure has lasted on average four years, from a minimum of about ten months (Germany in 1994-5) to a maximum of ten years (Spain in 2009-19).

⁶ Because of the paucity of recent research, the same conclusion cannot be reached for the related literature on the *changes* in the ratio of public debt to GDP. But older works produce similar results. For instance, in OECD countries with high levels of central government debt, executive fragmentation has been an impediment to fiscal adjustments (i.e. lower deficits), up to the 1990s (Franzese 2002: 176), but cf. De Haan and Sturm (1994; 1997). Budgetary rules (De Haan and Sturm 1994), their interaction with government divisiveness (Hallerberg, Strauch, and Hagen 2009: 86), and elections (Franzese 2002: 180; Hallerberg, Strauch, and Hagen 2009: 81) have similar effects.

⁷ The criteria to establish the existence of an excessive deficit are whether a) the ratio of the planned or actual government deficit to gross domestic product exceeds 3 percent or b) the ratio of government debt to gross domestic product exceeds 60 percent, but the latter criterium has never been sufficient on its own to make a determination. Additional relevant factors are taken into account in determining whether a numerical breach should lead to the opening of the procedure.

The regime displays several features that both the enforcement and the management schools of compliance deem important to ensure observance with its provisions. International relations scholars distinguish between two approaches to deal with non-compliance. The first emphasizes coercive mechanisms of monitoring and sanctions, the second takes a problem-solving perspective and relies on capacity building, rule interpretation, and transparency (e.g., Tallberg 2002; Chayes and Chayes 1995; Downs, Rocke, and Barsoom 1996). This regime combines both mechanisms. On the one hand, supranational monitoring is associated with recommendations, notices, and ratcheting sanctions⁸ in case of repeated non-compliance.⁹ And even though monetary sanctions have never been imposed¹⁰ and could be counterproductive since they aggravate the already perilous budgetary position of a government, fiscal recklessness *per se* can have dire consequences for a monetary union (see more below). On the other hand, the Commission operates as a main rule interpreter by issuing guidances, communications, technical annexes, and a comprehensive handbook on the procedures and methodologies used to implement the regime. To ensure comparability and transparency, a European system of national and regional accounts was adopted in 1996, and a 2005 reform set new obligations for member states and delegated more powers to the Commission to improve the quality of statistical data (e.g., Heipertz and Verdun 2010; Franchino and Mariotto 2020).

Yet, the impact of this regime on national budgeting is poorly investigated. Some studies ignore it, even though they include EU countries in the post-1993 period in their analysis (Harrinvirta and Mattila 2001; Perotti and Kontopoulos 2002; Brender and Drazen 2005). Other works seem to suggest that the regime made a difference only when there was a credible threat of exclusion from the eurozone. Wehner (2010b: 222), for instance, finds that the countries expected to adopt the euro (including Greece) run lower deficits in the two years prior to 1999 (see also, Volkerink and De Haan 2001; De Haan and Sturm 2000).¹¹ Mink and De Haan (2006) report the presence of political budget

⁸ Deposits and fines were not laid out until the adoption of the stability and growth pact in 1997 but, prior to the launch of the euro, the primary sanction for non-compliance was the credible threat of being excluded from the monetary union.

⁹ On top of this procedure, the EU has also probably the world's most advanced compliance system. Procedurally, it combines a centralized procedure where the Commission takes noncomplying states before the European Court of Justice, with a decentralized procedure, based on national courts referring cases to the same adjudicatory body (e.g. Tallberg and McCall Smith 2014; Fjelstul and Carrubba 2018; Carrubba, Gabel, and Hankla 2008).

¹⁰ In November 2003, the French and German governments managed to assemble a blocking minority in the only occasion the Council discussed measures under the threat of sanctions.

¹¹ Wehner (2010a) finds no association between a binary indicator for expected eurozone membership since 1992 and deficits, perhaps because this variable covers too long a period. However, a pre-EMU convergence variable in Hallerberg, Strauch and Hagen (2009: 91) fails to be significant in their full sample, the same applies to an EU accession indicator for Central and Eastern European countries in Fabrizio and Mody (2006).

cycles in the post-1999 period, suggesting that abiding by the regime's rules may not pay politically once a country has joined the monetary union. These results have led some scholars to consider the regime 'failed' (De Haan, Berger, and Jansen 2004: 235) or 'irrelevant' (Leblond 2006: 970).

But a more careful analysis of some recent works suggests that it may not be the case. Fortunato and Loftis (2018) find, in their pooled regression, that the post-Maastricht period has a weak negative impact on deficits. Similarly, De Haan, Jong-A-Pin, and Mierau (2013) report that the post-1999 period is associated with greater fiscal discipline.¹² These results appear to suggest the regime to have an impact on national fiscal policies, but these simple time indicators clearly do not distinguish between countries in or out of the eurozone, let alone those under an excessive deficit procedure. Conclusions are also premature in light of the fact these studies cover time periods that do not extend beyond 2004, except for Fortunato and Loftis (2018) who include observations up to 2009 for some countries.

We expect the oversight of the excessive deficit procedure to engender a reduction of budget deficits if countries are members (or expect soon to be members) of the eurozone. Not only this scrutiny may generate audience costs for parties in governments and charges of fiscal irresponsibility by opposition parties, but, on top of sanctions, protracted non-compliance could also encourage emulation by fellow governments, thus undermining the whole regime. Emulation can indeed have serious repercussions. The primary objective of this policy is to prevent negative externalities arising from fiscal indiscipline. Assuming an inflation-averse central bank, in a monetary union, these externalities range from higher interest rates, (common) currency appreciation, trade imbalances, up to default, financial contagion, and, in the long run, lower capital accumulation and output. Regardless of the appropriateness of precisely these fiscal rules, governments, which share a common monetary policy and cannot take advantage of currency fluctuations to soften the transmission of these effects, can plausibly try to reduce their exposure and to set up an efficacious oversight of national fiscal policies. If their budget deficit is considered excessive, they are not only more likely to feel the pressure to comply from fellow governments and supranational institutions but they are also more likely to be receptive to such pressures as they would not wish in the future to be at the receiving end of negative externalities originating from fiscal indiscipline in fellow eurozone member countries.

I proceed now to investigate whether this expectation is empirically corroborated.

¹² These scholars use a time indicator for the post-1999 period when the stability and growth pact, a reform of the fiscal regime, came into force. Jalles, Mulas-Granados and Tavares (2020) instead find that fixed exchange rates have a negative impact on fiscal discipline

Data and Model

To do so, I first replicate Fortunato and Loftis (2018), the latest systematic study on the determinants of budget deficits, for the time period between 1994 and 2019. Then, I investigate whether membership of the eurozone and oversight of the excessive deficit procedure have had an impact on fiscal discipline.

My dependent variable is the measure of *Deficit* that is employed in the excessive deficit procedure: the difference between the total expenditure and the total revenue of the general government, as defined in the European system of national and regional accounts, as a percentage of the gross domestic product.¹³ I then use six of the seven political explanatory variables employed by Fortunato and Loftis (2018).¹⁴ To measure the *Expected duration* of a government, I broadly follow the procedure employed by these scholars. I first re-estimate Chiba, Martin, and Stevenson's (2015) model of government duration.¹⁵ I then employ a nonparametric bootstrap to produce a duration mean from a distribution of 1,000 predicted survival times for each cabinet. Next, I subtract from these values the number of days the cabinet has been in office at the time the budget for a given year has been submitted to parliament. If this value exceeds the constitutionally mandated deadline for legislative elections, it is trimmed back to such maximum duration.¹⁶

¹³ Data come from the AMECO database and the OECD for the 1993-4 missing information.

¹⁴ The Maastricht era indicator is constant throughout my period of observation.

¹⁵ In so doing, I have first added to their dataset of 432 cabinets of Western European parliamentary democracies from the late 1940s to the late 2000s, those that have been formed up to 2019. I have then further included the following countries and time periods: Bulgaria (1991-2019), Croatia (2000-2019), Czech Republic (1992-2019), Estonia (1992-2019), Hungary (1990-2018), Latvia (1993-2019), Lithuania (1992-2019), Malta (1996-2003), Poland (1991-2015), Romania (1990-2019), Slovakia (1990-2019) and Slovenia (1990-2018). Cyprus is omitted because government survival does not depend on a legislative majority to exist. The model is, therefore, not applicable. My expanded dataset has 673 governments.

Chiba, Martin and Stevenson (2015) employ a joint model of government formation and duration that accounts for biases arising from nonrandom selection of governments at the formation stage. However, since they find no evidence of a selection problem when the type of cabinet termination is parliamentary dissolution (that is, when cabinet duration is estimated in view of the risk of early election rather than the risk of replacement), results from their naive and joint Weibull models are statistically indistinguishable. We, therefore, re-estimate their survival model only, thus significantly expediting the measurement process. Data on the survival model covariates come from Döring and Manow (2019), Seki and Williams (2014), Volkens et al. (2019) and Wratil (2018).

¹⁶ This is also the value for the Cypriot governments, for the Maltese and Polish governments whose duration cannot be estimated because of missing information, and for caretaker governments that are omitted from the survival model.

Parties in government is the number of cabinet parties. In case of more than one cabinet per year, I weigh the sum of the number of parties in each cabinet by the share of the year in office, excluding periods of caretaking and post-election government formation.¹⁷ The *Effective number of parties* in the legislature follows Laakso and Taagepera (1979)'s measure. In the case of elections, party fusion, or fission, I compute a similar time-weighted sum. *Caretaker time* is the share of a given year that a caretaker government has been in power, including the post-election government formation period.¹⁸

Government ideology is the seat-weighted mean of the left-right scores of cabinet parties from the comparative manifestos project (Volkens et al. 2020).¹⁹ Similarly, I compute the time-weighted sum of the government ideologies if more than one cabinet has been in office in a given year. Lastly, the *Budgetary constraint index* is Martin and Vanberg's (2013) measure of formal rules that act as constraints on government spending.²⁰

The economic control variables come from standard sources: the GDP per capita at constant 2010 US dollars, the dependency ratio, and the trade openness from the World Bank database, while the unemployment rate from Eurostat. Table A1 in the online appendix reports the descriptive statistics.

Finally, I use two measures to account for the impact of the oversight regime. The first is a binary indicator *Eurozone (EMU)* that takes the value of one if a country uses the euro in a given year, including the year preceding adoption when the European Council approves the applications of membership to the eurozone. The second variable, *Excessive deficit procedure (EDP)*, measures the proportion of a given year a country has been under the excessive deficit procedure.

Following Fortunato and Loftis (2018) and earlier works, I estimate an autoregressive distributed lag model that includes one-year lags of both the dependent and independent variables,

¹⁷ I did not exclude these periods in case of two caretaker governments that have been in office for a full calendar year: Italy's Monti in 2012 and Romania's Cioloş in 2016.

¹⁸ Data on these three variables come from Döring and Manow (2019). Cabinet parties without parliamentary seats are excluded in the computation of *Parties in government*, while non-affiliated parliamentarians and single-seat parties are excluded in the computation of *Effective number of parties*.

¹⁹ For the few missing data, I have used the scores from either the previous elections, the originating party (in case of fission), or, after being re-scaled, from Döring and Manow (2019).

²⁰ Data come from Hallerberg, Strauch and von Hagen (2009) and Hallerberg and Yläoutinen (2008). The index sums up the values, ranging from zero to four, of five procedural rules, and divides the result by the maximum possible sum (20). Note that the attributes *global vote on the total budget* and *amendments offsetting* are trichotomous, rather than dichotomous, in Hallerberg and Yläoutinen (2008). Data from Croatia, Cyprus and Malta are missing.

as well as concurrent realizations of the economic variables. This specification accounts for the autoregressive properties of spending patterns and for the fact that the effects of political variables are primarily felt not when budgets are implemented, but when they are drafted and adopted (Martin and Vanberg 2013: 961; Bawn and Rosenbluth 2006: 261). Only the indicator variable *EMU* enters the model in its concurrent realization since it measures membership or *expected* membership of the eurozone in a given year. For instance, the 1998 budget is affected by the realizations of the political variables in 1997 as well as the *expectation* that the European Council would decide on membership in 1998 (hence, *EMU* = 1).

Results

The first and third columns of Table 1 reports the results from replicating the pooled and fixed-effects models of Table 2 in Fortunato and Loftis (2018).²¹ The comparison allows us to establish if I unearth similar patterns of association. I focus on the same set of countries, but my period of observation covers only the years a country has been an EU member up to 2019. This implies that I add on average twelve years of observations, but I truncate the pre-Maastricht period.²²

Our findings are quite similar. As a government's expected time in office draws to a close, it begins to accumulate budget deficits (this is also in line with Mink and De Haan 2006, despite their cruder measure of proximity to elections). Consider the fixed-effects model. In the year a government is expecting parliamentary dissolution, it produces a deficit that is, on average, larger by 0.52% of GDP than the deficit produced by a government expecting dissolution within two years (a 1.6 standard deviation difference). This substantial impact is rather close to the 0.422% reported by Fortunato and Loftis (2018: 948). In 2010, it would have meant a deficit increase of €3.30 billion for a country like the Netherlands (GDP €639 billion).²³

The models in the second and fourth columns in Table 1 add my context (*EMU*) and oversight (*EDP*) variables of interest. Table 2 reports the average marginal effects, for eurozone governments,

²¹ Unlike Fortunato and Loftis (2018), I do not run 1,000 models - one for each of the bootstrapped predictions of *Expected duration*. I employ only the mean of the distribution of bootstrapped survival estimates.

²² The time period is 1994-2019 for Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, and the United Kingdom, while it starts in 1995 for Austria, Finland, and Sweden.

²³ Fortunato and Loftis (2018) pay less attention to the remaining political variables. The effective number of parties and caretaker time have the same signs and levels of significance as in my analysis. Legislative fragmentation appears to engender fiscal discipline. If the effective number of parties increases by two (a 1.2 standard deviation difference), the deficit decreases by 0.36% of GDP on average. The interaction between the number of parties and the budgetary constraint index also does not appear significant in their analysis, it is not in ours. Government ideology is signed differently, but it is not significant.

of the scrutiny of the excessive deficit procedure and, for comparison, of a decrease in expected duration.

Table 1: International Oversight of Fiscal Discipline

Lagged variables	Fortunato and Loftis	EMU and EDP	Fortunato and Loftis	EMU and EDP
Expected duration	-0.0006** (0.0002)	-0.0005** (0.0002)	-0.0007** (0.0002)	-0.0006** (0.0002)
Eurozone (EMU) ^a		0.4588 (0.4326)		0.5717 (0.4657)
Excessive deficit procedure (EDP)		0.8923** (0.3083)		0.4855 (0.4157)
EDP × EMU ^a		-1.1450** (0.3594)		-0.9469 (0.4449)
Parties in government	0.1155 (0.1857)	-0.0516 (0.1719)	0.0299 (0.2533)	-0.1480 (0.2403)
Budgetary constraint index (BCI)	1.3422 (0.8011)	1.2257 (0.8374)	-0.2951 (1.2651)	-0.6756 (1.3246)
Parties in government × BCI	0.0353 (0.2928)	0.2150 (0.2660)	0.1916 (0.4241)	0.3444 (0.4270)
Effective number of parties	-0.1784* (0.0754)	-0.1843 (0.0958)	-0.0647 (0.1424)	-0.0257 (0.1578)
Caretaker time	0.7510 (0.6650)	0.8473 (0.6402)	0.8759 (0.7400)	1.0517 (0.6824)
Government ideology	-0.0016 (0.0062)	-0.0010 (0.0033)	-0.0057 (0.0123)	-0.0043 (0.0100)
Deficit	0.6189** (0.0384)	0.5346** (0.0442)	0.5888** (0.0444)	0.4980** (0.0389)
GDP per capita	0.2568** (0.0871)	0.2644** (0.0886)	0.3167** (0.0903)	0.3309** (0.0952)
Unemployment rate	-0.7435** (0.1760)	-0.7928** (0.1743)	-0.7154** (0.1827)	-0.7323** (0.1849)
Dependency ratio	-0.5278** (0.1923)	-0.9190* (0.3687)	-0.6925* (0.2435)	-1.1585** (0.3702)
Trade openness	0.0083 (0.0271)	0.0040 (0.0246)	0.0029 (0.0257)	-0.0030 (0.0218)
Concurrent variables				
GDP per capita	-0.3070** (0.0850)	-0.3232** (0.0879)	-0.3130* (0.1071)	-0.3174** (0.1021)
Unemployment rate	0.7325** (0.2110)	0.7889** (0.2066)	0.7603** (0.2516)	0.8247** (0.2478)
Dependency ratio	0.4842** (0.1770)	0.8722* (0.3456)	0.6157* (0.2340)	1.0572* (0.3561)

Trade openness	-0.0013 (0.0292)	0.0046 (0.0284)	-0.0064 (0.0299)	-0.0016 (0.0298)
Intercept	4.7254* (1.9450)	4.9108 (2.5163)	5.2447* (2.0126)	5.6638 (2.7129)
N	387	372	387	372
Countries	15	15	15	15
R ²	0.776	0.755	0.693	0.654
Effects	random	random	fixed	fixed

Notes: Dependent variable: deficit/GDP. Western European EU countries, 1994-2019. Autoregressive distributed lag models with random effects. Robust standard errors in parentheses adjusted for country clusters. ** p<0.01, * p<0.05. ^a Since the indicator *EMU* measures also expected membership, it enters the regression in its concurrent realization.

Table 2: Effects on Deficit for Western European Eurozone Countries

	EDP and EMU models		Effects	EDP and EMU model Mundlak formulation
Expected duration	0.3807** (0.1341)	0.4335** (0.1285)	within	0.4387** (0.1324)
			between	0.7649** (0.2241)
EDP	-0.2527 (0.2192)	-0.4614** (0.1700)	within	-0.4566* (0.1920)
			between	-1.0174** (0.3841)
Effects	random	fixed		random

Notes: ** p<0.01, * p<0.05. Average marginal effects on deficit/GDP, computed for a two-year or, for between-effects, six-month shortening of expected duration, and for a full year or, for between-effects, four months of oversight under the excessive deficit procedure (about 1.6 standard deviation differences). See Table A2 in the online appendix for the Mundlak formulation model.

Consider first the fixed-effects model. These models are typically preferred because, by estimating only within-country effects, they avoid the possible bias originating from the omission of contextual variables (e.g., Bell and Jones 2015). My results indicate that being under the scrutiny of the excessive deficit procedure has a large impact on budgetary outcomes. If a procedure is ongoing for the full calendar year when the budget is drafted, a government of a eurozone country reduces, on average, the deficit by 0.46% of GDP, compared to when there is no procedure. Considering the 3% deficit ceiling, this is quite a substantial effect, fully offsetting the impact of a two-year shortening of expected duration (0.43%). Recall the Dutch example above. It means an impressive improvement of the budget balance by €2.77 billion. In other words, if a eurozone government is under the spotlight of the EDP, it is fiscally much more restrained than another executive of that same country

that has faced no scrutiny during its time in office, even if the two governments expected to last for a similar period of time before facing new elections. On the other hand, if a country is not a member of the eurozone, supranational oversight does not appear to have an impact on national fiscal outcomes (the marginal effect is the coefficient of the *EDP* variable in the last column of Table 1).

These results do not appear to carry through to the pooled model. As you can see in Table 2, a government of a eurozone country still seems to reduce its deficit if it is subject to oversight, but the effect does not reach the standard level of significance. The covariates of random-effects models are made up of two components: a ‘within’ component that represents the difference across periods of the same countries, and a higher-level ‘between’-country component. Problematically, pooled models assume the effects of these components to be equal. If they are not, as it is more likely the case, a random-effects estimator could be plagued by a kind of omitted variable bias as it cannot distinguish between the two processes (Bell and Jones 2015: 137). This heterogeneity can be modeled with the Mundlak (1978)’s formulation. The within-between variant of this formulation proposed by Bell and Jones (2015: 143) is straightforward. The fixed part can be represented as follows

$$y_{ij} = \beta_0 + \beta_1(x_{ij} - \bar{x}_j) + \beta_2\bar{x}_j$$

where y_{ij} is the dependent variable (the deficit-GDP ratio in year i and country j), β_0 is the intercept term, x_{ij} is a series of covariates that are measured at the country-year level, and \bar{x}_j are the country means of these covariates. In this formulation, within-effects, estimated by the coefficient β_1 , are clearly separated from between-effects, estimated by β_2 . Additionally, country-mean centering eliminates by design the collinearity between the within-component x_{ij} and the between-component \bar{x}_j , leading to more stable and precise estimates. Finally, if there is collinearity between the multiple \bar{x}_j s, these covariates can be removed without the risk of engendering bias in the estimation of the effects of within-level variables x_{ij} (Bell and Jones 2015: 142).

I report in the online appendix the results from running this specification of the pooled model²⁴ and, in the last column of Table 2, the marginal effects of both the within- and the between-components of my variables of interest. Reassuringly, the within-effects are very similar to those reported in the fixed-effects model, as they should be, and the between-effects are significant and signed in the same direction. Countries with a six-month lower average expected duration of governments - the difference between France and Belgium in this time period - run deficits that are, on average, higher by 0.76% of GDP. On the other hand, countries that have been under the scrutiny

²⁴ I drop the lagged realizations of the between-component of the economic variables since they are strongly collinear with the concurrent values.

of the excessive deficit procedure for an average period that is four months longer (the difference between France and Belgium, again) reduce their deficit by 1.02% of GDP.

Sensitivity Analysis and Extension

I investigate here if these results are sensitive to different model specifications and if they are robust to the inclusion of Central and Eastern European EU countries. Hallerberg, Strauch, and von Hagen (2009) argue that the failure to rein in deficits may be due to polarized governments that cannot avail themselves of suitable budgetary rules to offset spending demands. Following these scholars, as well as De Haan, Jong-A-Pin, and Mierau (2013), I have added to my model a measure of polarization *Government range* which is the absolute distance between the highest and lowest left-right scores of cabinet parties from the comparative manifestos project. This variable is interacted with three indexes of budgetary rules produced by Hallerberg, Strauch, and von Hagen (2009).²⁵

The results for the fixed-effects models are reported in Table A3 of the online appendix and the marginal effects are shown in Table A4 to allow comparison with Table 2. These specifications display slightly higher goodness of fit and the substantive effect of supranational oversight is larger. If a eurozone government is under the scrutiny of the procedure for the full year of drafting, the average reduction of the deficit is 0.62% of GDP. Continuing the Dutch example, this implies an average improvement of the budget balance by €4.02 billion, more than offsetting the effect of a two-year shortening of government duration.

Consider now the role of crises. The late 2000s and early 2010s were no ordinary years in Europe. The 2007-8 global financial crisis was followed by a sovereign debt crisis engulfing the continent for the next six years. In the fall of 2008, the Hungarian and the Latvian governments applied to the EU and other international organizations for financial assistance because they were experiencing difficulties in refinancing their debts. A request from Romania followed in the spring of 2009. Greece was the first eurozone country to demand assistance in May 2010, followed by Ireland later in the year, and Portugal, Spain, and Cyprus in the next three years.

For most of the period these countries negotiated and received assistance, they were under the oversight of the excessive deficit procedure.²⁶ Since financial support depended on the implementation of economic adjustment programmes, this conditionality, rather than the oversight from the procedure, may have led to financial discipline. I have added a variable, *Financial assistance*, that measures the proportion of a given year a country has been negotiating or receiving financial assistance and re-run the fixed-effects model (results are reported in Table A5 of the online appendix). This variable, lagged by one year, has indeed a substantial effect on fiscal discipline. A

²⁵ The budgetary constraint index is dropped because of collinearity, while I keep the same control variables of the models in Table 1 to allow comparability.

²⁶ Except for Latvia in 2008. Romania in 2014-5 and Greece in 2018 too were not under scrutiny. These were the final years of their assistance programmes.

government that benefits from financial assistance throughout the full year when the budget is drafted, reduces, on average, its deficit by an impressive 3.58% of GDP, compared to when it receives no assistance. Yet, the oversight from the excessive deficit procedure still leads to a deficit reduction of 0.45% of GDP, even controlling for financial assistance, and, again, fully offsetting a two-year shortening of expected duration (the marginal effects are shown in Table A6).

Lastly, my analysis can be extended to ten Central and Eastern European countries that joined the EU in 2004 and 2007.²⁷ Of these, Slovenia adopted the euro in 2007, following by Slovakia in 2009 and the three Baltic countries between 2011 and 2015. These are young democratic regimes that have experienced large party system upheavals and may display different patterns from those uncovered in consolidated democracies. The literature indeed suggests that the age of a regime may matter. For instance, Wehner (2010b: 221) finds that the association between partisan fragmentation and deficit, when parliamentary amendment power is unrestrained, is stronger in consolidated democracies. Brender and Drazen (2005) instead report that proximity to elections has larger budgetary effects in new than in old democracies. But, on the other hand, Fabrizio and Mody (2006), the only relevant study I am aware of that focuses specifically on these countries, do not find any such association between 1997 and 2003.²⁸

Our results are in line with these latter scholars. I replicate Table 1 for Central and Eastern European EU countries in Table A7 in the online appendix. I cannot find evidence that expected duration, oversight of the excessive deficit procedure, as well as financial assistance, are associated with budget deficits. Thus, the effects of these variables are obviously weakened if I pool the data from both sets of countries. Consider first the fixed-effects model in Table A8 in the online appendix (and Table A9 on the marginal effects). A two-year shortening of expected duration now leads to an increase in deficit of 0.26%, rather than 0.43%, of GDP. Supranational oversight has still a negative effect, but its size does not reach the nominal level of statistical significance. On the other hand, a full year of oversight during drafting leads to a massive decrease in deficit by 2.75% of GDP in the (Mundlak specification) random-effects model. Financial assistance displays the exact opposite behavior. It has a small nonsignificant effect in the random-effects model, and a larger significant impact in the fixed-effects model (although still smaller than for Western European countries only). A government receiving assistance during drafting reduces, on average, the deficit by 2.40% of GDP.

The estimation of these effects is unstable probably because of the unbalanced structure of the full dataset. In the highly balanced western European dataset, being the beneficiary of financial assistance explains the additional fiscal effort during the crisis period, over and above the normal

²⁷ Malta, Cyprus and Croatia, which joined in 2013, are excluded because of missing information about budgetary rules.

²⁸ The level of democracy, which could be associated with regime age, does not seem to matter as well (Woo 2003; Wehner 2010a; Brender and Drazen 2005).

adjustment following the opening of an excessive deficit procedure throughout its twenty-six years in force. In the full dataset, the added observations of the ten countries cover only twelve or fifteen years, with a substantial overlap with the crisis period.²⁹ Clearly, earlier observations from these countries are hardly missing at random and, as I have shown, these younger democracies display different dynamics.

Conclusion

Far from being irrelevant or a failure, supranational oversight has shaped the national budgetary processes of Western European countries to a significant extent. A government of a eurozone country that is under scrutiny when it is drafting the budget reduces the deficit by half a percentage point of GDP. This is a large effect, considering the ceiling of three percent established by the Treaty of Maastricht. It offsets the deficit increase that a government is likely to entertain in the year when it expects parliamentary dissolution, compared to two years earlier.

There is nothing inherently wrong with democratically elected governments choosing the timing of their deficit spending. And my study shows that eurozone governments have not given up their freedom of pursuing this avenue. Notwithstanding the vagaries of market-induced discipline, if financial markets start doubting a country's ability to meet its obligations, governments will eventually have to put their house in order or face the distressing prospect of default, unless higher economic growth or inflation are more readily achievable. As the sovereign debt crisis showed, the effects of profligate fiscal policies or default reverberate more severely across countries of a monetary union. Thus, the excessive deficit procedure has been designed to address the legitimate concerns of limiting these negative externalities. The fact that this regime does so is reassuring, and it is crucial for the fledging EU fiscal policy.

Since the sovereign debt crisis and, now, during the Covid-19 pandemic, the EU has been adopting a wide array of measures that have strengthened its limited fiscal capacity which, for some observers, has long been a critical flaw of the monetary union. Opponents to these developments raise legitimate concerns about the risk of wasting resources on governments that are poorly scrutinized when they do not comply with common fiscal rules. Showing that the excessive deficit procedure is not irrelevant may assuage these legitimate worries and strengthen the mutual trust required for developing an EU-wide fiscal capacity. Finally, since the EDP oversight attenuates the strategic timing of fiscal policies across the electoral cycle, an interesting direction of future research would be to investigate its impact on the electoral performance of government parties.

²⁹ Latvia, a eurozone country, has been negotiating or receiving financial assistance for more than three years, Hungary for more than two and a half years and Romania for six and half years.

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Online Appendix

Measurement of budget deficits and their correlates

Table A1: Descriptive statistics for all European Union countries (1994-2019)

	mean	s.d.	min	max
Deficit (% of GDP)	2.273	3.565	-6.853	32.06
Expected duration (days) ^a	801.4	444.9	-191.6	1,819
Parties in government ^a	2.456	1.212	0	7
Effective number of parties ^a	4.080	1.502	1.997	9.051
Caretaker time (% of year) ^a	0.0556	0.146	0	1
Government ideology ^a	-2.542	13.20	-47.87	35.41
Budgetary constraint index ^a	0.584	0.229	0	1
EDP ^a	0.372	0.444	0	1
EMU			0	1
Financial assistance ^a	0.0555	0.219	0	1
GDP per capita (thousands) ^a	35.86	20.20	6.476	112.0
Unemployment rate ^a	8.556	4.135	1.900	27.50
Dependency ratio ^a	49.65	4.316	38.46	61.27
Trade openness ^a	107.9	62.02	36.16	416.4

Note: N = 516, number of countries = 25. ^a One year lag statistics. s.d. standard deviation

Table A2: Mundlak (1978) Formulation of Pooled Model of Table 1

Lagged variables	Within-effects coefficients	Between-effects coefficients
Expected duration	-0.0006** (0.0002)	-0.0042** (0.0012)
Eurozone (EMU) ^a	0.2627 (0.8908)	
Excessive deficit procedure (EDP)	0.6224 (0.4403)	-2.9837* (1.2377)
EDP × EMU ^a	-1.0790* (0.4740)	-0.0994 (1.5604)
Parties in government	0.0967 (0.1544)	0.6601 (0.4976)
Budgetary constraint index (BCI)	-0.2030 (0.5233)	4.8065** (1.4481)
Parties in government × BCI	-0.5204 (0.7620)	-0.5737 (0.4797)
Effective number of parties	-0.0851 (0.1441)	-0.2732 (0.1505)
Caretaker time	1.0500	6.7293**

	(0.7517)	(2.4452)
Government ideology	-0.0027	-0.0286**
	(0.0100)	(0.0083)
Deficit	0.5032**	1.1092**
	(0.0371)	(0.0940)
GDP per capita	-0.3211**	b
	(0.1029)	
Unemployment rate	0.8223**	b
	(0.2390)	
Dependency ratio	1.0350**	b
	(0.3621)	
Trade openness	-0.0011	b
	(0.0309)	
Concurrent variables		
GDP per capita	0.3398**	-0.0163**
	(0.0992)	(0.0063)
Unemployment rate	-0.7374**	-0.1477**
	(0.1863)	(0.0379)
Dependency ratio	-1.1252**	-0.0297
	(0.3866)	(0.0468)
Trade openness	-0.0029	-0.0041**
	(0.0225)	(0.0011)
Intercept	4.5503	
	(2.7510)	
N	372	
Countries	15	
R ²	0.767	

Notes: Dependent variable: deficit/GDP. Western European EU countries, 1994-2019. Autoregressive distributed lag models with random effects. Robust standard errors in parentheses adjusted for country clusters. ** $p < 0.01$, * $p < 0.05$. ^a Since the indicator *EMU* measures also expected membership, it enters the regression in its concurrent realization. For the same reason, the country-mean of *EMU* is not included. ^b Variable dropped because of collinearity.

Table A3: Range, Rules and International Oversight of Fiscal Discipline

Lagged variables	Delegation index	Contracts index	Targets index
Expected duration	-0.0006** (0.0002)	-0.0006** (0.0002)	-0.0006** (0.0002)
Eurozone (EMU) ^a	0.6151 (0.4866)	0.5882 (0.4742)	0.5766 (0.4700)
Excessive deficit procedure (EDP) Effective	0.6389 (0.4091)	0.6919 (0.3886)	0.6350 (0.4112)
EDP × EMU ^a	-1.2724* (0.4639)	-1.3036** (0.4298)	-1.2633* (0.4514)
Parties in government	0.2432 (0.1482)	0.2207 (0.1470)	0.2179 (0.1531)
Effective number of parties	-0.0446 (0.1583)	0.0019 (0.1406)	-0.0050 (0.1373)
Caretaker time	1.2500 (0.6555)	1.2364 (0.6793)	1.1921 (0.6507)
Government ideology	-0.0067 (0.0070)	-0.0067 (0.0076)	-0.0067 (0.0077)
Government range	-0.0222 (0.0232)	-0.0307 (0.0237)	-0.0466 (0.0287)
Delegation index (DI)	0.5551 (0.8630)		
Government range × DI	-0.0164 (0.0394)		
Contracts index (CI)		1.0050 (0.7912)	
Government range × CI		-0.0014 (0.0340)	
Targets index (TI)			0.3621 (0.7453)
Government range × TI			0.0186 (0.0353)
Deficit	0.4776** (0.0330)	0.4761** (0.0319)	0.4741** (0.0316)
GDP per capita	0.3442** (0.0966)	0.3220** (0.0963)	0.3331** (0.0962)
Unemployment rate	-0.6759** (0.2057)	-0.6779** (0.1933)	-0.6753** (0.1969)
Dependency ratio	-1.0571* (0.3788)	-1.1293* (0.4004)	-1.1444* (0.4219)
Trade openness	-0.0047 (0.0224)	-0.0058 (0.0226)	-0.0058 (0.0220)

Concurrent variables			
GDP per capita	-0.3397** (0.1061)	-0.3304** (0.1040)	-0.3316** (0.1027)
Unemployment rate	0.8077** (0.2705)	0.8034** (0.2566)	0.8099** (0.2584)
Dependency ratio	0.9775* (0.3712)	1.0416* (0.3892)	1.0546* (0.4058)
Trade openness	0.0031 (0.0306)	0.0034 (0.0303)	0.0026 (0.0302)
Intercept	3.7862 (2.7166)	4.4422 (3.0893)	4.5298 (3.2231)
<hr/>			
N	372	372	372
Countries	15	15	15
R ²	0.665	0.666	0.666

Notes: Dependent variable: deficit/GDP. Western European EU countries, 1994-2019. Autoregressive distributed lag models with fixed effects. Robust standard errors in parentheses adjusted for country clusters. ** p<0.01, * p<0.05. ^a Since the indicator *EMU* measures also expected membership, it enters the regression in its concurrent realization.

Table A4: Effects on Deficit for Western European Eurozone Countries (Range and Rules)

	Delegation index	Contracts index	Targets index
Expected duration	0.4659** (0.1269)	0.4684** (0.1275)	0.4624** (0.1254)
EDP	-0.6335** (0.2173)	-0.6117** (0.2215)	-0.6284** (0.2285)

Notes: ** p<0.01, * p<0.05. Average marginal effects on deficit/GDP, computed for a two-year shortening of expected duration, and for a full year of oversight under the excessive deficit procedure (about 1.6 standard deviation differences).

Table A5: International Oversight of Fiscal Discipline and Financial Assistance

Lagged variables	EMU and EDP
Expected duration	-0.0005* (0.0002)
Financial assistance	-3.5814* (1.5360)
Eurozone (EMU) ^a	0.6826 (0.4684)
Excessive deficit procedure (EDP)	0.3643 (0.4314)
EDP × EMU ^a	-0.8135 (0.4263)
Parties in government	-0.2034 (0.2131)
Budgetary constraint index (BCI)	-0.4188 (1.1899)
Parties in government × BCI	0.3908 (0.3639)
Effective number of parties	0.0308 (0.1482)
Caretaker time	0.9126 (0.7093)
Government ideology	0.0003 (0.0100)
Deficit	0.4573** (0.0452)
GDP per capita	0.3606** (0.0995)
Unemployment rate	-0.6502** (0.1274)
Dependency ratio	-1.3608* (0.4742)
Trade openness	-0.0048 (0.0190)
<hr/> Concurrent variables <hr/>	
GDP per capita	-0.3545** (0.1156)
Unemployment rate	0.9032** (0.1968)
Dependency ratio	1.2600* (0.4729)
Trade openness	-0.0002

	(0.0288)
Intercept	4.4772
	(2.1846)

N	372
Countries	15
R ²	0.672
Effects	fixed

Notes: Dependent variable: deficit/GDP. Western European EU countries, 1994-2019. Autoregressive distributed lag models with random effects. Robust standard errors in parentheses adjusted for country clusters. ** p<0.01, * p<0.05. ^a Since the indicator *EMU* measures also expected membership, it enters the regression in its concurrent realization.

Table A6: Effects on Deficit for Western European Eurozone Countries (Financial Assistance)

	Financial assistance
Expected duration	0.3767** (0.1409)
EDP	-0.4492** (0.1487)

Notes: ** p<0.01, * p<0.05. Average marginal effects on deficit/GDP, computed for a two-year shortening of expected duration, and for a full year of oversight under the excessive deficit procedure (about 1.6 standard deviation differences).

Table A7: International Oversight of Fiscal Discipline in Central and Eastern Europe

Lagged variables	(1)	(2)	(3)	(4)
Expected duration	0.0000 (0.0003)	0.0000 (0.0003)	0.0001 (0.0003)	0.0001 (0.0003)
Financial assistance		-0.6356 (0.7138)		-1.7461 (1.2278)
Eurozone (EMU) ^a	0.4911 (0.6314)	0.5238 (0.6102)	0.2400 (0.8531)	0.1562 (0.8425)
Excessive deficit procedure (EDP)	-0.1491 (0.6990)	0.0033 (0.6339)	0.2263 (0.5691)	0.5801 (0.5841)
EDP × EMU ^a	0.4836 (0.8016)	0.3547 (0.7197)	0.6080 (0.9460)	0.1944 (0.7826)
Parties in government	-0.8215 (0.5518)	-0.9817* (0.4617)	-0.4915 (0.6877)	-1.0276 (0.5872)
Budgetary constraint index (BCI)	-7.5955* (3.5328)	-8.2918** (3.2148)	^b	^b

Parties in government × BCI	2.0477* (0.9855)	2.3433** (0.7920)	1.9073 (2.0239)	2.9897 (1.8496)
Effective number of parties	-0.1127 (0.3679)	-0.0957 (0.3707)	-0.1340 (0.3526)	-0.1243 (0.3550)
Caretaker time	1.1528 (0.8887)	1.1203 (0.9080)	1.7685 (1.1154)	1.6755 (1.1257)
Government ideology	0.0060 (0.0138)	0.0070 (0.0131)	-0.0065 (0.0195)	-0.0076 (0.0169)
Deficit	0.4741** (0.1494)	0.4801** (0.1533)	0.3193* (0.1352)	0.3072* (0.1323)
GDP per capita	0.9874** (0.2335)	1.0052** (0.2421)	0.9623* (0.2978)	0.9864* (0.3057)
Unemployment rate	-0.1923 (0.1391)	-0.1905 (0.1396)	-0.1102 (0.1907)	-0.1078 (0.1845)
Dependency ratio	0.3423 (0.1806)	0.3028 (0.2218)	-0.8729 (0.7976)	-0.8747 (0.7703)
Trade openness	-0.0057 (0.0287)	-0.0076 (0.0303)	-0.0255 (0.0261)	-0.0272 (0.0276)
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Concurrent variables				
GDP per capita	-0.9857** (0.2720)	-1.0147** (0.2922)	-0.9607* (0.3055)	-0.9937* (0.3154)
Unemployment rate	0.2054 (0.1827)	0.1978 (0.1879)	0.2233 (0.1902)	0.2476 (0.1870)
Dependency ratio	-0.4307* (0.1873)	-0.3901 (0.2292)	0.8172 (0.8166)	0.8287 (0.7832)
Trade openness	-0.0144 (0.0274)	-0.0131 (0.0288)	-0.0455 (0.0357)	-0.0383 (0.0348)
Intercept	12.1695** (2.1263)	12.6782** (1.8217)	10.9579 (5.8476)	9.5207 (5.1173)
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N	144	144	144	144
Countries	10	10	10	10
R ²	0.688	0.691	0.652	0.667
Effects	random	random	fixed	fixed

Notes: Dependent variable: deficit/GDP. Eastern European EU countries, 2004/2007-2019. Autoregressive distributed lag models with random effects. Robust standard errors in parentheses adjusted for country clusters. ** p<0.01, * p<0.05. ^a Since the indicator *EMU* measures also expected membership, it enters the regression in its concurrent realization. ^b The *Budgetary constraint index* is dropped because it does not vary across this time period, but its interaction with the number of government parties does vary. The Mundlak formulation of the random-effects model produces similar results.

Table A8: International Oversight of Fiscal Discipline across the European Union

Lagged variables	Fixed effects	Mundlak formulation	
		within-effects	between-effects
Expected duration	-0.0003 (0.0002)	-0.0003 (0.0002)	-0.0011 (0.0006)
Financial assistance	-2.4022** (0.8408)	-0.2799 (0.5284)	^b
Eurozone (EMU) ^a	0.2581 (0.3528)	0.2321 (0.3644)	
Excessive deficit procedure (EDP)	0.3219 (0.3618)	-1.3178 (1.0464)	0.2393 (0.6167)
EDP × EMU ^a	-0.3932 (0.3784)	-1.4297 (1.3346)	-0.3665 (0.6903)
Parties in government	-0.0688 (0.2034)	0.1941 (0.1543)	0.2627 (0.1763)
Budgetary constraint index (BCI)	-0.0549 (1.1823)	0.7825 (0.5689)	1.1635* (0.4678)
Parties in government × BCI	0.4272 (0.3395)	0.3582 (0.5915)	-0.1410 (0.1769)
Effective number of parties	0.0560 (0.1247)	0.0229 (0.1355)	-0.1370* (0.0677)
Caretaker time	0.9809 (0.5547)	1.0064 (0.5608)	0.8835 (0.6474)
Government ideology	-0.0031 (0.0081)	-0.0029 (0.0082)	-0.0010 (0.0055)
Deficit	0.4778** (0.0364)	0.4804** (0.0362)	0.9391** (0.0743)
GDP per capita	0.4299** (0.1231)	0.4363** (0.1272)	^b
Unemployment rate	-0.4669** (0.1212)	-0.4552** (0.1194)	^b
Dependency ratio	-0.7142* (0.3097)	-0.6927* (0.3303)	^b
Trade openness	0.0004 (0.0149)	0.0015 (0.0151)	^b
Concurrent variables			
GDP per capita	-0.3819** (0.1187)	-0.3877** (0.1223)	-0.0080** (0.0030)
Unemployment rate	0.6526** (0.1671)	0.6523** (0.1657)	-0.0284* (0.0134)
Dependency ratio	0.6015 (0.2966)	0.5861 (0.3156)	-0.0067 (0.0149)
Trade openness	-0.0156	-0.0165	0.0005

	(0.0218)	(0.0220)	(0.0008)
Intercept	4.6859*	0.7626	
	(1.7180)	(0.9584)	

N	516	516
Countries	25	25
R ²	0.639	0.748
Effects	fixed	random

Notes: Dependent variable: deficit/GDP. EU countries, 1994-2019. Autoregressive distributed lag models with random effects. Robust standard errors in parentheses adjusted for country clusters. ** p<0.01, * p<0.05. ^a Since the indicator *EMU* measures also expected membership, it enters the regression in its concurrent realization. For the same reason, the country-mean of *EMU* is not included. ^b Variable dropped because of collinearity.

Table A9: Effects on Deficit for European Union Eurozone Countries

	Fixed effects	Effects	Mundlak random effects formulation
Expected duration	0.2554* (0.1298)	within	0.2551 [†] (0.1332)
		between	0.1934 [†] (0.1039)
EDP	-0.0712 (0.2065)	within	-2.7475** (1.0521)
		between	-0.0420 (0.1591)

Notes: ** p<0.01, * p<0.05, [†] p<0.1 . Average marginal effects on deficit/GDP, computed for a two-year or, for between-effects, six-month shortening of expected duration, and for a full year or, for between-effects, four months of oversight under the excessive deficit procedure (about 1.6 standard deviation differences).