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Fiscal Politics in the Euro Area

by Luc Eyraud, Vitor Gaspar, and Tigran Poghosyan

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I N T E R N A T I O N A L M O N E T A R Y F U N D

**IMF Working Paper**

Fiscal Affairs Department

**Fiscal Politics in the Euro Area**

**Prepared by Luc Eyraud, Vitor Gaspar, and Tigran Poghosyan<sup>1</sup>**

Authorized for distribution by Vitor Gaspar

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**Abstract**

This paper provides evidence of fiscal procyclicality, excessive deficits, distorted budget composition and poor compliance with fiscal rules in the euro area. Our analysis relies on real-time data for 19 countries participating in the euro area over 1999–2015. We look for, but do not find, conclusive evidence of bias in procedures in relation to country size. The paper also briefly reviews the literature on political economy factors and policy biases, and offers some reflections on the euro area architecture.

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## I. INTRODUCTION

Like many other advanced economies, euro area (EA) countries have faced a significant accumulation of public debt in the past three decades. The public-debt-to-GDP ratio of the EA as a whole increased from an average level of less than 60 percent of GDP in the early 1990s to more than 90 percent of GDP in 2015. The surge in debt was particularly pronounced in 2009 and 2010 at the peak of the global financial crisis. Some countries were priced out of the market and contagion set in, with fiscal stress in some member states spilling over to others.

To explain the deterioration of fiscal positions, a large body of the literature has focused on the shortcomings of the institutional framework in Europe, in particular the design of supranational fiscal rules and the incompleteness of the Economic and Monetary Union (for example, Sapir and Wolff 2015; Benassy-Quere, Ragot, and Wolff 2016). Others have pointed to the role of the fiscal stimulus undertaken in the first years of the crisis and the materialization of contingent liabilities, including the rescue of the banking sector and the losses incurred by state-owned enterprises (IMF 2012). More recently, emphasis has been placed on the role of macroeconomic developments in general and low nominal growth in particular (IMF 2016a). Less attention has been paid to political economy considerations, although they can also account for deviations from sound fiscal policy and rising debt ratios.

This paper takes a different approach and analyzes how political factors have negatively affected fiscal outcomes in the EA between 1999 and 2015. Its main contributions are threefold: from a conceptual point of view, the paper extends the analysis of political economy factors and policy distortions, which are usually examined in the context of unitary countries, to the supranational level; from an empirical point of view, the paper reviews a series of policy biases, including the relationship between country size and budget execution; and from a normative point of view, the paper brings a novel perspective on fiscal governance reforms by focusing on how to correct incentives, while the literature has placed a greater emphasis on strengthening the economic rationale for the rules.

The purpose of the paper is to document fiscal policy biases and compliance with existing fiscal rules. Whether the rules themselves are well designed is beyond the scope of this paper. For example, the conduct of national fiscal policies when common monetary policy is constrained by the effective lower bound is not discussed here.

The remainder of the paper is structured as follows. The second section argues that political economy factors affect fiscal outcomes at both the national and supranational levels in the EA, which creates a number of fiscal policy biases. The third section presents empirical evidence on these policy biases and shows that fiscal rules have not been effective in correcting them. The fourth section reviews past reforms and suggests options for the future. The final section concludes.

## II. A POLITICAL ECONOMY PERSPECTIVE ON FISCAL POLICY BIASES IN THE EURO AREA

The European Union (EU) is a unique construct that cannot be described as a standard federal system. The specific institutional setup raises political economy issues, including some that are absent from unitary and federal states. In this context, this section documents policy biases in the EA at both the national and supranational levels.

This paper adopts a broad definition of the notion of “political economy,” understood to be the analysis of the interactions between the political environment and the economic system. In particular, we consider that the political economy field is not limited to the examination of political institutions per se but also covers tangential issues, such as cross-country policy coordination or the effect of fiscal reforms and fiscal developments on public confidence.

### A. Policy Biases at the National Level

Policies conducted by rational and elected policymakers can produce suboptimal outcomes. The reasons for and nature of these deviations from optimality have been widely explored by the literature, and they apply to many policy instruments, including monetary policy (inflationary bias) and structural policy (status quo bias). In the fiscal area, deviations from optimal policy primarily take the form of excessive deficits and a tendency of fiscal policy to be procyclical (Figure 1). In principle, fiscal policy could be procyclical without exhibiting a deficit bias, but the deficit bias results in large part from a failure to control spending increases and tax cuts in “good times.” Thus, the two biases are closely related in practice.

**Figure 1. National Political Economy**



Although some economic arguments can account for fiscal policy biases, political factors are often the first ones to blame (Alesina and Perotti 1995; Eslava 2006; Debrun, Hauner, and Kumar 2009): politicians’ reelection concerns and partisanship (leading to a short-term orientation for fiscal policy with opportunistic preelection spending as well as a tendency to produce optimistic revenue forecasts or unrealistic spending estimates); incentives to deviate from previous promises when economic agents have already adjusted their expectations and behavior (the “time inconsistency” problem, which could, for instance, occur with certain tax announcements); failure by heterogeneous groups such as line ministries, levels of government, or coalition parties to internalize the cost to the community of their competing claims on the government revenue pool (the “common pool”

problem<sup>2</sup>); or the population's imperfect understanding of tax and debt finance combined with a misperception of the government's intertemporal budget constraint ("fiscal illusion").

Political economy considerations can also affect the composition of fiscal policy. In particular, in times of fiscal adjustment, public investment cuts and tax increases may be favored over current expenditure restraint for reasons that are not related to efficiency and equity. For instance, governments may be tempted to reduce public investment that yields benefits for future voters compared with the immediate political gains derived from protecting spending on transfers. In addition, public investment cuts are often less disruptive to the provision of public services. An excessive reliance on tax measures can be motivated by their smaller negative effect on economic activity in the short term (potentially offset by larger costs in the medium term), their concentrated impact on the electorate (at least for progressive income taxes), and their lower visibility relative to expenditure cuts (because broad tax bases can generate significant revenues from relatively small rate hikes).

### **B. Policy Biases at the Supranational Level**

The EU is a unique entity that shares features of federal systems without properly falling under the definition (Moravcsik 2001; Hazak 2012). The EU lacks a number of legal and institutional elements that are present in federations. Unlike states in a federation, EU member states retain most of their sovereignty, and the national dimension of politics continues to predominate in the discussions at the European level (Gaspar 2012). Some argue that the EU construct lies between a fully federal system (such as the United States) and an intergovernmental cooperation system (such as the United Nations). Another important difference is that legislative powers are split between the European Parliament (EP) and the Council of the European Union—the latter represents the governments of the member states and is composed of national ministers. The vast majority of European laws are adopted jointly by the EP and the Council, although the EP involvement depends on which procedure the proposal is being adopted under.<sup>3</sup>

Focusing on the fiscal area, differences are apparent in all dimensions of fiscal policy (Cottarelli and Guerguil 2014). The size of the EU budget and its staff are very small compared with standard federal budgets and civil service; risk sharing and redistribution mechanisms are less developed; the EU does not have the ability to borrow for the general budget or tax citizens directly and draws its resources from member states' contributions; fiscal policy is subject to a very complex set of fiscal rules but

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<sup>2</sup> A common pool problem occurs when the benefits of spending accrue disproportionately to a particular group but the cost of taxation is spread over all groups. Because of this mismatch, individual groups do not internalize the full cost of expenditure (in terms of marginal taxation) and tend to overspend. In particular, common pool problems are prevalent when several decision makers (for example, spending ministers) compete for the public goods.

<sup>3</sup> Under the "ordinary legislative procedure" (also called "co-decision"), the EP has equal legislative power with the Council. However, the EP's role is more limited under the other (called "special") legislative procedures, including consent and consultation.

enforcement mechanisms are weaker than in federations and there are no direct controls from the center on member states' fiscal policies; and harmonization of spending and tax policies across states is very limited.

In the EA, another important aspect to consider is the existence of strong cross-country fiscal spillovers associated with trade linkages, confidence effects, the high degree of financial market integration, and the single monetary policy response.<sup>4</sup> Through these channels, fiscal imbalances in a given member state may affect the fiscal positions of other member states. These spillovers can go in either direction, either improving or deteriorating the fiscal position of neighboring countries. Empirical evidence of negative spillovers is provided by Caporale and Girardi (2013), who show that government yields of EA countries are strongly linked to each other. Therefore, deterioration in the fiscal position of a given country can be transmitted to the borrowing costs of other member states. Fiscal spillovers can also be positive, particularly when they are transmitted through the trade channel: fiscal relaxation in one country may benefit its trading partners by raising the demand for export goods and services, as evidenced by several empirical papers (Giuliodori and Beetsma 2004; Beetsma and others 2009). EC (2014) provides a comprehensive literature review of the spillovers in the EA by type of channel and type of shock.

All these specifics of the European institutional setup give rise to a number of political economy and policy coordination considerations that come on top of the ones prevailing at the national level (Figure 2):

- *Common pool problem at the supranational level.*<sup>5</sup> The process of fiscal integration in Europe may reinforce the common pool problem (and the related tendency to overspend), because it increases the number of constituencies and decision makers, and reduces transparency in the allocation of funds (von Hagen 2012). However, this concern should not be overstated given the small size of the EU budget and the fund allocation procedures (with each member state having veto power over individual budget items). A more serious common pool problem arises from the integration of bond markets. From the adoption of the euro until the global financial crisis, national bonds became quasi-perfect substitutes, with the process of financial liberalization resulting in a dramatic convergence of government bond yields.<sup>6</sup> The elimination of the exchange rate risk following the introduction of the euro rendered government bond markets close to perfect substitutes. Bond markets started functioning like a common pool of financing,

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<sup>4</sup> For instance, the European Central Bank may tighten monetary policy to contain inflation fueled by fiscal expansion in a specific country, particularly if it is a large one. Conversely, it can loosen the monetary stance in the EA as a whole if localized fiscal imbalances create risks of contagion, higher risk premiums, and disorderly market conditions.

<sup>5</sup> The common pool problem could also be described as a type of fiscal spillover (because it creates an interdependence between the utility functions of individual states). Nonetheless, to simplify the discussion, this section separates the two issues to emphasize that the fiscal implications of the common pool are primarily borne by the country itself (in the form of overspending), while fiscal spillovers focus on the effects on other countries.

<sup>6</sup> Low credibility of the no-bailout clause of the Maastricht Treaty is another possible explanation for the convergence of sovereign yields.

which created conditions for localized credit booms and made contagion effects more likely (Detken, Gaspar, and Winkler 2004; Bernoth, von Hagen, and Schuknecht 2012). Since the beginning of the crisis, the common pool has fragmented as a result of greater country differentiation of sovereign bond yields and the repricing of sovereign credit risk (Afonso, Arghyrou, and Kontonikas 2015). Nonetheless, nonfundamental and/or global factors continue to be important drivers of bond yields (ECB 2014).

- *Distorted incentives with respect to the fiscal stance.* In the presence of cross-country spillovers, the fiscal actions of individual countries have implications not only for their domestic economies, but also on the macroeconomic and fiscal conditions of other member states. If countries do not internalize the impact of their actions on others, distortions may arise. With positive spillovers, countries may have a tendency to conduct overly restrictive fiscal policies because they do not internalize the benefit of a fiscal expansion on other countries. With negative spillovers, the opposite bias materializes. For instance, individual countries may not fully internalize the costs of their fiscal profligacy in a common bond market. In equilibrium, with all governments making the same calculation, public debt and interest rates could rise compared with a situation of no interdependence across fiscal positions. Partly to address these issues, the EU has set up a yearly cycle of economic and fiscal policy coordination called the European Semester (which is supplemented by a review of national budget plans in EA countries), but this exercise cannot be described as a full-fledged cooperative approach meant to contain spillovers, given that fiscal plans are examined rather than negotiated between Brussels and the member states.
- *Biased enforcement of fiscal rules.* The unique surveillance and coordination procedures within the EU have posed challenges for enforcement. The responsibility for enforcement is shared between the European Commission (EC) and the Economic and Financial Affairs Council (ECOFIN), which comprises finance ministers of member states. The EC has the right and duty to monitor implementation of the Stability and Growth Pact (SGP) without having full power to take action in cases of noncompliance because ECOFIN has the final word on monitoring and enforcement decisions. This incomplete separation of powers between the two entities has long been seen as a weakness of the SGP for at least two reasons. First, the ECOFIN gathers officials responsible to their own countries' constituencies and with the mandate of advancing national interests. As a result, some have argued that the enforcement of the SGP has not been evenhanded, with preferential treatment granted to larger countries holding more voting rights (Cartenaro and Morris 2008). Second, ECOFIN members may have incentives to be lenient and avoid actions that are politically costly for other members because they might find themselves in a position of fiscal distress in the future. Otmar Issing, former Board Member and chief economist of the European Central Bank, described this implicit collusion situation as one in which potential sinners pass judgment on actual sinners. The financial crisis has further



accentuated this bias, with peer pressure becoming less effective when the number of fiscal delinquents rises.<sup>7</sup>

- *Deficit of democratic legitimacy and scapegoating of the center.* The deficit of legitimacy of the EU has multiple and complex roots. Among them is the limited remit of the EP, which creates a sense of “democratic shortfall.” The EP has no right to initiate legislation, has no supervision over the Council of the European Union, and it may dismiss the EC only *en bloc* (not individual commissioners). Under special legislative procedures, the EP’s legislative powers are more limited than those of the Council of the European Union, which is not a directly elected body (Kardasheva 2009). As a result, the European institutions are often perceived by the public as unelected and unaccountable entities. A second issue is the lack of transparency in the decision-making process: on many matters, decision making is intergovernmental (rather than supranational), which provides for less democratic oversight. For instance, with regard to the ECOFIN decisions, there are no minutes describing the discussions, only press releases with the content of the agreement that has been reached. Furthermore, the fact that the ECOFIN combines legislative and executive powers (with the ability to legislate on the fiscal framework and decide on its implementation) may result in excessive concentration of powers and undermine the system of checks and balances. Third, the complexity and sophistication of the governance framework, particularly in the fiscal area, make it difficult to understand. This problem is somewhat compounded by the multiplicity of monitoring schemes, which occasionally produce contradicting messages. All these factors have translated into a lack of transparency and ownership of the SGP. Exploiting this legitimacy gap, national policymakers have tended to attribute the responsibility for difficult and politically costly decisions to the center. During the global financial crisis, the fact that a number of assistance programs had been conducted under the surveillance of the EC reinforced the perception that fiscal austerity was imposed by Brussels rather than by the necessity to regain normal financial market access, rebuild buffers, and restore credibility after the crisis.

**Figure 2. Supranational Political Economy**



<sup>7</sup> This is because reputation costs decline, the “sinners judging sinners” incentive problem becomes more acute, and the difficulty of imposing sanctions increases with the number of delinquent countries.

### III. EMPIRICAL EVIDENCE ON FISCAL POLICY BIASES IN THE EURO AREA

As discussed in the previous section, political economy factors create policy distortions and can result in suboptimal fiscal outcomes. In particular, political considerations can lead to excessive spending in good times, eroding fiscal buffers and necessitating procyclical fiscal adjustments in downturns. During periods of fiscal consolidation, political preferences could be tilted toward preserving unproductive spending and increasing distortionary taxes, making fiscal composition less “growth friendly.”

Mindful of these risks, the SGP was designed to constrain fiscal discretion at the national level. The main objective of the SGP is to prevent national fiscal policies from having negative spillovers on other countries. Another objective is to help countries create fiscal buffers and allow fiscal policy to respond to country-specific shocks (euro-area-wide shocks are, in principle, left to the single monetary policy). To this aim, the SGP and the subsequent legislations have set numerical limits on various fiscal aggregates and developed a multilateral monitoring mechanism to ensure that deviations from the fiscal targets are corrected within a reasonable time frame (EC 2016a).

This section provides empirical evidence on the fiscal policy biases described above by reviewing macro-fiscal performance under the SGP and the track record of fiscal rules. Its main purpose is to assess whether the governance framework has been effective in correcting policy biases. The analysis relies mainly on two databases covering 19 EA countries over the period 1999–2015.<sup>8</sup> The first is the AMECO database maintained by the EC’s Directorate General for Economic and Financial Affairs, which contains information on ex post outturns of macroeconomic and fiscal variables. The second is a real-time database building on various vintages of the Stability and Convergence Programs submitted by member states. These programs contain information on outturns of macroeconomic and fiscal variables at the time of the release as well as projections up to three years ahead.

#### A. Macro-Fiscal Performance under the SGP

##### *Evidence of procyclical fiscal policy*

Although the main objective of the SGP is to prevent the buildup of excessive deficit and debt, it also leaves room for macroeconomic stabilization.<sup>9</sup> Stabilization can, in principle, take the form of automatic stabilizers and discretionary fiscal policy. The SGP puts emphasis on automatic stabilizers and tries to limit the scope for discretionary policy by imposing country-specific structural balance targets called medium-term objectives, or MTOs (Buti and Van den Noord 2004). If countries comply with these structural balance targets, their discretionary fiscal policy should, in principle, be acyclical,

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<sup>8</sup> To ensure consistency, the empirical analysis is conducted since 1999, although some EA countries (Cyprus, Estonia, Greece, Latvia, Lithuania, Malta, Slovak Republic, and Slovenia) joined the single currency area later.

<sup>9</sup> IMF (2015b) provides recent empirical evidence on fiscal stabilization and reviews the relevant literature.

in the sense that their underlying fiscal stance would remain unchanged regardless of the cyclical position.<sup>10</sup> At the same time, automatic stabilizers would operate in full. The benchmark MTO is a structural deficit ceiling of 0.5 percent of potential GDP. Combined with the 3 percent nominal deficit ceiling, this should leave sufficient room for automatic stabilizers to operate during a normal cycle (Eyraud and Wu 2015).

In practice and despite these safeguards, the EU member states, like many other countries, seem to have pursued a procyclical fiscal stance and prevented automatic stabilizers from operating freely. The issue is widely discussed in the literature and the results are mixed depending on the sample period, the data source, and the empirical specification adopted. Some studies find that fiscal policy in EA was acyclical until the beginning of the global financial crisis (Buti and Van den Noord 2004; Fatas and Mihov 2009), but most studies report evidence of procyclicality, especially in good times and following the introduction of the SGP in 1999 (European Commission 2004; Cimadomo 2005; Candelon, Muysken, and Vermeulen 2007; Deroose, Larch, and Schaechter 2008). The results also depend on whether the analysis is conducted ex post or in real time. In general, the evidence of procyclicality is weaker when real time data is used, suggesting that there could be a difference between the ex ante intentions of fiscal authorities and ex post outcomes (Forni and Momigliano 2005; Cimadomo 2008; Golinelli and Momigliano 2006; Bernoth, Hughes Hallet and Lewis 2008).

To investigate these issues, we first plot the changes in output gaps and changes in cyclically adjusted fiscal balances in EA countries over 1999–2015 (Figure 3). A procyclical fiscal stance would imply that observations should be concentrated in the upper-left or lower-right quadrants; a countercyclical stance would appear in the upper-right or lower-left quadrants; an acyclical fiscal stance would generate no systematic association between the two series. In practice, a negative association can be observed in more than half of the observations: in such cases, discretionary fiscal policy has loosened in periods when output growth exceeded its potential rate of growth (lower-right quadrant) and contracted in periods when output growth was below its potential (upper-left quadrant).

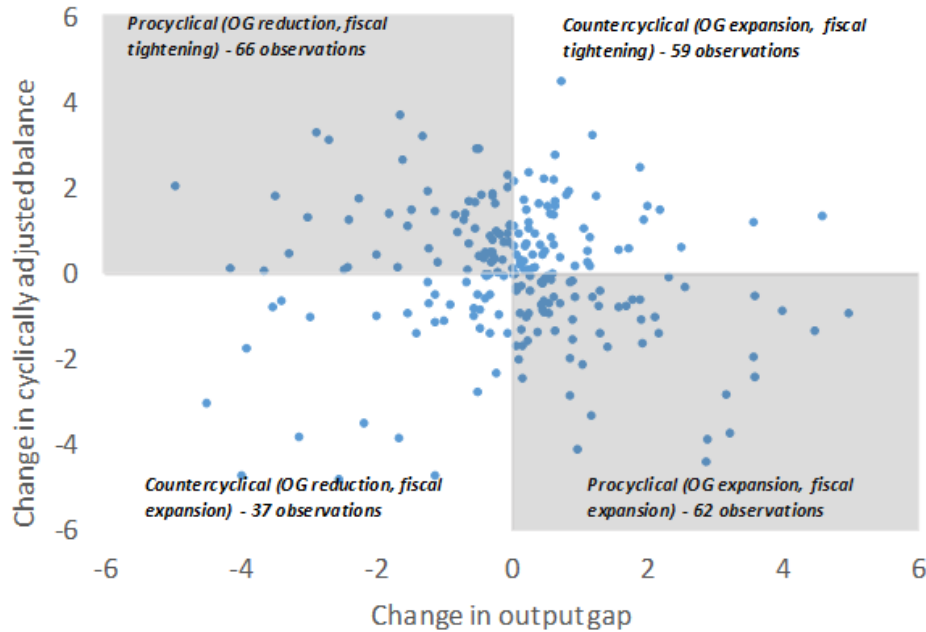
Various caveats apply to the descriptive analysis of Figure 3. The scatterplot does not show a strong negative relationship perhaps because the variables of interest (output gap and fiscal stance) are subject to measurement errors. The bivariate correlation may also be spurious if it is driven by other factors that are not controlled for. In addition, Figure 3 does not tell whether the procyclical bias appeared at the planning stage or implementation stage of the budget. One possibility is that fiscal policy plans were already procyclical at the outset (despite the rules). Another possibility is that fiscal

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<sup>10</sup> Although compliance with MTOs is assessed using asymmetric fiscal balance *ceilings*, the legislation describes them as *targets*, in the sense that countries are expected to converge toward their MTOs and stay close to them. For instance, EC (2016a) states that “the country-specific medium-term objective corresponds to the structural budgetary position that Member States should achieve, and maintain, over the cycle.” Therefore, complying with the MTO should limit the ability of countries to run a countercyclical policy. In practice, however, nothing prevents countries from overshooting their MTO targets, which could create space for a relaxation of the structural fiscal stance in bad times.

plans were acyclical or countercyclical, but procyclicality occurred through fiscal slippages during budget implementation.<sup>11</sup>

**Figure 3. Relationship between Changes in Cyclically Adjusted Balances and Output Gaps**



Sources: AMECO; authors' estimates.

Note: The sample includes 19 euro area countries over 1999–2015. The figure reports the contemporaneous association between the variables (measured in percentages). Outlier observations (above 5 percent and below –5 percent) are excluded to improve the visual representation of the scatterplot. OG = output gap.

For all these reasons, a more formal econometric analysis is conducted to evaluate how fiscal policy responds to the economic cycle in the EA. Following the approach adopted in the real-time literature, we assess the respective contributions of policy *planning* and *implementation* to fiscal procyclicality by running the following regression for the sample of EA countries over 1999–2015 (see Cimadomo 2011 for a survey):

$$\Delta sb_{i,t} = \alpha_i + \beta \times \Delta gap_{i,t} + \gamma \times debt_{i,t-1} + \rho_t + \varepsilon_{i,t} \quad (1)$$

where  $i$  and  $t$  indicate countries and years,  $sb$  is the structural-balance-to-potential-GDP ratio, and  $debt$  is the debt-to-GDP ratio. The main coefficient of interest is  $\beta$ , which measures whether discretionary fiscal policy is procyclical, countercyclical, or acyclical. A negative coefficient implies a procyclical fiscal stance (and a positive coefficient implies a countercyclical stance), while a statistically insignificant coefficient would suggest that the stance was acyclical. The regression also

<sup>11</sup> These slippages may occur in a variety of contexts: countercyclical expenditure plans, based on overoptimistic revenue projections, could turn procyclical ex-post when cyclical position and revenue outcomes disappoint; or ad-hoc revisions of expenditure plans through supplementary budgets could also generate procyclicality.

controls for the initial level of debt to capture a possible policy reaction aimed at ensuring debt sustainability.

Our estimations are performed using different vintages of the Stability and Convergence Programs (which include both plans and real-time realizations) and the latest AMECO database (ex post historical data as of 2016). Table 1 presents estimation results for three sets of variables: one-year ahead planned fiscal impulse and expected change in output gap (column (1)); real-time fiscal impulse and change in output gap as reported in the following year (column (2)); and ex post fiscal impulse and change in output gap using the latest vintage of the data as reported in 2016 (column (3)). Estimations show that despite broadly acyclical plans (insignificant coefficient  $\beta$  in column (1)), real-time and ex post outcomes have been procyclical (negative and significant coefficient  $\beta$  in columns (2) and (3)).

**Table 1. Fiscal Policy Procyclicity**

	Fixed Effects Estimator		
	Plans $\Delta(\text{SB}/\text{GDP})\ t t-1$	Actual, Real Time $\Delta(\text{SB}/\text{GDP})\ t t+1$	Actual, Ex Post $\Delta(\text{SB}/\text{GDP})\ t 2016$
	(1)	(2)	(3)
Initial Debt/GDP	0.02 [0.01]	0.05*** [0.01]	0.04*** [0.01]
$\Delta$ Output Gap	-0.12 [0.15]	-0.27* [0.16]	-0.55** [0.19]
Constant	-0.93 [1.72]	-3.88*** [0.79]	-3.27*** [0.90]
Observations	105	102	224
Number of Countries	19	19	19
$R^2$	0.33	0.65	0.29

Sources: AMECO; Stability and Convergence Programs; authors' estimates.

Note: The sample includes 19 euro area countries covering the period 1999–2015. Columns (1) and (2) rely on stability program data, while column (3) uses the AMECO database. In the absence of structural balances in AMECO, cyclically adjusted balances are used for the pre-2011 period in column (3). Because of data availability, the analysis is performed using overall (rather than primary) structural balances as dependent variables. Estimations rely on the panel ordinary least squares estimator. All regressions include time and country fixed effects.  $t|t-1$  indicates plans for period  $t$  reported in period  $t-1$ ,  $t|t+1$  indicates outcomes in period  $t$  reported in period  $t+1$ , and  $t|2016$  indicates outcomes in period  $t$  reported in 2016.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

The previous results may suffer from an endogeneity bias due to reverse causality effects. For instance, fiscal tightening (positive change in the structural balance) could widen the output gap (negative change) and generate a negative association between the two variables that is not related to procyclicity. Although this issue may not be too pronounced in the specification using the planned fiscal impulse (column (1)) given that expected changes in the output gap are typically used as “exogenous” inputs when formulating budget plans, the endogeneity bias may cause more

problems in the other regressions. Annex Table 1 attempts to address this issue with a dynamic generalized method of moments (GMM) estimator, which uses, in addition to the lagged variables (in levels and differences), trade-weighted output gaps as an additional instrument (following Gali and Perotti 2003; and Jaimovic and Panizza 2007).<sup>12</sup> This approach substantially reduces the number of observations, but confirms the evidence of procyclicality in all specifications.

Two additional sets of regressions are run as robustness checks. First, the effect of national political economy factors is explored by including in the specifications several political variables that are widely used in the literature (dummies for legislative and presidential election years, and a measure of political fractionalization). Including these variables as additional controls does not materially affect the results (Annex Table 3). Whether the coefficient of the output gap (which is a measure of procyclicality) is affected by political factors is also tested by running separate regressions using interaction terms of the output gaps with individual political variables; the interaction terms generally do not come out significant.<sup>13</sup> Thus, the evidence of procyclicality found in the whole sample does not seem to be primarily driven by political considerations at the national level, suggesting that supranational factors may also be at play.

Second, procyclicality could be concentrated in the years of fiscal consolidation that followed the fiscal stimulus of 2009–10. To test the sensitivity of the results, alternative estimations excluding 2011–13 are reported (Annex Table 5). Results are not materially affected, meaning that procyclicality is not a crisis-specific phenomenon.

### ***Evidence of deficit bias***

An important question is whether procyclicality occurs throughout the cycle or only during upturns. If procyclicality happens in good times but fiscal policy is acyclical or procyclical in bad times, the asymmetric fiscal policy reaction results in a “deficit bias” and excessive debt accumulation (Balassone and Francese 2004).

Given that the main objective of the SGP is to prevent the buildup of excessive deficits and debt, it contains several provisions aimed at ensuring a symmetric policy response and mitigating the deficit bias. One is the ceiling on the deficit ratio of 3 percent of GDP. Another is the public debt anchor at 60 percent of GDP. Also, the SGP sets country-specific medium-term targets in cyclically adjusted

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<sup>12</sup> The GMM approach seems superior to the more widely employed approach using the lagged output gap (or the lagged change in the output gap) as a dependent variable in the equation. While including the lagged variable is an easy fix to alleviate the endogeneity problem, it also makes the interpretation of the coefficient more difficult. For instance, a fiscal tightening in response to a positive change in the previous year’s output gap would be interpreted as countercyclical, while it may in fact be procyclical if the macroeconomic conditions deteriorate in the current year.

<sup>13</sup> Results are not reported in the annex but are available from the authors upon request.

terms (MTOs) and annual adjustments toward MTOs. Structural targets imply that fiscal buffers should accumulate in good times and be used to cushion shocks in bad times.<sup>14</sup>

Despite these provisions, the SGP has not prevented a steady deterioration in the member states' fiscal positions. Considering the sample of EA countries over 1998–2015, the deficit has exceeded the 3 percent ceiling in more than three-quarters of total country-year observations. Moreover, in 16 of the 19 EA countries, the average deficit over 1999–2015 was positive (in the range of 1.7 to 7.9 percent of GDP, depending on the country), exceeding the “close to balance” medium-term objective. Nonetheless, the deficit bias does not seem more pronounced in the EA than in other advanced economies (excluding Japan) when taking a long-term perspective. Since 1999, the fiscal deficits of EA countries and other advanced economies (excluding Japan) have fluctuated around 3 percent of GDP, with the EA posting lower deficits than its peers since the beginning of the global financial crisis.<sup>15</sup>

We then test more systematically whether fiscal policy has reacted asymmetrically to the economic cycle in the sample of 19 EA countries by using a regression model over the period 1999–2015:

$$\Delta sb_{it} = \alpha_i + \beta_1 \times \Delta gap_{it} \times D(\Delta gap_{it} > 0) + \beta_2 \times \Delta gap_{it} \times D(\Delta gap_{it} < 0) + \gamma \times debt_{i,t-1} + \rho_t + \varepsilon_{it} \quad (2)$$

Specification (2) is an extended version of specification (1), where the change in output gap is interacted with dummy variables for good times ( $\Delta gap_{it} > 0$ ) and bad times ( $\Delta gap_{it} < 0$ ). These interaction terms allow the asymmetric policy reaction to the cycle to be tested for. Similar to specification (18.1), coefficients  $\beta_1$  and  $\beta_2$  measure whether discretionary fiscal policy was procyclical (negative coefficients), countercyclical (positive coefficients), or acyclical (insignificant coefficients).<sup>16</sup>

Table 2 reports the estimation results for fiscal policy plans, and real-time and ex post outcomes. The estimations confirm the asymmetric response to the cycle and provide evidence of a deficit bias. Specifically, lax policies in good times have prevented countries from rebuilding buffers when their economies grew at rates above potential growth (columns (1) and (2)).

This finding is corroborated by GMM regressions that alleviate the endogeneity problem but at the expense of a large drop in the number of observations (Annex Table 2). The results are broadly robust to the inclusion of political economy variables (Annex Table 4) and the exclusion of the periods of fiscal consolidation after 2009–10 (Annex Table 6).

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<sup>14</sup> As discussed above, although compliance with MTOs is assessed through fiscal balance ceilings, MTOs are medium-term “targets,” which should be achieved and maintained by member states.

<sup>15</sup> The sample of advanced economies (excluding EA and Japan) includes Australia, Canada, Czech Republic, Denmark, Hong Kong SAR, Iceland, Israel, Republic of Korea, New Zealand, Norway, Singapore, Sweden, Switzerland, United Kingdom, and United States.

<sup>16</sup> A negative  $\beta_1$  means that in good times (output growth is above its potential rate of growth, meaning  $\Delta gap > 0$ ) an increase in output gap is associated with fiscal relaxation, which denotes procyclical fiscal policy. Similarly, a negative  $\beta_2$  implies that in bad times (output growth is below its potential rate of growth, meaning  $\Delta gap < 0$ ), a decrease in output gap is associated with a fiscal contraction, which is also a sign of procyclicality.

**Table 2. Asymmetric Policy Response and Deficit Bias**

	Fixed Effects Estimator		
	Plans $\Delta(\text{SB}/\text{GDP})_{t t-1}$	Actual, Real Time $\Delta(\text{SB}/\text{GDP})_{t t+1}$	Actual, Ex Post $\Delta(\text{SB}/\text{GDP})_{t 2016}$
	(1)	(2)	(3)
Initial Debt/GDP	0.01* [0.01]	0.06*** [0.01]	0.04*** [0.01]
$\Delta\text{Output Gap}^*D(\Delta\text{Output Gap}>0)$	-0.45*** [0.07]	-0.84*** [0.20]	-0.31 [0.30]
$\Delta\text{Output Gap}^*D(\Delta\text{Output Gap}<0)$	0.17 [0.26]	-0.13 [0.18]	-0.73*** [0.22]
Constant	-0.48 [0.66]	-4.19*** [0.66]	-3.17*** [0.94]
Observations	105	102	224
Number of Countries	19	19	19
$R^2$	0.39	0.67	0.3

Sources: AMECO; Stability and Convergence Programs; authors' estimates.

Note: The sample includes 19 euro area countries covering the period 1999–2015. Columns (1) and (2) rely on stability program data, while column (3) uses the AMECO database. In the absence of structural balances in AMECO, cyclically adjusted balances are used for the pre-2011 period in column (3). Because of data availability, the analysis is performed using overall (rather than primary) structural balances as dependent variables. Estimations rely on the panel ordinary least squares estimator. All regressions include time and country fixed effects.  $t|t-1$  indicates plans for period  $t$  reported in period  $t-1$ ,  $t|t+1$  indicates outturns in period  $t$  reported in period  $t+1$ , and  $t|2016$  indicates outturns in period  $t$  reported in 2016.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

### ***Evidence of suboptimal fiscal composition***

Political factors can have detrimental effects on fiscal policy not only through a suboptimal fiscal stance, but also through suboptimal budget composition (at unchanged stance). This is especially noticeable in periods of fiscal consolidation, when political preferences can be tilted toward preserving current spending and increasing distortionary taxes. These tendencies can ultimately undermine the growth potential of the economy (IMF 2015a).

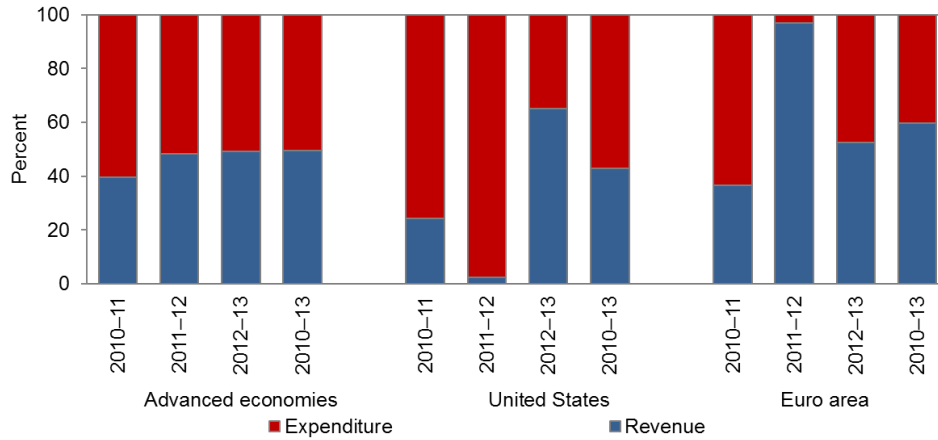
To address this risk, the fiscal framework has been amended to create better incentives for countries to protect public investment. An “investment clause” was formalized as part of the flexibility guidelines issued in 2015, allowing countries to temporarily deviate from their MTOs (or convergence paths to MTOs) to expand investment in projects with positive, direct, and verifiable long-term budgetary effects on growth and on the sustainability of public finances.<sup>17</sup>

<sup>17</sup> The applicability of the investment clause is limited by strict eligibility conditions (Melyn, Van Meensel, and Van Parys 2015).



Although it is still too early to assess the effectiveness of this initiative, past evidence shows that fiscal composition has not improved during the global financial crisis. For instance, despite the already-high initial level of taxation in EA countries, fiscal adjustment during 2010–13 was tilted toward revenue measures compared with the United States and other advanced economies (Figure 4). A similar picture emerges when analyzing expenditure composition (Figure 5). The brunt of expenditure adjustment has fallen on investment spending instead of on current spending, which is less productive but often politically costlier to cut.

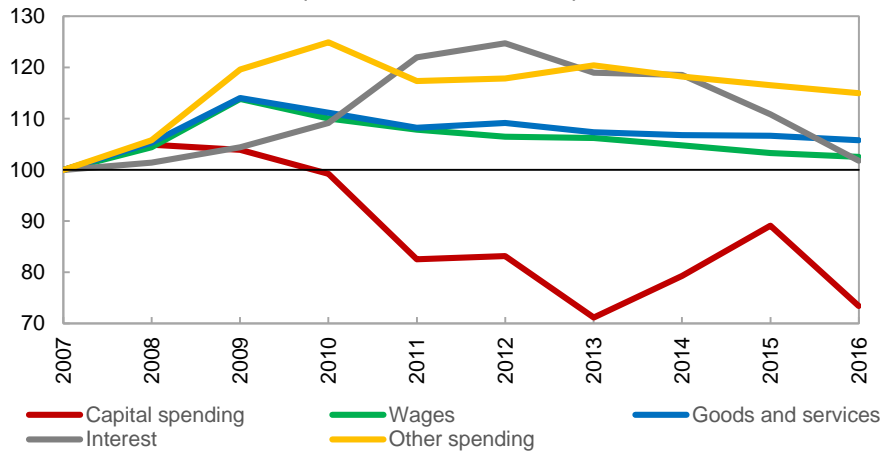
**Figure 4. Reliance on Revenue and Expenditure Measures in Fiscal Adjustment**



Sources: IMF *World Economic Outlook*; authors' estimates.

Note: The figure reports shares of revenue and expenditure measures in total fiscal adjustment.

**Figure 5. General Government Expenditure Composition (Rebased ratio to GDP)**



Sources: IMF *World Economic Outlook*; authors' estimates.

Note: The sample includes 19 EA countries. GDP ratios are rebased using 2007 as base year (= 100).

In theory, changes in tax and expenditure composition could well be driven by legitimate economic considerations and may not reflect political economy distortions. For instance, public investment cuts

could be justified by a shift toward private sector provision of certain infrastructure services. Preserving current expenditure and social transfers could be optimal when consumers are credit constrained in an economy with considerable slack.

Nevertheless, in the EA, the case for lowering taxes on labor and capital and promoting public investment is very compelling (IMF 2016b). In fact, the disproportional cuts in public investment have led to a large investment gap, which we proxy as the difference between observed public investment and investment that would stabilize the ratio of the stock of public capital to GDP at its initial level.<sup>18</sup> Following Bogaert (2016), the capital-stabilizing net investment ratio is estimated as  $y/(1+y) \times k$ , where  $y$  is the real potential growth rate and  $k$  is the initial stock of public capital as a ratio of GDP. The calculations show that in most EA countries, public investment is much lower than its capital-stabilizing level, resulting in a steady depletion of the capital stock over time. As of 2015, the investment gap ranged between 0.35 percent and 3.7 percent of GDP, depending on the country.<sup>19</sup> The erosion of public capital stock could, in turn, slow down the long-term potential of the economy, with adverse consequences on fiscal sustainability.

## **B. Compliance with Fiscal Rules**

In the absence of a counterfactual, it is difficult to state that the SGP has failed in its objective of fostering fiscal discipline (fiscal outcomes could have been worse in its absence). However, it is clear that the SGP has not been sufficient to correct policy biases reflected in a suboptimal fiscal stance and compositional distortions. This section further analyzes the causes of this inability to correct policy biases. In particular, it assesses whether the mixed track record of the SGP is the result of poor *ex ante* compliance with the rules (at the planning stage) or poor *ex post* execution of plans. The analysis focuses on the issue of compliance without assessing whether fiscal rules themselves are consistent with their stated objectives, including ensuring fiscal sustainability or achieving economic stabilization.

### ***What has been the track record of EA countries with fiscal rules?***

To prevent excessive deficits and debt buildup, the SGP has established a complex system of numerical constraints (EC 2016b). To simplify the compliance analysis, this section considers that the SGP includes four main numerical rules: the 3 percent of GDP nominal deficit ceiling, the 60 percent of GDP debt ceiling, the MTO in structural terms, and a benchmark fiscal effort of at least 0.5 percent per year in structural terms when structural balances are below MTOs or the country is under Excessive Deficit Procedure (EDP).

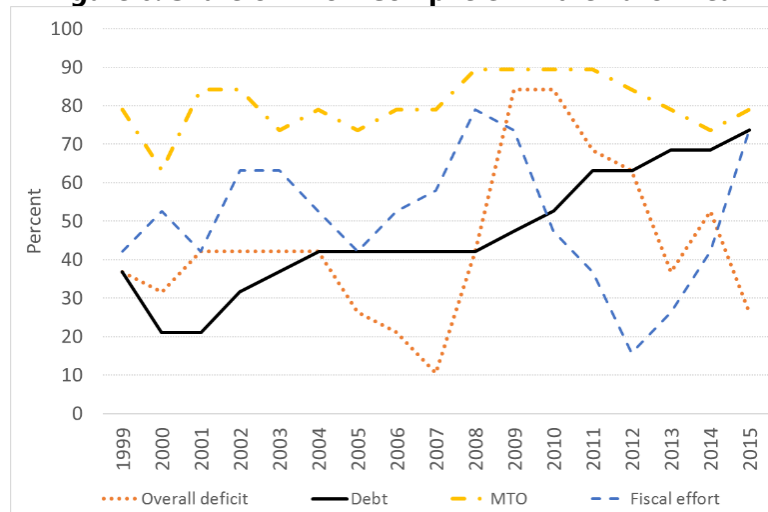
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<sup>18</sup> In both cases, investment is expressed in net terms, meaning excluding depreciation. For the initial level, we use the 2013 stock of capital, which is the most recent data available.

<sup>19</sup> The analysis is conducted for 15 EA countries for which capital stocks are available from the IMF's public debt database.

Figure 6 compares fiscal outturns with these targets or ceilings since the adoption of the euro. This simplified exercise should not be considered a formal test of compliance for five reasons: first, it is based on ex post data (using the AMECO database) and does not correct for the classification changes that have occurred following the transition from the ESA95 to ESA2010 fiscal reporting formats; second, targets are assumed to be similar across countries, cover the whole period, and be constant over time; third, the assessment does not take into account the possible activation of escape clauses or other provisions granting some flexibility; fourth, the comparison is carried out for all 19 EA countries, comprising those that introduced the euro after 1999; and fifth, numerical deviations may not necessarily represent cases of non-compliance given that the EC also exerts economic judgement, on top of its quantitative assessment, in both preventive and corrective arms. In addition, the analysis covers the whole Economic and Monetary Union (EMU) period, including the global financial crisis years when member states breached fiscal rules more systematically.

**Figure 6. Share of “Non-Compliers” in the Euro Area**



Sources: AMECO; authors' estimates.

Note: The sample includes 19 euro area countries. Medium-term objectives (MTOs) are set uniformly to 0 percent for all countries until 2005 and to country-specific numbers from 2006.

Figure 6 reveals a poor record of compliance with the key rules in EA countries over 1999–2015. For instance, the MTO was violated in 80 percent of observations under consideration, with almost two-thirds of countries exceeding the MTOs in every single year. Compliance particularly worsened during the crisis: in 2009, the MTO rule was violated by 90 percent of countries, the debt ceiling by 50 percent of countries, the deficit ceiling by 85 percent of countries, and the required fiscal effort by 75 percent of countries. In parallel, the share of countries with a debt ratio greater than 60 percent increased from 35 percent in 1999 to 75 percent in 2015. It is also notable that governance reforms implemented over 2005–13, such as increased flexibility, greater automaticity in enforcement, and greater ownership supported by revisions in national legislation, have not had an evident impact on compliance (without correcting for other factors).

### What are the drivers of weak compliance?

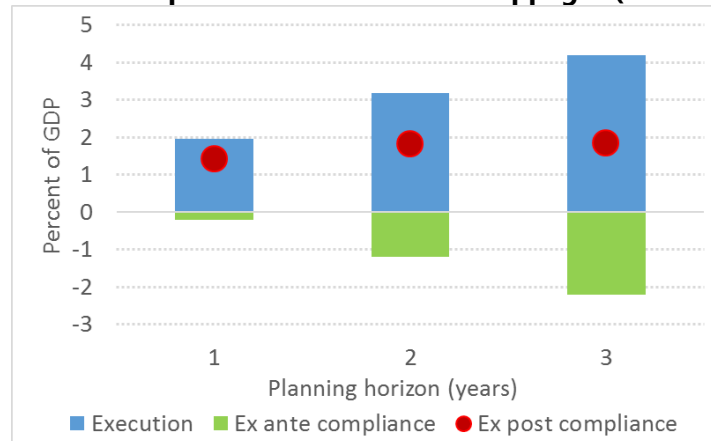
The poor ex post compliance documented in Figure 6 could be attributed to two factors, as shown in the accounting decomposition below:

$$\underbrace{[\text{Outcome} - \text{Target}]}_{\text{Ex post compliance}} = \underbrace{[\text{Plan} - \text{Target}]}_{\text{Ex ante compliance}} + \underbrace{[\text{Outcome} - \text{Plan}]}_{\text{Execution}}.$$

A first possibility is that countries did not foresee to comply with the numerical rules in their budget plans (poor ex ante compliance). Another possibility could be that planning was adequate, but ex post slippages led to consistent deviations from the plans (poor execution). The section above titled “Macro-Fiscal Performance under the SGP” analyzed the role of these two factors in determining the fiscal stance. The present section assesses their role in driving excessive deficits and debt in the subset of EA “non-compliers” over 1998–2013. The analysis below focuses on the two main rules capping the overall deficit and debt. The other rules are not examined because of the lack of data.

Figure 7 presents the results for the 3 percent deficit rule over the three-year planning horizon.<sup>20</sup> Consistent with the previous regressions, the analysis suggests that the main driver of poor ex post compliance was weak execution of plans. Given that the EC has not applied any fines or sanctions, this is also a sign of weak enforcement. Although the non-compliers consistently planned to reduce their deficits below the 3 percent threshold set out by the rules in each of the projected years, execution slippages more than offset these plans, leading to a median upward deviation from the ceiling of up to 2 percent of GDP at the end of the third year.

**Figure 7. Decomposition of Deficit Rule Slippages (Medians)**



Sources: AMECO; Stability and Convergence Programs; authors' estimates.

Note: Sample includes country-years with deficit/GDP > 3 percent. In the decomposition formula,  $t|t-i$  indicates plans for period  $t$  reported in period  $t-i$  and  $t|2016$  indicates outturns in period  $t$  reported in 2016. Decomposition formula:

$$\underbrace{DEF_{t|2016} - 3}_{\text{Ex post compliance}} = \underbrace{(DEF_{t|t-i} - 3)}_{\text{Ex ante compliance}} + \underbrace{(DEF_{t|2016} - DEF_{t|t-i})}_{\text{Execution}}$$

<sup>20</sup> The three components (ex post compliance, ex ante compliance, and execution) do not add up because of the use of medians.

Figure 8 carries out a similar decomposition for the 60 percent debt-to-GDP ratio rule. Similar to the deficit rule, poor execution is the main culprit. While the non-compliers planned to reduce debt by about 10 percent of GDP—from about 80 to 70 percent of GDP on average (both numbers correspond to 60 percent plus the height of the green bars) within three years—the debt ratio remained broadly unchanged ex post (as measured by 60 percent plus the height of the red dots).

**Figure 8. Decomposition of Debt Rule Slippages (Medians)**



Sources: AMECO; Stability and Convergence Programs; authors' estimates.

Note: The sample includes 19 euro area countries, over 1998–2013. Reported are medians. Sample includes country-years with debt/GDP > 60 percent. In decomposition formula,  $t|t-i$  indicates plans for period  $t$  reported in period  $t-i$  and  $t|2016$  indicates outturns in period  $t$  reported in 2016.

Decomposition formula: 
$$\underbrace{DEBT_{t|2016} - 60}_{\text{Ex post compliance}} = \underbrace{(DEBT_{t|t-i} - 60)}_{\text{Ex ante compliance}} + \underbrace{(DEBT_{t|2016} - DEBT_{t|t-i})}_{\text{Execution}}$$

The fact that most of the deviations occurred at the execution stage should not necessarily be interpreted as evidence of unintended budgetary slippages. Actual outcomes could also deviate from plans because of an unexpected nominal growth shortfall, reflecting, for instance, a negative inflation surprise. Since the 2005 reform of the SGP, the assessment of effective action has focused on “conditional compliance” with rules by estimating and subtracting the contribution of economic factors to isolate the policy part. Other factors may also account for ex post deviations from plans, such as intentional biases (for example, deliberate underestimation of the fiscal deficit in the budget), valuation changes affecting the debt stock, or statistical adjustments in the perimeter of the fiscal aggregate (which would also be reflected in the “execution” term).

### C. Country Size and Fiscal Outcomes

If deviation from plan is the main factor behind poor compliance, a natural question is whether these deviations, which may reflect poor enforcement of the rules, have affected all countries in a similar way or whether countries have behaved differently, perhaps because some benefited from more lenient treatment (Buti and Pench 2004; De Haan, Berger, and Jansen 2004). This section analyzes this issue of evenhandedness across member states using various approaches.

### ***Is there a relationship between country size and deviation from fiscal plans?***

First, the following regression is conducted for EA countries over the period 1999–2015:<sup>21</sup>

$$\Delta ob_{i,t|2016} - \Delta ob_{i,t|t-1} = \alpha_i + \beta \times Size_{i,t} + \gamma \times Controls_{i,t} + \rho_t + \varepsilon_{i,t} \quad (3)$$

where the dependent variable is the difference between outcome and plan for the change in the overall-balance-to-GDP ratio.<sup>22</sup> As mentioned in Beetsma, Giuliodori, and Wierds (2009), using first differences instead of levels is preferable to mitigate the impact of potential changes in the deficit definition across data vintages.<sup>23</sup> The main explanatory variable is *Size*, measured as the share of nominal GDP of an EA member to total EA GDP. Various controls are included related to the forecast errors in macroeconomic variables (nominal and real GDP growth, output gap, openness, borrowing costs), initial fiscal positions (debt ratio, distance from the MTO), election cycle (dummy in parliamentary election years), and whether the country is under EDP. The coefficient of interest is  $\beta$ . If fiscal slippages are not affected by the country's size, then  $\beta$  should be insignificant.

The estimation results do not invalidate the hypothesis of a systematic difference of behavior between large and small countries in their deviations from fiscal plans (Table 3). Specifically, the coefficient of the size variable is negative and significant in most specifications, showing that overall balances in bigger countries tend to underperform relative to plan by a larger margin. For instance, column (1) shows that when the share of a country in the EA GDP increases by 1 percent, the fiscal slippage of the overall balance increases by about 0.3 percent of GDP.

Nevertheless, caution should be exercised in interpreting the country size coefficient as evidence of uneven enforcement of fiscal rules. The negative correlation between size and fiscal slippages relative to plan could also be driven by other factors (Buti and Pench 2004). For instance, bigger countries may have larger fiscal multipliers, making fiscal adjustment costlier in terms of output if macroeconomic shocks force them to deviate from their initial budgets. Also, bigger countries tend to have deeper and more interconnected financial markets, making European Central Bank actions in response to developments in large countries more likely.

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<sup>21</sup> Estimations are performed using the panel ordinary least squares estimator with time and country fixed effects. The sample includes all observations, because restricting it to EDP countries would cut the sample by two-thirds of the observations.

<sup>22</sup> In this exercise, actual data are taken from the AMECO database, while plans are one-year-ahead forecasts from Stability and Convergence Programs.

<sup>23</sup> Real-time data come from different data releases. If the definition of the deficit had changed across releases for methodological reasons (for instance, inclusion of public enterprises in the general government), then the comparison of deficit levels across data releases would not be possible. First differences largely cancel out the effect of such methodological modifications and allow data to be compared across releases.

**Table 3. Country Size and Fiscal Plan Execution**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Country Size (GDP as a Share of EA GDP, Percent)	-0.32**	-0.30*	-0.29*	-0.23	-0.43***	-0.30**	-0.32***	-0.17	-1.64**	-0.63*	-0.30*	-0.35***	-0.32**	-1.99*
	[0.13]	[0.16]	[0.15]	[0.18]	[0.13]	[0.13]	[0.10]	[0.43]	[0.59]	[0.31]	[0.16]	[0.10]	[0.12]	[1.02]
Dummy (=1 for Countries in EDP)		0.11												-4.11**
		[0.27]												[1.58]
Forecast Error: Real GDP Growth			0.10											1.21
			[0.19]											[0.86]
Forecast Error: Nominal GDP Growth				0.16										-1.02
				[0.15]										[0.92]
Dummy (=1 for Parliamentary Election Years)					-0.39									-0.75
					[0.31]									[0.59]
Initial Overall Balance/GDP (Real Time, SCP)						-0.05								-0.15
						[0.03]								[0.25]
Initial Debt/GDP (Real Time, SCP)							0.02***							0.13**
							[0.01]							[0.06]
Forecast Error: Output Gap								-0.01						0.03
								[0.16]						[0.38]
Initial MTO-SB/GDP (Real Time, SCP)									0.48***					0.64**
									[0.16]					[0.28]
Forecast Error: Lagged Change in OB/GDP										-0.23				-1.01**
										[0.18]				[0.35]
Real GDP Growth (Ex Post)											0.17			
											[0.24]			
Long-Term Bond Yields												0.03		-0.12
												[0.14]		[0.25]
Openness (Ex Post)													0.01	-0.08**
													[0.00]	[0.03]
Constant	1.90**	1.680	1.75*	1.310	2.61**	1.62*	0.020	0.690	8.88**	4.14*	1.410	2.36***	0.950	14.470
	[0.86]	[1.20]	[0.97]	[1.24]	[1.05]	[0.93]	[0.94]	[2.49]	[3.48]	[2.24]	[1.46]	[0.79]	[0.85]	[9.92]
Observations	187	187	187	182	154	185	182	159	84	150	187	166	187	54
Number of Countries	19	19	19	19	17	19	19	19	18	18	19	17	19	16
$R^2$	0.20	0.20	0.20	0.22	0.20	0.20	0.33	0.19	0.35	0.36	0.21	0.20	0.20	0.71

Sources: AMECO; Stability and Convergence Programs; authors' estimates.

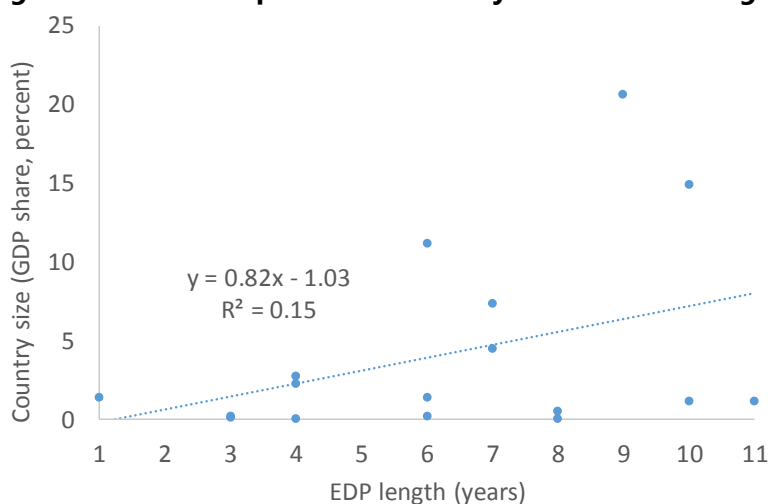
Note: The sample includes 19 euro area (EA) countries for the period 1999–2015. The dependent variable is the difference between actual and planned (1-year ahead) change in the overall balance-to-GDP ratio (in percent). Estimations are performed using the panel ordinary least squares estimator with time and country fixed effects. EDP = Excessive Deficit Procedure; MTO = medium-term objective; SB = structural balance; SCP = Stability and Convergence Program.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

### ***Are the modalities of the EDPs (length, effort) affected by country size?***

To assess whether the previous correlation may be driven by an uneven application of rules, we test whether large countries have benefited from a more lenient treatment under the EDP. Figure 9 plots the relationship between the duration of the EDP and country size. Data from EC (2015) on EDP length are used. Originally, countries were expected to correct their excessive deficits within a year, and in exceptional circumstances extensions of up to three years could be granted. However, in practice, some countries have taken up to eight years to correct their EDPs, and some countries entered EDP multiple times. Figure 9 shows that larger countries have tended to stay longer under EDP than smaller countries.

**Figure 9. Relationship between Country Size and EDP Length**



Sources: European Commission; authors' calculations.

Note: The sample includes 19 euro area countries for the period 2003–16 (there was no EDP before 2003). The two extreme observations in the upper right corner are Germany and France. The slope of the line remains positive when these two observations are excluded. EDP = Excessive Deficit Procedure.

We also test whether larger countries have been treated differently at the stage of the EDP recommended actions by running the following regression for 39 EDP episodes over 2003–15:

$$Effort_i = \alpha + \beta \times Size_i + \gamma \times Controls_i + \varepsilon_i \quad (4)$$

where *Effort* is the average required annual fiscal effort (in structural terms) for EDP countries.<sup>24</sup> If larger countries were treated more leniently by the EC and ECOFIN, then the coefficient of the size variable  $\beta$  would be negative. The estimation results reported in Table 4 do not confirm this hypothesis:  $\beta$  coefficients are not significant in most regressions. In the sample of EA countries, the

<sup>24</sup> The data on required annual fiscal effort used in EC (2015) was provided by EC staff. The required annual fiscal effort is defined as the total change in the structural balance required to eliminate the excessive deficit over the course of the EDP divided by the number of years.



negative coefficient of the size variable is marginally significant in the specification without controls, but this significance vanishes when control variables are included and for the broader sample of 28 EU countries.<sup>25</sup> This outcome suggests that EC recommendations have not favored larger countries in the required size of adjustment at the planning stage.

**Table 4. Country Size and EDP Recommendations**

	19 EA Countries					
	(1)	(2)	(3)	(4)	(5)	(6)
Country Size (GDP as a Share of EU GDP, Percent)	-0.022* [0.01]	-0.021* [0.01]	-0.01 [0.01]	0.00 [0.01]	-0.01 [0.01]	0.00 [0.01]
Public Debt (Percent of GDP)		0.00 [0.00]				0.00 [0.00]
Overall Balance (Percent of GDP)			-0.054*** [0.02]			-0.036*** [0.01]
Output Gap (Percent)				-0.102*** [0.03]		-0.03 [0.03]
Real GDP Growth (Percent)					-0.135*** [0.03]	-0.115** [0.05]
Constant	1.147*** [0.14]	0.815** [0.36]	0.734*** [0.15]	0.801*** [0.12]	1.156*** [0.11]	1.112*** [0.31]
Observations	47	47	47	47	47	47
$R^2$	0.03	0.07	0.26	0.32	0.38	0.54
	28 EU Countries					
	(7)	(8)	(9)	(10)	(11)	(12)
Country Size (GDP as a Share of EU GDP, Percent)	-0.02 [0.01]	-0.02 [0.01]	-0.01 [0.01]	-0.01 [0.01]	-0.01 [0.01]	0.00 [0.01]
Public Debt (Percent of GDP)		0.01 [0.00]				-0.005** [0.00]
Overall Balance (Percent of GDP)			-0.053*** [0.02]			-0.032*** [0.01]
Output Gap (percent)				-0.095*** [0.02]		-0.02 [0.03]
Real GDP Growth (Percent)					-0.147*** [0.03]	-0.147*** [0.04]
Constant	1.061*** [0.11]	0.725*** [0.24]	0.715*** [0.13]	0.837*** [0.11]	1.176*** [0.10]	1.266*** [0.22]
Observations	68	68	68	68	68	68
$R^2$	0.02	0.06	0.18	0.26	0.39	0.49

Note: The sample includes 39 Excessive Deficit Procedure (EDP) episodes from EC (2015). The dependent variable is the recommended average annual adjustment under EDP in structural terms. Estimations are performed using the pooled ordinary least squares estimator. Robust standard errors in brackets. Columns (1)–(6) present results from a sample of 19 euro area (EA) countries, while columns (7)–(12) present results from a broader sample of 28 European Union (EU) countries.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

To sum up, the evidence on biased application of the rules is mixed. On the one hand, bigger countries tend to deviate more from their fiscal plans than smaller countries, but this behavior could be unrelated to the rules. On the other hand, smaller countries under EDP are not requested to adjust excessive deficits faster than bigger countries, but the result should be treated with caution because it relies on a small number of observations.

<sup>25</sup> In both cases, the results should be interpreted with caution given the small number of observations.

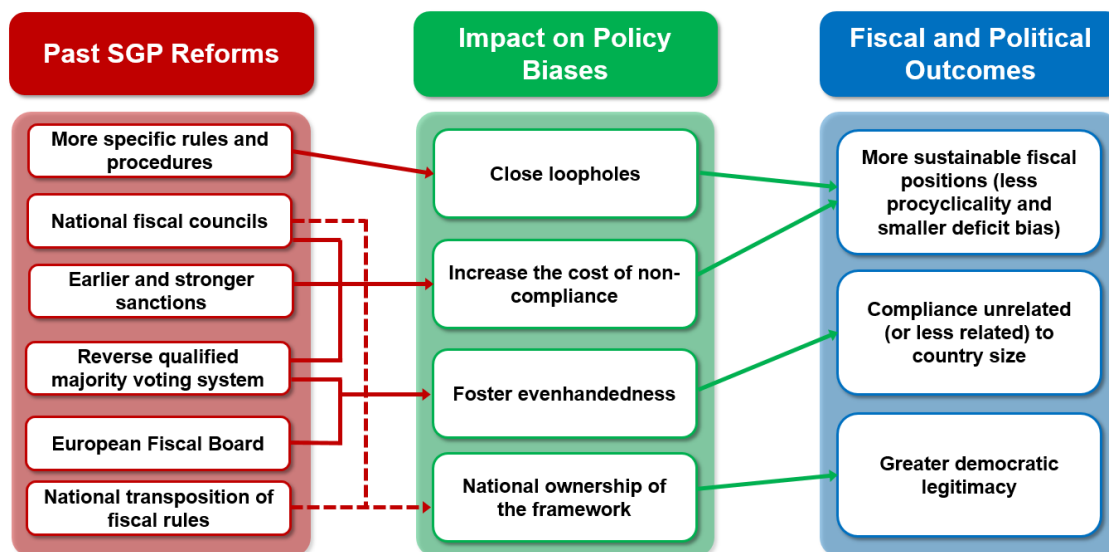
#### IV. PAST REFORMS AND POLICY OPTIONS FOR THE FUTURE

This section adopts a political economy view of the reform of the European fiscal framework. Despite past SGP reforms, the fiscal governance system continues to face a number of challenges, which points to the need to strengthen political incentives in the medium term and to introduce permanent changes to the EA architecture in the longer term.

##### A. Past Reforms of the European Fiscal Governance Framework

The previous section showed that the system of rules and procedures meant to foster fiscal discipline and mitigate cross-country spillovers has not been sufficient to eliminate policy biases. In fact, some of these biases have intensified in the past decade, such as the procyclicality of fiscal policy, public debt accumulation, and distortions affecting the budget composition. Although political economy factors are not the only reason for these suboptimal fiscal outcomes, the weakness of the fiscal governance framework has certainly not helped. The policy biases occurred despite successive revisions to the SGP that have attempted to mitigate political economy factors in four different ways (Figure 10):

**Figure 10. Past SGP Reforms and Policy Biases**



Note: SGP = Stability and Growth Pact.

- Fostering evenhanded treatment of countries.* The “reverse qualified majority” voting system adopted in 2011 gives more power to the EC by ensuring that its recommendations or proposals are approved by the ECOFIN unless a qualified majority of member states vote against it. Because it is now more difficult for the ECOFIN to overrule the EC recommendations, the risk of collusion or uneven treatment of countries is somewhat reduced. In addition, the creation of the new European Fiscal Board—operational since October 2016—could also help in the future by providing an independent evaluation of the execution of the fiscal governance framework.

- *Making deviations from rules more costly, both financially and politically.* Recent reforms have introduced the possibility of earlier and stronger sanctions for EA countries. The “reverse qualified majority” procedure may also increase the likelihood that sanctions will be applied. In addition, the 2012 Fiscal Compact has entrusted independent institutions, such as fiscal councils, with monitoring the implementation of fiscal rules. Among other duties, fiscal councils should protect the budget from political business cycles and expose to the public deviations from sound fiscal policy, raising their political cost for decision makers.
- *Bringing more specificity in the application of the rules.* Rules that are vague or ambiguous create margins of interpretation and loopholes that can be exploited by politicians and may result in uneven treatment of countries. Successive reforms of the framework have improved the specificity of the rules and of their conditions of application, including by laying out in detail the criteria for the use of flexibility within the framework.
- *Making the framework more legitimate and homegrown.* To foster national ownership of the system of rules, the Fiscal Compact has required countries to introduce structural balance rules (MTOs) in national legislation; these rules should be monitored by domestic independent institutions. Also, supranational surveillance has become better integrated with the national budget calendar to ensure that the EC’s recommendations are timely incorporated into national budgets and policies.

Past reforms constitute important steps toward correcting policy biases, but they have fallen short of addressing the key issue of political incentives, probably because, in most cases, their primary objective was not to tackle political economy distortions. Reforms that made the framework more flexible and more growth friendly have created additional complexity, further reducing its transparency and making communication with the public more difficult. Fiscal councils have been presented as a way to address the shortcomings of fiscal rules by fostering transparency and accountability and triggering reputational effects. However, their influence should not be overstated, in part because they are not immune to political interference and because fiscal sustainability is not at the center of the public debate at the moment in many countries.

Finally, the most important procedural reform of the past years, the “reverse qualified majority” rule, may not be sufficient to guarantee evenhandedness and eliminate the perception that some large countries are treated more leniently. The EC has constant interactions with national authorities (including at the technical level), creating a risk that political considerations be internalized within the institution. The call for a more political EC by some European leaders also points in this direction. The newly established European Fiscal Board is intended to improve the legitimacy and evenhandedness of the EC recommendations. However, the Board’s effectiveness hinges upon its independence from the EC and other political pressures. Its stature in the European public sphere and its influence in debates about fiscal policy in Europe will also be key. They will depend, partly, on the Board’s communication strategy.

## B. Taking into Account Political Economy Factors within the Existing Framework

Future reforms to the governance framework should try to reduce the hold of political economy factors on fiscal policy. Past reforms have focused mostly on enhancing the economic basis of the rules and upgrading their design to achieve the dual objectives of fiscal sustainability and economic stabilization. Less emphasis has been placed on ensuring that political incentives are well aligned with compliance. This approach may have reached its limits. If political incentives are not there, the most sophisticated revisions to the framework will not materially improve fiscal outcomes. Therefore, it is critical that new reforms also take into account the political economy dimension.

To make fiscal rules work politically, the incentive structure could be further strengthened on both sides—by establishing more credible sanctions and by creating more tangible benefits for countries complying with the SGP. Although this is a very difficult task in the absence of a political union, future reforms could be guided by two general principles:

- *Making sanctions more politically acceptable.* The current system of sanctions and “mandatory” remedial actions lacks credibility for two main reasons. First, financial sanctions for countries under EDP exacerbate the financial difficulties of already distressed governments, limiting the appropriateness of the sanctions and their scope for use in bad times. In the future, more emphasis should be placed on sanctions under the preventive arm, while nonpecuniary sanctions could also be considered under the corrective arm. Administrative sanctions are, for instance, common in many federations (Eyraud and Gomez 2014). Second, and more important, elevated sanctions carry a stigma and a political cost that make their application very unlikely. A more gradual system could thus be envisaged. Initial and/or small deviations should entail small financial costs so that they face less political opposition, while repeated and/or larger deviations could be penalized more heavily.<sup>26</sup> In any case, the enforcement of sanctions is likely to remain a highly contentious issue as long as member states retain sovereignty over fiscal issues. The idea that sovereign states can be sanctioned is problematic in international law. A credible enforcement system will require further political integration (see below).
- *Creating tangible benefits for compliers.* The current fiscal framework is heavily tilted toward negative incentives in the form of sanctions and corrective actions. By comparison, the positive side of the incentive structure is underdeveloped. For member states, the individual benefits associated with complying with the SGP are not always clear in the short run. The main benefit should be to preserve access to low-cost financing, but market discipline was not effective in the EMU prior to the global financial crisis for various reasons (Allard and others 2013). As a matter of fact, rules were the most binding in the run-up to the euro when countries could see a clear

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<sup>26</sup> In her analysis of collective action problems faced by individual using common pool resources, Ostrom (1990) notes that in successful institutional arrangements, sanctions are generally graduated, with initial sanctions remaining relatively low. She also shows that successful peer enforcement requires two main conditions: (1) a perception that other players also comply (mutual trust) and (2) a perception that the collective objective associated with the pooling of resources is achieved.

advantage in complying with them (Ioannou and Stracca 2011). Once EA participation was guaranteed, the benefits of fiscal discipline became more elusive. Several options could be considered to reinforce the rule-benefits nexus in the eyes of member states and citizens. One possibility involves linking the volume of structural funds and other EU subsidies to compliance with rules.<sup>27</sup> The proposal of establishing a stabilization capacity in the EA has also been discussed recently; in some variants, access to this central fiscal capacity could be conditioned on past compliance with rules (IMF 2016b). More generally, the fiscal framework should be designed in such a way that policymakers can establish a clear link between compliance and a well-functioning EMU that delivers price stability and robust growth. To support this macroeconomic objective, fiscal rules should be consistent with the conduct of ambitious demand- and supply-side policies that boost growth in both the short and medium terms.

In parallel with strengthening incentives, simplifying the framework is also essential (Andrle and others 2015). Successive legislative changes have made the SGP increasingly complex. The initial pact included a few supranational rules, of which only the 3 percent deficit ceiling was truly binding. Later on, the fiscal crisis and the mixed experience with a small set of constraints prompted the adoption of additional rules—some of them to address the shortcomings of previous ones. Today, fiscal aggregates are tied together by an intricate set of constraints that makes the monitoring and communication of the rules very difficult. To enhance the SGP's democratic legitimacy, the framework should be simplified and made more transparent to the public. Doing so would also reduce the loopholes and limit the scope for interpretation—both of which induce political games in the negotiations between the EC and member states. Simplifying the framework may require rethinking its overall structure, including consolidating the preventive and corrective arms and eliminating some redundant or ill-designed rules (Eyraud and Wu 2015).

### **C. Toward a More Comprehensive Approach**

In the long term, it is unlikely that reforms to the SGP alone will be sufficient to correct the policy biases that have plagued the functioning of the monetary union. The reason is that these biases are rooted in the overall architecture of the EA and, in particular, in the interplay between its various dimensions—fiscal, monetary, banking, and financial. Many argue that a partial approach focusing on the fiscal framework alone is not sustainable.

At the same time, there is no single comprehensive model toward which the EA should converge. Experience with existing federations suggests a range of options for alleviating the political economy pressures and fostering fiscal discipline. To simplify, these options can be arranged along a continuum structured around two polar models (Allard and others 2013; Wyplosz 2013; Cottarelli and Guerguil 2014). The first model would leave large autonomy to member states, while reinforcing market discipline. The model at the opposite end of the spectrum would rely more extensively on a center-based approach at the expense of a permanent loss of fiscal sovereignty for EA members. The

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<sup>27</sup> Since 2014, access to structural funds can be suspended if a country does not comply with the EDP recommendations under the corrective arm.

ultimate scope and shape of the new architecture will remain a matter of social and political preferences.

### ***Where does the EA stand now?***

At the moment, the EA framework combines elements of both models without bringing either of them to fruition. The provision enshrined in the Maastricht Treaty to ensure that member states do not assume other member states' fiscal commitments—often referred to as the “no-bailout” clause—was meant to give financial markets an incentive to discriminate among countries and price each member state's default risk. However, this clause has never been credible, and market discipline has not worked properly in the EMU (Moghadam 2014). With its set of supranational rules, the SGP also shares some similarities with the centralized model, but member states have kept most of their fiscal sovereignty, and the enforcement and control tools granted to the EC are very limited compared with what exists in other federations.

### ***Decentralized model with stronger market discipline***

In federations like Canada or the United States, states maintain a large degree of autonomy, including in the fiscal area. The center's controls over states' policies are relatively limited. Fiscal discipline is primarily achieved through financial markets, which limit the discretion of policymakers by imposing higher borrowing costs for imprudent policy. In these countries, bailouts of subnational entities are rare or nonexistent, and individual states are responsible for “honoring fully their own individual sovereign signature and all their commitments to sustainable fiscal conditions.”<sup>28</sup>

Certain prerequisites are essential for making market discipline effective. First, mechanisms should be in place to manage state defaults in an orderly way, in particular by establishing clear rules for the involvement of private creditors. Bailouts of states by the federal level or by other member states should be either avoided or confined within the boundaries of a clear framework. In the EA, the scale of the global financial crisis has warranted the creation of risk-sharing institutions such as the European Stability Mechanism. Their interventions should be designed in such a way that market discipline is not weakened, including through proper use of conditionality. Second, market discipline requires that adequate information on the borrower's existing liabilities and repayment capacity be readily available so that potential lenders can correctly discriminate between borrowers. One lesson from the global financial crisis is that there is scope for enhancing fiscal transparency and improving the measurement and disclosure of government balance sheets. Third, the sovereign-bank link distorted the pricing of risk by markets in several EA countries during the crisis, in part because of the perception that weak banks may overwhelm national fiscal resources. A credible joint fiscal backstop at the EA level as part of a full-fledged banking union could substantially weaken bank-sovereign links (IMF 2013).

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<sup>28</sup> This quote is taken from the letter written by J.C. Trichet and M. Draghi to Prime Minister Berlusconi dated August 5, 2011.

Because conditions for its effectiveness are seldom met, no federation relies on pure market discipline. Instead, institutional arrangements to constrain fiscal discretion, such as fiscal rules, are present in all federations. The countries where market discipline is strongest, such as Australia, Canada, and the United States, are those where subcentral rules are self-imposed. States establish these rules to signal to the market their commitment to fiscal discipline (Inman 1996). In Europe, relying more extensively on fiscal discipline does not mean that countries would need to pause or even reverse the fiscal integration process. Under the decentralized model, fiscal integration should continue with the goal of establishing “minimal elements” for the fiscal union to support robust growth and minimize the risk and severity of future crises (Allard and others 2013; Cottarelli 2013).

### ***Centralized model with deeper fiscal and political integration***

Other types of federations, like Germany, rely on stronger central oversight and tight central controls over regional policies to achieve fiscal discipline and mitigate the extent of fiscal spillovers across states. For instance, the federal level may retain a large share of tax powers or impose stricter spending or borrowing limits on subcentral governments.

In the EA, moving toward this model would require that member states surrender some fiscal sovereignty in the long term. At present, the EMU incorporates some aspects of a fiscal union, but in the narrow sense of fiscal discipline. Fiscal governance reforms have so far aimed at enhancing policy coordination across members while preserving sovereignty over national policies. Transfers of fiscal authority to the center have remained very limited. The Five Presidents Report (Juncker and others 2015) argues that rules-based cooperation alone is insufficient to transit toward a genuine monetary and economic union, and greater sharing of sovereignty over time is inevitable. In practice, this approach would require EA countries to accept more resource pooling and joint decision making on elements of national policies, potentially supported by a stronger EC with more extensive powers.

A centralized model could also contribute to improving the management of the EA aggregate fiscal stance and achieving a better policy mix by mitigating the common pool problem, better taking into account the macroeconomic needs of the area as a whole, and internalizing the cross-country fiscal spillovers. Member states, including those enjoying some room of maneuver within the SGP, would be invited to contribute to the attainment of the desired aggregate fiscal stance. The distribution of fiscal efforts among countries would be improved, notably by using fiscal space where it exists to increase public investment. This would contrast with today’s suboptimal policy mix, where the burden of ensuring macroeconomic stabilization is largely left to the ECB. Member states with negative output gaps have little or no room to support demand, while countries with fiscal space have no incentive to use it, resulting in a suboptimal aggregate fiscal stance (EC, 2016b).

To underpin the legitimacy and accountability of a stronger fiscal center, political integration would need to advance as well (Issing 2016).<sup>29</sup> In its present form, the rules-based governance framework lacks a democratic feedback mechanism through which voters could more effectively influence the decision-making process in Brussels (Alcidi, Giovannini, and Piedrafita 2014). The EP is the only European institution consisting of directly elected members, but its influence over European policies and the governance framework is limited. Stronger political integration with elected policymakers accountable to the EP and European voters could help address this democratic gap and increase the resilience of the integration process to public discontent. As is the case at the national level, citizens' support would then revolve around specific fiscal policies and actions rather than questioning membership and the European project as a whole.

Greater political integration could also help better shape, express, and defend matters of Europe-wide interest. As discussed above, the ECOFIN is composed of finance ministers of individual countries who are guided by national interests rather than EU-wide common objectives. This has created a number of issues, including a stronger say for big countries and perhaps more lenient treatment of them. Recent institutional reforms, such as the European Stability Mechanism and the banking union, have significantly increased the degree of risk sharing across member states, but this process could be further supported by a central executive authority, such as a Minister of Finance of EMU, which would act in the best interests of the union. Establishing a political union could provide legal grounds for such a central authority.

## V. CONCLUSION

This paper shows that some of the fiscal challenges faced by the EA are rooted in distorted political incentives—at both the national and supranational levels. Using real-time data from stability programs, the paper provides evidence on a range of fiscal policy biases, including procyclicality, excessive deficits, and compositional distortions. The results also suggest that the presence of national and supranational fiscal rules has not successfully alleviated these biases, which have continued to prevail following recent reforms of the fiscal framework. The evidence of bias in applying the rules (as a function of country size) is not as conclusive.

The importance of distorted incentives is a very simple result, but it has far-reaching implications that have not yet been fully acknowledged in the reform of fiscal institutions. One extreme and dangerous manifestation of these distortions is the expressed perception by many analysts that European fiscal governance releases countries from their national responsibilities. Nothing could be further from the truth: fiscal policy is, first and foremost, a national responsibility. The combination of this misperception with the predominance of the national dimension of politics constitutes a dangerous mix.

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<sup>29</sup> Further political integration could take the form of a supranational political union or tighter intergovernmental coordination.



One of the main lessons from our paper is that the most sophisticated improvements in the design of the framework will not bear fruit unless they also garner political and public support. By strengthening the economic basis of the rules, reform of the SGP has made significant progress, but efforts should continue on two fronts—right design combined with right incentives. It is possible and desirable to have a stronger system of incentives, including gradual and proportionate sanctions and clear benefits for compliers. In the longer term, a lasting solution must combine market discipline and stronger fiscal governance. Fiscal union will, if it happens, be an aspect of a comprehensive architecture accompanying bank and capital markets unions. It would reflect political choices in Europe.

## ANNEX. ADDITIONAL ECONOMETRIC RESULTS

**Annex Table 1. Baseline Specification: Fiscal Policy Procyclicality**

	Fixed Effects Estimator			Dynamic Panel GMM Estimator		
	Plans $\Delta(\text{SB}/\text{GDP})_t t-1$	Actual, Real Time $\Delta(\text{SB}/\text{GDP})_t t+1$	Actual, Ex Post $\Delta(\text{SB}/\text{GDP})_t 2016$	Plans $\Delta(\text{SB}/\text{GDP})_t t-1$	Actual, Real Time $\Delta(\text{SB}/\text{GDP})_t t+1$	Actual, Ex Post $\Delta(\text{SB}/\text{GDP})_t 2016$
	(1)	(2)	(3)	(4)	(5)	(6)
Initial Debt/GDP	0.02 [0.01]	0.05*** [0.01]	0.04*** [0.01]	-0.02*** [0.01]	-0.04*** [0.01]	0.67 [0.72]
$\Delta$ Output Gap	-0.12 [0.15]	-0.27* [0.16]	-0.55** [0.19]	-0.90*** [0.26]	-0.56*** [0.07]	-0.57** [0.24]
Lagged Dependent Variable				-0.23*** [0.07]	-0.27*** [0.08]	-0.81** [0.40]
Constant	-0.93 [1.72]	-3.88*** [0.79]	-3.27*** [0.90]	1.85*** [0.54]	2.18** [1.03]	8.60 [10.08]
Observations	105	102	224	44	43	189
Number of Countries	19	19	19	15	15	17
$R^2$	0.33	0.65	0.29			

Sources: AMECO; Stability and Convergence Programs; authors' estimates.

Note: The sample includes 19 euro area countries covering the period 1999–2015. Columns (1), (2), (4), and (5) rely on stability program data, while columns (3) and (6) rely on the AMECO database. In the absence of structural balances (SB) in AMECO, cyclically adjusted balances are used for the pre-2011 period in columns (3) and (6). Because of data availability, the analysis is performed using overall (rather than primary) structural balances as dependent variables. Estimations rely on the panel ordinary least squares estimator. All regressions include time and country fixed effects.  $t|t-1$  indicates plans for period  $t$  reported in period  $t-1$ ,  $t|t+1$  indicates outturns in period  $t$  reported in period  $t+1$ , and  $t|2016$  indicates outturns in period  $t$  reported in 2016. GMM = generalized method of moments.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

**Annex Table 2. Baseline Specification: Asymmetric Policy Response and Deficit Bias**

	Fixed Effects Estimator			Dynamic panel GMM estimator		
	Plans $\Delta(\text{SB}/\text{GDP})_{t t-1}$	Actual, Real time $\Delta(\text{SB}/\text{GDP})_{t t+1}$	Actual, Ex Post $\Delta(\text{SB}/\text{GDP})_{t 2016}$	Plans $\Delta(\text{SB}/\text{GDP})_{t t-1}$	Actual, Real Time $\Delta(\text{SB}/\text{GDP})_{t t+1}$	Actual, Ex Post $\Delta(\text{SB}/\text{GDP})_{t 2016}$
	(1)	(2)	(3)	(4)	(5)	(6)
Initial Debt/GDP	0.01* [0.01]	0.06*** [0.01]	0.04*** [0.01]	-0.01 [0.01]	-0.04*** [0.01]	0.10 [0.24]
$\Delta\text{Output Gap} \cdot D(\Delta\text{Output Gap} > 0)$	-0.45*** [0.07]	-0.84*** [0.20]	-0.31 [0.30]	-0.59 [0.44]	-0.68*** [0.19]	-2.31** [1.07]
$\Delta\text{Output Gap} \cdot D(\Delta\text{Output Gap} < 0)$	0.17 [0.26]	-0.13 [0.18]	-0.73*** [0.22]	-1.60* [0.85]	-0.20 [0.38]	-0.93 [0.77]
Lagged Dependent Variable				-0.23* [0.13]	-0.22** [0.11]	-0.67*** [0.23]
Constant	-0.48 [0.66]	-4.19*** [0.66]	-3.17*** [0.94]	1.84** [0.92]	3.07* [1.59]	11.12 [7.21]
Observations	105	102	224	44	43	189
Number of Countries	19	19	19	15	15	17
$R^2$	0.39	0.67	0.3			

Sources: AMECO; Stability and Convergence Programs; authors' estimates.

Note: The sample includes 19 euro area countries covering the period 1999–2015. Columns (1), (2), (4), and (5) rely on stability program data, while columns (3) and (6) rely on the AMECO database. In the absence of structural balances (SB) in AMECO, cyclically adjusted balances are used for the pre-2011 period in columns (3) and (6). Because of data availability, the analysis is performed using overall (rather than primary) structural balances as dependent variables. Estimations rely on the panel ordinary least squares estimator. All regressions include time and country fixed effects.  $t|t-1$  indicates plans for period  $t$  reported in period  $t-1$ ,  $t|t+1$  indicates outturns in period  $t$  reported in period  $t+1$ , and  $t|2016$  indicates outturns in period  $t$  reported in 2016. GMM = generalized method of moments.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

**Annex Table 3. Including Political Economy Variables: Fiscal Policy Pro-cyclicality**

	Fixed Effects Estimator			Dynamic Panel GMM Estimator		
	Plans	Actual, Real Time	Actual, Ex Post	Plans	Actual, Real Time	Actual, Ex Post
	$\Delta(\text{SB}/\text{GDP})_t   t-1$	$\Delta(\text{SB}/\text{GDP})_t   t+1$	$\Delta(\text{SB}/\text{GDP})_t   2016$	$\Delta(\text{SB}/\text{GDP})_t   t-1$	$\Delta(\text{SB}/\text{GDP})_t   t+1$	$\Delta(\text{SB}/\text{GDP})_t   2016$
	(1)	(2)	(3)	(4)	(5)	(6)
Legislative Elections	-0.11 [0.14]	0.11 [0.22]	-0.46** [0.16]	-0.09 [0.13]	0.04 [0.14]	2.63 [4.97]
Presidential Elections	0.05 [0.51]	0.72 [0.46]	0.71 [0.51]	-2.20** [0.93]	0.6 [0.45]	2.19 [3.00]
Fractionalization	0.68 [1.66]	3.1 [2.95]	2.38 [4.47]	-5.62 [4.48]	-0.82 [5.69]	0.00 [.]
Initial Debt/GDP	0.02* [0.01]	0.06*** [0.01]	0.04*** [0.01]	-0.03** [0.01]	-0.04*** [0.01]	0.43 [0.38]
$\Delta$ Output Gap	-0.12 [0.18]	-0.28 [0.17]	-0.53** [0.20]	-0.26 [0.38]	-0.50*** [0.15]	-1.14 [0.75]
Lagged Dependent Variable				0.33 [0.23]	-0.32*** [0.12]	-0.61* [0.33]
Constant	-1.54 [1.72]	-6.43** [2.29]	-5.20 [3.62]	6.51** [2.86]	3.23 [4.69]	-29.93 [23.35]
Observations	88	85	203	29	28	171
Number of Countries	18	18	18	15	15	17
$R^2$	0.36	0.7	0.3			

Sources: AMECO; Stability and Convergence Programs; authors' estimates.

Note: The sample includes 19 euro area countries covering the period 1999–2015. Columns (1), (2), (4), and (5) rely on stability program data, while columns (3) and (6) rely on the AMECO database. In the absence of structural balances (SB) in AMECO, cyclically adjusted balances are used for the pre-2011 period in columns (3) and (6). Because of data availability, the analysis is performed using overall (rather than primary) structural balances as dependent variables. Estimations rely on the panel ordinary least squares estimator. All regressions include time and country fixed effects.  $t|t-1$  indicates plans for period  $t$  reported in period  $t-1$ ,  $t|t+1$  indicates outturns in period  $t$  reported in period  $t+1$ , and  $t|2016$  indicates outturns in period  $t$  reported in 2016.

The political economy variables are taken from the Database of Political Institutions compiled by the Development Research Group of the World Bank and are defined as follows: (1) Legislative election = dummy variable taking the value of one in periods of parliamentary elections; (2) Presidential elections = dummy variable taking the value of one in periods of presidential elections; (3) Fractionalization = continuous variable between 0 and 1 measuring the probability that two deputies picked at random from the legislative body will be of different parties. GMM = generalized method of moments.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

**Annex Table 4. Including Political Economy Variables Asymmetric Policy Response and Deficit Bias**

	Fixed Effects Estimator			Dynamic panel GMM estimator		
	Plans $\Delta(\text{SB}/\text{GDP})_{t t-1}$	Actual, Real Time $\Delta(\text{SB}/\text{GDP})_{t t+1}$	Actual, Ex Post $\Delta(\text{SB}/\text{GDP})_{t 2016}$	Plans $\Delta(\text{SB}/\text{GDP})_{t t-1}$	Actual, Real Time $\Delta(\text{SB}/\text{GDP})_{t t+1}$	Actual, Ex Post $\Delta(\text{SB}/\text{GDP})_{t 2016}$
	(1)	(2)	(3)	(4)	(5)	(6)
Legislative Elections	-0.1 [0.13]	0.05 [0.20]	-0.46** [0.18]	-0.04 [0.16]	0.06 [0.13]	35.92 [27.15]
Presidential Elections	0.07 [0.54]	0.73 [0.46]	0.70 [0.50]	-2.87** [1.31]	0.55 [0.50]	0.48 [1.89]
Fractionalization	0.67 [1.56]	3.57 [3.00]	2.19 [4.26]	-3.97 [6.28]	-2.85 [5.64]	0.00 [.]
Initial Debt/GDP	0.02** [0.01]	0.06*** [0.01]	0.04*** [0.01]	-0.01 [0.01]	-0.03* [0.01]	-0.63 [0.63]
$\Delta\text{Output Gap} * D(\Delta\text{Output Gap} > 0)$	-0.51*** [0.11]	-0.89** [0.37]	-0.25 [0.34]	-1.32** [0.52]	-1.01*** [0.29]	3.05 [3.30]
$\Delta\text{Output Gap} * D(\Delta\text{Output Gap} < 0)$	0.15 [0.29]	-0.18 [0.18]	-0.72*** [0.22]	5.97 [4.21]	-0.21 [0.28]	-1.47 [1.04]
Lagged Dependent Variable				0.11 [0.24]	-0.48*** [0.12]	0.96 [1.22]
Constant	-1.11 [1.54]	-7.09*** [2.31]	-5.07 [3.55]	5.27 [3.90]	4.56 [4.36]	20.51 [26.98]
Observations	88	85	203	29	28	171
Number of Countries	18	18	18	15	15	17
$R^2$	0.41	0.71	0.31			

Sources: AMECO; Stability and Convergence Programs; authors' estimates.

Note: The sample includes 19 euro area countries covering the period 1999–2015. Columns (1), (2), (4), and (5) rely on stability program data, while columns (3) and (6) rely on the AMECO database. In the absence of structural balances (SB) in AMECO, cyclically adjusted balances are used for the pre-2011 period in columns (3) and (6). Because of data availability, the analysis is performed using overall (rather than primary) structural balances as dependent variables. Estimations rely on the panel ordinary least squares estimator. All regressions include time and country fixed effects.  $t|t-1$  indicates plans for period  $t$  reported in period  $t-1$ ,  $t|t+1$  indicates outturns in period  $t$  reported in period  $t+1$ , and  $t|2016$  indicates outturns in period  $t$  reported in 2016.

The political economy variables are taken from the Database of Political Institutions compiled by the Development Research Group of the World Bank and are defined as follows: (1) Legislative election = dummy variable taking the value of one in periods of parliamentary elections; (2) Presidential elections = dummy variable taking the value of one in periods of presidential elections; (3) Fractionalization = continuous variable between 0 and 1 measuring the probability that two deputies picked at random from the legislative body will be of different parties. GMM = generalized method of moments.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

**Annex Table 5. Excluding Periods of Fiscal Consolidation during the Global Financial Crisis: Fiscal Policy Procyclicality**

	Fixed Effects Estimator			Dynamic Panel GMM Estimator		
	Plans	Actual, Real Time	Actual, Ex Post	Plans	Actual, Real Time	Actual, Ex Post
	$\Delta(\text{SB}/\text{GDP})_t   t-1$	$\Delta(\text{SB}/\text{GDP})_t   t+1$	$\Delta(\text{SB}/\text{GDP})_t   2016$	$\Delta(\text{SB}/\text{GDP})_t   t-1$	$\Delta(\text{SB}/\text{GDP})_t   t+1$	$\Delta(\text{SB}/\text{GDP})_t   2016$
	(1)	(2)	(3)	(4)	(5)	(6)
Initial Debt/GDP	0.02* [0.01]	0.05*** [0.01]	0.03** [0.01]	0.00 [0.01]	-0.01 [0.01]	-0.05 [0.06]
$\Delta$ Output Gap	-0.08 [0.22]	-0.04 [0.19]	-0.46* [0.24]	-0.35* [0.21]	-0.56*** [0.05]	-0.29 [0.48]
Lagged Dependent Variable				-0.38*** [0.09]	-0.18*** [0.03]	-0.50** [0.22]
Constant	-1.23 [1.72]	-4.34*** [0.82]	-2.25** [0.92]	0.79 [0.51]	-0.23 [0.55]	5.50** [2.29]
Observations	59	57	173	31	31	141
Number of Countries	18	18	19	15	15	17
$R^2$	0.32	0.69	0.2			

Sources: AMECO; Stability and Convergence Programs; authors' estimates.

Note: The sample includes 19 euro area countries covering the period 1999–2015 excluding 2011–13. Columns (1), (2), (4), and (5) rely on stability program data, while columns (3) and (6) rely on the AMECO database. In the absence of structural balances (SB) in AMECO, cyclically adjusted balances are used for the pre-2011 period in columns (3) and (6). Because of data availability, the analysis is performed using overall (rather than primary) structural balances as dependent variables. Estimations rely on the panel ordinary least squares estimator. All regressions include time and country fixed effects.  $t|t-1$  indicates plans for period  $t$  reported in period  $t-1$ ,  $t|t+1$  indicates outturns in period  $t$  reported in period  $t+1$ , and  $t|2016$  indicates outturns in period  $t$  reported in 2016. GMM = generalized method of moments.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

**Annex Table 6. Excluding Periods of Fiscal Consolidation during the Global Financial Crisis:  
Asymmetric Policy Response and Deficit Bias**

	Fixed Effects Estimator			Dynamic panel GMM estimator		
	Plans	Actual, Real Time	Actual, Ex Post	Plans	Actual, Real Time	Actual, Ex Post
	$\Delta(\text{SB}/\text{GDP})_t t-1$	$\Delta(\text{SB}/\text{GDP})_t t+1$	$\Delta(\text{SB}/\text{GDP})_t 2016$	$\Delta(\text{SB}/\text{GDP})_t t-1$	$\Delta(\text{SB}/\text{GDP})_t t+1$	$\Delta(\text{SB}/\text{GDP})_t 2016$
	(1)	(2)	(3)	(4)	(5)	(6)
Initial Debt/GDP	0.02** [0.01]	0.06*** [0.01]	0.02** [0.01]	-0.01 [0.01]	-0.01 [0.01]	-0.09* [0.05]
$\Delta\text{Output Gap} * D(\Delta\text{Output Gap} > 0)$	-0.50** [0.24]	-0.62* [0.32]	-0.15 [0.42]	-0.62*** [0.09]	-0.44*** [0.04]	-1.41 [0.91]
$\Delta\text{Output Gap} * D(\Delta\text{Output Gap} < 0)$	0.07 [0.25]	0.01 [0.19]	-0.66** [0.27]	-1.32** [0.64]	-0.62*** [0.13]	-0.82 [0.57]
Lagged Dependent Variable				-0.46*** [0.13]	-0.13*** [0.04]	-0.76 [0.47]
Constant	-0.75 [0.70]	-4.68*** [0.68]	-2.04** [0.94]	0.32 [1.40]	-0.33 [0.65]	8.56 [8.55]
Observations	59	57	173	31	31	141
Number of Countries	18	18	19	15	15	17
$R^2$	0.36	0.7	0.21			

Sources: AMECO; Stability and Convergence Programs; authors' estimates.

Note: The sample includes 19 euro area countries covering the period 1999–2015 excluding 2011–13. Columns (1), (2), (4), and (5) rely on stability program data, while columns (3) and (6) rely on the AMECO database. In the absence of structural balances (SB) in AMECO, cyclically adjusted balances are used for the pre-2011 period in columns (3) and (6). Because of data availability, the analysis is performed using overall (rather than primary) structural balances as dependent variables. Estimations rely on the panel ordinary least squares estimator. All regressions include time and country fixed effects.

$t|t-1$  indicates plans for period  $t$  reported in period  $t-1$ ,  $t|t+1$  indicates outturns in period  $t$  reported in period  $t+1$ , and  $t|2016$  indicates outturns in period  $t$  reported in 2016. GMM = generalized method of moments.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

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