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Enforcement of Fiscal Rules: Lessons From the Fiscal Compact

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ENFORCEMENT OF FISCAL RULES: LESSONS FROM THE FISCAL COMPACT

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Abstract

In 2012, 22 EU countries signed the Fiscal Compact, an intergovernmental agreement aimed at backing EU fiscal rules with national arrangements. The main objective of the Compact was to strengthen compliance. Based on a survey of national independent fiscal institutions, we take a closer look at the correction mechanism, the core of the Fiscal Compact. As the name suggests, the correction mechanism is meant to automatically trigger fiscal adjustment in case public finances deviate from 'the path of virtue'. While design choices vary considerably across countries, a cluster analysis reveals distinct patterns. In particular, better compliance tend to be associated with a superior design of the correction mechanism, higher government efficiency and a stronger media presence of independent fiscal institutions. Economic growth can make up for a less sophisticated design. Additional inferential analysis confirms the link between compliance, design and other relevant valiables. Our survey also indicates that many countries have linked the trigger of the correction mechanism to formal decisions at the EU level rather than to independent assessors at the national level. This choice defeats the original purpose of correction mechanisms, namely to decouple key fiscal policy decisions from political considerations and discretion.

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1. INTRODUCTION

In a multilateral context, where sovereigns are collectively in charge of applying fiscal rules on themselves, ownership is key for compliance and enforcement. The EU's supranational fiscal framework, the Stability and Growth Pact (SGP), is a very clear case in point where persistent forbearance by the Commission and the Council can trigger moral hazard issues among Member States, and result in repeatedly prolonging the recommended fiscal adjustment efforts. Therefore, rigorous application of a supranational rules over time and across countries is absolutely necessary to ensure credibility. Any new attempt aimed to revise the European supranational surveillance framework will have to pay particular attention to the issue of enforcement.

Comprehensive assessments of past experience indicate that in the two decades of SGP history there was no overall trend towards better compliance in spite of successive reforms aimed at improving the effectiveness of the rules; see for instance EFB (2019) and Larch and Santacroce (2020). The reluctance or difficulties to enforce rules by imposing sanctions on sovereign countries was highlighted by the European Court of Auditors (2016) in its analysis of SGP implementation, and it was acknowledged by the European Commission (2020b) itself. Specifically, any form of financial sanction has increasingly been perceived as 'nuclear bomb without real deterrence effect' not least due to the inherent time-inconsistency: sanctions apply when Member States concerned typically find themselves in economic and budgetary difficulties and the political opportunity and willingness to 'punish' is weak.

Against this background, and with the help of a dedicated questionnaire to national Independent Fiscal Institutions (IFIs), this paper takes a closer look at the possible determinants of enforcement in the context of the ongoing EU economic governance debate. In the aftermath of the Great Financial Crisis, a major attempt was made via the so-called Fiscal Compact to increase national ownership of the tenets of the SGP. In particular, by signing the Compact in 2012, 22 EU countries committed to put in place national mechanisms to correct deviations from the medium term budgetary objective that would ensure prudent and sustainable public finances, are the adjustment path towards it[1]. While setting out general principles, the Compact left considerable leeway for national authorities to design their correction mechanisms. In light of the actual diversity in the design of the mechanisms, a careful analysis can potentially reveal what elements enhance or hinder enforcement and compliance.

Our paper complements the emerging empirical literature on the implications of the 2011-2013 governance reforms, and in particular the Fiscal Compact provisions, as to the effectiveness of national rules and fiscal institutions. Reuter (2019) investigated compliance with domestic fiscal rules in 1995-2015 concluding, *inter alia*, that pre-defined steps to be activated in the event of non-compliance actions did not increase compliance probabilities in a statistically significant manner. He attributed the surprising result to the fact that sanctions and automatic correction mechanisms had not (yet) been enforced systematically. Horvath (2018) reviewed both the legal transposition and the day-to-day implementation of the Fiscal Compact with a special focus on the establishment and the functioning of independent monitoring bodies. He concluded on the need for a stronger and more comprehensive enforcement of national transposing provisions to ensure compliance across Member States.

This paper is structured as follows. The next section provides an overview about the prevailing patterns of enforcement arrangements in EU Member States, with a view to the relevant legal

[1] The Fiscal Compact is Title III of the intergovernmental Treaty on Stability, Coordination and Governance in the Economic and Monetary Union, signed in March 2012. It currently requires the 19 euro area countries to introduce in the national legislation a structural balanced budget rule equipped with a correction mechanism. Three non-euro countries, Bulgaria, Denmark and Romania, are also bound by the same requirements on a voluntary basis.

requirements. Subsequently, we present the main findings of our survey of independent fiscal councils on the design and implementation of national correction mechanisms. A brief descriptive summary of our survey is complemented with non-parametic and parametric statistical analysis aimed at establishing patterns or regularities. The final section concludes by sketching some policy implications.

2. LEGAL AND INSTITUTIONAL LANDSCAPE IN THE EU

Enforcement of EU fiscal rules and how to strengthen it via national arrangements played an important role in the successive reforms of the EU economic governance framework in 2011-2013. To start with, in 2011 the Budgetary Frameworks Directive of the so-called six-pack reform set minimum standards for domestic fiscal frameworks.[2] As part of the design requirements for national fiscal rules, the Directive asked EU Member States to specify consequences in the event of non-compliance for each of their numerical rules. Admittedly, many of these consequences of non-compliance were stipulated in the form of reputational costs, e.g. simply requiring the public nature of IFI monitoring reports or government documents about the breach of the rule. This being said, there are several examples for more stringent enforcement mechanisms for debt rules (e.g. Poland and Slovakia have legislated links between numerical thresholds of debt-to-GDP ratios in the proximity of their debt anchors and certain budgetary steps), or for sub-national rules (e.g. in Estonia, Germany, and Lithuania, the breach of the local rules trigger well-specified corrective action, often allowing for central authorities to override non-compliant municipial budgets).[3]

In 2012, the intergovernmental Fiscal Compact was agreed. It followed the same logic as the Budgetary Frameworks Directive, namely to strengthen enforcement and compliance with EU fiscal rules by asking Member States to put in place at the national level institutions and processes consistent with the mainstays of the EU fiscal rules. The Fiscal Compact obliged its contracting parties to enshrine national correction mechanisms of binding force and permanent character accompanying their compulsory structural budget balance rules; for the latter, a general lower bound of a 0.5% deficit was laid down.[4] The core objective of these national correction mechanisms is to avoid lasting deviations from the country-specific medium-term objective (MTO) stipulated in structural terms or the adjustment path towards it, agreed at and recommended in the EU surveillance framework. The correction mechanisms were meant to enact, through an automatic trigger, budgetary measures to put an end to any significant deviation from these country-specific objectives or the adjustment towards them. In addition, the Fiscal Compact contained a requirement for establishing a pre-defined timeline for the implementation of the corrective budgetary measures. As the domestic structural budget balance rules had to be formulated in a consistent manner with the supranational EU rules, such an arrangement was expected to foster national ownership of the Union surveillance framework.

The essential features of the correction mechanisms are detailed in the so-called common principles communication[5], which, inter alia, emphasises four key elements: (i) legal status set to be of higher order than the budget law; (ii) well-defined circumstances for triggering the mechanism; (iii) pre-determined rules to frame the size and timeline of the fiscal adjustment; and (iv) role of national IFIs in monitoring all relevant aspects of the mechanism, and in particular its triggering, progress and extension, all under the aegis of the comply-or-explain principle. To ensure the credibility of the national monitoring process, the principles laid down a number of minimum standards for IFIs to

[2] Council Directive 2011/85/EU of 8 November 2011 on requirements for budgetary frameworks of the Member States – OJ of 23.11.2011, L306/41.
[3] See European Commission (2020a) for a survey of existing arrangements.
[4] For countries with a government debt-to-GDP ratio significantly below 60% and with low risks for long-term sustainability of public finances, the lower limit could reach a structural deficit of at most 1% of GDP.
[5] European Commission (2012): Communication from the Commission - Common principles on national fiscal correction mechanisms. https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2012:0342:FIN:En:PDF

safeguard their independence, most notably, in terms of statutory regime, freedom from interference, appointments, and adequacy of resources and of access to information.

It is worth clarifying that the Fiscal Compact provisions did not go as far as to demand the introduction of a 'control account' (pioneered in the EU by Germany, Austria and Latvia). This enhanced variant of a correction mechanism is used for recording all deviations from the targets. If these deviations reach a pre-defined limit (e.g. 1% of GDP), the national authorities must offset them within a given time-frame through a symmetrical overachievement of the targets, thereby tackling the ‘ratchet effect’ of periods with looser public finances.

In its February 2017 report, which exclusively focused on the legal transposition of the Fiscal Compact, the Commission generally found satisfactory compliance of the national legislations with the supranational provisions.[6]

3. SURVEY ON NATIONAL CORRECTION MECHANISMS

Despite the jointly agreed common principles, there are significant differences in the design of the correction mechanism across the 22 countries that signed the Fiscal Compact. This heterogeneity can be exploited to identify elements of best practice, especially as regards compliance with fiscal rules. To this end, the EFB secretariat organised a dedicated survey with the independent monitoring institutions in the 22 Fiscal Compact countries on the design and practice of national correction mechanisms.

The answers confirmed that since the transposition of the Fiscal Compact provisions in 2012-2013, there have been only four cases of IFIs initiating the triggering of the correction mechanism ex post, i.e. based on an observed significant deviation at the general government level. In two episodes (France 2014, Slovakia 2016), their call was unheeded, while in two more recent cases in late 2019 (Estonia, Slovakia), the correction mechanisms were activated, but the Covid-19 crisis suspended the enforcement process in the two countries at a relatively early stage.

According to the compliance tracker of the secretariat of the EFB[7], during the period under review numerical compliance with the EU structural balance rule in the Fiscal Compact countries was only around 50% and has not improved much over time.[8] Hence, at first sight enhanced national frameworks, and specifically the corrections mechanism, may not have promoted adherence with the EU fiscal rules. Given the limited number of actual implementations of national correction mechanisms, the following analysis mainly focuses on the various design features to capture elements that could be associated with more fiscal discipline or compliance.

The structure of the survey follow the logic of the common principles defined by the Commission to capture the key characteristics of correction mechanism across Member States (see the obove list for the main building blocks). Some three-fifths of the questions cover factually the various design features as adopted by the national authorities, while the remaining two-fifths asked about the monitoring IFI’s own assessments as well as their perceptions on the consistency, clarity and effectiveness of these arrangements. Answers to the former set of questions are compared to the

[6] European Commission (2017). In the few cases, where the Commission’s report concluded on conditional compliance reflecting a public commitment for remedial actions by the respective authorities, all countries in question subsequently took supplementary measures. These were, for instance, the operationalisation of the Slovenian Fiscal Council in spring 2017, or the Spanish decree amendment in March 2018, which removed the previous restrictions on access to information for the national IFI, the Independent Authority for Fiscal Responsibility.

[7] See for details Larch – Santacroce (2020).

[8] The overall average rate of compliance for all four SGP rules covered in the compliance tracker is around 60%.

findings of the Commission's 2017 transposition report and by the selection of national legal documents cited thereof.

The responses by the independent monitoring institutions confirm that within the boundaries of the common principles and essential standards, Member States have retained a considerable degree of freedom in terms of designing their own national correction mechanism and the set-up and mandate of their national IFIs. Given that some key elements predated the Fiscal Compact in a few Member States (e.g. structural budget balance rules and national IFIs already existed in several countries), and with a view to the diversity of national administrative settings and legal traditions, no one-size-fits-all model was imposed.

Overall, our analysis identified four crucial dimensions of the correction mechanisms which could be directly linked to their perceived deterrence effect and where strong patterns emerged (see also Table 2 for a distribution of countries):

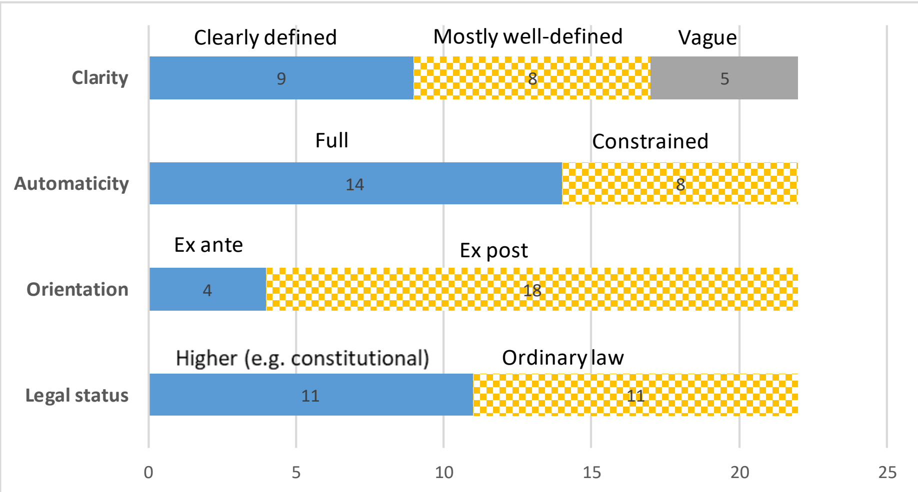
• Clarity of the national provisions, i.e. a summary assessment by IFIs on how precisely the conditions for triggering the mechanism and the subsequent procedural steps are defined in national legislation (clearly; mostly well; vaguely).

• Automaticity, i.e. whether the triggering of the correction mechanism has full automaticity or constrained in some ways;

• Orientation of the correction mechanism, i.e. whether the correction mechanism also be activated ex ante based on a high risk of a significant deviation or only ex post;

• Legal status, i.e. whether the national provisions were adopted as an ordinary law or at a higher legal level (the latter category combines the constitutional amendments, cardinal laws with qualified majority quorums and special legal arrangement in federal states, such as internal stability pacts).[9]

Graph 1: **Design features of national correction mechanism along four dimesions**



Source: Survey of EFB secretariat.

[9] While some fundamental provisions (such as the stipulation of the structural balanced budget rule) were adopted in a legal instrument having a higher status than ordinary law, the detailed implementing arrangements for these norms (such as the steps and procedures for the correction mechanism or the governing arrangements for the monitoring institution) were typically set out in associated ordinary legislation. In these cases, the respective countries were assigned to the 'constitutional' group as the binding force of the entire arrangement is better captured by the legal status of its core element(s).

Other potential design features were also considered (most notably, specifications on the timeline of adopting/implementing the corrective measures, pre-determined nature of corrective measures (i.e. to what extent the expenditure and revenue measures are specificed ex ante), and the procedural role of various institutions (government, IFIs, parliaments). They were not included in the quantitative analysis either because national solutions are too diverse, or assignments unclear. The latter is likely to be explained by the fact that in the overwhelming majority of countries the correction mechanism has not been tested, and many practical and procedural aspects are not clarified yet.

Out of the four dimensions listed above, the legal status is the one that has traditionally been scrutinised to capture its relevance of the effectiveness of fiscal frameworks. In this context, it is worth recalling that the IMF's and the European Commission's Fiscal Rule indices both assign greater score for rules with a higher statutory basis, which in principle would make them more difficult to modify or amend, albeit the empirical literature are not decisive on this issue. For instance, Debrun et al. (2008) found some positive, but statistically insignificant association between the statutory basis of numerical rules and fiscal outcomes.

One notable result of our survey is that the overwhelming majority of countries in question decided to link the automatic trigger of their correction mechanism to formal surveillance decision at the EU-level. Although, in principle, this approach ensures consistency between the EU surveillance framework and national budgetary procedures, it does not appear to promote local ownership over EU rules, which was the primary objective of the Fiscal Compact.

Placing the trigger to the supranational level needs to be seen against the track-record of the Commission and the Council in implementing the EU fiscal rules. In particular, as highlighted by the EFB (2020) the Commission and the Council have shown regular forbearance vis-à-vis a number of countries when assessing compliance with fiscal requirements. Since the Fiscal Compact entered into force, EU institutions have launched a significant deviation procedure only against one contracting party, Romania, a comparatively small Member State outside the euro area. This happened although developments of relevant budgetary variables in several other countries, including in particular larger ones, pointed to clear issues. Under the SGP, a significant deviation procedure is triggered if, on the basis of outturn data, the Commission and the Council conclude on a significant divergence of a country's budgetary position from its medium-term objective, or from the appropriate adjustment path towards it. [10]

A particularly clear, although not the only example of the flexible implementation of the rules by the Commission is the unilateral introduction of the 'margin of discretion' in 2017, which added a new element of qualitative assessment on top of quantitative criteria. The decision was motivated by the aim 'to strike a balance between stabilisation and sustainability needs' of a country. In practice, the margin of discretion allowed the Commission assessment to go beyond the development of relevant budgetary variables *vis-à-vis* quantitive requirements/criteria defined in the SGP. [11]

Other examples of forebarence in the Commission's assessment include (i) the generous use of flexibility provisions for unsual events, investment and structural reforms in the case of Italy (2016-2018), (ii) *ad hoc* adjustments to relevant fiscal indicators for Portugal and Slovenia (2017), and (iii) the acceptance of France's and Spain's so called nominal strategies when under the SGP's corrective arm (2016-2017).[12]

[10] The assessment is centered on the question of whether the deviation exceeds 0.5% of GDP in one single year or 0.25% of GDP on average in two consecutive years.

[11] See EFB (2018) for a detailed discussion.

[12] The nominal strategy consists in averting fiscal consolidation recommended under an excessive deficit procedure by taking advantage of higher than expected growth. A country following the nominal strategy may succeed in bringig the deficit below the 3% of GDP reference value without improving the underlying budgetary position.

Overall, the automatic correction mechanisms introduced with the Fiscal Compact cannot produce their intendent effect when the trigger is subject to *ad hoc* interpretations or improvisation of EU provisions. This outcome is consistent with the political economy or political science literature looking at the background of different enforcement designs of supranational agencies. In particular, Franchino and Mariotto (2021) argue that EU governments anticipating a greater risk of non-compliance will prefer a soultion that offers greater discretion, and countries with higher voting power push for a stronger involvement of the Council.

Of note, only three countries, Belgium, Bulgaria and France chose to make link the activation of the correction mechanism automatic to relevant conclusions of the national IFI. However, exercising this strong competence has run into difficulties. In Belgium, the High Council of Finance has only been able to carry out 'illustrative compliance assessments'[13], while in France, the national IFI's attempt to trigger the procedure in 2014 was effectively circumvented by the government.[14]

4. STATISTICAL ANALYSIS

After a brief description of the main design features of national correction mechanisms emerging from our survey we combine the information with other economic and fiscal data. The main objective is to explore whether differences in design are in any meaningful way associated with different degrees of compliance. Our analysis proceeds in two steps. We first apply cluster analysis – an agnostic, non-parametric method – to establish possible patterns in our sample. We then use a discriminant analysis – a parametric method – to check how well design features in combination with other variables of interest deliver a meaningful prediction over high and low levels of compliance.

4.1. CLUSTER ANALYSIS

To find similarities and differences across the Fiscal Compact countries we carried out a cluster analysis[15]. On top of the four dimensions of the national corrections mechanism presented above, a number of additional variables of interest, described in Table 1 below, were added. The indicator measuring compliance is of particular relevance. We draw on the compliance tracker of the Secretariat of the EFB, a database measuring numerical compliance with the quantitative constraints imposed on budgetary and fiscal aggregates by the EU fiscal framework. Since the correction mechanism of the Fiscal Compact is built around the structural budget balance rule we use the score covering that particular constraint. The compliance score is binary: it takes the value 1 when a country is compliant and 0 when non-comliant. For each country, we use the share of compliant years in the sample period 2013-2019.

The clearest pattern is achieved by a four-clusters setting. The average scores for each variable across clusters are reported in Table 2. Clusters are ordered by average compliance with the structural budget balance rule, which is at the heart of the Fiscal Compact. In our analysis, numerical compliance is taken as a proxy for enforcement and/or ownership, two key objectives of the Fiscal Compact.

[13] Despite the provision contained in the December 2013 Coordination Agreement, the Concertation Committee has so far never reached a decision in relation to the budgetary objectives apportioned to various levels of the federal government. Due to the lack of formally approved objectives, the High Council of Finance's annual compliance report repeatedly concluded that it was not in a positon to verify whether one or more entities (i.e.: individual communities, regions and community commissions) deviated significantly from their objectives.

[14] Based on the 2013 fiscal outcomes, the High Council of Public Finance triggered the correction mechanism in May 2014 that had eventually no effect. The budget bill for 2015, which should have been the vehicle for including the additional adjustment measures according to the national legislation, did not contain any additional adjustment measures. Instead, the authorities laid down a new multi-year fiscal trajectory through a new programming law (less than two years after adopting the previous one) incorporating past deviations with upwardly revised deficit targets, effectively moving the goalpost.

[15] A Ward-type cluster analysis (minimum variance method) was used given the large number of variables and difference in scales. In line with common practice, the data was standardised prior to the cluster analysis.

The first cluster comprises four out of the 22 Fiscal Compact countries that have the possibility to activate their correction mechanism ex ante. The second and third group each contain seven countries, while the last cluster encompasses four high-debt countries with weak growth performance and meagre scores for institutional quality. Of note, there are important differences within the four clusters and differences across groups may not apply to each country individually to the same degree. That said, the cluster analysis still reveals some interesting profiles.

Table 1: **Additional institutional and economic variables used in the cluster analysis**

Variable (abbreviation)	Scale	Source	Comment
World Governance Indicator (WGI)	Values range from approximately -2.5 (weak) to 2.5 (strong) performance.	World Bank	The three most relevant WGI dimensions for fiscal outcomes (i.e. control over corruption, government effectiveness and quality of regulations) are averaged over the 2013-2019 period.
Political Stability and Absence of Violence/ Terrorism (PS)	Values range from approximately -2.5 (weak) to 2.5 (strong) performance.	World Bank	Averaged over the 2013-2019 period
Media visibility of national IFIs (Media)	0%-100%	Europe Media Monitor (as taken from European Commission (2021))	Share of mentions relative to total number of articles. Calculated for the 2004-2019 period.
Compliance score for the structural balance rule (SBB)	0-100%	Compliance tracker of the EFB secretariat	Share of years in 2013-2019 in which a country was compliant with the rule.
Public debt-to-GDP ratio (Debt)	% of GDP	Eurostat	Averaged over the 2013-2019 period.
Average growth rate of real GDP (Growth)	year-on-year%	Eurostat	Averaged over the 2013-2019 period.

The first two clusters are characterised by a higher compliance score. They are either associated with a better design of the correction mechanism and/or a higher media presence of IFIs, where the latter seems to compensate for a less convincing design of the correction mechanism.

The third cluster underscores the importance of economic growth in staying with the limit imposed by the structural budget balance rule and containing the government debt, even with a lower compliance score. This is further corroborated by the fourth group that performs similarly or only slightly worse in terms of design and compliance indicators than the third, while higher debt levels are linked to a relatively weak media presence of IFIs and low economic growth.

Table 2: **Results of cluster analysis (mean scores)**

	Legal	Ex ante	Auto	Clarity	WGI	PS	Media	SBB	Debt	Growth	Countries	Characteristics
1.	0.50	1.00	1.00	2.00	1.52	0.72	0.018	0.61	71.4	3.62	Denmark, Germany, Ireland, Spain	Good design, high government efficiency, high growth, strong compliance, good media coverage
2.	0.43	0.00	0.00	1.43	1.06	0.74	0.021	0.51	70.6	2.18	Austria, Belgium, Bulgaria, Cyprus, Netherlands, Slovakia, Slovenia	Mixed design, medium growth, medium compliance, good media coverage
3.	0.57	0.00	0.86	0.29	1.14	0.82	0.008	0.47	37.1	3.61	Estonia, Finland, Latvia, Lithuania, Luxembourg, Malta, Romania	Mixed design, high growth, low debt, weak compliance, low media coverage
4.	0.50	0.00	1.00	1.50	0.74	0.38	0.007	0.46	134.7	0.95	France, Greece, Italy, Portugal	Mixed design, weak growth, high debt, weak compliance, low governance efficiency

Notes: Dimensions of national correction mechanisms: Legal: higher status=1 vs lower status=0. Ex ante=1 vs ex post=0. Auto: fully automatic trigger=1 vs constraint=0. Clarity: clearly defined=2, mostly well-defined=1, vague=0. WGI: country-score of the World Governance Indicators, normalised units around 0. PS: World Bank political stability indicator; Media: media visibility index of IFIs: share of total number of articles. SBB: compliance score with the structural balance rule, 1 equal to full compliance. Debt: government debt in % of GDP; Growth: average real GDP growth rate, y-o-y % change. The reference period for all indicators is 2013-2019 with the exception of media visibility (2004-2019). The values in the table are cluster means for each indicator.

Source: Survey of the EFB secretariat, World Bank WGI database, Europe Media Monitor, compliance tracker of the EFB secretariat, Eurostat

To check robusteness, we redid the cluster analysis using the average deviations from the structural budget balance rule instead of the compliance score, thereby accounting for the size of deviations.[16] Groups with very similar characteristics emerge. Once more, a high debt group with weak economic growth, mixed design and on average larger devisions is revealed. The ‘best practice’ group (group 1 in Table 2) now also exhibits by far the largest media coverage of IFIs thanks to the inclusion of the Netherlands, corroborating a positive relationship between IFI visibility and fiscal compliance. The other two groups managed a decent compliance: They are characterised by low debt levels and either an above average governance score or high rates of economic growth.

To further test the robustness of our results, various specifications were run. For example, in a three-group setting, the above described distinctions are still present, but some nuances are lost, as some countries from the second cluster are dispersed. Extending the cluster analysis by an additional group does not reveal any further insights since it only sorts out single countries, such as Greece, in standalone groups.

4.2. DISCRIMINANT ANALYSIS

In the following, we try to establish whether there are distinctive features among those countries that have a sub-par compliance score and those that fared above average. The cluster analysis indicated that countries with high or low compliance also share other characteristics, however, other methods area better suited to distil this finding.

The choice of econometric tools is limited by the relatively small sample and a large number of potential explanatory variables. A standard regression setting is prone to multi-collinearity. One avenue to address this challenge is to opt for a principle component approach. In case of our dataset and in merit of the results stemming from the cluster analysis, a canonical linear discriminant analysis constitutes an appropriate method to meaningfully separate groups by the compliance score and find patterns in the chosen explanatory variables.

A split of the 22 signatories of the Fiscal Compact into two groups of above and below average compliance with the structural budget balance rule leads to near balance separation. Countries with a below the average compliance score are also below or at the median, so that delineation would be identical. 12 countries fall into this category, with an average compliance score of 30%. The above average group consists of 10 countries, with an average compliance score of 80%.

The selected explanatory variables are those that have been used in the cluster analysis: survey indicators, WGI, growth, debt level and media coverage of IFIs. However, the compliance score (of structural budget balance) is now the dependent variable.

The derived canonical discriminant function has coefficients for each explanatory variable that best separate the observations into the two groups, i.e. maximising the distance between the mean of the two groups and minimising the variation within each group (see Table 3). The signs are largely as one would expect, i.e. the strength of the institutions, the design correction mechanism, political stability and economic growth pull in the same direction in grouping the countries while debt pulls in the other direction. Of note, the sign of the coefficient linked to media coverage turns out to be negative. There seem to be interactions with other explanatory variables that do not emerge clearly in our discriminant analysis. As indicated in the previous section, there is an important group of countries with a high media coverage of IFIs but comparatively weaker design features.

[16] Greece has been excluded in this exercise given its status of a programme country over the sample period and the overshooting of structural budget balance requirements by a large margin.

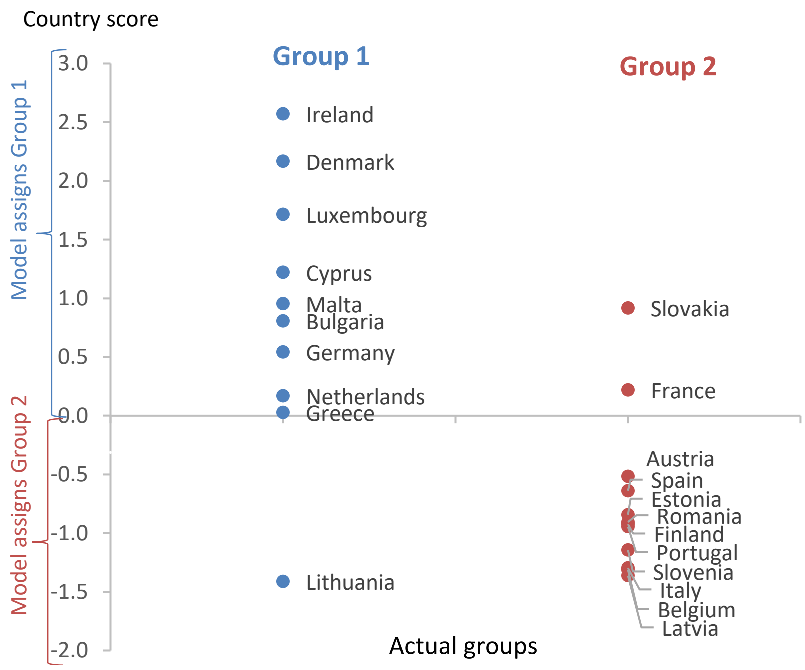
Table 3: **Discriminant function coefficients**

Variable	***Function coefficients***	
Independent varialbe:	SBB compliance score	SBB deviations
Legal status (survey)	-1.048	-0.513
Ex ante (survey)	0.275	-0.259
Automaticity (survey)	0.026	0.110
Clarity (survey)	0.438	1.010
WGI	0.215	0.588
Political Stability	0.464	0.325
Growth	0.008	0.456
Debt ratio	-0.102	-0.834
Media coverage IFI	-0.352	-0.285

Note: Greece was excluded from the analysis as it was throughout the period in an Adjustment Programme and recorded extraordinary fiscal adjustments, rendering it a clear outlier from a numerical and analytical point of view. SBB compliance score and deviation are two measures of compliance from the compliance tracker of the EFB secretariat: https://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/european-fiscal-board-efb/compliance-tracker_en

Plugging the observed values of each country into the discriminant function derives the model-based discriminant scores. Given that the variables used have been standardised, any country with a score above zero is predicted to fall into the high compliance group. Overall, the discriminant function separates the groups very well, though the p-value remains above the conventional levels of significance. The model predicts 19 out of 22 cases correctly. Graph 2 shows that France and Slovakia are incorrectly classified by the discriminant function as belonging to the high compliance group. The opposite is the case for Lithuania.

Graph 2: **Distriminant analysis - true and model classification by country**



Note: The x-axis shows the actual groups according to the observed compliance score with the structural budget balance rule. The y-axis shows the discriminant score, which is used to separate the countries into two groups (below and above zero). These are derived by the discriminant function coefficients of Table 3.

In an alternative setup and robustness check, the compliance score for the structural budget balance rule is replaced by the average deviations from the rule in % of GDP over the same time period (2013-2019). The high compliance group averaged an overachievement of the structural budget balance rule of 1 % of GDP, whereas the low compliance group averaged a shortfall of 0.3% of GDP. In this specification (with deviations from the rule as the dependent variable) the discriminant function misclassifies only two countries. It provides a similar prediction in terms of group membership and the canonical discriminant function coefficients have largely the same sign as in the original setup. Notably, the debt ratio seems to have a stronger influence on group membership when using deviations from the rule, i.e. large negative deviations are associated with high debt.

These results are encouraging. The limited set of variables included in the discriminant analysis already possess the ability to separate groups quite clearly into those with an above and below average compliance record. In a possible extension of this analysis, it would be useful to add a larger number of explanatory variables to the discriminant analysis and, when available, broaden the time period covered.

5. DISCUSSION AND POLICY IMPLICATIONS

Our analysis indicates that the exact way of increasing local ownership of fiscal rules through national correction mechanisms was, on average, not necessarily conducive to ensuring better numerical compliance. This being said, the possibility of triggering the correction mechanism *ex ante*, i.e. on the basis of a risk assessment by an independent institution, appears to stand out as a desirable design feature. Automaticity and clarity of the correction mechanism also seem to be positively associated with better compliance. At the same time, it is true, that higher-growth countries can potentially afford a more lenient design in their domestic fiscal frameworks while achieving better compliance. In a similar vein, high public visibility of IFIs in charge of monitoring public finances could also compensate for design flaws.

As to the perception of stakeholders, it is instructive that when IFIs were asked for an overall assessment of their national correction mechanism in the context of our survey, two distinct groups emerged. The first one identified the weak domestic transposition choices as the main culprit behind the problematic enforcement of the Fiscal Compact. These IFIs called for more automaticity in the procedures and stronger role for themselves, in order to depoliticise the necessary budgetary adjustments. Another set of IFIs argued that the effectiveness issues stem directly from poor design features embedded in the current EU surveillance framework, most notably, a reliance on unobservable variables, and a conceptual disconnect between fiscal objectives and actual budgeting decisions.

In terms of policy conclusions, to achieve the initial objective of the Fiscal Compact, a number of actions seem warranted. First, the automatic trigger of national correction mechanisms should ideally be linked to the assessments of independent entities at the national level. Second, all decisions around establishing significant deviations by IFIs and the concomitant activation of the correction mechanism should be subject to intense public scrutiny, preferably via both media and institutional rendezvous, most importantly presentations and discussions in national Parliaments. These two strands of actions should increase national ownership of the contraints imposed by a country's fiscal framework that, in turn, would make it more efficient and credible (Andersson and Jonung, 2019). Third, since economic growth fosters compliance, growth oriented policies should receive more attention, in particular structural reforms and government investment.

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