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FISCAL CONSTRAINTS IN THE EUROPEAN UNION – WHEN MORE IS LESS?

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Abstract

This paper examines the implications of fiscal rules measured through the Fiscal Rules Index and fiscal institutions that supervise fiscal policies on key aspects of fiscal policies such as public debt and budget deficits. Our goal was to identify the specific links between fiscal rules, institutions and fiscal policies, to support any rethinking of public policy matters. Our results confirm that the government's consolidated debt is influenced by both fiscal rules and institutions. Through this research we have showed that an increased number of institutions and fiscal rules is closely related to an increase in public debt levels. We explained this influence by stating that cause may consist in not having one strong and independent institution, but more institutions more or less independent that divide key responsibilities. Also our results indicate that budget deficits aren't influenced either by supervising institutions or fiscal rules.

Keywords: fiscal rules, institutions, fiscal policies, public debt, budget deficits

JEL classification: H30, E61, H63

1. INTRODUCTION

Since the current crisis, economists, politicians and the general public, argue the role of fiscal rules, especially in the context of high public debt levels. There is no denial of the fact that the need to maintain tight fiscal rules is absolutely necessary in order to ensure sound public finances and to maintain the credibility of a government to meet its obligations.

The key advantage of fiscal rules is that they do not allow governments to implement weak or inadequate fiscal policies that may lead to increasing public debt and public deficits. In other words, as critics argue, it reduces the power of policy-makers. Putting no strains on policy-makers unfortunately leads as some state to situations as the current crisis in Greece that implies high levels of public debt that cannot be counteracted through the usual fiscal policy mechanisms.

It is our goal to reveal through this paper which are the connections between fiscal rules, fiscal institutions and fiscal policies and to show how they influence each other. A smaller number of fiscal rules means that the fiscal policy of a country isn't highly regulated

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and submitted to control. Also, a smaller number of fiscal rules means that governments have few guidelines in conducting their fiscal policies.

Our results indicate that fiscal rules (measured through the Standardized Fiscal Rules Index) conduct to an increase of the governments consolidated debt, which it may seem strange at a first sight, but it can be explained by the fact that although fiscal rules exist they aren't enforced. Looking through our database we noticed the fact that the Fiscal Rules Index became positive and registered huge gains in the crisis period and after, period of time defined through increasing public debt and public deficits through most of EU member states. So, even if new fiscal rules were imposed, the timing couldn't be worse. Also this is the case of fiscal institutions, by which an increased number didn't conduct to smaller government's debt levels.

The public deficit doesn't seem to be influenced in any way by fiscal rules or the number of institutions, just only as we have expected by the government expenditure and revenue levels as percentage of GDP.

We organized our paper as follows. Section 1 represents our introduction. Section 2 marks our literature review and develops our key hypotheses. Section 3 describes the data sources and variables used in our analysis. Section 4 discusses the methods that we used in our analysis. Section 5 marks our empirical results, while in section 6 we summarized our conclusions and key findings.

2. LITERATURE REVIEW

The current economic and financial turbulence in the European Economic and Monetary Union boosted up by the crises in Greece has sparked a fiery debate on the viability of the common currency. The current debates also include major subjects as fiscal rules and their role in the current state of EMU. The situation of Greece also brought into discussion elements like fiscal transfers and the rules that should accompany them. (Evers, 2012, pp. 507-525)

At the European level, most of the economists when thinking about fiscal rules tend to resemble them to the Stability and Growth Pact. Because treaties like the one we mentioned regulate the actions of sovereign states, they often suffer from a fundamental implementation problem owing in large part to the absence of an effective and independent enforcer, as stated by Beetsma and Debrun (2007, pp. 453-477). The means by which constraints on fiscal policies influence the macroeconomic stability and welfare were analyzed by Pappa and Vassilatos (2007, pp. 1492-1513), which state that fiscal authorities can enhance welfare by targeting the regional output gap. On the other hand, targeting local inflation is less successful giving the fact that inflation stability is supervised by the central bank. We state that the key role of fiscal rules isn't represented by promoting welfare at a regional and general level, but to enhance supervision on fiscal policy-makers in order to obtain sound public finances and stability at a macroeconomic level. But, as pointed out by Sacchi and Salotti (2015, pp. 1-20), when strict fiscal rules are introduced, discretionary policy becomes output – stabilizing, results being easier to obtain by using rules regarding balanced budget, and less rules that influence expenditure, revenues or debt. Also, this conclusion is sustained by Albuquerque's (2011, pp. 2544-2599) results that indicate the fact that bigger countries and bigger governments have less spending volatility, the political factor not playing a role in this regard. Thus, imposing rules on balanced budgets still remains the best option. The credibility crisis regarding the sustainability of public debt can actually be resolved by implementing fiscal rules and enforcing them. One important factor is the fact that these rules may reflect stability oriented preferences of a state's voters and politicians. Conservative fiscal preferences may

lead to the establishment of rules and lower risk premia, a critic well known in the literature. (Heinemann *et al.*, 2014, pp. 110-127) On subject, other authors in field support the strengthening of national rule-based fiscal governance. Numerical fiscal rules can operate as enforced constraints as long as there is commitment to comply with them. (Iara and Wolff, 2014, pp. 222-236) In the EU for example, Reuter's (2015, pp. 67-81) results indicate that countries comply with their fiscal rules in only about 50% of the analyzed timeline. Although countries in almost half of the analyzed period didn't comply with their fiscal rules, it seems that having them as numerical targets still affects policy-makers, urging them to comply at least partial. Another know critic is the limited ability of governments to react to business cycle fluctuations. Analyzing the data from 48 US states, Fatás and Mihov (2006, pp. 101-117) proved that strict budgetary restrictions lead to lower policy volatility and that fiscal restrictions reduce the responsiveness of the fiscal policy to output shocks (also see Canova and Pappa, 2006, pp. 1391-1414). Daniel and Shiamptanis (2013, pp. 2307-2321) suggest in this regard that restrictions as fiscal rules require that the response of the primary surplus to debt to be relatively strong, expressed as long-run equilibrium deviations.

For their analyses on fiscal rules and fiscal policies, most of the authors used a two or a three-country model. Such an analysis was conducted by Andrea Ferrero (2009, pp. 1-10), the author suggesting that fiscal policies should stabilize idiosyncratic shocks, thus allowing for permanent variations of government debt. In general, optimal targeting rules formalize the balance between the different stabilization objectives that policy-makers want to achieve in order to fulfill their commitments. But, by using aggressive countercyclical tax revenue gap rules although increases welfare gains, it also conducts to a modest increase in the fiscal instrument's volatility. (Kumhof and Laxton, 2013, pp. 113-127) However, as Bergman and Hutchison (2015, pp. 82-101) state, high government efficiency combined with strong fiscal rules is the best combination that facilities countercyclical policy responses to GDP movements or volatility. Using the QUEST model of the European Commission, Breuss and Roeger (2005, pp. 767-788) analyzed the largest countries members of EMU (France, Germany and Italy) from the point of implementing the SGP fiscal rule. Sticking to the SGP rule is advantageous at least in the long-run but, depending on the shocks that countries have to face, although the rule may become harmful in a very short-run. Contrary, Brück and Zwiener (2006, pp. 357-369) proved that the deficit targeting rule enforced through the SGP leads to less stabilization than an expenditure target, the authors suggesting that the deficit rule should be replaced by an expenditure rule augmented by medium-term targets. But, in general it is agreed that a fiscal rule should boost discipline and credibility. Also, a fiscal rule should lead to a reduction in macroeconomic volatility and be easily understood by all interested parties. The ills that fiscal rules should remediate are fiscal indiscipline, volatility and low credibility of authorities (Garcia *et al.*, 2011, pp. 649-676).

Fiscal rules, such as the excessive deficit procedure and the SGP rule (Stability and Growth Pact) tend to constrain the governments behavior. But governments may have found a way to avoid these rules by using creative accounting, fact revealed by authors like Von Hagen and Wolff (2006, pp. 3259-3279). In order to design a fiscal policy rule with a better chance of success, it is necessary according to Reicher (2014, pp. 184-198) to understand the past behavior of the systematic portion of the fiscal policy. The author also states that fiscal policy rules are analogous to monetary policy rules, an important role in this picture being detained by anti-cyclical fiscal transfers as a tool to prevent too much output volatility.

As we have seen so far, designing fiscal rules is one of the most difficult tasks for policy-makers and supranational institutions. A huge number of variables influence the designing and

enforcing of fiscal rules. One of these variables is the form of governance specific to countries. At one moment or another, each form of governance will succeed the task of engaging into reforms at an institutional level. The analyses conducted by Hallerberg, Strauch and Hagen (2007, pp. 338-359) revealed that delegating decision-making to the minister of finance effectively improves fiscal discipline in countries where the ideological dispersion of government is relatively small. (Chatagny, 2015, pp. 184-200) Contrary, states with a higher degree of ideological dispersion in government present a higher degree of stringency of the fiscal targets, confirming the fact that strengthen fiscal discipline depends on the type of government, political environment and constitutional characteristics.

Considering the papers and results presented so far, we establish for our article two main hypotheses:

H1: Fiscal rules lead to a reduction in debt levels and public deficits of EU members.

H2: A higher number of institutions that supervise fiscal policies conducts to a higher fiscal discipline, thus to lower public debt and deficits levels.

3. DATA

3.1. Sample composition

We used in our analysis data composed of 28 countries, meaning the member states of the European Union, the sample period being 1995-2013 (annual records). We used dummy variables such as member of the EU (1), nonmember of the EU (0), member of EMU (1), nonmember of EMU (0).

Table no. 1 – Fiscal rules index, number of institutions, government consolidated debt, public debt and logarithm of GDP per capita

Country	Number of observations	FRI	NOI	GCDGDP	PDGDP	GDPCAPL
Austria	19	0.136	4.105	70.178	-2.452	10.302
		0.685	*0.315*	*7.008*	*1.51*	*0.171*
Belgium	19	0.165	2	105.71	-1.931	10.246
		0.195	*0*	*12.475*	*1.943*	*0.174*
Bulgaria	19	0.364		39.241	-1.157	7.907
		1.256		*26.896*	*3.47*	*0.572*
Croatia	19	-0.489	0.157	48.925	-4.025	9.062
		0.947	*0.374*	*15.053*	*1.88*	*0.242*
Cyprus	19	-0.941		60.068	-3.473	9.792
		0.32		*12.764*	*2.678*	*0.247*
Czech Republic	19	-0.365		26.468	-4.263	9.141
		0.473		*10.666*	*2.62*	*0.439*
Denmark	19	1.129	1	42.164	0.368	10.512
		0.441	*0*	*7.28*	*2.798*	*0.173*
Estonia	19	0.922	1	5.907	0.236	9.089
		0.135	*0*	*1.907*	*1.704*	*0.391*
Finland	19	0.659	0.052	44.931	0.994	10.284
		0.38	*0.229*	*6.951*	*3.647*	*0.207*
France	19	0.404	2.105	68.242	-3.778	10.193
		0.96	*0.315*	*11.369*	*1.664*	*0.149*

Country	Number of observations	FRI	NOI	GCDGDP	PDGDP	GDPCAPL
Germany	19	0.682	4.21	65.542	-2.436	10.24
		0.673	*0.535*	*8.118*	*2.4*	*0.118*
Greece	19	-0.816	1.21	167.733	7.605	9.663
		0.594	*0.418*	*9.562*	*3.252*	*0.243*
Hungary	19	-0.34	1.315	67.194	-5.115	8.841
		0.661	*0.477*	*10.348*	*3.16*	*0.405*
Ireland	19	-0.694	0.157	57.363	-3.384	10.465
		0.842	*0.374*	*33.187*	*8.499*	*0.199*
Italy	19	-0.341	0.105	109.557	-3.568	10.065
		0.393	*0.315*	*8.447*	*1.635*	*0.163*
Latvia	19	0.14	0.052	20.015	-2.273	8.563
		0.558	*0.229*	*13.208*	*2.644*	*0.636*
Lithuania	19	0.135	1	26.5	-3.494	9.067
		0.448	*0*	*10.664*	*3.006*	*0.251*
Luxembourg	19	1.018	0.789	10.81	1.831	11.124
		0.842	*0.418*	*6.115*	*2.191*	*0.169*
Malta	19	-1.014	0.052	61.326	-5.021	9.412
		0	*0.229*	*10.784*	*2.291*	*0.259*
Netherlands	19	1.009	1	57.052	-2.031	10.353
		0.022	*0*	*9.28*	*2.702*	*0.199*
Poland	19	1.118	1	45.794	-4.594	8.702
		0.826	*0*	*5.959*	*1.504*	*0.407*
Portugal	19	-0.352	1.526	72.605	-4.947	9.528
		0.672	*0.696*	*25.084*	*2.054*	*0.205*
Romania	19	-0.621	0.21	21.036	-3.636	8.058
		0.069	*0.418*	*9.013*	*2.049*	*0.654*
Slovakia	19	0.004	0.105	38.868	-5.368	8.795
		1.052	*0.315*	*9.021*	*2.944*	*0.561*
Slovenia	19	0.06	1	30.584	-3.91	9.503
		0.58	*0*	*13.153*	*3.358*	*0.277*
Spain	19	1.016	2.052	57.163	-3.689	9.83
		1.176	*0.229*	*14.79*	*4.432*	*0.244*
Sweden	19	1.483	1.368	49.494	-0.036	10.415
		1.104	*0.495*	*12.213*	*2.549*	*0.193*
United Kingdom	19	1.331	1.21	52.342	-3.752	10.22
		1.053	*0.418*	*17.605*	*3.636*	*0.207*

First row is the mean. Second row is the standard deviation of the variable
Source: author calculations

As independent variables we used the Standardized Fiscal Rules Index (FRI) calculated by the European Commission for each country and the number of institutions (NOI) with direct implications over the fiscal and budgetary policies, database provided also by the European Commission – see Table 1. Given the fact that we want to analyze the impact of the two independent variables on the behavior of fiscal policies, we choose for our analysis as dependent variables the government's consolidated debt as percentage of GDP (GCDGDP) and the public deficits as percentage of GDP (PDGDP). In theory, fiscal rules and better regulations from institutions should conduct to lower debt levels and to smaller public deficits as percentage

of GDP. More institutions should also lead to a better control over budgeting and over the fiscal policies. Also, we chose as control variables in order to define key aspects of states the GDP per capital logarithm (GDPCAPL), the growth rate of the GDP (GRGDP), growth rate of the general government expenditures as percentage of GDP (GREGDP), growth rate of the general government revenues as percentage of GDP (GRRGDP) and also the variations of the government consolidated debt as percentage of GDP (GRGCD). In order to capture the influence of the crisis we used the dummy variable (POC), which checks the value of one during 2008-2011 and zero otherwise. To enhance our analysis we also introduced the normative assessment of the draft government budget (NADGB), in order to capture if the prior review of each state draft budget influences the outcome reflected in our dependent variables.

3.2. Preliminary analysis

While the results depicted in Table 1 offer a small hint on what are the links between our chosen dependent and independent variables, a further deeper analysis is required.

Table no. 2 – The correlations between the Fiscal Rules Index, number of institutions, government consolidated debt and public deficits as percentage of GDP

		FRI	NOI	GCDGDP	PDGDP
FRI	Pearson Correlation	1			
	Sig. (2-tailed)				
NOI	Pearson Correlation	.297**	1		
	Sig. (2-tailed)	.000			
GCDGDP	Pearson Correlation	-.086	.343**	1	
	Sig. (2-tailed)	.056	.000		
PDGDP	Pearson Correlation	.294**	-.005	-.335**	1
	Sig. (2-tailed)	.000	.915	.000	

** *Correlation is significant at the 0.01 level (2-tailed).*
Source: Author calculations

Table 2 depicts our further investigation into the links between our independent and dependent variables. Our analyses indicates that there is a relatively strong connection between the number of institutions and the governments consolidated debt. The link between the Fiscal Rules Index and the governments consolidated debt and deficits is a weaker one. Also, our results indicate that there is a negative correlation between the governments consolidated debt and the public deficit levels. With our preliminary results in mind, we will next test our hypotheses.

4. METHODOLOGY

In order to establish the relationship between fiscal rules, supervising institutions and fiscal policies, we employ the next basic model (1):

$$Goverment\ debt\ indicators_{,c,t} = \alpha_i + \beta_1 Fiscal\ rules\ indicators + \beta_2 EU_{c,t} + \beta_3 UEM_{c,t} + \beta_4 POC_t + \beta_5 N_{c,t} + +\varepsilon_{i,t} \quad (1)$$

where:

$Goverment\ debt\ indicators_{i,c,t}$, is one of the two indicators for government debt used in analysis: government consolidated debt as % of GDP (*GCDGDP*) and public deficit as % of GDP (*PDGDP*);

$Fiscal\ rule\ indicators$: is one of the three fiscal rules indicator used in the analysis: Fiscal Rules Index (*FRI*), Number of institutions that influence the fiscal policies (*NOI*), and normative assessment of the draft government budget (*NADGB*);

EUc,- depicts the European Union Accession dummy by year;

$UEMc$,- is the European Monetary Union accession dummy by year;

POC_t- is a dummy variable, depicting the 2008-2011 global financial crisis;

$N_{c,t}$- represent country specific control variables for the government debt: Growth rate of GDP as % (*GRGDPL*), Growth rate of expenditures as % of GDP (*GREGDP*), Growth rate of revenues as % of GDP (*GRRGDP*), Growth rate of government Consolidated debt as % of GDP (*GRGCD*), Logarithm GDP per Capita (*GDPCAPL*);

$\varepsilon_{i,t}$- is the standard error

In order to capture de influence of fiscal rule indicators on government debt indicators we used and Ordinary Least Squares panel distribution with fixed effects to allow for country specific characteristics as government spending and revenues to be accounted. While the Fiscal Rules Index and the normative assessment of the draft budget were calculated by the European Commission according to a specific algorithm, the number of fiscal institutions that supervise and control budgeting was calculated by us by using the independent fiscal institutions database provided also by the European Commission. In all our models all specific control indicators are lagged +1 year because all the calculated growth rates exert a direct influence on the budgetary process for the next fiscal year. In order to circumvent the risk of serial correlated errors, we have done our analysis with all the standard errors clustered at a country level.

5. EMPIRICAL RESULTS

In order to test our hypotheses we used the previous mentioned basic model. In the second model we introduced into our analyses the dummy variable period of crisis in order to view if our results record significant changes. Finally, in Model 3 we introduced the last variable, the normative assessment of the draft government budget (NADGB) in order to see how this variable influences the governments consolidated debt and public deficits as percentage of GDP. Our results are presented in Table 3.

Table no. 3 – Government's consolidated debt and public deficits.

Panel A: Dependent variable GCDGDP				**Panel B: Dependent variable PDGDP**		
Variable	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
FRI	2.353*	2.332*	2.821*	-0.037	-0.033	-0.045
	(1.257)	(1.276)	(1.631)	(0.049)	(0.050)	(0.056)
NOI	15.541***	15.531***	11.136**	0.053	0.055	0.157
	(5.310)	(5.313)	(4.874)	(0.196)	(0.194)	(.252)
MEU	5.363	5.371	6.206*	0.137	0.135	0.116
	(3.208)	(3.214)	(3.442)	(0.135)	(0.132)	(0.116)

Panel A: Dependent variable GCDGDP				Panel B: Dependent variable PDGDP		
Variable	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
MEMU	0.099	0.151	0.559	-0.078	-0.088	-0.097
	(2.129)	(2.148)	(2.181)	(0.083)	(0.092)	(0.094)
GDPCAPL	-4.809	-4.459	-6.763	-0.003	-0.069	-0.016
	(5.517)	(5.442)	(6.210)	(0.135)	(0.150)	(0.139)
GRGDP	-0.152*	-0.148*	-0.092	0.004	0.003	0.002
	(0.084)	(0.080)	(0.088)	(0.003)	(0.003)	(0.003)
GREGDP	-0.550***	-0.543***	-0.484***	-0.003	-0.004	-0.005
	(0.108)	(0.097)	(0.103)	(0.007)	(0.007)	(0.007)
GRRGDP	0.248*	0.240*	0.243*	-0.008	-0.007	-0.007
	(0.128)	(0.131)	(0.122)	(0.014)	(0.013)	(0.013)
GRGCD	0.100**	0.102**	0.093**	0.000	0.000	0.000
	(0.040)	(0.040)	(0.045)	(0.001)	(0.001)	(.001)
TGRGDP	-0.293	-0.314	-0.343	0.994***	0.998***	0.999***
	(0.912)	(0.884)	(0.788)	(0.020)	(0.023)	(0.024)
TGEGDP	2.242***	2.264***	2.203***	-0.984***	0.988***	-0.986***
	(0.180)	(0.205)	(0.240)	(0.016)	(0.018)	(0.018)
POC		-0.608	-0.654		0.114	0.115
		(1.612)	(1.529)		(0.145)	(0.143)
NADGB			16.866			-0.392
			(11.600)			(0.327)
Number of observations	374	374	374	374	374	374
R squared	0.264	0.266	0.229	0.969	0.969	0.966
F-Stat	66.65	74.40	90.40	1860.08	1446.61	1880.05
(p-value)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)

*First row is beta coefficient. Second row is the standard errors clustered at country level. *** denotes significant at 1%, ** at 5%. And * at 10%.*
Source: Author calculations

For a better characterization of countries we also introduced into our analysis the total government revenues as % of GDP (*TGRGDP*) and the total government expenditures as % of GDP (*TGEGDP*). Our results indicate that our first hypothesis isn't confirmed by none of the models. An increase in the number and strength of the fiscal rules represented by the Fiscal Rules Index conducts to an increase in the governments consolidated debt levels. The strong connection between the number of institutions that supervise fiscal policies and governments consolidated debt is confirmed by all the three models. Unfortunately, neither our second hypothesis isn't confirmed, the results indicating a contrary evolution. An increase in the number of institutions leads to a strong increase in public debt levels as percentage of GDP. Model 3 indicates that there is a connection between the public debt and being or not a member of the European Union, becoming a member conducting to an increase in public debt levels. As expected, there is also a strong connection between government's expenditure and revenues levels and public deficits.

Our results also indicate that the public budgetary deficits aren't influenced by fiscal rules or by the number of institutions. We assume that main reason consists in the fact that the Fiscal Rules Index has turned positive for many countries over the crisis period, and also because the number of institutions has increased in same period of time by which deficits and especially debt levels were under a lot of stress.

6. CONCLUSIONS

Recent problems of EU members regarding the soundness of their public finances have caught the attention of all interested parties, starting from politicians and continuing with the press and the general public. In this regard, EU states still has to take actions in order to enhance the soundness of their public finances through reductions in public debt and deficits levels.

It was the aim of this paper to reveal and to offer our readers an insight into the influences that fiscal rules and institutions have on fiscal policies, especially regarding aspects as public debt and budget deficits. In this regard we analyzed macroeconomic variables such as GDP per capita, public revenues and expenditures levels, the growth rates of the mentioned two variables and others. The analyzed timeline covered 19 years, from 1995 to 2013, and the used data consisted mostly of macroeconomic variables for all 28 EU member states.

Our results confirm that the government's consolidated debt is influenced by fiscal rules and especially by the number of institutions. All three models indicate that fiscal rules have a negative impact on public debt, leading to higher levels. Introducing the crisis and the normative assessment of government draft budget didn't had an impact on our results in this regard. Also, an increased number of institutions leads to increased debt levels, fact that we may explain by assuming that a larger number of institutions aren't more efficient than one single independent and strong institution because of the dissemination of responsibilities and power over more institutions, more or less independent. Unfortunately, the public deficit isn't influenced neither by the fiscal rules or number of institutions, contrary to the general belief. We assume that the problem consists in the fact that although the Fiscal Rules Index registers positive values after the crisis began and the number of institutions increased, it was too late to make a difference, although we do not exclude that repeating the analysis in the future will not conduct to other new positive results.

The most important contribution of our paper to existing literature on subject consists in proving that imposing more rules and the establishment of new institutions does not necessary lead to positive results regarding fiscal policies.

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