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Europe's Deficit Free Riders: A Panel Data Analysis

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Abstract

The paper proposes an empirical method to measure the free riding possibility of public deficits in Europe. We use a cross-sectional time-series analysis of differences in national public deficits since 1991, and we compare the evolution of deficits before and after the inception of the euro in 1999. Evidence is that the countries breaching the Stability and Growth Pact are not likely free riders, but rather leaders in terms of deficits. In this case, they may lead the march towards higher public deficits in Europe.

Keywords: *Europe, Fiscal rule, Stability and Growth Pact*

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1. Introduction

The paper proposes a methodology to test for possible free riding behaviours with regard to the European fiscal rule.

The Stability and Growth Pact (SGP) was designed to strengthen fiscal discipline from the Treaty of Maastricht, fearing that once in the Economic and monetary union (EMU) some countries may hamper the stability of the monetary zone. Seven years later, the very countries that pushed for this rule are the ones not abiding by it.

The SGP was first drafted in Madrid in 1995, discussed in Florence and in Dublin in 1996, and accepted by the Amsterdam European Council of June 17, 1997.

Meeting in Dublin, the European Council requested the preparation of a Stability and Growth Pact in accordance with the principles and procedures of the Treaty of Maastricht. Of the five convergence criteria present in the Treaty, two were specifically aimed at fiscal controls, and were kept for the definition of the SGP. Deficits are to be kept "within the reference value of 3% of GDP" (European Council, 1997), with the medium and long-term objectives being "close to balance or in surplus" (European Council, 1997).

Formally, the SGP is a set of three elements. First, a political commitment of the budget surveillance process contained in the European Council resolution of June 17, 1997 (European Council, 1997).

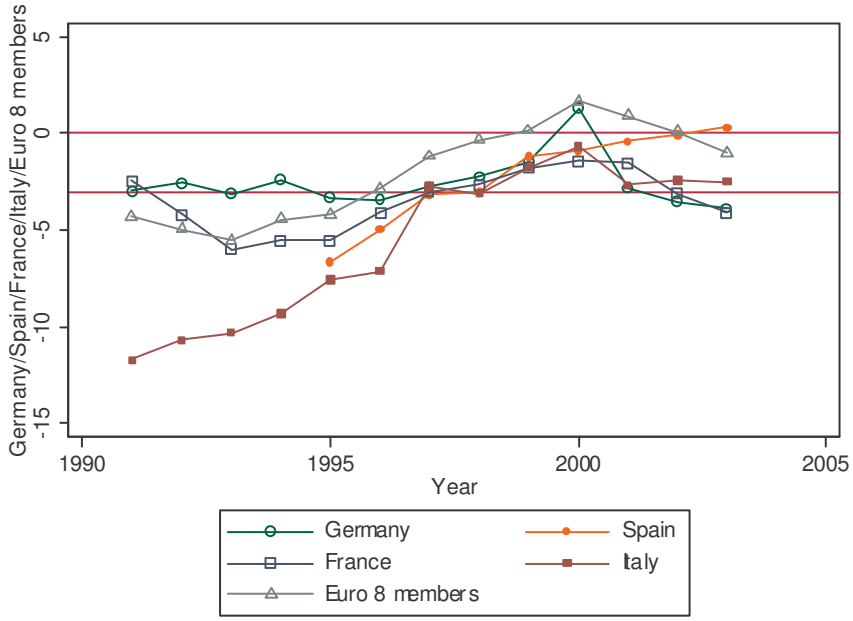
Second is a preventive element contained in the Council regulation 1466/97 (European Council, 1997): the European Council examines "stability and convergence programmes."

Third is a dissuasive element contained in the Council regulation 1467/97 (European Council, 1997). On the one hand, it refers to the excessive deficit procedure (EDP) embedded in article 104 of the Treaty of Maastricht: the first two years of excessive deficits were to serve as warnings. These sanctions are imposed in the form of non-interest bearing deposits. A fixed sum of 0.2% of national GDP is combined with an additional 0.1% of GDP for every percentage point by which the deficit surpasses the limit. On the other hand, in article 2 of the Council regulation 1467/97, it fine points that "in addition [to article 104c], the excess over the reference value shall be considered temporary if budgetary forecasts as provided by the Commission indicate that the deficit will fall below the reference

value following the end of the unusual event or the severe economic downturn."

As the most vocal supporters of the SGP, France and Germany could have been expected to be its most faithful servants, as well. Both Germany and France have breached the deficit ceiling consistently since 2002.

Figure 1. Public deficits as a percentage of GDP



Source: Eurostat, 2004, and own computations (Euro 8 members refers to the average deficit of the other eight euro countries)

According to revised budget figures, Greece breached the deficit ceiling since 1999. Although breaching the deficit ceiling, the European Council decided in 2004 not to fine the countries. In legal words, the Council does not consider this as a breaching of the SGP.

The stakes are high. The SGP has been justified by the economic literature in many ways: one of them being the impediment of free riding behaviours that could hamper the stability of the euro zone. In light of the recent fiscal developments in Europe, the paper aims at testing the free riding assumption.

The structure of the paper is as follows. In section 2, we present a myriad of arguments both supporting the Pact and recommending

alternatives. Section 3 presents the model, and section 4 the results. The policy implications are drawn in section 5.

2. The rationale for a European fiscal rule

In 2001, Beetsma provides us with a summary of the different arguments in favour of a fiscal rule (Beetsma, 2001). We can refine and find at least four arguments in support of the SGP in the economic literature.

2.1 Policy-mix

Article 99(3) of the Treaty establishing the European Community (European Commission, 2002) stipulates: "In order to ensure closer coordination of economic policies and sustained convergence of the economic performances of the Member States, the Council shall, on the basis of reports submitted by the Commission, monitor economic developments in each of the Member States". Although there is a debate on what an appropriate policy mix is, several supporters of the SGP argue that with the advent of a central monetary authority, it became important to establish the correct mix of fiscal and monetary policy in the Euro-zone (Beetsma, 2001; Issing, 2002). In 1999, Bolt wraps up this argument: "It is in [the following] context that the Pact for Stability and Growth must be regarded: it seeks to supplement the common monetary policy framework within EMU with sound fiscal policies by the Member States so as to relieve the burden on the ECB's monetary policy and to leave room for the operation of the automatic stabilizers"[1] (Bolt, 1999).

2.2 Credibility of the European Central Bank

Another reason is the maintenance of the credibility of the European central bank through insuring its leadership as the monetary authority. As noted by Buti and Van den Noord in 2004, the EMU is, "[commonly] seen as a regime of monetary leadership where fiscal policy is to support the central bank in its task to keep inflation in check," (Buti and Van den Noord, 2004). This power is drawn from

[1] Bolt (1999), p. 1.

the following European Council resolution, which accompanies the Pact: "it is also necessary to ensure that national budgetary policies support stability oriented monetary policies." When the Maastricht Treaty was drafted, many observers believed that the European budgetary situation could undermine the credibility of the future European Central Bank (Beetsma and Bovenberg, 1995). If a country's fiscal situation becomes unsustainable, other countries might be forced to a bail out of the insolvent national government. Alternatively, the European Central Bank may be forced to monetize national debts, and in so doing, may create additional inflation in the EU.

2.3 Structural externalities

In order to abide by the fiscal rules of the SGP, countries are forced to make needed structural reforms (Warin, 2003). These changes occur in the form of attacks on labour and wage rigidities. In other words, the fiscal constraints creates endogenous incentives to implement structural reforms. For instance, some authors argue that taxation endogenously adjusts fiscal imbalances (Amador, 1999; Turnovsky, 1992; 1996).

2.4 Free-riding and moral hazard

In 2002, Uhlig focuses his discussion of free-riding and the SGP on the effects of centralized monetary policy combined with decentralized fiscal policy (Uhlig, 2002). Uhlig regards the SGP as essential in preventing free riding in the form of excessively high deficits in some countries. The cause for concern over debt levels hinges on the independence of the central bank. Excessive levels of debt might lead to a crisis, in which the ECB might be morally, although not legally, bound to bail out insolvent countries. The preceding defence of the SGP is not without opponents. A consequent share of the literature dissects the relationship between centralized monetary and decentralized fiscal policymakers and find that the SGP might not be needed under some conditions (Fourçans and Warin, 2000; Leith and Wren-Lewis, 2002; Vranceanu and Warin, 2001).

However, a new literature occurs using the moral hazard or "post-contractual opportunism" approach: once a country is within the euro-zone, although it was not a free-rider, it may become one

(Dixit, 2001; Dixit and Lambertini, 2001), notably if one country already breaches the SGP (De Haan, Berger and Jansen, 2003).

3. Data and methodology

We compute country pairs between Germany, Italy, France, Spain as well as the weighted average of the other eight euro members. The reasons why we consider these four countries are twofold. First, we consider them as they are the biggest in the euro-zone. The country pairs will be calculated between the countries themselves, and between the countries and the weighted average of the other eight euro members. By taking these four countries, and by comparing each of them to the weighted average of the other eight euro members, we have a better chance to capture the relevant information from the smaller economies.

Second is because two of them – France and Germany – are currently breaching the Stability and Growth Pact. By computing these pairs, we look at any differences between a country that breaches the Pact and Italy, Spain or the weighted average.

We compare the period before the inception of the euro in 1999 to the period after 1999. The data start in 1991, after the German reunification, and end in 2003. We draw a cross-sectional time-series analysis, and our pool is "temporal dominant" (Stimson, 1985).

By considering differences rather than levels of public deficits, we want to study a country's behaviour in reaction to another one's behaviour. An analysis of levels would lead to interesting results for the next potential breaches of the SGP, but would be less interesting in terms of inter-country comparisons.

The database is constituted of data from *Eurostat* and the *AMECO* database (European Commission). The model is a closed-economy model, and we don't consider open-economy variables.

In a cross-sectional time-series analysis, error complication can be caused by model misspecifications. To deal with this problem, we can use either the covariance model or the error component model. After testing for each, we use the error component model: dealing with large economies, the reasoning is that the relevant explanatory variables that we have omitted are random variables across cross-section or over time. We use the Parks-Kmenta ap-

proach (Kmenta, 1997; Parks, 1967): time effects are assumed random and normally distributed. This model cannot deal with the heteroschedastic error complication; however, the error component model addresses the contemporaneous correlation of the error by including a coefficient of correlation between the disturbance of two different cross-sectional units at a given point of time (Kmenta, 1997). More specifically, we use a "feasible generalized least squares" (FGLS) approach as recommended by Kmenta (1997, p. 121). Considering these large economies, we also assume that each pair has errors that follow a different autoregressive process.

We analyse the difference in deficits both before and after the inception of the euro. The model is estimated using the following equation:

$$\begin{aligned}\Delta def_t &= \left(\alpha_0 + \lambda_t\right) + \alpha_1 \Delta \overset{+}{tburd}_t + \alpha_2 \Delta \overset{+}{gdp}_t \\ &+ \alpha_3 \Delta \overset{+}{debt}_t + \alpha_4 \Delta \overset{+}{cpi}_t + \alpha_5 \Delta \overset{+}{i}_{lr,t} + \varepsilon_t\end{aligned} \tag{1}$$

With intercept $\alpha_{0it} = \alpha_0 + \lambda_t$. Where α_0 is the "mean intercept", and λ_t represents time effects. Expected signs are given above the respective coefficients. We calculate differences for country pairs for two groups of variables: monetary and fiscal proxies. We also control for GDP, as well as short-run and long-run using the short-term and long-term interest rates as proxies.

Monetary variable

We control for the percentage change in the consumer price index (cpi). In the Economic and monetary union, and at the stage of the current convergence in Europe, a convergence of the inflation rates should be accompanied by a smaller difference in deficits across the country pairs. This is mainly the result of the institutional design of the EMU. Indeed, within the SGP framework, countries have to reach a deficit target, while at the same time the European Central Bank (ECB) implements the monetary policy for the euro zone. Differences in deficits and differences in the percentage change in the consumer price index should be both lowered for all pairs. This double institutional constraint on the monetary policy as well as on the fiscal policy is assumed to force convergence, and if this institu-

tional design provides what it was meant for, the intuition is to expect a positive sign of the cpi variable.

Fiscal variables

Here, we consider the current tax burden (total economy, denoted $tburd$), and consolidated gross debt (denoted $debt$).[2]

Public deficit excluding interest in percentage of GDP will be our dependent variable, denoted def [3]. The convergence on one of these fiscal variables should lead to a convergence in terms of deficit. The expected value is positive.

We also control for the gross domestic product at current market prices (reference level for excessive deficit procedure). Then, we consider the percentage change in GDP (gdp), and real long-term interest rate (i_{lt}) as in the Treaty of Maastricht to capture the long-term convergence. Here, the convergence of GDPs or interest rates should be the outcome of the same business cycle during the convergence period (or at least be a good proxy); hence, deficits should converge. The expected value is positive.

4. Results

Interestingly, we find some changes in the explanation of the differences in public deficits (excluding interest) for our panel after 1999 (see Table 1). It is first evidence that 1999 is a key date for public deficits in Germany, France, Italy, Spain and the euro average.

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2 The breakdown of total tax burden in capital tax, corporate income tax, and labour tax does not provide us with better results.

3 We consider the actual public deficit excluding interest since we will test the long-term interest rates as an independent variable. We also want to capture the impact of the change in interest rates on the structure of the budget. By looking at the public deficit excluding interest payments, we try to make sure that we don't capture the interest payments.

Table 1. Results before and after 1999 [Double-Lin specification]

Dependent variable: Public deficit excluding interest. Mean: -1.163308, Std. Dev.: 2.252526

Variable	Mean	Std. Dev.	Coefficient	t-statistic
Before euro (1991-98)				
Interest rate (long-term)	-.6174615	1.88271	-.406061	-2.87**
Total tax burden	-1.891923	7.181446	.0916524	3.39**
Public debt	-10.317	37.02883	.0450202	7.74**
CPI	-.7572308	1.210607	.4701821	1.84
GDP	-1.634574	2.06873	.2321514	1.97*
Intercept			.1743485	.78
n	79			
After euro (>1998)				
Interest rate (long-term)	-.6174615	1.88271	-1.597312	-.53
Total tax burden	-1.891923	7.181446	.0785506	1.99*
Public debt	-10.317	37.02883	.0427906	3.04**
CPI	-.7572308	1.210607	.9540736	2.33*
GDP	-1.634574	2.06873	.152651	.67
Intercept			-.3858297	-.98
n	50			

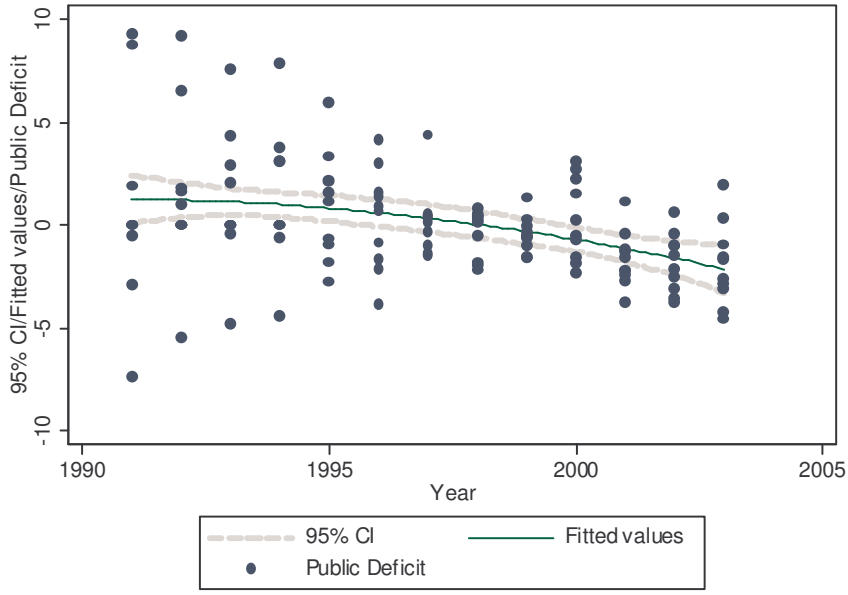
** .01 significance level
* .05 significance level

A second observation is that the differences in public deficits are smaller across time: countries are converging in terms of public deficits (see Figure 2).

A third is the fact that differences in long-term interest rates have a negative value: the convergence in terms of interest rates increases the inter-country difference in deficits. Initial conditions in Europe vary from country to country. Converging in one market means that adjustments have to be made in other markets.

Fourth, CPI becomes significant after the inception of the euro. This is relevant as one considers a monetary union with convergence in inflation rates.

Figure 2. Differences in public deficits from 1991 to 2003



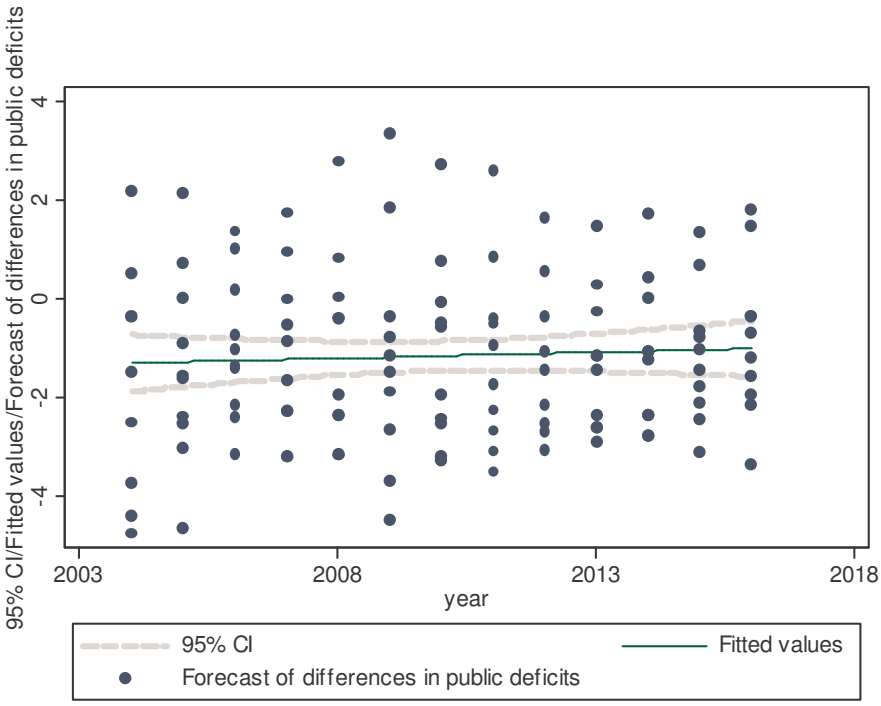
Source: own computations

Lastly, we can forecast the trend for the next 15 years. In order to do so, we set up the initial conditions for CPI, GDP, tax burden, and long-term interest rates as having the same trend as for the period 1991-2003. The weights considered for each independent variable are the ones previously calculated for the whole period 1991-2003, conversely to the panel data illustrated in Table 1. We see that the convergence in terms of public deficits is reinforced (see Figure 3).[4]

This does not mean that public deficits will decrease, but rather that the differences will lessen. In retrospect, Germany and France do not seem to be free riders, but rather leaders in terms of public deficits. This leads to interesting policy implications.

[4] Obviously, as the initial conditions will change in the future, the deficit is likely to be different. Nevertheless, the forecast is still useful to see what would happen if nothing is done by the policymakers to change the initial conditions.

Figure 3. Forecast of differences in public deficits (excluding interest)



Source: own computations

5. Policy implications and conclusion

One of the reasons why the SGP has been created is the willingness to prevent some countries from behaving as fiscal free-riders. The SGP has been weakened by its early major supporters, Germany and France. However, this study shows that it is less a question of free-riding than a broader trend of fiscal relaxation. This can more than weaken the fiscal rule, it can lead to the closing stages of the already moribund Pact.

Why is that so? Although included into the definition of the Pact, the dissuasive arm seems to malfunction, and this is likely to be one of the reasons why countries – Germany and France – decided to put more emphasis on their internal matters, then relaxing their fiscal policies, instead of strictly abiding by the letter of the SGP (De Haan, Berger and Jansen, 2003).

The main issue of this fiscal trend is that deficits higher than the 3% ceiling might lead to unsustainable government finances, unless

the European real growth rate is higher than 3%. With a real growth rate of 1.6% in 2001, 0.9% in 2002, 0.5% in 2003 (European Central Bank, 2005), it seems than the EMU needs a tightening of its deficits instead of loosening them up. Should it be done by this Pact or another one, or just a reform of this one? Europe policy makers will have to find soon a "Verständigungsgrundlage", an area of agreement.

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