The Stability and Growth Pact: A European Answer to the Political Budget Cycle?

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The Stability and Growth Pact: A European Answer to the Political Budget Cycle?

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Abstract
The existing literature on political budget cycles looks at the temptation for incumbent governments to run a greater deficit before an election by considering the characteristics of the incumbent. We propose here to look at the signals the incumbent receives from the voters. For this purpose, we consider the votes from the previous national elections and see whether they may influence the incumbent government to run a sound fiscal policy or an expansionary fiscal policy. However, since 1993 Europe has been equipped with two fiscal rules: a deficit and a debt ceiling. In this context, can we find evidence of a "political budget cycle" before 1993, and did the fiscal rules prevent the existence of a "political budget cycle" afterwards? To address these questions, we use a cross-sectional time series analysis of European countries from 1979 to 2005.

Keywords: Stability and Growth Pact, Political Business Cycle, Political budget Cycle, Partisan Theory

JEL Classification: E6, F4, P43

1. Introduction

Equipped with the Stability and Growth Pact (SGP), the Economic and Monetary Union (EMU) should be an effective answer to the costs of expansionary policies highlighted by the Political Budget Cycle (PBC) theory. The SGP was not only designed to prevent expansionary fiscal policies across Europe and, hence, assure fiscal sustainability, but

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also to prevent some countries from free-riding over other countries by running high deficits while the taking low interest rates of the well-disciplined countries.[1]

This paper is more anchored by the sustainability argument from the literature than the free-riding analysis. Indeed, the intuition we want to check is that if political budget cycles exist, the SGP should be an effective answer. The PBC theory predicts a recession at the beginning of each new term of office and an expansion immediately before the new election, with no partisan distinctions. Thus, two aspects are of importance: first, by fixing a ceiling, does the SGP prevent a PBC? Second, is the PBC theory this broad, or can we find partisan disctinctions?

In Europe, the SGP applies. This fiscal rule contrains governments. One can imagine that they have less incentive to use fiscal policy to try to manipulate voters. But, one can also imagine that since countries can no longer use monetary policy, either fiscal policy or structural policy can be used. Hence, one can try to measure the use of fiscal policies before elections. If governments do not use the fiscal policy, then they will use structural policy, which may lead to more ideological electoral campaigns.

Since 1999, the Stability and Growth Pact has imposed a cap on public deficits in Europe. Although this rule is applied to the 25 members of the European Union (EU), it is even more relevant for the EMU members.

The SGP, in its original definition, is constituted by three components: (1) a political commitment by European Union members to commit to a balanced budget in the medium term; (2) a preventive arm (the "early warning" procedure); and (3) a repressive arm (the fine after any given country breaches the deficit ceiling of 3% GDP and does not come back below 3% within the next two years) known as the Excessive Deficit Procedure (EDP).

Many reasons can be found in the economic literature to justify such a fiscal rule. Several studies focus on these topics, many of which examine the effects of fiscal policy and budget deficits on structural variables such as unemployment and growth. A short and incomplete list of such studies includes Blanchard, Barro, or Bernheim (Barro, 1989, Bernheim, 1989, Blanchard, 1985). Other researchers deal with the question of the sustainability of the budget deficit. This group includes Nielsen, Bohn, Perotti, Strauch et al., or Mongelli (Bohn, 1995, Mongelli, 1999, Nielsen, 1992, Perotti, et al., 1998). In 1999, Amador emphasized the role of fiscal policy and the behavior of the budget deficit and the public debt over time (Amador, 1999). An important feature of this model was in the definition of sources of uncertainty as stochastic processes. It also used stochastic optimization methods where it is assumed that taxation endogenously adjusts fiscal imbalances (Turnovsky, 1992, Turnovsky, 1996).

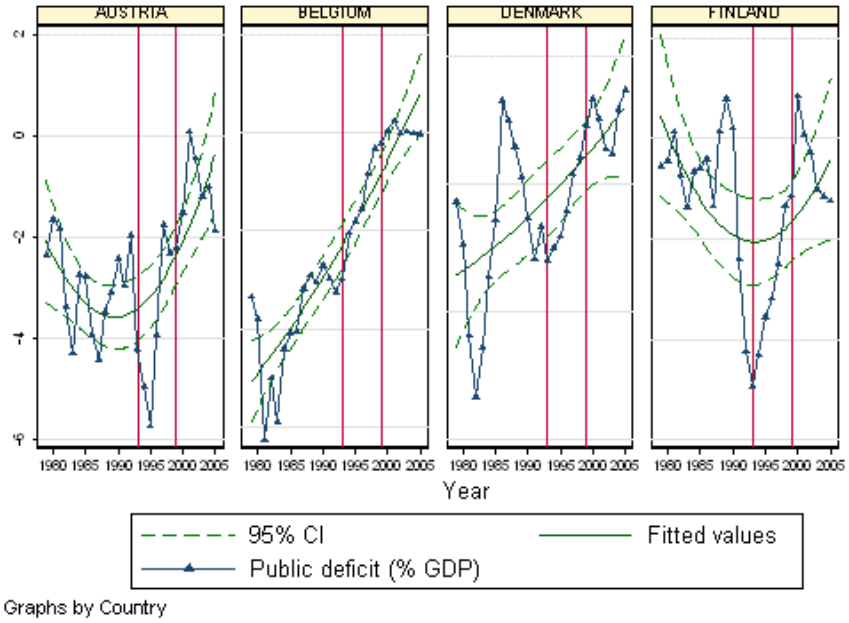
With Greece, which never abided by the Pact, and France and Germany which breached it in 2002, 2003, and 2004 without being fined, the SGP needed new credibility. Many

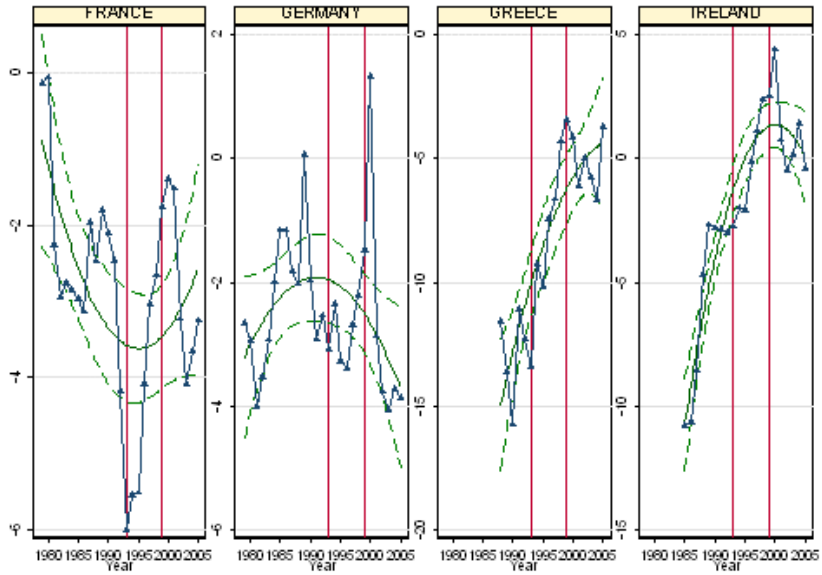
[1] See Warin, T., and Wolff, L., 2005. Europe's Deficit Free Riders: A Panel Data Analysis. European Political Economy Review 3, 5-17.

options were proposed to save the moribund SGP. On March 23rd, 2005, the European Council agreed in unanimity to introduce some flexibility into the SGP, creating *de facto* a "SGP II." This flexibility is introduced via the concept of "relevant factors," which are country specific. The factors will be relevant only if the European Council rules accordingly.

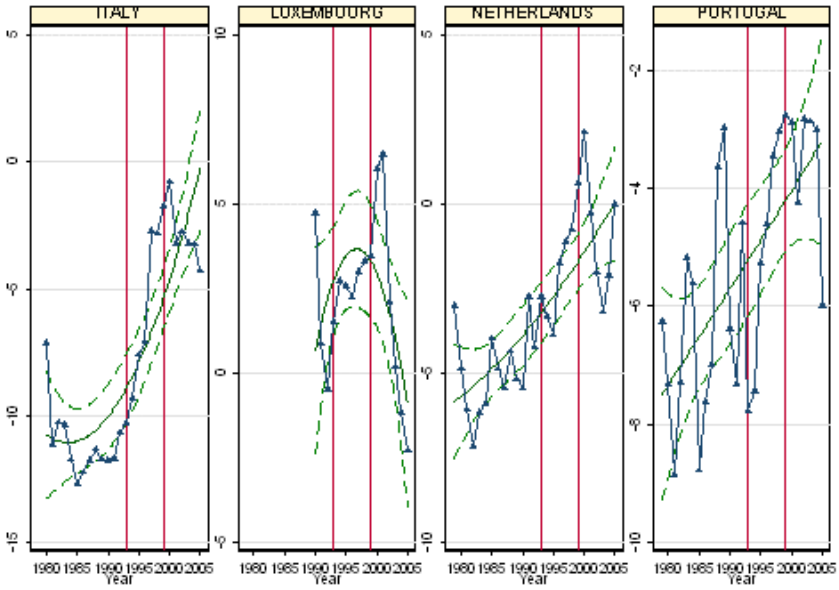
From a practical perspective, with Germany and France representing almost half of the population of the EMU, it is tough to believe that the breach of the SGP was justified by free-riding reasons, for instance. The incapacity of the German and French governments to implement structural reforms that would prevent the use of automatic fiscal stabilizers seems to be a more plausible assumption.

Figure 1. Public deficits as a percentage of GDP





Graphs by Country



Graphs by Country

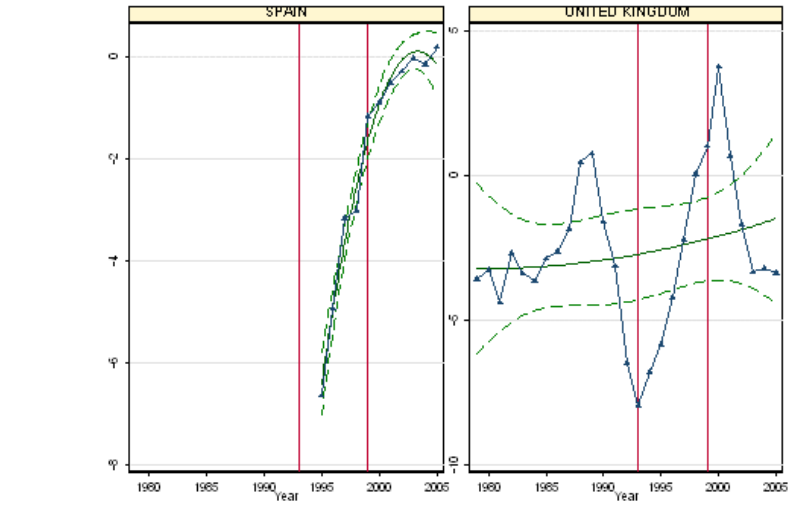
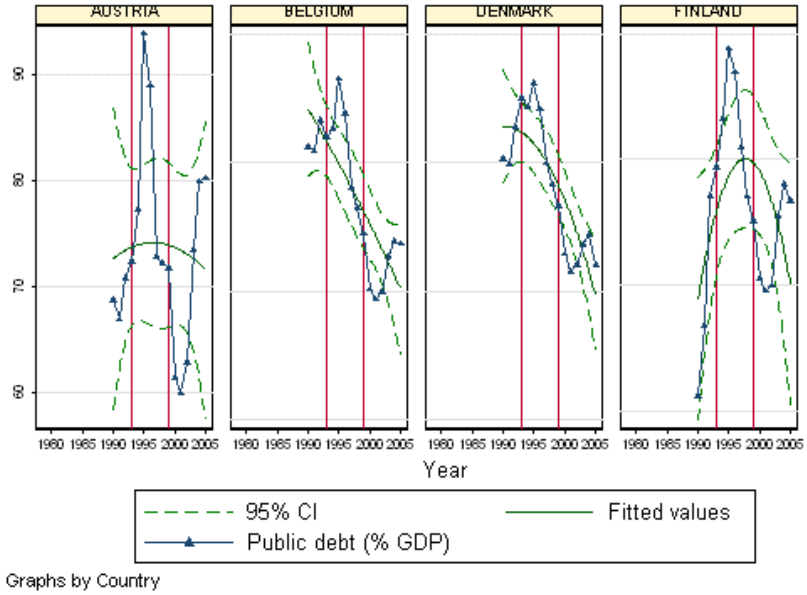
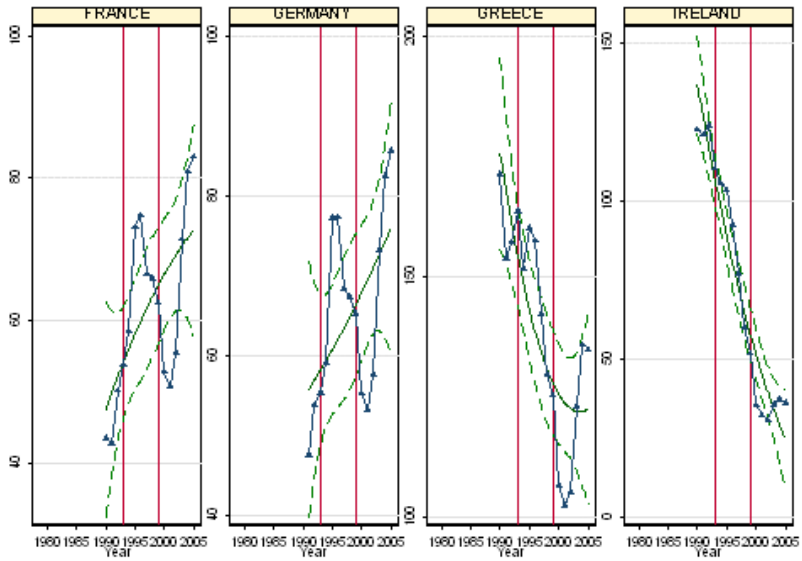


Figure 2. Public debt as a percentage of GDP





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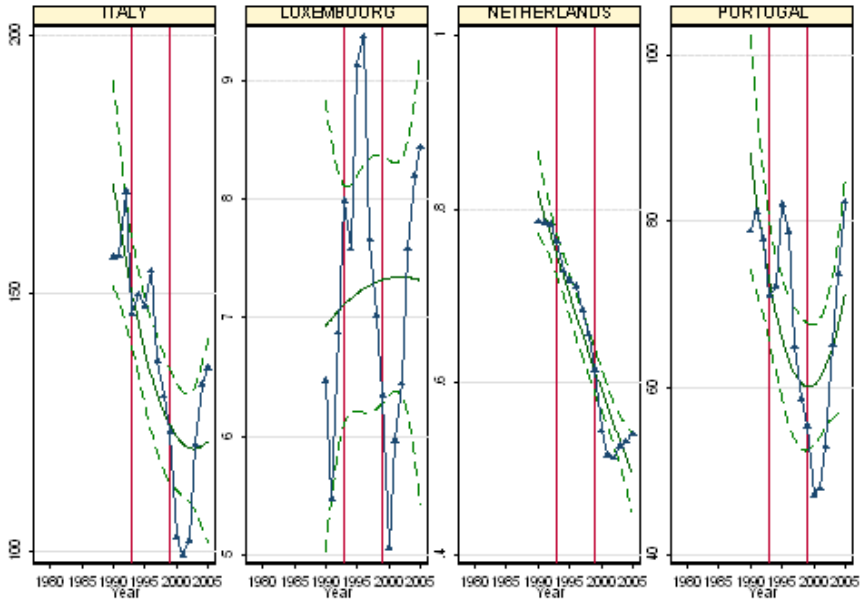
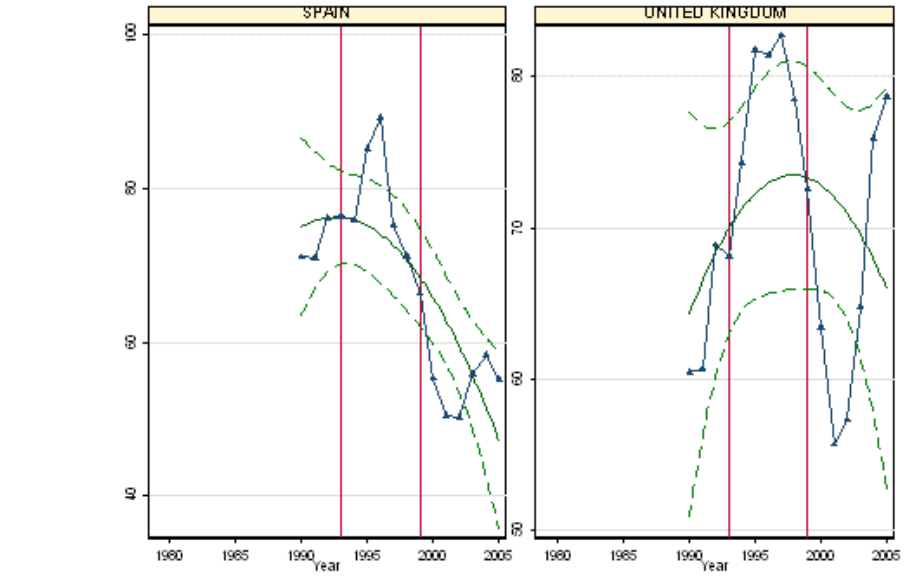


Graphs by Country



Since the SGP is a macroeconomic management rule, the main actor is the government. It is reasonable to assume that the government acts under constraints, one of them being the will of the population. The goal of this empirical paper is to look at whether electoral behaviors have an impact on the reason why some governments use a loose fiscal policy. We use a cross-sectional time-series analysis of the 14 EU members (including 12 EMU members) based on Arellano and Bond's methodology (Arellano and Bond, 1991). We look at the change in electoral behaviors as a proxy to capture the population's will in terms of fiscal and structural reforms. The dataset is constituted by data from the AMECO database, as well as data covering European national elections from 1979 to 2005.

This paper examines whether there really exists a PBC in EU member countries, as well as whether there is a partisan distinction. Combining both questions is not new in the literature (Mink and de Haan, 2005). Unlike Mink and de Haan (2005), we do not consider the timing of an election, but rather an election dummy variable to consider election years, as well as the votes for political parties in national elections. In contrast to Buti and van den Noord (2003) and von Hagen (2003), we use a multivariate model as in Mink and de Haan (2005).

The partisan effect is when an incumbent government from one party is more likely to act according to the PBC predictions. We use political votes for national elections and not the number of seats in the national institutions to look at a potential partisan effect in the sense that the incumbent government may prefer to base its future fiscal policy on the citizens' perceptions expressed through the context of national elections. This approach does not challenge for instance Mink and de Haan (2005), but complements the existing literature by asking the following question: is a government from one party more likely to adapt its fiscal policy in light of the citizens' latest votes? Moreover, the use of votes

instead of the number of seats is interesting for an identification reason: it seems to be a better proxy since it removes the noise that the electoral system can create (electoral map, etc.).

2. Review of the literature

The origins of the Political Business Cycle concept

By making an anachronism, it is easy to (re)-define nowadays a political business cycle, a political monetary cycle, and a political budget cycle. The political business cycle would explain the expansionary use of the national policy instruments (monetary and fiscal policies mainly) by the incumbent government to stimulate the economy before a major election. The political monetary cycle could be a notion applied to the explicit use of the monetary policy. The political budget cycle is in fact the notion applied to the explicit use of the fiscal policy. In fact, the political monetary cycle is a notion that does not exist, and is always confused with the political business cycle. The only two notions the literature use nowadays are the political business cycle to refer to the use of monetary policy, and the political budget cycle to refer to the use of the fiscal policy.

These models stress the incumbent's intent to maximize his expected vote share at the next election through the use of an expansionary monetary policy before the elections (Nordhaus, 1975). The assumption is that politicians attempt to create the most desirable economic conditions before elections to appeal to identified groups, although after the elections those policies may require costly adjustments. Alesina (1989) explains that the economy is overstimulated before the elections with expansionary policies and short-sighted voters reward the incumbent government, without realizing that a recession will be needed after the election to reduce inflation. As a consequence, there is an economic cycle that is generated by the elections timing, or in other words, the political cycle. In this context, the timing of macroeconomic policy is artificially affected by the timing of elections (Alesina, 1989). Moreover, the economy faces its "natural" economic cycles as well as politically generated cycles.

As summarized by Alesina (1989), Nordhaus' (1975) approach was refined by Cukierman and Meltzer (1986), Rogoff (1987), and Rogoff and Sibert (1988). Starting with the political business cycle, the theory evolved into the "rational political business cycle" theory. They extend Nordhaus' (1975) theory to rational voters, while explaining the existence of political cycles as sufficiently complicated budgetary process, which can, at least temporarily, fool voters. A second enhancement of the PBC theory is the "partisan theory" (PT) that was initiated by Hibbs (1977), based upon the assumption that left-wing parties prefer, on average, higher inflation and lower unemployment than right-wing parties. The third refinement is known as the "rational partisan theory" (RPT) proposed by Alesina (1987), and Alesina and Sachs (1988). According to this view, a left-wing party cannot "credibly" commit itself to fighting unemployment while keeping a low-inflation rate. Indeed, if expected inflation was "low," this government would create an

inflation surprise in order to reduce unemployment. One reason is the problem of time-inconsistency described by Kydland and Prescott (1977) and Barro and Gordon (1983).[2]

From "Political Business Cycle" to "Political Budget Cycle"

Another set of transformations was more technical than semantic, and concerned the political business cycle created by the use of fiscal policy for electoral reasons. Two categories can be drawn. The first category of models is called "adverse selection-type models" by Shi and Svensson (2004). They are built upon the assumption of asymmetries between the electorate and the politicians. The first of these models is created by Rogoff and Sibert (1988). Voters want to elect the more competent[3] politician and form rational expectations regarding the incumbent's type based upon observable current fiscal policy outcomes. Before the election, the high-type incumbent will attempt to signal his type (and thereby increase his chances of re-election) by engaging in expansionary fiscal policy, which is less "costly" for him than it is for the low-type. This leads to a pre-election increase in the government deficit when a competent politician is in office. As pointed out by Shi and Svensson (2004), some of the implications of the signaling models seem to be at odds with both empirical and anecdotal evidence. For example, only the more competent politician (rather than the less competent one) distorts the economy in the separating equilibrium of the signaling game. Likewise, only competent politicians will be re-elected. Furthermore, since only competent types signal by creating a boom before an election, the testable implications are unclear without additional information on the (unobservable) type of the incumbent.

Based on moral hazard, the second category of models will try to prevent these inconveniences. Persson and Tabellini (2000) and Shi and Svensson (2002) are precursors to these models, and assume that each politician has some competence. Obviously those public goods can also be increased by expanding the public deficit without making particular efforts to maximize the public goods supply. Voters are rational, but infer the competence level of the politician only from the supply of public goods. As a result, temptation exists from the incumbent government perspective to raise the deficit and supply more public goods to signal greater competence.

In a moral hazard framework, apart from electoral influences, Mink and de Haan (2005) take two factors into account in their empirical model that are not controlled by policy makers, but affect fiscal policy outcomes. First, they include the output gap as a proxy for the business cycle. Second, since unforeseen economic developments may affect fiscal policy outcomes, they include the difference between actual and expected real GDP growth. But the main contribution of this paper in light of our topic is that the authors study the PBC in the context of the SGP. Their results are in line with the moral hazard models. In the European framework, one finds contradictory results. On one side, Andrikopoulos, et al. (2004) investigated whether there is evidence of incumbent governments manipulating fiscal policies in order to increase their odds in the future

[2] For further details, see Alesina, A., Roubini, N., and Cohen, G. D., 1997. Political cycles and the macroeconomy. MIT Press, Cambridge, Mass.

[3] Competence is defined as the ability to transform tax revenues into public goods.

elections: they did not find such results after a thorough empirical study covering the years 1970-1998. On the other side, Buti and van den Noord (2003) analyzed the fiscal policies over the 1999-2002 period and found some evidence of expansionary fiscal policies motivated by the near elections. This result is confirmed by von Hagen (2003) who concludes that there is evidence that fiscal policies were used during the period 1998-2002 before elections.

It should be no surprise that incumbent governments switched from using monetary policy to fiscal policy. In the context of the Economic and Monetary Union, countries were losing monetary policy as a policy instrument. This argument holds not only for the period starting in 1999, but also for the convergence period from 1993 to 1998, and more specifically for the last two years of this period (1997 and 1998) within which countries' performance was evaluated for the entry into the EMU. However, to prevent fiscal unsustainability the EU was equipped with the SGP. At first glance, it is surprising that incumbent governments would breach the fiscal rule to increase the likelihood of re-election, but when one considers that monetary policy is no longer an option, the only remaining instrument is fiscal policy.

In light of these developments, we propose to look at the public deficits across 14 European countries, and see whether the deficits can be explained by a multivariate model comprising economic and political variables. Compared to the existing literature, we do not capture the existence of the PBC through the computation of an election variable, but through the votes expressed during national elections in the different countries. We do not use the results of the elections, but the votes going to each party in order to prevent the noise in the data created by the different electoral systems across countries. Indeed this noise is the difference between the percentage of votes, and the number of seats controlled in the national legislatures.

3. Model

As in Shi and Svensson (2002), we use fiscal balance as a percentage of GDP, government revenue as a percentage of GDP, and government expenditure as a percentage of GDP.

Shi and Svensson (2002) provide an empirical analysis of political budget cycles based on a large panel of countries. They find political budget cycles to be a universal phenomenon, a result that generalizes previous empirical findings based on smaller data sets. The empirical cross-country literature on political budget cycles has three common features. First, it is based on data sets from a relatively small number of countries; second, it focuses on identifying whether or not there exists any electoral effects on fiscal policy; and third, it treats the timing of elections as exogenous.

The latest developments in the literature help distinguish between outcomes due to deliberate policy choices and unobserved events that are confounded with both the timing of elections and fiscal policies.

However, those papers face concerns that in countries where political competition is restricted and elections can be manipulated, elections may not have the same effect on fiscal policies as in other, more democratic, countries. This is why we use the votes for parties instead of the outcome of elections in terms of seats. We block the noise created by the various electoral laws across countries which define the number of seats controlled by each party.

The dataset

This paper assembles a panel data set consisting of 14 countries over a 27-year period (1979-2005). The data allow us to study whether actual votes – and not parties elected – have effects on public deficits across countries, and the inception of the Stability and Growth Pact has reduced the Political Budget Cycle.

The reference database for economic variables is AMECO (compiled by the European Commission). Political data from 1979-1999 comes from Perrineau, et al. (2002) and data after 1999 comes from Turner (2006). We apply party classifications from the European Parliament to national parties. Parties are coded from the following types, and electoral data is compiled accordingly (see appendix 1 for an explanation of the classification methodology):

- European Unitary Left (GUE), formerly COM—socialist and communist
- Party of European Socialists (PSE), formerly PDS and SOC—social democratic and socialist
- Greens in the European Parliament (V), formerly ARE, RAD, ARC, and CDI
- European Liberal, Democrat, and Reform Party (ELDR), formerly LD—liberal and centrist
- European People's Party (PPE), formerly PSD, UDF, and EPP—Christian democratic and conservative
- The Union for Europe (UPE), formerly CDS-PP, RDE, and DEP—conservative
- Non-affiliated (NI)—extreme right

We computed these variables:

- Pop. 15-64/total (national accounts)
- Pop. over 65/total (national accounts)
- Total revenue (% GDP)
- Total tax burden excluding imputed social security contributions (% GDP)
- Social contributions (% GDP)
- Social benefits other than social transfers in kind: general government (% GDP)
- Social transfers in kind (% GDP)
- Deficit (% GDP)

- Debt interest (% GDP)

Methodology

The panel structure offers different advantages for the empirical analysis of individual behaviour. One of the most important features is that econometric techniques based on the combination of the cross-sectional and the time dimension of the data allow us to take into account the effect of variables not explicitly observed, for example time invariant individual-specific effects. For this reason, panel data techniques are more robust with respect to incomplete model specification. In particular, they provide an easy solution to the problem of endogeneity of explanatory variables.

All the variables – but the lagged party variables – are control variables.

Table 1. Descriptive statistics of key variables

Variable	Obs	Mean	Std. Dev.	Min	Max
year	378	1992	7.799204	1979	2005
gue	316	11.98813	9.929946	0	34.7
pse	316	24.99409	11.25568	0	45.1
v	316	4.24193	4.945133	0	22.2
eldr	316	11.70734	11.74335	0	42.6
ppe	316	21.2702	16.60478	0	48.8
upe	316	17.86521	20.83097	0	67.23314
ni	315	5.314673	7.442166	0	27.5
electyear	336	.2232143	.4170219	0	1
pop1564	351	66.28995	2.051991	58.8162	69.75991
popover65	324	21.32143	2.416817	16.39586	28.66794
socialcont	335	12.93771	5.012757	1.603669	23.55911
socbenefit	335	15.53966	3.004598	6.065574	24.13123
soctransfers	316	11.37093	3.963232	2.125163	20.90909
deficitgdp	335	-3.071742	4.141421	-15.7289	7.095311
debtinter	335	4.8745	3.682511	.1841621	16.95652

Panel data models can either be static or dynamic. In this context, static means that the dependent variable is expressed as a function of other contemporaneous variables. Dynamic panel techniques allow the explanatory variables to have both a short-run and a long-run impact on the variables of interest. We do both. Equation (1) is a standard panel data specification:

$$def_{i,t} = \sum_{j=1}^{k} a_j pol_{i,t-j} + \sum_{l=k+1}^{m} c_l w_{i,t} + d_{m+1} ELE_{i,t} + x_i + xt + e_{i,t}, \quad (1)$$

Where $def_{i,t}$ is the public deficit outcome in country i and year t, $pol_{i,t}$ a vector of political variables, $w_{i,t}$ a vector of control economic variables, $ELE_{i,t}$ an election dummy variable, x_i an unobserved country-specific effect, x_t an unobserved time effect, and $e_{i,t}$ an i.i.d error term.

However, the likely presence of country-specific effects and the time-specific effects render the Ordinary Least Squares estimator to be biased. In order to identify whether a random effects versus fixed effects specification was appropriate, a hausman test was run for the entire data set, and the fixed effects model was more appropriate. We then generated time dummies and tested for fixed effects. We concluded that our fixed effect regressions should include time effects. Fixed-effects estimators can eliminate the country-specific effect as well as the time-specific effect.

We also run a dynamic panel data analysis. This requires the introduction of the lagged dependent variable as an explanatory variable. We do it to test for hysteresis phenomena – or structural deficits – that can take time to reduce. Equation (2) is a dynamic panel data specification:

$$def_{i,t} = \sum_{j=1}^{k} \left[a_j def_{i,t-j} + b_j pol_{i,t-j} \right] + \sum_{l=k+1}^{m} c_l w_{i,t} + d_{m+1} ELE_{i,t} + x_i + xt + e_{i,t} \quad (2)$$

However, the inclusion of lagged dependent variables causes a bias. The bias of the fixed-effects estimator, which influences all variables, is a function of T and only when $T \to \infty$ will the fixed-effect estimator be consistent (Kiviet, 1995, Nickell, 1981).

Introducing a lagged dependent variable as explanatory variable causes different problems. Biased estimators are one example. One way to solve this problem is by first differencing the model and then using OLS. However, even if there is no autocorrelation in the error term in levels, the error term in first differences is correlated with the first differences of the lagged dependent variable (Shi and Svensson, 2002).

The GMM estimator is an interesting method because it controls for the unobserved country-specific effects, the time-specific effects, as well as the bias caused by the lagged dependent variables. We adopt the GMM estimator developed for dynamic panel data by Arellano and Bond (1991) and Arellano and Bover (1995).

By definition this estimator generates a large number of instruments. To test the validity of over-identifying restrictions, a Sargan Test or Hansen Test can be applied (Hansen, 1947).

The key idea is to find instrumental variables that correlate with the explanatory variables, but not with the error term.

To eliminate the country-specific effects as well as the time-specific effects, we can take first-differences of equation (1) to get:

$$\Delta def_{i,t} = \sum_{j=1}^{k} \left[a_j \Delta def_{i,t-j} + b_j \Delta pol_{i,t-j} \right] + \sum_{l=k+1}^{m} c_l \Delta w_{i,t} + d_{m+1} \Delta ELE_{i,t} + \Delta e_{i,t} \qquad (3)$$

Where $\Delta def_{i,t} = def_{i,t} - def_{i,t-1}$. Arellano and Bond (1991) note that under the assumption that the error term $e_{i,t}$ is not serially correlated, values of *def* lagged two periods or more are valid instruments for the transformed lagged dependent variables $\Delta def_{i,t-1}$. For the control variables, we assume that $w_{i,t}$ is weakly exogenous; that is, $w_{i,t}$ is uncorrelated with future realizations of the error term. Thus the GMM dynamic first-difference estimator uses the following linear moment conditions:

$$E\left[def_{i,t-s} \Delta e_{i,t} \right] = 0 \quad \text{for } s \geq 2, t = 3,...T \qquad (4)$$

$$E\left[w_{i,t-s} \Delta e_{i,t} \right] = 0 \quad \text{for } s \geq 2, t = 3,...T \qquad (5)$$

The election indicator $ELE_{i,t}$ is assumed to be strictly exogenous, and we therefore use $\Delta ELE_{i,t}$ as its own instrument in equation (3).

4. Results

We have results for four different periods: first the 1979-2005 period; second before the beginning of the convergence period in 1993; third the convergence period from 1993 to 1998; and fourth after the inception of the euro in 1999.

We look at these data from three different methodological frameworks: first is a standard OLS to help specify the model; second is the fixed effects model to take care of the fixed effects; and third is the dynamic panel approach to capture hysteresis phenomena in the public deficit across countries.

For checking the validity of the Arellano-Bond method, we consider two tests. The first is a Sargan test of over-identification, where the null hypothesis is that the instruments are uncorrelated with the residuals. Due to the numerous lagged party variables, the GMM model is always over-identified. This is less of an issue here since the GMM-in-difference method is used as a complement. The second one, the Arellano-Bond test, is a test of the assumption of no serial correlation (in levels), on which the moment conditions (equations (4) and (5)) rely. This test is implemented as a test of second-order serial

correlation in the difference equation (3), and the null assumption is always rejected, confirming the absence of auto-correlation.

Let us comment on the control variables with the fixed effects model on the one hand. We consider first the overall period 1979-2005 (see table 2) to validate our model specifications. Thus, it is reassuring to notice the constant result through the three approaches that debt interest has a negative sign, which shows that countries facing a higher payment in terms of debt interest will face a greater deficit (deficits are compiled with negative values). Another constant and validating result is that total tax revenue has a positive sign: the greater the total tax revenue, the lower the deficit. Now, it is interesting to notice that total tax burden has a negative sign. The difference between total tax burden and total tax revenue is social contributions. In other words, it seems that countries raising higher social contributions are also likely to face a higher pressure on their public finances. Although demographic variables seem to matter for the overall period (see table 2), they are no longer significant when we look at the breakdown of the overall period (see tables 3, 4, and 5), which is evidence of the overwhelming effect over the other variables of the Treaty of Maastricht for the period 1993-1998 (see table 4), and the SGP for the period starting in 1999 (see table 5).

Table 2. Results 1979-2005 [Double-Lin specification]

Dependent variable: Public deficit excluding interest. Mean: -3.071742 Std. Dev.: 4.141421

Variable	OLS	FE	Difference GMM
Public deficit excluding interest (year-1)	N/A	N/A	0.2901073**
Debt interest	-0.7353026**	-0.4506805**	-0.2571037**
Total tax revenue	0.6321491**	0.7458246**	0.7122313**
Total tax burden	-0.0530384**	-0.0945493**	-0.0664641**
Population over 15-64 (% of whole pop.)	0.179106	0.3295331**	-0.2011333
Population over 64 (% of whole pop.)	0.6362052**	0.7783252**	0.0095185
GUE parties (year-1)	-0.0848992**	0.0913666*	0.0280832
PSE parties (year-1)	-0.0626988**	-0.0107557	0.022431
Green (V) parties (year-1)	0.0153188	-0.0993946**	-0.0571948*
ELDR parties (year-1)	-0.0166451	0.2031895**	0.0574407
PPE parties (year-1)	0.1399689**	-0.049742	0.0141678
UPE parties (year-1)	-0.0013305	-0.0263433	-0.0021015
NI parties (year-1)	0.0126051	0.0068341	0.0184033
Election year (dummy)	0.159003	0.2510141	0.2195777
Social benefits	-1.609457**	-1.752802**	-1.360227**
Social transfers	0.1355616**	-0.43191**	-0.5501649**
Social contributions	0.1076007*	-0.0952666	-0.011923
** .01 significance level		*Sargan test:*	*0.99*
* .05 significance level		*Arellano-Bond test:*	*0*

On the other hand, let us comment on the political variables within the fixed effects model specification. For the overall period 1979-2005 (see table 2), it is remarkable to notice that we find evidence of the attraction of the median voter. ELDR parties are

center-right and center-left parties. The greater the vote they receive in the previous national elections, the lower the public deficit run by the incumbent government. Another interesting result is that the greater the votes to the Green parties for the previous elections, the bigger the deficit decided by the incumbent government before the next national elections. Even more interesting is the fact that the greater the votes captured by the extreme left parties during the previous elections, the lower the public deficit decided by the incumbent government is. Thus extreme parties' votes seem to not influence public finances policies decided by the democratic parties.

Table 3. Results before 1993 [Double-Lin specification]

Dependent variable: Public deficit excluding interest. Mean: -4.341804 Std. Dev.: 4.587443

Variable	OLS	FE	Difference GMM
Public deficit excluding interest (year-1)	N/A	N/A	0.230757**
Debt interest	-1.016209**	-0.68923**	-0.545235**
Total tax revenue	0.4989827**	0.50119**	0.5300141**
Total tax burden	-0.082907**	-0.02244	-0.0052663
Population over 15-64 (% of whole pop.)	1.153337**	1.011536	0.2563396
Population over 64 (% of whole pop.)	0.225908	0.332719	-0.1591016
GUE parties (year-1)	-0.2382814**	0.179599	0.048839
PSE parties (year-1)	-0.1015125*	-0.07977	-0.1747692
Green (V) parties (year-1)	-0.104388	0.00445	-0.0508214
ELDR parties (year-1)	-0.1845807**	0.002691	0.114676
PPE parties (year-1)	0.1319536**	0.286617*	0.1760885
UPE parties (year-1)	0.0144682	-0.00765	0.0217567
NI parties (year-1)	-0.0242687	-0.0396**	0.3726668
Election year (dummy)	-0.2567557	0.140356	-0.0046684
Social benefits	-2.180374**	-1.97358**	-1.607572*
Social transfers	-0.003857	0.181658	0.0139641
Social contributions	0.3190721**	0.564398	0.3970426
		Sargan test:	*0.97*
** .01 significance level		*Arellano-Bond test:*	*0.0001*
* .05 significance level			

Another noteworthy result comes from the breakdown of the overall period into the three periods: before 1993, 1993-1998, and after 1998. First, before 1993 (see table 3), governments did not have to abide by specific rules such the Treaty of Maastricht or the SGP. Interestingly enough, this time, the greater the right-wing parties' (PPE) votes, the lower the public deficit, showing a move rightward of the hunt for the median voter. For the extreme-right votes, the greater the votes in previous elections, the bigger the deficit. It is as if incumbent governments try to provide a social response to the people who, most of the time, vote for right-wing parties in Europe to express their anger at the middle.

So far, although we use a different approach, our results are in line with the Political Business Cycle theory and, more specifically, with the Partisan Theory showing that incumbent governments react in various ways to votes expressed during previous national elections. Now what about the period after 1993 when incumbent governments faced two

challenges: first the implementation of the Treaty of Maastricht, and second the implementation of the SGP? If those international constraints are stronger than the political pressures created by the internal political business cycle, then votes to parties should not influence the fiscal policies of incumbent governments in charge of pushing their countries towards the EMU. This intuition is indeed confirmed by our results (see tables 4 and 5): votes during previous national elections are no longer influential with regard to the choice of fiscal policies. The PBC was hindered by the Treaty of Maastricht and the SGP.

Table 4. Results 1993-1998 [Double-Lin specification]

Dependent variable: Public deficit excluding interest. Mean: -3.478863 Std. Dev.: 3.303119

Variable	OLS	FE	Difference GMM
Public deficit excluding interest (year-1)	N/A	N/A	-0.0616551
Debt interest	-0.72002**	-0.79687**	-0.6359416*
Total tax revenue	0.783326**	0.561949**	0.7289299**
Total tax burden	-0.06547**	-0.18813*	-0.123685
Population over 15-64 (% of whole pop.)	0.217007	0.801092	-0.1171404
Population over 64 (% of whole pop.)	1.024729**	1.385616*	-0.1139736
GUE parties (year-1)	-0.16085**	-0.16546	-0.09133
PSE parties (year-1)	-0.05892	-0.11808	-0.0389302
Green (V) parties (year-1)	0.093753	-0.05316	0.0918641
ELDR parties (year-1)	-0.00354	0.115363	0.0308189
PPE parties (year-1)	0.244204**	0.216776	0.1852269
UPE parties (year-1)	0.075558**	-0.35192	-0.5356991
NI parties (year-1)	-0.07544*	0.354078	0.5042425
Election year (dummy)	0.301948	0.841733	0.134539
Social benefits	-1.65321**	-1.46394**	-1.238511**
Social transfers	0.288848**	0.831821*	0.4914072
Social contributions	-0.03409	0.00482	-0.2416815
** .01 significance level		*Sargan test:*	*1*
* .05 significance level		*Arellano-Bond test:*	*0.0025*

The GMM approach was used as a means to check for the relative influences of the Treaty of Maastricht and the SGP. In other words, we try to see which constraint, the Treaty of Maastricht or the SGP, has a greater magnitude on the choice of fiscal policies by incumbent governments. This approach is also used as a complement to the fixed effects model in order to check for the presence, or not, of a structural public deficit. What is remarkable from the GMM results is that there seems to be a structural public deficit before the convergence period, but both between 1993 and 1998 and after 1998, public deficit excluding interest is no longer significant at 5%. Indeed under the Treaty of Maastricht, countries had to reduce their deficits and had a strong incentive to do so: the accession into the EMU. Under the Stability and Growth Pact, countries have to abide by the Pact to avoid fines, but the threat, although strong in 1999, was much weaker in 2004 when Germany and France were not fined by the European Union. This seems to be corroborated by the data at a significance level of 10%. Indeed at 10%, lagged public

deficit between 1993 and 1998 has a negative sign, meaning that a high deficit in the previous years forces countries to reduce the deficit in the following year (see table 4). The reason for this is, likely, for the countries to comply with the Treaty of Maastricht. But one can also note that after 1998, lagged public deficit is significant at 10% with a positive sign. This shows the presence of a structural component of the deficit: a greater deficit in previous years leads to a greater deficit in the following years. In other words, the SGP is less of an incentive to reduce the deficit than the Treaty of Maastricht (see table 5).

Table 5. Results after 1998 [Double-Lin specification]

Dependent variable: Public deficit excluding interest. Mean: -.7223197 Std. Dev.: 2.870706

Variable	OLS	FE	Difference GMM
Public deficit excluding interest (year-1)	N/A	N/A	0.0607197
Debt interest	-0.25571	-0.43177	0.0061564
Total tax revenue	1.33755**	1.416924**	1.130645**
Total tax burden	-0.08291**	-0.26025**	-0.1700705**
Population over 15-64 (% of whole pop.)	0.740259**	-0.65197	-1.037151
Population over 64 (% of whole pop.)	-0.14818	0.284171	0.239956
GUE parties (year-1)	0.022665	0.115432	0.1055479
PSE parties (year-1)	0.011831	0.050452	0.0550085
Green (V) parties (year-1)	-0.14205	-0.1555	-0.106288
ELDR parties (year-1)	-0.20291**	-0.07231	-0.0957179
PPE parties (year-1)	0.086039	-0.03391	-0.0087853
UPE parties (year-1)	-0.07067**	-0.05567	-0.006372
NI parties (year-1)	-0.0396	0.117731	0.128599*
Election year (dummy)	-0.05757	0.118412	0.2164624
Social benefits	-2.26316**	-2.35685**	-2.041319**
Social transfers	0.728492**	0.304929	-0.4909033
Social contributions	-0.28284*	-0.07672	0.0328927
** .01 significance level		*Sargan test:*	*1*
* .05 significance level		*Arellano-Bond test:*	*0.0329*

5. Conclusion and policy implications

Our results confirm that there is a political budget cycle across countries in Europe for the period 1979-2005, although internal political pressures are overwhelmed by the constraints imposed on fiscal policies by the Treaty of Maastricht and the consecutive rule: the SGP. Using the election year dummy, Mink and de Haan (2005) find strong evidence that the SGP has not restricted fiscal policy makers in the euro area from pursuing expansionary policies before elections. Thus, an extension of this result is that the breach of the SGP by Germany and France can be explained by moral hazard behaviors in those countries – one of the rationales for the creation of the SGP. Our results concern a broader period and are slightly different. Using votes from national

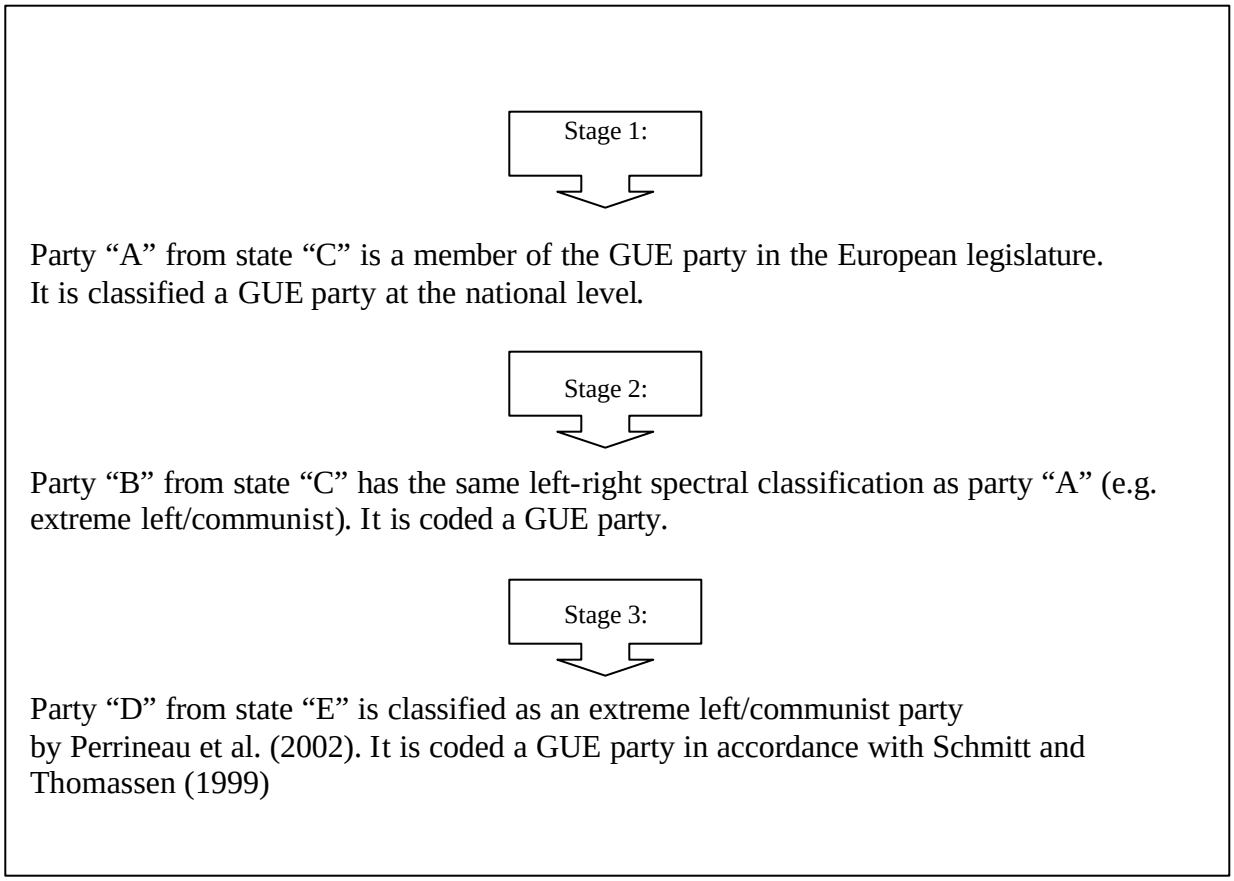
elections instead of the election year dummy *à la* Mink and de Haan (2005), we find strong evidence that before the Treaty of Maastricht, Europe faced a PBC, yet after 1993, the discipline imposed by the Treaty of Maastricht was stronger than the PBC. This holds true for the period starting in 1999 with the implementation of the SGP, although the SGP is less constraining than the Treaty of Maastricht. It is likely that in a couple of years, after which we can include more observations, we will find evidence that the SGP without the enforcement of the Excessive Deficit Procedure has not prevented the appearance of a new PBC.

The differences between Mink and de Haan (2005) results and ours can be explained by the fact that these authors consider the 1999-2004 period for euro members, when we control for periods prior the implementation of the SGP, and prior to the implementation of the Treaty of Maastricht. Our sample of countries is also wider than the euro members in order to control for countries with fewer constraints than the euro members.

In retrospect, our results are numerous. First, they are in line with the intuition as well as the goals of the Treaty of Maastricht and the SGP. Second, the breaching of the SGP by some member countries is not based on free-riding but rather moral hazard behaviors. Third, from a methodological perspective, using votes for national elections is an effective complement to the election year dummy as used in the existing literature (Mink and de Haan, 2005). Fourth, we find strong evidence for the existence of a structural budget deficit. Fifth, and perhaps more importantly, the SGP is less of a constraint than the Treaty of Maastricht. This calls for the actual enforcement of the EDP if one wants to prevent the occurrence of PBC, though indeed, further research is needed to ascertain which is least harmful: the PBC or the SGP?

Appendix 1. The Classification of Political Parties

The classification schema we have used consists of three stages, each of which controls for time and cross-border variation.



Stage one uses data compiled by (Perrineau, et al., 2002), which breaks down EP makeup (1979-1999) by state, party, and the European Party groups (i.e. GUE, PSE, V, ELDR, PPE, UPE, and NI). Given that not all national parties are represented in the EP, stage 2 uses parallel coding which assumes that parties having duplicate left-right spectral classifications would be members of the same supranational parties. Finally, because some parties were both unrepresented in the EP and have no national party duplicates, stage 3 classifies parties with respect to the (Schmitt and Thomassen, 1999) typology of supranational parties.[4]

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