



Available online at [www.sciencedirect.com](http://www.sciencedirect.com)

SCIENCE @ DIRECT®

European Journal of Political Economy  
xx (2004) xxx–xxx

European Journal of  
POLITICAL  
ECONOMY

[www.elsevier.com/locate/econbase](http://www.elsevier.com/locate/econbase)

# Fiscal policy and political business cycles in the EU

Andreas Andrikopoulos<sup>a</sup>, Ioannis Loizides<sup>a</sup>,  
Kyprianos Prodromidis<sup>b,\*</sup>

<sup>a</sup>*Department of International and European Economic Studies, Athens University of Economics and Business,  
76 Patission St., Athens 10434, Greece*

<sup>b</sup>*Department of Economics, Athens University of Economics and Business, 76 Patission St.,  
Athens 10434, Greece*

Received 18 March 2001; received in revised form 26 June 2002; accepted 16 February 2003

## Abstract

This paper examines whether incumbent national governments of the member states of the European Union (EU) manipulated the fiscal policy instruments at their disposal in order to create national political business cycles (PBCs), opportunistic or partisan, in the 1970–1998 period. The empirical evidence does not support this hypothesis. Rather, it appears that governments have pursued stabilization policies. Such a finding is encouraging in the sense that it is expected to facilitate the intentions of the EMU states to coordinate their fiscal policies with the aim of establishing a federal-type fiscal policy in the future.

© 2003 Elsevier B.V. All rights reserved.

*JEL classification:* E3; E6; H8

*Keywords:* Fiscal instruments; Target variables; Elections; Electoral cycles; Partisan cycles; Stabilization policies

## 1. Introduction

This paper investigates whether the national governments of the member states of the European Union (EU) have used fiscal policy in order to stabilize their national economies or to create national political business cycles (PBCs). If the answer is the latter, can these cycles be identified as being of an electoral-type or a partisan-type? And if this is the case, have such cycles exhibited comparable cyclical patterns over time and, perhaps, of narrower amplitude in the post-Maastricht (1992) era relative to

\* Corresponding author. Tel.: +30-210-8203-344; fax: +30-210-8203-301.

*E-mail address:* [kpp@aueb.gr](mailto:kpp@aueb.gr) (K. Prodromidis).

the preceding period? That is, the purpose of this paper is to ascertain whether incumbent governments have tried to generate PBCs in order to influence election outcomes and to determine whether basic stylized facts of PBCs, if any, can be detected in the EU. The answers have consequences for intentions of the European Monetary Union (EMU) states to coordinate fiscal policies in preparation for a federal-type fiscal structure. The issues are examined for democratic societies with majoritarian and proportional political systems. The former systems consist of two major political parties alternating in power; the latter in general involve a larger number of smaller parties and coalition governments.

The year 1992 is the beginning of an era characterized by rising expectations of gradual loss of fiscal autonomy of the EU member states, due to the budget-to-GDP and deficit-to-GDP criteria of 60% and 3%, respectively, imposed by the Treaty of Maastricht. These criteria have to be met by the member states prior to their accession to the EMU and be sustained afterwards. In all likelihood, these requirements are to be reflected in the economic policies of national governments, regardless of ideological differences. This implies that national political cycles caused by fiscal policy should be less prominent in the post-1992 era relative to the preceding period (see also [Alesina et al., 1997, Chapter 10](#)).

Political business cycle models feature the idea that, in majoritarian systems, governments improve their reelection prospects by stimulating aggregate demand in pre-election periods. The policies before elections can give rise to electoral or partisan cycles. Electoral (opportunistic) cycles are defined as persistent cyclical patterns of key target and policy variables regardless of the ideological orientation of the incumbent government ([Nordhaus, 1975](#); [Lindbeck, 1976](#)). Partisan cycles are defined as the persistent differences in such patterns conditional upon the ideology of the party in power ([Hibbs, 1977](#); [Haynes and Stone, 1990](#); [Andrikopoulos et al., 1998](#), and the literature cited therein). The electoral and partisan cycle models make use of an exploitable Phillips curve. In terms of voters' expectations, these models are considered as retrospective and naive. The counterparts of these models based on rational expectations are classified as rational electoral (e.g. [Rogoff and Sibert, 1988](#); [Rogoff, 1990](#)) and rational partisan models (e.g. [Alesina, 1987](#); [Alesina et al., 1993](#)).

Proportional political systems, with several parties forming coalition governments, are not prone to yield political cycles, especially partisan cycles. Through policy moderation, coalition governments are slow to react to shocks due to the veto power over the choice of policies by their members ([Alesina, 1987](#); [Alesina et al., 1997](#) and the literature cited therein). Moreover, they have a tendency to create larger budget deficits and build up government debt ([Alesina et al., 1997](#)). For a different view, see [De Haan and Sturm \(1998\)](#).

Empirical evidence from the majority of present 14 member states of the EU reveals a narrowing of the divergences observed in the evolution of government spending and taxes as ratios to GDP and their related structures from about the mid-1980s to the late 1990s ([Table 1](#)).<sup>1</sup> A similar point was made by the European Commission, *European Economy*

---

<sup>1</sup> The 15th partner, Luxembourg, is not mentioned here due to data unavailability.

Table 1

Structure and percentage shares of fiscal instruments in GDP, European Union 1970–1998

Countries/dates	G/GDP	GC/G	GI/G	TR/G	TH/TR	TB/TR	T/GDP	TD/T	TI/T	TD/TI	G/T
AUS: 1970–1974	42.4	47.5	12.5	40.0	88.9	10.5	27.9	39.8	60.2	0.66	1.52
1994–1998	46.6	39.1	6.1	54.8	84.2	10.3	28.8	44.1	55.9	0.79	1.62
BEL: 1970–1974	40.0	37.5	11.3	51.2	82.7	13.8	25.5	50.2	49.7	1.01	1.57
1994–1998	44.0	32.3	3.2	64.5	87.4	8.3	30.8	58.4	41.6	1.41	1.43
DEN: 1970–1974	42.6	55.1	10.2	37.2	78.0	22.0	41.2	58.7	41.3	1.42	1.02
1994–1998	51.8	46.8	3.4	49.8	81.4	13.8	50.0	62.9	37.1	1.73	1.04
FRA: 1970–1974	39.5	43.4	9.6	47.0	80.6	11.1	21.9	31.6	68.4	0.46	1.80
1994–1998	50.0	37.7	6.2	56.1	82.7	8.8	25.6	40.6	59.4	0.77	1.95
FIN: 1970–1974	33.4	53.3	11.9	34.8	74.4	22.1	26.8	53.0	47.0	1.13	1.25
1994–1998	50.4	40.4	5.5	54.1	85.6	9.4	31.5	57.5	42.5	1.35	1.60
GER: 1970–1974	39.6	48.6	10.7	40.7	83.1	12.4	24.9	47.9	52.1	0.79	1.59
1994–1998	45.4	46.0	4.7	49.3	84.7	8.9	23.2	42.8	57.2	0.81	1.96
GRE: 1970–1974	22.4	51.5	16.0	32.5	81.5	16.5	14.3	22.8	77.2	0.30	1.57
1994–1998	33.0	42.9	10.1	47.0	98.9	2.1	21.5	35.7	64.3	0.56	1.54
IRE: 1970–1974	37.0	51.8	12.1	36.1	67.7	32.4	27.5	31.8	68.2	0.75	1.34
1994–1998	29.7	39.9	7.6	52.5	87.9	25.9	29.3	49.8	50.2	0.99	1.01
ITA: 1970–1974	36.0	51.7	7.7	40.6	84.3	10.4	14.6	37.6	62.4	0.60	2.47
1994–1998	41.3	40.7	5.6	53.7	89.8	7.1	26.8	56.7	43.3	1.31	1.54
NET: 1970–1974	38.8	37.1	10.9	52.0	92.0	8.1	25.2	55.6	44.4	1.25	1.54
1994–1998	44.9	30.5	4.4	65.1	87.8	7.0	25.2	50.7	49.3	1.03	1.78
POR: 1970–1974	17.3	54.1	12.3	33.6	75.7	21.6	16.0	34.4	65.7	0.52	1.08
1994–1998	38.0	44.1	10.7	45.2	95.3	5.0	25.0	39.9	60.1	0.67	1.52
SPA: 1970–1974	23.0	44.0	11.9	44.1	80.8	9.2	12.3	39.1	60.9	0.64	1.87
1994–1998	39.6	41.3	8.6	50.1	78.6	14.6	22.7	51.9	48.1	1.08	1.74
SWE: 1970–1974	46.0	54.4	12.0	33.6	82.8	12.1	34.0	57.7	42.3	1.36	1.35
1994–1998	59.4	49.9	4.1	51.0	76.8	14.7	36.7	59.8	40.2	1.50	1.62
UK: 1970–1974	38.6	59.7	12.3	28.0	77.2	19.5	27.7	52.7	48.9	1.11	1.39
1994–1998	37.2	54.7	3.9	41.4	87.8	7.1	27.6	47.3	51.1	0.96	1.35

## Statistics

1970–1974

$\bar{X}$	35.50	49.30	11.50	39.40	80.70	15.80	24.30	43.80	56.30	0.86	1.53
$s$	8.50	6.70	1.80	7.10	6.00	6.90	8.00	11.30	11.30	0.35	0.36
$V$	0.24	0.13	0.16	0.18	0.07	0.43	0.33	0.26	0.20	0.41	0.24

1994–1998

$\bar{X}$	43.70	41.50	6.00	52.50	86.30	10.20	28.90	49.90	50.00	1.07	1.55
$s$	7.90	6.00	2.40	6.60	5.90	5.70	7.30	8.40	8.40	0.35	0.28
$V$	0.18	0.15	0.40	0.12	0.07	0.56	0.25	0.17	0.17	0.32	0.18

Source: European Commission, *European Economy*, No. 65, 1998.

Notes: Country initials refer to the 14 member states of EU.

Definitions of variables:  $G$ =total expenditure, general government;  $GC$ =government consumption expenditure;  $GI$ =government gross capital formation;  $TR$ =government transfer payments;  $GDP$ =gross domestic product,  $TH$ =transfer payments to households;  $TB$ =transfer payments to enterprises,  $TD$ =direct taxes (current taxes on income and wealth);  $TI$ =indirect taxes (current taxes on imports and production). Symbols  $\bar{X}$ ,  $s$  and  $V$  denote the average value, standard deviation and coefficient of variation, respectively, of the variables appearing in the respective columns. Due to rounding errors, the structures of government expenditures and taxes may not add up to 100.

(1998, No. 65), which claims that, in the EU taken *as a whole*, this is due to decreases in current primary expenditure rather than to decreases in taxes. A question is whether the fiscal changes observed reflect stabilization through fiscal policies or are intended pre-election period actions of incumbent governments seeking to improve their reelection prospects. In the latter case, it is of interest to investigate whether the changes observed during the 1970–1998 period can be distinguished in accord with the ideological position of the incumbent governments, liberal and socialist, and/or coalition type.

We shall examine the pre- and post-election period influences of incumbent governments on the cycles of key target variables and fiscal policy instruments in the EU member states during the 1970–1998 period. Included in the latter group of variables are government expenditures and their major components as well as direct and indirect taxes.<sup>2</sup>

Methodological issues are discussed in the following section and a description of the data is provided in Section 3. The empirical results are discussed in Section 4. Conclusions and policy implications are in the last section.

## 2. Methodology

The expectations hypotheses embodied in the PBC models allow a classification as first or second generation models. In the former group are the electoral cycle (EC) and the partisan cycle (PC) models. In the second group are the rational electoral (REC) and the rational partisan cycle (RPC) models.

Concerning first generation models, the EC models emphasize the incumbent political party's intention to secure reelection by maximizing its expected vote share at the next election. To that end, the models hypothesize a backward-looking private sector that judges the government by its past track record, and a short-sighted government systematically fooling a myopic electorate by judiciously exploiting a short-run Phillips curve trade-off during its tenure in office. The resulting EC hypothesis to be tested is: Governments, regardless of ideological orientation, adopt expansionary (contractionary) policies in the late (early) year(s) of their term in office in order to depress the rate of unemployment (inflation) at the expense of a higher inflation (more unemployment). On the other hand, the PC models stress that incumbents follow partisan macroeconomic policies. That is, they assign different weights to inflation and unemployment, since they represent different pressure groups with dissimilar preferences, incentives and objectives. The emerging testable EC hypothesis states that socialist or left-wing parties give greater weight to unemployment than inflation vis-à-vis right-wing or liberal parties. The parties might maintain these policies during their tenure in office. However, they switch to opportunistic policies if their reelection is in jeopardy (Frey and Schneider, 1978).

Regarding models of the second generation, the REC models emphasize the role of temporary information asymmetries in explaining electoral cycles in macroeconomic

---

<sup>2</sup> A similar analysis on direct and indirect taxes at a disaggregated level is given in Andrikopoulos et al. (2000).

policy instruments, e.g. taxes, transfers, government consumption spending and money growth, rather than in indicators of economic performance (Rogoff and Sibert, 1988; Rogoff, 1990). On account of their information advantages, the incumbent governments have an incentive to try to signal their competence in pre-election periods by manipulating the policy instruments. Their ulterior motive is to revert to their traditional policy actions after the election. That is, the end result of their pre-election actions is to fool the public and create cycles in the policy instruments, and conceivably affect the real variables before the election. The RPC models consider two ideologically different parties, notably socialists versus liberals, with ideologies, objectives and incentives known to an informed and rational public. In the context of a short-run Phillips curve trade-off, socialists are expected to be more averse to unemployment and less averse to inflation than liberals. In turn, rational voters anticipate the incentives of the alternative policymakers and form their expectations accordingly. In brief, RPC models predict a transitory expansion (contraction) at the beginning of a socialist (liberal) administration and a tapering off in the effects of their different policies on inflation and unemployment in the later part of their term in office. Inflation is predicted to be permanently higher with socialist rather than with liberal administrations. For a survey and overview, see Gärtner (1994).

In our empirical analysis, we search for basic stylized facts of electoral and partisan cycles, retrospective or rational, in fiscal policy instruments and key target variables across EU economies. To extract the cycle component of a time series, we employ two alternative, univariate, detrending procedures, the widely used Hodrick and Prescott (1997) and the optimally approximate high-pass and band-pass Baxter and King (1995) procedures, hereafter referred to as HP and BK filters, respectively.<sup>3</sup> Using different filters to identify the cyclical components of the time series allows us to ascertain the robustness of the empirical findings. Nonetheless, business cycles obtained from different detrending methods are not directly comparable with each other, since the different filters extract different types of information from the original series (Canova (1998a)). In fact, alternative detrending methods are associated with different definitions of the trend (Canova, 1998a; Burnside, 1998). Some information concerning both filters at issue is given below.

The HP filter is a cyclical filter designed to derive a smoothed trend,  $\tau_t$ , from a given time series  $z_t$ , where  $z_t$  stands for the series of any fiscal or target variable considered. The smoothed trend represents the growth component of series  $z_t$ . Any deviation of the actual time series from its smoothed trend defines the cycle component of the series,  $devz_t$ , hereinafter. In the empirical analysis we focus upon this variable and try to explain it in terms of political dummies and other relevant regressors.

In the HP filter technique, as well as in the BK one, we consider the logarithm of a time series  $z_t$ ,  $t = 1, \dots, T$ , provided that the series is not in percentage form. The smoothed trend

---

<sup>3</sup> The HP filter has been criticized for shortcomings and undesirable properties (see Harvey and Jaeger, 1993; King and Rebelo, 1993; Cogley and Nason, 1995; Canova, 1998a,b; Baxter and King, 1995 and the literature cited in Ravn and Uhlig, 1997). Other univariate approaches focusing on the decomposition of time series are the linear, simple moving average, first order difference, and exponential smoothing filters.

or growth component of this series,  $\tau_t$ , is obtained from the solution of the convex minimization detrending problem:

$$\min_{\tau_t} \sum_{t=1}^T (z_t - \tau_t)^2 + \lambda \sum_{t=2}^{T-1} [(\tau_{t+1} - \tau_t) - (\tau_t - \tau_{t-1})]^2, \quad \lambda > 0 \quad (1)$$

The deviation  $z_t - \tau_t$  is the filtered series and the Lagrange multiplier  $\lambda$  is a smoothing parameter. At the annual frequency, a value of the smoothing parameter  $\lambda$  equal to 100 is most often used (Backus and Kehoe, 1992; Ravn and Uhlig, 1997).<sup>4</sup> Recently, Ravn and Uhlig (1997) have strongly recommended a new HP filter adjustment rule, according to which any value of  $\lambda$  between 6.25 and 8.25 is a reasonable choice. Their finding is in agreement with the Baxter and King (1995) proposition that the HP filter approximates the ideal band-pass filter when  $\lambda = 10$ . In the empirical analysis, we have experimented with two values of  $\lambda$ , namely the values 100 and 6.70.

The linear BK filter isolates the business cycle components of a macroeconomic time series  $z_t$  by applying a symmetric moving average, with appropriately chosen weights, to the series under investigation. It specifies the business cycle as fluctuations of a series  $z_t$ , with a specific range of periodicities. In this framework, it is designed to eliminate very slow moving (linear and quadratic trend) components and very high frequency (irregular) components, while retaining the cyclic (intermediate) fluctuations in the series, which persist for periods of 2–8 years. These fluctuations are defined as cycles in the data between specified frequency bands and, as in the HP filter case, are referred to in the empirical analysis as  $devz_t$ .

In the empirical analysis, we focus upon variable  $devz_t$  and try to explain it in terms of political dummies and other relevant regressors. Earlier studies have used as regressands the rates of change of  $z_t$ 's or their ratios to GDP, and as arguments of the relevant regressions political and nonpolitical dummies. For instance, Alesina and Roubini (1992, 1993), Alesina and Perotti (1995) and Schuknecht (2000) have regressed total taxes and government expenditure variables or their ratios to GDP in terms of political and nonpolitical dummies.

In order to detect electoral or partisan cycle regularities of fiscal and target variables, we employ the following procedure. First, we apply BK and HP filtering (in the latter case we employ two alternative values of  $\lambda$ ,  $\lambda = 100$  and  $\lambda = 6.7$ ), for each target and fiscal instrument variables and get the series  $devz_t$ . Second, we estimate the regression model (2) at various levels of disaggregation of the variables involved.

$$devz_{it} = \alpha_i devz_{i,t-1} + \sum_{p=1}^q \beta_p d_{ipt} + \gamma d_{Mt} + \delta d_M^* + \varepsilon_{it} \quad (2)$$

where  $devz_{it}$  stands for the cycle component of the time series  $z_{it}$  of each fiscal and target variable  $i$ ,  $i = 1, \dots, 13$ , per EU country.<sup>5</sup> Symbol  $d_{ipt}$  denotes the pre- and post-election year political dummy variables specific to each EU member country examined (see Section 3). In

<sup>4</sup> Theoretically,  $\lambda$  can take any value from zero to infinity. When  $\lambda$  is equal to infinity (zero), the solution to the constrained minimization problem is a linear trend (the original series).

<sup>5</sup> To avoid overburdening the analysis with symbols, a country-specific subscript is omitted from all variables in Eq. (2).

this expression, variables  $devz_{i,t-1}$  and  $d_{ipt}$  stand for the persistence of the cycle and the effects of the political factors, respectively. Variables  $d_{Mt}$  and  $d_M^*$  are two dummies intended to capture the impact of the Treaty of Maastricht (1992) on the dependent variable. In particular,  $d_{Mt}$  measures the possible change in the amplitude of the cycle due to the Maastricht criteria; it takes a zero value before 1992 and a value of one otherwise. Variable  $d_M^*$  is an interaction dummy intended to capture whether the political effects on the dependent variable have been neutralized or weakened in pre-election periods in the aftermath of the Treaty. The interaction dummy is defined as the product  $d_M^* = d_{Mt}d_e$ , where  $d_e$  is a pre-election year dummy variable (see end of Section 3 for details). The last term in Eq. (2) is an error term with the usual properties.

### 3. The data

Our empirical analysis includes all EU member countries, except Luxembourg due to data limitations. It is based on a sample of 29 annual observations covering 1970–1998.<sup>6</sup> There are five target variables and eight fiscal instruments. The target variables include gross domestic product, GDP, personal disposable income, YD, private consumption expenditure  $C$  and the rates of unemployment  $u$  and inflation (rate of change of GDP deflator)  $\pi$ . The fiscal instruments include total expenditure of the general government  $G$ , its most important subcategories (see below), direct taxes (current taxes on income and wealth) TD and indirect taxes (taxes linked to imports and production) TI. The major components of total expenditures of the government are as follows: government consumption spending GC, government gross capital formation GI and total current transfers of the general government TR. The main constituents of TR are current transfers to households TH and to enterprises TB. With the exception of variables TR and TB, which are in percentage terms, target variables are expressed in 1990 prices. The transfer variables have been deflated by the GDP implicit price deflator. The tax variables TD and TI have been deflated by the GDP and the private consumption deflators, respectively. The data were obtained from the OECD publication *National Accounts, Volume II* (variables GDP, YD and C), and the Commission of the European Communities, *European Economy* (the remaining variables).<sup>7</sup> The dates of parliamentary elections and the types of the government formed are given in Table 2.

An overview of the information in this table reveals the following: (1) Five countries, namely Austria,<sup>8</sup> Belgium, Finland,<sup>9</sup> Italy and The Netherlands, have proportional-type political systems, which have given rise to coalition governments.<sup>10</sup>

<sup>6</sup> A longer time period was not available due to the lack of statistical data concerning various categories of the variables employed in the countries of the sample.

<sup>7</sup> All variables in levels are expressed at national currencies.

<sup>8</sup> In Austria, there were coalitions between the Social Democratic Party of Austria (SPÖ) and Austria's People's Party (ÖVP) in all post World War II elections before 1966 and after 1983, and single party governments by ÖVP in 1966 and SPÖ in 1970, 1971, 1975 and 1979.

<sup>9</sup> In Finland, there were coalition governments between the Social Democratic Party (SDP) and the Center Party (KESK) in all pre-1987 elections included in our sample, and one party governments afterwards, i.e. by SDP in 1987 and 1995, and KESK in 1991.

<sup>10</sup> Luxembourg also has adopted a proportional-type political system.

(2) The remaining countries have a majoritarian system that interchanges two parties in power. (3) In two countries, Ireland and Portugal, the two major parties have been nonsocialist (Fianna Fail and Fine Gael–Labor party) and nonconservative (Socialist and Social Democratic), respectively. (4) In Sweden, there has been an interchange in power of Social Democrats and coalitions of nonsocialist parties. (5) In France, the control of the presidency and the government has not always been in the hands of the same party (cohabitation). (6) In three countries, notably Greece, Portugal and Spain, the parliamentary system was suspended for a number of years (Greece, 1967–1974) or was revived in the mid-1970s (Portugal, 1975; Spain, 1977). Finally, Germany was reunified in 1989.

On the basis of the outcomes of the national elections (Table 2), we constructed the pre- and post-election year dummy variables reported in an appendix to the paper (Tables A1 and A2). In doing so, we divided particular calendar years according to the proportion of total months in a year that each party spent in power. The calculations were based on the definition of the election year as the 12-month period ending at the end of the month of the election. Thus,  $d_{cc}$  and  $d_{es}$  are the election year dummies associated with the incumbent government—conservative (liberal) and socialist, respectively—administering the election;  $d_{nc}$  and  $d_{ns}$  are the respective post-election year dummies. These political dummy variables were used in regression equations designed to test for partisan cycles in the EU countries (Section 4.2). For the respective regressions intended to test for electoral cycles, we collapsed the above pre-election year dummies  $d_{cc}$  and  $d_{es}$ , and the post-election year ones, i.e.  $d_{nc}$  and  $d_{ns}$ , into two dummy variables, notably  $d_e$  and  $d_n$ , respectively (Section 4.1).<sup>11</sup>

## 4. Empirical results

The empirical analysis is directed at detection of electoral and/or partisan cycle regularities. The results are discussed in Sections 4.1 and 4.2. The effects of the Treaty of Maastricht on the cycles are given in Section 4.2.

### 4.1. Electoral cycle regularities

In order to detect the impact of pre-electoral policies on the formation of cycles of fiscal instruments and target variables in the individual member countries of the EU, regardless of the ideology of the government in power, we estimate the following version of the regression model (2):

$$devz_{it} = \alpha_i devz_{i,t-1} + \sum_{p=1}^q \beta_p d_{ipt} + \gamma d_{Mt} + \delta d_{M^*} + \zeta d_D + \varepsilon_{it} \quad (3)$$

where  $devz_{it}$  is the cycle component of the time series of the fiscal and target variables examined. The explanatory variables examined in the country regressions are: (a) the

<sup>11</sup> For the construction of the dummy variables, see also Alogoskoufis et al. (1992) and Andrikopoulos et al. (1998).



lagged dependent variable; (b) political dummy variables, idiosyncratic to the country under consideration; (c) a dummy variable  $d_{Mt}$  taking a zero value before 1992 (Treaty of Maastricht) and a unit value otherwise; (d) an interaction dummy  $d_M^*$ , and (e) an additional dummy,  $d_D$ , for Greece, Portugal and Spain accounting for the time intervals these countries were governed by dictatorial governments. The latter variable takes a unit value for the periods these three countries were under dictatorial rule and zero otherwise<sup>12</sup>. The country political dummies  $d_{ipt}$  are defined as  $d_{et}$  and  $d_{nt}$ ; they represent the pre-election 12-month period and the post election years, but the last one, of the incumbent government, respectively. Variables  $devz_{i,t-1}$ ,  $d_{Mt}$ ,  $d_M^*$  and  $d_D$  were used for controlling for the influence of all factors other than the political factors in the  $devz_{it}$  equation.

In the estimation of Eq. (3), we choose ARMA( $p,q$ ) specifications as the “best” procedure for reducing short-run noise.<sup>13</sup>

For simplicity, after controlling for the other factors potentially influencing the electoral cycles of the fiscal and the target variables mentioned above, discussion is mainly restricted to the statistically significant estimates of the pre- and post-election year political dummies, as well as the effects of the Treaty of Maastricht on the cycles in question. In that respect, we present only the direction (signs: plus or minus) of the statistically significant coefficients at the 5% probability level of the political dummies in Tables 3 and 4.<sup>14</sup>

#### 4.1.1. Fiscal instruments

The regression results for the electoral cycle regularities in the fiscal instrument variables are reported in Table 3. On an overall basis, these results suggest that the great majority of the governments in power in the EU countries have not significantly propagated political business cycles. The estimates based on all three filtering procedures used indicate that the insignificant coefficients of the political regressors  $d_e$  and  $d_n$  have counted for more than 70% of all estimated coefficients of these regressors. This fact alone suggests the robustness of our findings. These findings are in agreement with the fiscal policies pursued by the EU nations in the 1980s and the early 1990s for the purpose of reducing their large deficits, which were accumulated in the 1970s by means of stabilization policies.<sup>15</sup> In the remaining cases, where the political regressors have

<sup>12</sup> Variable  $d_D$  takes a unitary value for the dictatorship periods and zero elsewhere. In fact,  $d_D$  assumes the value 1 from 1967 (April) to 1974 (July) in the case of Greece, and for the years before 1975 (April) and 1977 (July) for Portugal and Spain, respectively.

<sup>13</sup> In fact, the various versions of Eq. (3) were estimated with OLS. To all estimated regressions that performed well in terms of the autocorrelation, heteroscedasticity and Reset tests, we applied the Newey–West procedure. In all remaining cases we experimented with the ARMA approach. This approach involves an iterative three-stage procedure of identification, estimation and diagnostic checking. Model identification tools such as sample autocorrelation function (SACF) and sample partial autocorrelation function (SPCF) were used for identifying adequate models. For model selection we used Schwartz’s SBC as the model selection criterion. The optimal order of the model is chosen by the value of  $m$ , which is a function of  $p$  and  $q$ , so that  $SBC(m)$  is minimum.

<sup>14</sup> The detailed estimates of the above cycles of fiscal and target variables as functions of the political dummies at issue and other nonpolitical regressors are reported in suitable tables in an appendix, available upon request. In total, there are 42 tables in this appendix, which are classified in accordance with the EU country considered (14 countries) and the filtering procedure used (three filters).

<sup>15</sup> See, for instance, Saunders and Klau (1985), and Aldcroft (2001).

Table 2  
Dates of parliamentary elections in the EU countries

Years	AUS	BEL	DEN	FIN	FRA	GER	GRE	IRE	ITA	NET	POR	SPA	SWE	UK
1969	...	...	CON		CON	9:SOC	D	6:FF	...	...	D	D	SOC	LAB
1970	10:COL	...		6:COL	...	...	D	...	...	...	D	D	9:SOC	6:CON
1971	10:COL	11:COL	9:MINS		...	...	D	...	...	4:COL	D	D	...	...
1972	...	...		1:COL	...	11:SOC	D	...	5:COL	11:COL	D	D	...	...
1973	...	...	12:MINS	...	3:CON	...	D	2:FGL	...	...	D	D	9:SOC	...
1974	...	3:COL		...	...	...	11:CON	...	...	...	D	D	...	2:10:LAB
1975	10:COL	...	1:SOC	10:COL	...	...	...	...	...	...	4:SOC	D	...	...
1976	...	...		...	...	10:SOC	...	...	6:COL	...	4:SOC	D	9:COL	...
1977	...	4:COL	2:SOC	...	...	...	10:CON	6:FF	...	5:COL	...	6:CON	...	...
1978	...	12:COL		...	3:CON	...	...	...	...	...	...	...	...	...
1979	5:COL	...	10:SOC	4:COL	...	...	...	...	6:COL	...	12:SPD	3:CON	9:COL	5:CON
1980	...	...		...	6:SOC	10:SOC	...	...	...	...	10:SPD	...	...	...
1981	...	11:COL	12:SOC	...	...	...	6:SOC	6:FGL	...	5:COL	...	...	...	...
1982	...	...		...	...	...	...	2:11:FF	...	9:COL	...	10:SOC	9:SOC	...
1983	4:COL	...		4:COL	...	3:CON	...	...	6:COL	...	4:SOC	...	...	6:CON
1984	...	...	1:CON	...	...	...	...	...	...	...	...	...	...	...
1985	...	10:COL		...	...	...	6:SOC	...	...	...	10:SPD	...	9:SOC	...
1986	11:COL	...		...	3:CON	...	...	...	...	5:COL	...	6:SOC	...	...
1987	...	12:COL	9:CON	3:COL	...	1:CON	...	3:FF	6:COL	...	7:SPD	...	...	6:CON
1988	...	...	5:CON	...	3:SOC	...	...	...	...	...	...	...	9:SOC	...
1989	...	...		...	...	...	6:COL	6:FF	...	9:COL	...	10:SOC	...	...
1990	10:COL	...	12:CON	...	...	12:CON	4:CON	...	...	...	...	...	...	...
1991	...	11:COL		3:COL	...	...	...	...	...	...	10:SPD	...	9:COL	...
1992	...	...		...	...	...	...	11:FF	4:COL	...	...	...	...	4:CON
1993	...	...		...	3:CON	...	10:SOC	...	...	...	...	6:MINS	...	...
1994	10:COL	...	9:SOC	...	...	10:CON	...	...	3:COL	5:COL	...	...	9:COL	...
1995	12:COL	5:COL		3:COL	...	...	...	...	...	...	10:SOC	...	...	...
1996	10:COL	...		...	...	...	9:SOC	...	4:COL	...	...	3:CON	...	...
1997	...	...		...	...	...	...	6:FF	...	...	...	...	...	5:LAB
1998	...	...		...	...	...	...	...	...	...	...	...	9:COL	...
1999	...	...		3:COL	...	...	...	...	...	...	10:SOC	...	...	...

significantly affected the cycles of the fiscal variables, the effects were in the same direction regardless of the filter used. However, it should be noted that the statistically significant coefficients most often refer to cycles generated by means of the HP(6.7) and the BK filters. We now comment on experiments associated with findings relating to at least two filters.

*4.1.1.1. Government expenditure on goods and services.* The results associated with the political regressors in Table 3 reveal that national governments have not significantly affected the cycles of total government expenditure, and public consumption and public investment (government expenditure on goods and services) in pre- and post-election periods. The exceptions in the pre-election period refer to incumbents that positively affected the cycles of (a) total government expenditure in Austria, Greece and Germany; (b) public consumption in Belgium, Greece and Sweden; and (c) public investment in Germany. In the post-election period, governments in Austria, Sweden and Germany decreased the cycles of total government expenditure, public consumption and public investment, respectively. Finally, governments in France reacted in a counter intuitive way in affecting the cycle of public investment. That is, they have negatively affected it before elections, and positively afterwards. These findings indicate that we cannot make a case for electoral cycles in government spending in the EU as a whole. However, some hints of electoral-type cycles can be noticed in Austria for total government expenditure, Sweden for public consumption, and Germany for public investment. In addition, the positive sign of the pre-election period dummies on the cycles of total government expenditure in Germany and Greece, and public consumption in Belgium and Greece partly support this hypothesis.

*4.1.1.2. Government transfer payments.* In general, governments in power have not significantly affected the cycles of transfer payments and its constituents, i.e. transfers to households and businesses (Table 3). The exceptions are: (a) In pre-election periods, incumbents that exerted a positive influence on the cycles of total transfer payments, transfers to households, and transfers to businesses in Austria and Finland, Belgium and Finland, and France and Greece, respectively. In the same periods, there have been negative effects of policies on the cycles of transfers to households in Denmark and France and transfers to businesses in Ireland and the UK. (b) In post-election periods, governments have positively affected the cycles of total transfer payments in Denmark; transfers to households

---

Notes to Table 2:

Sources: Years 1964–1990, Andrikopoulos and Prodromidis (1996). Years 1991–1998, Chronicle of Parliamentary Elections, annual issues. (Publications of the Inter-Parliamentary Union, Geneva, Switzerland).

Notes: (a) Numbers in cells, preceding the types of government, indicate months of election. D = Dictatorship Era. (b) Abbreviations of types of government: (1) COL = Coalition; (2) CON = Conservative; (3) LAB = Labor; (4) FF = Fianna Fail Coalition; (5) FGL = Fine Gael + Labor Coalition; (6) SPD = Social Democratic (right); (7) MINS = Minority-Socialist; (8) SOC = Socialist. (c) In Ireland (1982), the UK (1974) and Greece (1989) two elections took place, in which FF and FGL, respectively, in Ireland; New Democracy (conservative) in Greece; and LAB in the UK won the elections.

Table 3  
Testing for electoral cycles of fiscal variables via three filters and regression (Eq. (3))

Countries, dummies	$G$			$GC$			$GI$			$TR$			$TH$			$TB$			$TD$			$TI$			Total (%)		
	HP	HP	BK	HP	HP	BK	HP	HP	BK	HP	HP	BK	HP	HP	BK	HP	HP	BK	HP	HP	BK	HP	HP	BK	HP	HP	BK
	$\hat{\lambda}_1$	$\hat{\lambda}_2$		$\hat{\lambda}_1$	$\hat{\lambda}_2$		$\hat{\lambda}_1$	$\hat{\lambda}_2$		$\hat{\lambda}_1$	$\hat{\lambda}_2$	K	$\hat{\lambda}_1$	$\hat{\lambda}_2$		$\hat{\lambda}_1$	$\hat{\lambda}_2$		$\hat{\lambda}_1$	$\hat{\lambda}_2$		$\hat{\lambda}_1$	$\hat{\lambda}_2$		$\hat{\lambda}_1$	$\hat{\lambda}_2$	
AUS: $d_e$	+	+	+	...	...	...	+	...	...	+	+	+	...	+	-	...	...	...	...	...	...	-	-	63	50	50	
$d_n$	...	-	-	...	...	+	...	...	...	...	...	-	...	+	+	...	...	...	...	...	...	+	100	75	33		
BEL: $d_e$	...	+	...	+	+	+	...	...	...	...	...	...	...	+	+	...	...	...	...	...	...	-	...	...	75	63	75
$d_n$	...	...	...	...	...	-	...	...	...	...	...	...	...	...	...	...	...	+	...	...	...	...	...	100	100	75	
DEN: $d_e$	...	...	...	...	...	...	...	...	...	-	-	-	...	-	-	...	...	...	...	...	...	...	...	88	75	75	
$d_n$	...	...	...	...	...	...	...	...	...	+	+	+	...	+	+	...	...	...	...	...	...	...	...	88	75	75	
FIN: $d_e$	...	...	...	...	...	...	+	...	...	...	+	+	...	+	+	...	-	...	...	...	...	...	...	63	75	75	
$d_n$	...	...	...	+	...	...	...	...	...	...	-	-	...	-	-	+	...	...	...	...	...	...	...	63	75	75	
FRA: $d_e$	...	-	...	...	-	...	-	-	-	...	...	...	...	-	-	...	+	+	...	...	...	-	...	...	75	33	63
$d_n$	...	...	...	...	...	...	+	+	+	...	...	...	...	+	+	...	-	-	...	...	...	+	...	...	75	63	63
GER: $d_e$	...	+	+	...	...	...	...	+	+	...	...	...	...	...	...	...	...	...	...	...	...	...	...	100	75	75	
$d_n$	...	-	...	...	...	...	...	-	-	...	...	...	...	...	...	...	...	...	...	...	...	...	...	100	75	88	
GRE: $d_e$	+	+	+	+	+	+	...	...	...	+	...	...	...	...	...	+	+	+	...	...	...	...	-	-	50	50	50
$d_n$	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	+	+	88	88	88
IRE: $d_e$	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	-	-	-	+	+	+	+	...	...	63	75	75
$d_n$	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	+	+	-	-	-	...	...	...	88	75	75
ITA: $d_e$	...	...	...	+	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	-	88	100	88
$d_n$	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	100	100	100
NET: $d_e$	...	...	...	...	...	...	...	...	+	...	...	...	...	...	...	...	...	...	...	...	...	...	-	-	100	75	75
$d_n$	...	...	...	...	...	...	...	...	-	...	...	...	...	...	...	...	...	...	...	...	...	...	+	+	100	88	75



in Austria, Denmark and France; and transfers to businesses in Ireland and the UK. At the same time, there have been negative effects of policies on cycles of total transfer payments and transfers to households in Finland; and transfers to businesses in France, but positive in Ireland and the UK. The results concerning Ireland and the UK are contrary to those predicted by the theory.

The preceding findings, in conjunction with the bulk of the statistically insignificant estimates already mentioned, do not support the hypothesis of electoral cycles in government transfer payments in the EU countries as a whole. However, a case in favor of the electoral cycle hypothesis can be made for total transfer payments and transfers to households in Finland, and transfers to businesses in France. This hypothesis is supported in part by the positive signs of the respective pre-election period dummies in Austria, Belgium and Greece for the cycles of total transfer payments, transfers to households and transfers to businesses, respectively.

*4.1.1.3. Direct and indirect taxes.* As in the case of the government spending and transfers variables already mentioned, incumbent governments have not in general significantly affected the cycles of total direct and indirect taxes (Table 3). The statistically significant estimates can be classified as follows: (a) UK governments have negatively influenced the cycles of total direct taxes in pre-election periods and in the opposite direction in post-election periods. (b) There have been effects similar of indirect taxes on cycles by the governments of Greece, The Netherlands and Portugal. (c) There have been negative effects of Austrian government actions on the cycle of total direct taxes before elections, and positive effects from corresponding actions in Spain after elections. (d) Finally, the actions of the Irish governments have led to increases of the cycles of direct taxes before elections and decreases afterwards, which is a counterintuitive result. In brief, the electoral cycle hypothesis can be maintained for direct taxes in the UK, and indirect taxes in Greece and Portugal. The hypothesis is partly supported in the cases of Spain and Austria for direct taxes and indirect taxes, respectively.

#### *4.1.2. Target variables*

Regression results for electoral cycle regularities in the target variables are reported in Table 4. The empirical evidence suggests that the great majority of the EU governments have not significantly affected the cycles of the target variables. This result is more pronounced than that for cycles of the fiscal instruments. In fact, the estimates based on all filtering procedures indicate that the insignificant coefficients of the political regressors  $d_e$  and  $d_n$  count for more than 80% of the totality of the estimates.

The evidence in Table 4 indicates that the statistically significant coefficients of the pre-election year dummies enter with the theoretically expected (positive) sign in two countries only, namely, the UK for cycles of GDP and disposable income, and Sweden for the cycle of private consumption expenditure. In the remaining cases with statistically significant coefficients, the relevant estimates have a negative sign. This result applies to France for GDP, private consumption spending and disposable income;

Table 4  
Testing for electoral cycles of target variables via three filters and regression (Eq. (3))

Countries, dummies	GDP			YD			C			u			π			Total (%)		
	HP	HP	BK	HP	HP	BK	HP	HP	BK	HP	HP	BK	HP	HP	BK	HP	HP	BK
	λ <sub>1</sub>	λ <sub>2</sub>		λ <sub>1</sub>	λ <sub>2</sub>		λ <sub>1</sub>	λ <sub>2</sub>		λ <sub>1</sub>	λ <sub>2</sub>		λ <sub>1</sub>	λ <sub>2</sub>		λ <sub>1</sub>	λ <sub>2</sub>	
AUS: <i>d<sub>e</sub></i>	...	...	...	...	...	...	...	...	...	...	...	...	+	...	...	80	100	100
<i>d<sub>n</sub></i>	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	100	100	100
BEL: <i>d<sub>e</sub></i>	...	...	...	...	...	...	...	-	...	...	...	...	+	...	...	100	80	80
<i>d<sub>n</sub></i>	...	...	...	...	...	...	...	+	+	...	...	...	...	...	...	100	80	80
DEN: <i>d<sub>e</sub></i>	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	100	100	100
<i>d<sub>n</sub></i>	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	100	100	100
FIN: <i>d<sub>e</sub></i>	...	...	...	...	...	...	...	...	...	-	...	...	...	...	...	801	100	100
<i>d<sub>n</sub></i>	...	...	...	...	...	...	...	...	...	...	...	...	+	...	...	100	100	80
FRA: <i>d<sub>e</sub></i>	-	-	-	-	...	-	-	-	-	...	-	...	...	+	...	40	20	20
<i>d<sub>n</sub></i>	+	+	+	+	+	+	...	+	+	...	...	...	+	...	...	60	40	20
GER: <i>d<sub>e</sub></i>	...	...	+	...	...	...	...	...	...	...	...	...	...	...	...	100	100	80
<i>d<sub>n</sub></i>	...	...	...	...	...	...	...	...	...	...	-	...	...	...	...	100	80	100
GRE: <i>d<sub>e</sub></i>	...	...	...	...	...	...	...	...	...	...	...	-	...	...	...	100	100	80
<i>d<sub>n</sub></i>	...	...	...	...	...	...	...	...	...	...	...	+	...	...	...	100	80	100
IRE: <i>d<sub>e</sub></i>	...	...	...	...	...	...	-	-	-	...	+	+	...	...	...	80	60	60
<i>d<sub>n</sub></i>	...	...	...	...	...	...	-	+	+	-	+	-	...	...	...	60	60	60
ITA: <i>d<sub>e</sub></i>	...	-	-	...	-	-	...	...	...	...	...	...	...	...	...	100	60	60
<i>d<sub>n</sub></i>	+	+	+	...	+	+	...	...	...	...	...	...	...	...	...	100	60	60
NET: <i>d<sub>e</sub></i>	...	...	...	...	...	...	...	...	...	...	...	...	+	+	...	100	80	80
<i>d<sub>n</sub></i>	...	...	...	...	...	...	...	...	...	...	...	...	...	-	...	100	100	80
POR: <i>d<sub>e</sub></i>	...	...	...	...	+	...	-	-	-	...	...	...	...	...	...	80	60	80
<i>d<sub>n</sub></i>	-	...	...	-	-	...	+	+	+	...	...	...	...	...	...	40	60	80
SPA: <i>d<sub>e</sub></i>	...	...	...	...	...	...	...	...	...	...	...	...	+	...	...	100	100	80
<i>d<sub>n</sub></i>	...	...	...	...	...	...	...	...	...	...	-	...	-	...	...	80	100	80
SWE: <i>d<sub>e</sub></i>	...	...	...	...	...	...	+	+	+	...	...	...	...	...	...	40	80	80
<i>d<sub>n</sub></i>	...	...	...	...	...	...	...	...	...	...	...	+	+	...	...	100	80	80
UK: <i>d<sub>e</sub></i>	...	+	+	+	+	+	...	...	...	...	...	...	...	...	...	80	60	60
<i>d<sub>n</sub></i>	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	100	100	100
Total*: <i>d<sub>e</sub></i>	93	79	71	86	79	79	71	64	71	93	79	57	93	93	100	87	79	76
<i>d<sub>n</sub></i>	79	86	86	86	79	86	86	71	71	86	71	57	100	100	100	87	81	80
( <i>d<sub>e</sub></i> + <i>d<sub>n</sub></i> )/2	86	83	79	86	79	83	79	68	71	90	75	57	97	97	100	87	80	78

Source: See Table 3.

Notes: The definitions of the political dummies *d<sub>e</sub>* and *d<sub>n</sub>*, and symbols “+”, “-” and “...” are given in Table 3. \* = percentages; GDP = gross domestic product; YD = disposable income; C = private consumption expenditure; u = unemployment rate; π = rate of inflation.

Ireland and Portugal for private consumption spending; and Italy for GDP and disposable income. In these countries, the post-election period dummies apropos of the cycles of the same target variables have positive coefficients. A similar finding was obtained for the post-election period dummy on the cycle of private consumption expenditure in Belgium.

The results for the pre-election effects of government policies on the cycles of the rates of unemployment and inflation are mostly and almost totally insignificant. For the

cycle of the unemployment rate, the statistically significant results are mixed: we observe negative signs in the case of France, and positive signs in the cases of Ireland and The Netherlands. We also observe negative signs for the post-election period dummies in Ireland and Spain, and positive signs in Sweden. These findings do not support a view in favor of electoral cycles in the EU. Rather, they seem to support the view that the EU governments have been primarily concerned with the pursuit of stabilization policies.

Contrary to these results, earlier studies employing different country samples and time periods have detected evidence for electoral cycles in policy instruments. In particular, [Tufte \(1978\)](#), using the 1961–1972 US data, found that government transfers payments increased significantly prior to presidential elections. Similar results were reported by [Alesina \(1988\)](#). [Tufte \(1978\)](#) also found that tax increases were *most probable* in post- than pre-election years (our emphasis). [Poterba \(1994\)](#), using US data at the state level for the 1988–1992 period, confirmed the hypothesis that tax increases are significantly smaller prior to gubernatorial elections than afterwards. [Pack \(1987, 1988\)](#) provided evidence for politically motivated business cycles on the revenue—but not on the expenditure side of the budget in the US for the 1957–1981 time span. By using panel data from a sample of 20 OECD countries for the 1960–1987 period, [Alesina and Roubini \(1993\)](#) provided evidence of electoral-type cycles on monetary and fiscal (taxes, government spending) variables. [Yoo \(1998\)](#) found a political tax cycle in Japan during the 1953–1992 period. [Schuknecht \(2000\)](#), using a sample of twenty-four developing countries for the 1973–1992 period, found that incumbent governments tend to increase public investment rather than lowering taxes prior to elections. Public investment cycles have been demonstrated as well by [Bates \(1988\)](#) for Zambia, and [Krueger and Turan \(1993\)](#) for Turkey.

## 4.2. Partisan cycle regularities

### 4.2.1. Fiscal instruments

To detect whether conservative (liberal) or socialist administrations have exerted political influence on the cycles of the fiscal and target variables, we estimated an alternative version of the regression model (3).<sup>16</sup> In that version, we reinterpreted the political dummies  $d_{ipt}$  to account for the potential impact on the economy of each of the two parties, when in power, before and after the elections. The construction of the political dummy variables at issue is discussed in Section 3. As in the preceding section, we present only the direction (signs: plus or minus) of the statistically significant coefficients of the political dummies in [Tables 5 and 6](#), respectively.<sup>17</sup>

<sup>16</sup> The five countries with a proportional political system, notably Austria, Belgium, Finland, Italy and The Netherlands, are not examined here.

<sup>17</sup> The detailed estimates of the above cycles of fiscal and target variables as functions of the political dummies and other nonpolitical regressors are reported in an unpublished appendix, which is available upon request. In total, there are 27 tables in this appendix, which are classified in accordance with the EU country (nine countries) and the filtering procedure (three filters).



The regression results for partisan cycle regularities in the fiscal instrument variables are reported in Table 5. The results are similar to those for the electoral cycle regularities. The great majority of EU governments, conservative or socialist, did not significantly affect the cycles of the fiscal instruments in question. The estimates based on all three filtering procedures indicate that the insignificant coefficients of the political regressors count for more than 75% of all estimated coefficients of these regressors. This implies that there are no notable differences between socialist and liberal administrations in the EU countries as regards their pre- and post-election policy actions. In the remaining cases, the political regressors significantly affected the cycles of the fiscal variables in the same direction, regardless of ideologies of incumbent governments and the filters used. Again, most often, statistically significant coefficients are associated with cycles obtained from the HP(6.7) and the BK filters. At this point, some comments on the cycles of the individual fiscal variables seem to be in order. Again, the comments refer exclusively to experiments associated with cycles generated by at least two filters.

*4.2.1.1. Government expenditure on goods and services.* Five of eight governments exerted no significant influence on the cycles of total government expenditure and consumption expenditure (Table 5). In the remaining cases the results are mixed. More specifically, governments, regardless of ideology, increased the cycles of both total government expenditure and public consumption expenditure in Greece.

Socialist governments also positively affected the cycles of total government expenditure and consumption expenditure in the UK before and after the elections, respectively. However, socialists (Socialist Party) in Portugal and liberals in Spain reduced the cycles of consumption expenditure before, and total government expenditure and consumption expenditure after the elections, respectively. For the cycle of public investment spending, the results indicate that in Germany, socialists and liberals alike have increased spending before elections, whereas socialists in Denmark increased spending before and after elections. Conservatives in Denmark, France, Greece and Spain reduced the cycle of public investment spending in the post-election period. Similar policies have been adopted by conservatives and socialists in Sweden in pre- and post-election periods, respectively (Table 5).

*4.2.1.2. Government transfer payments.* In general, both types of government in Denmark, France and Sweden did not significantly affect the cycles of transfer payments to households and businesses and, of course their sum (Table 5). On the other hand, socialists and conservatives alike positively influenced the majority of these cycles in Spain. Similar policies were pursued in pre- and post-election periods apropos of the cycles of total transfer payments and transfers to businesses by both parties in Portugal, with Social Democrats (“conservatives”) increasing the cycle of total transfers before and after elections and the Socialist Party (“socialists”) increasing the cycle of transfers to businesses after elections. In the UK,

Table 5  
Testing for partisan cycles of fiscal variables via three filters and regression (Eq. (3))

Countries, Dummies	<i>G</i>			<i>GC</i>			<i>GI</i>			<i>TR</i>			<i>TH</i>			<i>TB</i>			<i>TD</i>			<i>TI</i>			Total (%)				
	<u>HP</u>	<u>HP</u>	<u>BK</u>	<u>HP</u>	<u>HP</u>	<u>BK</u>	<u>HP</u>	<u>HP</u>	<u>BK</u>	<u>HP</u>	<u>HP</u>	<u>BK</u>	<u>HP</u>	<u>HP</u>	<u>BK</u>	<u>HP</u>	<u>HP</u>	<u>BK</u>	<u>HP</u>	<u>HP</u>	<u>BK</u>	<u>HP</u>	<u>HP</u>	<u>BK</u>	<u>HP</u>	<u>HP</u>	<u>BK</u>		
	$\lambda_1$	$\lambda_2$		$\lambda_1$	$\lambda_2$		$\lambda_1$	$\lambda_2$		$\lambda_1$	$\lambda_2$		$\lambda_1$	$\lambda_2$		$\lambda_1$	$\lambda_2$		$\lambda_1$	$\lambda_2$		$\lambda_1$	$\lambda_2$		$\lambda_1$	$\lambda_2$			
DEN: <i>d<sub>ec</sub></i>	...	...	...	...	...	...	...	+	+	...	...	...	...	...	...	...	-	...	...	...	...	...	...	...	...	100	75	88	
<i>d<sub>es</sub></i>	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	100	88	100	
<i>d<sub>nc</sub></i>	-	...	...	-	...	...	-	-	-	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	63	88	88	
<i>d<sub>ns</sub></i>	...	...	...	...	...	...	...	...	...	...	+	+	+	+	+	...	...	...	...	...	...	...	...	...	...	88	88	75	
FRA: <i>d<sub>ec</sub></i>	-	-	-	-	-	...	-	...	...	...	...	...	-	-	...	+	+	...	...	...	...	...	...	...	...	63	50	63	
<i>d<sub>es</sub></i>	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	+	+	...	...	...	...	...	...	...	...	100	88	88	
<i>d<sub>nc</sub></i>	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	-	...	...	...	...	...	...	...	...	100	100	88	
<i>d<sub>ns</sub></i>	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	-	-	...	...	...	...	...	...	...	100	88	88	
DEN: <i>d<sub>ec</sub></i>	...	...	...	...	...	...	...	+	+	...	...	...	...	...	...	...	-	...	...	...	...	...	...	...	...	100	75	88	
<i>d<sub>es</sub></i>	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	100	88	100	
<i>d<sub>nc</sub></i>	-	...	...	-	...	...	-	-	-	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	63	88	88	
<i>d<sub>ns</sub></i>	...	...	...	...	...	...	...	...	...	...	+	+	+	+	+	...	...	...	...	...	...	...	...	...	...	88	88	75	
GER: <i>d<sub>ec</sub></i>	...	-	-	...	...	...	...	...	...	...	...	...	-	-	-	...	...	-	-	-	...	...	...	...	...	75	63	63	
<i>d<sub>es</sub></i>	...	...	...	...	...	...	...	...	...	...	...	...	-	-	...	...	...	...	...	...	...	...	...	...	...	100	88	88	
<i>d<sub>nc</sub></i>	...	...	...	...	...	...	...	...	...	...	-	+	-	-	...	...	...	...	...	...	...	...	...	...	...	75	88	88	
<i>d<sub>ns</sub></i>	...	...	...	...	...	...	...	...	...	...	...	...	+	+	...	...	...	...	...	...	...	...	...	...	...	100	88	88	
GRE: <i>d<sub>ec</sub></i>	...	+	+	+	+	...	...	...	...	...	+	+	...	...	...	+	...	...	...	...	...	...	...	...	+	75	53	63	
<i>d<sub>es</sub></i>	+	+	+	+	+	+	...	...	...	...	+	+	+	+	+	...	+	+	+	...	...	...	...	...	...	50	50	50	
<i>d<sub>nc</sub></i>	...	...	...	...	...	...	...	...	...	...	...	-	-	...	...	...	...	...	...	...	...	...	...	+	+	+	75	75	75
<i>d<sub>ns</sub></i>	...	...	...	-	-	-	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	75	88	75
IRE: <i>d<sub>ec</sub></i>	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	-	-	...	+	...	+	...	...	...	88	75	88	
<i>d<sub>es</sub></i>	...	...	...	+	+	+	...	...	...	...	+	+	+	+	+	...	...	...	+	+	+	...	...	...	...	...	50	50	50
<i>d<sub>nc</sub></i>	...	-	...	...	-	...	...	...	...	...	-	-	-	...	+	+	...	...	...	-	-	-	...	...	...	63	25	63	
<i>d<sub>ns</sub></i>	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	100	88	88

POR: $d_{cc}$	+	+	+	+	+	+	...	-	-	...	...	...	...	...	...	...	...	...	...	...	...	...	...	75	63	63	
$d_{es}$	...	...	...	...	...	...	...	...	...	...	...	...	-	-	-	...	...	...	...	...	+	-	-	-	75	75	63
$d_{nc}$	...	...	...	...	...	...	...	+	+	...	...	...	...	+	+	...	...	...	...	...	+	+	+	88	63	63	
$d_{ns}$	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	-	...	...	-	+	+	75	88	88	
SPA: $d_{cc}$	+	+	+	-	+	...	...	+	+	...	...	...	...	...	...	+	...	...	...	...	...	-	...	...	63	63	75
$d_{es}$	...	...	...	...	...	...	+	...	...	...	-	...	...	...	-	...	...	...	...	...	...	...	...	...	88	75	88
$d_{nc}$	...	-	-	...	...	...	-	-	-	...	...	...	...	...	...	...	...	...	...	...	...	-	-	88	63	63	
$d_{ns}$	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	+	+	100	88	88	
SWE: $d_{cc}$	...	...	...	...	...	...	-	-	...	...	...	...	+	...	...	...	...	...	...	...	...	...	...	75	75	100	
$d_{es}$	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	-	-	...	...	...	...	100	75	88	
$d_{nc}$	...	...	...	+	...	...	...	+	+	...	...	...	...	...	...	...	...	...	...	...	...	...	...	88	75	88	
$d_{ns}$	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	100	100	100	
UK: $d_{cc}$	...	...	...	+	+	+	...	...	...	-	-	-	...	...	...	-	-	-	-	-	-	-	...	63	63	50	
$d_{es}$	+	...	...	...	...	...	...	...	...	+	+	+	+	+	+	...	...	-	-	...	...	...	...	50	63	63	
$d_{nc}$	...	...	...	-	-	-	...	...	...	...	...	...	...	+	...	...	...	...	+	+	...	...	...	88	63	63	
$d_{ns}$	...	...	...	+	...	...	...	...	...	...	...	...	...	-	-	+	+	...	...	...	...	...	...	63	75	75	
Total*	81	79	81	69	77	83	88	81	83	81	73	73	73	65	67	85	79	69	90	81	83	75	79	81	80	77	78
$d_{cc}$	67	44	44	56	44	78	78	56	67	89	78	78	78	78	78	67	67	67	89	67	78	78	100	89	75	67	72
$d_{es}$	78	89	89	89	78	78	89	100	100	67	56	67	67	44	44	89	67	67	78	78	67	89	89	89	79	75	75
$d_{nc}$	78	78	89	89	56	89	78	56	56	78	89	78	78	56	78	100	89	67	100	78	78	67	75	75	79	74	75
$d_{ns}$	100	100	100	100	89	100	100	100	100	100	89	78	89	67	67	78	78	67	89	89	89	78	78	89	92	88	86

Source: Twenty-seven tables in an appendix, available upon request.

Notes:  $*(d_{cc} + d_{es} + d_{nc} + d_{ns})/4$ . The definitions of the political dummies are explained in the text, Section 3. All other symbols and variables reported in this table are explained in Table 3.

socialists have increased the cycles of total transfers and transfers to households in post-elections periods, whereas conservatives in Germany reduced the cycle of transfers to businesses before elections. In Greece, both parties reduced the cycle of transfer payments to households in all periods. The empirical evidence therefore does not support an argument in favor of partisan cycles in transfer payments in the EU countries.

*4.2.1.3. Direct and indirect taxes.* The statistically significant regressors in the partisan cycle regressions indicate that all governments throughout the EU (especially Denmark, France, Greece, Portugal, Spain and Sweden) reduced indirect taxes in all periods (Table 5). However, the results are mixed in the respective equations for direct taxes. In particular, conservatives in Germany decreased the direct tax cycle both before and after elections, and socialists in Sweden also reduced it before elections. On the other hand, socialists in Portugal (“Socialist Party”) and Greece increased it before elections, and socialists and conservatives in Greece increased it after the elections. Finally, in Ireland, Fianna Fail (“conservatives”) increased it before and Fine-Gael–Labor (“socialists”) after the elections. The conclusion emerging from the analysis is that no case for partisan cycle regularities in direct and indirect taxes in the EU can be made during the sample period.

#### *4.2.2. Target variables*

The statistically significant estimates for the target variables indicate that both parties, when in power, have managed to reduce the partisan cycles (Table 6). More specifically, conservatives and socialists in Denmark and Germany, and conservatives in France, Sweden and the UK have reduced the cycles of GDP, and disposable income in all periods. Similar findings arise for the performance of socialists after the elections in the UK. Conservatives in Greece, among all conservative governments in the EU, have positively influenced the cycle of disposable income before elections and the cycle of private consumption spending both before and after elections. With the exception of the Socialist Party (“socialists”) in Portugal and conservatives in Sweden, which increased the cycle of the rate of unemployment after elections and in both periods, respectively, conservatives and socialists in all other countries have decreased it. Again, with the exception of socialists in Sweden in both periods, in all other countries socialists and conservatives reduced the cycle of the rate of inflation in all periods. In conclusion, there is no empirical evidence for partisan cycle regularities in the key target variables employed in the EU in the period of the sample.

#### *4.2.3. Treaty of Maastricht and cycles of instruments and targets*

The impact of the Treaty of Maastricht, as measured by the statistically significant coefficients of the dummy variables  $d_M$  and  $d_M^*$  in at least two filters used, is reported in Table 7. These estimates do not exceed the 20–25% of all cases considered. That is, the information presented in this table indicates that the impact of the Treaty of Maastricht on the cycles of the

Table 6

Testing for partisan cycles of target variables via three filters and regression (Eq. (3))

Countries Dummies	GDP			YD			C			u			π			Total (%)		
	HP	HP	BK	HP	HP	BK	HP	HP	BK	HP	HP	BK	HP	HP	BK	HP	HP	BK
	λ <sub>1</sub>	λ <sub>2</sub>		λ <sub>1</sub>	λ <sub>2</sub>		λ <sub>1</sub>	λ <sub>2</sub>		λ <sub>1</sub>	λ <sub>2</sub>		λ <sub>1</sub>	λ <sub>2</sub>		λ <sub>1</sub>	λ <sub>2</sub>	
DEN: $d_{ec}$	...	...	...	...	...	...	...	+	+	...	+	+	...	+	+	60	60	80
$d_{es}$	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	100	100	100
$d_{nc}$	—	...	...	—	...	...	...	—	—	—	—	—	—	—	—	100	100	100
$d_{ns}$	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	100	100	100
FRA: $d_{ec}$	—	—	—	—	—	...	—	...	...	—	...	...	—	...	...	100	80	80
$d_{es}$	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	100	80	80
$d_{nc}$	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	100	100	100
$d_{ns}$	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	100	80	100
GER: $d_{ec}$	...	—	—	...	...	...	...	...	...	...	...	...	...	...	...	80	100	60
$d_{es}$	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	80	80	80
$d_{nc}$	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	80	100	80
$d_{ns}$	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	100	80	100
GRE: $d_{ec}$	...	+	+	+	+	...	...	...	...	...	...	...	...	...	...	80	60	80
$d_{es}$	+	+	+	+	+	+	...	...	...	...	...	...	...	...	...	100	80	80
$d_{nc}$	...	...	...	+	...	...	...	...	...	...	...	...	...	...	...	40	60	40
$d_{ns}$	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	100	100	80
IRE: $d_{ec}$	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	100	60	80
$d_{es}$	...	...	...	+	+	+	...	...	...	...	...	...	...	...	...	40	80	40
$d_{nc}$	...	—	...	...	—	...	...	...	...	...	...	...	...	...	...	80	80	100
$d_{ns}$	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	80	80	100
POR: $d_{ec}$	+	+	+	+	+	+	...	—	—	...	—	—	...	—	—	100	60	100
$d_{es}$	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	100	100	80
$d_{nc}$	...	...	...	...	...	...	...	+	+	...	+	+	...	+	+	80	100	100
$d_{ns}$	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	40	80	60
SPA: $d_{ec}$	+	+	+	—	+	...	...	+	+	+	+	+	...	+	+	80	80	60
$d_{es}$	...	...	...	...	...	...	+	...	...	—	...	...	+	...	...	100	100	100
$d_{nc}$	...	—	—	...	...	...	—	—	—	...	—	—	—	—	—	100	80	80
$d_{ns}$	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	100	100	100
SWE: $d_{ec}$	...	...	...	...	...	...	—	—	...	...	—	—	...	—	—	80	80	100
$d_{es}$	...	...	...	+	...	...	...	...	...	...	...	...	...	...	...	80	80	80
$d_{nc}$	...	...	...	...	...	...	...	+	+	+	+	+	...	+	+	80	80	80
$d_{ns}$	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	100	80	80
UK: $d_{ec}$	...	...	...	+	+	+	...	...	...	...	...	...	...	...	...	80	80	80
$d_{es}$	+	...	...	...	...	...	...	...	...	...	...	...	...	...	...	80	60	60
$d_{nc}$	...	...	...	—	—	—	...	...	...	...	...	...	...	...	...	80	100	100
$d_{ns}$	...	...	...	+	...	...	...	...	...	...	...	...	...	...	...	100	100	80
Total*	89	85	86	86	95	89	81	81	89	81	81	89	81	83	81	86	84	84
$d_{ec}$	89	78	78	78	78	89	67	67	100	67	67	100	67	67	100	84	73	80
$d_{es}$	89	78	89	89	100	78	89	78	78	89	78	78	89	78	78	89	84	78
$d_{nc}$	89	89	78	78	100	100	78	89	89	78	89	89	78	89	89	82	89	87
$d_{ns}$	89	89	100	100	100	89	89	89	89	89	89	89	89	89	89	89	89	89

Source: Twenty-seven tables in an appendix, available upon request.

Notes:  $*$ =( $d_{ec} + d_{es} + d_{nc} + d_{ns}$ )/4. The definitions of the political dummies are explained in the text, Section 3. All other symbols and variables reported in this table are explained in Tables 3 and 5.

Table 7  
Impact of Treaty of Maastricht on cycles of fiscal instruments and target variables

Countries	$d_M < 0, d_M^* > 0$	$d_M > 0, d_M^* < 0$	$d_M < 0$	$d_M > 0$	$d_M^* > 0$	$d_M^* < 0$
<i>(a) Fiscal instruments</i>						
AUS	TH	...	...	...	TD	...
BEL	...	...	GI	...	...	...
DEN	GC, TR, TH	...	...	...	TB	G
FIN	TH	...	...	...	...	...
FRA	GI	...	...	...	...	...
GER	...	GC, GI, TH	...	...	...	G, TB
GRE	...	...	GC	...	...	...
IRE	...	TD	TD	...	...	...
NET	...	...	...	TI	...	...
POR	TB	...	...	...	...	...
SPA	...	...	GC, TD	...	...	...
SWE	...	GI	...	...	...	...
UK	TB	TH	...	...	TR	...
<i>(b) Target variables</i>						
FRA	GDP, YD, C	...	...	...	...	...
GER	...	C	...	...	...	...
GRE	...	...	u	...	...	u
IRE	...	...	YD	...	...	...
ITA	...	...	...	...	...	...
POR	...	YD	...	...	...	...
SPA	...	...	...	...	u	...
UK	...	...	...	u	...	...

Source: Forty-two tables in an appendix, available upon request.

Note: The results reported here come from relevant regressions associated with at least two of the three filters used. Variables  $d_M$  and  $d_M^*$  stand for the amplitude and interaction Maastricht dummies. The definitions of the variables are given in Tables 3 and 4, respectively.

instruments and target variables examined has been limited.<sup>18</sup> An observation in support of this finding is that the EU national governments were in a process of narrowing down differences in their economic policies, long before the initiation of the Treaty, with the ultimate objective of forming the EMU in the future.

### 5. Summary and conclusion

In this paper, we have searched for electoral and partisan cycle regularities in fiscal instruments and target variables in 14 EU member countries for the 1970–1998 period. To generate the cyclical variables, we used three filtering procedures. The conclusion emerging from the empirical analysis does not lend support to the presence of electoral-

<sup>18</sup> The source of the information in this table is estimates of regression (3) in association with the search of electoral cycles. Degrees of freedom problems prevented comparable estimates for the case of partisan cycles.

or partisan cycle-type hypotheses in the EU. Indications of political business cycles in the fiscal instruments and the target variables used are scanty. The great majority of the results suggest that the national governments of the EU countries did not take policy actions leading to the creation of electoral or partisan cycles in fiscal instruments and target variables. Our findings rather suggest that the EU governments have been primarily concerned with the pursuit of stabilization policies rather than with policies giving rise to political cycles, with the intent of curing the inflation and unemployment problems of the 1970s and 1980s. This result is encouraging, in the sense that it underlies a convergence of the fiscal policies pursued by the majority of the individual member countries of the Union in the pre-1998 period. It therefore facilitates the task of the European Commission in leading toward a federal-type fiscal policy in the EMU in the future.

### **Acknowledgements**

Earlier versions of this paper have been presented in seminars at the University of Cyprus, the National University of Ireland, University College Cork, and the Association d' Instituts Européens de Conjoncture Économique (Athens meeting, 2002); and the Conferences on Global Dimensions in Banking and Currency Crises, Izmir, Turkey (August 2000) and the Global Economy: Challenges and Opportunities for the 21st Century, Athens (August 2000). The constructive comments of three anonymous referees and the suggestions of Arye Hillman are greatly appreciated. Thanks are also due to Ricardo Fiorito, Efthymios Tsionas, Alexandra Livada, Marios Fridakis and the participants in the above seminars and congresses for comments and suggestions. Financial support received from the Center of Economic Research, Athens University of Economics and Business, is greatly acknowledged (grant for Project E791).







Table A2

Pre- and post-election year dummy variables used in the estimation of electoral cycle-type regression, EU 1969–1998

Year	Austria		Belgium		Finland		Italy		Netherlands	
	$d_e$	$d_n$	$d_e$	$d_n$	$d_e$	$d_n$	$d_e$	$d_n$	$d_e$	$d_n$
1969	0.17	0.83	0.00	1.00	0.50	0.50	0.00	1.00	0.00	1.00
1970	0.83	0.17	0.08	0.92	0.50	0.50	0.00	1.00	0.67	0.33
1971	0.83	0.17	0.92	0.08	0.92	0.08	0.58	0.42	0.33	0.67
1972	0.00	1.00	0.00	1.00	0.08	0.92	0.42	0.58	0.92	0.08
1973	0.00	1.00	0.75	0.25	0.00	1.00	0.00	1.00	0.00	1.00
1974	0.17	0.83	0.25	0.75	0.17	0.83	0.00	1.00	0.00	1.00
1975	0.83	0.17	0.00	1.00	0.83	0.17	0.50	0.50	0.00	1.00
1976	0.00	1.00	0.67	0.33	0.00	1.00	0.50	0.50	0.58	0.42
1977	0.00	1.00	0.33	0.67	0.00	1.00	0.00	1.00	0.42	0.58
1978	0.58	0.42	1.00	0.00	0.67	0.33	0.50	0.50	0.00	1.00
1979	0.42	0.58	0.00	1.00	0.33	0.67	0.50	0.50	0.00	1.00
1980	0.00	1.00	0.08	0.92	0.00	1.00	0.00	1.00	0.58	0.42
1981	0.00	1.00	0.92	0.08	0.00	1.00	0.00	1.00	0.42	0.58
1982	0.67	0.33	0.00	1.00	0.67	0.33	0.50	0.50	0.75	0.25
1983	0.33	0.67	0.00	1.00	0.33	0.67	0.50	0.50	0.00	1.00
1984	0.00	1.00	0.17	0.83	0.00	1.00	0.00	1.00	0.00	1.00
1985	0.08	0.92	0.83	0.17	0.00	1.00	0.00	1.00	0.58	0.42
1986	0.92	0.08	0.00	1.00	0.75	0.25	0.50	0.50	0.42	0.58
1987	0.00	1.00	1.00	0.00	0.25	0.75	0.50	0.50	0.00	1.00
1988	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.25	0.75
1989	0.17	0.83	0.00	1.00	0.00	1.00	0.00	1.00	0.75	0.25
1990	0.83	0.17	0.08	0.92	0.75	0.25	0.00	1.00	0.00	1.00
1991	0.00	1.00	0.92	0.08	0.25	0.75	0.67	0.33	0.00	1.00
1992	0.00	1.00	0.00	1.00	0.00	1.00	0.33	0.67	0.00	1.00
1993	0.17	0.83	0.00	1.00	0.00	1.00	0.75	0.25	0.58	0.42
1994	0.83	0.17	0.58	0.42	0.75	0.25	0.25	0.75	0.42	0.58
1995	1.00	0.00	0.42	0.58	0.25	0.75	0.67	0.33	0.00	1.00
1996	0.83	0.17	0.00	1.00	0.00	1.00	0.33	0.67	0.00	1.00
1997	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.58	0.42
1998	0.17	0.83	0.50	0.50	0.75	0.25	0.00	1.00	0.42	0.58

Source: Own calculations based on Table 2.

See Table A1.

## References

- Aldcroft, D.H., 2001. *The European Economy 1914–2000*. Routledge, London.
- Alesina, A., 1987. Macroeconomic policy in a two party system as a repeated game. *Quarterly Journal of Economics* 102, 651–678.
- Alesina, A., 1988. Macroeconomics and politics. *NBER Macroeconomics Annual*, 13–52.
- Alesina, A., Perotti, R., 1995. Fiscal expansions and adjustments in OECD countries. *Economic Policy*, October, 207–248.
- Alesina, A., Roubini, N., 1992. Political cycles in OECD economies. *Review of Economic Studies* 59, 663–688.
- Alesina, A., Roubini, N., 1993. Electoral business cycles in industrial democracies. *European Journal of Political Economy* 9, 1–23.

- Alesina, A., Cohen, G.D., Roubini, N., 1993. Electoral business cycles in industrial democracies. *European Journal of Political Economy* 23, 1–25.
- Alesina, A., Roubini, N., Cohen, G.D., 1997. *Political Cycles and The Macroeconomy*. The MIT Press, Cambridge, Mass.
- Alogoskoufis, G.S., Lockwood, B., Philippopoulos, A., 1992. Inflationary expectations, political parties, and the exchange rate regime: theory and evidence. *European Journal of Political Economy* 8, 375–399.
- Andrikopoulos, A.A., Prodromidis, K.P., 1996. Are there political cycles in the member countries of the EU? An empirical investigation. In: Paraskevopoulos, C.C., Grinspun, R., Georgakopoulos, T. (Eds.), *Economic Integration and Public Policy in the European Union*. Edward Elgar, Cheltenham, pp. 61–66.
- Andrikopoulos, A.A., Prodromidis, K.P., Serletis, A., 1998. Electoral and partisan cycle regularities: a cointegration test. *Journal of Policy Modeling* 20, 119–140.
- Andrikopoulos, A.A., Prodromidis, K.P., Loizides, J., 2000. Political business cycles and national tax policies in the EU. Athens University of Economics and Business. unpublished manuscript.
- Backus, D.K., Kehoe, P.J., 1992. International evidence on the historical properties of business cycles. *American Economic Review* 82 (4), 864–888.
- Bates, R., 1988. Governments and agricultural markets in Africa. In: Bates, R. (Ed.), *Towards a Political Economy of Development: A Rational Choice Perspective*. University of California Press, Berkeley, pp. 331–358.
- Baxter, M., King, R.G., 1995. Measuring business cycles: approximate band-pass filters for economic time series. NBER Working Paper, 5022.
- Burnside, C., 1998. Detrending and business cycle facts: A comment. *Journal of Monetary Economics* 41, 513–532.
- Canova, F., 1998a. Detrending and business cycle facts. *Journal of Monetary Economics* 41, 475–512.
- Canova, F., 1998b. Detrending and business cycle facts: a user's guide. *Journal of Monetary Economics* 41, 533–540.
- Cogley, T., Nason, J.M., 1995. Effects of the Hodrick–Prescott filter on trend and difference stationary time series; implications for business cycle research. *Journal of Economic Dynamics and Control* 19, 253–278.
- De Haan, J., Sturm, J.E., 1998. Political and economic determinants of OECD budget deficits and government expenditures: a reinvestigation. *European Journal of Political Economy* 13, 734–750.
- Frey, B.S., Schneider, F., 1978. An empirical study of politico-economic integration in the United States. *Review of Economics and Statistics* 60, 191–206.
- Gärtner, M., 1994. Democracy, elections, and macroeconomic policy: two decades of progress. *European Journal of Political Economy* 10, 85–109.
- Harvey, A.C., Jaeger, A., 1993. Detrending, stylized facts and the business cycle. *Journal of Applied Economics* 8, 231–247.
- Haynes, S.E., Stone, J.A., 1990. Political models of the business cycle should be revived. *Economic Inquiry* 28, 442–465.
- Hibbs, D.A., 1977. Political parties and macroeconomic policy. *American Political Science Review* 71, 1467–1487.
- Hodrick, R.J., Prescott, E.C., 1997. Post-war US business cycles: an empirical investigation. *Journal of Money, Credit and Banking* 29 (1), 1–16 (The HP filter has become well known as a Carnegie-Mellon University working paper since 1980).
- King, R.G., Rebelo, S.T., 1993. Low frequency filtering and real business cycles. *Journal of Economic Dynamics and Control* 17, 207–231.
- Krueger, A., Turan, I., 1993. The politics and economics in Turkish policy reform in the 1980's. In: Bates, R., Krueger, A.O. (Eds.), *Political and Economic Interactions in Economic Policy Reforms: Evidence from Eight Countries*. Blackwell, Oxford.
- Lindbeck, A., 1976. Stabilization policies in open economies with endogenous politicians. *American Economic Review* 62 (2), 1–19 (papers and proceedings).
- Nordhaus, W., 1975. The political business cycle. *Review of Economic Studies* 42, 169–190.
- Pack, J.R., 1987. The political policy cycle: presidential efforts vs. presidential control. *Public Choice* 54, 231–259.

- Pack, J.R., 1988. The Congress and fiscal policy. *Public Choice* 58, 101–122.
- Ravn, M.O., Uhlig, H., 1997. On Adjusting the HP-Filter for the Frequency of Observations Working Paper Center, Tilburg University.
- Rogoff, K., 1990. Equilibrium political budget cycles. *American Economic Review* 80 (1), 21–36.
- Rogoff, K., Sibert, A., 1988. Elections and macroeconomic policy cycles. *Review of Economic Studies* 55, 1–16.
- Saunders, P., Klau, P., 1985. The role of the public sector: causes and consequences of the growth of government. *OECD Economic Studies* 4 (Paris).
- Schuknecht, L.S., 2000. Fiscal policy cycles and public expenditures in developing countries. *Public Choice* 102, 115–130.
- Tufte, E.R., 1978. *Political Control of the Economy*. Princeton University Press, Princeton.
- Yoo, K.R., 1998. Intervention analysis of electoral cycles: the case of Japan. *Public Choice* 98, 241–258.