

## **THE POLITICAL-BUDGET CYCLE IN COUNTRIES OF THE EUROPEAN UNION**

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**Abstract:** We empirically estimate the political-budget cycle in the member countries of the European Union in period of 1988-2008. We indirectly analyze the potential of these countries to deal with increasing public debts which were augmented by the global economic crisis. The selection of the EU countries depends on three characteristics of democracy – shared power, openness and adaptability. The openness of democracy is the most important characteristics in relation to effective behavior of governments. We suppose that governments are motivated to make electoral manipulation in countries which have lower level of openness. We choose Finland, the Netherlands, Austria, Estonia, Poland, the Czech Republic, Romania and Greece to include into our sample of countries. The research of political-budget cycle confirmed our assumption. We did not find the political-budget cycle in Finland, the Netherlands and Estonia. On the other hand, we identified that Austrian, Czech and Greece governments had a tendency to manipulate fiscal policy before elections. The regression coefficients of Poland electoral dummies were very statistically significant but they had a wrong sign. We could not estimate political-budget cycle in Romania due to the short time series.

**Key words:** political-budget cycle, structural balance, election, openness of democracy, corruption, political parties.

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# THE POLITICAL-BUDGET CYCLE IN COUNTRIES OF THE EUROPEAN UNION

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## Introduction

Financial crisis started in the United States in the summer of 2007. It expanded into global economic crisis and compelled the government of European countries to set safety measures in the form of fiscal packages. They had only one task: to stimulate an aggregate demand and prevent economies from steep decline. However, fiscal expansion worsened fiscal balances of the countries. There were large double figure budget deficits in some countries. The EU governments were not able to adhere to the Maastricht criteria – compulsory for countries of the euro area and voluntary for the others. They put their fiscal discipline aside at the moment of impending recession.

When financial crisis disappeared and economies were picking up, the governments started to tackle the problem of increasing budget deficits and public debts. Generally, people worried about their future because of the threat of state bankruptcy in some European countries (as it happened in Iceland in 2008). The governments got political capital into their hands. It was a short period when voters were willing to support government in painful fiscal reforms, accepting lower incomes and decrease of their well-being because they believed in long-term economic growth. The governments had a special opportunity to deal with actual and future structural problems of budget deficits (e.g. ageing of population, generosity of social system, high expenditures in health and in education or bureaucracy).

This time of government protection can be very short. We have already noticed many strikes and upheavals in the response to first fiscal reforms in the European countries. And we can suppose that the acceptance of reforms will go down in time. Will government retain their reformatory efforts? Will they make only temporary safety measures or real budget reforms which improve effectiveness of public sector?

According to economic theories, politicians maximize their utility by clinging to power. Therefore governments usually make unpopular fiscal reforms at the beginning of the electoral period. They do not want to threaten their reelection. Politicians rely on shortsighted voters who are interested in actual events more than in events two or three years ago. Politicians can thus behave in an opportunistic way. They can consider four-year election period too short to make essential fiscal reforms. They can postpone them so that they would not be accountable to voters for them. On the other hand, forthcoming elections can motivate them to make populist politics.

If the governments of European countries are serious about their reform effort will we be able to find out through an analysis of the political-budget cycle. It explores a behavior of politicians in the last election periods and reveals their tendency to pursue short-time election targets. The political-budget cycle is a repeated abuse of fiscal

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policy by government in order to be reelected. It occurs in the form of lower tax revenues, higher public expenditures or larger budget deficits.

The fiscal expansion before election moves economy out of balance in short time. Growth in aggregate demand increases output of an economy (or decreases unemployment) and price level. If self-regulation mechanism works well, output of an economy will return on its initial level after some time. The fiscal expansion has no real effect on economy.

The repeated political-budget cycles give rise to large budget deficits. After that public debt increases. The government pays off its public debt by government bonds with different date of maturity. The government bonds are offered to domestic and foreign economic subjects. The large number of government bonds can increase interest rates. Economic subjects are attracted to higher interest rates of government bonds. If they buy them, they are able to have only a little risk private investments in their portfolios. The lower level of private investments hampers technological progress. It has a negative impact on productivity and competitiveness of economy. The political-budget cycle can create an undesirable crowding-out effect.

The first theoretic studies about the political-budget cycle were published by Rogoff, Sibert (1988) and Rogoff (1990). They finished a twenty-year long period in which economists had empirically verified the political-economic cycle. The political-economic cycle described a relationship between fundamental macroeconomic aggregates – inflation, unemployment and economic growth – and behavior of voters. This relationship was explained through the Phillips curve and changes in the monetary policy. Rogoff, Sibert (1988) replaced the Keynesian Phillips curve by neoclassic utility function of voter and politician. They reacted on two important events. They accepted the theory of rational expectation which denied a real effect of monetary policy in economy. And they took into account an increasing number of independent central banks. The governments lost their power in central banks or influenced them in an indirect way. The fiscal policy has become dominant instrument of manipulation of fiscal policy by governments (Drazen, 2000).

The research of the political-budget cycle is part of dynamic area of macroeconomics called political economics. We can find a lot of theoretical and empirical studies about the political-budget cycle. They are often based on different institutional presumptions. Shi, Svensson (2006) present evidence about the political-budget cycle in developing countries. Persson, Roland, Tabellini (2003) finds the political-budget cycle in the parliamentary democracies and countries with proportional voting rules. Alt, Lassen (2003) pays attention to fiscal transparency and their results suggest that lower transparency is associated with larger budget deficits in time of election. Brender, Drazen (2004) identify the political-budget cycle in new democracies. Their voters have not got enough experience with pre-election manipulation of fiscal policy. Rose (2006) argues that politicians will have limited ability to manipulate fiscal policy if the Balanced Budget Act is adopted. Mink, de Haan (2005) or Donahue, Warin (2006) are interested in the relationship between the Maastricht criteria and the political-budget cycle. The latest studies analyze electoral manipulation via pork-barrel spending.

According to previous research, our objective is to empirically verify the political-budget cycle in eight member countries of the European Union in 1988-2008. In this

way, we indirectly analyze the potential of these countries to deal with increasing public debts which were augmented by global economic crisis. The selection of the European Union countries depend on three characteristics of democracy – shared power, openness and adaptability (Halperin, Siegle, Weinstein, 2005). The openness of democracy becomes the most essential characteristic in relation to effective behavior of governments. The freedom of expression and minimizing of corruption are typical criteria of openness. These criteria are observed at the international level by Freedom House (The Freedom of the Press Index) and Transparency International (The Corruption Perception Index). They compile the longest and the most consistent time series of ranked countries. According to ranking of the countries, we choose from all member countries of the European Union the following: Finland, the Netherlands, Austria, Estonia, Poland, the Czech Republic, Romania and Greece. These countries differ in their economic conditions and advancement of political system, too.

We determine the basic period of time 1988-2008. This time period is long enough for analyzing of the political-budget cycle and includes 21 observations. We can identify the political-budget cycle at least for five regular parliamentary elections. We retain extent of time period only in the case of Austria. We modify the period of time according to availability of data in the international databases. The time periods of post-communistic countries start in 1995. There were important political and economic changes in Estonia, Poland, the Czech Republic and Romania which prevented governments from electoral manipulation. We also exclude the year of 2009 from our analysis because governments performance were hit by the global economic crisis in this year.

We estimate the model of the political-budget cycle for each country separately. We try to avoid bias which results from using panel data. The models will also use different explanatory variables. The statistical significance of explanatory variables will indicate its impact on the size of structural deficit. We estimate the model of the political-budget cycle by Ordinary Least Squares Method (OLS).

We explain the assumptions of model in the first chapter. The second chapter describes the estimated model of the political-budget cycle – the general formula of the model, all variables and data resources. The third chapter contains the results of estimated models of EU countries. We summarize our findings in the conclusion.

### **1. Openness of democracy**

At the beginning, we set up basic assumptions of our research. These assumptions have an institutional form and represent the essential characteristics of democracy. The better the countries fulfill characteristics of democracy, the more effective their governments' performance is and the lesser is motivation of politicians to make electoral manipulation. The control mechanisms of democracy work well so that they discourage politicians from fiscal manipulation. Politicians know that voters do not accept such behavior and punish it in the following elections. Our approach removes ideological differences between political parties. It does not matter if left-wing or right-wing political party is in power. We are interested in how effective the performance of governments is.

Halperin, Siegle, Weinstein (2005) distinguish three characteristics of democracy - shared power, openness, adaptability. Shared power is a part of formal legislative (especially the Constitution) and describes a separation of legislative, executive and judicial power. Executive should not hold all power in their hands and obstruct legislative in making laws or judiciary in checking rules. People respect law in standard democracies and this is also the case of our countries. The best values of Polity IV Project confirm this fact. Polity IV Project examines behavior and relationship between subjects of state power (Marshall, Jaggers (2010)).

The second characteristic of democracy – adaptability – is associated with political stability of countries. The necessary condition of adaptability is an acceptance of voters' desire which results in alternation of political parties in power. The power of political parties is defined by the size of their membership. The more members a political party has, the more stable is its position in the party system. The government strength is also important in the countries with proportional voting roles. Difference in ideology or not enough seats in parliament increase the threat of government fall and a necessity to announce preliminary elections. If governments often change in power, their performance is hampered and reforms are made more difficult.

The level of political stability varied between our European Union member countries. The indicator of political stability was published in the survey of Governance Matters VIII of the World Bank. Finland had the best political stability in our sample of countries. Austria was considered to be a good example of country with a stable political system at the end of the 1980s. But the two strongest Austrian political parties suffered from decrease of membership since 1990s. The government coalitions were not ideologically consistent and were thus weak. There was also big problem with stability of Dutch governments at the turn of the millennium. The indicator of political stability was lower in remaining countries. Romania had a long way ahead. The party system of Romania was very weak. The political parties were interconnected with business interest groups and did not have the confidence of voters. Therefore, voters did not want to be members of political parties. Political instability was typical for countries with developing political system as we suppose. However, political stability was related to the last characteristics of democracy – openness.

**Table 1: Governance Matters - Political Stability Indicator (1996-2008)**

Countries	1996	1998	2000	2002	2003	2004	2005	2006	2007	2008
Finland	1.30	1.32	1.46	1.62	1.66	1.60	1.56	1.47	1.43	1.36
Netherlands	1.33	1.49	1.46	1.24	1.17	0.99	0.89	0.80	0.85	0.95
Austria	1.31	1.32	1.27	1.31	0.99	1.01	1.06	1.03	1.23	1.30
Estonia	0.49	0.56	0.70	0.89	0.98	0.82	0.64	0.76	0.60	0.57
Poland	0.61	0.61	0.40	0.68	0.66	0.22	0.34	0.33	0.56	0.79
Czech Rep.	1.06	0.80	0.62	0.99	0.90	0.71	0.78	0.87	0.84	0.93
Romania	0.37	0.19	0.00	0.32	0.27	0.01	0.20	0.23	0.27	0.30
Greece	0.32	0.26	0.63	0.72	0.64	0.44	0.48	0.53	0.50	0.32

*Source: Kaufmann, D., Kraay, A., Mastruzzi, M. (2010)*

*Notes: The governance indicator is measured in units ranging from about -2.5 to 2.5, with higher values corresponding to better governance outcomes.*

Openness is an essential assumption of effective behavior of democratic governments. Openness is based on information. We talk about information which governments provide to voters. This information is a public good and yields positive externality. However, governments can be motivated to provide less public good than is its social optimal level. There is a rent in the utility function of politicians in addition to other variables. This rent does not have to be paid in money. It is related to prestige of political function and as such, it does not motivate politicians to behave ineffectively. On the other hand, the rent in the form of money has opposite consequences. This rent motivates politicians to abuse authority for their private purpose. We call this behavior rent-seeking activity or corruption. These activities are synonyms of ineffective behavior of politicians.

Democracy has at least two control mechanisms which can prevent it from ineffective behavior of politicians. The first control mechanism is freedom of press. The second one is establishment of an independent civil society. We talk about freedom of press if the media are not formally (legislative regulation) or informally (personal interest of politicians or businessmen) restricted in offering information. The media acquire information from initiative of governments or put pressure on governments to give voters more information than they do. The media process information, verify it and call attention to shortcomings. They only inform voters about ineffective behavior of governments (either mistakes in public administration or corruption). The punishment is a matter of law enforcement authorities. However, voters themselves can punish governments for ineffective behavior in the next election.

Development of civil society is the second control mechanism of democracy. The independence of civil society indicates interest of voters to actively influence public affairs. When civil society augments, voters are interested more in specific public activities. They put pressure on governments to be more effective because of their private interest. There is a positive correlation between civil society and higher level of power decentralization. When political responsibility is shifted to local governments, voters are closer to allocation of public resources. In addition, the agenda of central government is smaller and it is easier to control central government. Civil society makes distribution of public goods better and decision of voters in election more sophisticated. However, the development of civil society is subjected to higher level of information from governments to voters.

Openness of a democracy is described with four indicators in our sample of EU countries. The first indicator - Freedom of the Press Index - is published by international organization Freedom House. The ratings of countries had tendency to stagnate or increase in time with exception of Austria (Table 2). Austria's Freedom of the Press Index worsened very much because of increasing political pressures on the media. The best ratings were achieved by Finland and the Netherlands. The freedom of press was accepted in Estonia or in the Czech Republic. The worst conditions were in Romania. There were strong regulations and pressures of interest groups on the media.

**Table 2: The Indicator of Freedom of the Press (1996-2008)**

Countries	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Finland	15	15	15	15	15	14	10	10	9	9	9	9	9
Netherlands	14	14	14	14	14	15	15	15	12	11	11	13	13
Austria	12	12	12	12	12	14	24	23	23	21	21	21	21
Estonia	24	22	20	20	20	20	18	17	17	17	16	16	16
Poland	21	27	25	25	19	19	18	18	19	20	21	22	24
Czech Rep.	19	19	19	20	20	24	25	23	23	22	20	18	18
Romania	49	47	39	44	44	44	35	38	47	47	44	42	44
Greece	29	27	30	30	30	30	30	28	28	28	28	25	27

Source: Freedom House (2010)

Notes: The indicator of Freedom of Press has three rating: (F) Free: 0-30, Partly Free (PF) 31-60 and Not Free (NF) 61-100.

The second indicator – The Corruption Perception Index – is annually compiled by the organization Transparency International. The best ratings were achieved again by Finland and the Netherlands (Table 3). Estonia had the best rating among post-communistic countries. The Corruption Perception Index of Poland has improved in last five years. Unfortunately, the Czech Republic lagged behind these countries. The rating of Greece worsened rapidly in reaction to the global economic crisis. The rating of Greece was as low as the rating of Romania in 2009.

**Table 3: The Corruption Perception Index (1997-2009)**

Countries	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Finland	9.5	9.6	9.8	10.0	9.9	9.7	9.7	9.7	9.6	9.6	9.4	9.0	8.9
Netherlands	9.0	9.0	9.0	8.9	8.8	9.0	8.9	8.7	8.6	8.7	9.0	8.9	8.9
Austria	7.6	7.5	7.6	7.7	7.8	7.8	8.0	8.4	8.7	8.6	8.1	8.1	7.9
Estonia	-	5.7	5.7	5.7	5.6	5.6	5.5	6.0	6.4	6.7	6.5	6.6	6.6
Poland	5.1	4.6	4.2	4.1	4.1	4.0	3.6	3.5	3.4	3.7	4.2	4.6	5.0
Czech Rep.	5.2	4.8	4.6	4.3	3.9	3.7	3.9	4.2	4.3	4.8	5.2	5.2	4.9
Romania	3.4	3.0	3.3	2.9	2.8	2.6	2.8	2.9	3.0	3.1	3.7	3.8	3.8
Greece	5.4	4.9	4.9	4.9	4.2	4.2	4.3	4.3	4.3	4.4	4.6	4.7	3.8

Source: Transparency International (2010)

Notes: The Corruption Perception Index is measured in units ranging from about 0 to 10, with higher values corresponding to better outcomes.

The civil society enforces its special interests through non-profit organizations. The development of non-profit organizations in the post-communistic countries involves the NGO Sustainability Index which presents the United States Agency for International Development (USAID). This NGO Sustainability Index analyzes and assigns scores to legal environment, organizational capacity, financial viability, service provision, public

image, etc. According to rating, the most successful non-profit organizations were in Estonia and Poland (Table 4). The major shortcomings suffered Romania's non-profit organizations. In post-communistic countries, non-profit organizations had typically problems in areas of organizational capacity, financial viability and credibility. On the other hand, the number of non-profit organization increased in time, they polarized activity and did not concentrate offices to the capital city of the country. The same review of quality nonprofit organizations was not available for old member countries of the European Union. However, we suppose that their quality was higher (Zook, 2009).

**Table 4: The NGO Sustainability Index (1997-2009)**

Countries	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estonia	-	-	-	2.4	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.0	2.0
Poland	1.8	2.0	2.1	2.1	2.1	2.2	2.1	2.3	2.3	2.3	2.3	2.2	2.2
Czech Rep.	-	-	-	2.4	2.3	2.5	2.4	2.7	2.7	2.7	2.7	2.7	2.7
Romania	3.6	3.8	4.1	4.1	4.0	3.7	3.8	3.7	3.6	3.6	3.5	3.5	3.5

Source: United States Agency for International Development (2010)

Notes: The NGO Sustainability index is measured in units ranging from about 1 to 7, with lower values corresponding to better outcomes.

A share of local government total expenditures to general government total expenditures is the last indicator of openness. The higher value of indicator corresponds to higher level of decentralization. Table 5 shows that the largest share of power had local governments in Finland. However, there was an unexpected low level of decentralization in Austria. Austria lagged behind all post-communistic countries. The worst value of indicator can be seen in Greece. Greek central government made almost all political decisions.

**Table 5: The indicator of decentralization of political power (1996-2008)**

Countries	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Finland	34.0	35.1	35.3	35.2	36.7	37.7	38.2	38.5	38.7	39.2	40.1	40.7	41.6
Netherlands	33.8	32.9	33.7	34.3	35.5	34.8	35.2	35.7	35.2	35.2	33.6	34.1	34.2
Austria	18.4	17.6	17.5	17.7	17.4	15.3	15.3	15.1	14.1	15.2	15.2	15.4	15.6
Estonia	26.3	27.1	25.0	23.8	23.4	28.8	28.9	27.5	28.2	28.2	27.6	28.1	27.7
Poland	31.2	22.3	22.1	34.0	32.5	32.1	30.5	29.1	30.2	30.4	31.2	31.6	32.7
Czech Rep.	28.6	22.8	22.8	21.7	22.9	22.9	23.8	28.1	27.9	26.3	27.5	26.2	26.6
Romania	13.6	12.3	10.8	10.2	11.3	17.8	18.4	20.1	20.9	21.0	24.5	26.4	25.3
Greece	4.9	4.8	5.0	5.0	5.3	5.6	5.8	5.4	5.9	5.9	6.0	5.7	5.7

Source: OECD (2010)

Notes: The indicator of decentralization of political power is measured as a share of local government total expenditures to general government total expenditures, with higher values corresponding to higher decentralization of power.



The survey of openness indicates that there are no differences in our sample of countries in case of shared power. The indicator of political stability is more volatile and depends on stability of party system and type of voting systems. Voter's willingness to be active in politics is the most important condition of political stability. The political parties which suffer low level of membership are weak and incline to disintegration. They are a threat to stability of governments or their coalition cohesion. The openness of democracy becomes the most important characteristics in relation to research of the political-budget cycle. The ratings of openness indicators differ significantly in our sample of countries. If democracy is not sufficiently open, there is not free flow of information from the media to voters. Political pressure on the media has only one task: to cover ineffective behavior – corruption, for example. The ineffective behavior of politicians is also supported centralization of power. Voters are far from real politics and are not motivated to be active in public affairs.

The best results in all indicators of openness are seen in Finland. The Finnish media are independent, society disapproves corruption behavior and voters are active in politics due to high level of power decentralization. We suppose that Finnish politicians do not manipulate fiscal policy and behave effectively. The Dutch government also is not prone to the political-budget cycle. The results of Austria's indicator are not very good and show a tendency to decrease. There is the low level of openness in the post-communistic countries. However, the ratings of post-communistic countries differ very much when we compare the results of Estonia and Romania. The worst ratings of indicators between old member countries of the European Union are seen for Greece. We suppose that politicians will be motivated to make electoral manipulation in countries which have the lower level of openness. The control mechanisms of democracy do not work very well and politician can initiate the political-budget cycle.

## 2. Model set-up

We examine the political-budget cycle for eight countries of the European Union in period 1988-2008. This time period contains 21 observations. The beginning of time period is consistent with new democratic history of the countries in Central and Eastern Europe. The democratic political system is fundamental assumption of our model of the political-budget cycle. Finally, the period 1988-2008 is used only for Austria because the data sets for remaining countries cover a shorter period. Shorter time periods are typical for post-communistic countries and contain less than 13 observations. The political and economic transformation prevented the governments of post-communistic countries from electoral manipulation at the beginning of the 1990s. Romania has the shortest time period. The defined time period does not contain year 2009 (except for Romania) because of the global economic crisis.

Our research of the political-budget cycle follows Shi, Svensson (2006) and Brender, Drazen (2004). They used the Generalized Method of Moments developed by Arellano, Bond (1991) to estimate the political-budget cycle. They wanted to minimize possible bias in using the Ordinary Least Squares Method. This bias was brought about by a country fixed effect. This explanatory variable differed in individual countries and contained factors which were not a part of other variables of model but influenced budget deficits (e. g. generosity of social system, structure of economy, international liabilities, enhancing quality of environment). Shi, Svensson (2006) and Brender,

Drazen (2004) estimated the fixed effects of countries for large data sets. Our model of the political-budget cycle does not contain this explanatory variable because of individual analysis of EU countries. We use for estimating of our model the original Ordinary Least Squares Method.

The model of the political-budget cycle is given by:

$$f_t = \sum_k b_k f_{t-k} + \sum c x_t + d \text{ELEC}_t + \varepsilon_t, \quad (1.1)$$

where  $f_{t-k}$  is general government structural balance in year t-k,  $x_t$  is a vector of control variables in period t,  $\text{ELEC}_t$  is an electoral dummy in period t and  $\varepsilon_t$  is an error in period t.  $b_k$ ,  $c$  and  $d$  are estimated regression coefficients. The statistical significance of regression coefficient  $d$  refers to existence of the political-budget cycle.

The dependent variable  $f_t$  involved data on central government balance, total expenditure or total revenue in Svensson (2006), Brender, Drazen (2004) and etc. Our dependent variable  $f_t$  is general government structural balance which excludes the incidence of business cycle on the government balance. We take these data from databases of IMF (Finland, Austria, Greece), OECD (The Netherlands, Poland), the European Commission (Estonia, Romania) and Ministry of Finance of the Czech Republic.

The standard explanatory variable in models of the political-budget cycle is general government structural balance in the year t-1. It measures how much general government structural balance  $f_t$  tends to change when one year lagged general government structural balance  $f_{t-1}$  changes by one unit. If we use this explanatory variable, we will shorten the time periods of one item. We suppose that adoption of law takes time to governments when they arrange electoral manipulation. We will use the notation  $\text{struct\_b\_t-1}$  in empirical analysis when we refer to one year lagged general government structural balance.

We choose a set of fifteen explanatory variables to examine the political budget cycle in the countries of the European Union. These variables are based on competence of governments. The governments have power to change or influence them. At the same time, they are (directly or indirectly) a part of voters' utility functions. On the side of tax revenues, we compile the variable of cyclically-adjusted taxes on individual or household income in millions of national currency ( $\text{cycl\_adj\_inc\_tax\_t}$ ) and cyclically-adjusted taxes on individual or household income in percentage of GDP ( $\text{tax\_hdp\_t}$ ). We follow Brender, Drazen (2004). They found out that governments in established democracies had a tendency to cut taxes before elections. They respond to fiscal conservatism of voters. Voters have a long time experience with behavior of governments before elections and have aversion to populist politics. However, voters consider reduction in taxes to be a form of motivation and expect a future increase of income. Furthermore, we present the variables of employment in public sector. They have a form of the total number of employees in public sector ( $\text{public\_emp\_t}$ ) and public wage expenditures ( $\text{wage\_t}$ ). We suppose that government can influence public employees before the election.

We take into account the number of pensioner in every country ( $pen_{65+_t}$ ) and the number of pensioners in percentage of whole population ( $pen_{65+_pop_t}$ ). Almost all countries of the European Union have problem with ageing of their population. The expenditures on old-age pensions increase and make up an essential part of public expenditures. Pensioners are a relatively large group of voters and populist policies which are targeted at them can worsen the budget deficits. On the side of public expenditures, we also use the explanatory variables of social benefits ( $soc\_benefit_t$ ), social transfers ( $soc\_transfer_t$ ), health expenditures ( $health_t$ ), education expenditures ( $edu_t$ ), social protection expenditures ( $soc\_protection_t$ ) or family and child expenditures ( $family_t$ ) and unemployment expenditures ( $unemp_t$ ). The last explanatory variable of the model is public debt interests to GDP ( $int\_hdp_t$ ). Many EU countries amassed a large public debt and they have to pay it off.

We take the data for explanatory variables from database of IMF, OECD, Eurostat, ILO or Ministry of Finance and Statistic Office of the sample countries. The time series have a tendency to sustain upward or downward movement. We use the concept of differencing to remove these trends and it shortens times series about one item.

The electoral dummy has two forms in our model of the political-budget cycle. If time period contains regular and preliminary parliamentary elections together, we use notation  $elec\_r+p_t$  for electoral dummy. On the other hand, if we take into account only regular parliamentary election, we estimate the regression coefficient of the variable  $elec\_r_t$ . The electoral dummy equals 1 in an election year and 0 otherwise no matter when during the year parliamentary election occurred. The parliamentary elections are typically in our sample of countries every four years. The countries differ only in dates of elections (spring vs. autumn).

This definition of model helps us analyze the political-budget cycle in the countries of the European Union in period 1988-2008. The finding about the political-budget cycle will be the evidence about ineffective behavior of European governments.

### 3. Empirical evidence of the political-budget cycle

The models of the political-budget cycle have a specific formula for each country of our sample. The models are compiled from explanatory variables which suit the best changes of dependent variable. The estimates of model are made for electoral dummies  $elec\_r+p_t$  and  $elec\_r_t$  separately and the results are compared. The time series are shorter due to the use of one year lagged general government structural balance ( $struct\_b_{t-1}$ ) and concept of differencing. We present the summary of our results in the Table 6 and Table in the Appendix.

First of all, we estimated the political-budget cycle in Finland. The time series covers the period 1991 – 2008 showing a total of five regular parliamentary elections. There were three strong political parties in Finland, but none had a chance of getting to power alone. Although these political parties had to form coalition governments, the political system of Finland was very stable.  $R^2 = 0.66$  and P-value for the F-statistic of model was smaller than 10 %. We can say that 66 % of the variation in general government structural balance can be explained by the variation of chosen explanatory variables. The explanatory variables had together statistically significant explanatory power for

the dependent variable, but when we compare these results with other countries they are the worst of all (except for Romania).

The model of the political-budget cycle of Finland was estimated according to this formula:

$$\text{struct\_b\_t} = c_1 * \text{cycl\_adj\_inc\_tax\_t} + c_2 * \text{soc\_benefit\_t} + c_3 * \text{pen\_65+\_pop\_t} + d * \text{elec\_r+p\_t} + \mathcal{E}_t. \quad (1.2)$$

The estimated regression model of Finland did not contain the variable  $\text{struct\_b\_t-1}$  unlike formula (1.1). The variable  $\text{struct\_b\_t-1}$  made a predictive power of model higher but it was not statistically significant itself. We suppose that the growth of revenue from cyclically-adjusted taxes on individual or household income improve structural balance and vice versa. The estimated regression coefficient of variable  $\text{cycl\_adj\_inc\_tax\_t}$  had wrong minus sign. We found out that the faster increase of public expenditures was not offset by increase in income tax revenues and worsened structural balance. However, the variable  $\text{cycl\_adj\_inc\_tax\_t}$  was not statistically significant. The growth of social benefits ( $\text{soc\_benef\_t}$ ) had a negative effect on structural balance because of minus sign of the regression coefficient. This explanatory variable was statistically significant at the 5 % level. Finland belongs to countries which suffer from ageing of population. This process started at the beginning of the millennium. The Finnish government actually gives attention to retirement policy and prepares some reforms. The regression coefficient of  $\text{pen\_65+\_pop\_t}$  had a plus sign so that big rise of pensioner in population did not enlarge structural imbalance. On the other side, we have to notice that Finnish governments maintained old-age pension system in surplus.

The regression coefficient of electoral dummy had right minus sign. But the decrease of structural deficits/surpluses was not as large as to make the electoral dummy statistically significant. We argue that the Finnish governments did not have the tendency to initiate the political-budget cycle. They behaved effectively in this respect.

The analysis of the political-budget cycle in the Netherlands was based on the total of thirteen observations. The data set was limited because of the short time series of cyclically-adjusted taxes on individual or household income to GDP ( $\text{tax\_hdp\_t}$ ). The four parliamentary elections took place in the Netherlands in period 1995-2008. Turbulent changes in the political system hit the Netherlands after the parliamentary elections in 2002. The stability of the political system was at risk. Politician Wilhelms S. P. Fortuijn was assassinated during the 2002 election campaign because of his controversial views about immigrants and Islam. His small political party Pim Fortuyn became unexpectedly the second most successful political party in the elections. Pim Fortuyn participated in forming of the coalition government. However, politicians of Pim Fortuyn lacked experience and caused internal conflicts in their political party which led to the fall of the government. This government became the shortest-ruling Dutch cabinet since the WWII. Questions of nationality and religion are still important political topics in the Netherlands in these days.

The model of the political-budget cycle in The Netherlands was very statistically significant. P-value for the F-statistic was smaller than 1 %.  $R^2 = 0.92$ , i. e. the explanatory variables explained large part of changes in structural balance.

The model of the political-budget cycle of the Netherlands was calculated as:

$$\text{struct\_b\_t} = b * \text{struct\_b\_t-1} + c_1 * \text{tax\_hdp\_t} + c_2 * \text{public\_emp\_t} + d * \text{elec\_r+p\_t} + \mathcal{E}_t, \quad (1.3)$$

where the regression coefficient  $b$  of explanatory variable  $\text{struct\_b\_t-1}$  had minus sign. We suppose that this result was influenced by spring term of parliamentary elections which motivated governments to make electoral manipulation the year before elections. The decrease of structural balance in the period  $t-1$  by EUR 1 milliard worsened the actual structural balance of the Netherlands by EUR 0.4 million. This explanatory variable was statistically significant at the 1 % level. The regression coefficient of variable  $\text{tax\_hdp\_t}$  had minus sign and was not statistically significant. We can use the same explanation in this case as for analysis of Finland. The growth of public employment had tendency to worsen the structural balance by EUR 0.4 million. The explanatory variable  $\text{public\_emp\_t}$  was statistically significant at the 1 % level. The same level of significance was reached for the last explanatory variable  $\text{int\_hdp\_t}$ . The rise of public debt interests to GDP by 1 % enlarged structural deficits (or reduce structural surpluses) by EUR 1.9 milliard. Public debt of the Netherlands was about 70 % GDP in the mid-1990s. The Dutch governments had to fulfill the Maastricht criteria and succeed in the reduction of public debt to 45 % GDP in 2007.

The regression coefficient of electoral dummy  $\text{elec\_r+p\_t}$  had minus sign but we did not find any statistical significance. The results did not change when we excluded the 2003 preliminary election from our sample. We found out that there was not any political-budget cycle in the Netherlands.

We used the longest time series to verify the political-budget cycle in Austria. In addition to arguments in Chapter 2, the beginning of the time series corresponded to the change in Austrian party system which diverted from bipartism to moderate pluralism. There were two very strong political parties – Social Democratic Party of Austria and Austrian People's Party – which governed separately or in big coalitions. The other political parties had marginal representation in parliament. The political system of Austria was considered to be very stable. The situation changed at the beginning of the 1990s. Both of these political parties suffered the fall of membership and at the same time the power of the other political parties went up after elections. The coalition governments were weak because of different ideology of political parties (Hloušek, 2008). There were seven parliamentary elections in the period 1988-2008 and three of them had preliminary character.

The model of the political-budget cycle of Austria had this formula:

$$\text{struct\_b\_t} = c_1 * \text{tax\_hdp\_t} + c_2 * \text{soc\_benefit\_t} + c_3 * \text{public\_emp\_t} + c_4 * \text{int\_hdp\_t} + d * \text{elec\_r+p\_t} + \mathcal{E}_t. \quad (1.4)$$

The model of the political-budget cycle in Austria was very statistically significant. P-value for the F-statistic was smaller than 1 % and  $R^2 = 0.83$ . The regression coefficient of explanatory variable  $\text{tax\_hdp\_t}$  had plus sign. This plus sign corresponded to assumptions of our model. The growth of tax burden by 1 % had tendency to enlarge structural deficits of Austria by EUR 2.5 milliard. This explanatory variable was significant at the 99 % level. The Austrian governments made several income tax reforms from the end of the 1980s. They wanted to stimulate employees to work harder

and deal with increasing competition on the international labor market. The income tax reforms were typically adopted the year before elections or in election year, i.e. 1989, 1994, 1999 and 2005. The income tax cuts reduced tax revenues and worsened structural balance of Austria (Schratzstaller, Wagener, 2008). The explanatory variable  $soc\_benefit\_t$  had right minus sign but we did not find any statistical significance. There also was not any statistical significance at the explanatory variable  $public\_emp\_t$ . The public employment in Austria moved in opposite direction to structural balance. The Austrian governments made large reform of public administration in the 1990s which led to decrease of public employment. They wanted to reduce pressure on the expenditure side of state budgets. But we found out that the effect of reforms was smaller than governments expected because the problem of the large structural deficits still persisted. Accumulation of public deficits made public debt of Austria higher. The public debt to GDP was about 60 %. The rise of public debt interests to GDP ( $int\_hdp\_t$ ) by 1 % had tendency to worsen structural balance of Austria by EUR 7.8 milliard. The seriousness of indebtedness was confirmed by high statistical significance of explanatory variable  $int\_hdp\_t$ .

The regression coefficient of electoral dummy had minus sign. The variable was statistically significant at the 1 % level. The structural deficits of Austria had tendency to enlarge by EUR 2 milliard in year of elections. The result of regression analysis changed only slightly when we excluded the preliminary elections from our data set.  $R^2$  decreased to 78 % but the statistical significance of model remained on the same level. Recently, the explanatory variable  $soc\_benefit\_t$  was statistically significant at the 10 % level and the statistical significance of  $elec\_t\_r$  went down at the 90 % level. Our analysis of the political-budget cycle revealed a tendency of Austrian governments to make electoral manipulation in period 1988-2008.

We found out that there was no political budget cycle in Estonia. In addition, the regression coefficient of electoral dummy  $elec\_r+p\_t$  had plus sign so that the structural balance of Estonia had tendency to improve in the year of elections. Estonian governments were able to draw up the state budgets in surplus. They followed successful public policy of governments in Finland and the Netherlands. The good condition of public finance confirmed indirectly the plus sign and statistical significance of the explanatory variable  $tax\_hdp\_t$ , too. The statistical significance of the explanatory variable  $soc\_benefit\_t$  was at the 5 % level. The growth of social benefits caused the deterioration of structural balance.

The model of the political-budget cycle of Estonia was given by:

$$struct\_b\_t = c_1 * tax\_hdp\_t + c_2 * soc\_benefit\_t + c_3 * public\_emp\_t + d * elec\_r+p\_t + \varepsilon_t. \quad (1.5)$$

According to  $R^2$  the variation in structural balance was explained by changes of the explanatory variables at the 78 % level. The model of the political-budget cycle was less statistically significant because P-value for the F-statistic was smaller than 10 %. The three parliamentary elections took place in Estonia in the period 1997-2008. Estonian political stability was negatively influenced in two directions. The winning political parties did not automatically form governments after parliamentary elections. The government coalitions were weak and fell down during the election period. Then political parties entered new coalition governments. However, we should notice that

polarization of the Estonian party system was on the low level and political parties usually inclined to centre or to right part of the ideological spectrum (Strmiska, M., a kol., 2005, Cabada, L., Dvořáková, V., a kol., 2004).

Estimating political-budget cycle of Poland revealed some interesting findings. The electoral dummies  $elec\_r+p\_t$  and  $elec\_r\_t$  had a high statistical significance. However, the regression coefficient of electoral dummies had plus sign so that structural balance had tendency to improve by PLN 11.6 milliards ( $elec\_r+p\_t$ ) or 14.7 PLN ( $elec\_r\_t$ ) in the year of parliamentary elections. There were four parliamentary elections in Poland in the period 1997-2008 and only one of them had preliminary character. The political stability of Poland was threatened by ideological differences between political parties. The coalition governments were heterogeneous and were not able to held the office in unchanged composition for the whole electoral term (Strmiska, M., a kol., 2005).

The model of the political-budget cycle of Poland had this formula:

$$struct\_b\_t = c_1 * tax\_hdp\_t + c_2 * soc\_benefit\_t + c_3 * pen\_65+_t + c_4 * int\_hdp\_t + d * elec\_r+p\_t + \mathcal{E}_t, (1.6)$$

where  $R^2=0.95$  and P-value for the F-statistic of the model was smaller than 1 %. The results of explanatory variable  $tax\_hdp\_t$  depended on including of preliminary election. If the preliminary election was in the sample, the regression coefficient had a plus sign and if there were only regular elections in the sample, the regression coefficient had a minus sign. However, the explanatory variable  $tax\_hdp\_t$  was not statistically significant in either cases. The expected results had the explanatory variable  $soc\_benefit\_t$ . The explanatory variable  $pen\_65+_t$  did not meet the model assumptions. A number of pensioners had declining growth rate in Poland in long-time. Finally, the number of pensioners declined by 39 000 in year 2008. It was extraordinary development in our sample of EU countries. The Polish government fought against amassing of public debt. The public debt was about 45 % GDP. The regression coefficient of explanatory variable  $int\_hdp\_t$  was statistically significant at the 1 % level. The rise of public debt interests by 1 % had tendency to increase structural deficits of Poland by PLN 25.9 milliard.

The analysis of the political-budget cycle in the Czech Republic was based on the total of eleven observations. The three parliamentary elections took place in the period 1998-2008. The first of them – in 1998 – was called preliminary. Czech governments were weak and ideologically heterogeneous. The setting of voting system together with no coalition potential of Communist Party of Bohemia and Moravia had a negative impact on political stability (Pšeja, 2005). The statistical significance of model was lower and  $R^2=0.81$ . When we excluded the preliminary election from our data set, there was not any statistical significance of the model.

The model of the political-budget cycle of the Czech Republic was estimated to the formula:

$$struct\_b\_t = c_1 * tax\_hdp\_t + c_2 * soc\_benefit\_t + c_3 * public\_emp\_t + d * elec\_r+p\_t + \mathcal{E}_t. (1.7)$$

We found out that the growth of tax burden by 1 % had a tendency to improve structural deficits of the Czech Republic by CZK 5.3 milliard. If we added returns from cyclically



adjusted social security contributions to the explanatory variable  $tax\_hdp\_t$ , our findings followed Doležalová (2010). The income taxes were a main topic of 2006 election campaign. The strongest opposition party suggested the concept of flat income tax and government followed this suggestion by cutting income tax for low-income workers (i. e. potential voters of left-wing political party in power). The income tax returns declined that year. However, the explanatory variable  $tax\_hdp\_t$  was not statistically significant. Surprisingly, the regression coefficient of explanatory variable  $soc\_benefit\_t$  had a plus sign. The fall of social benefits did not improve structural deficits and vice versa. The regression coefficient had the same sign when we excluded the preliminary election from our sample although social benefits increased in growing rate in the election years of 2002 and 2006. When we used the electoral dummy  $elec\_r\_t$ , the statistic significance of explanatory variable  $soc\_benefit\_t$  decreased at the 90 % level. The explanatory variable  $public\_emp\_t$  was statistically significant at the 5 % level. The growth of public employment had tendency to enlarge structural deficits by CZK 2.9 million. The number of public employees was increasing in time and put pressure on public expenditures.

The electoral dummy  $elec\_r+t\_t$  confirmed that structural deficits had tendency to worsen by CZK 49.2 milliard in the year of elections. The regression coefficient of electoral dummy  $elec\_r+t\_t$  was statistically significant at the 5 % level. The statistical significance of model disappeared when we excluded the 1998 preliminary election from our sample. These results indicated that income tax cuts, changes in maternity allowances or children benefits, etc. did not have such power to make the electoral dummy  $elec\_r\_p$  statistically significant.

We estimated the political-budget cycle in Greece in the period 1995-2008 when three regular and one preliminary parliamentary elections took place.  $R^2=0.84$  and  $P$ -value for the  $F$ -statistic of was smaller than 10 %. The statistical significance of the model went up at the level 95 % when we excluded the preliminary election from our data set.

The model of the political-budget cycle of Greece was given by:

$$struct\_b\_t = b * struct\_b\_t-1 + c_1 * soc\_benefit\_t + c_2 * pen\_65+_t + c_4 * int\_hdp\_t + d * elec\_r+p\_t + \mathcal{E}_t, \quad (1.8)$$

where only two values of explanatory variables were consistent with the assumptions of the model. The regression coefficient of the explanatory variable  $struct\_b\_t-1$  had a wrong plus sign. The structural balances in year before election had a positive effect on the structural balance in the election year. The regression coefficient of the explanatory variable  $soc\_benefit\_t$  had a minus sign and was statistically significant at 95 % level. The explanatory variables  $pen\_65+_t$  and  $int\_hdp\_t$  did not meet assumptions of our model. The explanatory variable  $pen\_65+_t$  was influenced by declining growth rate of pensioners in election years. The public debt interests to GDP had tendency to decrease in election years. However, public debt of Greece was about 100 % GDP for a long time.

The electoral dummy  $elec\_r+t\_t$  indicated that structural deficits had a tendency to worsen by EUR 3.5 milliard in the year of election. In term of statistical significance we obtained better results of the model when we retained only regular parliamentary



elections in our sample. The electoral dummy  $elec\_r\_t$  was statistically significant at the level of 5 % and structural deficits had tendency to enlarge by EUR 4.9 milliard in the year of election. We found out that there was the political-budget cycle in Greece in period 1995-2008.

Romania was the last country in our research. We examined an incidence of the political-budget cycle only on seven observations. The data set was limited because of short time series of general government structural balance. The data was published by Eurostat since 2001. The very short time series did not allow us to get robust results of the model. The model did not have predictive power and was not statistically significant. We included the analysis of the political budget cycle in Romania in our research only to complete our sample of countries with different openness of democracy.

The model of the political-budget cycle in Romania had this short formula:

$$struct\_b\_t = b * struct\_b\_t - 1 + d * elec\_r + p\_t + \mathcal{E}_t . (1.9)$$

The political system of Romania was not stable (Cabada, L., Dvořáková, V., a kol., 2004, Kubát, M., a kol., 2004). The party system suffered from a repeated splintering of old political parties and emergences of new ones. This process was based on unsatisfied personnel ambitions of politicians who did not receive an adequate share of power in the old political parties according to their beliefs. Romanian political parties – and consequently governments – were connected to powerful interest groups that influenced decisions of politicians. Romanian politics was full of clientelism and corruption. The ineffective behavior of governments had an impact on their weak performance. The credibility of politicians was on a low level and voters did not believe them. They did not have any motivation to become members of political parties or non-profit organizations (to boost the control mechanisms of democracy). The transformation took place in Romania later than in other post-communistic countries. Public sector suffered from a low level of transparency so that public institutions were not able to provide international organizations with consistent data about public finances. Therefore, we suppose that there was a big motivation among politicians to make electoral manipulation in Romania. Unfortunately, we could not verify it because of limited data set.

Our research of the political budget cycle was based on specification of eighteen explanatory variables. Finally, we used ten of them in our empirical analysis of electoral manipulation. The one year lagged structural balance was statistically significant in regression analysis of the Netherlands and Greece. However, only the first country met assumptions of our model. The explanatory variables of income tax revenues and public expenditures by function indicated different results and statistical significance. We tried to explain them in accordance with changes in fiscal policies, reform afford of governments or demographic development in each country of our sample. We found the political-budget cycle in three countries – Austria, the Czech Republic and Greece. The electoral dummies were also statistically significant in regression analysis of Poland but the regression coefficients had a wrong plus sign. We could not find the political-budget cycle of Romania because of short time series.

## Conclusion

Our research of the political-budget cycle was based on the assumption that politicians have a motivation to make electoral manipulation in countries which have a lower level of openness. Accordingly with our expectations, we did not find the political-budget cycle in Finland and the Netherlands. They had the best rating of openness indicators in our sample of countries. Their governments were responsible and did not abuse fiscal policy for electoral manipulation. The regression analysis did not indicate the incidence of the political-budget cycle in Estonia. Estonian governments were able to draw up the state budgets in surplus, thus differing in this respect from the remaining post-communistic countries. The Estonian government also positively influenced the institutional framework. Among the post-communistic countries that our sample consisted of, Estonia had the best rating of Freedom of the Press Index, The Corruption Perception Index and NGO Sustainability. It lagged only in the indicator of political stability when we look at our three characteristics of democracy.

We found out that Austrian governments had a tendency to manipulate fiscal policy before elections. When we made a decision to exclude three preliminary elections from our data set, the regression coefficient of electoral dummy still remained statistically significant. The electoral manipulation was facilitated by centralization of political power, increasing pressure of politicians on the media and a loss of voters' interest in politics. Control mechanisms of democracy worsened in Austria in the period 1988-2008. The estimate of the political-budget cycle of the Czech Republic had ambiguous results. We refer to some changes of fiscal policy (e. g. income tax cuts, changes in maternity allowances or children benefits) before elections in years 2002 and 2006 but the regression coefficient of electoral dummy  $elec\_r\_t$  was not statistically significant. The model of the political-budget cycle of Greece exhibited opposite results. The regression coefficient of electoral dummy had a higher statistical significance when we made the regression analysis only with regular parliamentary elections. Greece had the worst rating of openness in the sample of old member countries of the European Union and even lagged behind the new ones. There was almost an absolute centralization of political power, a high level of corruption perception and government pressure on the press.

We obtained the interesting results in our regression analysis of Poland. The electoral dummies  $elec\_r+p\_t$  and  $elec\_r\_t$  were very statistically significant, but their regression coefficients had a plus sign. The structural balance had tendency to improve in Poland in the year of elections. This result thus could be subjected to future research. We could not estimate the political-budget cycle in Romania because of short time series. Romania only completed our sample of countries with different openness of democracy.

Our research of the political-budget cycle suggests that the electoral manipulation is used more broadly in countries with lower level of openness (except for Poland and Romania). If the control mechanisms of democracy work well, governments are discouraged from fiscal manipulation. They are worried about their reelection. When they make populist politics (especially on public expenditure side), voters punish them in elections. The openness of democracy encourages in voters personal concern over effective behavior of governments.

Governments which behave effectively have the best chance to deal with negative aspects of actual global economic crises because they are not subject to a short-time temptation for electoral manipulation. They have a potential to draw up necessary reforms and adopt them although effect of these can be seen in long-time perspective. And the latest statistic data confirm our conclusions. Finland is rated among European countries which were able to quickly deal with negative aspects of global economic crisis and started to implement necessary reforms of public sector. Situation of other European economies is more complicated and dubious.

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## Appendix

Table 6: The political-budget cycle and using of electoral dummy elec\_r+p\_t

DEPENDENT VARIABLES	COUNTRIES							
	Finland	Netherlands	Austria	Estonia	Poland	Czech Rep.	Romania	Greece
struct_b_t-1		-0.0004*** [-3.773]					0.0662 [0.203]	0.4941* [1.603]
cycl_adj_inc_tax_t	-0.0005 [-1.014]							
tax_hdp_t		-4.1249 [-1.575]	2.5045*** [4.036]	-2.1564** [-2.398]	-1.2898 [-0.685]	5.3486 [0.110]		
public_emp_t		-0.004*** [-4.265]	0.0906 [0.728]	0.0662 [1.045]		-0.0028** [-2.779]		
pen_65+_t					0.00006* [2.209]			0.0002** [2.311]
pen_65+_pop_t	8.3686** [2.460]							
soc_benefit_t	-0.0013*** [-2.782]		-0.0001 [0.420]	-0.0005** [-2.405]	0.0016*** [-7.166]	0.0013*** [3.247]		-0.0015*** [-3.177]
int_hdp_t		-18.402*** [-3.815]	-7.7673*** [-3.292]		-25.276*** [-5.482]			3.7147 [1.349]
elec_r+p_t	-0.8541 [-0.939]	-0.3163 [-0.139]	-2.0034*** [-2.768]	1.2313 [1.414]	11.640*** [4.154]	-49.1546** [2.514]	-1.6754* [-2.049]	-3.515* [-1.872]
R2	0.66	0.92	0.83	0.78	0.95	0.81	0.68	0.84
F-Statistic	2.64	8.53	6.53	3.17	13.74	3.80	2.17	3.70
No. of Dep. Var.	4	5	5	4	5	4	2	5
Total Years	18	13	20	12	12	11	7	13



**Table 7: The political-budget cycle and using of electoral dummy elec\_r\_t**

DEPENDENT VARIABLES	COUNTRIES				
	Netherlands	Austria	Poland	Czech Rep.	Greece
struct_b_t-1	-0.0004*** [-3.922]				0.3910 [1.404]
cycl_adj_inc_tax_t					
tax_hdp_t	-3.8242 [-1.487]	2.5016*** [3.630]	1.6924 [0.922]	23.671 [0.402]	
public_emp_t	-0.0004*** [-4.288]	0.1539 [1.010]		-0.0021* [-1.624]	
pen_65+_t			0.00006* [1.924]		
pen_65+_pop_t					0.0002** [2.837]
soc_benefit_t		-0.0005* [-1.559]	-0.0017*** [-7.020]	0.0010* [0.210]	-0.0019*** [-4.038]
int_hdp_t	-19.018*** [-4.082]	-7.6824*** [-2.793]	-35.396*** [-6.172]		4.6031* [1.748]
elec_r_t	-2.0737 [-0.658]	-1.7819* [-1.841]	14.685*** [4.008]	-35.923 [-1.225]	-4.8635** [-2.373]
R <sup>2</sup>	0.92	0.78	0.95	0.69	0.86
F-Statistic	9.05	4.73	13.00	1.84	4.68
No. of Dep. Var.	5	5	5	4	5
Total Years	13	20	12	11	13

**THE POLITICAL-BUDGET CYCLE IN COUNTRIES OF THE EUROPEAN UNION**

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**Abstract:** We empirically estimate the political-budget cycle in the member countries of the European Union in period of 1988-2008. We indirectly analyze the potential of these countries to deal with increasing public debts which were augmented by the global economic crisis. The selection of the EU countries depends on three characteristics of democracy – shared power, openness and adaptability. The openness of democracy is the most important characteristics in relation to effective behavior of governments. We suppose that governments are motivated to make electoral manipulation in countries which have lower level of openness. We choose Finland, the Netherlands, Austria, Estonia, Poland, the Czech Republic, Romania and Greece to include into our sample of countries. The research of political-budget cycle confirmed our assumption. We did not find the political-budget cycle in Finland, the Netherlands and Estonia. On the other hand, we identified that Austrian, Czech and Greece governments had a tendency to manipulate fiscal policy before elections. The regression coefficients of Poland electoral dummies were very statistically significant but they had a wrong sign. We could not estimate political-budget cycle in Romania due to the short time series.

**Key words:** political-budget cycle, structural balance, election, openness of democracy, corruption, political parties.

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