

Impact of Political Cycles on Structural Deficits – Evidence From the Central European Countries

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Abstract. Traditionally, the connection between economic cycles and political cycles is being put under examination. There is a lot of evidence that politicians try to boost national economies before elections using short term tools. Based on those results, this paper focuses on less traditional approach, trying to determine, whether there is some statistically significant connection between level of structural current budget balance (adjusted for economic influence by elimination of cyclical part) and political cycles. Research was performed using data from four central European countries – the Czech Republic, Hungary, Poland and Slovakia. Statistically significant relation was proven among three out of four mentioned countries, which shows that political cycles effect the debt situation of economies, which could play an important role in today's debt crisis.

Keywords: Political Cycles, Structural Deficits, Central and Eastern Europe

JEL classification: E61, E62, H62, C25

1. Introduction

The aim of this paper is to present the results of performed statistical analysis that concerns the possible relation between values of structural current budget deficits of countries and political cycles. Research that has been done so far concentrates usually on two, slightly different areas. First group of researches examine relationships between budget deficits and economic variables or existence of structural reforms. The other group is focusing on the behavior of politicians within political cycles. They inquire into the fact that before elections, governing political parties try to boost the economy in order to enhance their chances for reelection. These two traditional approaches have raised the question, whether political cycles influence also structural deficit of countries. And this issue became crucial part of this paper.

But what would confirm this relation? It would confirm that political variables have impact on the level of indebtedness. Type of government, phase of political cycle and other factors play a role. This is becoming increasingly important in connection with the current debt crisis within the euro area. Government and politicians are being blamed for not paying enough attention to the level of government deficits and debts, when putting it in other words - for being irresponsible in fiscal terms. And we can see today a lot of effort being put to some limitation of the decision over the level of deficits no national level towards the EU. Given the fact that there is the connection between national political situation (development) and the level of deficits, limitation of the influence of national politics seems to have some rationale. Four member countries of the so called Visegrad group (the Czech Republic, Slovakia, Poland and Hungary) had been put under econometric examination.

2. Literature Overview

The applied approach is, as mentioned above, to certain extent non-traditional. This is also reflected in some shortness of available empirical literature. Some researchers focus on political cycles and they are trying to determine some relation to the economic performance. They claim that economic conditions before elections affect election outcomes. Here we can mention papers from Nordhaus (1975) or Hibbs (1977) that first came with this idea. Milani (2010) tests various political business cycle theories in a New Keynesian model with a monetary and fiscal policy mix. According to his research, few quarters before a presidential

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election monetary policy becomes considerably more inertial before elections and fiscal policy deviations from a simple rule are more common. Abrams and Iossifov (2006) concentrate on the role of FED. They present evidence to support the existence of a Federal Reserve-induced political monetary cycle that corresponds to the U.S. presidential election cycle. Using various Taylor rules, they find support for the view that Fed policy turns significantly more expansionary in the seven quarters prior to the election, but only when the Fed chair and incumbent presidential party have partisan affiliations.

Concerning the second group of papers, I have found three helpful papers, Hughes-Hallett, et al. (2005) present both a theoretical model and an econometric model exploring the interactions between fiscal constraints and structural reforms. Key idea is that the more rigid a country's markets (esp. labor markets), the more valuable fiscal flexibility is (the more costly fiscal restraints are). In a monetary union, structural reform generates positive externalities. But structural reform is costly. These two facts alone (positive externalities + positive cost) mean that structural reform will be under-provided. The second paper, Campoy and Negrete (2010), provides an intuitive model of the relationships between structural reforms and fiscal policies under different institutional arrangements. Within this model, the authors derive rules that would generate the socially optimal level of reforms, but argue that this requires credibility. So they explore other institutional arrangements. With nationally-determined levels of structural reform, fiscal coordination can be counterproductive (less structural reform than without fiscal coordination). This mirrors the result in Hughes-Hallett et al. (2005). Last, but not least (and most helpful) paper comes from Busemeyer (2004). This paper deals with the effectiveness of the existing mechanism (the Stability and Growth Pact) through 2004. He regresses the current budget balance on a prospective euro area membership dummy and a large number of economic, institutional, and political control variables, and finds that the euro areal membership dummy is significantly associated with smaller deficits. He further finds that the magnitude of deficit and debt reduction is larger in "small" countries than in large countries. His focus on institutional and political control variables is very close to the approach applied in this paper.

The difference is that this paper does not include economic variables, since structural budget balance is used as dependent variable, which is already dismantled of the influence of economic cycle (i.e. cyclical component of budget balance).

3. The Model and Data Sources

Statistical model that was applied in this article is based on a regression model. OLS (ordinary least squares) minimizes the sum of squared vertical distances between the observed responses in the dataset and the responses predicted by the linear approximation.

Since all four CEE countries had undergone the process of economic transformation, the length of time series is relatively short and includes 15 observations (from 1996 to 2010).

Structural budget balance was chosen as the dependent variable (*scbb*). The reason for this decision was to limit to large extent the influence of economic cycles, and, in this way, not to have to include economic control variables into the model, since it focuses primarily on political control variables.

Four independent (political) variables were construed and used:

- number of years the ruling coalition (party) has (had) been in office (*gov_period*),
- percentual majority of the ruling coalition (party) in legislature (*majority*),
- whether the government is left-wing (left-to-center-wing) (*left*) (left = 1, other = 0),
- and whether it is a pre-elections period (*pre_elections*) (respective period = 1, other = 0).

Concerning the last independent variable, a pre-election period is defined as a period containing the respective year in which the election took place and the previous year. This principle is base on the approach applied by other economists that typically use a seven-quarter perion (see Milani (2010)).

As can be seen from the type of variables, the first two are numerical, but the other two are categorical and take the form of dummy variables.

To test the quality of the model, several methods and tests were used. The presence of autocorrelation between residuals was tested using the Durbin-Watson statistics. Possible presence of heteroscedasticity was examined using the White test. Residuals were tested for their normality and using the augmented Dickey-

Fuller test (ADF), stationarity of time series was examined. Multicollinearity presence was measured using variance inflation factor (VIF).

As for the data source for independent political variables, the Database of Political Institutions was helpful. It is a special database run by the Development research group of the World Bank. But as it turned out, some control over the data provided was needed, since some information was misleading and some was missing.

The information on structural current budget deficits is hardly to find compared to information on current budget deficits only¹. The most comprehensive data can be found in the database of the **International Monetary Fund**.

4. The Findings for the Individual Countries

Before we get to the results for individual countries, a brief overview of results (and their comparison) will be provided. The most important information is that they differ across the four countries. Except for the Czech Republic, the model has proved the presence of the statistically significant relation between dependent and some of the independent political variables. The level and also direction of dependence however fluctuates.

In order to reduce the length of this paper, tables with **statistical results** were **uploaded** as a pdf file to the **author's webpage** (nb.vse.cz/~xcajr01), where they can be downloaded (**last file on the page**).

4.1. The Czech Republic

As mentioned above, the Czech Republic is (among the four countries) the only one, where statistically significant influence of any political factor could not be proved. P-values for all four independent variables exceeded 0.05 (0.10) dramatically.

	coefficient	std. error	t-ratio	p-value
const	3.68488	12.2865	0.2999	0.7704
gov_period	-0.178628	0.661457	-0.2701	0.7926
left	1.46271	3.16007	0.4629	0.6534
pre_elections	1.17837	1.53966	0.7653	0.4618
majority	-1.34777	26.3840	-0.05108	0.9603

Fig. 1: Statistical results for the Czech Republic; own calculations.

Performed tests brought satisfying results – Durbin-Watson (1.338291) not conforming autocorrelation, White test (p-value for chi-square 0.368396) not rejecting homoscedasticity, test of residuals normality (p-value for chi-square 0.15209) not rejecting normal distribution of residuals and ADF test showing their stationarity. On the other hand, the values for VIF are indicating problems with multicollinearity of variables (high values for *left*, *gov_period* and *majority*).

The case of the Czech Republic will be further examined in order to confirm, whether there really is no statistically significant influence of those independent variables, or if this is only the matter of inappropriateness of the model employed.

4.2. Hungary

For Hungary (and also for two other countries) the results are completely different. Three of four independent variables appear to be significant, when two of them even have p-values below 0.01. These variables of political cycles are:

	coefficient	std. error	t-ratio	p-value	
const	10.4605	4.17590	2.505	0.0312	**
gov_period	-0.780236	0.313341	-2.490	0.0320	**
left	2.55256	1.28326	1.989	0.0747	*
pre_elections	2.74658	1.18126	2.325	0.0424	**
majority	-8.45558	7.11131	-1.189	0.2619	

Fig. 2: Statistical results for Hungary; own calculations.

¹ The reason is that there is no one correct method of their calculation.

- *pre_elections* – this variable raises the size of structural deficit. This can be interpreted in a way that politicians in power do increase deficits (mandatory spending) before elections to assure a reelection.
- *gov_period* – this variable has positive impact on fiscal performance. We can interpret this that the more time the governing parties have for performing of their program, the better results they run into.
- *left* – this variable has negative impact on structural deficit. We can interpret this in a way that in case of left-wing ruling coalition the structural deficits tend to be higher.

Testing the model itself brings positive results – Durbin-Watson (2.147866) is not conforming autocorrelation, White test (p-value for chi-square 0.361665) not rejecting homoscedasticity, test of residuals normality (p-value for chi-square 0.940336) not rejecting normal distribution of residuals and ADF test showing their stationarity. The values for VIF are indicating no problems with multicollinearity of variables, since values for all independent variables are close to 1.

In case of Hungary we can conclude, that elections holding and the existence of left-wing ruling coalition have negative impact, while the period of time the government is in office has positive influence on the size of structural deficits.

4.3. Poland

In case of Poland we can find two of four independent variables having strong significance, both having p-values below 0.01. These political control variables are:

- *left* – this variable has (contrary to Hungary) positive influence on the size of structural deficit. The interpretation of this is more difficult and would certainly require getting more familiar with details of Poland’s political landscape. One explanation could be that right-wing coalition had acted more like a populist government. **But explanation of these causalities is not the aim of the paper.**
- *gov_period* – this variable has negative impact on fiscal performance.

	coefficient	std. error	t-ratio	p-value	
const	2.17466	2.46494	0.8822	0.3984	
gov_period	0.723377	0.144159	5.018	0.0005	***
left	-5.58279	0.899549	-6.206	0.0001	***
pre_elections	-0.410888	0.723160	-0.5682	0.5824	
majority	3.85106	4.62024	0.8335	0.4240	

Fig. 3: Statistical results for Poland; own calculations.

Testing the model quality brings again positive results – Durbin-Watson (1.395551) is not conforming autocorrelation, White test (p-value for chi-square 0.305765) not rejecting homoscedasticity, test of residuals normality (p-value for chi-square 0.663246) not rejecting normal distribution of residuals and ADF test showing their stationarity. The values for VIF are indicating no problems with multicollinearity of variables, since values for all independent variables are again close to 1.

In case of Poland we can conclude, that the period of time the government is in office has negative impact, while the existence of left-wing ruling coalition has positive influence on the size of structural deficits.

4.4. Slovakia

In case of Slovakia we can only find two of four independent variables having strong significance, when only one of them has p-value below 0.01. These two political control variables are:

- *majority* – this variable has negative influence on the size of structural deficit. We could interpret this that stronger coalitions (compared to weak ones) are not so threatened by losing some votes in parliament, so they can pursue a loosened fiscal line.
- *gov_period* – this variable has also negative impact on fiscal performance.

	coefficient	std. error	t-ratio	p-value	
const	-52.7082	16.9210	-3.115	0.0110	**
gov_period	1.14304	0.598900	1.909	0.0854	*
left	-1.78410	1.24774	-1.430	0.1832	
pre_elections	-1.30405	1.50757	-0.8650	0.4073	
majority	97.3840	27.7843	3.505	0.0057	***

Fig. 4: Statistical results for Slovakia; own calculations.

Testing the model itself brings again positive results – Durbin-Watson (2.462781) is not conforming autocorrelation, White test (p-value for chi-square 0.628461) not rejecting homoscedasticity, test of residuals normality (p-value for chi-square 0.449152) is still not rejecting normal distribution of residuals and ADF test still showing their stationarity, but very on the edge (0.06040). The values for VIF are indicating no problems with multicollinearity of variables.

In case of Slovakia we can conclude, that majority hold by government and the period of time the government is in office have negative influence on the size of structural deficits.

5. Conclusion for the Findings

As can be observed from the findings for individual countries (with the exception of the Czech Republic) there is a statistically significant connection between specific political variables of political cycles and dependent variable, structural deficits. What is definitely interesting is that countries' balances exhibit dependence on different independent variable, which is presumably based on their different political characteristics. But not only this – even if there is the relation to same independent variables, this relation can be of completely different direction (as shown on the example of Hungary and Poland). This is proving that within this region political cycles do have adverse effects on debt values. This is raising a question what the connection of these findings to the solution to the problem of fiscal irresponsible behavior is. There is probably no doubt about the idea having structural deficits balanced or close to balance. But the approach that has been applied so far in Europe has not shown positive results, when looking at the size of national structural deficits.

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