



Political Expenditure Cycle in V4 Countries

LENKA MALICKA¹

¹ Assistant Professor, Technical University of Kosice, Faculty of Economics, Department of Finance, Kosice, Slovakia, e-mail: lenka.malicka@tuke.sk

ARTICLE INFO

Received June 15, 2018
Revised from June 27, 2018
Accepted August 25, 2018
Available online September 15, 2018

JEL classification:

H72, D72.

DOI: 10.14254/1800-5845/2018.14-3.12

Keywords:

public expenditure,
central government,
political expenditure cycle,
opportunistic behaviour
.

ABSTRACT

Public expenditure subjects to government and its volume and structure is influenced by decisions of government according to activities and fiscal policies realized. Political expenditure cycles could also act as one of potential public expenditure determinant and could influence the public expenditure volume and structure. The paper examines whether the political expenditure cycle is present in V4 countries at the central level of government considering the opportunistic approach. Variance of central government expenditure indicates the presence of changes in the central government total expenditure and in its sub-categories defined according to government functions, while the analysis of their dynamics in connection with parliamentary election brings only vague results. After, the OLS model is estimated for each V4 country for the period 1995-2015. Results of estimations present certain statistically significant impact of election period on the central government total expenditure. As the monitored time-series cover the period of the financial crisis, models were tested for the structural break. Augmented regressions were re-estimated. Results point to cases, when election variables meet the hypothesis about the opportunistic behaviour of central government. Additionally, prevalent part of results shows opposite behaviour of the central government before and after the financial crisis. However, observed results do not allow generalizing the opportunistic model to all V4 post-communist countries, because statistically significant opposite effects of tested hypothesis are also observed.

INTRODUCTION

Revising the political cycle literature, authors distinguish among opportunistic and partisan approach (see, e.g. Alesina and Roubini, 1990) introduced to the economy in the 1970s. Opportunistic behaviour of political incumbent is explained by the interest in re-election, which motivate it to change the volume and structure of public expenditure in election years (Delgado et al. 2011). As Alesina and Roubini (1990, p.1) mention, "... the policymakers maximize their popularity or their probability of re-election... ". Partisan approach consists in following different party interests distinguishing among left wing and right wing parties. Opportunistic government activities in the period

of election might be connected with two types of political cycle. In the case of political business cycles, there are political cycles in economic activity (Drazen 2010, p.462). In the case of political budget cycle, the political incumbent is engaged into the manipulation with the volume of public expenditure and provides the expansionary fiscal policy, or, if the voter is conservative, the incumbent changes the structure of the public expenditure in favour of visible and citizen friendly areas as housing or social services (Drazen and Eslava, 2010).

In the empirical research, there is a broad investigation of the political business cycle presence in the case of OECD countries. Alesina and Roubini (1990, 1992) examining 18 OECD countries, search for answers on two research questions in their paper. One of them is to elicit "... whether or not the dynamic behaviour of GNP growth, unemployment and inflation is systematically affected by the timing of elections and of changes of governments ..." (Alesina and Roubini, 1990, p.2). Their main findings point to the rejection of the both opportunistic and partisan theories. Gärtner (1994) also seeks for the political cycles in OECD countries. He is reflecting on the partisanship and he considers his empirical findings as inconsistent with the rational political business cycle model (investigated also by Alesina and Roubini, 1990, 1992). Clark et al. (1998) at the same sample revise the hypothesis of manipulating the macroeconomy at the base of opportunistic motivations. Their pooled OLS time-series show constraining effect of the government action in the field of exchange regime in the highly mobile capital conditions and of the above-average independence of central bank on the political cycle appearance. Potrafke (2012) investigates the economic performance in connection with political cycle at the sample of OECD countries in period 1951-2006. According to him, in two-party systems political cycles are present more frequently. He argues that voters can clearly punish or reward political parties for governmental performance.

In the field of political budget (or expenditure) cycle, a survey of the empirical literature is provided by Lici and Dika (2016). Reviewing also earlier studies, the most frequently mentioned are works of Rogoff (1990), Alessina and Roubini (1990 and 1992), Persson and Tabellini (2003), Drazen and Eslava (2005 and 2010) or Efthyvoulou (2012). From the current research, Enkelmann and Leibrecht (2013) provide a panel analysis of political expenditure cycle on a sample of 32 European countries. In a part of their research they distinguish among western and eastern countries. Results point to more obvious existence of political expenditure cycles in eastern European countries. Despite of the manipulation with public expenditure (or with its sub-categories) present in both western and eastern democracies, according to these authors, electorally motivated changes in public expenditure are ineffective instrument to win the elections. Klomp and Haan (2013) estimate a panel data model of 65 democratic countries in period 1975-2005. Their main findings are about a strong influence of election period on fiscal policy arrangements. Brender and Drazen (2013) stress the relationship between elections and changes in government expenditure structure in a dataset of 71 democracies over 1972-2009 using a panel data model. Further division of countries into developed and undeveloped lead them i.a. to findings, that older democracies have larger changes in the expenditure structure than newly established ones. Manjhi and Mehra (2015) use an optimal control method and mention, that incumbent behaving in the line with the opportunist model is able to mobilize votes at the much higher cost of budgetary deficit to the economy. The connection of terms of deficit and political budget cycle is investigated also in the research of Sáez (2016). His main findings are about significant increases in expenditures on the debt occur the year in which a state assembly election is held in India.

The aim of the paper is to capture changes in the public expenditure volume and partially in its structure in V4 countries in connection with the period of elections - verifying the presence of the political expenditure cycle in the case of V4 countries central government level. The basic motivation was given by the paper of Enkelmann and Leibrecht (2013). The choice of countries relies on results of a wide empirical research, which point to opportunistic electoral motivation in developing post-communist countries formerly including also Eastern European countries (also V4 countries) as mention Brender and Drazen (2005), Vergne (2009), Enkelmann and Leibrecht (2013) and also Castro and Martins (2015).

The paper is organized in a following way. After the Introduction involving also the literature review, the chapter of Methods and Data is presented. Here the methodology, data sources and basic assumptions of the research are explained. Next chapter of Results and Discussion provides a quantification of the variance of central government total expenditure and a regression analysis to describe the relationship between central government total expenditure and parliamentary elections. Conclusion, list of References and Appendices close the paper.

1. METHODS AND DATA

Data are collected from the Eurostat database on annual base predominantly from the Government Finance Statistics part (Eurostat, 2018b). The paper interest is straitened to the central government expenditure activities (according to Eurostat labelled as S1311 subsector). Partial interest consists in the public expenditure items. They emulate the government functions and they are developed in ten divisions (known as COFOG) as follows: 01 expenditure on general public services, 02 defence, 03 public order and safety, 04 economic affairs, 05 environmental protection, 06 housing and community amenities, 07 health, 08 recreation, culture and religion, 09 education and 10 social protection (Eurostat, 2018a). The revision of expenditure items according to COFOG is provided also by Enkelmann and Leibrecht (2013), Brender and Drazen (2013) or Castro and Martins (2015). Data focusing on parliamentary elections are collected from national web sites as Czech Republic Government (2018), The Chancellery of the Prime Minister (2018), Statistical Office of the Slovak Republic (2018) or from related informative web sites as Norsk Senter for Forskningsdata (hereinafter NSD) (2018).

Period covered by data is 1995-2015 (in case of Poland 2002-2015 for the COFOG divisions). To capture changes in structure of public expenditure provided on central government level of each V4 country, the variance of expenditure according to COFOG divisions is computed. It is followed by monitoring the dynamics of the total central expenditure growth and growth of expenditures according to COFOG divisions (listed in Appendices) in context with parliamentary elections in each country. After, the regression analysis is made on the basis of OLS linear regression for each country separately. The dependent variable is expressed as central government total expenditure. Explanatory variable is expressed as dummy variable achieving 1 in the period of elections, otherwise 0. Alternative explanatory variable is captured to the analysis to cover the potential manipulation of public expenditure in a one year period before election. This dummy variable achieves 1 in the period one year before elections, otherwise 0. To control for the public expenditure, the set of control variables is also involved to the estimation. Its choice is inspired by the related literature.

The basic expectation focuses on the positive relationship between election variable and central government total expenditure in the sense of the opportunistic approach is defined in the Introduction. Additionally, the control variables are involved to the estimations. In the case of public deficit, both negative and positive impact might be observed. While the negative impact of the public deficit is expected due to requirement of public expenditure reduction to decrease the public deficit, positive impact of public deficit on public expenditure might be obtained due to increasing requirements on returnable resources (Sáez, 2016). Central government revenue might influence the central government expenditure in the way of determining the total disposal of the government. If the central government revenue increases, the central government expenditure might increase, too. More resources are created, more is spent. As mention e.g. Zhu and Krug, 2005 or Lamartina and Zaghini, 2008, expected relate of GDP to public expenditure is positive in developed countries (according to the Wagner's Law). This tendency might change in industrialized or developed countries. However, countries in the sample belonged to the developing ones in the beginning of monitored period; their economic development from transition to market-oriented countries is finished, yet. The GDP variable is similarly involved to the estimations provided by Enkelmann and Leibrecht (2013) or Brender and Drazen (2013). The inflation rate variable is also considered. Its increase is often connected with the worsening of the economic situation in a country. In the field of inflation

rate, the activity of central bank is primarily desired. The role of central government is supplementary but also important. Brender and Drazen (2013) found its positive but insignificant impact in developed countries.

OLS estimations are attended by a Heteroskedasticity and Autocorrelation Consistent (HAC) Covariance Matrix to avoid heteroskedasticity and autocorrelation. Additionally, models are tested for heteroskedasticity (Breusch-Pagan test, BPtest, under the null hypothesis: heteroskedasticity not present), autocorrelation (Durbin-Watson test, DWtest, values might meet the value around 2) and collinearity (Variance Inflation Factor test, VIF test, values higher than 10 may indicate problems with collinearity). To test the regression for the structural break, which might be present in the covered period (1995-2015), the Chow test is realized under the null hypothesis of no structural break (H_0 : no significant improvement in fit from running two regressions). As a splitting variable the financial crisis variable is used.

Dependent variable (*centTE*) is expressed as the central government (subsector S1311) total expenditure-to-GDP, growth of the HDP per capita (*gGDPpc*) is based on GDP at market prices and country total population on 1st January, inflation rate (*infl*) is expressed using the all items HICP annual average rate of change (2015=100), central government total revenue (*centrTR*) is expressed as central government (subsector S1311) total revenue-to-GDP. Election variables are dummy variables scored 1 in election year (*EI*) or pre-election year (*PreEI*), otherwise 0. Financial crisis variable is a dummy variable scored by 1 in the period when the financial crisis influences the economic development, otherwise 0.

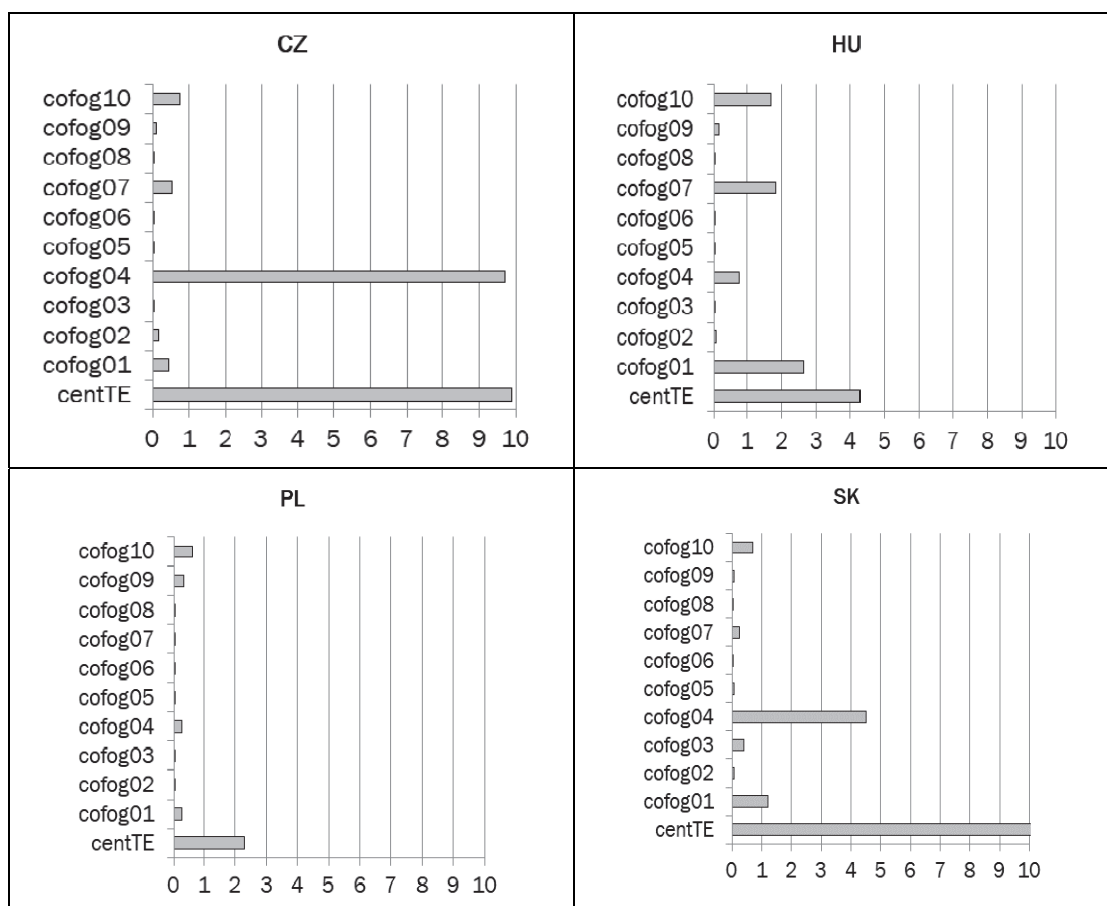
2. RESULTS AND DISCUSSION

2.1 Variance and Dynamics of Central Government Expenditure

Figure 1 presents variance of public expenditure provided by central government as total amount and according to COFOG divisions for each V4 country. Figure 2 presents the evolution of the central government total expenditure in the monitored period. During the monitored period the variance of central government total expenditure (*centTE*) is highest in case of Slovakia (thereinafter SK, see Figure 1). The volume of central government total expenditure reached its maximum in 2000 (38.4% of GDP), when certain reforming steps in the public sector and public finance were prepared by the central government. It decreased dramatically in 2001 (see Figure 2), when the process of fiscal decentralization started and regional level of self-government was established by law. In the period of financial crisis (2009), when the central government activities in the field of macroeconomic stabilisation and revenue redistribution were desired, it increased to the value of 29% of GDP. The variance of central government total expenditure in Czech Republic (thereinafter CZ) is influenced by the massive decrease of central government total expenditure in period of 1995–1996 (deep economic recession in all post-communist V4 countries in transition), and by exceeding public deficit in 2003 (Trend 2003). The variance of the COFOG 04 division emulates the variance of central government total expenditure. It might be explained by realizing required public finance reforms in terms of excessive public deficit. In Hungary (thereinafter HU), the central government total expenditure also decreases in period 1995-2000 (see Figure 2), which covered both the economic recession in 1995-1996 in transitive economics of central and eastern Europe and the period of implementation of stabilization programmes to revive the economic growth (Kornai 1996 and 2000, OECD 2000). In 2006 its increase might be connected with the fortified activity of central government in the period of excessive public deficit and public debt (Orosz, Biederman 2015). It mirrors the variance of the general public services division (see Figure 1), which includes public deficit and public debt transactions. Evident is increase of central government total expenditure in 2013, when central government had to reduce local government indebtedness (Reuters 2012), which was highest in the EU. In Poland (thereinafter PL), central government total expenditure decreases in period 1995-2000 (see Figure 2), despite of the fact that Polish economy growth

much faster than other central and eastern European countries in transition (Gomulka, 2016). It also decreases since 2010 (see Figure 2), when the boom-bust in public investments decreased (more drastically in period of 2011-2012 (OECD 2014)). However, the variance of particular expenditure items (total and according to COFOG) is low, in comparison with other V4 countries.

Figure 1. Changes in structure of public expenditure provided on central government level – variance of total central government expenditure and central government expenditure according to COFOG divisions

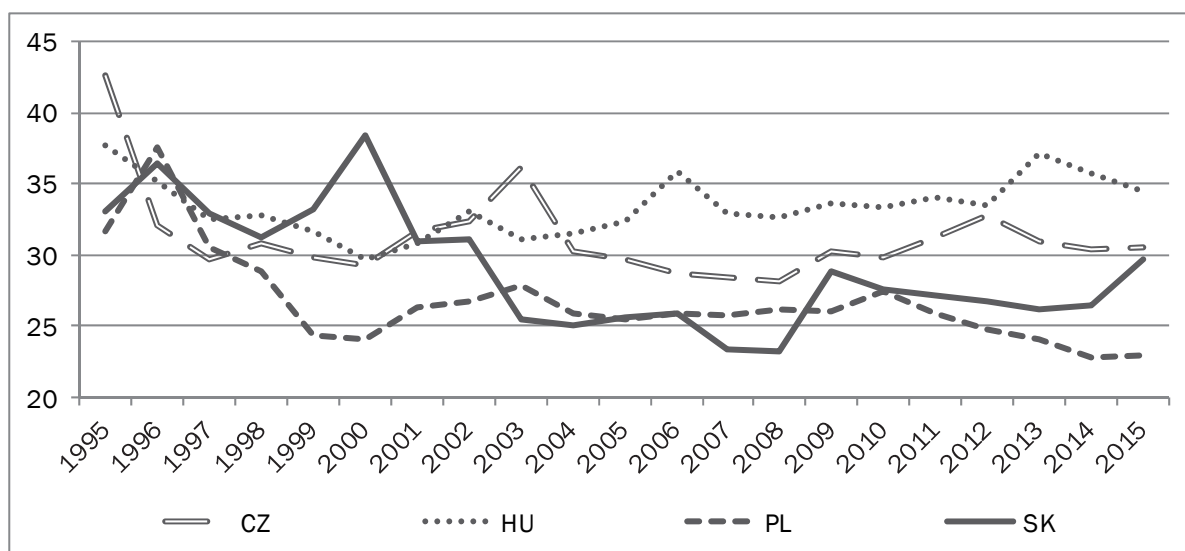


Notes: Variance of central government expenditure (*centTE*) in Slovakia (SK) is more than 10. Remind on COFOG divisions: 01 general public services, 02 defence, 03 public order and safety, 04 economic affairs, 05 environmental protection, 06 housing and community amenities, 07 health, 08 recreation, culture and religion, 09 education, 10 social protection. Monitored period of Poland is 2002-2015 due to missing data in Eurostat database.

Source: own computation

Summarizing the variance of COFOG divisions in V4 countries, the highest variance is observable in the field of economic affairs, general public services and social protection (ranked from the highest value - CZ: 04 economic affairs, 10 social protection, 07 health, 01 general public services; HU: 01 general public services, 04 economic affairs, 07 health, 10 social protection; PL: 10 social protection, 09 education, 01 general public services, 04 economic affairs; SK: 04 economic affairs, 01 general public services, 10 social protection, 03 public order and safety). That implies that changes in the central government expenditure are present.

Figure 2. Evolution of the central government total expenditure of V4 countries in 1995 – 2015.



Source: own computation

Table 1 Dynamics of the central government total expenditure growth in context with parliamentary elections in v4 countries

	CZ		HU		PL		SK	
	<i>gE</i>	ΔE	<i>gE</i>	ΔE	<i>gE</i>	ΔE	<i>gE</i>	ΔE
1996	-0.25	-10.50	-0.07	-2.50	0.19	5.90	0.10	3.40
1997	-0.07	-2.40	-0.08	-2.70	-0.19	-7.10	-0.10	-3.50
1998	0.04	1.10	0.01	0.30	-0.06	-1.70	-0.05	-1.70
1999	-0.03	-1.00	-0.04	-1.20	-0.15	-4.40	0.06	2.00
2000	-0.02	-0.60	-0.06	-1.90	-0.02	-0.40	0.16	5.20
2001	0.09	2.50	0.04	1.10	0.10	2.30	-0.19	-7.40
2002	0.02	0.70	0.07	2.30	0.02	0.40	0.00	0.10
2003	0.11	3.70	-0.06	-2.00	0.04	1.20	-0.18	-5.60
2004	-0.16	-5.80	0.01	0.40	-0.07	-2.00	-0.02	-0.40
2005	-0.02	-0.60	0.03	0.90	-0.02	-0.40	0.02	0.50
2006	-0.03	-1.00	0.11	3.50	0.02	0.40	0.01	0.30
2007	-0.01	-0.30	-0.08	-3.00	-0.01	-0.20	-0.10	-2.50
2008	-0.01	-0.20	-0.01	-0.30	0.02	0.50	-0.01	-0.20
2009	0.07	2.00	0.03	1.10	-0.01	-0.20	0.25	5.70
2010	-0.01	-0.40	-0.01	-0.40	0.06	1.50	-0.04	-1.30
2011	0.05	1.40	0.02	0.70	-0.06	-1.60	-0.01	-0.40
2012	0.05	1.60	-0.01	-0.50	-0.04	-1.10	-0.01	-0.40
2013	-0.06	-1.90	0.11	3.70	-0.03	-0.80	-0.02	-0.60
2014	-0.02	-0.50	-0.04	-1.40	-0.05	-1.20	0.01	0.30
2015	0.00	0.10	-0.04	-1.30	0.00	0.10	0.12	3.20

Note: Periods of parliamentary elections are grey shaded, the particular expenditure (E) growth rate (g) is computed as $gE = \frac{(E_t - E_{t-1})}{E_{t-1}}$, first difference ΔE is computed as $\Delta E = E_t - E_{t-1}$, monitored period 1995-2015. E is expressed as % of GDP.
Source: own computation

As Table 1 shows, the growth of central government expenditure in connection with the period of parliamentary elections is not evident in V4 countries. There is not observable any regularity

in the evolution of the central government total expenditure growth in the election year or in the pre-election year. This indicates low (or none) statistically significant relation between election variables and central government total expenditure in V4 countries, what mirrors the results obtained in estimations presented in Table 2. Dynamics of the growth of central government expenditure according to COFOG divisions in context with parliamentary elections in v4 countries is presented in Tables listed in Appendices.

2.2 Regression Analysis of Central Government Total Expenditure Determinants with Accent on Election

Results of regression analysis presented in Table 2 show existent relation between political cycle and volume of central government total expenditure in case of CZ, PL and SK. However, all these cases are different. In case of CZ, the election year variable is statistically significant and its relation to the central government total expenditure is positive. It might indicate the existence of opportunistic behaviour of the central government seeking the re-election. Regarding the results of election of the lower house of CR parliament since 1996, almost the same parties won the election; differences are observable in the coalition construction. The case of the certain party re-election and repeated involvement to the coalition is observable in the period of 1998, 2002 and 2010 (Czech Republic Government, 2018). In HU, the impact of the election period on central government total expenditure is not observed. However, according to the parliamentary election results, the case of re-election and repeated involvement to the coalition is present in the period of 2006 and 2014 (NSD, 2018). In PL, the election year variable is not significant. Although, the positive relation between pre-election year and central government total expenditure is observable. It might also indicate the manipulation with the public expenditure volume before election in the sense of the opportunistic approach. In PL, since 2005 a case of a political party re-election and its membership in the coalition is observable, additionally in 2005 and 2015 the one-party government (coalition) was established (The Chancellery of the Prime Minister, 2018).

Different (opposite) are results of the SK estimation. Here the negative statistically significant relation between election year variable and central government total expenditure is presented, contrary to the given hypothesis. In SK, the current turbulent social and political process might result in preterm elections. Since 1998, alternately two main political parties were leading the coalition. In the brief history of this republic, there is an example of re-election and repeated coalition membership in the period of 2002 and 2016 (Statistical Office of the Slovak Republic, 2018). Contrary to the other V4 countries, the central government activity (in financial expression) is decreasing in the election period. Besides the election variables also certain control variables are statistically significant. In all cases the relationship between public deficit and central government total expenditure is negative. The increase in public deficit causes a decrease of central government total expenditure. The effect of central government total revenue on its total expenditure is also similar in all V4 countries. The increase of revenue causes the increase of expenditure. The additional financial resources are spent regarding the actual demand for public goods. In case of SK, also one year lagged central government total revenue variable is significant and its influence on the dependent variable is positive in accordance with the expectation given hereinbefore. In case of CZ model, the GDP per capita growth variable is statistically significant and in a negative relationship with central government total expenditure. The increase of the GDP per capita growth induces the decrease of central government total expenditure. It might refer to the Wagner Law's interpretation that in developed countries this relation is positive, while the CZ has overcome the transition process and become a market-oriented (developed) country. Statistically significant in case of CZ model is also the variable of inflation rate. Its positive relationship with central government total expenditure is in accordance with the expectation of realizing certain activities on the central government level to ameliorate the economic situation in the country.

Table 2 Regression analysis; relation between central government expenditure volume and defined election variables in V4 countries

Variable	CZ		HU		PL		SK	
	Coeff.	Signif.	Coeff.	Signif.	Coeff.	Signif.	Coeff.	Signif.
<i>intercept</i>	-8.361	**	-5.787	*	-1.570		1.023	
<i>gGDPpc</i>	-5.309	**						
<i>Def</i>	-0.520	***	-1.010	***	-0.768	***	-0.947	***
<i>infl</i>	0.144	**						
<i>centTR</i>	1.290	***	1.206	***	1.091	***	0.603	***
<i>centTR_{t-1}</i>							0.370	***
<i>EI</i>	0.545	*			0.367	*	-0.670	**
<i>PreEI</i>								
AdjR2	0.841		0.807		0.967		0.971	
BP p-value	0.211		0.238		0.166		0.940	
DW	2.206		1.686		1.750		1.468	
VIF	<i>gGDP_{pc}</i>	1.315	<i>Def</i>	2.678	<i>Def</i>	1.059	<i>centTR</i>	4.754
	<i>Def</i>	1.318	<i>centTR</i>	2.406	<i>centTR</i>	1.019	<i>centTR_{t-1}</i>	5.763
	<i>infl</i>	1.361			<i>EI</i>	1.250	<i>Def EI</i>	1.654
	<i>centTR</i>	1.318						1.257
	<i>EI</i>	1.384						

Note: OLS using HAC, dependent variable is Total expenditure of central government according to Eurostat S1311. Models do not suffer from heteroskedasticity (BPtest), autocorrelation (DW test) and collinearity (VIF test). *** denotes significance at 0.01, ** at 0.05 and * at 0.1 significance level.

Source: own computation

As the financial crisis variable (dummy variable) might influence the central government activity (in the field of redistribution and stabilization), the regression stability test, known as Chow test (Chow, 1960) was realized. Results of Chow test indicate the presence of structural break in case of all V4 countries. Results of augmented regressions for Chow test are shown in Table 3.

Table 3 Split of the samples in case of HU and SK (according to the regression stability test)

Variable	CZ		HU		PL		SK	
	Coeff.	Signif.	Coeff.	Signif.	Coeff.	Signif.	Coeff.	Signif.
<i>intercept</i>	-3.091		-10.283	***	-12.624	**	4.075	**
<i>gGDPpc</i>								
<i>Def</i>	-0.546	***	-0.967	***	-0.905	***	-1.081	***
<i>infl</i>								
<i>centTR</i>	1.112	***	1.380	***	1.580	***	0.620	***
<i>centTR₁</i>								
<i>EI</i>			0.580	*	0.647	**	-0.498	**
<i>PreEI</i>			0.685	*				
<i>crisis</i>	1.757	**	37.830		-1.277		18.787	
<i>Cr_gGDPpc</i>	12.423	**						
<i>cr_Def</i>	0.556	**	1.226	**	0.319	**	0.646	***
<i>cr_centTR</i>	omitted				0.165	*	0.350	*
<i>cr_centTR₁</i>							-1.135	**
<i>cr_infl</i>	omitted							
<i>cr_EI</i>	-1.034	**			-1.388	***	2.514	***
<i>cr_PreEI</i>	1.952	***					omitted	
AdjR2	0.806		0.773		0.893		0.975	
DW test	2.268		2.124		1.641		1.591	

Note: Augmented regression for Chow test, OLS, using observations 1996-2015 (T = 20), Dependent variable: *centTE*, HAC standard errors, bandwidth 2 (Bartlett kernel), marked variables are omitted due to exact collinearity. Chow test p-value < 0.000 for all models, financial crisis dummy variable is used. *** denotes significance at 0.01, ** at 0.05 and * at 0.1 significance level. Abbreviation "cr" states for dummy variable "crisis". Coefficients of statistically insignificant variables are not displayed in the Table, except of the splitting variable and intercept coefficients.

Source: own computation

As the results presented in Table 3 show, in the case of CZ, election variables before the financial crisis are not statistically significant. After it, the results of augmented regression show significant effects of both variables on central government total expenditure. However, their coefficients are opposite to each other and only the pre-election year variable is in line with the hypothesis about the opportunistic government behaviour.

In case of HU augmented regression, the election variable constructed as election year and pre-election year are statistically significant in the period before the financial crisis. Their coefficients are positive, what meets the hypothesis of political expenditure cycle and opportunistic approach. After the financial crisis these variables became insignificant.

In the case of PL model, the election year variable is significant before and also after the financial crisis. It behaves in accordance with tested hypothesis in the period before the financial crisis. After the financial crisis the relation between election year variable and central government total expenditure is negative and indicates reduction of public expenditure provided by central level of government in the period of election.

In the case of SK augmented regression, the split of the sample by the financial crisis variable also brings different results for the election period impact on the central government total expenditure. Before and also after the financial crisis, the election year variable is the only one statistically significant among election variables. Its coefficient is opposite in these two cases. Before financial crisis the negative relationship between election year and central government total expenditure indicates the absence of the manipulation with public expenditure at the level of central government. The situation changes after the financial crisis, where the coefficient turns to positive and the opportunistic approach is here admissible.

Control variable public deficit changes its coefficient after the financial crisis from negative to positive in both models. While in the period before the crisis the relationship between public deficit and central government total expenditure was negative, after the financial crisis it is positive. Obviously, the need of providing additional public goods and services by central government mirrors in the volume of the public debt. If the public debt increases the central government total expenditure increases, too. Impact of central government total revenue on its expenditure also changes after the financial crisis. While in the case of HU is this change present in current period, in case of SK, is negative effect observed in one year lag of central government total revenue. This inverse relationship might be explained by the central government financial situation in the period of financial crisis (after 2009), when its revenue decreased, but it did not induce correspondent reduction in central government spending. The need of macroeconomic stabilization and fortification of redistribution activities made on central government level was required in mentioned period. In case of CZ model strong influence of GDP per capita growth on the central government total expenditure after the financial crisis is observable.

CONCLUSION

Public expenditure seems to be an important macroeconomic instrument. Decisions in the field of public expenditure pertain to the government. Its activities might refer to the actual needs and preferences of the country. However, government as a political incumbent implements its political ambitions and one of them might be a re-election in the next period. In the aim of raising the probability of re-election, government might manipulate with the volume of public expenditure to achieve temporary enhancement of economic conditions in the country. If the voter is conservative, the political incumbent might manipulate with the public expenditure structure and promote expenditure categories with citizen friendly impact on economy as housing amenities or social services. Such a model of political incumbent is known as opportunistic behaviour in the literature.

In this paper, searching for opportunistic behaviour of the central government in V4 countries is realized. First, the evolution of V4 countries' central government total expenditure is analysed and variance of the central government expenditure and its sub-items is computed to recognize conditions in each of V4 countries. In SK and CZ the highest variances of monitored categories are observable. Summarizing the variance of COFOG divisions in V4 countries, the highest variance is observable in the field of economic affairs, general public services and social protection. Unfortunately, the dynamics of the total expenditure and expenditure sub-items in connection with the period of parliamentary elections does not reveal clear regularities of their growth in the election or pre-election year. Contrary, results of regression analysis give some results favourable to the tested hypothesis of the opportunistic behaviour of the government at the central level, but they should not be generalized. More precise results are given by considering the presence of the structural break (financial crisis) in the period covered by data. Augmented regressions show different behaviour of the central government in the field of public expenditure in almost all V4 countries. The tested hypothesis is satisfied by results in case of HU and PL in the period before the financial crisis and in case of SK in the period after the financial crisis. In the CZ model, the expectation is satisfied in case of pre-election year (contrary to election year) in the period after the financial crisis.

ACKNOWLEDGEMENTS

The paper is supported by grant VEGA 1/0559/16.

REFERENCES

- Alesina, A., Roubini, N. (1990), "Political Cycles in OECD Economies", *NBER working Paper Series*, No. 3478, National Bureau of Economic Research, Cambridge, USA.
- Alesina, A., Roubini, N. (1992), "Political Cycles in OECD Economies", *The Review of Economic Studies*, Vol. 59, No. 4, pp. 663-688.
- Brender, A., Drazen, A. (2005), "Political budget cycles in new versus established democracies", *Journal of Monetary Economics*, Vol. 52, No. 7, pp. 1271-1295.
- Brender, A., Drazen, A. (2013), "Elections, Leaders, and the Composition of Government Spending", *Journal of Public Economics*, Vol. 97, No. 1, pp. 18-31.
- Castro, V., Martins, R. (2015), "Budget, expenditures composition and political manipulation: Evidence from Portugal", *NIPE Working Papers*, 4/2015, NIPE - Universidade do Minho.
- Clark, W., Reichert, U., Lomas, S., Parker, K. (1998), "International and Domestic Constraints on Political Business Cycles in OECD Economies", *International Organization*, Vol. 52, No. 1, pp.87-120.
- Chow, G.C. (1960), "Tests of Equality between Sets of Coefficients in Two Linear Regressions", *Econometrica*, No. 28, pp. 591-605.
- Czech Republic Government (2018), *Government of the Czech Republic*, available at <https://www.vlada.cz> (accessed March 13, 2018).
- Delgado, F. J., Lago - Penas, S., Mayor, M. (2011), "On the determinants of local tax rates: new evidence from Spain", Working Papers, 2011/4, Institut d'Economia de Barcelona.
- Drazen, A. (2008), "Political Budget Cycles" in Durlauf, S.N., Blume, L.E. (eds.), *The New Palgrave Dictionary of Economics*, 2nd edition, Macmillan Publishers, Ltd., New York.
- Drazen, A., Eslava, M. (2005), "Electoral manipulation via voter-friendly spending: theory and evidence", *NBER working paper*, 11085, National Bureau of Economic Research, Cambridge, USA.
- Drazen, A., Eslava, M. (2010), "Electoral manipulation via expenditure composition: theory and evidence", *Journal of Development Economics*, No. 92, pp. 39-52.

- Efthyvoulou, G. (2012), "Political budget cycles in the European Union and the impact of political pressures", *Public Choice*, No. 153 (3-4), pp. 295–327.
- Enkelmann, S., Leibrecht, M. (2013), "Political expenditure cycles and election outcomes: Evidence from disaggregation of public expenditures by economic functions", *Economics Letters*, No. 121, pp. 128–132.
- Eurostat (2018a), "Government expenditure by function – COFOG", available at http://ec.europa.eu/eurostat/statistics-explained/index.php/Government_expenditure_by_function_%E2%80%93_COFOG, (accessed 26 February, 2018).
- Eurostat (2018b), "Government finance statistics", available at <http://ec.europa.eu/eurostat/data/database>, (accessed 11 January 2018).
- Gärtner, M. (1994), "The quest for political cycles in OECD economies", *European Journal of Political Economy*, Vol. 10, No. 3, pp. 427-440
- Government Office of the Slovak Republic (2018), available at <http://www.government.gov.sk/>, (accessed 13 March, 2018).
- Gomulka, S. (2016), "Poland's economic and social transformation 1989–2014 and contemporary challenges", *Central Bank Review*, Vol.16, No. 1, pp. 19-23
- Klomp, J., de Haan, J. (2013), "Political budget cycles and election outcomes", *Public Choice*, Vol. 157, No. 1–2, pp. 245–267
- Kornai J. (1996), "Adjustment without Recession: a Case Study of Hungarian Stabilization", *Lessons from the Economic Transition, Central and Eastern Europe in the 1990s*, Kluwer Academic Publishers.
- Kornai J. (2000), "Ten Years After 'The Road to a Free Economy': The Author's Self-Evaluation", the *World Bank Paper Annual Bank Conference on Development Economics – ABCDE*.
- Lamartina, S., Zaghini, A. (2008), "Increasing Public Expenditures: Wagner's law in OECD Countries", *CFS Working Paper*, No. 2008/13 Goethe University, Center for Financial Studies, Frankfurt.
- Lici, E., Dika, I. (2016), "Political Budget Cycles: A Survey of Empirical Literature", *International Journal of Economics, Commerce and Management*, Vol. 4, No. 4, pp. 368-379
- Norsk Senter for forskningsdata (NSD) (2018), "Hungary Parliamentary Elections", available at <http://www.nsd.uib.no>, (accessed 13 March, 2018).
- OECD (2000), "*Economic Surveys: Hungary 2000*", OECD, Paris.
- OECD (2014), "*Economic Surveys: Poland 2014*", OECD, Paris.
- Orosz, A, Biederman, Z. (2015), "*Public finance consolidation in Hungary*", Institute of World Economics (IWE), Centre for Economic and Regional Studies of the Hungarian Academy of Sciences (MTA KRTK), Hungary.
- Persson, T., Tabellini, G. (2003), "*The Economic Effects of Constitutions*", MA: MIT Press, Cambridge.
- Potrafke, N. (2012), "Political cycles and economic performance in OECD countries: empirical evidence from 1951–2006", *Public Choice*, Vol. 150, No. 1–2, pp. 155–179.
- Reuters (2012), "Hungary govt to take on 1.7 billion pounds of municipal debt", *Business News*, 27 Oct, 2012, available at <http://uk.reuters.com/article/uk-hungary-localgovts-idUKBRE89Q05920121027> (accessed 07 March, 2018).
- Rogoff, K. (1990), "Equilibrium political budget cycles", *American Economic Review*, Vol. 80, No. 2, pp. 1–36.
- Sachs, J. D. (2007), "*Developing Country Debt and Economic Performance, Volume 2: Country Studies Argentina, Bolivia, Brazil, Mexico*", National Bureau of Economic Research, The University of Chicago Press, Chicago and London.
- Sáez, L. (2016), "The Political Budget Cycle and Subnational Debt Expenditures in Federations: Panel Data Evidence from India", *Governance*, Vol. 29, No. 1, pp. 47–65
- Statistical Office of the Slovak Republic (2018), *The Election to the Parliament of the Slovak Republic*, available at <http://volby.statistics.sk/index-en.html> (accessed 13 March, 2018).

Trend (2003), "CR Expects Record-breaking Public Deficit" (in original: ČR očekává rekordný deficit veřejných financí), 8 August, 2003, available at <https://www.etrend.sk/ekonomika/cr-ocakava-rekordny-deficit-verejnych-financii.html> (accessed 26 February, 2018).

The Chancellery of the Prime Minister (2018), available at <https://www.premier.gov.pl> (accessed 13 March, 2018)

Vergne, C. (2009), "Democracy, elections and allocation of public expenditures in developing countries", *European Journal of Political Economy*, Vol.25, No. 1, pp. 63–77.

Zhu, Z., Krug, B. (2005), "Is China a Leviathan?", *ERIM Report Series Reference*, No. ERS-2005-087-ORG, Erasmus Research Institute of Management, Rotterdam.

APPENDICES

Table A. Dynamics of central government expenditure according to COFOG divisions in context with parliamentary elections in CZ

	g01	g02	g03	g04	g05	g06	g07	g08	g09	g10
1996	0.11	0.00	-0.06	-0.61	-0.29	0.38	0.21	0.20	0.13	-0.10
1997	-0.18	0.06	0.06	-0.11	-0.20	-0.55	-0.24	-0.33	-0.34	0.19
1998	-0.09	-0.17	-0.11	0.17	0.00	0.20	0.15	0.00	0.17	-0.02
1999	0.00	0.13	0.13	-0.18	-0.25	-0.17	0.00	0.00	-0.03	0.03
2000	-0.03	0.00	0.00	-0.15	0.00	0.20	-0.07	0.00	0.06	0.02
2001	0.18	0.00	0.00	0.37	0.00	0.00	0.07	0.00	0.03	-0.01
2002	0.03	0.06	0.06	-0.03	0.00	-0.50	-0.07	0.00	0.03	0.06
2003	0.29	0.06	0.00	0.35	0.33	-0.33	0.14	0.00	0.11	-0.02
2004	0.02	-0.32	-0.05	-0.45	-0.25	3.00	-0.06	0.00	-0.07	-0.08
2005	0.09	0.15	0.06	-0.18	0.00	-0.13	-0.13	0.00	0.00	-0.02
2006	-0.14	-0.27	0.00	-0.02	0.00	0.00	0.15	0.00	0.00	0.00
2007	-0.14	0.00	-0.11	0.02	-0.33	-0.14	0.00	0.00	-0.03	0.06
2008	-0.06	-0.09	0.00	0.07	0.00	-0.17	-0.07	0.00	0.00	0.00
2009	0.12	0.00	0.06	0.09	-1.50	0.20	0.07	0.25	0.05	0.11
2010	0.00	0.00	0.00	-0.12	-2.00	0.00	0.07	-0.20	0.00	0.00
2011	-0.03	-0.10	-0.11	0.00	3.00	-0.17	0.94	0.50	-0.05	-0.01
2012	0.49	-0.11	-0.06	-0.05	0.00	-0.40	0.00	0.00	0.05	0.01
2013	-0.33	-0.13	0.07	-0.02	-0.50	0.00	0.00	0.00	0.05	0.02
2014	0.00	0.00	-0.06	0.00	0.00	0.00	0.00	0.00	-0.05	-0.03
2015	-0.08	0.29	0.07	0.18	-0.50	-0.33	0.03	0.00	-0.03	-0.03

Note: Periods of parliamentary elections in CZ are grey shaded, positive values above 0.2 are bold, the particular expenditure (E) growth rate (g) is computed as $g=(E_t-E_{t-1})/E_{t-1}$, monitored period 1995-2015.

Source: own computation

Table B. Dynamics of central government expenditure according to COFOG divisions in context with parliamentary elections in HU

	g01	g02	g03	g04	g05	g06	g07	g08	g09	g10
1996	0.00	0.10	0.00	-0.30	0.50	-0.67	0.47	-0.25	0.13	-0.14
1997	-0.12	0.27	0.00	0.00	0.33	1.00	-0.44	-0.25	-0.03	-0.03
1998	-0.07	-0.14	0.12	0.41	0.00	0.00	0.14	0.11	0.00	-0.16
1999	-0.01	0.08	-0.05	-0.23	-0.25	-0.50	0.06	0.00	0.00	0.09
2000	-0.19	-0.08	0.11	0.09	0.00	0.00	0.18	-0.10	0.06	-0.15
2001	0.13	0.00	-0.05	-0.05	0.00	0.00	0.00	0.22	0.00	0.06
2002	-0.11	0.17	0.16	0.27	0.00	0.00	0.10	0.18	0.00	0.15
2003	-0.13	-0.07	-0.09	-0.23	0.00	0.00	-0.05	-0.08	0.22	0.07
2004	0.08	0.00	-0.10	-0.07	-0.33	0.00	0.29	0.08	-0.11	0.06
2005	-0.02	0.00	0.00	0.02	0.00	0.00	0.04	-0.15	0.00	0.14
2006	0.08	0.08	0.11	0.12	0.00	0.00	0.46	0.00	-0.03	0.13
2007	-0.02	-0.07	-0.10	0.11	0.50	-1.00	-0.34	-0.09	-0.03	-0.19
2008	0.17	-0.23	0.11	-0.14	0.00	0.00	-0.22	0.00	-0.05	0.01
2009	0.01	-0.10	-0.05	-0.04	0.00	0.00	0.10	0.00	0.03	0.14
2010	-0.07	0.33	-0.05	0.00	-0.33	1.00	0.48	0.10	-0.05	-0.08
2011	0.05	-0.08	0.06	0.31	0.50	1.00	0.00	0.00	-0.06	-0.20
2012	0.00	-0.36	0.00	-0.15	0.00	0.00	0.32	0.27	-0.03	-0.10
2013	0.20	0.00	0.05	0.07	0.00	-0.50	0.33	-0.07	0.28	-0.11
2014	-0.12	-0.14	-0.05	0.05	0.67	0.50	-0.07	0.15	0.10	-0.12
2015	-0.25	-0.17	0.05	0.25	0.40	0.00	-0.13	0.07	0.00	0.00

Note: Periods of parliamentary elections in HU are grey shaded, positive values above 0.2 are bold, the particular expenditure (E) growth rate (g) is computed as $g=(E_t-E_{t-1})/E_{t-1}$, monitored period 1995-2015.

Source: own computation

Table C. Dynamics of central government expenditure according to COFOG divisions in context with parliamentary elections in PL

	g01	g02	g03	cg04	g05	g06	g07	g08	g09	g10
2003	0.12	0.00	0.11	0.05	0.00	0.33	-0.08	0.33	0.04	0.00
2004	-0.08	0.00	-0.05	0.05	0.00	-0.25	-0.09	0.00	-0.07	-0.10
2005	-0.10	0.00	0.05	0.09	0.00	-0.33	0.20	-0.25	0.00	-0.01
2006	-0.04	0.06	0.00	0.16	0.00	0.50	0.00	0.33	0.02	-0.04
2007	-0.08	0.18	0.05	0.14	0.00	-0.33	-0.08	0.00	-0.06	-0.01
2008	-0.04	0.00	0.00	0.06	1.00	0.00	0.09	0.00	0.00	0.06
2009	0.16	-0.25	0.00	0.00	-0.50	0.00	-0.08	-0.25	-0.18	0.10
2010	0.02	0.07	0.00	0.03	1.00	-0.50	0.09	0.33	0.02	0.13
2011	-0.04	0.00	-0.05	-0.03	0.00	2.00	-0.08	-0.25	0.02	-0.15
2012	0.02	-0.06	0.00	-0.09	0.00	-0.33	0.09	0.00	-0.02	-0.08

2013	0.02	0.13	0.00	-0.28	0.00	0.00	0.00	0.00	-0.02	-0.01
2014	-0.13	-0.12	0.00	0.26	0.00	0.00	0.00	0.00	0.00	-0.15
2015	-0.04	0.07	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.05

Note: Periods of parliamentary elections in PL are grey shaded, positive values above 0.2 are bold, the particular expenditure (E) growth rate (g) is computed as $g=(E_t-E_{t-1})/E_{t-1}$, monitored period 2002-2015 due to missing data.

Source: own computation

Table D. Dynamics of central government expenditure according to COFOG divisions in context with parliamentary elections in SK

	g01	g02	g03	g04	g05	g06	g07	g08	g09	g10
1996	0.22	0.07	0.06	0.15	0.20	1.00	0.07	0.13	0.04	-0.06
1997	-0.06	-0.13	-0.06	-0.10	-0.25	-0.67	-0.10	-0.11	0.00	-0.10
1998	0.04	0.00	0.00	-0.16	-0.22	0.50	-0.04	0.00	-0.13	-0.02
1999	0.14	-0.07	-0.09	0.03	0.29	0.67	-0.12	-0.13	0.29	0.09
2000	0.39	0.00	0.00	0.22	0.33	0.60	0.09	0.14	0.07	-0.10
2001	-0.32	0.00	0.00	-0.33	-0.50	-0.63	-0.04	-0.13	-0.10	0.15
2002	0.07	0.00	0.00	-0.03	0.00	0.33	0.00	0.00	0.04	-0.03
2003	-0.05	-0.31	-0.32	-0.26	-0.17	-0.50	-0.29	-0.29	-0.04	-0.16
2004	-0.08	-0.11	-0.05	-0.02	0.00	0.00	-0.06	0.00	-0.04	0.14
2005	0.03	0.00	-0.10	-0.11	-0.20	0.50	-0.06	0.00	0.08	0.14
2006	-0.04	0.13	0.11	0.05	0.00	-0.33	0.07	0.00	0.07	-0.02
2007	-0.10	-0.11	-0.10	-0.12	-0.25	0.00	-0.06	0.00	-0.10	-0.06
2008	-0.03	0.00	0.00	0.11	0.33	0.00	-0.07	0.00	-0.04	-0.05
2009	0.28	0.13	0.22	0.20	0.25	0.50	0.21	0.20	0.28	0.25
2010	-0.16	0.00	-0.05	-0.14	-0.20	-0.33	0.00	0.00	-0.06	0.16
2011	0.00	0.00	0.00	-0.02	-0.25	0.00	0.00	0.00	0.03	-0.06
2012	0.02	0.00	-0.05	-0.05	0.33	0.00	-0.06	-0.17	-0.03	0.00
2013	0.06	0.00	0.05	0.03	0.00	0.00	0.06	0.00	-0.03	-0.14
2014	0.01	0.00	0.05	0.02	0.00	0.00	0.00	0.00	0.03	-0.02
2015	0.14	0.22	0.05	0.34	0.50	0.50	0.06	0.20	0.03	0.00

Note: Periods of parliamentary elections in SK are grey shaded, positive values above 0.2 are bold, the particular expenditure (E) growth rate (g) is computed as $g=(E_t-E_{t-1})/E_{t-1}$, monitored period 1995-2015, The next parliamentary election were held in 2016, that is why the situation in 2015 is evaluated.

Source: own computation

A, page 163_ there is a needless dot after Keywords?

B, page 165_ there is a needless dot in a blanc space after the Introduction

C, page 172_ there is a missing dot after the sentence in the Acknowledgement