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by

Sören Enkelmann and Markus Leibrecht

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Political Expenditure Cycles and Election Outcomes

Evidence from Disaggregation of Public Expenditures by Economic Functions

Sören Enkelmann[†] Markus Leibrecht[‡]

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Abstract

Through disaggregating public expenditures by economic functions this paper offers a new perspective on the existence and effectiveness of electorally motivated expenditure policy. The aim of the paper is to provide more detailed information on the specific expenditure categories by which politicians try to affect election results. Based on COFOG data for 32 OECD and Eastern European countries over the years 1990-2010, it is shown that political expenditure cycles in total expenditures as well as in specific expenditure categories mainly exist in newly democratized Eastern European countries. However, the paper also provides evidence that these electorally motivated spending policies are ineffective means to enhance the re-election probability.

JEL: H11, H30, H50

Keywords: political expenditure cycle, political economy, re-election probability, COFOG

[†] *Department of Economics, Leuphana University, Scharnhorststrasse 1, D-21335 Lüneburg. E-mail: enkelmann@leuphana.de*

[‡] *Austrian Insitute of Economic Research, Arsenal Objekt 20, A-1030 Vienna. E-mail: markus.leibrecht@wifo.at*

1 Introduction

Does public expenditure growth significantly increase in election years? If yes, does this political budget cycle impact on the re-election probability of the incumbent and his political party? The empirical literature comes up with clear messages: First, except for new democracies political expenditure cycles do not exist. Second, election-year deficit spending does not lead to a higher re-election probability; in fact, it may even be decreased. Yet, these findings are based on studies which focus on aggregate measures of public spending (e.g. Brender and Drazen, 2005, and, 2008).

However, election-year manipulation may take forms which are not fully captured by fiscal aggregates. Brender and Drazen (2013) construct an index to measure changes in the composition of total public expenditures. They find that the overall change in expenditure composition is higher in newly democratized countries. Yet, a larger change in expenditure composition in election than in non-election years is predominantly a phenomenon in established democracies. In addition, several recent studies disaggregate total budget categories into current and capital spending (e.g. Vergne, 2009) and find for high-income OECD countries that elections shift public spending towards more visible current expenditures (Katsimi and Sarantides, 2012).

The distinction between current and capital expenditure categories is only one way to disaggregate public spending. Another possibility is to structure public expenditures according to their economic function. Using expenditure data separated by economic functions allows isolating in more detail which expenditure categories incumbents conceive as visible and targetable to specific groups of voters. Indeed, based on a sample of Columbian municipalities, Drazen and Eslava (2010) find that governments, in their attempt to remain in office, tend to increase visible expenditures on housing, health, water and energy to target voters. Evidence based on a broad sample of countries is lacking.[1]

The presence of electorally motivated expenditure cycles, however, is not sufficient to draw conclusions about the effectiveness of these measures with respect to the incumbent's goal of re-election. At the disaggregate level, only few empirical studies examine the suitability of electorally motivated budget policies to win elections. In particular, distinguishing between current and capital spending, Drazen and Eslava (2010) find "that

[1]While Brender and Drazen (2013) isolate compositional changes around election years based on a broad sample of countries, their aim is not to provide information on the specific expenditure categories by which politicians try to affect election results.

voters penalize the incumbent party for running large deficits before elections, and reward it for increasing the amount of targeted (capital, authors) spending [...]" (p. 52).

Against this background the contribution of this paper is to offer a new perspective on the existence and effectiveness of electorally motivated budget policy by disaggregating public expenditures by economic functions. It adds to the literature by pinpointing in more detail which expenditure categories are used by incumbents to affect election results and by indicating if these expenditure manipulations increase an incumbent's re-election probability. We apply the Classification of the Functions of Government (COFOG) data for the EU-27 countries, Iceland, Norway, Canada, New Zealand and the U.S.A. over the 1990-2010 period.[2]

2 Empirical Model, Data and Methodology

To isolate the presence of electorally motivated expenditure policies we apply the following empirical model (compare Fatás and Mihov, 2003):

$$\Delta \ln G_{jit} = \alpha + \beta \Delta \ln Y_{i,t-1} + \gamma ELEC_{it} + \theta \Delta \ln X_{i,t-1} + \nu_i + \rho_t + \epsilon_{it}, \qquad (1)$$

where G_{jit} is either real total expenditure or one of ten COFOG expenditure categories ($j = 1, \cdots, 11$), $Y_{i,t-1}$ is real GDP in national currency (both variables are defined in 2005 prices) and $ELEC_{it}$ pinpoints election years following Franzese (2000). The matrix $X_{i,t-1}$ contains control variables that capture inertia in public expenditure growth (lagged dependent variable), scale effects (population), globalization effects (openness), the age structure (share of young and elderly in total population) and labor market effects (unemployment rate).

Additionally, in regressions for single COFOG categories the growth rate of total expenditures is included in $X_{i,t-1}$ to reduce the possibility that the election variable merely picks up changes in total expenditures around election years. ν_i and ρ_t are $N-1$

[2]We make use of first-level COFOG data which splits expenditure into the following ten functions: general public services (*admin*); defense; public order and safety (*security*); economic affairs (*economic*); environmental protection (*environ*); housing and community amenities (*housing*); health; recreation, culture and religion (*leisure*); education; social protection (*social*).

country-fixed effects and $T-1$ time-fixed effects. ϵ_{it} is the remainder error term.[3] Control variables are lagged by one year to mitigate problems from reverse causality.

As stressed by Brender and Drazen (2005) it is important to distinguish between old and new democracies. Therefore, we estimate Equation (1) not only for the complete country sample, but also separately for Western countries and the newly democratized countries in Eastern Europe.[4] Another relevant distinction is between predetermined and premature elections (e.g. Katsimi and Sarantides, 2012). To cope with this issue we include two separate election variables, one for predetermined and one for premature elections in $ELEC_{it}$. Yet, for East European countries our sample contains only three premature elections. Hence, this split of the election variable is not meaningful. To estimate model (1) we use the bias-corrected Least Square Dummy variable estimator advanced by Bruno (2005), which is suitable for our small N and small T application.

The second aim of the study is to investigate whether the existence of political expenditure cycles affects the re-election probabilities of incumbents. For those expenditure categories for which we establish the presence of a political expenditure cycle we estimate the following empirical model:

$$REELECT_{ie} = \alpha' + \beta' PBC_{jie} + \gamma' W_{ie} + \epsilon'_{ie}. \tag{2}$$

$REELECT_{ie}$ is a dummy variable indicating re-election of the incumbent party in country i and election year e. Following Klomp and de Haan (2012) we base our Political Budget Cycle (PBC) measures on the residuals of Equation (1) when the latter is estimated with $ELEC_{it}$ left out. These residuals comprise the election effect on growth in expenditure category j. Specifically, we define $PBC1_{jie}$ as the difference between the election-year residual and the mean of the residuals over the incumbent's term in office. Hence, a positive value indicates an above-average (unexplained) growth in expenditure category j in election year e. $PBC2_{jie}$ is a dummy variable which is 1 if $PBC1_{jie} > 0$, and 0 otherwise. Finally, $PBC3_{jie}$ is a dummy variable which is 1 for the 25% largest

[3] As we apply a two-way-fixed effects approach we capture the impact of time-invariant, country-specific determinants (e.g. electoral and political system, welfare regime; level of social trust) as well as global economic factors (e.g. global booms and busts).

[4] Greece, Portugal and Spain are frequently treated as newly democratized countries in empirical studies based on samples beginning in the 1970s or the 1980s (e.g. Brender and Drazen, 2005). Our sample starts in 1990 and 1995, respectively. We therefore consider these three countries in the group of old democracies.

values of $PBC1_{jie}$, and 0 otherwise. Matrix W_{ie} contains variables which control for the business cycle (GDP growth and inflation in the election year),[5] the strength of the incumbent party (vote share in the last election) and total expenditure growth during the incumbent's term in office (mean growth rate of total expenditures). For right-hand side variables e refers to the year before the election if the election takes place between January and June.[6] ϵ'_{ie} is the remainder error term.

Our dataset is based on several sources. Government expenditures, nominal GDP and GDP deflators (2005 as base year) are taken from Eurostat and OECD databases. Election dates and information concerning the incumbent's strength are taken from Armingeon et al. (2012), Beck et al. (2001), Nohlen and Stöver (2010) as well as electionresources.org and electionguide.org. Openness and population data come from Heston et al. (2012). Unemployment rates are from the European Commission's AMECO database. The shares of old and young persons in total population and inflation data are those reported in World Bank's WDI database. To determine which elections are predetermined we follow Katsimi and Sarantides (2012) and use information provided by the Inter-Parliamentary-Union Platform.[7]

The re-election variable is an extension of the information provided by Brender and Drazen (2008) using information from de Zárate's (2012) World Political Leaders database. Thus, the re-election variable measures whether the incumbent or his party is re-elected, which is in accordance with Brender and Drazen's (2008) extended sample.

Public expenditure variables are measured at the general government level for two reasons. First, even in case of national-level elections, electorally motivated spending does not necessarily only take place at the central government level. For instance, spending on social protection is frequently channeled via social security funds which are under control of national parliaments. Similarly, in unitary states local communities are highly influenced by the central government in their expenditure decisions (see, e.g., Shah, 1999). Thus, it is conceivable that local expenditures as reported in the COFOG database are highly influenced by central governments' considerations. Second, using central govern-

[5]Inflation is considered not least as several of the East European countries experience high inflation rates during the sample period. Note that in the first-step regressions inflation is not considered since real expenditure data are used and time-fixed effects are included in Equation (1).

[6]For example, if the election takes place in January we assume that the GDP growth rate in the year prior to the election year is relevant to voters.

[7]`http://www.ipu.org/english/home.htm`.

ment expenditure data is problematic as there are pronounced growth rates which are simply due to shifts in the fiscal responsibility between federal and sub-national governmental entities. Moreover, in several countries a system of inter-governmental transfers exists which is not taken into account in unconsolidated COFOG data.[8] In a robustness check, we follow Potrafke (2011) and re-estimate Equation (1) without the federal states Austria, Belgium, Canada, Germany and the U.S.A. for which it might be questionable to explain general government expenditure growth with national-level elections. Expenditure data on economic affairs are corrected for major one-off transactions (esp. UMTS revenues). For the U.S.A. data on environmental expenditures are lacking.

Table III contains the difference in average growth rates between predetermined election years and non-election years. Descriptive evidence already hints toward some electorally motivated changes in public expenditures, especially in Eastern European countries.

3 Results

Results displayed in Table I indicate the presence of an election cycle in total public expenditures in the sample covering all 32 countries (TOTAL). This evidence is in line with recent findings of Klomp and de Haan (2012) and Efthyvoulou (2012). The coefficient of $ELEC\_PRED_{it}$ implies that real total expenditure growth is about 1.3 percentage points higher in predetermined election years. In contrast, no effect is found in case of premature elections which is in line with Katsimi and Sarantides (2012).[9] Concerning the control variables, results signal that government spending is slightly pro-cyclical on average. Moreover, an increase in the share of old people increases total expenditure growth, in line with Shelton (2007). The coefficient of the lagged dependent variable, if statistically significant, signals negative autocorrelation. All remaining control variables

[8]For instance, in the Slovak Republic defense expenditures of the central government decrease substantially in 2006 with a corresponding increase in local government expenditures on defense-related issues. In 2007, however, this change in the allocation of responsibility over defense expenditures is reversed again. In Austria, the central government provides the state level (Bundesländer) with the financial means to fulfill their duties in case of certain education spending (e.g. salaries of teachers in primary and secondary schools).

[9]The average growth rates of real total expenditures in predetermined election years is about 3.8 percent, whereas it is 2.8 percent in non-election years.

lack statistical significance, which is consistent with findings of related literature (e.g. Potrafke, 2011; Shelton, 2007).

However, from related literature we know that election cycles in total public expenditures are mainly a phenomenon in newly democratized countries. As our sample includes ten new democracies from Eastern Europe, we expect the election cycle to be driven by this country group. Indeed, this is the case: In old democracies (WEST), no evidence for an election cycle in total expenditures can be established[10]; in contrast, the evidence in favor of election cycles is statistically and economically significant in newly democratized countries (EAST). Quantitatively, the effect is more pronounced compared to the total sample (4.2 vs 1.3 percentage points).

Looking at the estimation results for single COFOG sub-categories displayed in columns 2-11 in Table I reveals that in both country groups specific expenditure categories are used to gain votes. In Western countries the categories *leisure* and *education* grow significantly stronger in election years. However, when federal countries are dropped the election effect in the education category is statistically insignificant. Thus, in the West incumbents do not manipulate the overall growth in large and dominant expenditure categories like health, social protection or transport and telecommunication infrastructure.[11] This is not unexpected given the results of Brender and Drazen (2008) who find that voters in old democracies penalize election motivated increases in total public expenditures and in deficits, respectively. Moreover, as stressed by Brender and Drazen (2013), entitlement spending is dominant in health and social protection which makes electorally motivated changes harder to achieve. In contrast, expenditures on recreation, culture and religion (*leisure*) are small enough to be easily compensated by decreases in other expenditure categories and are visible and targetable to specific voter groups at the same time.

In Eastern countries above average growth in election years is more frequent than in the West. This is consistent with the finding of Brender and Drazen (2013) that compositional changes are generally more important in newly democratized countries than in old democracies even if the extent is the same in election and non-election years. The compositional changes in election years are driven by the categories *admin*, *environ*, *economic* and *social* which gain in importance. The presence of election cycles in spending

[10]Excluding federal states does not change this result (available upon request).

[11]Of course, compositional changes *within* each expenditure category might take place. For instance, an electorally motivated shift from capital to current expenditures within a category is likely given the findings of Katsimi and Sarantides (2012).

on social protection is unexpected given the dominance of entitlement spending in this sector. Yet, it is consistent with Lipsmeyer (2003) who argues that in Eastern European countries citizens demand high levels of social protection since voters are accustomed to universal welfare assistance. The significant impact on the *economic* category is plausible given the importance of infrastructure projects in the catching-up process of Eastern European countries (Aghion and Schankerman, 1999). Regarding the rather pronounced electoral effect on environmental spending, it is interesting to note that growth rates in this category are relatively volatile. Most importantly, descriptive evidence already shows that the average growth rate in this category is 37.8 percentage points higher in election years (cf. Table III). From a substantive viewpoint, the finding of an election cycle in environmental spending might reflect that the extensive requirements from the European Commission in the field of waste water management and air pollution abatement (see, e.g., The Economist, 1999) are strategically fulfilled in election years. Finally, expenditures on general public services include sub-categories which automatically increase in election years, such as outlays for voter registration and the holding of elections. In newly democratized countries, with low experience in holding democratic elections, these expenditures might be relatively high.[12]

Do these election-motivated increases in expenditure growth enhance the re-election probability of the incumbent or his party? Our findings indicate that this is not the case. Even if the results displayed in Table II are based on a limited number of observations[13] we find a significant impact on the re-election probability neither for total expenditures nor for the relevant COFOG sub-categories. This holds true for each of the three PBC measures as well as both country groups. The only significant determinants of the re-election probability are real GDP growth and the rate of inflation in Eastern Europe and the inflation rate in old democracies, respectively. These results are well in line with Brender and Drazen (2008) as well as the vote and popularity function literature as surveyed in Paldam (2008).

[12]Hence, stronger increases in election years in *admin* are likely not electorally motivated.
[13]We therefore estimate Equation (2) as a Linear Probability Model.

4 Conclusions

This paper confirms that electorally motivated expenditure cycles exist. The paper adds to the literature by indicating which specific expenditure categories are used by incumbents to gain elections. The question why these specific channels are chosen clearly deserves further research. Our results also imply that politicians should not engage in electorally motivated spending, not only for economic reasons but also because it is an ineffective means to enhance the re-election probability.

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Table I Do political expenditure cycles exist?

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
TOTAL	**total exp**	**admin**	**defense**	**security**	**economic**	**environ**	**housing**	**health**	**leisure**	**education**	**social**
$Elec\_pred_{it}$	1.310*	2.927*	1.167	3.041	1.671	24.745***	−1.849	−1.190	3.058*	2.492***	0.805
	(0.086)	(0.081)	(0.639)	(0.136)	(0.643)	(0.000)	(0.887)	(0.440)	(0.078)	(0.008)	(0.252)
$Elec\_prem_{it}$	0.337	1.335	1.096	1.138	−0.506	1.451	−1.390	0.727	−2.342	−0.349	0.917
	(0.673)	(0.449)	(0.675)	(0.596)	(0.894)	(0.831)	(0.919)	(0.654)	(0.200)	(0.724)	(0.217)
Obs (countries)	447 (32)	447 (32)	447 (32)	447 (32)	447 (32)	428 (31)	447 (32)	447 (32)	447 (32)	447 (32)	447 (32)
WEST	**total exp**	**admin**	**defense**	**security**	**economic**	**environ**	**housing**	**health**	**leisure**	**education**	**social**
$Elec\_pred_{it}$	0.098	0.392	1.073	0.923	−0.886	2.304	−8.796	0.957	2.999*	1.744*	−0.613
	(0.916)	(0.786)	(0.694)	(0.482)	(0.867)	(0.370)	(0.273)	(0.387)	(0.096)	(0.061)	(0.392)
$Elec\_prem_{it}$	0.340	1.653	−0.059	0.441	−0.633	0.286	−2.114	0.784	−0.966	−0.417	0.638
	(0.621)	(0.120)	(0.977)	(0.649)	(0.871)	(0.893)	(0.721)	(0.336)	(0.468)	(0.551)	(0.242)
Obs (countries)	327 (22)	327 (22)	327 (22)	327 (22)	327 (22)	308 (21)	327 (22)	327 (22)	327 (22)	327 (22)	327 (22)
EAST	**total exp**	**admin**	**defense**	**security**	**economic**	**environ**	**housing**	**health**	**leisure**	**education**	**social**
$Elec\_it$	4.222***	8.337*	5.708	7.692	8.277*	52.662**	13.118	−3.156	−1.200	2.956*	3.314*
	(0.008)	(0.099)	(0.354)	(0.237)	(0.095)	(0.015)	(0.761)	(0.520)	(0.775)	(0.237)	(0.069)
Obs (countries)	120 (10)	120 (10)	120 (10)	120 (10)	120 (10)	120 (10)	120 (10)	120 (10)	120 (10)	120 (10)	120 (10)

Dependent variable: growth rate of real government expenditure (total or COFOG group). $Elec\_pred_{it}$ = predetermined elections. $Elec\_prem_{it}$ = premature elections. Control variables not shown. TOTAL = full country sample. WEST = Western countries. EAST = East European countries. Based on bias-corrected LSDV estimator (Bruno, 2005) with time-fixed effects. Bootstrapped standard errors (400 replications). p-values in parentheses. *** (**, *) denote statistical significance at the 1 (5, 10) percent level.

Table II Do political expenditure cycles enhance the re-election probability?

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
WEST	**total exp**	**admin**	**economic**	**environ**	**leisure**	**education**	**social**
$PBC1_{jie}$					0.001	−0.009	
					(0.894)	(0.647)	
$PBC2_{jie}$					−0.106	0.119	
					(0.358)	(0.306)	
$PBC3_{jie}$					−0.089	−0.047	
					(0.528)	(0.731)	
Obs					75	75	
EAST							
$PBC1_{jie}$	−0.001	−0.008	0.003	0.001			−0.019
	(0.980)	(0.450)	(0.766)	(0.744)			(0.409)
$PBC2_{jie}$	0.065	−0.078	−0.019	−0.058			−0.080
	(0.777)	(0.796)	(0.921)	(0.776)			(0.670)
$PBC3_{jie}$	0.069	−0.127	0.187	−0.001			−0.161
	(0.776)	(0.503)	(0.457)	(0.998)			(0.491)
Obs	27	27	27	27			27

Dependent variable: $REELECT_{ie}$. e = election year; t = election year if late election (July–December) or year prior to the election year if early election. PBC_{jie} are the proxies for political expenditure cycles as defined in the text. Control variables not shown. Based on Ordinary Least Squares. Bootstrapped standard errors (400 replications). p-values in parentheses. *** (**, *) denote statistical significance at the 1 (5, 10) percent level.

Table III Growth rates in predetermined election years and non-election years

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
ALL	1.51	2.09	0.12	2.15	0.94	14.99	13.00	0.04	2.44	2.03	1.42
WEST	1.23	3.41	−0.19	1.16	−0.94	−0.06	−4.55	1.29	1.78	1.06	1.10
EAST	1.75	−0.93	0.12	3.47	4.18	37.78	42.37	−2.97	3.04	3.63	1.65

Difference between growth rate in predetermined election years and non-election years. COFOG expenditure categories: (1) total expenditures, (2) admin, (3) defense, (4) security, (5) economic, (6) environ, (7) housing, (8) health, (9) leisure, (10) education, (11) social.

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Leuphana Universität Lüneburg
Institut für Volkswirtschaftslehre
Postfach 2440
D-21314 Lüneburg
Tel.: ++49 4131 677 2321
email: brodt@leuphana.de

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