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Self-preserving Leviathans - Evidence from Regional-level Data

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Self-preserving Leviathans
Evidence from Regional-level Data

Abstract

This paper investigates the impact of the intensity of political competition on the leviathan behavior by political incumbents. Using panel data from German municipalities, we test whether the relative political strength of parties in local councils influences the spending behavior of officeholders. We find only weak evidence that strong officeholders (with weak political opponents) exhibit leviathan behavior in total government spending. Additionally, we test for political budget cycles at the local level. Here, we find strong empirical evidence that the spending pattern during a legislative period depends on the distribution of power in local councils. In municipalities with weak political competition the public spending reaches a peak in election years. The political incumbents act as self-preserving leviathans. If officeholders face politically strong opponents, they do not initiate a political budget cycle.

JEL-Code: H610, H720, H760.

Keywords: political competition, local government, leviathan.

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1 Introduction

In this paper, we examine whether the relative political strength of parties in local councils influences the spending behavior of officeholders in German municipalities. We also study opportunistic budget cycles at the local level and how these cycles depend on the distribution of power in local councils.

In a representative democratic system, citizens delegate power to politicians for certain periods of time. The institutional setting allows elected incumbents to maximize their own utility functions which could deviate from citizens' preferences [Tullock (1959)]. The voters have only limited direct influence on political decisions made by their representatives during the legislative period. This applies to fiscal policies, such as decisions concerning public revenue, expenditures and debt. Consequently, politicians in office might behave like a leviathan. In the leviathan setting, all politicians receive rents from being in office proportional to the size of government and thus all officeholders regardless of party affiliation will enlarge public spending if given the opportunity [Brennan and Buchanan (1980)]. A number of institutional arrangements, however, constrains officeholders' freedom of action, thereby taming the leviathan. The literature describes institutional arrangements, such as *tax competition* [see for example Rodden (2003)], *direct democracy* [see Matsusaka (2005) or Vatter (2000)] and *checks and balances* through the separation of powers [Persson *et al.* (1997)]. Closely related to the last mentioned arrangement are the re-election desires of politicians. The uncertainty of re-election can trigger two different effects. On one hand, the re-election motive increases the accountability of politicians and limits the gap between policy and voters' preferences. Thus, it might increase the efficiency of policy outcomes. On the other hand, it might cause inefficient opportunistic behavior by officeholders, such as public spending to please swing voters before an election which creates a political budget cycle.

We investigate whether a lack of sufficient political competition facilitates leviathan behavior by local officeholders. To answer this question, we study how the distribution of power in local councils influences local public spending. In addition, we test for political budget cycles at the local level. Our research focuses on German municipalities, which are the lowest level of government. This approach is especially interesting for three reasons. First, no de jure separation of powers exists at the local level. Officeholders at the lowest

subnational level do not face a second political body with conflicting interests (see section 3 for institutional details); therefore, they have more scope for the abuse of power. The only directly disciplining opponents are potential veto-players in the local councils. The distribution of power among parties might determine the extent of leviathan behavior and the scope for the creation of electoral budget cycles. Second, the close proximity of citizens to government at the local level makes local budgets a preferred object for electoral manipulation. Local officials are better informed about local needs [Oates (1972)] and thus more capable of using this information for strategic purposes than politicians at higher levels. Local governments can target public spending to voter groups more precisely and, therefore, buy votes more efficiently. Third, the lowest government tier is responsible for more than 30% of total public spending (excluding social insurance) in Germany. Even more important is the municipalities' role in public investment spending: In 2013, 52% of public investments in material assets were made at the local level (see Federal Statistical Office (2014) for these figures).

Our main findings can be summarized as follows. We find only weak evidence that politically strong incumbents (which are confronted by few and/or weak opponents in local councils) exhibit leviathan behavior in government spending. On average, the total public spending by politically strong officeholders is only slightly higher in comparison to those without political strength. However, we find strong empirical evidence that the spending pattern during a legislative period depends on the distribution of power in local councils. Politically weak incumbents with strong political opponents show no signs of electoral engineering. Their spending is quite uniformly distributed over the election period. In contrast, politically strong incumbents create a political budget cycle. Their pattern of public spending shows great variance within the election period. Strong officeholders exploit their lack of supervision and low political competition to decrease spending in the middle of election periods and increase it during election years. The institutional framework leaves only little room for increasing total spending, but depending on the intensity of political competition in local councils, there seems to be great leeway to manipulate multi-year local budgets for re-election purposes. In this way, the local politicians act as self-preserving leviathans.[1]

The remainder of the paper is structured as follows: Section 2 provides a brief review of

[1]Whether the budget manipulation is successful at achieving re-election is not considered in our paper.

the related literature. The institutional setting of German municipalities, the empirical strategy, and the data are put forth in section 3. Section 4 discusses the results, while section 5 presents the conclusions.

2 Literature

In this section, we discuss the different strands of literature related to our analysis. First, we summarize the literature concerning the influence of political strength of governing parties on fiscal policies. Second, we briefly review the theoretical literature on political budget cycles. Third, we discuss the theoretical background of our analysis. In doing so, we combine the arguments of two strands of literature and derive hypotheses for empirical analysis. Finally, we briefly review the empirical literature on political budget cycles, focusing on studies that examine electoral cycles at the local level.

According to the literature, government budget deficits can be seen as a tragedy of the commons. Given finite budgets and the absence of a coordinator, self-interest-oriented policy makers will use the budget to maximize their individual benefits and externalize the cost to society as a whole. The common pool problem generates a spending bias [see Alt (2002)]. From this perspective, the size of the government and the budget deficit should be positively correlated with the number of politically relevant players and negatively correlated with the strength of the coordinator. Roubini and Sachs (1989) focus on the comparative impact of coalition and single-party governments. They argue that making tough decisions to reduce the level of public debt can be more difficult under coalition governments than single-party governments. This has become known as the "weak government" hypothesis [Roubini and Sachs (1989)]. When reviewing the empirical literature in this field, it seems as if lower political strength, i.e., higher fragmentation of decision-making, increases government size and leads to higher budget deficits. Numerous studies on the national level find such effects [see for example Volkerink and De Haan (2001) or Elgie and McMenamin (2008) for literature reviews]. The implementation of a strong coordinator, the reduction of budget claimants, and strengthening institutional checks and balances[2] limit the common pool problem. Volkerink and De Haan (2001)

[2]Checks and balances work by creating conflicting interests between different political bodies, requiring both bodies to agree on public policy. In this way, the two bodies discipline each other and improve fiscal performance [Persson *et al.* (1997)].

show that there is a strong correlation between the government's parliamentary majority and the budget deficit. The greater the government's majority, the lower the deficit.

At the local level, the hierarchies within a municipality are rather flat, and mechanisms of de jure checks and balances do not exist. In contrast to the national level (which often has a bicameral legislature), there is no second political body with conflicting interests. The only disciplining opponents are potential veto-players in the local councils. Political strength at this level comes simply from collecting as many votes as possible in order to control a large share of the local council. Regarding political strength as a relatively greater number of votes in the local council (reducing the number of veto-players) raises two implications. On one hand, a more concentrated distribution of power reduces political competition in decision making and reduces the number of claimants in budget decisions and thus the common pool problem. For example, Ashworth *et al.* (2005) and Borge (2005) find that, even at the municipal level, the fragmentation of governments has unfavorable effects on the local budget deficit. On the other hand, possession of the majority of seats in the local council provides opportunities for the abuse of power for re-election purposes. Strong parties find themselves in the dilemma of choosing to conduct responsible, clear-sighted policy or being able to unopposedly increase expenditures in order to attract or reward voters. Evidently, the degree of political strength does matter for fiscal policies, though we cannot form a clear hypothesis about the direction of this impact. The leviathan hypothesis would be: *A lower degree of political competition in local councils leaves more room for the ruling party to impose its preferred policy. This means that the officeholder is able to increase spending.*

Our paper also concerns a second strand of literature - that on opportunistic political business cycles. Opportunistic models of political business cycles assume that politicians are primarily interested in re-election and thus compete for the median voter [see for example Nordhaus (1975), Rogoff (1990)].[3] In the literature on opportunistic cycles, it is widely agreed that budget cycles do not produce measurable business cycles in macroeconomic outcomes (e.g., unemployment or economic growth); therefore, we focus on electoral cycles in fiscal policies (expenditures and deficits).

[3]In partisan models, parties follow ideological motives [see for example Hibbs (1977) and Alesina (1987)]. As the attribution of ideological positions to parties at the local level is much more ambiguous compared to the national level, we focus on opportunistic cycles and do not treat the literature on ideological motives.

The theoretical literature on political budget cycles asserts that political incumbents initiate a cycle shortly before elections in order to signal competence or please voters, thereby increasing their re-election chances [see for example Rogoff and Sibert (1988), Rogoff (1990) or Shi and Svensson (2006)]. These cycles are likely to be stronger when there is more need for them (re-election is uncertain) and when the incumbent has the political ability to manipulate the budget [Schultz (1995) and Geys (2007)]. It is very difficult to measure the political need for budget manipulation at the local level, but the political ability for budget manipulation can be approximated by the distribution of power among parties in local councils. Early theoretical models explaining political cycles rested on the assumption that voters are backward-looking and myopic. However, when assuming rational voters, it is questionable why politicians should manipulate public expenditures, increase transfers, or cut taxes [Eslava (2011)]. A first argument from theory is that voters have imperfect information about the competence of potential policy makers, and the incumbents signal their type by manipulating the budget. If voters lack sufficient information about the incumbent's true ability to allocate resources effectively, they will interpret an increase in the provision of public goods (an increase in public spending) prior to an election as a signal of competence [Rogoff and Sibert (1988)]. We, therefore, expect to find that the pattern in the public budget varies over the legislative period. This pattern should be more pronounced with politically strong incumbents because they can manipulate the budget more easily, and voters can unambiguously associate the signal with the sender.

A second explanation of political budget cycles builds on swing voters. Targeted transfers can persuade those ideologically moderate voters more easily than voters who are ideologically more extreme. Budget manipulations affect electoral outcomes because expenditures or transfers are targeted at more politically impressionable voters [see Dixit and Londregan (1996) and Drazen and Eslava (2006)]. The officeholders have an incentive to restructure public spending towards expenditures valued by the swing and not by core voters. Rational voters are aware that they are targeted but still have a higher probability of voting for that incumbent. Again, we expect to find an electoral pattern in public budgets. The swing voter argument seems more relevant to our analysis than the imperfect information argument because we focus on the lowest government level. At the local level, the information asymmetry between voters and politicians is less important

than at the national level. On one hand, voters have close contact with local politicians and they can directly observe the competence of local incumbents. On the other hand, local politicians know the impressionable (swing) voters and their preferred projects and can use this information in strategic actions.

We derive two hypotheses from those theoretical arguments. First, in accordance with the theory, *public spending rises in election years. In non-election years, this behavior reverses, and spending decreases.* (Re-)elected governments implement painful budget adjustments when they feel relatively safe from voters' displeasure. Second, *the extent of pre- and post-electoral budget manipulation depends on the political strength of the incumbent government.* It is much easier for politically strong governments facing weak opponents or no veto-players to target public spending and to send an unbiased signal that can be unambiguously associated with the sender.

There is a large, still-growing empirical literature on political budget cycles. Most of this literature focuses on national-level data. Exhaustive overviews are provided by Alesina *et al.* (1997), Drazen (2001), and Franzese Jr. (2002). Empirical studies that focus almost exclusively on industrialized countries do not find statistically significant political budget cycles. Robust empirical evidence in favor of political budget cycles has been found in less-developed countries and young democracies [see Block (2002), Brender and Drazen (2005), Shi and Svensson (2006)]. A more recent literature concerning political budget cycles has devoted attention to the local government level.[4] Empirical studies using subnational data commonly find election effects in public budgets. A study by Mouriuen (1989) using subnational data for the Nordic countries, Italy, and France found that local expenditures grew faster closer to local elections, while local taxes increased only in mid-term years. Similar results were found by Blais and Nadeau (1992) for Canadian provinces and by Rosenberg (1992) and Brender (2003) for Israeli municipalities. More supporting evidence is provided by Strate *et al.* (1993) and Bhattacharyya and Wassmer (1995) for American towns, by Binet and Pentecôte (2004) and Foucault *et al.* (2008) for French municipalities, and by Veiga and Veiga (2007) for municipalities in Portugal. Akhmedov and Zhuravskaya (2004) examine data on Russian regional government expenditures and observe a strong increase in total public spending and deficit close to the election day.

[4]There is also literature on political budget cycles at the local government level in less-developed countries and young democracies. However, we focus our brief literature review on developed countries.

Homolkova and Kis-Katos (2013) analyze the presence of political budget cycles in 609 West German cities. They find evidence for a pre-election manipulation of the local budget in terms of expenditures, tax revenues and public borrowing. The study most similar in nature to ours is that by Geys (2007). He studied fluctuations in local government debt in Flemish municipalities and found that the growth rate of local public debt was significantly higher in election years, particularly if the local government was a coalition. The more fragmented the local government, the more pronounced the electoral cycle. In contrast to our study, Geys (2007) focuses solely on the effect of political fragmentation in the election and post-election year. He implicitly assumes (in line with the main body of theoretical literature) that political budget cycles are entirely neutral over the legislative period in the sense that the budget returns to its pre-election state. We consider this point in our empirical approach. We ask whether the increase in expenditures in the election year is offset over the legislative term and whether this result depends on the distribution of power in local councils.

3 Data and Empirical Strategy

3.1 Data and Institutional Setting

This section gives background information on institutional settings and public finance rules in German municipalities. Our analysis is based on data about the municipalities of the German Free State of Saxony. The restriction on a single German state is necessary because the institutional frameworks at the municipal level differ between federal states. The annual municipal data stem from the Statistical Office of the Free State of Saxony (2012, 2014). Our data set consists of 458 municipalities from 1994 to 2010. The numbers of periods and municipalities in our sample result in a maximum of 7.786 observations. Saxon municipalities are governed by local councils, which are elected for a five-year term and, inter alia, make decisions about the local budget. The local council is the main body of self-government at the local level, providing legislation and controlling the administration. The mayor, who is elected by voters for a seven-year term, is head of the administration and prepares council meetings but can generally not pass budget decisions unilaterally. Thus, the local council has always the final say on fiscal policy. Electoral

law fixes election dates; hence, we have reason to assume that any electoral patterns in local budgets are due to the incumbents and not the determination of election dates. A system of proportional representation is used to allocate the seats in the local councils.[5] In contrast to the parliaments of the two upper tiers of government (federal and state level), local councils usually have no formal coalitions. Political decisions are often made on majorities whose composition varies; ideological differences between parties play only a minor role. A party's political strength is simply derived from its share of votes. The election outcomes serve as a basis for calculating measures of political strength.[6]

Measurement concepts for governments' political strength or political competition common in the literature can be roughly divided into three categories. First, one can focus on the winning political party. The simplest measure is a dummy variable, which is equal to 1 if more than 50% of all votes are achieved by a single party (*absolute majority*); otherwise, the dummy variable is equal to 0. This measure has been used, for example, by Ashworth *et al.* (2005). An appropriate alternative might be the number of veto-players, i.e., the number of opponents required for the winning party to form a majority in order to pass decisions. In addition to these ad hoc approaches, a second category of measures considers the winning party's plurality. A highly common measure in this category is the difference in vote shares held by the winner and the runner-up [e.g., Aidt *et al.* (2011), De Paola and Scoppa (2014)]. Following Aidt *et al.* (2011), we will refer to this as the *win-margin*. The larger the index, the stronger the winning party in comparison to its closest opponent. The third category of political strength measures considers the distribution of all votes. The most often used indicator in this field is a *Herfindahl index*.[7] It accumulates the squared vote shares of all competing parties. If there is only one party in a local council, this measure reaches its maximum of 1. If the competing parties have equal vote shares, the normalized *Herfindahl index* is 0. We use a normalized form of the *Herfindahl index* in order to make it comparable to the previously mentioned measures. The three measures used for our analysis are summarized in Table 1. A correlation matrix can be found in Table A.1 in the appendix.

[5] The seats are allocated using a D'Hondt formula without a minimum vote share.

[6] It is not totally evident which of the two measures, votes or seats, is better in general. In a proportional system both are highly correlated [see Solé-Ollé (2006)]. In our case the electoral system is proportional and both measures are practically identical.

[7] This index is often called the *effective number of parties* and is (in its inverse form) frequently used as a measure of political fragmentation [e.g., Volkerink and De Haan (2001), Ashworth *et al.* (2005)].

Table 1
Descriptive Statistics – Political Strength Measures (Indices between 0 and 1; Means)

Election Year	Absolute Majority	Win-Margin	Herfindahl Index
1994	0.474	0.260	0.203
1999	0.502	0.273	0.203
2004	0.541	0.278	0.202
2009	0.568	0.289	0.217

All three measures indicate that local election results in Saxony have come to more heavily favor one party. The number of municipalities with a party holding an absolute majority rose during our observation period from 217 (47%) to 260 (57%). By design, the respective measures are constant for the length of an election period. In the following analysis, we will focus on the *Herfindahl index*. The results for the other two measures (*absolute majority* and *win-margin*) are presented in the appendix.

Municipalities are granted financial autonomy by the German Basic Law. Local policy makers can manipulate the local budget through two means: decisions influencing revenues and expenditures. However, due to the design of the local fiscal equalization scheme, the budget decisions of local policy makers more or less concern only expenditures. Local revenues are mainly determined by the number of inhabitants and greatly smoothed by the equalization scheme. Therefore, we use detrended per-capita expenditures (cyclic component) as the dependent variable in our analysis of leviathan behavior and political budget cycles.[8] A Hodrick-Prescott filter [Hodrick and Prescott (1997)] is used to ensure that we analyze only those expenditures disposed by local policy makers. The remaining expenditures (trend component) are assumed to be compulsory, i.e., they cannot be influenced by local officeholders in the short term (e.g., personnel expenditures). Information on the endogenous variable is presented in Table A.2 in the appendix. The cyclical component varies from approximately -1,166 Euros to 3,097 Euros per capita and, therefore, shows considerable deviation from the long-term expenditure trend.

To isolate the effect of the political determinants on local spending patterns, we use a number of control variables. To capture possible ideological differences in spending behavior at the local level, we include a factor variable for the different winning parties

[8] We also used two alternative dependent variables for robustness checks: the accounting balance and the ratio of investment to running costs. The results are shown in Table A.4 in the appendix.

(those with the highest number of votes in a local election). The base category is the conservative Christian Democratic Party (CDU). Furthermore, we include the municipalities' *Population*. Due to the design of the fiscal equalization scheme, this variable determines the fiscal endowment of municipalities to a large extent. In addition, the total population has often been found to be connected with the level of expenditures for different reasons [e.g., scale effects in public goods provision (Geys *et al.* (2008))]. The variable (per-capita) *County-level gross domestic product (GDP)*[9] captures municipal expenditure variations driven by the affects of the overall economic situation on revenue. The variable *Financial dependency* is a proxy for the economic power of a municipality, defined as the (per capita) difference between the grants a municipality receives from higher tiers of government and its own business tax revenues. In the economic literature, higher financial dependency is frequently connected with higher expenditures because municipalities might have few incentives to use the grants efficiently [De Borger and Kerstens (1996), Kalb (2009)]. However, for municipalities in the Free State of Saxony, the opposite influence was expected: The higher the gap between grants and revenues, the lower the financial power of a municipality. Finally, the same line of argument can be applied to the share of interest payments relative to total expenditures (*Interest share*). Additionally, we include a number of dummy variables: First, we add *Flood*, which accounts for the damages and the accompanying needs for public investments caused by a flood in 2002 which is considered one of the most severe natural disasters in Germany. This dummy variable takes a value of 1 in 2002 and 0 in other years. Second, we use a dummy variable to control for rising expenditures connected to the 2009 economic crisis (*Crisis*). This dummy variable takes a value of 1 in 2009 and 0 in other years. Third, we use two dummy variables for administrative reforms completed in 1996 (*Reform 1*) and 2008 (*Reform 2*) which affected the size and organizational structure of many municipalities in the Free State of Saxony. *Reform 1* equals 1 from 1996 and *Reform 2* from 2008 onwards and 0 in other years. As well, we use a dummy for the Hartz-IV-Reform (*Hartz*), which partly shifted costs from unemployment from the federal to the municipal level. This dummy variable takes a value of 1 from 2005 onwards and 0 in other years. The vector of controls is summarized in Table 2.

As we observe expenditures at the municipal level over time, the data permits apply-

[9]This data was obtained from Working Group Regional Accounts VGRdL (2014).

Table 2
Descriptive Statistics – Control Variables (Averaged over Time)

Variable	Mean	Std. Dev.	Min.	Max.
Population	9,529.86	35,766.49	394	527,613
County-level GDP (Euros per capita)	15,688.91	2,705.39	9,951.96	30,802.05
Financial dependency (Euros per capita)	146.34	202.20	-4,246.46	787.91
Interest share (% of gross expenditures)	2.98	2.18	0.00	28.86
Flood (dummy)	0.06	0.24	0	1
Crisis (dummy)	0.06	0.24	0	1
Reform 1 (dummy)	0.88	0.32	0	1
Reform 2 (dummy)	0.18	0.38	0	1
Hartz (dummy)	0.35	0.48	0	1

ing panel-data techniques. We use heteroscedasticity-robust standard errors, following White (1980), to avoid inefficient standard errors due to heteroscedastic variance and/or autocorrelated error terms. We checked for multicollinearity by using pairwise correlation.

3.2 Empirical Strategy

We proceed in three steps. First, we focus on the impact of political strength on detrended per-capita expenditures. To do so, we simply regress the municipalities' (i) detrended per-capita expenditures (*Exp*) at time t on political strength (*Strength*), a vector of control variables (C), a time-invariant individual fixed effect (δ), and an error term (ϵ). This model can be written as follows (see Equation 1):

$$Exp_{i,t} = \alpha + \beta \cdot Strength_{i,t} + \gamma \cdot C_{i,t} + \delta_i + \epsilon_{i,t}. \tag{1}$$

This specification abstracts potential time effects and merely gives a first impression of the impact of political strength on detrended per-capita expenditures. This baseline specification is also used to test whether it delivers reasonable results and therefore can be useful for further analysis.

In the second step, we add the time dimension. In addition to increasing expenditures to attract voters, a party with sufficient political strength could shift expenditures toward the end of an election cycle and try to reduce them afterwards. The resulting budget cycles could be interpreted as evidence of leviathan behavior. Recalling that municipal elections in Saxony are held every five years, we pool the observations in every first,

second, third, and fourth year after an election. For this purpose, we introduce a vector of time dummies (T) into our regression (see Equation 2):

$$Exp_{i,t} = \alpha + \beta \cdot Strength_{i,t} + \zeta \cdot T_t + \gamma \cdot C_{i,t} + \delta_i + \epsilon_{i,t}. \tag{2}$$

Each of these dummy variables equals 1 in one of the four post-election years and 0 in election years. Thus, as the election years are chosen as the base level, the coefficients of the time dummies can be interpreted as marginal effects on detrended per-capita expenditures with respect to time. Therefore, they quantify fluctuations in expenditures explained solely by the length of time from the previous or to the forthcoming election.

Having examined the impact of political strength on detrended per-capita expenditures (step 1) and the existence of budget cycles (step 2), we combine these two issues (step 3) and examine the impact of political strength on the amplitude of budget cycles. Parties with greater political strength are expected to shift expenditures more frequently compared to parties with less strength. We check this by interacting the measures of political strength with the time dummies T in Equation 3:

$$Exp_{i,t} = \alpha + \beta \cdot Strength_{i,t} + \zeta \cdot T_t + \eta \cdot (Strength_{i,t} \times T_t) + \gamma \cdot C_{i,t} + \delta_i + \epsilon_{i,t}. \tag{3}$$

This specification allows us to examine whether the marginal effects of time on detrended per-capita expenditures (from step 2) depend on the level of political strength.

4 Results

4.1 Baseline Regressions

The results of the baseline specification (step 1) are presented in Table 3. Column I shows the regression results for the pooled cross-section, and column II a panel regression with individual-fixed effects and time-fixed effects. Column III displays the panel regression results with additional control variables and without time-fixed effects.

First, we briefly discuss the findings for our control variables focusing on column III. Almost all control variables show the expected sign. The impact of *Population* is insignificant, which indicates that possible scale effects in the provision of public goods do not

Table 3

Regression Results – Baseline Specifications (Political Strength Measured by the Herfindahl Index)

	I	II	III
Political strength	-16.113	48.496*	49.013*
	(17.909)	(27.706)	(27.982)
Winning party			
SPD	30.247	-84.931***	-89.149***
	(20.551)	(31.564)	(31.058)
The Left	11.484	-64.960	-65.876
	(36.391)	(43.185)	(43.582)
FDP	13.717	-7.8937	-8.4721
	(24.269)	(37.989)	(39.222)
Others	-7.3273	-8.8084	-8.0264
	(6.4838)	(10.028)	(10.164)
Population (total)	1.909e-04*	-0.001591	-0.001967
	(1.003e-04)	(0.001335)	(0.001304)
Financial dependency	-0.1084***	-0.1608***	-0.1474***
	(0.02371)	(0.02811)	(0.02900)
Interest share	-34.344***	-87.327***	-89.936***
	(1.7080)	(7.1166)	(6.9587)
County-level GDP (per capita)	-0.006716***	7.776e-04	1.488e-04
	(0.001238)	(0.004009)	(0.002851)
Flood			-1.2071
			(9.5050)
Crisis			27.783**
			(11.357)
Reform 1			-81.749***
			(16.028)
Reform 2			6.4134
			(10.232)
Hartz			-93.784***
			(11.293)
Constant	227.27***	408.94***	404.55***
	(23.564)	(54.927)	(45.615)
Individual fixed effects	No	Yes	Yes
Time-fixed effects	No	Yes	No
Observations	7,786	7,786	7,786
R-squared	0.084	0.236	0.227
Number of groups		458	458
Robust standard errors in parentheses	*** p<0.01, ** p<0.05, * p<0.1		

prevail. The coefficient for the variable of *Financial dependency* is significantly negative, which could mean that highly dependent muncipalities are forced to cut expenditures. As expected, the *Interest share* has a negative impact on per-capita expenditures as well. The impact of per-capita *County-level GDP* is not clear. The coefficient is significantly negative in the pooled cross-section analysis which indicates that a positive overall economic situation seems to decrease the need for local public spending. However, this effect vanishes if individual fixed effects are included. The *Flood* variable is insignificant; the severe damages caused by the 2002 flood are not reflected in this year's local expenditures perhaps because of large governmental reconstruction funds. *Reform 1* and the *Hartz*-Reform were followed by decreased local expenditures. The economic *crisis* in 2009 came with significantly higher per-capita expenditures. Regarding the spending behavior of parties, we can only conclude that fiscal policy in municipalities in which CDU has the highest vote share is significantly different from the one in municipalities with a majority of social democrats (SPD). The differences to all other parties are not significant.

Focusing on the variable of political strength (measured by the *Herfindahl Index*), we find that the impact on per-capita expenditures is positive and slightly significant. However, the effect is rather small: The annual excess spending of politically strong parties amounts to less than 50 Euros per capita. The reason for this small effect might be the fiscal equalization scheme which limits the extent to which local politicians may spend additional revenues in their own municipalities. Thus, if parties intend to attract voters by increasing public spending, they might have to shift expenditures from one year to another and/or restructure the composition of local expenditures.

4.2 Leviathans and Political Budget Cycles

The results of step 1 (column *Baseline*), step 2 (column *Budget Cycle*), and step 3 (column *Interactions*) are shown in Table 4.[10]

The results of step 2 reveal a significant budget cycle. The detrended per-capita expenditures are high in the election year and lowest three years later. This result indicates that local decision makers manipulate the spending pattern for opportunistic reasons. Local officeholders implement painful spending adjustments at a time they feel relatively safe

[10]For the sake of clarity, the controls are suppressed. Their effects are, by and large, similar to Table 3. Only the *Flood* variable is now significantly positive.

Table 4

Regression Results – Time Effects and Interactions (Political Strength Measured by the Herfindahl Index)

	Baseline	Budget Cycle	Interactions
	I	II	III
Political strength	49.013*	49.004*	143.92***
	(27.982)	(27.904)	(45.179)
Years			
1 year after election		-0.9943	11.303
		(10.429)	(12.333)
2 years after election		3.7198	35.984***
		(10.984)	(12.990)
3 years after election		-41.963***	-8.2358
		(12.898)	(15.080)
4 years after election		-2.9455	27.050*
		(10.542)	(14.059)
Interactions			
*1 year after election * Political strength*			-61.079
			(48.866)
*2 years after election * Political strength*			-159.38***
			(52.526)
*3 years after election * Political strength*			-166.60***
			(55.177)
*4 years after election * Political strength*			-147.49**
			(65.447)
Constant	404.55***	395.02***	375.44***
	(45.615)	(46.484)	(47.957)
Individual fixed effects	Yes	Yes	Yes
Time-fixed effects	No	No	No
Controls	Yes	Yes	Yes
Observations	7,786	7,786	7,786
R-squared	0.227	0.230	0.232
Number of groups	458	458	458
Robust standard errors in parentheses	*** p<0.01, ** p<0.05, * p<0.1		

from the electorate's displeasure. There still is no clear indication of leviathan behavior because we have shown only that local policy makers shift expenditures on the eve of elections, presumably in order to attract potential voters. The identification of leviathan behavior requires to show that policymakers which are confronted with low political competition increase public spending. We identify leviathan behavior using the interaction of the political strength measure with the observed budget cycle, according to step 3 (see the *Interactions* column in Table 4). A proper interpretation of these interaction terms necessitates the calculation of the marginal effect of time on per-capita expenditures. The equation for this marginal effect is the following:

$$\frac{\partial Exp_{it}}{\partial T_t} = \zeta + \eta \cdot Strength_{it} \tag{4}$$

The marginal effect of a certain year in the election period on local expenditures depends on the officeholders' political strength. Figure 1 depicts this marginal effect for the different years between elections and for different levels of political strength. Figure 1 shows both the situation for minimal and maximal political strength based on the lowest and highest possible value of the normalized *Herfindahl Index* (i.e., 0 and 1)[11]. The bars depict the marginal effect, as calculated from equation 4. Because the marginal effect of political strength on expenditures equals ζ in the case of no political strength, the left panel depicts only the time dummies.

First, we focus on a situation in which all parties have equal political strength; in other words, the measure of political strength has a value of 0. We set the election year to 0 and let the bars show deviations in per-capita expenditures driven only by the election schedule. As seen in the left panel in Figure 1, the observed budget cycle is rather small when there is no party with more political strength than others.

However, the spending pattern is different if one party has high political strength (right panel of Figure 1). On average, the excess spending of powerful officeholders amounts to only circa 37 Euros per capita which is even less than in the baseline regression from Table 3. In election years, however, the excess is significantly higher: 143.92 Euros per capita. Therefore, we set the election year to this amount of extra expenditures (not to 0 as in the case of no political strength). Again, the bars show deviations from this value

[11] Figures A.1 and A.2 in the appendix display the results for the two other measures of political strength: *win-margin* and *absolute majority*.

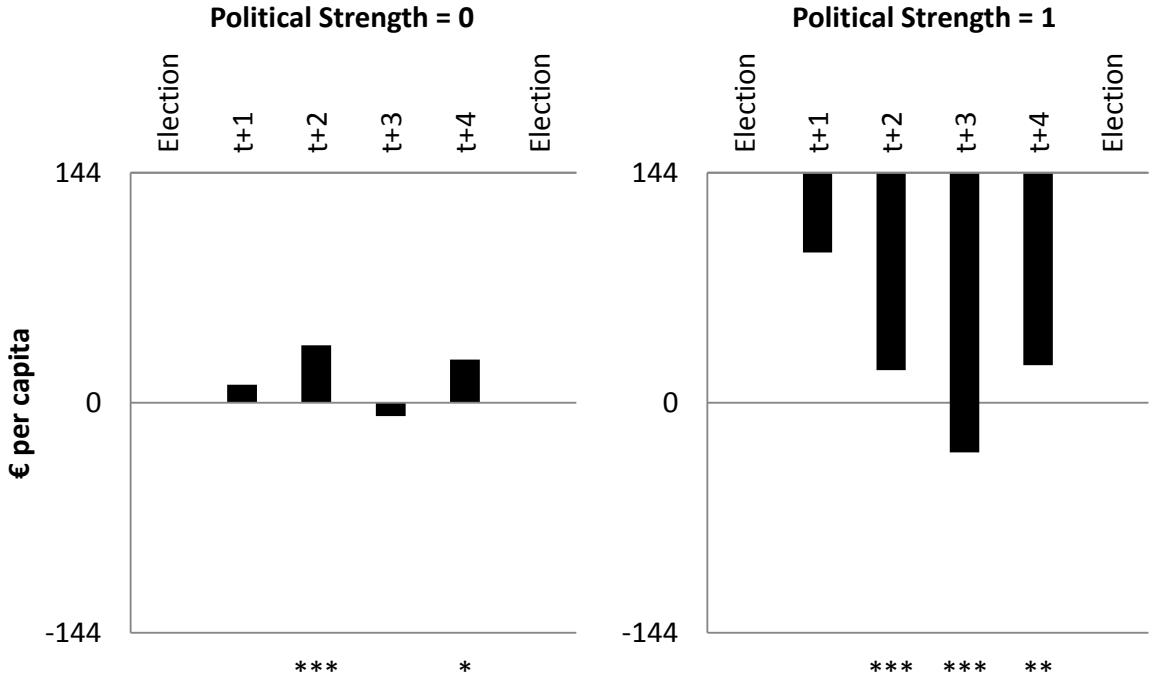

Figure 1: Time effects on detrended per-capita expenditures (using the *Herfindahl Index*), *** p<0.01, ** p<0.05, * p<0.1

over the election cycle. Evidently, the amplitude is much larger. The sum of deviations from the election year level is significantly larger than the sum of deviations in the case with no political strength. We observe significant spending reductions in the second, third and fourth years after an election. The increase in per-capita expenditures in an election year is greater the stronger a party's lead is. At very low levels of political strength, expenditures do not even necessarily peak in election years.

We interpret these findings as clear evidence of leviathan behavior at the local level. Of all parties, those unchallenged initiate the largest budget cycles, although they probably have the least need. The only parties that possess the majority necessary to authorize such obviously election-related expenditures are the ones that command the majority on a local council. Interestingly, this kind of election-related spending has no long-term consequences for the local budget. We find, that the sum of annual excess spending that comes with political strength is not significant over the legislative period for any of the strength measures deployed. Thus, the budget cycles are neutral because possible campaign goodies are retrieved between two elections. Therefore, regardless of the level of political strength, policy makers manage to shift expenditures so that the overall budget

for an election period remains untouched.

As a final step in our empirical analysis, we deploy a number of robustness checks using alternative dependent variables representing the spending behavior of local policy makers. The results for the robustness checks are reported in Table A.4 in the appendix. First, we use the *accounting balance* in per capita terms. The lower this measure is, the more a municipality overestimates its financial scope. We find that politically strong officeholders run significantly higher budget deficits (in comparison to a situation with perfect political competition) in the third year after an election and slightly reduce their deficits in the year before and after an election. Although these reductions do not fully compensate the increases in the other years, they are sufficient to keep the additional deficit that results from strong officeholders' fiscal policy (circa 222 Euros per capita during a legislative period) within the insignificant range. Interestingly, powerful incumbents spend the least between two elections, according to our earlier findings, but run the highest deficits at the same time. Thus, they seem to raise funds for their upcoming electoral engineering activities. This finding supports our hypothesis on leviathan behavior.

Second, we use the *ratio of investment to running expenditures* as a further alternative dependent variable. A change in this ratio indicates to what extent policy makers shift expenditures from administrative costs (e.g., personnel costs) to items more visible to voters and more likely to be rewarded on election day (e.g., public construction projects). These budget manipulations are not directly observable in the total expenditure figures, because they are budget neutral. We find that politically strong policymakers maximize their ratio of investment to running costs in election years while parties under perfect political competition increase their emphasis on investments two, three and four years after an election. Obviously, competitive local councils negotiate investment projects immediately after an election and set a high value on finishing them before the next election in order to gain the voters' reward. They might want to avoid that a project is attributed to the next local council whose composition is not yet clear. Politically strong officeholders with weak opponents in the local councils do not show such behavior. They maximize the ratio in election years and keep it at a lower level between two elections. Their higher emphasis on investments in election years can be interpreted as an attempt to signal competence.

5 Conclusion

This paper investigates the impact of the intensity of political competition in local councils on the leviathan behavior by political incumbents. We also study opportunistic budget cycles and how these cycles depend on the distribution of power in local councils.

Our results suggest that politically strong incumbents exhibit leviathan behavior in public spending. Even though the average excess spending by politically strong local governments during a legislative period is rather low, we find strong empirical evidence that the spending pattern over a legislative period depends crucially on the political strength of parties in the local councils. While politically weak officeholders do not show considerable electoral engineering activities, politically stronger local parties initiate budget cycles. They use an absence of supervision and political competition to sharply increase spending in election years and cut back on expenditures in the middle of election cycles in order to limit the unfavorable long-term impacts of such behavior on the local budget. Even though the institutional setting does not allow policymakers to increase total spending at will, it leaves room for manipulating the local budget for re-election purposes, depending on the political strength of incumbents. In this way, local politicians can act like self-preserving leviathans.

This paper has not addressed a number of issues which could provide more insight into this topic. One such issue is that of partisan budget cycles. Although we have abstracted this paper from them, we found that parties might behave differently in regards to per-capita spending. This finding could prompt an investigation of whether leviathans are more likely to be found in the left or right wing of local councils. A second interesting issue to consider are potential veto players. For example, the mayor, who is elected every seven years and is part of the legislature, has the right to propose the local budget to the council, whose members have always the final say in passing the budget. It could be interesting to see whether the mayor's role as an agenda setter has an impact on the potentially opportunistic behavior by parties. Another factor, from which we abstracted this paper because it does not play a major role in Saxony, is fiscal supervision by federal officers. Depending on which party has the majority in the federal parliament, it can influence the spending behavior of municipalities in various ways [see, e. g. Homolkova and Kis-Katos (2013)]. These issues could be the subject of future research.

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Appendix

Table A.1
Correlation Matrix of Political Strength Measures

	Win-Margin	Herfindahl Index	Absolute Majority
Win-Margin	1.00		
Herfindahl Index	0.90	1.00	
Absolute Majority	0.63	0.48	1.00

Table A.2
Descriptive Statistics – Endogenous Variable (in Euros per capita)

Variable	Mean	Std. Dev.	Min.	Max.
Gross expenditures	1,331.92	477.64	539.78	7,447.78
Cyclic component, estimated	**0.00**	**267.48**	**-1,166.28**	**3,096.67**
Trend component, estimated	1,331.92	367.29	696.73	5,007.51

Table A.3
Regression Results – Alternative Measures of Political Strength

	Win-Margin	Herfindahl Index	Absolute Majority
	I	II	III
Political strength	96.811**	143.92***	26.359*
	(37.485)	(45.179)	(13.669)
Years			
1 year after election	8.7549	11.303	12.427
	(13.127)	(12.333)	(12.559)
2 years after election	37.150***	35.984***	27.102**
	(14.261)	(12.990)	(13.786)
3 years after election	-11.818	-8.2358	-24.294
	(15.772)	(15.080)	(15.087)
4 years after election	29.559**	27.050*	19.980
	(14.500)	(14.059)	(12.590)
Interactions			
*1 year after election * Political strength*	-36.346	-61.079	-26.999
	(41.003)	(48.866)	(16.687)
*2 years after election * Political strength*	-122.25***	-159.38***	-46.183**
	(45.287)	(52.526)	(18.634)
*3 years after election * Political strength*	-110.37**	-166.60***	-35.066*
	(45.292)	(55.177)	(18.721)
*4 years after election * Political strength*	-118.75**	-147.49**	-45.549**
	(51.147)	(65.447)	(18.870)
Constant	378.49***	375.44***	390.09***
	(48.360)	(47.957)	(46.995)
Individual fixed effects	Yes	Yes	Yes
Time-fixed effects	No	No	No
Controls	Yes	Yes	Yes
Observations	7,786	7,786	7,786
R-squared	0.231	0.232	0.230
Number of groups	458	458	458
Robust standard errors in parentheses	*** p<0.01, ** p<0.05, * p<0.1		

Table A.4

Regression Results – Alternative Dependent Variables (Political Strength measured by the Herfindahl Index)

	Detrended Expenditures	Accounting Balance	Ratio of Investment to Running Costs
	I	II	III
Political strength	143.92***	-41.168	0.04354
	(45.179)	(57.938)	(0.08312)
Years			
1 year after election	11.303	34.338**	8.622e-04
	(12.333)	(13.419)	(0.01678)
2 years after election	35.984***	-27.525**	0.05161***
	(12.990)	(11.224)	(0.01791)
3 years after election	-8.2358	-16.351	0.06493***
	(15.080)	(12.334)	(0.01976)
4 years after election	27.050*	26.567**	0.04691***
	(14.059)	(11.432)	(0.01673)
Interactions			
*1 year after election * Political strength*	-61.079	9.7881	-0.07558
	(48.866)	(53.496)	(0.05248)
*2 years after election * Political strength*	-159.38***	-12.306	-0.1607**
	(52.526)	(48.078)	(0.07278)
*3 years after election * Political strength*	-166.60***	-22.766	-0.1342**
	(55.177)	(45.944)	(0.06009)
*4 years after election * Political strength*	-147.49**	9.1451	-0.1538**
	(65.447)	(46.077)	(0.07088)
Constant	375.44***	-460.83***	2.1207***
	(47.957)	(50.408)	(0.1073)
Individual fixed effects	Yes	Yes	Yes
Time-fixed effects	No	No	No
Controls	Yes	Yes	Yes
Observations	7,786	7,786	7,786
R-squared	0.232	0.155	0.288
Number of groups	458	458	458
Robust standard errors in parentheses	*** p<0.01, ** p<0.05, * p<0.1		

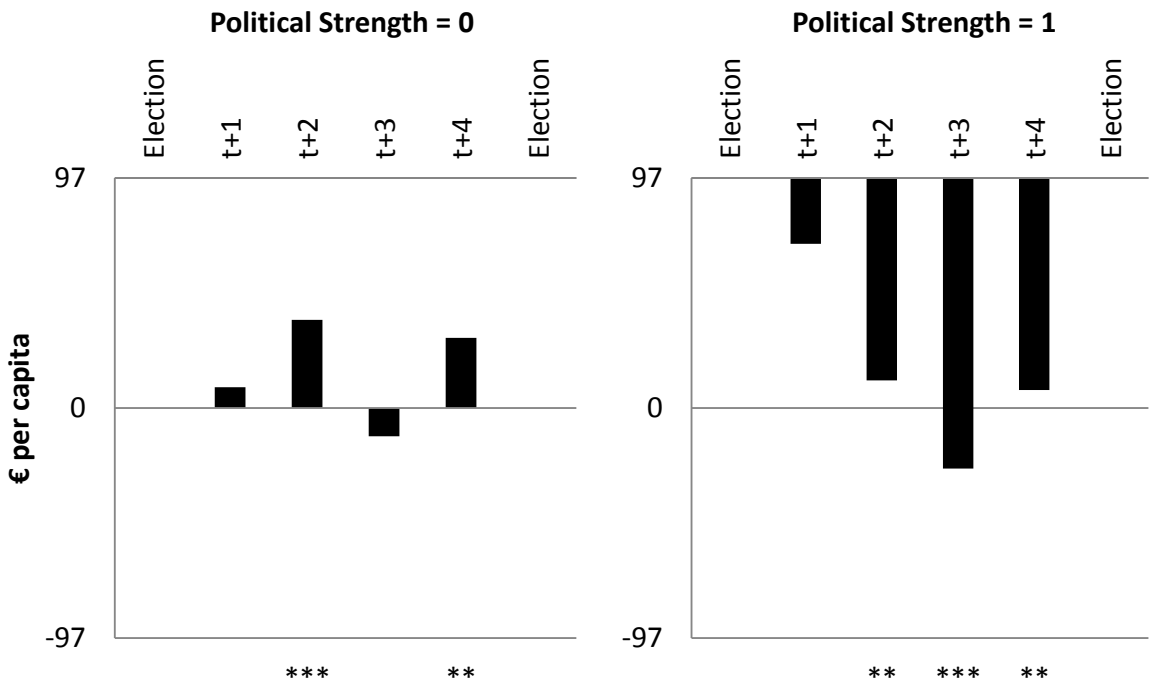

Figure A.1: Time effects on detrended per-capita expenditures using *win-margin*, *** p<0.01, ** p<0.05, * p<0.1

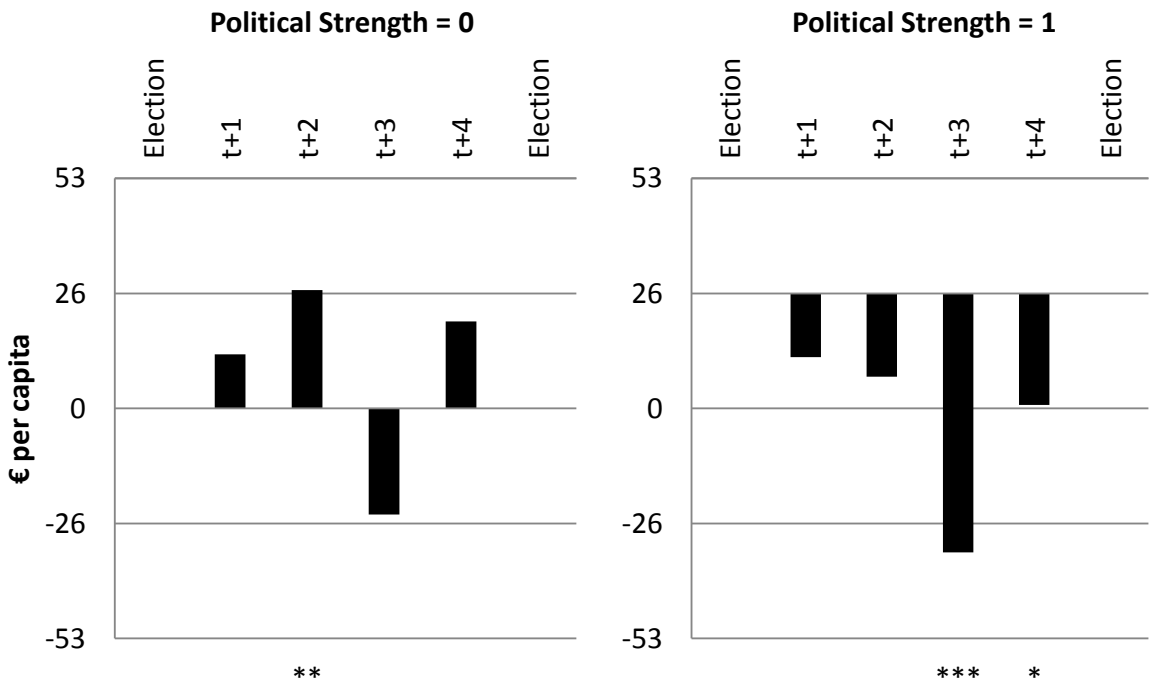

Figure A.2: Time effects on detrended per-capita expenditures using *absolute majority*, *** p<0.01, ** p<0.05, * p<0.1