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Current expenditure over the term of office: The case of Polish municipalities

Wydatki bieżące w cyklu wyborczym: Przypadek gmin w Polsce

Abstract

This article sets out to examine fluctuations in municipal current expenditure over the course of the term of office. An empirical study was conducted on a sample of 2,479 Polish municipalities over the period 2008–2022. In addition to total current expenditure, the analysis also looked at its components, including current expenditure on salaries and allowances, grants for current tasks, benefits for natural persons, and current expenditure on the purchase of materials and services. To account for unobserved heterogeneity and the impact of the business cycle, panel models with fixed effects for municipalities and electoral terms were employed. The results indicate that the political budget cycle affects total current expenditure and is influenced by current expenditure on salaries and allowances, as well as grants for current tasks. In addition, the magnitude of the decrease in total current expenditure in the post-election year is found to be more pronounced in municipalities with a newly elected mayor, compared to municipalities where the incumbent mayor was re-elected.

Keywords: local government, political budget cycle, electoral opportunism.

JEL: D72, H72

Streszczenie

Celem niniejszego artykułu jest zbadanie wahań wydatków bieżących gmin na przestrzeni kadencji. Badanie empiryczne zostało przeprowadzone na próbie 2479 polskich gmin w latach 2008–2022. Oprócz wydatków bieżących ogółem, analizie poddano również ich składniki, w tym wydatki bieżące na wynagrodzenia i pochodne od wynagrodzeń, dotacje na zadania bieżące, świadczenia na rzecz osób fizycznych oraz wydatki bieżące na zakup materiałów i usług. Aby uwzględnić nieobserwowaną heterogeniczność i wpływ cyklu koniunkturalnego, zastosowano modele panelowe z efektami stałymi dla gmin i kadencji wyborczych. Uzyskane wyniki wskazują, że polityczny cykl budżetowy dotyczy wydatków bieżących ogółem, a wpływ na niego mają wydatki bieżące na wynagrodzenia i pochodne od wynagrodzeń oraz dotacje na zadania bieżące. Ponadto stwierdzono, że skala spadku całkowitych wydatków bieżących w roku powyborczym jest bardziej nasilona w gminach z nowo wybranym wójtem (burmistrzem, prezydentem miasta) w porównaniu z gminami, w których urzędujący wójt (burmistrz, prezydent miasta) został ponownie wybrany.

Słowa kluczowe: samorząd lokalny, polityczny cykl budżetowy, oportunizm wyborczy.

JEL: D72, H72

1. Introduction

Earlier studies have demonstrated that fluctuations induced by the logic of the political budget cycle are observable in numerous areas of fiscal policy: public revenues (Alesina and Paradisi, 2017; Swianiewicz, Kurniewicz and Kalcheva, 2019; Benito, Guillamón and Ríos, 2021), public expenditure and budget deficit (Baskaran et al., 2016), public debt (Bastida, Beyaert and Benito, 2013), fiscal health (García-Sánchez, Mordán and Cuadrado-Ballesteros, 2014). Furthermore, they cover various types of public expenditure, including investment expenditure (Goeminne and Smolders, 2014), police expenditure (Guillamón, Bastida and Benito, 2013), debt service expenditure (Sáez, 2016), and health expenditure (Potrafke, 2010).

The study, the results of which are presented in this article, addresses a research gap regarding current expenditure and its components by economic characteristics. Previous studies of Polish municipalities (Köppl-Turyna et al., 2016; Kukołowicz and Górecki, 2018; Filipiak and Kluza, 2022; Olejnik, 2022; Budzeń and Wiśniewski, 2023) have examined total expenditure, investment expenditure or expenditure by function. So why is an investigation of current expenditure relevant? The majority of municipal expenditure is allocated to the tasks mentioned above. On average, they account for more than 80% of total municipal expenditure. They are also typically salient to voters. On top of that, their positive impact on the economic situation of the beneficiaries is immediate. By contrast, investment projects often result in inconvenience for inhabitants (e.g. traffic congestion and noise) and take a considerable amount of time (months or even years) to achieve the final result. The study aims to empirically verify whether current expenditure and its components is subject to change during the term of office in line with the political budget cycle. Polish municipalities, which are responsible for a wide range of current tasks and have considerable leeway in their execution, serve as an excellent testing ground for this investigation.

The structure of the paper is as follows. Section 2 discusses the related literature. This is followed by Section 3, which presents data, hypothesis and an empirical model. Section 4 describes the results. The final section provides concluding remarks and suggests avenues for further research.

2. Literature review

The seminal paper by Nordhaus (1975) has inspired a substantial body of theoretical and empirical literature exploring the relationship between electoral cycles and business cycles. Initially, the literature examining the budget manipulation by politicians seeking re-election exclusively focused on the national level. Rogoff (1990) proposed a shift in perspective, moving from the concept of the political business cycle to the concept of the political budget cycle. The latter is applicable also to subnational governments, which individually have little or no power to shape macroeconomic phenomena. As the availability of relevant data has increased, the analysis of highly developed countries has been followed by studies of transition

and developing countries. Additionally, scholarly interest has shifted from analyses at the aggregate level to the study of components of public expenditure, revenues and so forth (Shi and Svensson, 2003; Phillips, 2016; Mandon and Cazals, 2019).

Table 1.

The summary of studies on political budget cycles with respect to municipal expenditure in Poland

Author(s)	Subject and time scope	Object scope	Results
(Köppl-Turyna et al., 2015)	Urban municipalities in the years 2002–2013	Total expenditure and its components: expenditure on health, education, infrastructure administration, social security, environment	The political budget cycle exists. Its strength is positively correlated with the degree of dependency of the municipality on grant and subsidy income.
(Kukołowicz and Górecki, 2018)	Municipalities in Poland in which the incumbent mayor is seeking re-election and has at least one challenger in the years 2007–2010	Total expenditure	The political budget cycle exists. Increases in pre-election spending enhance the electoral prospects.
(Filipiak and Kluza, 2022)	Municipalities in Poland in the years 2007–2018	Investment expenditure	The political budget cycle exists. Local politicians engage in rent-seeking activities.
(Olejnik, 2022)	Municipalities in Poland, excluding cities with county rights, in the years 2007–2019	Total investment expenditure and its components	The political budget cycle exists. Prior to elections, municipal activity tends to prioritise visible investments.
(Budzeń and Wiśniewski, 2023)	Cities with county rights in the years 2004–2021	Investment expenditure	The political budget cycle exists. There is autocorrelation in municipal investment spending.

Source: the author's own work.

The previous literature on Polish municipalities unequivocally documents the political budget cycle with respect to total and investment municipal expenditure. A summary of the papers most closely related to the current one is provided in Table 1. These papers also offer some additional insights that may prove useful in selecting the form of the dependent variable and the set of control variables. The study by Köppl-Turyna et al. (2015) shows that the dependence on external revenue sources exacerbates pre-election budget manipulation. Kukułowicz and Górecki (2018) not only document the existence of pre-electoral budget manipulation of total expenditure, but also find that it is electorally rewarding. Filipiak and Kluza (2022) confirm the findings of previous studies documenting the political budget cycle, this time with respect to municipal investment expenditure. In addition, Olejnik (2022) observes that more visible investment expenditure is preferred by politicians, who use them to gain political support.

A review of the existing literature indicates that there is a research gap regarding current expenditure and its components. One cannot rule out the possibility that the fluctuations in total expenditure around elections are driven by investment

expenditure, while current expenditure does not vary in accordance with the logic of the political budget cycle. Some components of current expenditure by type (e.g. salaries and allowances, as well as grants) may appear to be more appealing to opportunistic politicians seeking to secure their positions. These open questions motivate this empirical research.

3. Data, hypothesis and empirical model

Municipalities in Poland perform a wide set of public goods and services, including education, roads, water supply, waste and wastewater management, cultural and recreational facilities. Municipal tasks are classified into obligatory and optional. With the exception of obligatory tasks financed through conditional central government grants, decisions about the specific scope and form of implementing municipal tasks rest upon municipal authorities (Orankiewicz and Turała, 2024). The leading role is ascribed to the mayor, who oversees the execution of municipal tasks on a daily basis and is the only person with the right to submit a municipal budget proposal.

The research sample covers all 2,479 municipalities in Poland in the years 2008–2022. This period includes three local elections (in the years 2010, 2014 and 2018) and four terms of office. Since local elections in the analysed period took place at the end of a given calendar year (in November and December), the term of office is assumed to start in year t +1, where t is the election year. Current tasks consume the vast majority of public funds at the municipal level in Poland. To illustrate, on average, current expenditure accounts for 83% of total expenditure (please see Figure 1). Without doubt, current expenditure represents a heterogeneous category. It encompasses such diverse spending items as a donation supporting the functioning of a private kindergarten and a utility bill for street lighting. Accordingly, the components of current expenditure can be classified in a number of ways. The focus of this paper is a classification based on economic characteristics. It is crucial to note that this expenditure differs not only in terms of its direct economic effects but also in terms of its potential appeal to incumbents seeking re-election. The largest share of current expenditure incurred by Polish municipalities is allocated to current expenditure on salaries and allowances (35% of total expenditure), followed by benefits for natural persons (21%), current expenditure on the purchase of materials and services (16%), and grants for current tasks (5%)[1].

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[1] Grants for current tasks include grants to finance tasks delegated to other local government units, grants to co-finance current tasks of statutory bodies, and grants to co-finance specific types of products and services.

Figure 1.
The structure of municipal expenditure in Poland in the years 2008–2022

- ☐ investment expenditure
- ⊞ current expenditure on salaries and allowances
- ■ grants for current tasks
- ▨ benefits for natural persons
- ☐ current expenditure for the purchase of materials and services
- ☐ other current expenditure
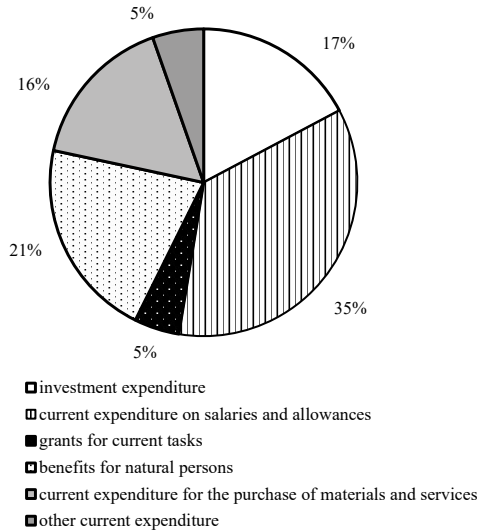
Note: unweighted averages.
Source: the author's own work, on the basis of Ministry of Finance data.

An increase in public funds allocated to current tasks is expected to strengthen popular support for local government authorities. Knowing this, local authorities intend to concentrate current expenditure in the period close to the elections. At the same time, a scarcity of public funds may necessitate that they offset the surge in expenditure prior to elections. Assuming that voters have a short memory, it is predicted that such cuts take place far from the next elections, namely in the year following the elections (post-election year). The research hypothesis is that fluctuations in current expenditure in Polish municipalities follow the logic of the political budget cycle, i.e. they increase before local elections and decrease after the elections. In the first step, the object of investigation are fluctuations in total current expenditure. The dependent variable is the total current expenditure per capita at constant 2022 prices. Three baseline specifications are considered:

$$current\_expenditure_{it} = \beta_1 \, election\_year_t + \sum_{j=1}^{N} \boldsymbol{\beta} \, controls_{ij} + \varphi_t + u_i + \varepsilon_{it} \qquad (1)$$

$$current\_expenditure_{it} = \beta_1 \, pre\_election\_year_t + \beta_2 \, election\_year_t + \sum_{j=1}^{N} \boldsymbol{\beta} \, controls_{ij} + \varphi_t + u_i + \varepsilon_{it} \qquad (2)$$

$$current\_expenditure_{it} = \beta_1 \, pre\_election\_year_t + \beta_2 \, election\_year_t + \beta_2 \, post\_election\_year_t + \sum_{j=1}^{N} \boldsymbol{\beta} \, controls_{ij} + \varphi_t + u_i + \varepsilon_{it} \qquad (3)$$

where:
i – municipality,
t – year,
φ_t – term-of-office fixed effect,
u_i – municipal fixed effect,
ε_{it} – error term.

In regression (1), a comparison is made between expenditure in the election year and expenditure in the other years. In regression (2), the period of interest is extended to the year before the election, since pre-election budget manipulation may persist over a longer period. In regression (3), the reference year is the one that falls two years after the last election and two years before the next election. This allows us to verify whether pre-election increases in expenditure are compensated for after the elections. It was not clear how to classify the years within the last term of office. The reason for this is that, starting from the year 2018, the term of office at the local level was extended from four to five years. In addition, the elections originally scheduled for 2023 were postponed to April 2024 by the act of 29 September 2022. This all means that 2019 has been labelled as a post-election year, while 2020 and 2021 serve as reference years. Although the elections were actually held in the first half of 2024, the year 2022 is treated as a pre-election year because, for the preparation of the relevant budget and for most of its implementation, this year was expected to be a pre-election year by local decision-makers. As this assumption may be open to question, in the robustness checks the year 2022 has been excluded from the estimation period.

Since local elections are held simultaneously in all Polish municipalities, it is not possible to control for both pre-election, election and post-election years as well as fixed year effects. Instead, we introduce electoral term controls. The models also include a number of control variables: fiscal, demographic, economic and political. To describe the fiscal stance of municipalities, we consider revenue capacity[2] (known as the g-index used in the revenue equalisation system) and the ratio of debt to revenues. The availability of own resources (captured by the former control) is expected to have a positive effect on current expenditure, while the propensity to spend is expected to decrease with increasing indebtedness (the latter control). Among the demographic variables, we introduce the number of inhabitants, the share of pre-working age inhabitants and the share of post-working age inhabitants. Variables that capture the economic situation of the local community include the share of the unemployed in the working-age population and the average salary. As with current expenditure, tax revenues and average salaries were adjusted to 2022 price levels. Finally, the regression controls for the percentage of votes cast for the incumbent mayor in the previous election. Previous studies (e.g. Banaszewska, 2022; Swianiewicz, 2024) have shown that the mayor dominates local budget policy. To mitigate the simultaneity problem, fiscal, demographic and socioeconomic control variables are lagged by one year.

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[2] Revenue capacity takes into consideration not only actual revenues but also the monetary effects of preferential tax treatment (e.g. tax rate reductions and tax allowances).

Later, to investigate the underlying mechanisms, a series of analyses are conducted for the main components of current expenditure by their economic function. We also examine whether fluctuations in total current expenditure over the term of office vary between municipalities with the same mayor as before the elections and those with a newly elected mayor.[3] To verify this, we estimate a regression that additionally employs interactions between (pre-/post-)election years and the dummy denoting whether the previous mayor was re-elected and compare the respective marginal effects for these two groups of municipalities.

4. Results

The paper examines the variation in municipal current expenditure over the course of a term of office. Table 2 reports the estimations for total current expenditure. Tables 3–6 display the results for the selected components of current expenditure. We begin with a regression without fiscal, demographic, socio-economic and political controls. As shown in column 1 of Table 2, total current expenditure per capita was, on average, higher in election years than in other years during the period 2008–2022. The result remains positive and statistically significant, also under a regression incorporating the set of control variables (column 2). When both pre-election and election year (columns 3 and 4) are considered, the pattern of a pre-election increase persists, with a higher increase observed in the election year. Finally, it is found that a pre-election increase in total current expenditure is partially offset by a decrease in the post-election year (columns 5 and 6). The results for the control variables also merit comment. In all the specifications, statistically significant coefficients are obtained for revenue capacity, the share of residents of pre-working age in the total population and the share of the unemployed in the working-age population. Higher spending on current tasks is expected in richer municipalities with better demographic prospects and lower unemployment.

Fluctuations consistent with the logic of the political budget cycle are also documented with respect to current expenditure on salaries and allowances (please see Table 3). Again, the coefficients on revenue capacity and the share of residents of pre-working age in the total population are positive and statistically significant. In general, the higher the share of the dependent population (i.e. in pre- and post--working age), the higher the per capita expenditure on salaries and allowances. Surprisingly, a higher debt-to-revenues ratio is associated with higher current expenditure on salaries and allowances. This result suggests that high indebtedness does not incentivise local authorities to save on personnel costs. We do not find that municipalities try to counteract a poor labour market situation by increasing public sector employment, as the coefficient on the unemployment rate turns out to be insignificant. Rather, they seem try to adjust salaries and wages to local market conditions, as suggested by a statistically significant and positive coefficient on the respective control variable. This time, a political control variable is found to be consistently significant. Less popular mayors are found to spend more on salaries

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[3] I would like to thank one of the reviewers for suggesting this idea.

and allowances. This supports a more nuanced approach to analysing municipal budget policies from a political economy perspective.

Table 2.
Regression results for total current expenditure

Variables	(1)	(2)	(3)	(4)	(5)	(6)
Pre-election year			355.523***	215.317***	219.086***	203.318***
			(3.324)	(7.351)	(3.315)	(7.259)
Election year	410.759***	254.371***	547.591***	413.535***	408.387***	437.229***
	(4.294)	(7.309)	(4.427)	(9.377)	(4.866)	(9.571)
Post-election year					-376.115***	-381.027***
					(3.420)	(7.346)
Revenue capacity		0.227***		0.226***		0.222***
		(0.059)		(0.059)		(0.058)
Debt-to-revenues ratio		-0.711		-0.229		0.011
		(0.654)		(0.645)		(0.636)
Number of inhabitants		0.012***		0.010**		0.004
		(0.004)		(0.004)		(0.003)
Share of residents of pre--working age in the total population		47.609***		65.695***		103.133***
		(6.003)		(5.786)		(5.810)
Share of residents of post--working age in the total population		15.943***		9.657*		-6.387
		(5.638)		(5.531)		(5.471)
Share of the unemployed in the working-age population		-45.885***		-39.123***		-33.124***
		(2.278)		(2.299)		(2.268)
Average salary		0.509***		0.292***		-0.006
		(0.018)		(0.023)		(0.027)
The percentage of votes cast for the incumbent mayor in the previous election		-0.139		-0.151		-0.147
		(0.252)		(0.248)		(0.247)
Constant	5,636.109***	1,785.942***	5,547.222***	2,500.085***	5,675.336***	3,626.451***
	(5.536)	(134.171)	(5.382)	(132.439)	(5.857)	(134.341)
Term-of-office dummies	YES	YES	YES	YES	YES	YES
Municipal fixed effects	YES	YES	YES	YES	YES	YES
Observations	37,155	37,055	37,155	37,055	37,155	37,055
R-squared	0.832	0.866	0.851	0.870	0.866	0.881
Number of municipalities	2,479	2,479	2,479	2,479	2,479	2,479

Note: Robust standard errors clustered at municipal level are given in brackets. Statistical significance is denoted as follows: *** α = 0.01; ** α = 0.05; * α = 0.1. The coefficients on pre-election, election, and post-election years obtained in regressions (5) and (6) are shown in Figure A1.

Source: the author's own work based on Ministry of Finance data, Statistics Poland Local Data Bank, National Electoral Commission data.

Table 4 confirms the existence of a political budget cycle with respect to grants for current tasks. The revenue capacity proxied by revenue capacity is again positively correlated with expenditure per capita. Similarly to current expenditure on salaries and allowances, the impact of the share of the dependent population is positive and significant. This time, a higher indebtedness level is identified to bring about stricter budget scrutiny. Grants for current tasks seem to serve as a means of local economic policy, as they are found to be positively associated with the share of the unemployed in the working-age population.

Table 3.

Regression results for current expenditure on salaries and allowances

Variables	(1)	(2)	(3)	(4)	(5)	(6)
Pre-election year			67.858***	28.788***	51.587***	27.972***
			(0.939)	(2.563)	(0.831)	(2.496)
Election year	120.725***	88.221***	146.825***	109.496***	130.221***	111.097***
	(0.992)	(2.225)	(1.197)	(3.570)	(1.114)	(3.696)
Post-election year					-44.830***	-25.814***
					(1.034)	(2.510)
Revenue capacity		0.019**		0.019**		0.019**
		(0.008)		(0.008)		(0.008)
Debt-to-revenues ratio		0.617***		0.681***		0.697***
		(0.179)		(0.182)		(0.182)
Number of inhabitants		-0.002		-0.003		-0.003
		(0.003)		(0.003)		(0.003)
Share of residents of pre-working age in the total population		20.383***		22.798***		25.331***
		(2.593)		(2.619)		(2.712)
Share of residents of post-working age in the total population		14.266***		13.425***		12.334***
		(2.151)		(2.162)		(2.198)
Share of the unemployed in the working-age population		-1.965**		-1.062		-0.657
		(0.954)		(0.971)		(0.979)
Average salary		0.118***		0.089***		0.069***
		(0.006)		(0.008)		(0.009)
The percentage of votes cast for the incumbent mayor in the previous election		-0.220**		-0.222**		-0.221**
		(0.106)		(0.106)		(0.106)
Constant	2,094.471***	894.621***	2,077.505***	990.021***	2,092.777***	1,066.420***
	(2.656)	(71.410)	(2.524)	(74.557)	(2.773)	(77.731)
Term-of-office dummies	YES	YES	YES	YES	YES	YES
Municipal fixed effects	YES	YES	YES	YES	YES	YES

Variables	(1)	(2)	(3)	(4)	(5)	(6)
Observations	37,170	37,070	37,170	37,070	37,170	37,070
R-squared	0.777	0.804	0.788	0.805	0.791	0.806
Number of municipalities	2,479	2,479	2,479	2,479	2,479	2,479

Note: Robust standard errors clustered at municipal level are given in brackets. Statistical significance is denoted as follows: *** α= 0.01; ** α = 0.05; * α = 0.1.

Source: the author's own work based on Ministry of Finance data, Statistics Poland Local Data Bank, National Electoral Commission data.

Benefits for natural persons represent a category of current expenditure that has been greatly affected by institutional changes during the period of analysis. This is due to the introduction of the Family 500+ child benefit programme in April 2016. The relevant funds flew through municipal budgets, but local government units had no influence on the eligibility criteria. In January 2022, the handling of payments was taken away from the municipalities. These changes motivate one of the robustness checks that is described later.

Table 4.

Regression results for grants for current tasks

Variables	(1)	(2)	(3)	(4)	(5)	(6)
Pre-election year			24.754***	23.750***	19.618***	23.146***
			(0.708)	(1.788)	(0.751)	(1.744)
Election year	33.953***	30.964***	43.473***	48.516***	38.233***	49.701***
	(0.867)	(1.846)	(1.033)	(2.898)	(1.061)	(2.983)
Post-election year					-14.149***	-19.106***
					(0.856)	(2.007)
Revenue capacity		0.025**		0.025**		0.024**
		(0.012)		(0.012)		(0.012)
Debt-to-revenues ratio		-0.384***		-0.331***		-0.319***
		(0.095)		(0.094)		(0.093)
Number of inhabitants		0.004**		0.003*		0.003*
		(0.002)		(0.002)		(0.002)
Share of residents of pre-working age in the total population		16.009***		18.002***		19.877***
		(2.061)		(2.097)		(2.192)
Share of residents of post-working age in the total population		7.282***		6.589***		5.781***
		(1.414)		(1.416)		(1.445)
Share of the unemployed in the working-age population		3.144***		3.889***		4.189***
		(0.736)		(0.752)		(0.758)
Average salary		0.019***		-0.005		-0.020***

Variables	(1)	(2)	(3)	(4)	(5)	(6)
		(0.004)		(0.005)		(0.006)
The percentage of votes cast for the incumbent mayor in the previous election		0.044		0.043		0.043
		(0.079)		(0.078)		(0.078)
Constant	333.780***	-307.109***		-228.402***		-171.858***
	(2.026)	(51.228)		(50.463)		(50.049)
Term-of-office dummies	YES	YES	YES	YES	YES	YES
Municipal fixed effects	YES	YES	YES	YES	YES	YES
Observations	37,170	37,070	37,170	37,070	37,170	37,070
R-squared	0.290	0.329	0.298	0.334	0.300	0.336
Number of municipalities	2,479	2,479	2,479	2,479	2,479	2,479

Note: Robust standard errors clustered at municipal level are given in brackets. Statistical significance is denoted as follows: *** α= 0.01; ** α = 0.05; * α = 0.1.

Source: the author's own work based on Ministry of Finance data, Statistics Poland Local Data Bank, National Electoral Commission data.

The regression results shown in Table 5 for the years 2008–2022 are consistent with the logic of the political budget cycle. As for the control variables, this time we do not document that revenue capacity affects municipal expenditure. At the same time, benefits for natural persons decrease as the debt-to-revenues ratio increases. The demographic structure plays a role, but only with respect to the share of elderly inhabitants. Surprisingly, a worse socio-economic situation of the local community (captured by a higher unemployment level and a lower average salary) is associated with lower benefits for natural persons. These benefits are also found to increase with the size of the population.

Table 5.

Regression results for benefits for natural persons

Variables	(1)	(2)	(3)	(4)	(5)	(6)
Pre-election year			149.758***	122.745***	45.057***	111.276***
			(1.849)	(2.596)	(1.846)	(2.704)
Election year	147.028***	102.013***	204.628***	192.725***	97.789***	215.228***
	(3.054)	(3.992)	(2.981)	(4.419)	(3.363)	(4.496)
Post-election year					-288.469***	-362.861***
					(1.528)	(3.206)
Revenue capacity		0.025*		0.024*		0.021
		(0.013)		(0.013)		(0.013)
Debt-to-revenues ratio		-1.975***		-1.700***		-1.478***
		(0.188)		(0.174)		(0.165)
Number of inhabitants		0.013**		0.012**		0.007**

Variables	(1)	(2)	(3)	(4)	(5)	(6)
		(0.005)		(0.005)		(0.003)
Share of residents of pre--working age in the total population		3.623		13.922***		49.528***
		(2.407)		(2.302)		(2.187)
Share of residents of post--working age in the total population		-14.773***		-18.358***		-33.691***
		(1.970)		(1.917)		(1.930)
Share of the unemployed in the working-age population		-46.156***		-42.304***		-36.616***
		(1.229)		(1.191)		(1.109)
Average salary		0.156***		0.032***		-0.251***
		(0.005)		(0.006)		(0.009)
The percentage of votes cast for the incumbent mayor in the previous election		-0.078		-0.085		-0.080
		(0.112)		(0.107)		(0.104)
Constant	1,809.459***	1,372.976***	1,772.015***	1,779.743***	1,870.287***	2,853.652***
	(2.208)	(105.314)	(2.193)	(100.176)	(2.580)	(86.378)
Term-of-office dummies	YES	YES	YES	YES	YES	YES
Municipal fixed effects	YES	YES	YES	YES	YES	YES
Observations	37,170	37,070	37,170	37,070	37,170	37,070
R-squared	0.782	0.803	0.795	0.808	0.827	0.847
Number of municipalities	2,479	2,479	2,479	2,479	2,479	2,479

Note: Robust standard errors clustered at municipal level are given in brackets. Statistical significance is denoted as follows: *** α= 0.01; ** α = 0.05; * α = 0.1.

Source: the author's own work based on Ministry of Finance data, Statistics Poland Local Data Bank, National Electoral Commission data.

Table 6 shows that current expenditure on the purchase of materials and services is higher in both pre-election and election years than in other years. However, contrary to the results discussed earlier, we also document an increase in the post--election year. This may indicate some inertia in expenditure in this area. Again, expenditure is found to be driven by revenue capacity and the share of the dependent population. Higher salaries are typically associated with higher prices of goods and services on local markets, which is reflected in the positive and statistically significant coefficient on the respective independent variable.

Table 6.

Regression results for current expenditure on the purchase of materials and services

Variables	(1)	(2)	(3)	(4)	(5)	(6)
Pre-election year			100.125***	28.220***	87.890***	28.763***
			(1.510)	(2.614)	(1.458)	(2.566)
Election year	99.168***	37.461***	137.678***	58.317***	125.194***	57.251***
	(1.513)	(2.439)	(1.734)	(3.600)	(1.788)	(3.712)

| Variables	(1)	(2)	(3)	(4)	(5)	(6)
Post-election year					-33.708***	17.177***
					(1.457)	(2.676)
Revenue capacity		0.045**		0.045**		0.045**
		(0.019)		(0.019)		(0.019)
Debt-to-revenues ratio		-0.494*		-0.430*		-0.441*
		(0.260)		(0.259)		(0.260)
Number of inhabitants		-0.000		-0.001		-0.000
		(0.001)		(0.001)		(0.001)
Share of residents of pre-working age in the total population		13.544***		15.912***		14.226***
		(2.043)		(2.116)		(2.245)
Share of residents of post-working age in the total population		19.504***		18.680***		19.405***
		(2.423)		(2.436)		(2.475)
Share of the unemployed in the working-age population		-0.476		0.410		0.140
		(0.941)		(0.947)		(0.950)
Average salary		0.186***		0.158***		0.171***
		(0.006)		(0.007)		(0.009)
The percentage of votes cast for the incumbent mayor in the previous election		-0.007		-0.008		-0.008
		(0.115)		(0.115)		(0.115)
Constant	1,090.416***	-467.048***	1,065.383***	-373.529***	1,076.866***	-424.365***
	(2.544)	(57.352)	(2.413)	(57.991)	(2.650)	(59.960)
Term-of-office dummies	YES	YES	YES	YES	YES	YES
Municipal fixed effects	YES	YES	YES	YES	YES	YES
Observations	37,170	37,070	37,170	37,070	37,170	37,070
R-squared	0.547	0.626	0.580	0.628	0.582	0.628
Number of municipalities	2,479	2,479	2,479	2,479	2,479	2,479

Note: Robust standard errors clustered at municipal level are given in brackets. Statistical significance is denoted as follows: *** α= 0.01; ** α = 0.05; * α = 0.1.

Source: the author's own work based on Ministry of Finance data, Statistics Poland Local Data Bank, National Electoral Commission data .

Figure 2 shows the marginal effects for municipalities with newly elected mayors (mayor re-elected = 0) and municipalities where a mayor kept their position (mayor re-elected = 1). As can be seen, in both groups we document an increase in total current expenditure in the (pre-)election year, together with a decrease in the year following the municipal elections. In general, the political budget cycle does not seem to depend on a change of mayor, or on there being no change. A statistically significant difference (at the 95 per cent level) between these two groups is found only for the post-election year. A decrease in total current expenditure is more pronounced in municipalities with a new mayor. This may be due either to fulfil-

ling promises made during the election campaign to reduce excessive municipal expenditure, or to the time needed to implement new ideas/projects[4].

Figure 2.
Marginal effects for total current expenditure
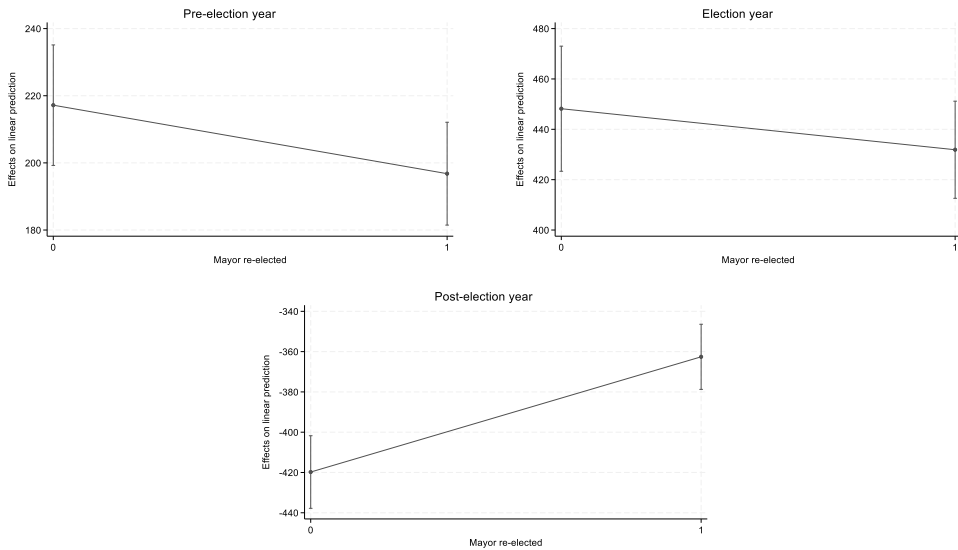
Note: Vertical lines represent 95 per cent confidence intervals.
Source: the author's own work based on Ministry of Finance data, Statistics Poland Local Data Bank, National Electoral Commission data.

A number of sensitivity checks were conducted. Firstly, the dependent variable is expressed in a natural logarithm. The application of a logarithmic transformation serves to mitigate the influence of outlying observations while simultaneously stabilising the variance of the dependent variable. Secondly, the period of analysis excludes the years 2020–2022, as the budget execution was affected by widespread and unexpected shocks during this period: the ongoing global pandemic, the Russian invasion of Ukraine, and the concurrent inflationary and energy crises. Thirdly, the period of analysis was limited to the years 2008–2015 in order to exclude the impact of the Family 500+ programme. Fourth, the present study is reduced in scope to municipalities with fewer than 20,000 inhabitants. In this group of municipalities, local councillors are elected via the first-past-the-post system, whereas in larger municipalities, the proportional voting rule is binding. Furthermore, in municipalities with fewer inhabitants, there are a fewer number of tasks conducted by entities with separate legal personality (municipal companies). Additionally, the

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[4] I would like to express my gratitude to one of the reviewers who pointed out these two possible interpretations.

population threshold allows for the exclusion of cities with county rights, which perform both municipal and county tasks.

The findings of the sensitivity analyses are presented in Tables A3–A7[5] and Figure A2. The overall results remain unchanged in qualitative terms with respect to total current expenditure, current expenditure on salaries and allowances, and grants for current tasks. This provides further support for our causal argumentation. In contrast with our initial expectations, the results of a specification limited to the years 2008–2015 indicate that benefits for natural persons decrease in the pre-election year and increase in the post-election year. With regard to current expenditure on the purchase of materials and services, the coefficient on the post-election-year dummy is found to be statistically non-significant at conventional levels in three out of four robustness checks. As regards the difference in marginal effects for municipalities with a newly elected mayor and municipalities without a change in this position, the robustness checks displayed in Figure A2 are in line with the baseline results, except for the insignificant difference in the post-election year in the sample covering the years 2008–2015 only.

Table 7.

The scale of fluctuations in current expenditure over the term of office

Type of expenditure	Pre-election year	Election year	Post-election year
Total current expenditure	5.9% (2.53%)	13.4% (8.2%)	-9.4% (-1.2%)
Current expenditure on salaries and allowances	2.0% (2.3%)	7.5% (6.1%)	-1.5% (-0.7%)
Grants for current tasks	11.2%	22.6%	-6.3%
Benefits for natural persons	11.0% (-2.1%)	26.7% (3.4%)	-30.5% (2.5%)
Current expenditure for purchase of materials and services	4.9%	11.3%	0.00%[a]

Note: Estimations limited to the years 2008–2015 in brackets. The year t+2 serves as a reference year.

[a] – the respective coefficient is not statistically significant at conventional levels.

Source: the author's own work based on Ministry of Finance data, Statistics Poland Local Data Bank, National Electoral Commission data.

The analysis so far has concentrated on variations in expenditure levels as expressed in absolute terms (on a per capita basis). To facilitate comparisons between types of expenditure, Table 7 presents the fluctuations in terms of percentage changes. In the context of institutional changes, estimates are presented for the whole period (2008–2022) and for the years 2008–2015 with respect to benefits for

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[5] To save space, only the coefficients on pre-election, election and post-election year dummies and constant are displayed. The detailed results of sensitivity checks are available from the author upon request.

natural persons, current expenditure on salaries and allowances, as well as total current expenditure.

As shown in Table 7, the relative fluctuations in total current expenditure are significantly reduced when the observation period is limited to the years 2008–2015. However, the fluctuations remain statistically significant. The largest relative fluctuations are observed in the category of grants for current tasks. On average, these are about 10% (20%) higher in the pre-election year and decrease by more than 5% in the post-election year compared to the reference year. The near-election variation with respect to current expenditure on salaries and allowances is arguably diminished by the fact that salaries are sticky down. Furthermore, the Labour Code restricts employment flexibility, which potentially discourages municipal authorities from hiring additional personnel in the pre-election period. Such decisions entail a longer-term financial commitment, which may be a deterrent in the context of electoral politics. A similar result, indicating a consistency of expenditure on salaries and wages over time was observed in the case of French municipalities (Foucault, Madies and Paty, 2008). With regard to benefits for natural persons, the selection of the period under analysis proves to be of pivotal importance. The hypothesis of a political budget cycle is not supported by the empirical evidence for the period 2008-2015. The relative changes in current expenditure for the purchase of materials and services in the pre-election and election years are quantitatively similar to those observed for total current expenditure. This analogy is not documented for the post-election year, in which former expenditure is found to be comparable to that observed in the reference year(s).

Our findings align with previous empirical evidence on total and investment municipal expenditure in Poland (Köppl-Turyna et al., 2015; Kukołowicz and Górecki, 2018; Filipiak and Kluza, 2022; Olejnik, 2022). It can be concluded that fluctuations attributable to the political budget cycle are driven by expenditure on current tasks in conjunction with those on investments. In an international context, similar results have been obtained by Sakurai and Menezes-Filho (2011), whereas empirical evidence presented by Veiga and Veiga (2007) indicates the absence of politically driven variation in municipal current expenditure. These conflicting empirical findings can be explained by studies indicating that the presence and magnitude of political budget cycles are contingent on certain country- and local--level characteristics, such as voter time preference and media pressure (Cuadrado--Ballesteros and García-Sánchez, 2018; Kyriacou, Okabe, and Roca-Sagalés, 2022). In the case of Poland, it can be conjectured that voters probably have a high discount rate, which leads them to prefer immediate spending. Additionally, the pressure of the local media tends to be rather weak.

5. Conclusions

This study demonstrates that fluctuations in total current expenditure in Polish municipalities between 2008 and 2022 align with the conventional sequence of events in the political budget cycle. Expenditure on current tasks is increased prior

to elections (in the pre-election and election years) and subsequently decreased in the post-election year. The research hypothesis has been confirmed also with respect to certain components of current expenditure, namely current expenditure on salaries and allowances, as well as grants for current tasks. Conversely, there is no consistent evidence concerning benefits for natural persons and current expenditure for the purchase of materials and services. It suggests that these components of current expenditure seem less appealing to the electorate in the opinion of municipal authorities. As regards the status of benefits for natural persons, this result may be somewhat surprising, given that a generous welfare policy is typically regarded as a key component of pork-barrel politics. This rather unexpected result can be explained by the fact that the redistribution policy in Poland is highly centralised, with municipalities serving primarily as payment agents in the majority of cases. A (lack of) shift in political power at the municipal level has been shown not to exert an impact on the existence of the political budget cycle. The only difference observed is in the magnitude of the drop in total current expenditure in the year following the elections. The baseline results remain robust when subjected to a number of sensitivity checks, including a log-linear specification, the use of shortened periods of analysis and the application of a research sample limited to less populated units.

The empirical evidence suggests that budget opportunism in the area of current expenditure in Polish municipalities is driven by specific subcategories. This justifies an empirical investigation of political budget cycles at both the aggregated and disaggregated levels. Furthermore, municipal current expenditure is found to be dependent on certain local fiscal, demographic, and socio-economic characteristics. The current analysis also indicates that newly elected mayors adapt and start to mimic the behaviour of their more experienced peers quite quickly.

One limitation of the current study is that it employs annual data, which may not fully capture the nuances of expenditure within a given year. In light of the findings, it would be prudent to enhance the citizenry's oversight of the implementation of current tasks. One potential solution is to facilitate the accessibility of local budget data in a user-friendly format and providing support to independent local media. It will be interesting to see whether the recently adopted legislation on the protection of whistleblowers will prove to be an effective means of addressing this issue. A promising avenue for further research would be to examine whether a pre-election increase in current expenditure can be linked to electoral benefits.

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Appendix

Table A1.
Descriptive statistics

Variables	Number of observations	Mean	Standard deviation	Minimum	Maximum
(1) Total current expenditure	37155	4266.366	1400.19	1879.007	40317.81
(2) Current expenditure on salaries and allowances	37170	1769.341	404.292	385.172	6969.726
(3) Grants for current tasks	37170	249.317	206.041	0	5833.982
(4) Benefits for natural persons	37170	1122.609	595.926	226.167	20370.92
(5) Current expenditure on the purchase of materials and services	37170	842.417	364.408	256.962	7478.535
(6) Revenue capacity	37173	1413.944	1203.212	278.396	50631.38
(7) Debt-to-revenues ratio	37171	24.388	16.842	0	437.3
(8) Number of inhabitants	37172	15480.41	50732.36	1286	1795569
(9) Share of residents of pre-working age in the total population	37172	19.594	2.553	9.744	33.2
(10) Share of residents of post-working age in the total population	37172	18.049	3.629	6.6	43.6
(11) Share of the unemployed in the working-age population	37099	7.495	3.875	.6	31.186
(12) Average salary	37182	3466.82	859.512	1762.77	10076.64
(13) The percentage of votes cast for the incumbent mayor in the previous election	37145	57.751	16.893	13.12	97.14
(14) Mayor re-elected	37155	0.678	0.467	0	1

Note: Variables (6)–(12) are lagged by one year.

Source: the author's own work based on Ministry of Finance data, Statistics Poland Local Data Bank, National Electoral Commission data.

Table A2.
Correlation matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1) Total current expenditure	1.000												
(2) Current expenditure on salaries and allowances	0.809	1.000											
(3) Grants for current tasks	0.472	0.246	1.000										
(4) Benefits for natural persons	0.711	0.519	0.162	1.000									
(5) Current expenditure on the purchase of materials and services	0.801	0.622	0.437	0.364	1.000								
(6) Revenue capacity	0.634	0.412	0.439	0.114	0.609	1.000							
(7) Debt-to-revenues ratio	0.012	0.053	0.094	-0.110	0.055	0.018	1.000						
(8) Number of inhabitants	0.124	0.133	0.251	-0.075	0.254	0.102	0.118	1.000					
(9) Share of residents of pre-working age in the total population	-0.175	-0.152	-0.175	-0.114	-0.205	-0.095	-0.101	-0.139	1.000				
(10) Share of residents of post-working age in the total population	0.310	0.291	0.161	0.313	0.249	0.056	-0.035	0.090	-0.740	1.000			
(11) Share of the unemployed in the working-age population	-0.314	-0.254	-0.259	-0.284	-0.294	-0.218	0.093	-0.091	0.093	-0.207	1.000		
(12) Average salary	0.677	0.584	0.372	0.650	0.543	0.314	-0.013	0.112	-0.323	0.459	-0.458	1.000	
(13) The percentage of votes cast for the incumbent mayor in the previous election	0.009	0.008	-0.070	0.037	-0.009	-0.024	-0.031	-0.082	0.146	-0.065	-0.054	-0.001	1.000

Note: Variables (6)–(12) are lagged by one year.

Source: the author's own work based on Ministry of Finance data, Statistics Poland Local Data Bank, National Electoral Commission data.

Table A3.

Regression results for total current expenditure – robustness checks

	(1)	(2)	(3)
Dependent variable in natural logarithm			
Pre-election year		0.060***	0.057***
		(0.001)	(0.001)
Election year	0.076***	0.120***	0.126***
	(0.001)	(0.002)	(0.002)
Post-election year			-0.099***
			(0.001)
Constant	7.934***	8.134***	8.425***
	(0.041)	(0.038)	(0.034)
Observations	37,055	37,055	37,055
R-squared	0.899	0.905	0.920
Number of municipalities	2,479	2,479	2,479
The period of analysis: the years 2008–2019			
Pre-election year		209.707***	164.810***
		(12.630)	(11.842)
Election year	141.530***	342.466***	383.663***
	(11.202)	(21.479)	(22.124)
Post-election year			-456.652***
			(10.204)
Constant	403.104	1,466.603***	3,548.885***
	(255.272)	(289.741)	(317.019)
Observations	29,640	29,640	29,640
R-squared	0.795	0.800	0.823
Number of municipalities	2,479	2,479	2,479
The period of analysis: the years 2008–2015			
Pre-election year		51.782**	53.220**
		(21.249)	(21.630)
Election year	156.325***	209.589***	221.714***
	(11.659)	(29.775)	(32.660)
Post-election year			-43.235***
			(16.334)
Constant	1,177.148***	1,442.318***	1,666.190***
	(332.787)	(425.986)	(485.954)
Observations	19,746	19,746	19,746
R-squared	0.358	0.359	0.360
Number of municipalities	2,478	2,478	2,478
The set of municipalities: population below 20,000 people			
Pre-election year		218.055***	208.881***
		(8.604)	(8.539)

	(1)	(2)	(3)
The set of municipalities: population below 20,000 people			
Election year	226.396***	389.894***	419.483***
	(7.486)	(10.603)	(11.123)
Post-election year			-363.454***
			(8.631)
Constant	1,469.683***	2,228.213***	3,363.760***
	(192.731)	(198.930)	(209.321)
Control variables	YES	YES	YES
Observations	31,985	31,985	31,985
R-squared	0.858	0.862	0.873
Number of municipalities	2,173	2,173	2,173

Note: Robust standard errors clustered at municipal level are given in brackets. Statistical significance is denoted as follows: *** α= 0.01; ** α = 0.05; * α = 0.1. All regressions include term-of-office dummies and the set of control variables. The set of control variables consists of: revenue capacity, debt-to-revenues ratio, number of inhabitants, share of residents of pre-working age in the total population, share of residents of post-working age in the total population, share of the unemployed in the working-age population, average salary, the percentage of votes cast for the incumbent mayor in the previous election.

Source: the author's own work based on Ministry of Finance data, Statistics Poland Local Data Bank, National Electoral Commission data.

Table A4.
Regression results for current expenditure on salaries and allowances – robustness checks

	(1)	(2)	(3)
Dependent variable in natural logarithm			
Pre-election year		0.021***	0.020***
		(0.001)	(0.001)
Election year	0.056***	0.071***	0.072***
	(0.001)	(0.002)	(0.002)
Post-election year			-0.015***
			(0.001)
Constant	6.994***	7.063***	7.106***
	(0.028)	(0.029)	(0.031)
Observations	37,070	37,070	37,070
R-squared	0.813	0.815	0.815
Number of municipalities	2,479	2,479	2,479
The period of analysis: the years 2008–2019			
Pre-election year		36.422***	33.926***
		(3.412)	(3.187)
Election year	63.450***	98.342***	100.645***
	(2.655)	(5.693)	(5.874)

	(1)	(2)	(3)
Post-election year			-25.412***
The period of analysis: the years 2008–2019			
			(2.594)
Constant	520.307***	704.700***	820.809***
	(87.394)	(95.192)	(101.727)
Observations	29,655	29,655	29,655
R-squared	0.772	0.775	0.776
Number of municipalities	2,479	2,479	2,479
The period of analysis: the years 2008–2015			
Pre-election year		32.214***	32.812***
		(3.861)	(3.942)
Election year	48.088***	81.215***	86.255***
	(2.510)	(5.941)	(6.668)
Post-election year			-17.940***
			(3.408)
Constant	617.341***	781.779***	874.913***
	(85.482)	(94.639)	(104.750)
Observations	19,756	19,756	19,756
R-squared	0.666	0.670	0.670
Number of municipalities	2,478	2,478	2,478
The set of municipalities: population below 20,000 people			
Pre-election year		30.765***	30.162***
		(2.771)	(2.716)
Election year	86.858***	109.924***	111.887***
	(2.232)	(3.739)	(3.917)
Post-election year			-24.053***
			(2.687)
Constant	1,087.772***	1,194.787***	1,269.957***
	(81.177)	(83.977)	(86.360)
Observations	31,990	31,990	31,990
R-squared	0.794	0.795	0.796
Number of municipalities	2,173	2,173	2,173

Note: Please see table A3.

Source: the author's own work based on Ministry of Finance data, Statistics Poland Local Data Bank, National Electoral Commission data.

Table A5.

Regression results for grants for current tasks – robustness checks

	(1)	(2)	(3)
Dependent variable in natural logarithm			
Pre-election year		0.108***	0.106***
		(0.006)	(0.006)
Election year	0.120***	0.200***	0.204***
	(0.005)	(0.009)	(0.009)
Post-election year			-0.065***
			(0.006)
Constant	5.194***	5.551***	5.744***
	(0.134)	(0.132)	(0.134)
Observations	37,058	37,058	37,058
R-squared	0.387	0.394	0.396
Number of municipalities	2,479	2,479	2,479
The period of analysis: the years 2008–2019			
Pre-election year		25.009***	22.918***
		(2.430)	(2.290)
Election year	18.471***	42.430***	44.359***
	(1.932)	(4.084)	(4.217)
Post-election year			-21.295***
			(2.298)
Constant	-399.910***	-273.297***	-175.999***
	(65.986)	(65.858)	(67.815)
Observations	29,655	29,655	29,655
R-squared	0.271	0.277	0.280
Number of municipalities	2,479	2,479	2,479
The period of analysis: the years 2008–2015			
Pre-election year		23.691***	24.459***
		(2.547)	(2.609)
Election year	10.568***	34.930***	41.405***
	(2.274)	(4.331)	(4.678)
Post-election year			-23.046***
			(3.905)
Constant	-46.784	74.145	193.790**
	(74.394)	(73.613)	(76.399)
Observations	19,756	19,756	19,756
R-squared	0.096	0.103	0.107
Number of municipalities	2,478	2,478	2,478
The set of municipalities: population below 20,000 people			
Pre-election year		19.864***	19.533***
		(1.676)	(1.643)

	(1)	(2)	(3)
The set of municipalities: population below 20,000 people			
Election year	21.761***	36.654***	37.731***
	(1.613)	(2.583)	(2.697)
Post-election year			-13.194***
			(2.012)
Constant	-218.753***	-149.658**	-108.424*
	(61.588)	(61.890)	(62.675)
Observations	31,990	31,990	31,990
R-squared	0.288	0.292	0.293
Number of municipalities	2,173	2,173	2,173

Note: Please see table A3.

Source: the author's own work based on Ministry of Finance data, Statistics Poland Local Data Bank, National Electoral Commission data.

Table A6.

Regression results for benefits for natural persons – robustness checks

	(1)	(2)	(3)
Dependent variable in natural logarithm			
Pre-election year		0.116***	0.104***
		(0.002)	(0.003)
Election year	0.129***	0.215***	0.237***
	(0.003)	(0.003)	(0.004)
Post-election year			-0.364***
			(0.003)
Constant	5.824***	6.207***	7.283***
	(0.078)	(0.072)	(0.058)
Observations	37,070	37,070	37,070
R-squared	0.821	0.826	0.872
Number of municipalities	2,479	2,479	2,479
The period of analysis: the years 2008–2019			
Pre-election year		121.220***	81.778***
		(3.653)	(3.145)
Election year	9.524**	125.650***	162.043***
	(4.527)	(6.459)	(6.205)
Post-election year			-401.623***
			(3.852)
Constant	315.446**	929.145***	2,764.202***
	(125.695)	(119.878)	(110.827)
Observations	29,655	29,655	29,655

	(1)	(2)	(3)
The period of analysis: the years 2008–2019			
R-squared	0.714	0.720	0.778
Number of municipalities	2,479	2,479	2,479
The period of analysis: the years 2008–2015			
Pre-election year		-16.302***	-17.079***
		(2.355)	(2.452)
Election year	48.049***	31.285***	24.740***
	(5.097)	(4.679)	(3.911)
Post-election year			23.299***
			(4.976)
Constant	612.144***	528.930***	407.974***
	(75.045)	(82.380)	(99.767)
Observations	19,756	19,756	19,756
R-squared	0.013	0.013	0.014
Number of municipalities	2,478	2,478	2,478
The set of municipalities: population below 20,000 people			
Pre-election year		128.791***	119.880***
		(2.772)	(2.802)
Election year	83.220***	179.778***	208.783***
	(4.209)	(4.649)	(4.755)
Post-election year			-355.350***
			(3.514)
Constant	823.684***	1,271.677***	2,382.223***
	(90.252)	(88.628)	(92.446)
Observations	31,990	31,990	31,990
R-squared	0.802	0.807	0.843
Number of municipalities	2,173	2,173	2,173

Note: Please see table A3.

Source: the author's own work based on Ministry of Finance data, Statistics Poland Local Data Bank, National Electoral Commission data.

Table A7.

Regression results for current expenditure on the purchase of materials and services – robustness checks

	(1)	(2)	(3)
Dependent variable in natural logarithm			
Pre-election year		0.048***	0.048***
		(0.002)	(0.002)
Election year	0.071***	0.107***	0.107***

	(1)	(2)	(3)
	Dependent variable in natural logarithm		
	(0.002)	(0.004)	(0.004)
Post-election year			-0.001
			(0.003)
Constant	5.913***	6.074***	6.077***
	(0.056)	(0.056)	(0.057)
Observations	37,070	37,070	37,070
R-squared	0.680	0.684	0.684
Number of municipalities	2,479	2,479	2,479
	The period of analysis: the years 2008–2019		
Pre-election year		27.985***	27.573***
		(3.447)	(3.251)
Election year	52.662***	79.472***	79.852***
	(2.904)	(5.548)	(5.714)
Post-election year			-4.203
			(2.800)
Constant	-246.231***	-104.550	-85.348
	(81.673)	(86.958)	(92.011)
Observations	29,655	29,655	29,655
R-squared	0.468	0.470	0.470
Number of municipalities	2,479	2,479	2,479
	The period of analysis: the years 2008–2015		
Pre-election year		28.817***	29.037***
		(4.472)	(4.557)
Election year	54.299***	83.932***	85.785***
	(3.242)	(6.783)	(7.417)
Post-election year			-6.594
			(4.434)
Constant	-6.400	140.696	174.930
	(105.361)	(114.055)	(123.269)
Observations	19,756	19,756	19,756
R-squared	0.231	0.235	0.235
Number of municipalities	2,478	2,478	2,478
	The set of municipalities: population below 20,000 people		
Pre-election year		25.614***	26.161***
		(2.863)	(2.816)
Election year	33.265***	52.468***	50.688***
	(2.501)	(3.903)	(4.047)
Post-election year			21.810***
			(2.908)
Constant	-662.006***	-572.909***	-641.069***
	(82.084)	(84.284)	(87.007)

	(1)	(2)	(3)
The set of municipalities: population below 20,000 people			
Observations	31,990	31,990	31,990
R-squared	0.613	0.615	0.615
Number of municipalities	2,173	2,173	2,173

Note: Please see table A3.

Source: the author's own work based on Ministry of Finance data, Statistics Poland Local Data Bank, National Electoral Commission data.

Figure A1.

*Pre-election, election and post-election year effects for total current expenditure*
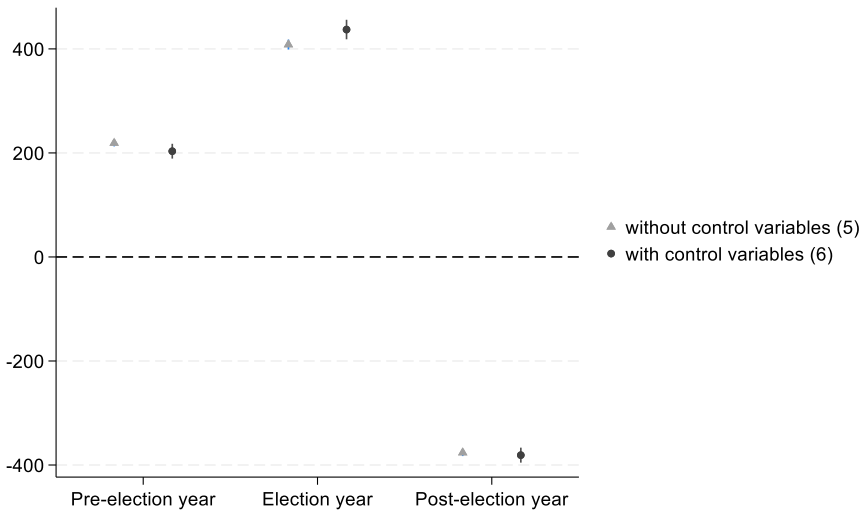
Note: the reference year is the second year of the term of office. Vertical lines represent 95-percent confidence intervals. The results shown correspond to regressions (5) and (6) in Table 2.

Source: the author's own work based on Ministry of Finance data, Statistics Poland Local Data Bank, National Electoral Commission data.
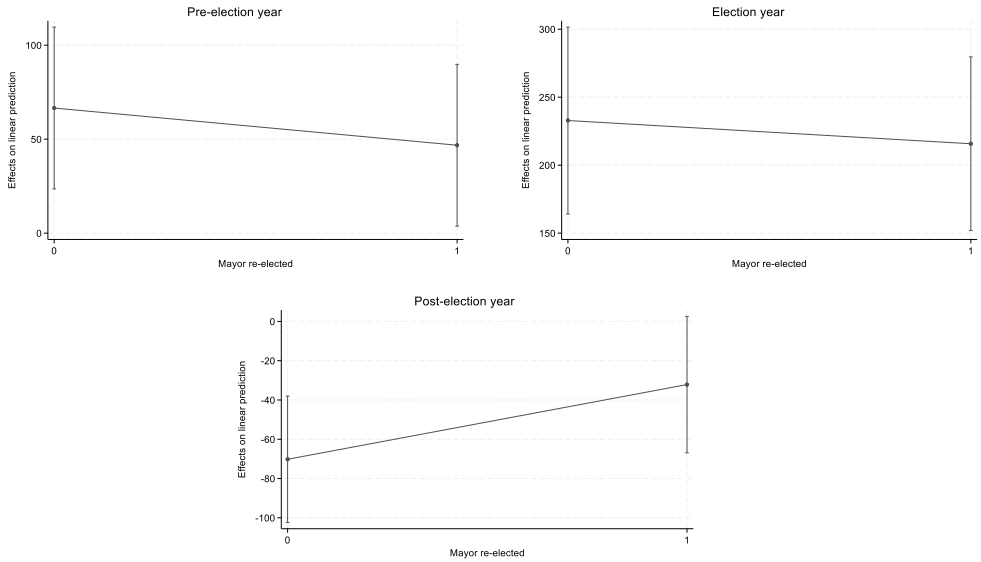
Figure A2.
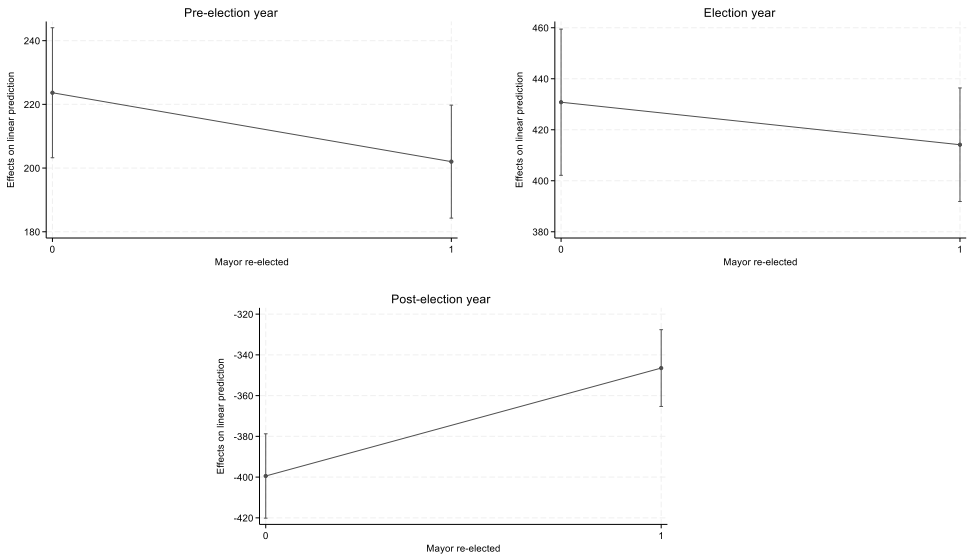*Marginal effects for total current expenditure – robustness checks*
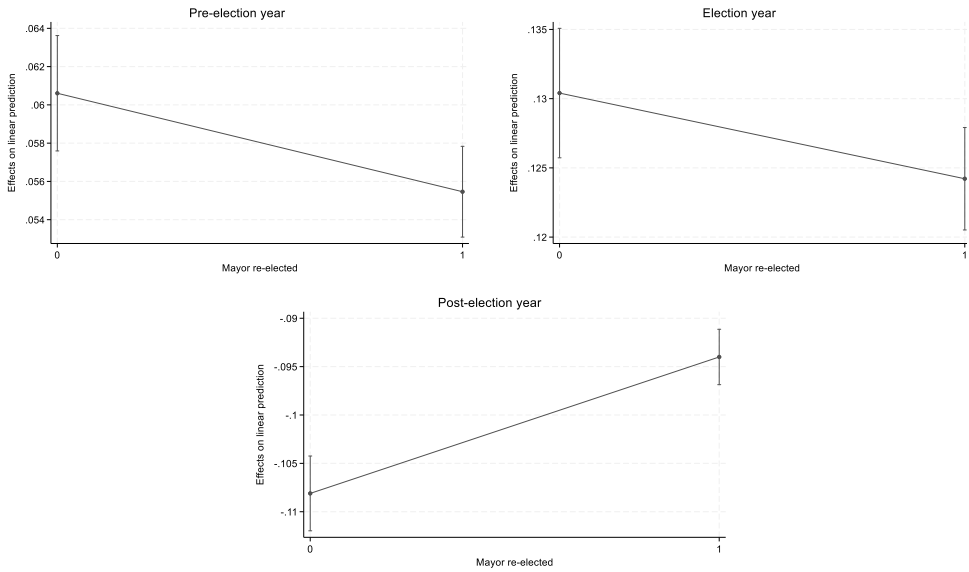
Panel A. Dependent variable in natural logarithm
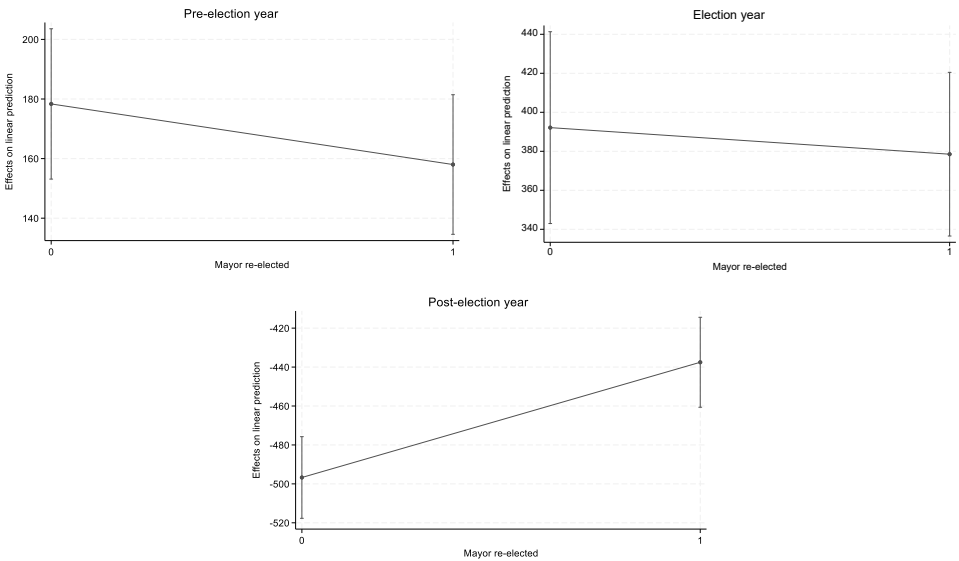
Panel B. The period of analysis: the years 2008–2019

Panel C. The period of analysis: the years 2008–2015

Panel D. The set of municipalities: population below 20,000 people

Note: Vertical lines represent 95-percent confidence intervals.

Source: the author's own work based on Ministry of Finance data, Statistics Poland Local Data Bank, National Electoral Commission data.