The political budget cycles in emerging and developing countries

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Abstract

Purpose – This paper examines the political budget cycles in emerging and developing countries using a sample of 91 countries from 1992 to 2019.

Design/methodology/approach – This paper employs a pooled ordinary least squares (OLS) model with clustered standard errors at the country level. To address endogeneity issues, the authors also employ a two-step system generalized methods of moments model.

Findings – The authors find clear evidence of political budget cycles in emerging and developing countries. The authors consistently find that incumbents increase total government spending, particularly in economic affairs, public services and social welfare, in the year before an election and the election year. In contrast, they contract spending in the year after an election.

Research limitations/implications – Policymakers should be aware of the political budget cycles during election years. Promoting control of corruption and democracy helps to alleviate the effects of the political budget cycles in emerging and developing countries.

Originality/value – The authors are among the first to explore the political budget cycles in emerging and developing countries by focusing on the total government spending and its main compositions, including expenditures on economic affairs, public services and social welfare. Besides, the authors also explore the conditioning effects of control of corruption, political ideology and democracy.

Keywords Political budget cycle, Government expenditure, Election cycle, Emerging and developing countries

Paper type Research paper

1. Introduction

The political budget cycle theory suggests that incumbent chief executives and governments act opportunistically before elections to improve the chance of re-election (Nordhaus, 1975; Alesina *et al.*, 1997). Increasing government spending serves as a positive signal of incumbents' "competence," which refers to their ability to provide more public goods before elections (Rogoff, 1990). They can increase capital spending to generate short-term economic growth (Klein and Sakurai, 2015; Bonfatti and Forni, 2019) and/or expand spending on social welfare to improve the situation of low- and middle-income voters being left behind (Vergne, 2009; Schneider, 2010). However, spending more on social welfare, such as health, education and social protections, to placate voters might not produce the same rewards for incumbents as different constituencies' interests often compete (Barberia *et al.*, 2011). For example, increasing the benefits of social insurance and pensions may not benefit a large share of low- and middle-income voters in emerging and developing countries as they work in the informal sector.

For this reason, to increase the chance of re-election, incumbents could rely more on investment infrastructure – especially on projects with high immediate visibility – to signal their competence to electorates. As voters cannot perfectly observe government expenses and the level of the budget deficit, they tend to rely on observed information about government spending before an election to make inferences about the persistence of incumbents' competence over time (Shi and Svensson, 2006). Increasing spending on social welfare and investment infrastructure tends to happen in the year preceding elections as it takes time for those policies to have real effects on the economy (Barberia *et al.*, 2011).

Some studies challenge the political budget cycle by pointing out that voters are aware of the opportunistic behavior of incumbents and do not respond to manipulated fiscal policies before an election (see, for example, Peltzman, 1992; Brender and Drazen, 2008). In this regard, another strand of the literature provides evidence that incumbents generate electoral benefits without being punished by voters by changing the compositions of government spending rather than overall spending (see, for example, Drazen and Eslava, 2010; Schneider, 2010).

However, the existing theoretical models and empirical evidence on the political budget theory tend to focus on developed countries such as Italy (Bonfatti and Forni, 2019), Portugal (Veiga and Veiga, 2007; Castro and Martins, 2013), Germany (Foremny and Riedel, 2014), among others. Significantly absent from this literature is whether and how the political budget cycle theory applies to emerging and developing countries. Particular attention should be focused on emerging and developing countries as voters lack the necessary information to assess economic policy and incumbents' performance, leaving the ground for opportunistic behavior to thrive (Vergne, 2009). Moreover, the tax base tends to be low in those countries, which prevents incumbents from reducing taxes for political support. Thus, incumbents in emerging and developing countries prioritize public spending over tax reduction to enhance political support (Schuknecht, 2000). Therefore, to fill this gap in the literature, this paper revisits the theory of the political budget cycle in the context of emerging and developing countries.

Using a panel of 91 emerging and developing countries from 1992 to 2019, we consistently find that election years and the year before an election witness an increase in government spending, while government spending declines in the year after an election. These findings confirm the existence of the political budget cycles in emerging and developing countries. In particular, incumbent governments expand public spending before and during an election to create short-run economic growth for electoral advantages. Then, they reduce spending after an election to correct imbalances generated before elections. We find that the increase in government spending is more pronounced in the year before an election than in election years. One explanation is that incumbent governments may account for the time lag as fiscal expansion policies take time to affect the economy.

Digging deeper into the compositions of government expenditure, we find that incumbents generate nomination benefits by increasing spending on economic affairs, public services and social welfare. Spending on economic affairs appears to be stronger than that on other dimensions because incumbent governments favor spending on economic-related projects with high immediate visibility to attract voters. Our additional analyses also provide evidence that opportunistic behavior is less pronounced in countries with higher levels of control of corruption.

The rest of the paper is organized as follows. Section 2 briefly reviews related literature on the political budget cycle. Section 3 describes our variables and the research model. Section 4 presents our empirical findings and some additional analyses. Section 5 addresses endogeneity concerns. Section 6 concludes.

2. Literature review

2.1 Theory and related literature

The existing literature on the political cycle has offered both theoretical frameworks and empirical evidence that economic conditions determine the success of an election. In this regard, favorable economic conditions are associated with a higher probability of incumbents being re-elected (Castro and Martins, 2019). In sharp contrast, voters punish their incumbents for poor economic conditions by voting for their opposition candidates and political parties (Lindvall, 2014; Nguyen *et al.*, 2020). Thus, incumbents tend to stimulate short-term economic growth before elections to increase their re-election probabilities.

The classic political budget cycle theory suggests that politicians act opportunistically before elections by distorting fiscal policies to maximize their re-election prospects (Nordhaus, 1975; Rogoff, 1990; Nguyen *et al.*, 2020). In particular, they tend to increase public spending on highly visible infrastructure to electorates, such as bridges and rural roads, to signal their competence (Rogoff, 1990; Veiga and Veiga, 2007; Lewis, 2018). Increasing government spending on economic affairs before elections helps to stimulate demand and boost economic growth, especially during periods of economic recessions (see, for example, Devarajan *et al.*, 1996; Parui, 2021). Besides, short-term opportunistic effects can also be observed in the social sector, where incumbents increase spending on the welfare state to placate citizens, especially low-income voters (Schneider, 2010). Similarly, Nguyen *et al.* (2022a) examined social spending in 108 countries from 1991 to 2019 and found that governments increase social spending (health, education and social protection) as a percentage of GDP by around 0.14% during the election years. Based on these arguments, we posit the following hypothesis.

H1a. Incumbent governments increase spending before an election

However, prior studies also provide conflicting views regarding the opportunistic behavior of incumbents. Brender and Drazen (2008) do not find evidence of higher government spending or budget deficit before elections. Instead, they find that improving budget balance during pre-election periods sends a positive signal to the public as voters are "fiscally conservative" and could punish incumbents that pursue loose fiscal policies before elections. Peltzman (1992) and Alesina *et al.* (1998) also provide evidence that higher deficits over the term of office lower the probabilities of re-election in developed countries. Considering the change in overall government spending during election periods in 19 developed Organisation for Economic Co-operation and Development (OECD) countries over the years 1972–1999, Katsimi and Sarantides (2012) also find no clear evidence of the existence of the political budget cycles.

Another strand of the literature pinpoints the existence of incumbents' opportunistic behavior in election years but provides evidence that electoral cycles do not significantly alter overall government spending. One of the possible reasons is that incumbents manipulate fiscal expenditures by changing the compositions of government spending rather than overall spending (Veiga and Veiga, 2007; Schneider, 2010). For example, examining elections in Colombian municipalities, Drazen and Eslava (2010) found that incumbents cut spending on interest payments, transfers to retirees and payments to temporary worker contracts and significantly expanded spending on infrastructures such as road construction and water plans before elections. Klein and Sakurai (2015) tell a similar story, in which politicians in Brazil tend to shift current spending to capital spending while budget balances and overall expenditure remain unchanged. Similar evidence exists in Italian municipal elections (Bonfatti and Forni, 2019). Thus, given that voters might be rational and punish incumbents for running large deficits (Drazen and Eslava, 2010), by changing the compositions of government spending, incumbents can benefit from the opportunistic fiscal cycle before elections while keeping a controlled fiscal balance. Thus, we formulate the following hypothesis.

H1b. Election cycles do not have a significant impact on the total government spending

The political budget cycle theory also indicates that governments are compelled to contract government spending to correct unbalances generated by opportunistic behavior before elections (Rogoff, 1990; Nordhaus, 1975; Castro and Martins, 2019). This sheds light on Block (2001), who finds that government spending two years after a competitive election is lower than that in the year before an election in developing countries. Results are similar to Ames (1977), who concludes that government spending in Latin American countries increased by 6.3% before elections and reduced by more than 7.6% in post-election years from 1947 to 1982. The author argues that governments contracted capital spending after elections as they had generated imbalances before the polls. This evidence leads us to the following research hypothesis.

H2. Government spending is lower in the year after an election

3. Data, variables and methods

3.1 Data
Our sample consists of 1,441 country-year observations representing 91 countries from 1992 to 2019. The list of countries is reported in Table A1 in Appendix. All country-level variables are winsorized at the 1st and 99th percentiles to lower the influence of outliers. Our explanatory variables show remarkably little correlations (see Table A2 in Appendix). The correlation coefficients of electoral variables with control variables are smaller than |0.31|, alleviating the concern that multicollinearity problems drive our main findings.

Details of all variables used in this study and their data sources are presented in Table 1. Their descriptive statistics are provided in Table 2 [1]. On average, the level of government expenditure in our sample is 25.93% of GDP. Spending on social welfare (including health, education and social protections) makes up the largest share of government expenditure to GDP, at 10.98%. As mentioned earlier, we only focus on the three most important dimensions of government spending, including economic affairs, public services and social welfare, which accounts for more than 22% of government spending on GDP in total. Spending on other dimensions, such as defense, environmental protection, recreation, culture and religion and housing and community amenities, only contributes less than 4% of spending on GDP, for which we do not account in this study. Throughout this paper, we assume that government spending is not affected by the level of central bank independence. In fact, central bank independence can weaken the incentives of incumbents in expanding fiscal policies (Aklin and Kern, 2021). For example, a proactive central bank can increase interest rates to offset the effects of increased government spending. To test the validity of our assumption, we employ the central bank independence index by Garriga (2016) as a control variable. We find that our main findings remain consistent [2]. However, we do not control for central bank independence in this paper as this limits our sample to the year 2012 and significantly reduces the number of observations (more than 33.6%) due to data constraints.

3.2 The election cycle and control variables
We source data for executive elections from the World Bank's Political Institutions Database. To provide a comprehensive view of government spending during election periods, we introduce three electoral dummy variables to capture government spending in the year before an election (*Pre-election*), election year (*Election*) and the year after an election (*Post-election*). The classic political budget cycle theory suggests that government spending increases before an election and reduces after the election.

In addition to the above independent variables of interest, we also control for factors found in the literature to impact government spending significantly. Regarding demographic

Dependent variables		
Expenditure	The share of total government expenditure to GDP	Government Finance Statistics (GFS) – IMF
Economic affairs	The ratio of government spending on economic affairs to GDP	GFS
Public services	The ratio of government spending on public services to GDP	GFS
Social welfare	The ratio of government spending on social welfare to GDP. Social welfare is the sum of government spending on health, education and social protection	GFS
Main independent variables		
Pre-election	The dummy variable which equals 1 for the year before an election and 0 otherwise	Database of Political Institutions (DPI)
Election	The dummy variable which equals 1 for election years and 0 otherwise	DPI
Post-election	The dummy variable which equals 1 for the year after an election and 0 otherwise	DPI
Control variables		
Population growth	The annual growth rate of the total population in a country	World Development Indicators (WDI)
Median age	The median age of the entire population of a country	United Nations
GDP growth	The annual GDP growth rate of a country	WDI
Unemployment rate	The unemployment rate of a country	WDI
Inflation	The annual inflation rate, which is based on the consumer price index	WDI
Government debt	The ratio of general government debt to GDP. In the case that data for general government debt are missing, we use central government debt	WDI
Tax revenue	The index measures the overall level of economic freedom with higher values indicating greater levels of freedom	WDI
Corruption control	The index measures the level of control of corruption in a country. The index varies between -2.5 and 2.5, with higher values indicating stronger control of corruption	World Governance Indicators
Left-wing	The dummy variable which equals 1 if the incumbent government is characterized as left-wing and 0 otherwise	DPI
Democracy	The index (polity2) measures overall level of democracy. The index varies between -10 (hereditary monarchy) and 10 (consolidated democracy), with higher values indicating higher levels of democracy	POLITY IV

Source(s): Authors' own work

characteristics, population growth (*Population growth*) is included as it is associated with a greater burden on the government budget (Holcombe and Williams, 2008; Nguyen *et al.*, 2021). Median age (*Median age*) is also considered because an aging population is associated with higher demand for social welfare (McManus, 2019; Nguyen *et al.*, 2022a). Similarly, we account for the unemployment rate (*Unemployment rate*) because governments have to increase spending on social protections at higher levels of unemployment.

Regarding macroeconomic controllers, we also include GDP growth (*GDP growth*) to account for the business cycle (Nguyen, 2021a). Moreover, higher inflation (Inflation) discourages governments from spending as it exacerbates inflation problems (Brender and Drazen, 2013). Government debt (*Government debt*) is a greater debt burden that could prevent a government from increasing total expenditure. Tax revenue (*Tax revenue*)

Variable	Obs	Mean	Std. dev	Min	Max
Expenditure	1,441	25.93	11.80	6.69	102.25
Public services	1,116	6.44	4.02	1.17	32.08
Economic affairs	1,125	4.59	2.97	0.53	19.11
Social welfare	1,227	10.98	7.05	0.52	31.24
Pre-election	1,441	0.20	0.40	0	1
Election	1,441	0.21	0.41	0	1
Post-election	1,411	0.21	0.41	0	1
Population growth	1,441	1.34	1.23	−1.73	6.05
Median age	1,441	25.32	7.37	13.59	43.53
Unemployment rate	1,441	7.95	5.96	0.52	30.69
Inflation	1,441	10.11	24.01	−2.92	432.79
Government debt	1,441	48.63	33.53	2.95	215.97
GDP growth	1,441	2.89	3.93	−15.04	15.31
Tax revenue	1,441	14.87	5.49	0.04	34.63
Corruption control	1,240	−0.26	0.69	−1.67	1.71
Left-wing	1,111	0.458	0.498	0	1
Democracy	1,335	4.384	5.682	−10	10

Note(s): Ninety-one countries considered in this study include Afghanistan, Albania, Angola, Armenia, Azerbaijan, Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, Bulgaria, Burkina Faso, Burundi, Cabo Verde, Cambodia, Central African Republic, Chile, China, Colombia, Congo Republic, Costa Rica, Cote d'Ivoire, Croatia, Dominican Republic, Egypt, El Salvador, Equatorial Guinea, Ethiopia, Georgia, Ghana, Guatemala, Honduras, Hungary, India, Iran, Jamaica, Jordan, Kazakhstan, Kenya, Korea, Kuwait, Kyrgyz Republic, Lebanon, Liberia, Madagascar, Malaysia, Maldives, Mauritius, Mexico, Moldova, Mongolia, Morocco, Mozambique, Myanmar, Namibia, Nepal, Nicaragua, North Macedonia, Pakistan, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Poland, Romania, Russian Federation, Saudi Arabia, Solomon Islands, South Africa, Sri Lanka, Sudan, Tajikistan, Tanzania, Thailand, Togo, Trinidad and Tobago, Tunisia, Turkiye, Uganda, Ukraine, United Arab Emirates, Uruguay, Vanuatu and Zambia
Source(s): Authors' own work

Table 2.
Descriptive statistics

constitutes another control variable as tax revenue is the fundamental source of government expenditure.

3.3 Methods

To examine the effects of the election cycle on government spending, we employ the following research model:

$$Expenditure_{i,t} = \beta Elections_{i,t} + \delta Controllers_{i,t-1} + \alpha + \tau_t + \varepsilon_{i,t}, \tag{1}$$

where i and t are country and year, respectively. *Expenditure* is the ratio of government expenditure to GDP; *Elections* represents electoral variables (*Pre-election*, *Election* or *Post-election*); *Controllers* is the vector of control variables; α is the constant term; τ_t captures time (year) fixed effects and ε_{it} is the usual error term. Control variables enter lagged one year to alleviate simultaneous and endogeneity issues. As elections vary between countries, we cluster standard errors at the country level throughout this paper. Despite controlling for a range of control variables found in the literature to have an important impact on government spending, our main findings might be driven by omitted variables. To check for the sensitivity of our findings, we also use two-way clustering standard errors at both country and year levels and control for country-fixed effects, a point to which we return later in Section 4.8. Besides, we also employ a two-step system generalized methods of moments (GMM) model in Section 5 to alleviate endogeneity concerns.

4. Results and discussions

This section examines the effects of the election cycle (*Pre-election*, *Election* and *Post-election*) on total government spending. Then we delve into the main compositions of government spending, including economic affairs, public services and social welfare. Then we explore the conditioning effects of control of corruption on the relationship between the election cycle and government spending. Finally, we use different clusters of standard errors to check for the sensitivity of our findings.

4.1 The election cycle and government spending

Table 3 reports our baseline results on the effects of the election cycle on government spending using a pooled ordinary least squares (OLS) model. Turning to the main novelty of this study, the hypothesis that incumbents increase government spending before elections (*Hypothesis* H1a) receives clear empirical support [3]. In particular, the coefficient on *Pre-election* is positive and statistically significant (at more than 99% confidence level), indicating that incumbent governments appear to increase government expenditure one year ahead of an election. Economically, the year before an election is associated with a 1.75% increase in government spending over GDP, *ceteris paribus*. The finding is consistent with the classic political budget cycle theory (Nordhaus, 1975; Rogoff, 1990) and well-established empirical findings provided in the literature (see, for example, Veiga and Veiga, 2007; Lewis, 2018).

	(1)	(2)	(3)	(4)
Pre-election	1.753***			1.613***
	(0.639)			(0.524)
Election		1.044***		1.276***
		(0.353)		(0.462)
Post-election			−1.226**	−1.280**
			(0.578)	(0.598)
Population growth ($t-1$)	1.388*	1.384*	1.375*	1.312*
	(0.772)	(0.771)	(0.774)	(0.776)
Median age ($t-1$)	0.606***	0.605***	0.604***	0.602***
	(0.196)	(0.197)	(0.197)	(0.196)
Unemployment rate ($t-1$)	0.483***	0.483***	0.483***	0.483***
	(0.167)	(0.167)	(0.167)	(0.167)
Inflation ($t-1$)	−0.258***	−0.249***	−0.264***	−0.253***
	(0.0570)	(0.0581)	(0.0569)	(0.0568)
Government debt ($t-1$)	−0.0644***	−0.0860***	−0.0588**	−0.0595**
	(0.0241)	(0.0240)	(0.0240)	(0.0239)
GDP growth ($t-1$)	0.165	0.165	0.163	0.162
	(0.148)	(0.148)	(0.148)	(0.148)
Tax revenue ($t-1$)	0.422**	0.423**	0.422**	0.428**
	(0.188)	(0.187)	(0.188)	(0.186)
Constant	1.863***	1.825***	1.792***	1.816***
	(0.294)	(0.586)	(0.412)	(0.427)
Observations	1,441	1,441	1,441	1,441
Time effects	Yes	Yes	Yes	Yes
Number of countries	91	91	91	91
R-squared	0.286	0.286	0.286	0.289

Note(s): Robust standard errors clustered by country are in parentheses. The dependent variable is the ratio of total government spending to GDP (*Expenditure*). ***, ** and * denote significance at the 1%, 5% and 10% level, respectively
Source(s): Authors' own work

Table 3.
The election cycle and expenditure: baseline results

Generally speaking, incumbents in emerging and developing countries expand fiscal policies before an election to increase their chance of re-election.

Similarly, the coefficient on *Election* in Column 2 shows that incumbent governments also increase government spending during election years, further supporting the political budget cycle theory. However, the magnitude of this effect is smaller than that of *Pre-election*, indicating that governments have more incentive to employ fiscal policy expansion for political purposes in the year before an election. This is not surprising as the effect time lag implies that when fiscal policy is enacted, it takes time for the policy to affect the economy. Thus, incumbent governments may significantly increase spending in the year before an election to account for the effect of time lag and allow voters to recognize the impact of their policies on the economy during the election year.

The political budget cycle theory also implies that governments tend to lower their expenditure after an election to correct unbalances generated before the election (Castro and Martins, 2019). Indeed, *Post-election* is found to have a negative and statistically significant impact on government spending, confirming that governments contract spending after an election. This evidence confirms that political budget cycles exist in emerging and developing countries.

Our control variables provide some further results that are worth highlighting. In line with our conjectures, higher population growth, median age and unemployment rate are associated with higher government spending. A larger debt burden and higher inflation are found to reduce government spending. Not surprisingly, higher tax revenue, which is the primary source of the government budget, enables governments to spend more.

Our analyses do not confine to overall government spending to provide a complete picture of the election cycle and government spending. Instead, we dig deeper into the main compositions of government spending, which include spending on economic affairs, public services and social welfare.

4.2 The election cycle and government spending on economic affairs

Table 4 shows the election cycle's impact on government spending on economic affairs. We find that incumbent governments significantly increase spending on economic affairs in the pre-election and election years, agreeing with those reported that incumbents tend to expand capital spending before elections for electoral advantages (see, for example, Ames, 1977; Klein and Sakurai, 2015; Bonfatti and Forni, 2019). In line with the finding of the baseline model, the coefficient on *Election* is smaller than that of *Pre-election*, suggesting that policy time lags induce incumbent governments to expand spending on economic affairs one year ahead of an election.

Compared to spending on public services and social welfare, a point to which we return in the next subsections, spending on economic affairs appears more important than other sectors. The finding is in line with Shi and Svensson (2006), who suggest that incumbent governments favor spending on economic affairs, particularly public projects with high immediate visibility, such as infrastructure construction, to make inferences about their persistent competence.

Concerning the year after an election, *Post_election* is negatively correlated with spending on economic affairs, suggesting that incumbents reduce spending on economic affairs after an election. This is not surprising as the political budget cycle theory suggests that incumbents should cut public spending after elections to correct imbalances generated by increasing spending before elections (Castro and Martins, 2019).

4.3 Electoral cycle and spending on public services

Table 5 presents the findings on the election cycle's impact on government spending on public services. We continue to find that government spending increases before and during

	(1)	(2)	(3)	(4)
Pre-election	0.970***			0.884***
	(0.281)			(0.272)
Election		0.727***		0.771***
		(0.215)		(0.246)
Post-election			−0.605**	−0.559**
			(0.312)	(0.282)
Population growth $(t-1)$	−0.278**	−0.257**	−0.261**	−0.285**
	(0.138)	(0.126)	(0.128)	(0.122)
Median age $(t-1)$	0.346***	0.345***	0.365***	0.334***
	(0.0974)	(0.0974)	(0.0975)	(0.0974)
Unemployment rate $(t-1)$	−0.0346	−0.0146	−0.0146	−0.0139
	(0.0496)	(0.0496)	(0.0494)	(0.0489)
Inflation $(t-1)$	−0.122***	−0.148***	−0.196***	−0.155**
	(0.0435)	(0.0535)	(0.0612)	(0.0654)
Government debt $(t-1)$	−0.00983*	−0.00991*	−0.00986**	−0.0104*
	(0.00495)	(0.00594)	(0.00495)	(0.00582)
GDP growth $(t-1)$	0.0979**	0.0984**	0.0982**	0.0976**
	(0.0427)	(0.0428)	(0.0427)	(0.0422)
Tax revenue $(t-1)$	0.231***	0.234***	0.230***	0.248***
	(0.0494)	(0.0493)	(0.0493)	(0.0487)
Constant	4.410**	4.409**	4.450**	4.520**
	(2.246)	(2.248)	(2.258)	(2.215)
Observations	1,125	1,125	1,125	1,125
Time effects	Yes	Yes	Yes	Yes
Number of countries	76	76	76	76
R-squared	0.071	0.072	0.073	0.078

Note(s): Robust standard errors clustered by country are in parentheses. The dependent variable is the ratio of government spending on economic affairs to GDP (*Economic affairs*). ***, ** and * denote significance at the 1%, 5% and 10% level, respectively
Source(s): Authors' own work

Table 4.
The election cycle and
economic affairs

an election. Again, spending in election years is smaller than that of the year before, confirming that incumbent governments favor spending in the year before an election to generate electoral advantages. Nevertheless, spending on public services is less pronounced than spending on economic affairs. One explanation is that the main component of spending on public services is public debt transactions, which are periodic and less affected by the political cycle. Besides, we do not find evidence that governments contract spending on public services after an election.

4.4 Electoral cycle and spending on social welfare

Social spending accounts for the largest share of the total government spending. Table 6 displays the election cycle's impact on spending on social welfare, which is measured as the percentage of spending on health, education and social protection to GDP. *Pre-election* enters positive and statistically significant, indicating that governments expand spending on social welfare before elections. The result aligns with the political budget cycle theory, which suggests that governments should increase social spending before an election to placate voters, especially low-income ones (Vergne, 2009; Nguyen *et al.*, 2022a). *Election* appears to increase government spending on social welfare in election years, but its effect is greater than the year before an election. We suggest that spending on social welfare, such as social protections, does not involve policy time lag as in the case of spending on economic affairs

	(1)	(2)	(3)	(4)
Pre-election	0.277***			0.319***
	(0.0567)			(0.0777)
Election		0.120***		0.149***
		(0.0319)		(0.0346)
Post-election			0.162	−0.223
			(0.114)	(0.172)
Population growth $(t-1)$	0.326***	0.329***	0.323***	0.307***
	(0.0882)	(0.0864)	(0.0851)	(0.0821)
Median age $(t-1)$	−0.108**	−0.106**	−0.110**	−0.106**
	(0.0482)	(0.0483)	(0.0481)	(0.0479)
Unemployment rate $(t-1)$	0.0382	0.0379	0.0378	0.0386
	(0.0538)	(0.0538)	(0.0537)	(0.0539)
Inflation $(t-1)$	0.0259	0.0260	0.0261	0.0258
	(0.0160)	(0.0160)	(0.0158)	(0.0157)
Government debt $(t-1)$	0.0357***	0.0357***	0.0357***	0.0354***
	(0.0110)	(0.0109)	(0.0109)	(0.0110)
GDP growth $(t-1)$	−0.0392	−0.0387	−0.0389	−0.0394
	(0.0543)	(0.0544)	(0.0543)	(0.0542)
Tax revenue $(t-1)$	0.158**	0.158**	0.158**	0.159**
	(0.0759)	(0.0760)	(0.0759)	(0.0754)
Constant	4.004***	4.969***	4.014***	3.212
	(1.675)	(1.669)	(1.669)	(2.628)
Observations	1,116	1,116	1,116	1,116
Time effects	Yes	Yes	Yes	Yes
Number of countries	76	76	76	76
R-squared	0.262	0.262	0.262	0.264

Table 5.
The election cycle and general public services

Note(s): Robust standard errors clustered by country are in parentheses. The dependent variable is the ratio of government spending on public services to GDP (*Public services*). ***, ** and * denote significance at the 1%, 5% and 10% level, respectively
Source(s): Authors' own work

since they immediately increase people's disposable income. Thus, governments may favor spending of social expenditure in election years rather than the year before an election. It is similar to spending on economic affairs, where governments reduce social spending in the aftermath of an election to correct imbalances generated before and during election years (Castro and Martins, 2019).

Overall, in line with the political budget cycle theory, our findings provide empirical evidence that government spending increases in the year before an election and in election years, while it reduces in the year after an election. Our findings, however, contrast with some claims that incumbents tend to keep the overall spending stable while generating opportunistic benefits during pre-election periods by changing the allocations of their expenditure (Veiga and Veiga, 2007; Schneider, 2010). One possible reason is that running higher deficits due to the expansion of government spending before an election for electoral advantages could send a negative signal to voters (Schneider, 2010; Klein and Sakurai, 2015; Bonfatti and Forni, 2019). Nevertheless, this relies on the assumption that voters are fully aware of the opportunistic behavior of incumbent governments, which might be possible in some advanced countries. Our sample focuses solely on emerging and developing countries, many of which are new democracies. For this reason, voters – who cannot perfectly observe government expenses and the level of the budget deficit – could assess incumbent governments based on their ability to provide more public goods before elections (Rogoff, 1990).

	(1)	(2)	(3)	(4)
Pre-election	0.620***			0.678***
	(0.113)			(0.149)
Election		0.813***		0.942***
		(0.205)		(0.286)
Post-election			−0.559***	−0.588***
			(0.125)	(0.145)
Population growth $(t-1)$	0.474**	0.469***	0.461***	0.468**
	(0.230)	(0.230)	(0.230)	(0.236)
Median age $(t-1)$	0.529***	0.530***	0.530***	0.577***
	(0.161)	(0.162)	(0.161)	(0.106)
Unemployment rate $(t-1)$	0.129*	0.129*	0.128*	0.184**
	(0.0688)	(0.0687)	(0.0683)	(0.0923)
Inflation $(t-1)$	−0.0155**	−0.0154**	−0.0155**	−0.0156**
	(0.00672)	(0.00672)	(0.00664)	(0.00701)
Government debt $(t-1)$	−0.0128**	−0.0128**	−0.0128**	−0.0128**
	(0.00518)	(0.00517)	(0.00519)	(0.00519)
GDP growth $(t-1)$	−0.0424*	−0.0426*	−0.0428*	−0.0636
	(0.0227)	(0.0227)	(0.0226)	(0.0664)
Tax revenue $(t-1)$	0.159**	0.160**	0.160**	0.195**
	(0.0671)	(0.0671)	(0.0670)	(0.0904)
Constant	−5.038***	−5.134***	−5.132***	−8.881***
	(1.297)	(1.314)	(1.310)	(3.283)
Observations	1,227	1,227	1,227	1,227
Time effects	Yes	Yes	Yes	Yes
Number of countries	83	83	83	83
R-squared	0.560	0.572	0.563	0.583

Note(s): Robust standard errors clustered by country are in parentheses. The dependent variable is the ratio of government spending on social welfare to GDP (*Social welfare*). ***, ** and * denote significance at the 1%, 5% and 10% level, respectively
Source(s): Authors' own work

Table 6.
The election cycle and
social welfare

4.5 The role of control of corruption
Decisions on government spending result from decision-making by politicians who could be motivated mainly by their self-interests. Corrupt politicians may be incentivized to increase government spending to exact large bribes (Mauro, 1998; Vukovic, 2020). However, increasing government expenditure during pre-election and election periods is sensitive as the mainstream political party/leader with the aim to replace the corrupt incumbents could investigate the incumbents' decisions on large expenditures. For example, Pierskalla and Sacks (2018) argue that incumbents may be less incentivized to engage in large government-funded projects and services that can expose them to a politically motivated corruption investigation before and especially during an election. In sharp contrast, some studies suggest that corrupt politicians might not be punished at elections as they can design a system that protects both their rent-seeking behavior and the probability of re-election (Coviello and Gagliarducci, 2017; Vukovic, 2020). Despite ambiguities remaining, little attention has been given to the impact of control of corruption on government spending in times of election. By interacting electoral variables with the level of control of corruption, Table 7 presents the conditioning effects of control of corruption (*Corruption control*) on the relationships between electoral variables and government spending.

Results presented in Table 7 confirm the existence of a strong, positive, statistically significant and robust relationship between election years and government spending. We find negative and significant coefficients of the interaction terms of *Pre-election* and *Election*

	(1)	(2)	(3)
Pre-election	2.131***		
	(0.765)		
Pre-election × Corruption control	−0.420***		
	(0.133)		
Election		1.460***	
		(0.446)	
Election × Corruption control		−0.223***	
		(0.0598)	
Post-election			−1.225**
			(0.597)
Post-election × Corruption control			−1.559
			(1.220)
Corruption control	−0.528**	−0.612**	−0.592**
	(0.249)	(0.300)	(0.281)
Population growth $(t-1)$	2.638***	2.632***	2.618***
	(0.841)	(0.845)	(0.846)
Median age $(t-1)$	0.840***	0.839***	0.838***
	(0.197)	(0.199)	(0.199)
Unemployment rate $(t-1)$	0.523***	0.520***	0.523***
	(0.186)	(0.187)	(0.187)
Inflation $(t-1)$	−0.158***	−0.161***	−0.149***
	(0.0455)	(0.0424)	(0.0510)
Government debt $(t-1)$	−0.0222	−0.0226	−0.0223
	(0.0268)	(0.0272)	(0.0271)
GDP growth $(t-1)$	0.189	0.193	0.191
	(0.161)	(0.164)	(0.162)
Tax revenue $(t-1)$	0.583***	0.576***	0.575***
	(0.189)	(0.192)	(0.192)
Constant	4.75***	5.16***	4.93***
	(1.803)	(1.915)	(1.846)
Observations	1,240	1,240	1,240
Time effects	Yes	Yes	Yes
Number of countries	90	90	90
R-squared	0.341	0.336	0.337

Table 7.
The election cycle and public spending: the role of control of corruption

Note(s): The table reports the conditioning effects of control of corruption (*Corruption control*) on the relationship between the election cycle and government spending. The dependent variable is the ratio of total government expenditure to GDP (*Expenditure*). Standard errors clustered at the country level are in parentheses. ***, ** and * denote significance at the 1%, 5% and 10% level, respectively
Source(s): Authors' own work

with *Corruption Control*, implying that the positive impact of *Pre-election* and *Election* on government spending is weakened in countries that better control corruption issues. One explanation is that better control of corruption could prevent corrupt politicians from exploiting the government budget for private benefits before elections. The argument is supported by Coviello and Gagliarducci (2017) and Vukovic (2020) who argue that corrupt governments spend more before elections as they are less likely to be punished at elections as they can design a system that protects both their rent-seeking behavior.

Our findings confirm the role of control of corruption in alleviating the effects of political budget cycles during election years in emerging and developing countries. Although the impact of *Post-election* on overall government spending remains consistent and significant, the coefficient on interaction term of *Post-election* with *Corruption Control* failed to develop a significant coefficient.

4.6 The role of political ideology

Incumbent governments are heterogeneous as they can pursue opposite economic and social policy orientations. Left-wing governments representing the interest of the middle and lower-class constituents tend to favor a more generous welfare state and lower unemployment (McManus, 2019). They also pursue higher government spending and taxes (Hibbs, 1977; Nguyen *et al.*, 2022b). By contrast, right-wing governments drawing support from middle- and upper-class societal groups traditionally favor lean welfare states, smaller government spending, balanced budgets and lower taxes and inflation (Castro and Martins, 2019; Nguyen *et al.*, 2020; McManus, 2019). Thus, we conjecture that left-wing governments may spend more during elections than right-wing governments. Table 8 explores this dimension by interacting electoral variables with a dummy variable of left-wing government (*Left-wing*). We find that left-wing governments are associated with higher government spending, which

	(1)	(2)	(3)
Pre-election	0.612***		
	(0.220)		
Pre-election × Left-wing	0.356**		
	(0.172)		
Election		1.375**	
		(0.588)	
Election × Left-wing		0.205	
		(0.239)	
Post-election			−0.601***
			(0.231)
Post-election × Left-wing			0.704
			(0.818)
Left-wing	2.654**	2.433**	2.410**
	(1.164)	(1.116)	(1.104)
Population growth $(t-1)$	1.372***	1.376***	1.379***
	(0.441)	(0.435)	(0.431)
Median age $(t-1)$	0.766***	0.765***	0.765***
	(0.222)	(0.222)	(0.222)
Unemployment rate $(t-1)$	0.349**	0.348**	0.348**
	(0.132)	(0.132)	(0.132)
Inflation $(t-1)$	−0.0114	−0.0116	−0.0117
	(0.0138)	(0.0139)	(0.0141)
Government debt $(t-1)$	−0.0200	−0.0200	−0.0201
	(0.0258)	(0.0257)	(0.0257)
GDP growth $(t-1)$	0.0773	0.0770	0.0804
	(0.106)	(0.107)	(0.107)
Tax revenue $(t-1)$	0.667***	0.668***	0.669***
	(0.162)	(0.162)	(0.162)
Constant	3.59	3.55	3.60
	(2.610)	(2.568)	(2.558)
Observations	1,111	1,111	1,111
Time effects	Yes	Yes	Yes
Number of countries	75	75	75
R-squared	0.411	0.411	0.411

Note(s): The table reports the conditioning effects of left-wing government (*Left-wing*) on the relationship between the election cycle and government spending. The dependent variable is the ratio of total government expenditure to GDP (*Expenditure*). Standard errors clustered at the country level are in parentheses. ***, ** and * denote significance at the 1%, 5% and 10% level, respectively
Source(s): Authors' own work

Table 8.
The election cycle and public spending: the role of political ideology

supports the extensive literature on partisan models of government expenditure (Magkonis *et al.*, 2021).

The interaction term in Column 1 of Table 8 indicates that the positive impact of *Pre-election* on government spending is strengthened when left-wing governments stay in office. The finding implies that left-wing governments increase their spending in the year before an election by a higher amount than right-wing governments, which is consistent with Veiga and Veiga (2007). As governments tend to pursue core policy orientation and party cohesion (Sacchi and Roh, 2016), right-wing governments may have less motivation to expand government spending before an election than left-wing governments aggressively. Nevertheless, we do not find evidence that left-wing governments have an essential impact on government spending in the election year and the year after an election.

4.7 The role of democracy

The political budget cycle theory suggests that incumbent governments act opportunistically to increase the chance of re-election (Nordhaus, 1975; Alesina *et al.*, 1997). This theory relies on the political-market imperfections, which implies that opportunistic behavior exists due to information asymmetries between incumbent governments and voters (Vergne, 2009). In particular, due to information asymmetries, voters tend to rely on observed information about government spending before an election to make inferences about the persistence of incumbents' competence over time (Shi and Svensson, 2006). However, opportunistic behavior could be less pronounced in more democratic countries. Democracy, by promoting political competition, helps to alleviate adverse selection phenomena and asymmetry information (Rogoff, 1990; Vergne, 2009).

Moreover, in more democratic countries, voters are more fiscal conservations (Peltzman, 1992). They are aware of manipulated fiscal policies and punish incumbents for higher deficits and spending before an election (Peltzman, 1992; Brender and Drazen, 2008). These arguments lead us to conjecture that democracy may alleviate the effects of political budget cycles.

Using data for the level of democracy from the Polity IV database, we interact democracy (*Democracy*) with electoral variables. Table 9 shows that the effects of *Pre-election* and *Election* on government spending become smaller at higher levels of democracy, firmly confirming that democracy reduces opportunistic behavior before and during election years.

4.8 Alternative clustering standard errors

As election variables vary between countries, standard errors are clustered at the country level throughout this paper. To ease any concern that our findings are sensitive to changes in underlying structures of standard errors, in Table 10, we employ two-way clustering standard errors at both country and year. We also account for country-fixed effects, which helps to control for unobserved time-invariant differences between countries, such as public policies, institutions and culture. In general, we find that the effects of electoral variables on government spending are consistent with the results of the baseline models, firmly indicating that our results are robust to more complex structures of standard errors and inclusion of country-fixed effects.

5. Addressing endogeneity concerns

There might be concerns that our findings presented so far suffer from serious endogeneity problems. It is worth stressing that election variables are less likely to be influenced by endogeneity issues as they are predetermined and well distributed based on the chief executive's term. Thus, election years are generally exogenous political events (Kaviani *et al.*,

	(1)	(2)	(3)
Pre-election	1.007***		
	(0.368)		
Pre-election × Democracy	−0.234**		
	(0.0961)		
Election		0.637**	
		(0.311)	
Election × Democracy		−0.255**	
		(0.124)	
Post-election			−1.067**
			(0.499)
Post-election × Democracy			0.176
			(0.135)
Democracy	−0.602***	−0.601***	−0.589***
	(0.164)	(0.152)	(0.150)
Population growth $(t-1)$	0.628**	0.624**	0.635**
	(0.278)	(0.267)	(0.274)
Median age $(t-1)$	0.634***	0.633***	0.635***
	(0.188)	(0.187)	(0.187)
Unemployment rate $(t-1)$	0.441**	0.440**	0.440**
	(0.173)	(0.173)	(0.173)
Inflation $(t-1)$	−0.150***	−0.151***	−0.143***
	(0.0431)	(0.0431)	(0.0434)
Government debt $(t-1)$	−0.0438**	−0.0486**	−0.0468**
	(0.0218)	(0.0217)	(0.0218)
GDP growth $(t-1)$	0.0235	0.0211	0.0193
	(0.141)	(0.140)	(0.142)
Tax revenue $(t-1)$	0.626***	0.627***	0.628***
	(0.180)	(0.180)	(0.180)
Constant	−0.775	−0.807	−1.003
	(6.811)	(6.734)	(6.699)
Observations	1,335	1,335	1,335
Time effects	Yes	Yes	Yes
Number of countries	86	86	86
R-squared	0.375	0.376	0.375

Note(s): The table reports the conditioning effects of democracy (*Democracy*) on the relationship between the election cycle and government spending. The dependent variable is the ratio of total government expenditure to GDP (*Expenditure*). Standard errors clustered at the country level are in parentheses. ***, ** and * denote significance at the 1%, 5% and 10% level, respectively
Source(s): Authors' own work

Table 9.
The election cycle and
public spending: the
role of democracy

2020). Moreover, as far as we are concerned, no previous study provides theoretical or empirical evidence on the reverse relationship between government expenditure and the election cycle.

However, government expenditure could persist over time, indicating that not including the lagged dependent variable in our regressions could result in omitted variable bias (Nguyen, 2021b). Nevertheless, the inclusion of the lagged dependent variable will mislead OLS estimates due to the correlation between the lagged dependent variable and the error term (Baltagi, 2013; Bermpei *et al.*, 2018). For this reason, we employ a two-step system GMM model proposed by Arellano and Bover (1995) and Blundel and Bond (1998). In our GMM setting, we treat only lagged dependent variables and election variables as endogeneity as they are our main variables of interest. Control variables enter our regressions lagged one

	(1)	(2)	(3)
Pre-election	1.255***		
	(0.387)		
Election		0.832***	
		(0.256)	
Post-election			−0.918***
			(0.345)
Population growth ($t − 1$)	0.858***	0.895***	0.828***
	(0.250)	(0.244)	(0.247)
Median age ($t − 1$)	0.697***	0.698***	0.699***
	(0.166)	(0.166)	(0.167)
Unemployment rate ($t − 1$)	0.181**	0.181**	0.180**
	(0.0877)	(0.0880)	(0.0875)
Inflation ($t − 1$)	−0.180**	−0.0181**	−0.0183**
	(0.0818)	(0.00832)	(0.00823)
Government debt ($t − 1$)	−0.0886***	−0.0885***	−0.0885***
	(0.0234)	(0.0234)	(0.0234)
GDP growth ($t − 1$)	−0.0117	−0.0114	−0.0112
	(0.0490)	(0.0487)	(0.0488)
Tax revenue ($t − 1$)	0.355***	0.355***	0.356***
	(0.0916)	(0.0913)	(0.0912)
Constant	2.523	2.515	2.451
	(3.236)	(3.102)	(3.122)
Observations	1,440	1,440	1,440
Time effects	Yes	Yes	Yes
Country effects	Yes	Yes	Yes
Number of countries	91	91	91
R-squared	0.824	0.824	0.824
Cluster levels	Country and year	Country and year	Country and year

Table 10.
The election cycle and
expenditure:
alternative clustering
standard errors

Note(s): Robust standard errors clustered by country and year are in parentheses. The dependent variable is the ratio of total government expenditure to GDP (*Expenditure*). ***, ** and * denote significance at the 1%, 5% and 10% level, respectively
Source(s): Authors' own work

year to alleviate endogeneity. We treat control variables as exogenous to reduce the number of instruments and avoid the problems of too many instruments.

Table 11 presents our results using the GMM approach. The lagged dependent variable enters statistically significant at the 1% level in all models, confirming the necessity to account for dynamic effects. Since Hansen and Arellano-Bond autocorrelation tests never reject the validity of our instruments used, it is safe to assume that our GMM estimates are valid. The positive and significant coefficients on *Pre-election* and *Election* confirm the political budget cycles and our evidence presented above. Similarly, we continue to find that governments reduce their spending in the year after an election. The magnitude of coefficients on election variables and control variables do not change much in comparison with those presented in our baseline models, suggesting that endogeneity and omitted variable bias do not significantly influence our main findings.

6. Conclusion
This study contributes to the literature by exploring the political budget cycles in emerging and developing countries. We find that incumbent governments act opportunistically before and during an election by increasing government spending to generate nomination benefits,

	(1)	(2)	(3)
L.Expenditure	0.757***	0.758***	0.787***
	(0.0831)	(0.0799)	(0.0804)
Pre-election	1.672**		
	(0.521)		
Election		1.105***	
		(0.326)	
Post-election			−1.331***
			(0.373)
Population growth (t − 1)	0.477**	0.598***	0.572**
	(0.192)	(0.232)	(0.240)
Median age (t − 1)	0.173**	0.185**	0.167**
	(0.0735)	(0.0731)	(0.0675)
Unemployment rate (t − 1)	0.101**	0.109**	0.0967**
	(0.0457)	(0.0477)	(0.0482)
Inflation (t − 1)	−0.144***	−0.163***	−0.175***
	(0.0341)	(0.0461)	(0.0533)
Government debt (t − 1)	0.00228	−0.00131	−0.000708
	(0.00601)	(0.00591)	(0.00581)
GDP growth (t − 1)	0.153**	0.136**	0.144**
	(0.0649)	(0.0681)	(0.0675)
Tax revenue (t − 1)	0.518***	0.542***	0.522***
	(0.142)	(0.153)	(0.129)
Constant	3.659***	3.873***	3.029**
	(1.337)	(1.510)	(1.441)
Observations	1,419	1,419	1,419
Time effects	Yes	Yes	Yes
Number of countries	91	91	91
Number of instruments	67	67	67
AR(2)	0.174	0.186	0.193
Hansen J	0.474	0.483	0.425

Note(s): Robust standard errors are in parentheses. The dependent variable is the ratio of total government expenditure to GDP (*Expenditure*). Time effects in our GMM setting is time trend, which is captured by a *trend* variable that begins in 1991 and increases by one in each of subsequent years for each country. We also use time trend instead of time-fixed effects to lower the number of instruments in our GMM estimations. ***, ** and * denote significance at the 1%, 5% and 10% level, respectively
Source(s): Authors' own work

Table 11.
The election cycle and
government spending:
GMM model

confirming the existence of the political budget cycles in emerging and developing economies. In particular, incumbents increase spending – especially spending on economic affairs – in the year before an election. At the same time, they contract spending in the year after an election to correct imbalances generated before. These findings are robust to alternative clustering standard errors and endogeneity problems.

Given that opportunistic behavior results in some negative effects, as they are driven by political purposes rather than social welfare, our findings suggest that policymakers in emerging and developing countries should be aware of the opportunistic behavior of incumbent governments during an election cycle. Besides, the presence of right-wing governments and promoting control of corruption and democracy are useful to alleviate the effects of the political budget cycles.

Due to the availability of data for elections, we do not account for legislative and do not differentiate between scheduled and unscheduled elections. Future research should explore these dimensions to provide a more complete picture of political budget cycles.

Notes

1. The list of countries considered in this study is provided at the footnote of Table 2.

2. Results are not reported here but are available upon request.

3. Our findings remain consistent when we use the annual growth rate of government spending instead of the level of government spending. The results are not reported here but are available upon request.

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Appendix

Afghanistan	Cabo Verde	Guatemala	Mexico	Russian Federation
Albania	Cambodia	Honduras	Moldova	Saudi Arabia
Angola	Cameroon	Hungary	Mongolia	Solomon Islands
Armenia	Central African Republic	India	Morocco	South Africa
Azerbaijan	Chile	Iran	Mozambique	Sri Lanka
Bahamas	China	Jamaica	Myanmar	Sudan
Bahrain	Colombia	Jordan	Namibia	Tajikistan
Bangladesh	Congo Republic	Kazakhstan	Nepal	Tanzania
Barbados	Costa Rica	Kenya	Nicaragua	Thailand
Belarus	Cote d'Ivoire	Korea	North Macedonia	Togo
Bhutan	Croatia	Kuwait	Pakistan	Trinidad and Tobago
Bolivia	Dominican Republic	Kyrgyz Republic	Panama	Tunisia
Bosnia and Herzegovina	Egypt	Lebanon	Papua New Guinea	Turkiye
Botswana	El Salvador	Liberia	Paraguay	Uganda
Brazil	Equatorial Guinea	Madagascar	Peru	Ukraine
Bulgaria	Ethiopia	Malaysia	Philippines	United Arab Emirates
Burkina Faso	Georgia	Maldives	Poland	Uruguay
Burundi	Ghana	Mauritius	Romania	Vanuatu
				Zambia

Table A1.
List of countries

Source(s): Authors' own work

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Expenditure	(1)	1													
Public services	(2)	0.36	1												
Economic affairs	(3)	0.53	0.05	1											
Social welfare	(4)	0.77	0.00	0.22	1										
Pre-election	(5)	0.01	−0.05	−0.02	0.03	1									
Election	(6)	0.00	−0.04	−0.02	0.04	−0.18	1								
Post-election	(7)	−0.01	−0.04	−0.04	0.03	−0.22	−0.19	1							
Population	(8)	−0.30	0.17	−0.07	−0.54	−0.05	−0.07	−0.08	1						
Median age	(9)	0.39	−0.18	0.08	0.68	0.04	0.06	0.05	−0.78	1					
Unemployment rate	(10)	0.36	0.17	−0.03	0.32	0.03	0.02	0.01	−0.12	0.09	1				
Inflation	(11)	0.02	0.23	−0.06	−0.01	−0.03	−0.03	0.03	−0.02	−0.05	0.04	1			
Government debt	(12)	−0.04	0.38	−0.16	−0.13	−0.04	−0.07	−0.03	0.16	−0.17	0.10	0.14	1		
GDP growth	(13)	0.03	−0.17	0.15	0.03	0.02	0.02	−0.01	−0.23	0.15	−0.10	−0.15	−0.14	1	
Tax revenue	(14)	0.40	0.19	0.06	0.48	0.04	0.05	0.03	−0.28	0.29	0.31	0.06	0.01	−0.05	1

Source(s): Authors' own work

Table A2.
Correlation matrix

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