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Article

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GENERAL & APPLIED ECONOMICS | RESEARCH ARTICLE

Estimating the modulating role of economic development on the effect of elections on government expenditure in Africa

Serebour Quaicoe^{1*}

Abstract: The study contributes to the political economy debate in Africa by examining the extent to which economic development mediates the effect of elections on government expenditure. To this end, the study employs macrodata spanning 1985–2015 on 43 African countries for the analysis. Robust evidence from the system GMM estimator shows that: (1) election periods significantly induce government expenditure in Africa, and (2) economic development is significant in reducing the use of fiscal surprise in election periods. Policy recommendations are provided in the end.

Subjects: Development Studies; Politics & Development; Economics and Development; Economics; Political Economy

Keywords: Africa; Budget Cycle Hypothesis; Democracy; Economic Development; Election; Election Burden; Government Expenditure

1. Introduction

The fundamental goal of every economy is to achieve and sustain high rates of economic growth (Ofori & Grechyna, 2021; Peprah et al., 2019). This is directly linked with the need to expand the capabilities of a country's citizens or create a congenial environment for the realisation of these

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PUBLIC INTEREST STATEMENT

Despite the growing concern that incumbent governments in the developing world use fiscal surprise during election periods to boost their chances of holding on to power, a conspicuous lacuna in the political and development literature is that empirical work(s) exploring the claim in the case of Africa is(are) hard to find. This basically forms the motivation for this study. First, the study examines the effect of elections on government expenditure in Africa. Second, the study investigates the extent to which economic development mediates the effect of elections on government expenditure in Africa. To this end, the study draws on data from the World Bank's World Development Indicators on 43 African countries for the analysis. The study provides evidence from the dynamic system GMM estimation to show that: (1) election periods significantly induce government expenditure in Africa, and (2) economic development is significant in reducing the use of fiscal surprise in election periods.

capabilities (Ofori & Asongu, 2021a; 2021b; Sen, 2000). Chief of those capabilities is freedom. As Sen (2000) argues, freedom, key of which is political freedom, is on the one hand, an important driver of development and on the other hand, a major development outcome. It is in this regard that Elections have long been recognised as one of the preferred means through which people can satisfy/exercise their freedoms. In Africa, elections have taken deep roots in most economies and the necessary systems and structures that support their successful conduct are being strengthened (Ebeke & Ölçer, 2013). Several reforms have also been carried out, all aimed at helping the citizens choose their leaders in a manner that expresses their wishes and aspirations. Evidence of these is the establishment of many independent national electoral commissions who are mandated by their constitutions to administer and manage free, fair and credible elections. The voting processes have also been improved upon in many African countries.

Over the last three decades, the democratic reforms embarked upon in many African countries have led to the successful transition of many countries from one-party, military and autocratic rule to multiparty democracy (Van De Walle, 2000). At the heart of democratic transitions is the holding of periodic multiparty elections. Since the re-emergence of democratic systems in Africa in 1989, Africans have used elections as the main means of choosing leaders to represent them at all levels (Gyampo, 2009). At the same time, Africans have also used elections to change from one government to another. Between 1990 and 1998, some 70 parliamentary elections involving at least two parties were convened in 42 out of the 48 countries (Van De Walle, 2000). In addition, there were over 60 presidential elections with more than one candidate during this time. As of 1998, 26 countries had convened second elections, usually on schedule, i.e., at the end of the constitutionally fixed term of officeholders elected during the first elections (Van De Walle, 2000). Elections in Africa have thus become a powerful tool for accountability, democracy and ultimately human development.

Vergne (2009) argues that elections prompt accountability in two ways. In one breath, elections provide political competition and help governments to be more efficient by alleviating the moral hazard issue or mitigating the adverse selection phenomenon. By weeding out incompetent politicians and giving those in power an incentive to put in the effort, elections are believed to provide suitable incentives for efficient governance. The accountability effect indicates that elections affect the incentives facing politicians. The anticipation of not being re-elected in the future incentivizes elected officials not to shirk their obligations to the voters in the present (Barro, 1973; Ferejohn & Kuklinski, 1990; Manin, 1997). In this view, elections are seen as a sanctioning device that induces elected officials to act in the best interest of the people. However, one important condition that affects political accountability is the competitive electoral mechanisms and at the core of the electoral mechanism is the vote. The vote is the primary tool for citizens to make their governments accountable. If a large fraction of citizens do not express their opinions, elections would create no incentives for politicians to espouse or implement policies in the public interest (Rogoff, 1990).

While election is a reliable barometer of the democratic experience of a country, the very survival of a democratic government is largely influenced by incumbent political party financing which is also known in the literature as electorally motivated expenditure cycles (Enkelmann & Leibrecht, 2013). A common phenomenon in young democracies like those of Africa is the inclination of incumbent governments to resort to fiscal surprise or manipulate public policy to increase their chances of re-election (Vergne, 2009). The extant literature suggests that the overall change in expenditure composition is higher in newly democratised countries than in advanced democracies. More so, expenditure composition in election years is usually larger than non-election years in established democracies (Enkelmann & Leibrecht, 2013). Evidence gathered by Drazen and Eslava (2010) suggests that, in their attempt to remain in office, the elected government officials in the Columbian municipalities tend to increase visible expenditures on housing, health, water and energy to target voters (Enkelmann & Leibrecht, 2013). Similarly, Stasavage (2005) reckons that the need to obtain an electoral majority may have influenced African governments to spend more on education and to prioritize primary schools over universities within the education budget. The study further shows that democratically elected

African governments spend more on primary education, while spending on universities appears unaffected by democratisation.

Further, a theoretical argument in favour of the opportunistic policymaking suggests that since voters do not take into account the government's intertemporal budget constraint, opportunistic policymakers take advantage of voters and use budget deficits to increase their chances of re-election (Chiminya & Nicolaidou, 2015). More importantly, because voters are known to overestimate the benefits of current expenditure and underestimate future tax burden, opportunistic politicians who seek to be re-elected take advantage of voters by increasing spending more than taxes in pre-election periods to please voters (Chiminya & Nicolaidou, 2015). Instead of focusing on overall government expenditure, studies such as Katsimi and Sarantides (2012), Aregbeyen and Akpan (2013), and Enkelmann and Leibrecht (2013) have assessed the effects of elections on disaggregated components (current and capital) of government expenditure. Though such disaggregated analyses provide much information on the distribution of government spending and enhance the design of policies to minimise the political budget cycle, not much is known of how economic development mediates the effect of election-related fiscal surprise on government expenditure.

Indeed, existing studies on the election-budget cycle phenomenon have been on how economic development plausibly enhances or constrains the effect of elections on government expenditure. The study hypothesizes that, in relatively developed countries with good infrastructure, highly educated and politically discerning populace, the incumbent government will not be compelled to employ fiscal surprise as instrument to solicit for votes in election years. That is, regardless of the fierceness of the electoral contest, the government may not resort to fiscal surprise as such attempts may result in them losing the elections (i.e., being punished by the electorates). This in essence, enables governments to free up fiscal space and, for example, shift some resources for redistribution or debt repayment. From the foregoing arguments, the study contributes to the debate on the electoral budget cycle hypothesis by testing two hypotheses. First, this study tests whether elections have a significant positive effects on government expenditure in Africa. Second, this study tests whether economic development interacts with elections to reduce government expenditure in election periods.

The rest of the paper is organized as follows: the next section presents theories and empirical works on elections and election-induced government expenditure. Section 3 outlines the methods used for the paper. We present our results and discussion in section 4, and that of our conclusion and policy recommendations in Section 5.

2. Literature review

2.1. Political budget cycle theory

The theoretical foundation of this study is the political budget cycle theory. The political budget cycle (PBC) is the periodic fluctuation in fiscal policies, induced by the cyclicity of elections (Shi & Svensson, 2002). In democratic systems, once every few years, political agents face elections. For the incumbent governments, these elections determine whether they remain in office or not (Klien, 2014). The people's representatives in democratic system have to renew their legitimacy through elections (Vergne, 2009). The electoral pressures associated with this requirement may lead politicians to manipulate fiscal policies to increase their chances of re-election. That is, in the remit of PBC, the intention of incumbent governments is to secure re-election by maximizing his/her expected votes in the next election (Nordhaus, 1975). The theory assumes that the electorates are backward-looking and evaluate the government based on its past track record. This implies that, governments, regardless of ideological orientation, adopt expansionary fiscal policies prior to elections to stimulate the economy and enhance their chances of re-election (Potrafke, 2012).

The PBC theory has evolved in stages over the years. The first stage in the development of the PBC theory is the traditional or opportunistic budget cycle theory developed by Nordhaus (1975).

This theory posits that politicians' primary goal is to maximize their probability of retaining political office. Hence, to improve their re-election chances, incumbents attempt to stimulate the economy, implementing overly expansive macroeconomic policies before an election. After an election, these policies produce unemployment, high budget deficits, high inflation and low economic growth. The opportunistic PBC theory thus anticipates wide fluctuations in economic growth, unemployment and inflation around elections.

The traditional PBC theory characterises politicians as identical and opportunistic, meaning that their only preference is to remain in power. In the remit of the PBC theory, voters are seen as myopic and naïve (i.e., having adaptive expectations and thus voting retrospectively), and are mostly swayed into voting for incumbents when times are good before the election (Block, 2002). The traditional PBC theory also predicts that monetary and fiscal policies will be expansionary before elections and contractionary after elections. In addition, the opportunistic PBC theory predicts that inflation may decrease before elections but will increase after elections. Also worthy of mention in the first phase of the literature is the partisan model of political business cycle introduced by Hibbs (1977) championed Hibbs (1977) criticised the assumption in the earlier models that portrays politicians as purely opportunistic and that their only motive is to remain in power.

According to the partisan model, political parties represent competing constituencies and ideologies, and when in office, follow policies that are favourable to their supporting groups. For example, right-wing parties traditionally emphasise low inflation, while left-wing parties traditionally prefer low unemployment. Presuming a standard short-run, Phillips curve trade-off between inflation and unemployment, the Hibbs model predicts that right-wing governments will lower inflation rates at the expense of higher rates of unemployment and lower growth. In contrast, left-wing governments will tend to favour employment and higher growth at the expense of inflation. Thus, the traditional partisan models indicate that incumbents again, use economic policy to garner voter support, but based on their partisan political orientation, they will prefer economic policies with different emphases to accomplish this end.

The second stage in the development of the literature on PBC is the incorporation of rational expectations (see Rogoff & Sibert, 1988; Rogoff, 1990). In the realms of rational expectations, information asymmetries between politicians and voters take centre stage in explaining electoral cycles. The basic tenet of this version of PBC is that incumbent governments exploit his information advantage to assess their chances before elections. For instance, in the moral hazard model of political competition of Shi and Svensson (2002), politicians may behave opportunistically even if some voters are aware of planned fiscal policies. In this case, the larger the number of voters that fail (ex-ante) to distinguish pre-electoral manipulations from incumbent competence, the more incumbent profits from boosting expenditures before an election. Alt and Lassen (2006) point out that this is usually the case in young democracies where transparency is a challenge.

An important feature of the rational opportunistic political budget cycles model is the presence of uncertainty regarding the policymakers' competence. In this environment, the incumbent has an incentive to manipulate fiscal instruments. Rosenberg (1992) shows that in election periods, the incumbent, who is uncertain about the electoral outcome, may increase expenditure targeted to activities that will raise his employment prospects in case he is not re-elected. In general, rational PBC models predict a negative electoral impact on taxation. However, aggregate public spending may rise in the election period, as the incumbent will have an incentive to increase expenditures financed by a deficit observed by voters in the post-election period but it may also fall, as the rise in the incumbent's level of effort will limit wasteful public spending (Besley & Case, 1995).

Another theoretical perspective focuses on the economic determinants of electoral outcomes. In their review of economic voting literature, Lewis-Beck and Stegmaier (2000) conclude that economics and elections are intertwined, stressing that all in democratic nations that have received considerable

attention, some economic indicators, objective or subjective, can be shown to account for much of the variance in governments' support. Brender and Drazen (2005) provide three reasons why expansionary fiscal policies in a pre-election year may lead to a higher re-election probability. Firstly, a fiscal expansion could stimulate economic growth and voters may interpret this as a signal of a good governance. Secondly, government expenditures for special target groups (e.g., the vulnerable in-society) may increase the number of votes given by this group for the incumbent. Finally, voters may simply prefer low taxes and high spending and reward politicians who deliver these.

2.2. The relationship between election and government expenditure

The significance of election is seen in its role for deepening democracy, maintaining peace and promoting human rights. Political and Development scientists consider election as the most dignified means through which leaders or representatives are appointed (Sen, 2000). Elections present citizens with equal opportunity to actively participate in the choice and decision-making. In both developed and developing countries, individuals and political parties are pursuing political power through the use of legal and illegal means. Chief among these means is the use of monetary or fiscal policy surprise to convince the electorates for votes. Despite their relevance in promoting human rights and democracy, elections have been theoretically and empirically proven as major sources of socioeconomic burdens and unfavourable outcomes, usually in developing countries (Drazen & Eslava, 2010; Ehrhart, 2012).

One of such burdens is the public budget cycle which usually occurs when the re-election-minded incumbent has the incentive to manipulate public policy instruments (fiscal policy) to increase their chances of re-election. This partly contributes to policy volatility, which negatively impacts long-term growth, triggering fiscal sustainability concerns and aggregate welfare shocks (Ebeke & Ölçer, 2013). In advanced democracies and economies, studies such as Block (2002), Brender and Drazen (2005), Shi and Svensson (2002), Drazen and Eslava (2010), Ehrhart (2012), Klomp and De Haan (2013), Hallerberg and Von Hagen (1997), and De Haan (2014) find evidence of the election-business cycle. Evidence gleaned from these studies indicate that, in such economies, governments' chances of winning election are not necessarily contingent on their expenditure in the election period but overall performance in several facets of national development. On the flip side, Lindberg (2003), and Alt and Lassen (2006) argue that the electoral successes of governments in less developed countries are mostly tied to their spending on items that will increase their chances of re-election.

Figure 1. Number of Elections by Countries.
 Source, Author's construct, 2021

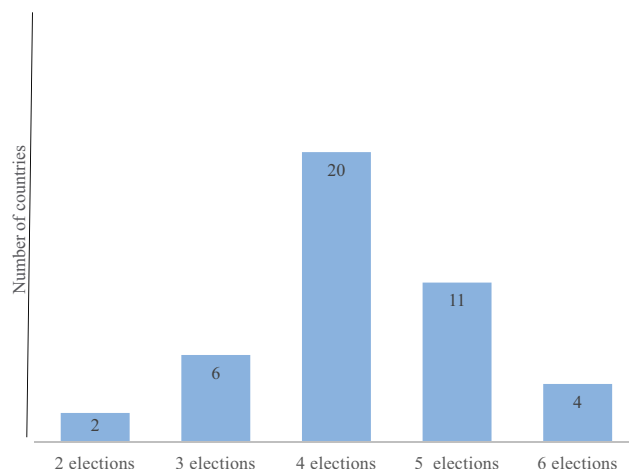


Figure 2. Government Expenditure in Pre-Election and Election Years.

Source, Author's construct, 2021

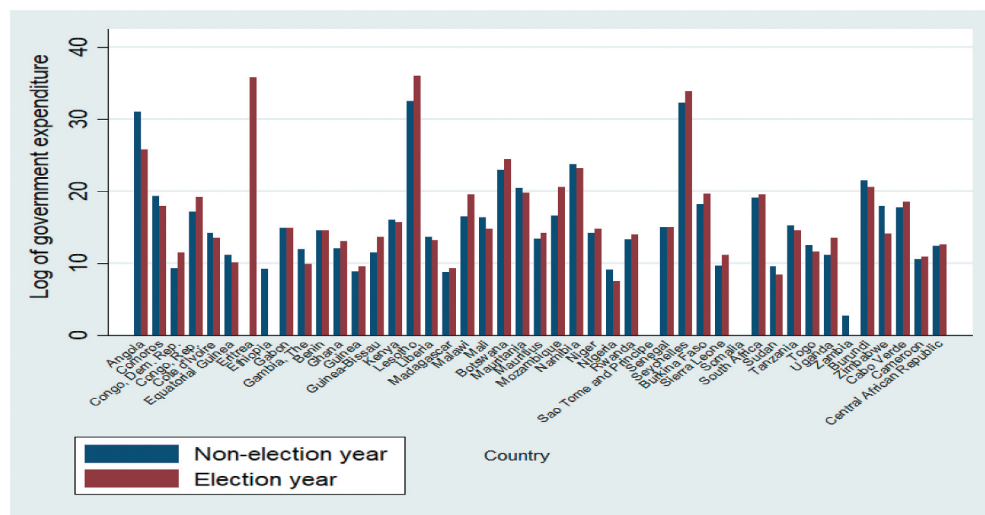
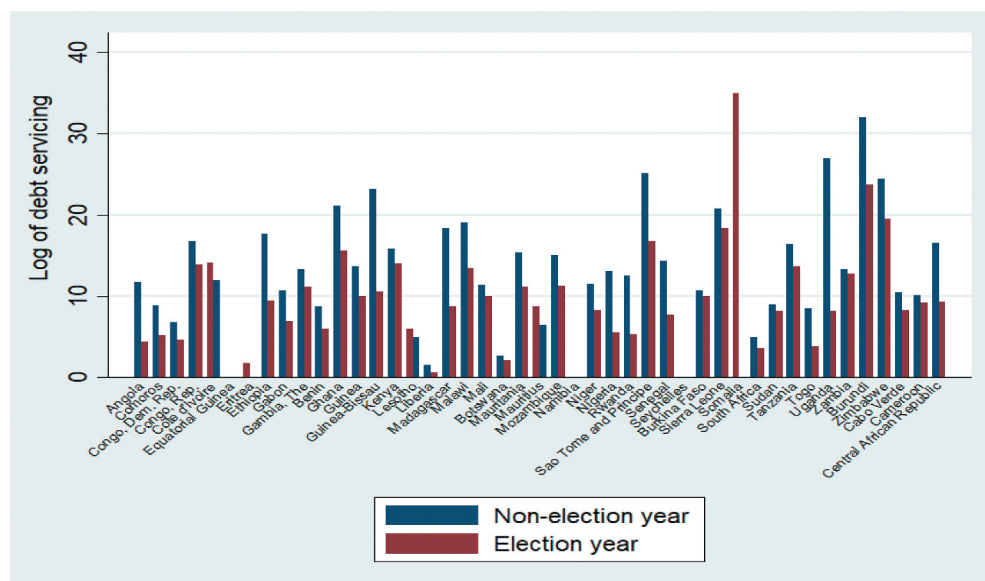


Figure 3. The Distribution of Debt Servicing on Election by Country.

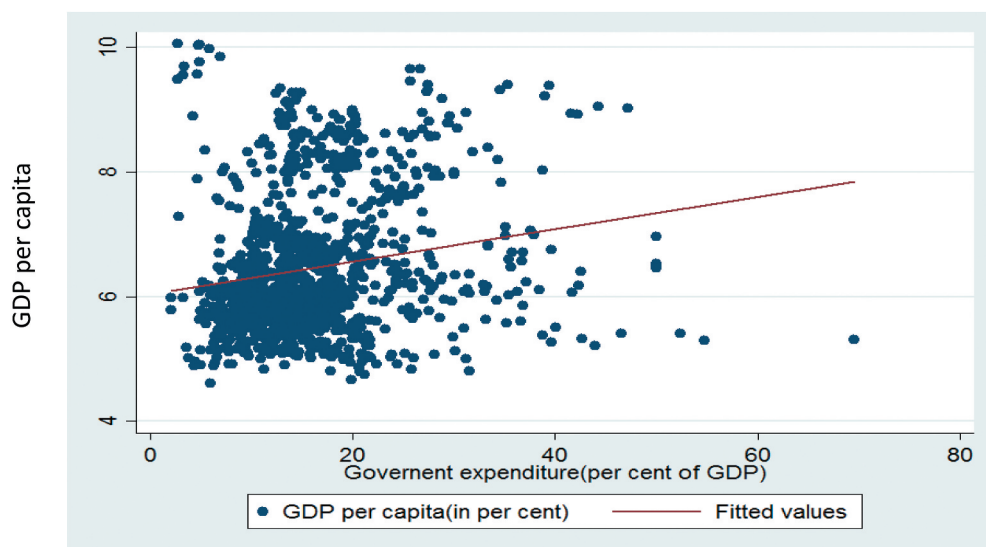
Source: Authors' construct, 2021



To put the study into perspective, the study presents Figure 1 and Figure 2 to show presidential election experiences and government expenditure levels of the countries under study. Particularly, Figure 1 shows that over the three decades under consideration, the number of presidential elections held by Africa countries ranges from 2 to 6. Further, Figure 1 shows that 20 countries have conducted at least four elections while 11 countries have successfully held at least 5 elections. This suggests that many African countries are gaining considerable experience in electoral democracies in recent decades.

At the backdrop of this experience, it is generally expected that governments in Africa do not embark on unintended or unplanned expansionary fiscal policies considering the plausible budget deficits or debt accumulation associated with it (Vergne, 2009).

Figure 4. Government Expenditure and GDP Per Capita.
 Source: Authors' construct, 2021



Next, this study delves into the overview of government expenditure in elections and non-election periods in Africa. Figure 2 shows that, over the study period, countries such as Eritrea, Lesotho and Seychelles experienced the highest percentage of government expenditure, especially in election years as compared to non-election years.

It is also evident that countries such as Ethiopia, Somalia, Sao Tome and Principe and Zambia experienced low government expenditure in both election and non-election periods. This distribution gives an idea of the trend and distribution of government expenditures in the election and non-election years.

Experience in most developing countries has shown that to influence the electoral outcomes, incumbent governments sometimes divert funds meant for productive/investment purposes or debt servicing to the provision of tangible projects in their bid to retain power (Sáez, 2016). This in turn leads to a reduction in debt servicing particularly during election years and further accumulation of public debt. In Figure 3, there is an indication that debt servicing of the majority of the countries is higher in non-election years than election years. In other words, debt servicing is very low in election years in almost all the countries considered in this analysis.

2.3. The link between elections, economic development, and government expenditure

In addition to election, the level of economic development is another measure of wellbeing and a determinant of the extent of government spending both in an election year and non-election year. As presented in Figure 4, there is a positive relationship between economic development proxied by GDP per capita and government expenditure. A high level of GDP per capita is expected to translate into high government revenue and spending through the payment of taxes by the citizens. There is also the argument that higher economic development depicts a growing enlightened populace who cannot be swayed into renewing incumbent governments' mandates because of fiscal surprise. It is therefore expected that economic development suppresses the effects of elections on government expenditure even in young or developing democracies.

The links between election periods, economic development and government expenditure as I show in Sections 2.2 and 2.3, are worth exploring empirically and the next section provides the methods adopted in doing so.

3. Data and Research Methods

3.1. Data, variable measurement and a priori expectation

The study uses macrodata for a sample of 43 African countries over the period 1985–2015 for the analysis. This allowed for the creation of a balanced panel of 1333 country-year observations. It is imperative to point out that the number of countries dropped to 43 because in countries such as Egypt, Morocco, Algeria, Tunisia and Libya, democratic elections are not held consistently. Additionally, countries such as Djibouti, South Sudan, Chad and Swaziland are excluded from the analysis because of limited data. The latter also underscores the choice of the study period. Moreover, some of these countries (for example, Somalia) are recovering from civil unrest and are in the process of strengthening their democracies.

3.1.1. Outcome variable

The dependent variable of interest in this study is general government final consumption expenditure as a percentage of GDP. It is captured as all government current expenditures for the compensation of employees, and purchases of goods and services. It also includes most expenditures on national defence and security but excludes government military expenditures that are part of government capital formation (Ofori, 2021)

3.1.2. Variable of interest

The main variable of interest is elections and it is captured as a dummy, taking on the value 1 if an election was held in a particular country and 0 if otherwise. Theoretical and empirical evidence suggests that governments in developing countries use “fiscal surprise” to influence voters’ decisions during election years. This affects their ability to remain committed to their fiscal obligations including debt servicing. As a result, it is expected that election period/year is positively associated with government expenditure.

3.1.3. Control variables

For our controls, inflation is selected to proxy macroeconomic instability. According to Klomp and De Haan (2013) and Ofori et al. (2021a), inflation affects government receipts and expenditures through nominal progression in tax rates, and tax brackets, and through price indexation of receipts and expenditures. Inflation is captured by the consumer price index. The study also considers unemployment as another covariate because of its direct link with government spending and revenues. Further, dependency ratio is included in the analysis because a higher share of children and elderly calls for increased government spending due to, for example, greater social spending on education and health care. Also, the study looks at the implication of economic development proxied by GDP per capita in the estimation as it signifies growing enlightened populace who will not be influenced by fiscal surprise and hence, low level of government spending in election periods. The variable is measured as GDP divided by population in 2017 constant US dollars (Ofori et al., 2021b). Election year is also binary created for the election and pre-election years.

The other independent variables included in the analysis are the governance system and electoral system. These two covariates are also dichotomous, where 1 denotes the simple majority system against 0 for the proportional State, and 1 for the presidential system as against 0 for the parliamentary system. This follows the argument by Persson and Tabellini (2002) and Klomp and De Haan (2013) that elections may have different effects on fiscal policy under different electoral and governance systems. Per our hypothesized negative effect of economic development on government in election periods, the study includes an interaction term of Gross Domestic Product (GDP) and year of election (election variable) in the models.

3.2. Theoretical model specification

Following Drazen and Eslava (2010), the study uses the signalling model of Rogoff (1990) in addressing the objectives of this study. The model is built on the following principles: (i) two

time periods in the political arena: Period 1 is before an election and period 2 is after an election; and (ii) policy instruments are exogenous with tax (levied in each period) and two public goods. The first good is represented by the variable g_1 is a short-term public good. With this good, voters can see immediately what is being provided while the second good represented by the variable G_2 is a long-term public (investment) good. It is important to indicate that voters cannot see how much is spent in this period until the next period. The third principle is the preferences and conflict of interest which can be looked at in three forms: (a) voters and politicians have the same preferences over public goods; (b) politicians get ego-rent from being in office; and (c) the conflict of interest is not about rents, but about the competency of the politician. In this model, the representative voter's two-period utility can be specified as:

$$U^v = \underbrace{y - \tau + \ln(g_1)}_{\text{pre-election utility}} + \underbrace{y - \tau + \ln(G_2)}_{\text{post-election utility}} + \ln(G_2) \quad (1)$$

In equation 1, the variable y represents income which is also assumed to be non-discounting whereas τ represents the exogenous tax. In line with equation 1, the two-period utility function for a politician is specified as:

$$U^p = Ib + U^v \quad (2)$$

In equation 2, $b > 0$ is the ego-rent of re-election and $I = 1$ if re-elected and zero if not re-elected. The utility of the voter is influenced by government policy which is also dependent on the type of politician. The politician is either competent (C) or incompetent (L) and this can be functionally summarised as: $(i \in \{C, L\})$. Competence is defined in the context of how good the politician is when it comes to the production of public goods:

$$G_2 + \underbrace{g_1}_{\text{pre-election utility}} = \tau + \epsilon_i \text{ and } \underbrace{g_2}_{\text{post-election utility}} = \tau + \epsilon_i \quad (3)$$

From equation 3, the variable ϵ_i represents the lasting competency of a politician of the type i with $\epsilon_C > \epsilon_L \equiv 0$. The probability that a randomly selected politician is competent (C) can be written as $P \in (0, 1)$. Similarly, the probability that a randomly selected politician is incompetent (L) can be written as $P \in (0, 1)$. At the beginning of period 1, the incumbent observes his competency ϵ_i and decides on how to allocate tax revenues between the two public goods (g_1, G_2). However, voters observe how much is spent on g_1 but not what is spent G_2 . At the end of period 1, if an election takes place where the incumbent runs against a randomly chosen challenger, he is either re-elected if he is supported by a majority of the voters or otherwise the challenger takes office. If the incumbent is re-elected, he spends the post-election budget on the short-run public good g_2 at the beginning of period 2. Nonetheless, if the challenger is elected, she observes her competency and spends the post-election budget on the short-run public good g_2 . In period 2, the politician (either incumbent or the challenger) spends all taxes on short-term public goods: $g_1(i) = \tau + \epsilon_i$. In period 1, the politicians and the voters equally care about policy. Therefore, the maximized decision in periods 1 and 2 can be functionally written as:

$$\underset{g_1, G_2}{\text{Max}} = \underbrace{y - \tau + \ln(g_1)}_{\text{period1 decisions}} + \underbrace{\ln(G_2) + y - \tau + \ln(\tau + \epsilon_i)}_{\text{period2 decisions}} \quad (4)$$

The decisions in the two periods are subject to the constraint:

$$\tau + \epsilon_i = g_1 + G_2$$

The logarithmic form of the utility for the two periods which also represents the preference of voters can be specified as:

$$g_1^* = G_1^*(i) = \frac{\tau + \epsilon_i}{2} \text{ for } i \in \{C, L\} \quad (5)$$

In model 5, $G_1^*(i)$ represents the long-term expenditure of the incumbent or government while g_1^* is its short-term expenditure. The voters' re-election of competent politicians is based on the trust that they repose in them (the incumbent) in providing more post-election public goods. The voters observe what the incumbent does before the election g_1 and use that to estimate the level of competence of the incumbent. Based on this estimate, voters re-elect the incumbent if they think it is sufficiently likely that the incumbent will be competent or elect the challenger if otherwise. Being guided by their desire for re-election, they have the incentive to provide lots of short-term public goods at the cost of long-term public goods during the pre-election period if that will enable them to get re-elected. Equation 5 can be expanded further in the form of equation 6 to include other control variables that influence the incumbent's (government) spending in the short term:

$$g_1^* = G_1^*(i) + \beta_i X_i + \epsilon_i \quad (6)$$

From equation 6, X_i is the vector of other factors that influence government spending (i.e., our control variables), β_i is the vector of coefficient of those explanatory variables while ϵ_i represents the error term.

3.3. Empirical model specification

The empirical strategy adopted for examining the effect of elections on government expenditure is the dynamic system generalized method of moment (system GMM; see, Arellano & Bover, 1995). As compared to the static GMM, the dynamic system GMM allows for the testing of the relationship between the dependent variable (government expenditure) and its lagged values (Obeng et al., 2021). This estimation technique is used because our variable of interest, election year is not entirely exogenous. According to Shi and Svensson (2002), the timing of elections and the fiscal policies could be affected by a common set of unobserved variables, including crises or social unrest which can be hardly included in the specification of the regression model. Also, it is important to indicate that aside the aforementioned endogeneity concerns, there is a potential element of simultaneity between government expenditure and GDP per capita, which this technique takes care of in the estimation.

Additional justifications for applying the two-step system GMM technique is seen in (Asongu & Nwachukwu, 2016; Ofori et al., 2021c; Tchamyou, 2019). To begin with, the sample countries (i.e., N) used in the study is greater than the number of time period in each cross-section (i.e., T). Thus, with $N > T$, it guarantees that the application of the technique is satisfied. Also, the dataset reveals cross-country variation which is accounted for in the estimation. The GMM technique is consistent even irrespective of structural regimes. This is more so because the selected African countries are remarkably similar in terms of macroeconomic developments, and structural and institutional settings (Ofori & Asongu 2021b) As Ofori et al. (2021d) and Fosu and Abass (2019) argue, the GMM technique accounts for the limited proliferation of instruments as well as cross-sectional dependencies, making it consistent and efficient across different structural regimes. To the extent that failure to take into account such potential endogeneities can bias our estimates,¹ the system GMM is relied upon as our main estimation technique.

$$Gexp_{it} = \beta_0 + \beta_1 Gexp_{it-1} + \beta_2 Elec_{it} + \beta_3 Gdpcap_{it} + \beta_4 Inf_{it} + \beta_5 Unemp_{it} + \beta_6 Sysgov_{it} \\ + \beta_7 ADR_{it} + \beta_8 Elsys_{it} + \beta_9 (Elec_{it} * Gdpcap_{it}) + \epsilon_{it} \quad (7)$$

Where $Gexp$ denotes government expenditure; Inf is the rate of inflation; $Unemp$ represents unemployment rate; $Sysgov$ is the system of governance; ADR represents age dependency ratio; and $Elsys$ is the electoral system in the respective countries. The interaction between election year and level of economic development (GDP per capita) is captured as $Elec * Gdpcap$. The instruments used in the GMM regressions are the lagged levels (two periods) of the dependent variable,

Table 1. Variable definition and expected signs

Variable	Definition	A priori sign
Government expenditure (Gexp)	Government expenditure is captured as recurrent and capital expenditure as a percentage of GDP	Dependent variable
Election (Elec)	Election year/season is a dummy, with 1 indicating election year and 0 if non-election year.	Positive/Negative
GDP per capita (Gdpcap)	GDP per capita is the overall GDP of a country divided by the population in 2017 constant dollars	Positive
Inflation (Inf)	Inflation rate is the consumer price index	Positive/ Negative
Unemployment (Unemp)	The unemployment rate is the proportion of unemployed as a percentage of the labour force	Positive
Governance System (Sysgov)	System of governance is a dummy, with 1 indicating simple majority and 0 if a parliamentary system of governance	Positive/ Negative
Age Dependency Ratio (ADR)	Dependency ratio is the proportion of people aged less than 16 and greater than 65 in the population	Positive
Election System (Elsys)	Electoral system is a dummy, with 1 indicating the presidential system of government and 0 if a parliamentary system of governance.	Positive/ Negative
Elec*Gdpcap	Interaction of election year and GDP per capita	Negative/Positive

Source: Author's construct, 2021.

government expenditure, and GDP per capita for the difference equation, and lagged difference (one period) for the level equation. In assessing the robustness of the system GMM estimates, the Sargan test and Hansen J statistics are examined. Though both the Sargan and Hansen J test statistics are based on the same null hypothesis, the results for both tests will be reported in the interest of comparison. Another test that was conducted was the Arellano–Bond test for autocorrelation. The net effect from the interaction terms of elections and economic development on debt servicing from equations (7) is expressed as:

$$\frac{\partial(Gexp)}{\partial(Elec)} = \beta_2 + \beta_9 \overline{Gdpcap} \quad (8)$$

where \overline{Gdpcap} is the mean of GDP per capita.

In Table 1, the description of the variables included in the model and their respective a' priori expectations are presented (see the general summary statistics in Table A1).

4. Results and discussion

Section 4 provides the discussion of the findings on the effects of elections on government expenditure in Africa. Particular attention is also given to the analysis on the mediating role of the level of development on government expenditure in election years. The section is split into two,

Table 2. Distribution of means of some selected variables across years of election

Variable	Obs.	Election	No election	Difference	Combined	t-statistics
Government Expenditure	1333	18.519 (0.774)	15.758 (0.229)	2.761(0.631)	16.178 (0.228)	4.377***
Unemployment Rate	1333	8.294(0.486)	6.668(0.228)	1.626(0.544)	6.951(0.207)	2.987***
Age dependency Ratio	1333	89.136 (0.811)	88.929 (0.397)	0.207(0.934)	88.965 (0.356)	0.222
GDP per capita	1333	6.424(0.078)	6.441(0.033)	0.016(0.085)	6.438(0.031)	0.182
Inflation rate	1333	65.214 (0.087)	59.743 (0.044)	5.471(0.103)	61.990 (0.041)	7.234***

Robust standard errors in parentheses;

***p < 0.01, **p < 0.05, *p < 0.1

the first section looks at the descriptive analysis of the variables of interest, while the presentation and discussion of the regression estimates follow in the next section.

4.1. Descriptive analysis

The study begins the empirical analysis by presenting the relationships between the variables and election periods. These variables include GDP growth, unemployment rate, GDP per capita and inflation rate. The distribution of the variables as depicted in Table 2 shows government expenditure, rates of unemployment and inflation significantly differ between the election and non-election years.

Information gleaned from Table 2 indicates that the average unemployment rate is 8.2 per cent in election years and 6.7 per cent in non-election years, suggesting that governments will strive to address unemployment concerns in election years as compared to non-election years. As Kroth (2012) argue, in young democracies and especially in the developing world, incumbent governments in their bid to influence electoral outcomes and retain power embark on several projects in election years as compared to other non-election periods (Kroth, 2012). The data shows a mean inflation rate of 65.2 per cent in election years as compared to 59.7 per cent in non-election years. This is linked with the greater fiscal surprise which is generally recurrent spending in election years as compared to non-election years. The average GDP per capita in log terms over the study period is 6.4 in both election and non-election years. This indicates economic development in Africa does not respond to fiscal surprise. It is important to note that the summary statistics of all the variables are presented in Table A1.

4.2. Results on the effects of election and economic development on government expenditure

The study precedes the multivariate regression estimation via the system GMM approach with a bivariate analysis of the relationship between government expenditure and all the other covariates (see, Table 3).

It is also important to indicate that to have an idea of the true relationship between the dependent variables (government expenditure) and the explanatory variables, a bivariate regression is run. Table 8 presents the results of this regression. The results generally show a positive relationship between years of election and government expenditure. In addition to election, unemployment, and electoral system are also positively associated with government expenditure. However, system of governance, level of development (GDP per capita), age dependency ratio and inflation are negatively associated with government expenditure.

Table 3. Bivariate estimates of elections on government expenditure (Dependent variable: government expenditure)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Variables	OLS	OLS	OLS	OLS	OLS	OLS	OLS
Election	0.028*** (0.0081)						
Unemployment		0.002*** (0.0003)					
Governance system			-0.173*** (0.0102)				
Age dependency				-0.001*** (0.0002)			
GDP per capita					0.013*** (0.0024)		
Electoral system						-0.044*** (0.0052)	
Inflation (CPI)							-0.016*** (0.0052)
Constant	0.158*** (0.0023)	0.146*** (0.0032)	0.504*** (0.0201)	0.240*** (0.0168)	0.079*** (0.0154)	0.236*** (0.0094)	0.215*** (0.0175)
Observations	1,169	1,169	1,169	1,169	1,169	1,169	1,169
R-squared	0.0162	0.0466	0.1190	0.0225	0.0331	0.0697	0.0157

Robust standard errors in parentheses;

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

4.3. Main results on the effect of elections and economic development on government expenditure

The evidence from the post estimation tests in Appendix B shows that the fixed effect estimates are preferred to the random effect estimates. However, considering the aforementioned endogeneity concerns, the analysis is based on the system GMM estimation models.

The results as presented in Table 4 show that previous government expenditure exerts a positive effect on current government expenditure. The magnitude of the marginal effect shows that the lag of government expenditure induces current government expenditure by 11 per cent (see, Column 5). This result shows that productive government spending has the potential to engender the multiplier effect and an increase in government expenditure in subsequent years. Further, the study finds evidence for our first hypothesis that electoral periods have significant effect on government expenditure compared to non-election years. The results show that there is an increase in government expenditure in election periods between 0.03 and 0.18 percentage points (see Columns 4 & 5). Our findings provide evidence for political budget cycle in African countries. There is also strong empirical evidence that economic development and improvement in the general wellbeing of the population, proxied by GDP per capita, has a significant positive relationship with government expenditure. Holding all other factors constant, a percentage increase in GDP per capita leads to an increase in government expenditure within the range of 0.8 per cent and 3.5 per cent (see Columns 4 & 5). The economic intuition underpinning this result is that improvement in the standard of living is accompanied by the demand for better provision of goods and services—health, education, security, employment, infrastructure and social protection.

Additionally, the study finds evidence for our second objective. The results show that the extent of the effect of election seasons on government expenditure is modulated by the level of economic

Table 4. Effects of electoral on government expenditure (dependent variable: Government expenditure)

Log expenditure	(1)OLS	(2)Fixed effect 1	(3)Fixed effect 2	(4)GMM 1	(5)GMM 2
Election	0.1072** (0.0427)			0.0354*** (0.0087)	0.1836** (0.0777)
Unemployment	0.0004* (0.0002)	0.0010*** (0.0001)	0.0012*** (0.0001)	0.0013*** (0.0003)	0.0012*** (0.0003)
Governance system	-0.1193*** (0.0084)	-0.1087*** (0.0069)	-0.1098*** (0.0067)	-0.0544*** (0.0131)	-0.0567*** (0.0136)
Age dependency ratio	0.0001 (0.0002)	-0.0001 (0.0002)	-0.0003 (0.0003)	0.0011*** (0.0001)	0.0010*** (0.0001)
GDP per capita	0.0105*** (0.0027)	0.0081** (0.0037)	0.0104** (0.0046)	0.0274*** (0.0032)	0.0292*** (0.0037)
Election *GDP per capita	-0.0135** (0.0063)		-0.0123*** (0.0021)		-0.0240* (0.0124)
Electoral system	-0.0229*** (0.0038)	-0.0209*** (0.0022)	-0.0130*** (0.0029)	-0.0162*** (0.0037)	-0.0163*** (0.0038)
Inflation	-0.0081** (0.0041)	-0.0111** (0.0042)	-0.0198*** (0.0029)	-0.0072** (0.0031)	-0.0071** (0.0031)
Expenditure (Lag)			0.0482** (0.0206)	0.1006*** (0.0285)	0.1101*** (0.0265)
Constant	0.3691*** (0.0377)	0.3875*** (0.0523)	0.3963*** (0.0585)		
Observations	1,333	1,333	1,333	1,169	1,169
R-squared	0.2108	0.2110	0.2834		

Robust standard errors in parentheses;

*** p < 0.01, ** p < 0.05, * p < 0.1

development (GDP per capita). In fact, in all the models, all the interaction terms are negative. The study finds a net effect of election year and economic development on government expenditure of approximately 2 per cent in the OLS model and 3 per cent in the system GMM model. The net effect for our OLS model based on equation (8) as:

$$\frac{\partial(Gexp)}{\partial(Elec)} = 0.1072 + (-0.0135 * \overline{Gdpcap})$$

$$\frac{\partial(Gexp)}{\partial(Elec)} = 0.1072 + (-0.0135 * 6.438) = 0.0202$$

In the same vein, the net effect from our system GMM estimates is calculated as:

$$\frac{\partial(Gexp)}{\partial(Elec)} = 0.184 + (-0.024 * \overline{Gdpcap})$$

$$\frac{\partial(Gexp)}{\partial(Elec)} = 0.184 + (-0.024 * 6.438) = 0.0294$$

The results show that economic development is effective in modulating the effect of election periods on government expenditure. The modest net effect of the interaction term on elections and economic development compared to their direct effects affirms our hypothesis that as countries develop, fiscal surprise loses its power of influencing election outcomes. Instead, electoral outcomes are determined by government's performance over the years. The result implies that economic development is associated with improved socio-economic structures of a country and a populace that can read through the lines and punish incumbents who resort to fiscal surprise to hold on to power.

Further, the study finds that, relative to the parliamentary system of governance, government expenditure reduces by a little over 5 per cent if the country operates the presidential system of governance. In other words, government expenditure is higher within countries that run a parliamentary system of governance. This is plausible, especially due to the high number of parliamentary candidates and the complexity of the electoral processes which require more spending to provide the requisite logistics for the successful conduct of elections. More so, all the salaries and allowances of elected parliamentarians add to government expenditure. This compounds the already high government spending on developmental projects. In line with this result is the evidence that government expenditure reduces by approximately 2 per cent if the country operates the majority electoral system compared to the proportional system. This observation can also be ascribed to the complexities involved in the parliamentary system of an election where each candidate would have to secure a certain proportion of the votes cast before emerging as the winner. Unlike the simple majority, a parliamentary system of election involves a series of stages/requirements that need to be satisfied and this increases government spending on elections.

Also, the study finds that age dependency has a significant positive effect on government expenditure in Africa. The result shows that an increase in the age dependency ratio by 10 per cent increases government expenditure by 0.01 per cent. This is likely due to the fact that increasing numbers of too young or aged increases policymakers' pressure to provide education, health care and safety net program. This result supports the finding of a similar study carried out by Klomp and De Haan (2013) on 65 developed and developing countries. Another control variable that has a positive effect on government expenditure is unemployment. There is strong empirical evidence to show that a 10 per cent increase in unemployment is associated with a 0.012 per cent increase in government expenditure. This is also a plausible outcome given that, during election periods, governments in the developing world put in more effort to address unemployment to increase their chances of retaining power.

The post estimation test as shown by the Sargan statistic and the AR (2) indicates the system-GMM estimates are more efficient. In particular, the AR (2) shows the absence of autocorrelation in the residuals. Also, the Sargan statistic also indicates the instruments used in the system GMM model are exogenous and well-identified (see, Table A2).

5. Conclusions

Against the backdrop that governments in young democracies sometimes resort to fiscal surprise in election periods in order to boost their chances of retaining power, the study examines the effect of elections on government expenditure in Africa. The study moves a step further to test whether the level of economic development of a country is significant

in mediating the effect of elections on government expenditure. Using data over the period 1985–2015 for 43 African countries,² I provide evidence based on the dynamic system generalized method of moments to show that— (1) election periods induce government expenditure in Africa countries, and (2) economic development is effective in suppressing the effect of elections on government expenditure in election periods. The study concludes that governments in African countries spend between 3 and 18 per cent of GDP to put them in a pole position to retain power. Further, the study concludes that economic development is a key factor that reduces fiscal surprise in African countries during election periods.

The study recommends that governments in Africa avoid election-related fiscal surprise irrespective of the electoral pressure to avoid plausible fiscal deficit and debt accumulation. The consequence of which is the disruption of macroeconomic stability gains in non-election periods, and the short and long-term development challenges due to fiscal deficit/debt accumulation. Spending that promotes the development and high level of literacy is thus essential to ease the pressure on the government and thus reduce the need of pleasing the populace through spending on tangible projects during election periods. Also, because such election-related fiscal surprises are financed through concessional loans, policymakers should use such loans judiciously to create jobs and address the regions infrastructure deficit. Particularly, the latter can go a long way to create a congenial environment for the private sector to thrive and reduce unemployment.

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Declaration

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Note

- Specifically, there will be a downward bias when the omitted variable correlates positively with election timing and negatively with fiscal policy outcomes such as government expenditure (Shi & Svensson, 2002).
- See the list of countries in Table A3

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APPENDICES

Table A1: Variables included in the models for government expenditure

Variable	Obs.	Mean	Std. Dev.	Min	Max
Election year	1,169	0.152	0.359	0.000	1.000
Pre-election year	1,169	0.111	0.314	0.000	1.000
Government expenditure	1,169	16.178	7.808	2.0471	69.542
Unemployment rate	1,169	7.461	8.020	0.000	39.300
System of governance	1,169	1.975	0.155	1.000	2.000
Age dependency ratio	1,169	88.033	13.146	40.795	112.682
GDP per capita	1,169	6.464	1.108	4.612	10.058
Electoral system	1,169	1.677	0.467	1.000	2.000
Inflation rate	1,169	4.736	0.360	4.161	10.106

Source: Authors' construct, 2021.

Table A2: Post-estimation test for the GMM estimations

Description of test	Government expenditure		
	Chi2 value	z	Prob.
Arellano-Bond test for AR (1) in first differences		-3.72	0.000
Arellano-Bond test for AR (2) in first differences		-2.35	0.019
Sargan test of over-identification restrictions	524.04		0.172
Hansen test of over-identification restrictions	28.29		1.00
Difference-in-Hansen tests of exogeneity of instrument subsets: GMM instruments for levels			
Hansen test excluding group	28.53		1.00
Difference (null H = exogenous)	-0.24		1.00
Hansen test excluding group	28.11		1.00
Difference (null H = exogenous)	0.18		0.981

Source: Authors' construct, 2021.

Table A3: List of countries in the study

Angola	Eritrea	Madagascar	Senegal
Benin	Ethiopia	Malawi	Seychelles
Botswana	Gabon	Mali	Sierra Leone
Burkina Faso	Gambia	Mauritius	South Africa
Cameroon	Ghana	Mauritania	Sudan
Cape Verde	Guinea	Mozambique	Tanzania
Central African Republic (CAR)	Guinea Bissau	Namibia	Togo
Comoros	Ivory Coast	Niger	Uganda
Congo (Brazzaville)	Kenya	Nigeria	Zambia
Democratic Republic of Congo	Lesotho	Rwanda	Zimbabwe
Equatorial Guinea	Liberia	Sao Tome and Principe	

Source: Authors' construct, 2021.



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