THE RELATIONSHIP BETWEEN FISCAL POLICY AND ELECTIONS IN THE EAST AFRICAN COMMUNITY

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DECLARATION

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the Research Project contains no material previously published or written by another person except where due reference is made in the Research Proposal itself.

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Abstract

Incumbent leaders may manipulate fiscal policy in terms of increasing recurrent or capital expenditure to convince voters of their competence in running the government. Financing of the increased expenditure is what leads to fiscal balances since the expenditure exceeds the revenue a country generates. This study aims to find out whether fiscal policy is affected by election years for the East African Community member countries which include Kenya, Uganda, Tanzania, Rwanda and Burundi. The main variables of interest are pre-election, election, post-election years and the fiscal balance to capture the fiscal policy manipulation. Control variables are also included such as inflation, the logarithm of the exchange rate and the growth rate in real GDP. Arellano and Bond Generalized Method of Moments estimator was applied to the dynamic panel data model for the time span 1990-2015. The study concludes that the fiscal balance is not affected by the incumbent leaders. This is so because the fiscal balance was insignificant during the election years for the EAC member countries. However, there is a significant relationship between fiscal balance and the growth rate in real GDP indicating that the fiscal balance in East African member countries is affected more by economic variables as compared to opportunistic incumbents. Despite the fact that fiscal balance is not affected by elections, there is still need for strong institutions which translate to better governance, better allocation of public goods, which leads to sustained growth that will lead to a reduction in the fiscal balance.

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List of abbreviations

EAC: East African Community

GDP: Gross Domestic Product

GMM: Generalized Method of Moments

LDC: Less Developed Countries

OECD: Organization for Economic Co-operation and Development

PBC: Political Budget Cycle

Chapter 1: Introduction

1.1 Background Information

During election years, government spending tends to rise as taxes lower. This is done by incumbent officials trying to convince voters of their competence in running the government. Since voters respond to economic conditions that are good, an incumbent will use expansionary fiscal policy which will affect economic outcomes and stimulate economic growth. Anthony Downs (1957, p.28), said that parties "formulate policies in order to win elections, rather than win elections in order to formulate policies". These cycles characterized by political manipulation of fiscal variables is what leads to the existence of political budget cycles.

18th February 2016 was an election year for Uganda. 48% of the Ugandan total budget allocation went to infrastructure (Budget Highlights Uganda, 2016). In Rwanda, elections were carried out on August 2017 and overall expenditure rose to 1.95 trillion francs in the year 2016/2017, from 1.81 trillion francs in the year ending 2015/2016 (Reuters, 2016). An increase in the budget leads to increased fiscal balances. Fiscal balances occur when the revenue a country generates is less than its expenditure. This fiscal balances due to expenditure oriented policies by incumbents are what lead to the political budget cycles.

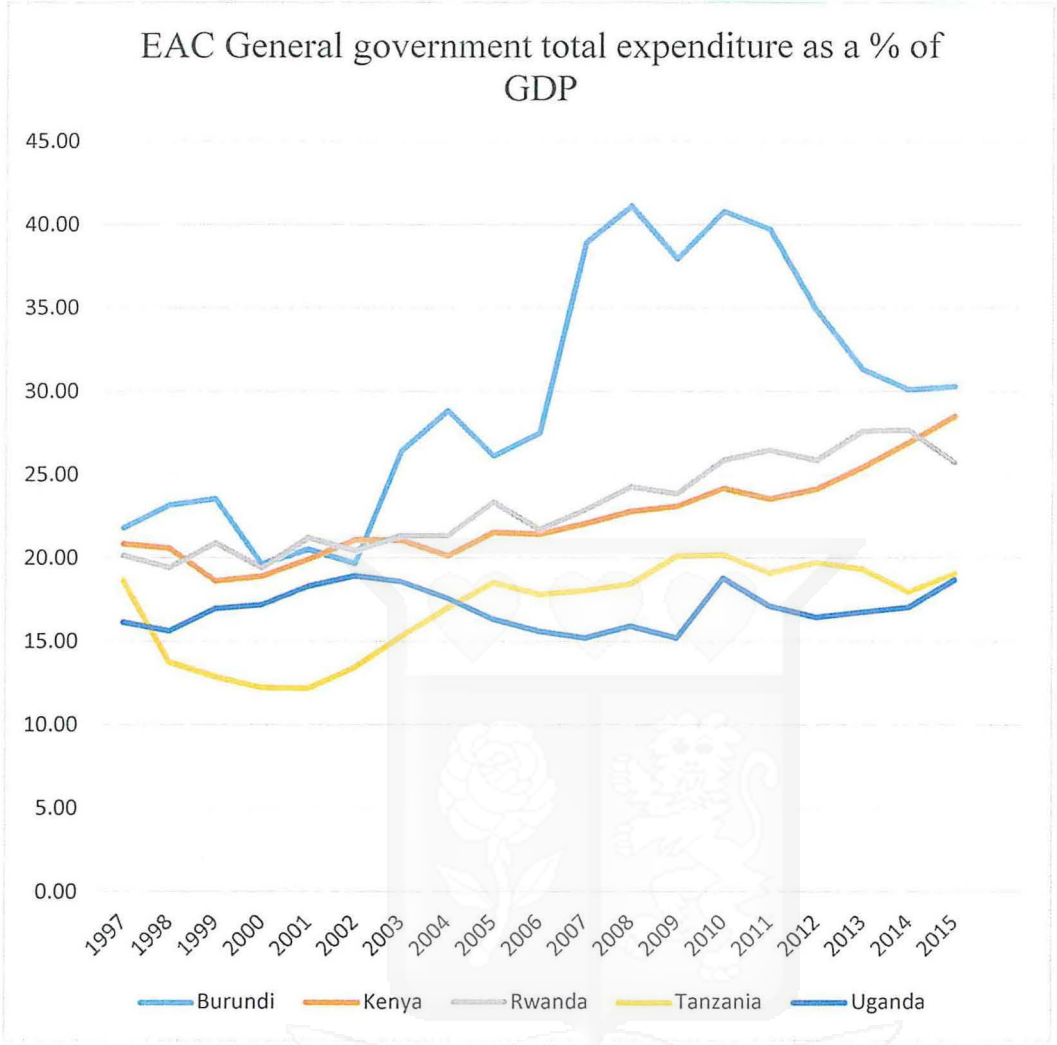
A fiscal policy is a tool used by governments to influence taxes and spending. Expansionary fiscal policies allow tax cuts, increased transfer payments, rebates and increased government expenditure. The main instrument used to expand fiscal policy is an increase in public expenditure as opposed to lowering tax in developing economies (Schuknecht, 2000). This is so because the tax base is small in developing countries and would therefore not enhance government popularity as it is hardly visible. Also the effect of reduced taxes on economic performance will not be immediate making it difficult for the government to reap its political benefits. Fiscal balance which is the difference between government revenue and expenditure is used in this study as a proxy for fiscal policy

Figure 2 analyses government expenditure as a percentage of GDP from 1997-2015 for the East African countries. From the graph below, the government expenditure has been

gradually rising for Kenya, Uganda, Rwanda and Tanzania across time. However, for Burundi in the year 2010 which was an election year saw the government expenditure rise to its highest. The rise in government expenditure could lead to economic growth if the expenditure is directed to productive sectors. However if used opportunistically by incumbents, is detrimental to the economy as it is not sustainable. Kenya's growth in government expenditure from the year 2010/2011 to 2015 can be attributed to the fact that Kenya devolved its government leading to more expenditure being channeled towards county governments. Tanzania's highest peak in government spending was in 2010 which was an election year in Tanzania. Rwanda reached its highest in 2014 but reduced its government expenditure in 2015. This was attributed to the fact that the period 2014/2015 which is not an election year was affected by delayed donor disbursements and lower domestic revenue flows as well as slow implementation of projects. As a result of these developments, total spending was lower than projected (Ministry of Finance, 2015).

In Uganda, the 2011 elections were marred with exceptional spending of fighter jets. This led to a retrospective approval of supplementary budgets to a tune of 33% of the approved budget. 2006, another election year in Uganda, saw the 2005/2006 supplementary budget increase of nearly 10% of the approved budget and the supplementary budgets being largely recurrent in nature (The East African, 2011). The increased lavish expenditure by incumbents could also lead to increased inflation in addition to increased fiscal balances.

Figure 2: EAC government expenditure as a % of GDP



Source: IMF World Economic Outlook (WEO), October 2015

1.2 Problem Statement

The reason government expenditure is encouraged is that it leads to economic growth if channeled to productive sectors of the economy. However are these expenditure-oriented policies used by opportunistic incumbents to secure their re-election prospects? This study addresses the issue as to whether elections have an impact on government expenditure in the East African Community (EAC) member countries. Shi and Svensson (2006) find out that the existence of Political Budget Cycles (PBC) is more evident in developing as opposed to developed countries. Where on average, government fiscal balance increases by almost 1% of GDP in developing economies during election years as opposed to developed. A study done in one of the EAC member countries by Weinstein

(2011) argues that the Tanzanian ruling party, Chama Cha Mapinduzi, in a bid to win elections, increased capital expenditure hence increased fiscal balances in the most supportive districts.

This paper seeks to study whether fiscal policy is affected by elections for the EAC member countries. As developing economies, they are better placed to explain the PBC because of the weak institutional capacity and poor transparency in budgets that increases their vulnerability of experiencing election induced fiscal policies. An understanding of the degree of fiscal policy volatility during election periods in these countries and whether the rise in government expenditure during election years is sustainable and growth enhancing is important so as to find the most appropriate fiscal consolidation measure to take. Fiscal consolidation refers to the policies taken up by governments to reduce fiscal balances.

Furthermore, with the Political Federation, where EAC member countries aim to form a central government as the ultimate goal of the EAC Region, it is important to understand how the government spending behaves in the individual countries during election years. This will enable the EAC members to strengthen fiscal rules and institutions to avoid such manipulation.

1.2.1 Research Objective

The overall objective of this research is to find out whether fiscal policy is affected by election years for the East African Community member countries.

1.2.2 Research Question

Is fiscal policy affected by election years in the EAC member countries?

1.3 Justification of the study

This study aims to add to the pool of studies on the existence of PBC in developing countries by identifying how various macroeconomic factors are affected by elections. This is important because government expenditure is meant to be growth enhancing and several studies have been carried out to find out the impact of government expenditure on growth. However, if government expenditure is raised by opportunistic incumbents, this may not lead to growth but rather spike inflation which is detrimental to the economy. This will benefit EAC member counties as it will enable policy makers in individual

countries identify if political budget cycles really exist and if so, find ways to ensure that a rise in government expenditure is sustainable and growth enhancing rather than opportunistic.

1.4 Scope of study

This study will cover the EAC member counties which include Kenya, Uganda, Tanzania, Burundi and Rwanda. The period of study is 36years from 1980-2016. It covers the time around which the EAC countries had their first presidential elections. Presidential elections in these countries take place every 5 years for most of the countries. However, South Sudan is omitted from this study since there is insufficient information regarding fiscal policy and no election has been carried out yet. An election is anticipated in the year 2018.

Chapter 2: Literature Review

2.1 Introduction

Political Budget Cycle research examines the effect election cycles have on public expenditure, taxes and budget balances. Theoretical literature provides theories that are in support of political budget cycles that have evolved over time. Earlier scholars such as Nordhaus (1975) argue that incumbents had to ensure they maximise their reelection prospects by increasing their vote share. This was done by expansionary policies to stimulate the economy. Other scholars using the moral hazard model argue that incumbents will be elected if voters are able to assess their competence in the delivery of easily observed public goods which will lead to increased balances prior to an election (Persson & Tabellini, 1990). Shi and Svensson (2006) on the other hand came up with an adverse selection model that emphasizes the role of temporary information asymmetries between the incumbent and the voters.

The section on theoretical literature therefore expounds on the various factors that influence the existence of these cycles such as information asymmetries, transparency and the level of democracy which enable incumbents manipulate variables such as expansionary monetary policy and fiscal policies.

This chapter also looks at empirical work that either supports or contradicts the existence of political budget cycles amongst different countries and time spans. Various scholars employ different macroeconomic variables both monetary and fiscal to explain these cycles.

2.2 Theoretical Literature

Theory on political cycles dates back to the 1970s which captured the fact that economic decisions were made within a political framework. Nordhaus (1975) argued that the Philips curve which tries to explain that inflation and unemployment are inversely related, explains the concept of opportunistic political business cycles. Governments in these models would expand monetary policy which leads to inflation prior to elections and this would lead to lower unemployment. Lower unemployment in turn was a sign of good economic conditions which led voters to re-elect the incumbent. Expansionary monetary policies were studied by earlier scholars. However with time focus was shifted to election

induced fiscal cycles where information asymmetry, transparency, composition of spending, fiscal conservatism and new democracies play a key role in determining the existence if any and degree of these cycles.

Expansionary Monetary Policies

With time, scholars relaxed the assumption that inflation was used by incumbent leaders to attract voters by reducing unemployment prior to elections. This is because voters tend to be rational and anticipate such decisions. Alesina (1998) argues that governments cannot reduce unemployment before the election since voters will anticipate the rate of inflation to rise after the election. Voters are more forward looking and this will affect their preferred choice of leader. Consequently, incumbents choose an expansionary monetary policy only if it can signal to the electorate that their economic decisions are competent (Persson & Tabellini, 1990). However, monetary business cycles are not as relevant because of the emergence of the independence of the Central Banks hence few governments have the freedom to influence monetary policy directly. Researchers have therefore shifted their focus from expansionary monetary policy to examining electoral cycles in expenditure policies.

Information asymmetry

Sibert and Rogoff (1988) disagree with fact that rational voters would allow their expectations to be influenced by pre-election antics. Rather, these cycles are influenced by temporary information asymmetries where the incumbents have more information than the voters. Therefore the voters may not see the need to monitor the government closely enough to know if taxes are effectively used by the government. Voters might not find it worthwhile to engage in costly information gathering to determine who to vote for. Hence before elections, voters could be easily manipulated by incumbents as they try to signal of their competence. This information asymmetry gives rise to these electoral cycles in macroeconomic policy.

More recent Political Budget Cycles models contrast with Rogoff and Silbert (1988) in the fact that there exist temporary information asymmetries between the voters and the incumbents which explain the electoral cycles in fiscal policy. Shi and Svensson (2006)

in their moral hazard model of political competition argue that despite the fact that most voters are informed, they will behave opportunistically since some of the voters remain uninformed. If a greater number of voters that fail to distinguish between incumbent competencies from fiscal policy manipulation that is election induced is more, the incumbent benefits from increasing expenditure prior to elections.

The politico-institutional environment plays an important role in what incentivizes incumbents to create these cycles. More specifically, the more benefits gained by politicians when still in power, the more their incentives are to influence the perception voters have about them before an election (Shi & Svensson, 2006).

Peltzman, (1992) disagrees with the fact that fiscal policy is manipulated by opportunistic incumbents to increase their vote share. He argues that governors in the US are punished if they increasing spending. He also argues that incumbents who increase expenditure prior to elections are not able to fool voters since they end up being punished even more increasing expenditure by the time their term ends. This is because voters have information concerning fiscal data and are therefore well informed as they cast their ballots.

Eslava (2005) in a study in Colombia of local governments argues that well informed voters are not easily bought by an increase in expenditure as the voters do not like increased expenditure and fiscal balances. Political manipulation therefore does not take the form of increased government spending but rather is as a result of changes in the composition of government expenditure. This change in political manipulation is because voters despite being rational, still lack enough information to determine whether the choices made by incumbents are due to opportunistic manipulation.

Transparency

Lassen (2006) supports this argument that the existence of political budget cycles should not exist in countries that have fiscal institutions that are transparent. Instead, incumbents on the state level use different fiscal strategies in an attempt to increase the support of voters. Examples of alternative strategies include increased social transfers prior to the election.

Adi (2003) and Drazen (2008) report similar findings. Adi (2003) argues that in Israel, voters are in a position to effectively monitor fiscal choices made by politicians, large balances before an election tend to reduce an incumbent's re-election chance. Brender (2008) finds out that the vote share an incumbent receives decreases with an increase in fiscal balances prior to the elections. It therefore means that voters who are well informed are averse to increased government balances.

Fiscal conservatism

Fiscal conservatism provides yet another explanation for election-induced government expenditure which involves the reduction in government spending to avoid fiscal balances by targeting some specific groups at the expense of others. Drazen (2010) finds out that electoral manipulation still does exist but it is not evident in aggregate expenditure.

Fiscal policy instrument

Rogoff (1990) includes the composition of government spending in the signaling model but it yields a different prediction. Voters are easily enticed by taxes and current expenditure as compared to capital expenditure. This information is used by voters to make decisions on whether the incumbent is competent. The competent incumbent is therefore at a position to increase current expenditure that is easily observable and reduce capital expenditures which is less visible.

Schuknecht (2000) focuses on the fiscal policy instrument used by developing countries to offer a chance for re-election. The author finds out an expansion of fiscal policy is the main instrument used to increase public expenditure as opposed to lowering tax. This is so because the tax base in developing countries is small and incumbents would not therefore use it as it would not enhance popularity as it is hardly visible. Also, a tax cut would not have an immediate effect on economic performance making it hard to actually reap the political benefits.

Some recent studies based on regional data are in support of this, i.e., they find no evidence of election cycles on government spending but identify a change in the spending composition that is easily targeted because of its visibility such as road construction and

physical structures (Drazen & Eslava, 2010). Porche (2007) finds a positive and significant effect of upcoming elections on support for the agricultural sector.

New Democracies

Brender (2007), in a cross-section of countries, finds evidence in support of PBC, and argues that theses cycles are driven by countries that became democratic recently hence the name "newer democracies". Once the newer democracies are omitted from the sample, the political budget cycles disappear. This is so because politicians are inexperienced with electoral policies hence voters lack information that is necessary to properly evaluate fiscal manipulation.

Allan (2007) argues that it is important for governments in new democracies to deliver good economic policies. Political budget cycles are therefore a characteristic of counties that are democratically fragile. Svensson (2006) is an extension of Rogoff's (1990) model which analyses the effects democracy and the institutional quality have on the size of the fiscal cycles. Transparency is emphasized in both models as it reduces the size of the political budget cycle.

2.3 Empirical Review

Empirical literature on Political Budget Cycles examines various models used to explain these cycles. Research has been carried out in developed and developing economies, new and existing democracies and results differ depending on the data sets and model specifications. This section begins with empirical studies that prove that PBC lead to a shift in the composition of government expenditure rather than increased fiscal balances. This section also provides evidence of PBC in developed, developing and new democracies.

Composition of spending

Several empirical studies that have been carried out to actually find out that governments would rather change government expenditure composition towards more visible current expenditure as opposed to capital expenditure. Schuknecht (2000) using 24 developing countries from 1973 to 1992 attempts to find out the choice of policy instruments used by incumbents. Regressions are run on the panel data for the 24 countries using the fixed

effects model. The fiscal variable is the dependent variable while the other independent variables include the election variable, the countries terms of trade changes, trade orientedness of a country, the real effective exchange rate, regime of the exchange rate and programs supported by IMF. The study found out that public expenditure increased prior to elections since it enhanced an incumbent's popularity as it had a direct impact on the welfare of voters. Vergne (2009), also in support of a change in the composition of expenditure using a dataset of 42 developing countries from the period 1975 to 2001 reports that the composition of spending shifts towards current expenditures that is more visible in particular towards subsidies and wages during elections. The variables used in this study include transport and communication expenditure as a proxy for capital expenditure spending and an election dummy to reflect the impact of elections. The method used is the generalized method of moments for dynamic panel data models.

Developing countries

Manipulation of fiscal policy prior to elections was initially thought to be a phenomena of developing economies. This is due to the presence of weak institutions in developing countries. Ames (1990) in a panel data study of 17 Latin American countries for the period 1947-1982 carried out multiple regressions on political and economic factors that affect the changes in government expenditure. The researcher finds out that there is a 6.3% increase in government expenditure prior to the elections and it decreased by 7.6% in the post-election year.

Schuknecht (1996), on the other hand carries out a study of these cycles in 35 less-developed countries from 1970 to 1925. The researcher argues that Less Developed Countries (LDC) are prone to more manipulation by the incumbents. This is so because checks and balances are weaker and incumbents have more power over monetary and fiscal policy. Expenditure oriented policies such as employment generation through public work programs or the distribution of free or subsidized goods are thus more effective than tax reductions to affect voter behavior.

Developed countries

Persson and Tabellini (1990) argue that developed economies are strongly affected by Political Budget Cycles. The authors' divides the sample to countries that are democratic hence are characterized by elections that are competitive. The countries are 40 and span from the period 1960-1998. Two-stage least squares (2SLS) is used to estimate the effect of the structure of the political party on the type of economic variable manipulation by prior to elections. The authors finds a political revenue cycle where the revenues decrease as a share of GDP prior elections in a single party government as compared to a coalition government. No political cycle is found in expenditures, transfers or overall budget balance across the countries or political systems. This was obtained using Ordinary Least Squares (OLS) by regressing government spending and type of government on per-capita income, population over 65, openness, federalism, ethno-linguistic fractionalization, and UK colony.

Developing and developed countries

Some scholars argue that these political cycles are a phenomena of developing economies while others argue that they are present in developed countries as well. Shi and Svensson (2006) carried out a study incorporating both developed and developing countries to find out the extent to which both developed and developing countries are affected by these cycles. In a panel of 85 developed and developing countries, over the period 1975-1995, using a dynamic panel data specification and the GMM. Shi and Svensson (2006) find that on average, fiscal balances as a percentage of GDP increase by almost 1% in the year elections are carried out. This is in support of political budget theory in developing countries. Political budget cycles are larger in developing countries as compared to developed countries.

Klomp and Haan (2013) in a more recent study examine the differences between developing and developed countries. Data is employed on 70 countries that are democratic for the period 1970-2007. Existence of PBC was tested using the Pooled Mean Group (PMG) estimator in their sample since Instrumental Variable (IV) or Generalized Method of Moments (GMM) presume that the data is suitable to be pooled. However, in panel models with large N and T the assumption of homogeneity of the slope coefficients is

frequently rejected. Klomp and Haan (2013) find out that elections have a significant effect in the short run on the budget balance and government spending. On average, there is a 0.6% increase in government spending and 0.8% decrease in budget balance during elections. The authors also find out that the occurrence of PBC is affected by the level of development such that the short-run effect is much stronger in developing than industrial countries. In the long run for industrial countries, there is a small but negative effect on government spending but a positive one on the budget balance. The implication of this is that although there is expansionary fiscal policy prior to elections, governments take restrictive measures to control the fiscal imbalances maybe because of the dislike voters have towards budget balances (Peltzman, 1992).

Level of Democracy

Democratized countries are countries that experience competitive elections to vote their leaders. Incumbents have to therefore convince voters to vote for them. Most developing countries are characterized as new democracies while developed countries as established democracies as they have practiced democracy longer.

Recent studies report evidence on the existence of Political Budget Cycles in democracies that are already established. Grier (2008) in carrying out a study for the US from 1961-2004, finds out that election timing plays a significant role in the quarterly GDP growth. The variables in this study are multiple lags of changes in interest rates, money growth, inflation, energy prices, lagged output growth, government spending and timing of elections.

Tujula (2007), in support for Political Budget Cycles in their sample of Organization for Economic Co-operation and Development (OECD) countries for the period 1975–2002. Finds out that elections, debt growth, macroeconomic developments and political factors have a significant effect on the budget balance.

Similarly, Mink (2006), finds evidence of opportunistic behavior of policymakers in the majority of the European Union (EU) countries after the start of the monetary union. The author uses a multivariate model for the time span 1999-2004. Mink (2006) finds out that all countries apart from Portugal had a decreased budget balance during election years as

compared to the prior election year. On average, there is an increase in the budget balance by 0.96% of GDP with an election dummy used in the model. The empirical model used accounts for the output gap as a proxy for the business cycle and the difference between the actual and expected real GDP growth to capture unforeseen economic developments that may affect fiscal policy outcomes. Mink (2006) also takes to account the potential election effects, hence two alternative indicators are considered. The first involves adding a dummy to the equation that indicates whether a year is an election year or not. The second one is a similar dummy used to account for pre-election years. The pre-election dummy was included since election induced fiscal measures take time to have an effect hence there is a probability the fiscal measure was taken prior to the actual election.

Block (2002) finds evidence of PBC in countries that are newly democratized. The sample included 69 developing countries. The author carries out this test implementing both fiscal and monetary policy variables as dependent variables to test for the existence of these cycles. These variables include fiscal balances, expenditures, government consumption, and net claims on government while the monetary variables include money growth, interest rates, inflation, seignorage, and exchange rates. The results suggest that politicians primarily interested in ensuring they get re-elected manipulate both fiscal and monetary policy instruments to win the support of rational voters. During election years, the fiscal balance, public spending, government consumption and net claims increase as share of GDP while there are faster monetary expansions and lower nominal interest rates. In particular there is a 1-2.6 percentage increase of GDP during election years.

For the democratic countries that have previously been studied, it is evident that there indeed exists manipulation on economic indicators by governments to improve their chances of election.

2.4 Conceptual Framework

Figure 3 shows the relationship between the dependent and independent variables for this study. For political budget cycles to exist, the fiscal balance should rise in election years. The dependent variable is the logarithm of the fiscal balance which is the difference between total revenue and total expenditure. The independent variables are the lagged levels of the fiscal balance, three election dummy variables to indicate the pre-election,

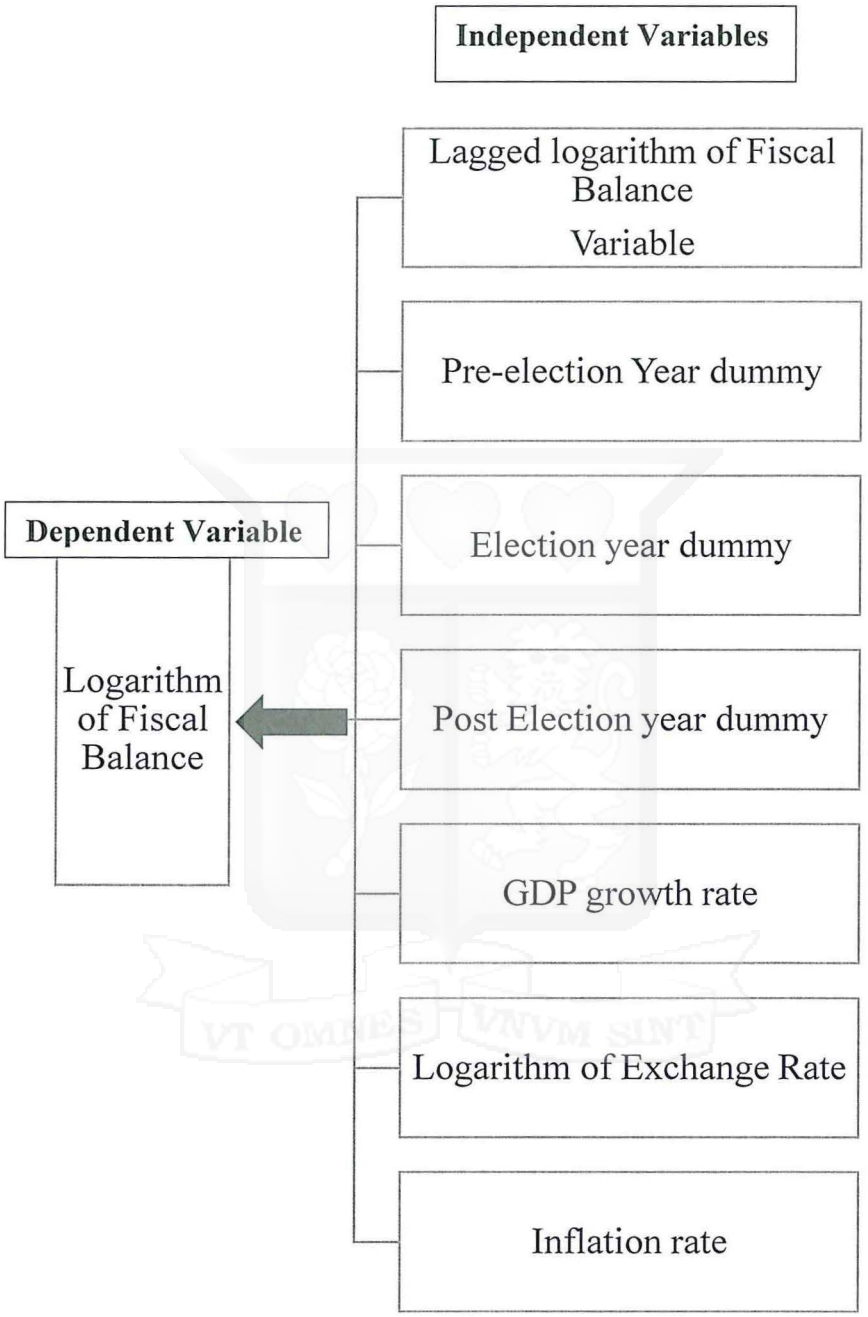
election and post-election year, the real GDP growth rate, inflation rate and the logarithm of the exchange rate.

Political budget cycle literature, suggested indicators of fiscal policy to include fiscal balances, taxes and government expenditure. This study employs the use of fiscal balance as it is a reflection of the effects of both revenue and expenditure. The lagged level of the fiscal balance is present because the fiscal balances in the current year are affected by the balance in the prior year.

The election dummy takes the value one during an election, post-election and pre-election year and 0 otherwise. Pre –election year is introduced since politicians may manipulate government expenditure the year before so as to ensure they are re-elected while already elected officials may begin expansionary policies right after they are elected.

The exchange rate is included because it indicates a countries competitiveness. A depreciation in the exchange rate makes a country more competitive as a country earns more revenue due to increased exports. Inflation is included as it affects the cost of goods sold hence increased expenditure by politicians will raise the inflation rates. While the GDP growth rate is used since a faster growth rate leads to a reduction in the budget balance as a result of higher taxes which lead to increased revenues (Brender & Drazen, 2008).

Figure 3: Conceptual Framework Representation



Chapter 3: Methodology

This chapter contains the methodology used and data sources that explain the existence of political budget cycles. A dynamic panel data specification was used and the GMM estimator employed. The reason for this particular model selection is expounded more in this chapter.

3.1 Research Design

The study can be classified as longitudinal in nature. The choice was justified because the study seeks to follow the same sample which are the EAC member countries over time and make repeated observations on fiscal policy in the election years. Longitudinal research design will seek to describe patterns of change in government spending in election years and help establish the direction and magnitude of the causal relationships.

3.2 Population and sampling

The population in this study is all the EAC member countries that include Kenya, Uganda, Tanzania, Rwanda, Burundi and South Sudan. The sample is the EAC member countries except South Sudan because of inadequate information concerning the country. Election data is unavailable as they have never had a presidential election hence it cannot be relied upon to explain the political budget cycles.

3.3 Data Collection and source of data

The study is based on 5 EAC member counties. The period of study is 25 years from (1990-2015). This is so because data for all variables is readily available from 1990. Data on election years is obtained from The Database on Political Institutions from the World Bank. Supplementary data on election years was obtained from the African elections website. Data on the fiscal balance (difference between revenue and total expenditure) as a percentage of GDP is obtained from the International Financial Statistics (IFS) of the International Monetary Fund (IMF). Missing data points in some of the countries were obtained from the East African community data portal. Data on the real GDP growth rate, exchange rate and inflation is obtained from the World Bank's World Economic Indicators' database.

3.4 Data Analysis

3.4.1 Model Specification and variable description

The model is a standard dynamic panel data model since the lagged value of the dependent variable $Logfisc_{it}$ appears as an explanatory variable. This is because fiscal variables tend to be highly cyclical.

$$logfisc_{it} = \beta_1 logFisc_{it-1} + \beta_2 logFisc_{it-2} + \beta_3 Growth_{it} + \beta_4 Ele(-1)_{it} + \beta_5 Ele_{it} + \beta_6 Ele(+1)_{it} + \beta_7 Inf_{it} + \beta_8 LogExch_{it} + e_{it} + \mu_{it}$$

The regression includes:

$Logfisc_{it}$: The fiscal balance for country i at time t

$logFisc_{it-1}$ $logFisc_{it-2}$: Two lagged levels of the logarithm of the fiscal balance

$Growth_{it}$: The growth rate of real GDP in country i at time t

Inf_{it}: The inflation rate of country i at time t.

$LogExch_{it}$: Logarithm of the exchange rate of country i at time t.

Ele_{it}: An election indicator for country i at time t at the election year

$Ele(-1)$: Pre-election indicator

$Ele(+1)$: Post-election indicator

e_{it}: The error term for country i at time t.

μ_{it}: Country specific effects

β_s: Beta coefficients are the unknown parameters that need to be estimated.

The real GDP growth rate, inflation rate and logarithm of exchange rate were used as control variables. Control variables are used in an attempt to increase the robustness of main the findings.

The election variables Ele_{it}, $Ele(-1)$ and $Ele(+1)$were treated as dummy variables during the election, pre-election and post-election years respectively. With the value 1

during the election, pre-election and post-election year and 0 otherwise. The election variables used were treated as exogenous variables. The reason for this is that no good election instrumental variables exist. Also, this is the standard approach used in PBC literature hence it makes results comparable.

However, some econometric problems exist from estimating the equation above. The lagged dependent variable and the unobserved heterogeneity captured by μ_{it} makes Ordinary Least Squares (OLS) estimator biased. Fixed Estimator cannot be used since taking first differences removes the unobserved heterogeneity but the presence of a lagged dependent variable retains the endogeneity problem. The Fixed Effects bias is dependent on the length of the time series. The estimator is consistent only if the length goes to infinity (Nickell, 1981) (Kiviet, 1995). With the average number of observations for each country in the sample as 26, the bias of the fixed effects estimator may still be present.

3.4.2 Generalized Method of Moments

The Arellano and Bond generalized method of moments (GMM) estimator is used to counter some of the problems. It instruments the differenced variables that are strictly exogenous with all their available lags in levels.

Since the lagged dependent variable $Logfisc_{it}$ is present in the model, it is correlated with the error term causing endogeneity. This is because the lagged error of the logarithm of fiscal balance is not contemporaneously correlated with the error term $\varepsilon_{i,t}$. The error term of the current period is therefore correlated with the error term of the previous period. But since the lagged period's error is a direct determinant of the lagged fiscal balance, this creates correlation between the lagged fiscal balance and the current period's error. Arellano and Bond propose the difference GMM estimator for dynamic panel models. The first difference for the equation can therefore be written as follows:

$$(Logfisc_{it} - Logfisc_{i,t-1}) = \beta_1(Logfisc_{i,t-1} - Logfisc_{i,t-2}) + \beta_3(Growth_{i,t} - Growth_{i,t-1}) + \beta_4(Inf_{i,t} - Inf_{i,t-1}) + \beta_5(Ele(-1)_{i,t} - Ele(-1)_{i,t-1}) + \beta_6(Ele_{i,t} - Ele_{i,t-1}) + \beta_7(Ele(+1)_{i,t} -$$

$Ele(+1)_{i,t-1}) + \beta_6(logExch_{i,t} - logExch_{i,t-1}) + (\varepsilon_{i,t} - \varepsilon_{i,t-1})$ For $i = 1, \ldots N, t = 1, .. T$

For consistent parameter estimates of the dependent variable, additional instruments needed to be included. The valid instruments for the independent variables are lagged values of the dependent variable. However, for the lagged dependent variable $Logfisc_{it}$, its instruments are lagged values of the dependent variable and can either be $Logfisc_{i,t,}Logfisc_{i,t-1}$ or $Logfisc_{i,t-2}$. This solves the problem of endogenous variables.

The two lags of the logarithm of the fiscal balance are used as GMM-style instruments since they are the endogenous variables. The instruments of the endogenous variables need to be kept few especially since the number of countries in the sample are few. A large number of instruments will lead to the sargan test being weak. The Sargan test is a test of over-identifying restrictions where the null is that the instruments are not correlated with the error term. This is done in order to provide some evidence of the instruments' validity to be a 'good instrument' which is meant to make the instruments relevant (correlated with the endogenous variables). The exogenous variables are instrumented against themselves. They include the pre-election, election and post-election year dummies, the real GDP growth rate, the logarithm of the exchange rate and the inflation rate.

3.4.3 Autocorrelation Test

A test for autocorrelation was also carried out. Autocorrelation refers to when an error term in one period affects the other. Presence of autocorrelation in a regression may make the coefficients appear to be statistically significant when they are not. The null hypothesis in this test is that there is no autocorrelation and is applied to differenced residuals. The test for AR (1) process in first differences usually rejects the null hypothesis but the test for AR (2) is accepted to prove that there is no first-order serial correlation in the residuals of equation in levels.

The lagged levels are however poor instruments which leads to less efficient estimates for first differences if the variables are similar to a random walk. The system GMM by

Arellano and Bover is proposed in which if the original equation in levels is added to the system leading to additional instruments it increases efficiency. In this equation, variables in levels are instrumented with suitable lags of their own first differences. These first differences should be uncorrelated with the unobserved country effects hence the need to use extra moment conditions that rely on initial observations.

However, difference GMM was used for this analysis because system GMM requires the use of more instruments. Therefore, it may not be appropriate to use system GMM with a dataset with a small number of countries. Because when the number of instruments is greater than the number of countries the Sargan test may be weak.

3.5 Estimation Procedure

Univariate explanatory data analysis was first carried out to understand the data through its descriptive statistics.

The Akaike Information Criteria (AIC) was used to find the appropriate number of lags of the dependent variable.

The Arellano and Bond generalized method of moments (GMM) estimator was then used with the GMM-style instruments as the two lagged levels of the logarithm of fiscal balance which is the dependent variable. The control variables: real GDP growth rate, inflation rate and the logarithm of exchange rate and the election variables were instrumented against themselves in the difference equation.

The Sargan test and the test for autocorrelation are carried out on the GMM model. First, there is test for the validity of the assumption that the error term e_{it} is not serially correlated. Serial correlation refers to when an error term in one period affects the other. Presence of serial correlation in a regression may make the coefficients appear to be statistically significant when they are not. The null hypothesis in this test is that there is no autocorrelation and is applied to differenced residuals. The test for AR (1) process in first differences usually rejects the null hypothesis but the test for AR (2) is accepted to prove that there is no first-order serial correlation in the residuals of equation in levels.

The second test was the Sargan test of over-identifying restrictions. The null is hypothesis is that the instruments are not correlated with the error term. This was done in order to

provide some evidence of the instruments' validity to be a 'good instrument' which is meant to make the instrument relevant (correlated with the endogenous variables).

Chapter 4: Empirical Results and Analysis

The findings from this research are presented in this chapter. Descriptive statistics were first carried out to better understand the data, then the Arellano Bond GMM estimator was used to test for evidence of Political Budget Cycles.

4.1 Descriptive Statistics

Analysis was conducted on univariate exploratory data. This gave a general overview of the data. The table below shows the descriptive statistics.

Table 1: Descriptive statistics

Variable	Mean	Std Dev.	Min	Max	Skewness	Kurtosis
Log Fiscal Balance	65.50	37.67	1	130	0	1.80
Inflation rate	11.46	10.02	-2	56	1.94	7.19
Growth rate	3.08	13.83	-68.3	36.2	-1.50	8.43
Log Exchange	6.13	1.22	3.13	7.94	-0.59	2.18
Pre-election dummy	0.16	0.37	0	1	1.84	4.38
Election Dummy	0.16	0.37	0	1	1.84	4.38
Post-election Dummy	0.15	0.35	0	1	2.00	4.01

The total number of observations is 130. The election indicators took a value of 1 during the election year, pre-election year and post-election year and 0 otherwise. From the table above the inflation rate was is at 11.46% on average with the minimum at -2% while the highest is at 56%. This shows some instability in the inflation rate. The real growth rate is at 3% of GDP. Which means that on average, the 5 countries will grow at a rate of 3%. Logarithm is taken for the exchange rate to convert the USD to logarithm. The fiscal balance was also converted to logarithm to set the variable to a certain range and avoid extreme values.

The panel dataset is strongly balanced as there are no missing data points. The real GDP growth rate and the logarithm of the exchange rate are negatively skewed while the election dummies and the inflation rate are positively skewed. A kurtosis of greater than

3 implies non-normality of the data. The logarithm of fiscal balance and the logarithm of exchange rate are the only variables that are normally distributed. While the inflation rate and real GDP growth rate experience kurtosis that is in excess of 3. This may have an effect on statistical inference. However taking the taking of differences eliminates non-normality.

4.2 Findings

The Arellano and Bond GMM estimator is applied using two lagged levels of the dependent variable as GMM style instruments and all the control variables and election dummies were instrumented against themselves.

The choice of two lags is justified by the use of information criteria as shown in table 2.

Table 2: Information criteria

Lag	Df	p	AIC	HQIC	SBIC
0			10.07	10.07	10.09
1	1	0.000	9.54	9.56	9.58*
2	1	0.071	9.53*	9.55*	9.59

Akaike information criteria is applied in this case despite the fact that it allows the use of many lags as compared to SBIC. This is because the maximum number of lags that affects fiscal balance need to be identified.

Table 3: Arellano Bond panel-data estimation

Log of fiscal balance	Coefficients	Standard error	Z	P |z|
L1	0.4469117	0.0898552	4.97	0.000
L2	0.1895929	0.0872812	2.17	0.030
Pre-election year	5.237185	6.80972	0.77	0.442
Election Year	1.247605	6.685576	0.19	0.852
Post-Election Year	4.426589	6.840923	0.65	0.518
Growth rate	-0.623618	.2109856	-2.96	0.003
Log exchange rate	3.311495	5.631326	0.59	0.556
Inflation rate	0.2456991	.2932389	0.84	0.402
F(8,111)	15.49			
Prob > F	0.0000			
R^2	0.5274			

From the table above, it is evident that none of the election variables are significant at either the 1%, 5% or 10% level of significance. The coefficients of the election dummies although insignificant, agree with literature to support the existence of fiscal manipulation during election years. The positive coefficient indicates that there is an increase in the size of the balance in the pre, post and during an election year. This validates the existence of Political Budget Cycles.

The growth rate and the two lagged levels of the logarithm of the fiscal balance are significant. However, there is a negative coefficient to indicate that there is a negative relationship between the fiscal balance and the GDP growth rate. It therefore means that a 1 percentage point increase in the real GDP growth rate results to a 62% decrease in the fiscal balance. The lagged levels of the logarithm of fiscal balance are significant to indicate that the fiscal balance in the current year is affected by the fiscal balance of the previous two years.

The logarithm of exchange rate is insignificant though it implies that an increase in the exchange rate leads to an increase in the fiscal balance. The inflation rate is also insignificant but implies that an increase in the inflation rate leads to an increase in the fiscal balance.

The R^2 is 0.5274 implying that the independent variables explain 53% of the variation of the logarithm of the fiscal balance. The f-test of the overall significance is less than 0.05. The null hypothesis indicates that all the variables are not jointly significant in influencing the dependent variable. The null hypothesis is therefore rejected indicating that all the independent variables which include two lagged levels of the fiscal balance, the election indicators, exchange rate, inflation rate and the real GDP growth rate are significant in influencing fiscal balance.

The sargan test is a test on the validity of instrumental variables. The null hypothesis being tested is that the instrumental variables are exogenous making them acceptable. Based on the results of the sargan test, we fail to reject the null hypothesis that the instruments as a group are exogenous. This is because the p-value is greater than the level of significance. Therefore, we can therefore conclude that the instruments used are well chosen.

Table 4: Sargan Test

```
Sargan test of overidentifying restrictions
        H0: overidentifying restrictions are valid

        chi2(107)     =  119.5361
        Prob > chi2   =    0.1919
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The Arellano Bond is a test for autocorrelation. The null hypothesis is that no autocorrelation exists for the differenced residuals. The null hypothesis is rejected for the first order since the p-value is less than the 5% significance level. This is so because of the presence of the lagged dependent term. However, for the second order serial correlation for the first difference residuals, the p-value is greater than the level of significance. This indicates that there is first order serial correlation but there does not exist second order serial correlation in levels. Hence there is no evidence of misspecification.

Table 5: Test for autocorrelation

Arellano-Bond test for zero autocorrelation in first-differenced errors

Order	z	Prob > z
1	-7.3124	0.0000
2	-.55721	0.5774

H0: no autocorrelation

Chapter 5: Discussions and Conclusion

This chapter links the objective of this study to the results presented in chapter 4. The results are discussed and conclusions based on the results are contained in the sections below.

5.1 Discussion

The main objective of this study was to determine whether fiscal policy is affected by elections in the EAC member countries. The objective was achieved through carrying out the Arellano Bond GMM estimation on the data. The variables used included the logarithm of fiscal balance and its lagged values, the election indicator for the pre-election year, election year and post-election year and some control variables such as the real GDP growth rate, inflation rate and the logarithm of the exchange rate. To prove the existence of political budget cycles, the election indicators are meant to be significant.

Studies have noted that existence of these political budget cycles is indeed a phenomena of developing countries due to their weak institutions (Block, 2002). However, results in this study indicate that there does not exist any manipulation prior post and during election years as indicated by the lack of significance at 1%, 5% and 10% levels of the fiscal balance. Similar to Seitz (2000), there is evidence of no fiscal manipulation but rather the fiscal balance is affected by economic factors in particular real GDP growth. Seitz (2000) in his study of 10 German states from 1970-1996 finds no evidence of expenditure or fiscal manipulation and concludes that the fiscal variables are affected by economic factors. Despite the fact that the fiscal balance is insignificant during the election years, there is a positive coefficient which is in line with political budget cycle literature (Shi & Svensson, 2006).

From the results, a 1 percentage point change in the real GDP growth rate would lead to a 62% decrease in the fiscal balance. Gupta, Clements, Baldacci, and Mulas-Granados (2005) in their study argue that the fact that fiscal policy and growth are inversely related holds for countries that have not yet achieved stable macroeconomic conditions. This is because countries that have more stable macroeconomic conditions do not experience increased growth with a decrease in fiscal balances.

The lagged variables of the fiscal balance are also significant with a positive coefficient implying the current fiscal balance is caused by the balance from the previous two years. This therefore means that the fiscal balance variable is highly persistent.

The exchange rate is insignificant though the positive coefficient implies that there is a positive relationship between exchange rate and fiscal balance. This may be the case since government expenditure on infrastructure is heavily reliant on imports. Therefore a change in the exchange rate makes imports more expensive hence increasing expenditure which leads to increased balances. The inflation rate is also insignificant with a positive coefficient which indicates that there exists a positive relationship between inflation and fiscal balance. This is in line with what is expected because an increase in inflation leads to increased expenditure which in turn increases the fiscal balance.

5.2 Conclusion

The study set out to find out whether fiscal policy is affected by elections amongst the East African countries. This is because incumbents may be opportunistic and manipulate fiscal policy by increasing fiscal balances to finance their expenditure which leads to the existence of political budget cycles

The existence of these cycles is seen as a phenomena of developing countries because of their weak institutions (Block, 2002). However, the results of this study disagree with political budget theory literature. Fiscal balances are insignificant in election years. However, the relationship between fiscal balance and elections is in support of political budget cycle literature because of the positive coefficient that indicates that in election years, the deficit increases.

Fiscal balance is however influenced by the growth rate. A 1 percentage point increase in the growth rate leads to a 62% decrease in the fiscal balance. The fiscal balance in East African countries is therefore influenced by economic factors such as the real GDP growth rate. Therefore policies directed to increase real GDP growth amongst the East African member countries will help reduce the fiscal balance.

5.3 Recommendations

Knowledge on the existence of PBC is important for policy makers in the achievement of fiscal consolidation. Fiscal consolidation refers to policies the government undertakes to reduce debt. Despite the fact that fiscal balance is not driven by opportunistic incumbents, there is still need to strengthen political institutions since this leads to better governance, better allocation of public goods which leads to growth. Growth has a direct effect on the reduction of balances.

5.4 Area of further research

Scholars such as Mackic (2013) use different fiscal variables such as expenditure, taxes, current and capital expenditure in Croatia to find out that fiscal balance and total expenditure increase in the election, pre-election and post-election years. Inclusion of other fiscal variables apart from fiscal balance which incorporates both revenues and expenditures could possibly yield different results.

It would also be interesting to assess the impact of fiscal policy at the county level especially with the onset of devolution for a country like Kenya. This would assess whether decisions made by voters are influenced by opportunistic incumbents.

5.5 Limitations of the study

One major setback for this study is the availability of data for EAC member counties hence leading to a short time series which leads to fewer data points. The results may therefore be more robust with a longer time series.

Appendix

Election years for the EAC countries from 1990-2015

Country	Election Years
Kenya	1992, 1997, 2002, 2007, 2012
Uganda	1996, 2001, 2006, 2011
Tanzania	1995, 2000, 2005, 2010, 2015
Rwanda	2003, 2010
Burundi	1994, 1998, 2005, 2010, 2015

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