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**Research Report**

## Political business cycles and macroeconomic convergence: The WAMZ experience

WAMI Occasional Paper Series, No. 7

**Provided in Cooperation with:**

West African Monetary Institute (WAMI), Accra

*Suggested Citation:* Tarawalie, Abu Bakarr; Sissoho, Momodu; Conte, Mohamed; Ahortor, Christian R. (2014) : Political business cycles and macroeconomic convergence: The WAMZ experience, WAMI Occasional Paper Series, No. 7, West African Monetary Institute (WAMI), Accra

This Version is available at:

<https://hdl.handle.net/10419/264218>

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WAMI OCCASIONAL PAPER SERIES  
VOL.1 NO. 7

**POLITICAL BUSINESS CYCLES AND MACROECONOMIC  
CONVERGENCE: THE WAMZ EXPERIENCE**

ACCRA, GHANA

APRIL, 2014

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# POLITICAL BUSINESS CYCLES AND MACROECONOMIC CONVERGENCE IN THE WAMZ

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APRIL 2014

ABSTRACT

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*This study investigates the existence of political business cycles (PBCs) in the West African Monetary Zone (WAMZ) countries and their implications for the attainment of the macroeconomic convergence criteria required for the formation of monetary union and the introduction of the single currency. The paper formulates hybrids of non-rational opportunistic and partisan PBC empirical models for estimation and analysis of real sector variables, fiscal outturns and monetary aggregates.*

*The results reveal that in the Gambia, there is very little evidence of the existence of PBC in most of the variables used. The country's performance on both the primary and secondary convergence criteria may not suffer significant challenge from PBC trends if the data generating processes remain unchanged. The data on Ghana confirm significant PBC trends in most of the fiscal and monetary variables, while real sector variables exhibit insignificant PBC trends. The existence and the direction of PBC trends suggest that Ghana may face significant challenges in complying with most of the convergence criteria in election years. Regarding Guinea, there is evidence that real sector variables and fiscal outcome variables follow PBCs. Money supply also exhibits a PBC with contraction coinciding with election years and expansion occurring in non-election years. The results suggest that opportunistic and ideological political behaviour may affect Guinea's compliance with inflation, fiscal deficit and central bank financing criteria. Analysis of the Nigerian data shows that inflation, fiscal variables and money supply follow PBC trends with low values/ rates occurring in election years and higher values/ rates in non-election years. Thus, Nigeria's compliance with most of the convergence criteria may not be seriously challenged in election years. For Sierra Leone, real sector variables and money supply do not show signs of PBC. However, total and recurrent expenditures exhibit significant PBC trends but with contraction in election years, while revenue increases in those years. Thus, the fiscal deficit contracts in election years and expands in other years. The results reveal that PBC do not pose serious challenges to Sierra Leone's compliance with the primary and secondary convergence criteria. Although the PBC trends in some of the WAMZ countries during the study period do not pose significant challenges to the attainment of the WAMZ macroeconomic convergence criteria, the fiscal and monetary authorities in the WAMZ countries are urged to take steps to minimise possible impacts of PBCs on their performance regarding the convergence scale.*

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**Key Words:** *Political business cycle, WAMZ, Macroeconomic Convergence*

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<sup>1</sup> The authors are staff of the Research and Statistics Department of the West African Monetary Institute. The authors are grateful to the Technical Committee of the WAMZ, and staff of WAMI for their valuable comments. They also appreciate the comments of the external reviewers. Finally, on behalf of WAMI, the authors are grateful to the African Capacity Building Foundation (ACBF) for the financial support in processing this report. The views expressed in the occasional paper are those of the authors and do not necessarily represent the views of WAMI. The occasional papers describe final reports of research studies prepared by the authors and presented to the technical Committee during the WAMZ Convergence Council meetings



## 1.0 INTRODUCTION

The West African Monetary Zone (WAMZ) was established by the Authority of Heads of State and Government of five West African Member States (The Gambia, Ghana, Guinea, Nigeria and Sierra Leone) (the Authority) in December 2000, with the objective of establishing a common central bank and the introduction of a single currency. After a decade of being on observer status, Liberia became a full-fledged member of the WAMZ in February 2010. The West African Monetary Institute (WAMI), which was also established by the Authority, commenced operation in March 2001. It was primarily mandated to undertake technical preparations for the launch of a monetary union for the West African Monetary Zone (WAMZ) and the establishment of a West African Central Bank (WACB).

The West African Monetary Zone (WAMZ) project requires all member states to meet four primary and six secondary macroeconomic convergence criteria as a preconditions for take-off of the WAMZ monetary union. Since the inception of the project in 2000 and the establishment of the West African Monetary Institute (WAMI) in 2001 to oversee the project, member countries have been assessed on their performance on the convergence criteria. The WAMZ monetary union was initially scheduled to commence in January 2003, after a convergence process. Despite efforts by the Member States to meet the benchmarks required for the commencement of the monetary union, the launch of the monetary union was postponed to July 1, 2005, due to the lack of macroeconomic and structural convergence. Member countries have failed to simultaneously satisfy all the convergence criteria required for the formation of the WAMZ monetary union and the introduction of the single currency. This led to further postponement of the launch date for the monetary union to 2005, 2009 and 2015. With the new date for the commencement of the monetary union fixed for on or before January 1, 2015, member countries are being urged to put in place policies, measures and programs that will facilitate their macroeconomic convergence for the next launch date. An observable behaviour or trend regarding

performance on the convergence criteria is that, since the introduction of the WAMZ programme, member countries' performance on the convergence criteria (especially fiscal deficit to GDP and inflation criteria) continued to deteriorate during election years, hence, the question, "Do political business cycles (PBCs) exist in WAMZ member countries?" It is to this extent that this study endeavours to investigate a plausible existence of PBCs and the implications for the attainment of the macroeconomic convergence criteria required for the formation of monetary union and the introduction of the single currency in the WAMZ.

The term political or budget cycle (PBC) is used to describe a cyclical fluctuation in fiscal policies induced by the timing of elections. The direct cause of a PBC lies in government's opportunistic behavior: incumbent politicians, regardless of their ideology, try to use expansionary fiscal policies before elections to please the voters, maximize their popularity and increase their re-election chances. Politicians are generally believed to be driven by office seeking motives. Thus, as election periods approach, incumbents are more apt to manipulating fiscal and other related economic policies to increase their chances of being re-elected. This generates cyclical variations in macroeconomic variables, which are commonly referred to as political business cycles (PBCs). Within the WAMZ, the existence of PBCs and their possible impact on member countries' performance on the convergence scale are not known.

The objective of this study, therefore, is to investigate the extent to which electoral cycles affect real sector variables, fiscal outturns and monetary aggregates. In other words, this study seeks to find out whether or not these variables show trends of political business cycles (PBCs). Existence of PBCs will mean member countries will find it difficult satisfying and sustaining their compliance with the convergence criteria, especially in election periods. Thus, the findings will help both WAMI and member countries to identify which policy measures to adopt in

minimising the impact of PBCs on members' compliance with the macroeconomic convergence criteria.

The rest of the paper is structured as follows: Section 2 explores the background of the WAMZ Project and reviews member countries' compliance with the convergence criteria since 2001. It further looks at the political systems in each of the member-States and identifies their

respective electoral periods to ascertain how they relate to their performance on the convergence criteria. Section 3 reviews the political business/budget cycle (PBC) literature, while Section 4 discusses the theoretical framework for the study, formulates the empirical model and describes the data to be used for the estimation. In Section 5, the PBC estimation results are presented and analysed. Section 6 concludes the paper with some policy recommendations.



## 2.0 BACKGROUND

### 2.1 The WAMZ Project and Macroeconomic Convergence

The four primary criteria of the WAMZ Project are: (1) maintaining end-of-year inflation rate at a single-digit level; (2) keeping the fiscal deficit within 4 percent of GDP; (3) central bank's financing of fiscal deficit should not exceed 10 percent of previous year's tax revenue; and (4) gross external reserves should cover at least three months of imports. The six secondary convergence criteria are: (1) clearance and non-accumulation of arrears; (2) tax revenue should be at least 20 percent of GDP; (3) salary mass should not exceed 35 percent of tax revenue; (4) public investment from domestic resources should be at

least 20 percent; (5) real deposit interest rate should remain positive; and (6) nominal exchange rate appreciation or depreciation should be within a band of  $\pm 15$  percent of 2006 exchange rate (WAMZ ERM II).

Multilateral surveillance missions conducted so far by WAMI to member countries to assess their compliance with the convergence criteria reveal that members find it difficult to satisfy and sustain their performance on the convergence criteria. Member countries' performances on the primary convergence are presented in the Table 1.

**Table 1: Number of Criteria Satisfied by WAMZ Member Countries, 2002 - 2012**

Country	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
The Gambia	1	1	3	3	4	4	4	3	2	3	3
Ghana	0	2	2	2	2	2	0	0	3	4	3
Guinea	2	0	0	2	1	2	2	3	0	2	2
Liberia	NA	NA	NA	NA	NA	NA	NA	4	4	3	3
Nigeria	3	2	3	3	4	4	3	3	2	3	3
S. Leone	2	0	2	2	2	2	2	2	1	1	2

Source: WAMI Macroeconomic Convergence Reports

From the table, no country satisfied all the primary convergence criteria between 2001 and 2005, hence, the postponement of the launch of the monetary union to December 2009. From 2006 – 2008, Gambia satisfied all the 4 criteria,

while Nigeria met all the 4 in 2006 and 2007. In 2009 and 2010, only Liberia met all the 4 criteria on its accession to the WAMZ Programme. Thus, the launch date for the monetary union was again shifted to on or before January 2015.

### 2.2 Political Systems and Electoral Cycles in WAMZ Countries

By definition, the term electoral cycle can be used to describe the several phases involved in electoral process within a political contrivance or an organizational system. The phases of an electoral process can be generally classified into three periods; namely: pre-electoral, electoral, and post-electoral periods, with each phase having some desirable or specific agenda. For example, the pre-electoral period, could involved certain stages such as planning, training, registration, etc.; electoral period involved such activities as

campaign, nominations, voting, and results; and, finally, in the post-electoral period, the actors, agents, and all stakeholders, particularly the overseer institution engage in the process of review, reform, and strategy toward the next period.

Putting a time frame to these activities for a particular electoral phase is quite difficult since electoral periods differ from one country to the other. And even where electoral periods are the

same, electoral laws may require certain activities to be done within stipulated periods which may differ across countries. For the purpose of this study and considering the electoral pattern in the WAMZ countries, for countries with four-year electoral cycles, electoral periods refer to the year in which presidential elections are held irrespective of which month of the year the elections are held. The pre-electoral period refers to the year before the electoral period, while the post-electoral period refers to the two years after the electoral period. For countries with five-year electoral cycles, the electoral period is the year within which the presidential elections are held; the pre-electoral period is the year before the elections, while post-electoral period refers to three years following the election year. In countries where the electoral cycle takes seven years, the electoral period is the year within which presidential elections are held. Pre-electoral periods refer to two years before the election year, while post-electoral periods refer to four years following the election year.

The following sub-sections provide a brief summary of the different political systems practiced by the respective WAMZ member-states since independence.

### **Gambia**

Gambia is an emerging democracy. The country has practiced democracy since independence through 1994, when Yahya Jammeh (APRC) seized power in July 22, 1994, through a military coup. Jammeh's military regime administered the economy until the country transitioned into a democratic nation in 1996. Through a direct popular vote, Jammeh was elected president for a five-year term, from 1996 to 2001, a period that has been described as a restricted democratic practice. President Yahya Jammeh was re-elected in 2001, 2006 and 2011.

The electoral system in Gambia is unique with its first past the post simple majority system. The country has a unicameral legislature, and comprises 53 seats serving for a five-year term. Forty-eight members are elected by direct popular

vote in single-member constituency, while the remaining five are appointed by the president. The next scheduled National Assembly election is slated for 2012.

### **Ghana**

The democratic political system of Ghana is a mixture of presidential and parliamentary by design. The president is elected by direct popular vote for a four-year term. Members of the unicameral parliament with 230 seats are elected by single-member constituencies using the first-past-the-post system, and also serve a four-year term.

Democratic dispensation in Ghana has evolved through several stages. Between 1957 and 1958, the nation started with a full democratic experience, which turned to a restricted democratic practice from 1958 to 1964. Between 1964 and 1966 the country operated under a one-party-state (CPP), and from 1966 to 1969, the country was under the military regime. Democracy returned in 1969, but interrupted by another military intervention in 1972. The military remained in power until 1979, when another democratic dispensation was tried. The new democracy was barely practiced for two years, before another military coup emerged, alleging an endemic and systemic corruption. Ghana thus experienced a protracted military government, lasting eleven years.

Democracy returned to Ghana in 1992, and the country became classified as an "emerging democracy." Ever since, a peaceful and stable democratic has thus returned to Ghana. Elected in 2008, President John Evans Atta Mills (NDC) remains the current president since January 7, 2009. Following the death of President John Atta Mills, John Dramani Mahama took office as President on 24 July 2012. He was later elected to serve his first term as president in December 2012 election.

### **Guinea**

Guinea's political system can be described as an "emerging democracy." The head of government



is the president, who is elected for a seven-year term. The president also appoints the prime minister. The legislative system in Guinea is unicameral. The economy currently has 114 seats in the National Assembly, whose members is elected by direct popular votes through parallel systems, and serves five-year term. The parallel system is such that 38 single-member constituencies use the first-past-the-post (simple majority) system and 76 in one national constituency using the party-list proportional representation system.

Since independence, the political system in Guinea has evolved through different forms of political practices or experimentations. Between 1958 and 1984, several, the country had a one-party system before the incursion of military regime that reigned from 1984 to 1990. A multi-party system democracy returned in 1990, but by 1993 it had retrogressed to a restricted democratic dispensation, which lasted through 2008, after which another military regime administered the economy until 2010.

Since December 2010, the emerging democracy of Guinea has as its elected president, Alpha Condé (RPG), who is expected to serve a seven-year term as prescribed by the constitution. Accordingly, the next presidential election is scheduled to hold in 2017.

## **Nigeria**

Nigeria's emerging democracy has a presidential political system. The country has a three-tier system of government, that is, the Federal (also referred to as National), State, and Local governments. The federal government is headed by the presidency at the executive branch and a bicameral national assembly as the legislature. The bicameral legislative national assembly comprises of the Senate (109 Seats) and House of Representatives (360 Seats). Both president and legislators are elected by direct popular vote for a four-year terms.

The executive arms of each State and Local governments are headed by the Executive Governor and Local Government Chairman,

respectfully. Both State and Local legislative arms are unicameral in nature, also called State Assembly and Local Government Councilors, respectively. State Assembly members serve a four-year term, corresponding to the electoral cycles at the Federal or National level. The Councilors serve a three-year term, and as prescribed in the constitution, their electoral periods or cycles are determined by their respective State Governors.

Since independence, political situation in Nigeria has been frequently interrupted by military incursion in government. The first democratic dispensation was a British style parliamentary system that lasted for barely six years, between 1960 and 1966. Following a series of political unrest across the nation, consequential to highly perceived election rigging, the military struck and ruled until 1979 when democracy returned with American presidential framework.

The second Republic lasted for another four years, 1979 to 1983, before the military regime intervened and stayed in government for another six years. From 1989 to 1993, a restricted democratic practice was in place. The country regressed to full military governance in 1993 through 1998, after which the transition to a new democracy began and emerged fully in 1999. Since 1999, the emerging democracy has been sustained in Nigeria. The most recent elections were held in April 2011.

## **Sierra Leone**

The political system in Sierra Leone is Presidential democracy with a unicameral legislature of House of Representatives. Both the president and Legislators are elected for five-year terms by direct popular vote. Electoral system for the presidency has a two-round (run-off), and a candidate must have a minimum of 55 percent of the vote to avoid a second round.

The unicameral House of Representatives has 124 Seats. Of these, 112 members are elected by direct popular vote in single-member constituencies using the first-past-the-post (simple majority) system. The remaining twelve are Paramount

Chiefs, representing each provincial district, and are indirectly elected.

After independence, Sierra Leone practice democracy between 1961 and 1967, before a brief military interruption in government for about one year. Emerging democracy returned in 1968 and lasted through 1971. Following the country's constitutional amendments on 19 April 1971, Sierra Leone became a republic. The House of Representatives immediately elected Siaka Stevens of the All People's Congress (APC) as the President, and was sworn in 21 April 1971

From 1971 to 1978, the political situation in Sierra Leone was a restricted democratic practice, after which the country evolved into a one-party state, and then transitioned into Multiparty by 1992. The military struck again in 1992 and remained in power for another four years, before experimentation with democracy, which only

lasted for one year. When military took over the government in 1997, it quickly prepared the country for another emerging democracy. Since 1998, democratic dispensation in Sierra Leone had been relatively stable in the sub-region. Ernest Bai Koroma became the president in 2007. The next schedule election is expected to hold in 2017.

The foregoing political system summaries indicate that member countries have a chequered history since the time of attaining their independence or state formation. Indeed, these countries experienced their own 'Dark Ages' characterised by military takeovers spanning the late 1960s to late 1990s. In order not to get lost in these 'Dark Ages', this study will restrict itself to the electoral cycles from 1990 to date with emphasis on presidential election dates. Table 2 shows the electoral cycles in WAMZ member countries between 1990 and 2010.

**Table 2: Electoral Cycles in the WAMZ**

Country	Presidential Election Dates
The Gambia	1992 ,1996 ,2001 ,2006 ,2011
Ghana	1992, 1996, 2000, 2004, 2008,2012
Guinea	1993, 1998, 2003, 2010
Liberia	1997, 2005,2012
Nigeria	1993, 1999, 2003, 2007, 2011
Sierra Leone	1996, 2002, 2007, 2012

Source: Compiled by WAMI Staff



### 3.0 LITERATURE REVIEW

#### Theoretical Literature Review

PBC analyzes the interaction of the political system and economic system, that is, how macroeconomic fundamentals behave when political factors are at play. To understand the influence of election cycle on the economy, one contending issue is to understand the characteristics of political parties, the candidates, for example, whether the parties are opportunistic or ideological and partisan.

An opportunistic party will employ monetary or fiscal policies that maximize the chances of being elected or re-elected. Ideological party, on the other hand, will implement policies with the objective of realizing certain economic or social agenda, while ascribing no independent weight to winning or seeking political popularity. Assumptions about other key players in the political system, especially regarding the voters, are also central to appreciating how the economic impact will manifest. Accordingly, different approaches to the theory of political business cycle have been proposed.

Nordhaus (1975) pioneered a formal theoretical opportunistic framework whereby he showed that if voting is based on economic performance in the recent past, assuming an adaptive expectation scheme, an opportunistic incumbent would find it optimal to generate a cycle of an economic stimulus before elections as it corresponds to his term in office, not minding a recession later. To Nordhaus, in a democratic dispensation, politicians have less incentive to value post-election consumption. This contrasts with private investors who can trade off short-term consumption for long-term investments. Nordhaus' model is explained using the famous Phillip's curve inflation-unemployment short run trade-off. The voters are assumed to be sensitive to both inflation and unemployment in deciding who to vote for. Policy maker can generate a desired output growth level by selecting an appropriate level of inflation. An observable pattern exhibited by politicians is to embark on

spending glut as election approach, not minding its inflationary implication, and followed by some dose of macroeconomic austerity at the dawn of political cycle upon coming to power. Unfortunately, such policy strategy could generate a cycle with a suboptimal outcome without any real gain in output growth. With a moderately increasing inflation before election creating growth, the higher inflation becomes permanent after election, notwithstanding being followed with a contractionary policy.

An alternative model, the "ideological cycle or partisan" model was formulated by Hibbs (1977). Ideological cycle postulated that political parties are ideologically identifiable, and they choose certain economic policies based on party philosophy; for example, a Left Wing party that cares more about low unemployment is willing to accommodate high inflation, while the Right Wing that is concerned with controlling inflation will tolerate high unemployment. Depending on the ideology of party in power, economic policies change and partisan preferences shape policy formulations driving the observable business cycle. By implication, the key actors or agents of change within this framework may not necessarily be political candidates, but the electorates or other pressure groups that identify preferences according to party platforms. Thus, political business cycles often signify the economy's fluctuation around its long run behaviour being created by political pressures and interest groups [See also: Paldman, 1997; p.342].

Both models have been criticised for assuming that voters are non-rational, retrospective in how inflation expectation is formed, and myopic in evaluating competence of politicians. Contrary argument is that, with experience, voters understand that politicians will likely be opportunistic, hence ready to punish incumbent and reward the challenger. The models also ignore the role of fiscal policy, and focus mainly on Phillip's curve involving only monetary and real



variables, the issue of central bank independence and how it factors in becomes imperative. Such independence of the monetary authority limits the control an incumbent may have over the choice of monetary policy tools to induce desired inflation level.

Later models addressed these omission and simplistic assumptions by incorporating into the models voters with all available information and rational in their expectation formulation. Alesina (1988), for example, examines how the degree of the Central Banks' independence affects the magnitude of political influence on the economy and monetary policy. An independent Central Bank could reduce the magnitude of politically induced fluctuations in monetary policy. According to Rogoff (1990), inflation averse Central Banker could reduce the inflationary bias in policymaking. Empirical evidence revealed that independent Central Banks have been associated with a lower average inflation rate and may have been responsible for reducing politically induced volatility of monetary policy and inflation (Alesina, 1988; p17)

Deviating from the Traditional non-rational opportunistic model, Persson and Tabellini (1991) (hereafter, P & T) model augments Nordhaus (1975) model with a rational expectation scheme. In P & T (1990), voters are forward looking and rational so that expectation are formed based on current available information at time T, rather than retrospectively. A competence factor for political candidates is also introduced. The competence term and the associated information asymmetry account for how efficiently, different governments handle the economy. These factors introduce uncertainties in election outcome and source of the accompanying cycle.

In a related postulation, Rogoff (1990) proposes the political agency theory, which stressed the importance of reputation building by office seeking politician in shaping political business cycle. An important contribution by Rogoff (1990) was its application of fiscal policy approach, rather than the mainly monetary version employed in the earlier models, amidst his presumption of their basic insights. Rogoff

assumes that the fiscal policy pursued by an incumbent measures and signals how competent or incompetent the incumbent is, which then determines whether voters will reward or punish him. Voting scheme filters politicians with desirable characteristics and can be used to reduce moral hazard problem of politicians. In this regard, rational and informed voters are influenced by pre-election budget manipulation by incumbent. Manipulation is such that during the election years, tax falls and spending increases, while post election periods witness the reverse.

By implication therefore, only the competent incumbent create political budget cycle. Put differently, since all politicians want to win re-election and will always seek to maximize the chances of doing so, this model therefore allows for competent incumbent candidates taking advantage of opportunistic behaviour to get re-elected. Hence, only the competent regime that has greater probability of taking advantage of whatever stimulus economic package it can facilitate to win re-election, thereby generating political cycle. Other variations of political agency model include Besley and Case (1995) and Banks and Sundaram (1998) where electoral accountability of rent-seeking politician are believed to determine cycles.

Some economists have argued that in a situation where incumbent has the authority to determine when an election is held, an opportunistic election timing (OET) hypothesis may hold. The hypothesis suggests that the incumbent may time an election to take place when the economy is doing well to enhance re-election; hence, election timing becomes a function of the status of the economy, rather than the macro-economy being driven by elections as postulated by PBC theories (Alesina, Cohen and Roubini, 1993; Hecklemt and Berument, 1998). Drazen (2000) also formulates an "active fiscal—passive monetary" model of rational opportunistic cycle in which central bank's monetary policy accommodates government's manipulation of fiscal policy.

Following Merikas and Merika (2005), Nordhaus (1989) and Reichenvater (2007), PBC models can be classified as:



*Opportunistic non-rational (traditional) models:* In this model, the government is assumed to be opportunistic – choosing policies to maximise vote or probability of election, while the electorates are considered non-rational (naive and myopic) – are backward looking and places premium on recent events. In terms of economic structure, the government has control over policy instruments and policy is assumed to be effective. Shocks that affect the economy essentially emerge internally from political decisions of the ruling party which is generally considered competent. These models predict that a business cycle will be generated within the electoral cycle with austerity after the elections and a boom before the election. The key characteristics of this cycle are expansion in the year or two before the election with GDP growth above normal (unemployment below normal) in the election year. Inflation begins to increase immediately before or immediately after the election while it declines gradually after the elections in the midst of a recession. In these models, policies and their macroeconomic outcomes are similar across political regimes (irrespective of parties in power).

*Opportunistic rational models:* The electorates in this model are assumed to be rational or super-rational making optimal forecasts based on full information, while the government is opportunistic with control over policy instruments which deliver policy effectiveness. The ruling party is competent in handling the economy but shocks to the economy can emanate from internal or external sources. These models predict that there will be short-run manipulations of policy instruments immediately before elections, which result in increase in deficits, inflation, money growth in the two-three quarters before each election; tightening of monetary and fiscal policies after elections; no systematic, multi-years effects on growth and unemployment except for some minor effects immediately before the election.

*Partisan non-rational (traditional) models:* These models assume that political parties have clear cut ideologies and the ruling party will pursue its

ideology – i.e. pursuance of those policies that deliver economic outcomes consistent with the party's vision and not for the prospects of election/ re-election. The electorates in these models are non-rational – i.e. backward looking and placing more weight on recent events. Here, the ruling party has control over policy instruments, implying policy effectiveness. The ruling party is competent but the source of shocks to the economy is unclear. The predictions of these models are that economic policies change with regime change. In developed economies, booms occur when left-wing governments take power and anti-inflation policies are pursued when right wings are in power. Characteristic of these models is that unemployment rates remain permanently lower, while growth and inflation rates are permanently higher during the tenure in office of left-wing governments than with right-wing governments.

*Partisan rational models:* Here, the ruling party pursues its ideology and the electorates are assumed to be rational/ super-rational with forecasts based on full information. The ruling party is competent and has control over policy instruments that are deployed to achieve policy targets. Shocks to the economy are from internal and/ or external sources. These models predict that there will be no politically induced cycles since popularity follows a random walk. The short-run partisan effects after elections won by the right wing include temporarily lower-than-normal unemployment rates and temporarily higher-than-normal growth rates for about two years. The opposite outcomes result when the left wings are the electoral victors. Inflation is permanently higher when the left is in office than when the right is in office.

*External shock models:* In these models, the ruling party is competent but can choose to be opportunistic or partisan (ideological), while the electorates are either non-rational or ultra-rational. The ruling party has control over policy instruments designed to hit policy targets. Economic shocks experienced in these models are from external sources. Since popularity of parties and elections are unaffected by genuinely external



shocks, PBCs are dominated by external shock cycles.

*Competence variation models:* The key difference between this set of models and the aforementioned ones is that parties have varying degrees of competence. With the presence of ultra-rational electorates, more competent parties remain in power longer than incompetent ones. Electorates tend to place premium on recent events if there is on-the-job training. Shocks to the economy emanate either from internal or external sources.

### Empirical Literature Review

A host of studies have attempted to test the implications of PBC in both developed and developing economies, with most of the study assuming fixed timing of elections. In these studies, evidence of political budgeting in economic cycle is mixed. For example, little support for political cycle in economic activity as predicted by Nordhaus model had been presented by McCallum (1978). Paldam (1979) and Lewis-Beck (1988) had also reported lack of evidence in developed countries. Allen, Sulock, and Sabo (1986) provided evidence that the seasonally adjusted unemployment rate conforms to a four-year political business cycle when the incumbent party is re-elected. Further, Alesina (1987) suggests that the economy tends to behave differently as a function of the ideological consistency of political parties once they are in power, citing the United States where recessions occur at the beginning of Republican administrations, but output growth above trend and higher inflation at the beginning of Democratic governments. Terra & Bonomo (2005) find that domestic currency appreciations tend to occur before federal elections, while devaluations are normally observed after elections are held.

Heckleman and Berument (1998) presented evidence that, in parliamentary democracies, incumbents might have advantage of endogenous election timing. According to them, while the empirical results could not support the political budget cycle hypothesis in Japan and British

democracies, their study uncovered hidden evidence of political monetary cycle in these countries. Earlier studies by Ito and Park (1988) and Alesina, Cohen, and Roubini (1993) have presented evidence of an election being endogenous to GDP growth.

Shi and Svensson's (2002) paper assembled a large panel data set consisting of 91 countries over a 21-year period to examine whether electoral effects on fiscal policy variables are common across countries, and whether they are more or less pronounced in developing countries. To distinguish between outcomes due to deliberate policy choices and unobserved events that are confounded with both the timing of elections and fiscal policies, they also investigated the issue of timing predetermination. Findings reveal that political budget cycle is a universal phenomenon. Larger deficits are created in election periods through increases in government spending amid falling revenue. The study also confirms an existence of systematic differences between developed and developing countries, whereby political budget cycles are large in developing countries but not so in developed countries. Shi and Svensson emphasized further the relevance of an economy's institutional features in explaining the size (and composition) of political budget cycles.

Using Swedish local governments' data, Pettersson-Lidbom (2003) developed a three-step empirical methodology to test the rational electoral cycle hypothesis. The study investigates the existence of electoral cycles in fiscal policy, how the cycles might depend on election outcomes as suggested by political agency models, and to what extent is electoral success related to fiscal policy. Not only is spending raised and taxes reduced in the election year, findings suggest that spending is higher for a government that will be re-elected as compared to those that will not be re-elected; in the post-election year, spending is higher and taxes are lower for re-elected governments than for newly elected ones. Also, re-elected governments spend less and tax more in the post-election year as compared to the election year, and conditional on

taxes, spending is positively related to electoral success.

Faal (2007) examines the presence of opportunistic electoral budget cycles in Papua New Guinea using quarterly time series data. A clear pattern emerges of pre-election manipulations of fiscal policy by incumbent governments, mainly in the form of increased development spending and overall primary expenditure, followed in some cases by retrenchment in post-election periods. Faal's finding supports the predictions of rational opportunistic political business cycle theory. To the extent that revenue was not significantly related to elections, either in the pre- or post-election period, Faal noted that electoral swings in fiscal deficits reflect a preference for influencing expenditures rather than taxation.

Other studies confirming opportunistic cycle (OC) hypothesis include Hallerberg and de Souza (2000) who study Eastern European EU accession countries and find that countries with flexible exchange rate regime and dependent central bank increase monetary supply, while countries with fixed exchange rate engage in fiscal expansions

during electoral periods; Treisman and Gimpelson (2001) who find significantly stronger evidence for the presence of OC in the Russian data; Gonzalez (2002) who studies fiscal policies of the Mexican central government and finds evidence of opportunistic changes in election years; Akhmedov and Zhuravskaya (2003) who, using a monthly panel data for 1996-2002 in 86 Russian regions, find that total budgetary expenditure and its components on education, health-care, social disbursements, industrial subsidies, and mass media start growing about nine months before elections with the largest increase occurring one month before elections; Sergey Verstyuk (2004) who finds strong evidence for the existence of electoral cycles in the behaviour of fiscal policy instruments in Ukraine; Vergne (2009) who, using a panel of developing countries from 1975 to 2001, finds that election-year public spending shifts towards more visible current expenditures, in particular wages and subsidies, and away from capital expenditures; and Sakurai and Filho (2008) who establish that both opportunistic and partisan cycles have occurred in the management of the budgets of Brazilian municipalities after the end of the military government.



## 4.0 THEORETICAL FRAMEWORK AND METHODOLOGY

### 4.1 Theoretical Framework

The theoretical framework adopted is hybrid of non-rational opportunistic and non-rational partisan models following Nordhaus' (1989) view that purely ideological parties will pursue policies that look quite opportunistic. Though the PBC literature tends to differentiate between opportunistic and ideological models, Nordhaus' analysis shows that the distinction between these models is usually blurred in reality. Generally, parties are said to be opportunistic if they pursue policies to maximise the probability of election or re-election without regard to past positions (the views of party faithful) or economic outcomes. Conversely, parties are ideological or partisan if they choose to pursue policies that are geared towards the attainment of certain economic and social objectives without consideration for re-election or political popularity. According to Downs (1957) as quoted in Nordhaus (1989), political parties formulate policies in order to win elections, rather than win elections in order to formulate policies. This observation throws light on the fact that in all democracies, at different times and in varying degrees, both ideology and opportunism are the key underpinnings of political parties' behaviour.

It must be noted that purely opportunistic and purely ideological frameworks have their strengths and weaknesses. A purely opportunistic framework based on Hotelling-Downs models will have equilibrium convergence as a result of single-mindedly pursuit of re-election, while a purely ideological framework will attain a stable equilibrium with divergent party policies. This equilibrium divergence thesis implies that ideological parties are not as responsive to voters' revealed preferences as are opportunistic parties. This also means that as parties become more ideological, their policies diverge farther from the tastes of the median voter. That is, the more ideological parties become, the farther away they move from the centre of the ideological spectrum.

The literature also has it that purely ideological parties are not manipulative as opportunistic parties. However, in reality, overall macroeconomic performance is determined by average policy that seeks to satisfy the median voter. This is because purely ideological parties do not always cling to their avowed political beliefs without compromising their stand for re-election. The extent that purely ideological parties desire to implement their policies, they may choose to exploit voter ignorance or myopia to increase their re-election chances (Nordhaus, 1989).

Within the WAMZ, there is lack of established democracies where parties pursue purely ideological policies. However, in those countries where power changes hands from one political party to the other, parties undertake measures that result in policy shifts during the very first-two years of assuming office, suggesting some level of ideological or partisan tendencies. In line with this observation, the theoretical framework for this study is a hybrid of non-rational opportunistic and non-rational ideological models following Nordhaus (1989).

The non-rational opportunistic partisan framework is built on assumption that political parties differ in their preferences and are purely ideological with a stable Nash equilibrium; government trades off current satisfaction (low unemployment) for current and future pain (high inflation); the parties have zero discount rate for the future (over discounting the future), implying the parties have focus on short-term gains, hence, they exhibit a mixture of ideological and opportunistic behaviours; and that voters are backward-looking with no consideration for macroeconomic outcomes beyond the election. With these assumptions, the  $j$ th party's objective function is specified as



$$1) \quad W_J \{ E[U_J(x)], p_J \} = \beta [p_J U_J(x_J)] + (1-p_J) U_J(x_K) + (1-\beta) p_J$$

Where  $W_J$  is the preference function for Party J;  $E[U_J(x)]$ , the expected utility of macroeconomic outcome according to the ideology of Party J;  $x_J$ , the stated position (ideology) of Party J;  $\beta$  the relative weight on

ideology;  $(1-\beta)$ , the weight on the prospect of gaining office;  $p_J$ , probability of Party J winning the election;  $p_K = 1-p_J$ , the probability of Party K winning the election. Equation (1) can be reduced to the following voting function based on the Phillips curve:

$$2) \quad W_J(u_t, \pi_t, u_{t-1}, \pi_{t-1}) = - \left[ u_t^2 + b_J \pi_t^2 + (1+\mu)^{-1} (u_{t-1}^2 + b_J \pi_{t-1}^2) \right]$$

Where  $u$  and  $\pi$  represent deviations from optimal unemployment and inflation rates;  $b$  is the inflation aversion coefficient; and  $\mu$  is the memory factor that shows the extent to which voters forget past events. Equation (2) assumes that the two parties have the same level of inflation and unemployment targets with ideological difference only in inflation aversion. The quadratic form of the voting function is chosen for computational convenience. The

voting function applies to only 4-year interval periods for Ghana and Nigeria presidential elections, 5-year interval periods for the Gambia and Sierra Leone, 5/7-year periods for Guinea and 7-year interval periods for Liberia. Equation (2) can be maximised subject to the economic constraint below.

$$3) \quad \pi_t = \pi_{t-1} - a(u_t - u^*) + e_t$$

where  $u^*$  is the natural rate of unemployment;  $a$  is the stable Phillips curve coefficient; and  $e_t$  captures unpredictable events that affect inflation notably international crude oil price hikes, exchange rate fluctuations as well as periodic bad harvests.

curve economic constraint (Equation 3) yields the following solution paths, assuming the parties focus on only the current period with no shocks to the economy:

$$4a) \quad u_{J,t} = b_J a \pi_{J,t}$$

$$4b) \quad u_{J,t-1} = b_J a (\pi_{J,t} + \pi_{J,t-1})$$

Suppose that the inflation aversion coefficient of the median voter ( $b_M$ ) is such that  $b_J < b_M < b_K$ . When the incumbent party is purely opportunistic, it will set its  $b_i$  equal to  $b_M$ ; if purely ideological/partisan, the party will stick to its gun and  $b_i$  will be set equal to  $b_J$  or  $b_K$ , depending on which party is in power. Where the incumbent party exhibits a mixture of ideological and opportunistic behaviour,  $b_i$  will be set close to  $b_M$ . Maximising the number of votes the incumbent can get (Equation 2) subject to Phillips

Equation 4 (a & b) shows that equilibrium condition for votes maximization is the relationship between unemployment and inflation rates delivered by the incumbent government based on its ideological policies. From simulation experiments, Nordhaus (1989) notes that when the incumbent party is purely opportunistic, the time path of macroeconomic variables (outcomes) will be oscillatory but relatively more stable than when the incumbent party pursues both ideology and opportunism.

## 4.2 Empirical Model Specification

The empirical model is formulated based on the theoretical framework. That is, a model that captures both the opportunistic and ideological behaviours of political parties in power. In most studies, autoregressive models augmented with PBC variables were formulated and estimated (see Alesina and Roubini, 1992; McCallum, 1978; Hibbs, 1987; Alesina and Sachs, 1988; and Verstyuk, 2004). According to Alesina and Roubini (op cit), the autoregressive distributed lag (ADL) specification for the dependent variable is the "best" using standard techniques. This is because macroeconomic time series are assumed to be generated by a covariance-stationary stochastic process that can be expressed in autoregressive form. Thus, autoregressive specifications are adopted as parsimonious representations of time series behaviour of PBC variables, instead of structural models (Drazen, 2000). However, considering the fact that the study period is too short to offer sufficient observations, this study employs Box-Jenkins (ARIMA) Methodology in the PBC estimation.

### ARIMA Modelling

There are three basic types of linear models: autoregressive (AR), moving-average (MA), and ARMA models. One view on these models is that they provide good first-order approximations to

$$5) \quad X_t = \delta + \phi_1 X_{t-1} + \phi_2 X_{t-2} + \dots + \phi_p X_{t-p} + A_t - \theta_1 A_{t-1} - \theta_2 A_{t-2} - \dots - \theta_q A_{t-q}$$

Thus, the Box-Jenkins ARMA model is a combination of the AR and MA models. The ARMA model is stable—i.e., it has a stationary 'solution'—if all zeros of  $\phi(z)$  are larger than one. The representation is unique if all zeros of  $\theta(z)$  are larger or equal to one in modulus and if  $\phi(z)$  and  $\theta(z)$  do not have common zeros. The stable ARMA model always has an infinite-order MA representation. If all zeros of  $\theta(z)$  are larger than one, it also has an infinite-order AR representation.

the dynamics of the data-generating process. Another view is that they only intend to capture the first two moments of that Data Generating Process (DGP), i.e. means and covariances (including variance and correlations). Because all features are described exhaustively by the first two moments in a world of Gaussian distributions, the linear models are perfect for data that are nearly Gaussian or for samples that are too small that there would be evidence to the contrary. To the forecaster, these simple linear models are attractive as long as non-Gaussian or non-linear features are not strong enough that those can be captured successfully by different models. Even for many data sets that are known to contain non-linear dynamics, the non-linearity is either not time-constant enough or not significant enough to permit improved prediction. This justifies the popularity of these simple linear models, as they were suggested by Box & Jenkins (1994).

ARMA model combines the moving average and the autoregressive approaches of univariate time series modelling. It employs a systematic methodology for identifying and estimating models that could incorporate both approaches. This makes Box-Jenkins models a powerful class of models. A series  $X_t$  is said to follow an autoregressive moving-average process of order (p, q) or ARMA(p, q) process if

In many data sets, stationarity appears to be violated, either because of growth trends, regular cyclical fluctuations, volatility changes, or level shifts. In all these cases, expectation and/or variance appears to be changing through time. However, signs of non-stationarity do not necessarily justify discarding the linear models. In order to 'beat' ARMA prediction, a model class has to be found that can do better. In the absence of such a model class, it is advisable to work with the available ARMA structures. For the very special cases of trending behaviour and of



seasonal cycles, integrated models are attractive. The idea of an integrated process is that the observed variable becomes stationary ARMA after some preliminary transformations, such as first or seasonal differences.

On occasion a series must be differenced  $d$  times before it can be made stationary, such a series is said to be integrated of order  $d$ , denoted  $I(d)$ . If differencing a series  $d$  times makes it into a stationary ARMA( $p, q$ ), the DGP of the series is said to be an autoregressive integrated moving average process, denoted ARIMA( $p, d, q$ ). Thus, for this study all the variables of interest as identified above will be estimated using the general ARIMA model with opportunistic and ideological dummies.

$$6) \quad GDPG_t = \alpha_0 + \sum_{i=1}^{p+q} \alpha_i ARIMA(p, d, q) + \beta_1 dumo + \beta_2 dumi + \varepsilon_t$$

where  $GDPG$  is real GDP growth;  $ARIMA$  captures the AR and MA components of equation (5) with  $I=d$  representing the number of times the dependent variable must be differenced to make it stationary;  $dumo$  is an opportunistic dummy taking values, one in an election year and zeros

$$7) \quad INF_t = \alpha_0 + \sum_{i=1}^{p+q} \alpha_i ARIMA(p, d, q) + \beta_1 dumo + \beta_2 dumi + \varepsilon_t$$

where  $INF$  is inflation measured as a quarterly series and other variables are as defined above except that  $dumo$  takes value 1 in first quarter of an election year through the fourth quarter of the succeeding year since inflationary episodes occur with a lag and  $dumi$  takes its negative values for four quarters from the first quarter of the second year following the election.

$$8) \quad FIS_t = \alpha_0 + \sum_{i=1}^{p+q} \alpha_i ARIMA(p, d, q) + \beta_1 dumo + \beta_2 dumi + \varepsilon_t$$

For this study, the four different ARIMA models are specified. These are the real GDP growth and inflation models for the real sector; fiscal outcome models that estimate the effects of opportunistic and ideological behaviours on fiscal variables such as fiscal deficit, total expenditure and its components and revenue; as well as monetary outcome model that captures the impacts of opportunism and ideology on monetary variables.

### Real Sector Models

These models are formulated to investigate the existence of PBC in broad macroeconomic variables such as real GDP growth and inflation. These are specified as follows:

elsewhere;  $dumi$  is an ideological/ partisan dummy that takes values, -1 in the first and second years after election, 1 in an election year and zeros elsewhere; and  $\varepsilon$  is the error term.

### Fiscal Outcome Model

The essence of the fiscal model is to obtain direct signs of political behaviour since the budget process is directly under the control of the government. Political opportunism or ideology reflects directly in fiscal outcomes. The model is specified as follows:

where  $FIS$  is a vector of fiscal outcome variables such as government expenditure (that is decomposed into recurrent and capital expenditure, education and health expenditure, and salary mass), government revenue (tax revenue), and fiscal deficit including and excluding grants.  $dumo$  is a dummy for political opportunism that takes values, one in an election year and zeros elsewhere.  $dumi$  is a dummy for ideology or partisan behaviour and takes values, -1 in the first and second years after election, 1 in an election year and zeros elsewhere.

$$9) \quad MON_t = \delta_0 + \sum_{i=1}^{p+q} \alpha_i ARIMA(p, d, q) + \beta_1 dumo + \beta_2 dumi + \varepsilon_t$$

where  $MON$  is a vector of monetary outcome variables such as money growth and money/GDP ratio.  $dumo$  is a political opportunistic dummy that takes values, 1 in the first – fourth quarters of an election year and zeros elsewhere.  $dumi$  is an

### Monetary Outcome Model

The essence of monetary outcome model is to establish the presence of monetary accommodation of fiscal behaviour. However, monetary variables exist in high frequency, a characteristic which is desirable for obtaining sufficient number of observations for country specific estimation and analysis. Thus, the monetary outcome model is specified to use quarterly data as follows:

ideological dummy with values, 1 for the first – fourth quarters of an election year, -1 for the first – eight quarters following an election and zeros elsewhere.

### 4.3 Data Sources and Description

The study utilized quarterly data for the period 1990 – 2011. Quarterly Inflation and money supply (M1) are obtained from IFS online database while real GDP growth and fiscal outcome variables measured annually are obtained from WAMI data base with supplements from various issues of IMF country reports. To account for seasonality in the GDP series, the study makes use of real GDP growth rates. For inflation and money supply variables seasonality

is controlled by introducing dummies into the model. Seasonality in monetary aggregates is controlled by introducing seasonal dummies into the various monetary models. They are however dropped when their coefficient estimates are not significant. Stationarity tests are conducted using the ADF unit root test procedure. Estimation is carried out using EVIEWS 7 econometric software.



## 5.0 PRESENTATION AND ANALYSIS OF RESULTS

### 5.1 Results for the Gambia

#### Stationarity Test Results

The Augmented, Dickey-Fuller (ADF) unit root test results reported in Table 3 indicate that most of the variables are integrated of order zero (stationary at level) at the conventional levels of significance. The only variables that are integrated of order one (stationary at first difference) are the real GDP growth, revenue

excluding grants, revenue including grants and money supply growth. These results informed the choice of ARIMA model estimated for the Gambia as presented in Table 4. The models are essentially dominated by moving average components.

**Table 3: Gambia: Unit Root Test Results**

Variable	ADF Statistic at level	ADF Statistic at First Difference	ADF Statistic at Second Difference	Order of Integration
Real GDP Growth (GDPG)	-2.303708 <i>0.1808*</i>	-6.405855 <i>0.0001</i>	NA	I(1)
Inflation (INF)	-3.334063 <i>0.0166</i>	NA	NA	I(0)
Fiscal Deficit Excluding Grants (FISDEG)	-3.634062 <i>0.0157</i>	NA	NA	I(0)
Fiscal Deficit Including Grants (FISDIG)	-5.461215 <i>0.0007</i>	NA	NA	I(0)
Total Expenditure (TEXP)	-2.977035 <i>0.0553</i>	NA	NA	I(0)
Recurrent Exp (CUREXP)	-3.361034 <i>0.0261</i>	NA	NA	I(0)
Development Exp (DEVEXP)	-3.134650 <i>0.0409</i>	NA	NA	I(0)
Emoluments (EMOL)	-3.641798 <i>0.0180</i>	NA	NA	I(0)
Revenue Excluding Grants (REVEG)	-1.860982 <i>0.3420</i>	-4.218425 <i>0.0048</i>	NA	I(1)
Revenue Including Grants (REVIG)	-2.353163 <i>0.1670</i>	-6.220545 <i>0.0001</i>	NA	I(1)
Money Supply (M1) Growth (MONG)	-2.100250 <i>0.2452</i>	-7.345846 <i>0.0000</i>	NA	I(1)

Source: Computed by WAMI Staff \*Figures in italics are probabilities of significance.

### PBC Estimation Results

From Table 4, the political business cycle (PBC) estimation results show that the real GDP growth and inflation did not exhibit any sign of PBC in the Gambia during the study period. These findings could be attributed to the fact that real sector issues might not be topical issues on political campaign platforms in the Gambia during the study period. With regard to fiscal outcome variables, fiscal deficit excluding grants showed no sign of PBC under either non-rational

opportunistic behaviour or non-rational ideological behaviour of political parties. However, fiscal deficit including grants exhibited a PBC on both counts during the study period. From purely opportunistic perspective, fiscal deficit including grants actually widened during election years. Graphical analysis showed that the fiscal deficit including grants increased sharply a year prior to the elections during the study period (see Figure 1).

**Table 4: Gambia: Political Budget/ Business Cycle (PBC) Estimation Results**

Variable	ARIMA Model (p d q)	Opportunistic Dummy (DUMO)	Ideological Dummy (DUMI)	Remark
<b>Real Sector Outcomes</b>				
Real GDP Growth (GDPG)	(0, 1, 1)	0.200323 <i>0.8921</i>	-1.339471 <i>0.3625</i>	Exhibits no PBC
Inflation (INF)	(2, 0, 2)	-0.554419 <i>0.5713</i>	0.278860 <i>0.6398</i>	Exhibits no PBC
<b>Fiscal Outcomes</b>				
Fiscal Deficit Excluding Grants (FISDEG)	(0, 0, 2)	1.662006 <i>0.4023</i>	-1.933524 <i>0.3223</i>	Exhibits no PBC
Fiscal Deficit Including Grants (FISDIG)	(0, 0, 2)	-1.405989 <i>0.0904</i>	1.523103 <i>0.0294</i>	Exhibits PBC on both counts
Total Expenditure (TEXP)	(1, 0, 2)	-6.461033 <i>0.0011</i>	3.833399 <i>0.0055</i>	Exhibits PBC on both counts
Recurrent Exp (CUREXP)	(2, 0, 2)	-0.570466 <i>0.1961</i>	0.954184 <i>0.0255</i>	Exhibits PBC on one count
Development Exp (DEVEXP)	(0, 0, 3)	-2.837234 <i>0.2009</i>	1.331055 <i>0.2332</i>	Exhibits no PBC
Emoluments (EMOL)	(2, 0, 2)	-0.056477 <i>0.7546</i>	0.026630 <i>0.7589</i>	Exhibits no PBC
Revenue Excluding Grants (REVEG)	(0, 1, 3)	1.216686 <i>0.3098</i>	2.135440 <i>0.1132</i>	Exhibits no PBC
Revenue Including Grants (REVIG)	(2, 1, 2)	-3.955483 <i>0.0050</i>	0.838687 <i>0.1944</i>	Exhibits PBC on one count
<b>Monetary outcome</b>				
Money Supply (M1) Growth (MONG)	(1, 1, 3)	5.507760 <i>0.1547</i>	-3.583901 <i>0.2094</i>	Exhibits no PBC

Source: Computed by WAMI Staff \*Figures in italics are probabilities of significance.



Figure 1: The Gambia: Trends in Fiscal Deficit Excluding Grants and Deficit Including Grants

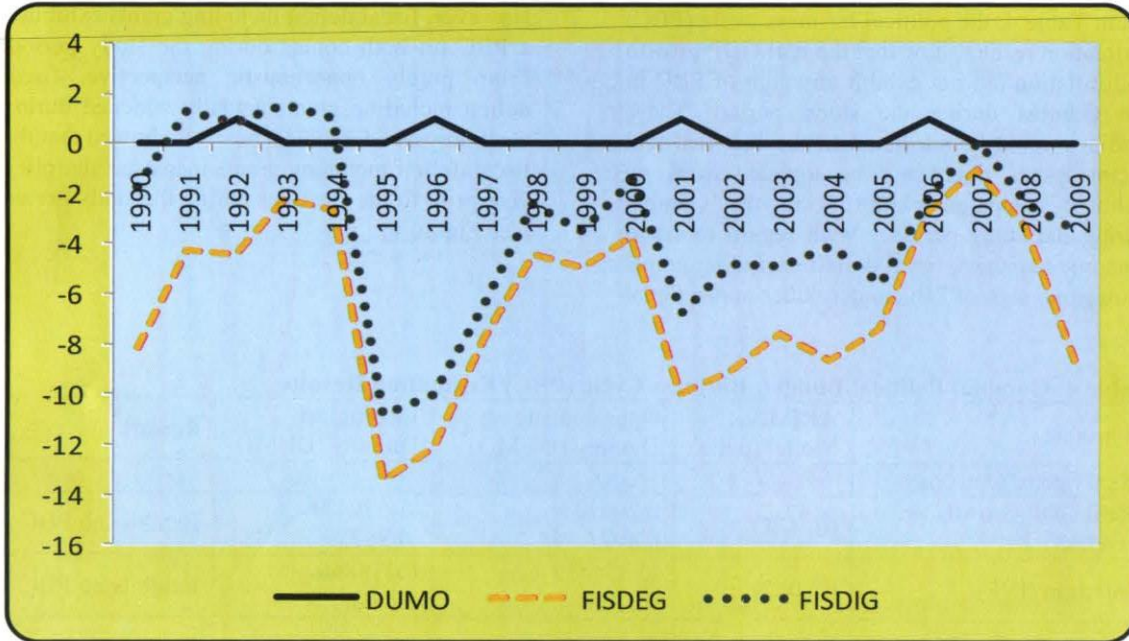


Figure 2: The Gambia: Trends in Total Expenditure and its Components

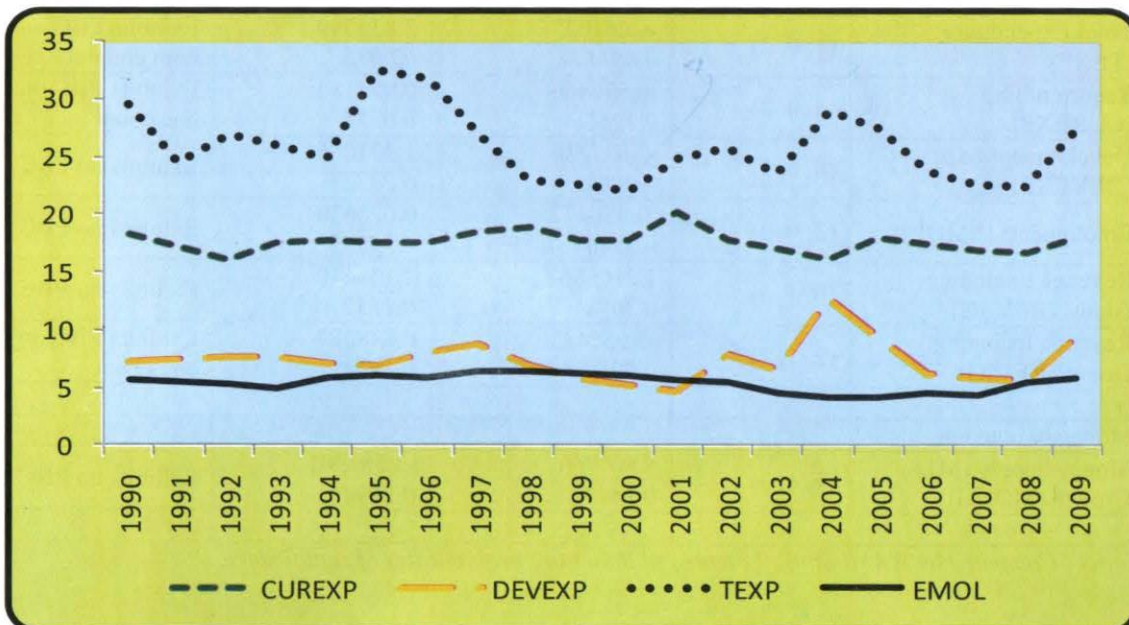
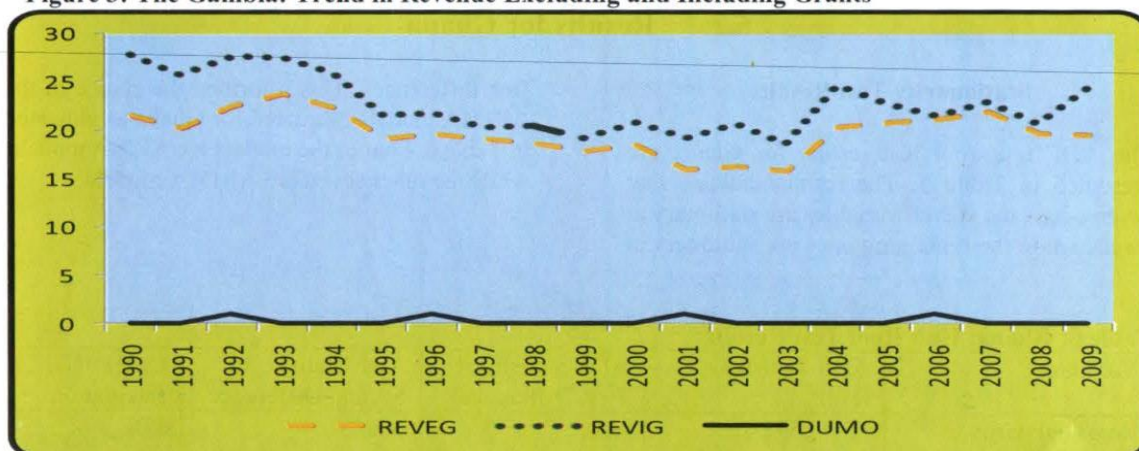


Figure 3: The Gambia: Trend in Revenue Excluding and Including Grants



Going by ideological/ partisan behaviour, the positive coefficient of the ideological dummy indicated that the deficit was relatively bigger in an election year than during post-election period. This, to a very large extent, shows that the grant component of the government budget gets bigger in an election year than what prevails in the immediate post-election years.

Focussing the estimation on total expenditure and its components, it became clear that total expenditure exhibited a PBC in the Gambia during the study period from both opportunistic and ideological perspectives. The negative sign of the opportunistic dummy indicates that total expenditure appeared to be contracting in election years. However, like the fiscal deficit including grants, it was actually exploding a year prior to an election. The positive ideological dummy reveals that total expenditure tended to expand during elections and contract in the years immediately following the elections. The recurrent expenditure followed a PBC trend from ideological perspectives during the study period. It expanded during years of election and contracted thereafter. The salaries and wages (emoluments) component of the recurrent expenditure did not show any sign of PBC either from opportunistic or ideological perspectives.

On the revenue side, total domestic revenue (revenue excluding grants) did not exhibit any

PBC. However, revenue including grants showed a PBC according to the opportunistic dummy by contracting during election years.

Money supply growth exhibited no PBC during the study period in the Gambia, suggesting that though fiscal deficit including grants followed a PBC trend, there was no evidence of monetary accommodation. In sum, though the real and monetary outcomes in the Gambia did not show any sign of PBC, the key fiscal outcomes strongly followed a PBC trend.

Regarding the implications of the findings for the Gambia's performance on the WAMZ convergence scale, the following points are worth noting: 1) Meeting the single-digit inflation convergence criterion may not follow a PBC since there is no evidence that inflation follows a PBC in the Gambia; 2) Election behaviour may not impact on the Gambia's performance on the WAMZ fiscal deficit convergence criterion since the fiscal deficit excluding grants did not exhibit a PBC in any form; 3) Election behaviour may not affect the central bank financing criterion since monetary authorities appeared not to be engaging in accommodative monetary policy; and 4) With little evidence that emoluments and revenue excluding grants follow a PBC trend, the Gambia's performance on the secondary convergence criteria may not follow a PBC.



## 5.2 Results for Ghana

### Stationarity Test Results

The ADF unit root test results for Ghana are presented in Table 5. The results indicate that seven out of the eleven variables are stationary at levels, while the remaining ones are stationary at

first differences. This informed the choice of the ARIMA models estimated for Ghana as indicated in Table 6. Four of the models are ARMA models, while the other seven are ARIMA models.

**Table 5: Ghana: Unit Root Test Results**

Variable	ADF Statistic at level	ADF Statistic at First Difference	ADF Statistic at Second Difference	Order of Integration
Real GDP Growth (GDPG)	-2.908577 <i>0.0629</i>	NA	NA	I(0)
Inflation (INF)	-3.879603 <i>0.0034</i>	NA	NA	I(0)
Fiscal Deficit Excluding Grants (FISDEG)	-3.076569 <i>0.0457</i>	NA	NA	I(0)
Fiscal Deficit Including Grants (FISDIG)	-2.690847 <i>0.0938</i>	NA	NA	I(0)
Total Expenditure (TEXP)	-1.591599 <i>0.4673</i>	-2.809992 <i>0.0078</i>	NA	I(1)
Recurrent Exp (CUREXP)	1.976259 <i>0.9995</i>	-3.100639 <i>0.0469</i>	NA	I(1)
Development Exp (DEVEXP)	-3.299908 <i>0.0338</i>	NA	NA	I(0)
Emoluments (EMOL)	-0.644904 <i>0.8379</i>	-5.948816 <i>0.0001</i>	NA	I(1)
Revenue Excluding Grants (REVEG)	-2.764149 <i>0.0822</i>	NA	NA	I(0)
Revenue Including Grants (REVIG)	-1.009108 <i>0.7279</i>	-4.236899 <i>0.0050</i>	NA	I(1)
Money Supply (M1) Growth (MONG)	-3.182951 <i>0.0247</i>	NA	NA	I(0)

Source: Computed by WAMI Staff \*Figures in italics are probabilities of significance.

### PBC Estimation Results

The PBC estimation results presented in Table 6 indicate that, concerning real sector outcomes, real GDP growth followed a PBC trend from ideological perspective. The coefficient of the

ideological dummy is positive and significant at the 10 percent level, suggesting that real GDP tended to expand greatly during election years, while it declined in immediate post-election years. This could be explained by the fact that there were usually huge fiscal injections into the Ghanaian

economy during election years, which boosts the growth process in those years. The non-significance of coefficients of the dummy variables in the inflation model implies that inflation rate in Ghana did not show sign of a PBC.

All the fiscal outcome variables exhibited PBCs at the conventional significance levels. Apart from fiscal deficit including grants and revenue excluding grants, all the fiscal outcome variables followed PBC trend from both opportunistic and

ideological perspectives. While fiscal deficit including grants exhibited a PBC from ideological perspectives, revenue excluding grants followed PBC trend in line with political opportunistic behaviour. From Table 6, fiscal deficit excluding grants deteriorate during election years due to political opportunism, while it deteriorates during election years and improved in the immediate post-election years. Fiscal deficit including grants also exhibits similar PBC behaviour by worsening in election years and improving in the years following elections (see Figure 4).

**Table 6: Ghana: Political Budget/ Business Cycle (PBC) Estimation Results**

Variable	ARIMA Model (p d q)	Opportunistic Dummy (DUMO)	Ideological Dummy (DUMI)	Remark
<b>Real Sector Outcomes</b>				
Real GDP Growth (GDPG)	(0, 0, 2)	0.142336 <i>0.4271</i>	0.198725 <i>0.0983</i>	Exhibits PBC on one count
Inflation (INF)	(1, 0, 1)	-0.324853 <i>0.7929</i>	-0.409180 <i>0.5820</i>	Exhibits no PBC
<b>Fiscal Outcomes</b>				
Fiscal Deficit Excluding Grants (FISDEG)	(0, 0, 2)	-2.123138 <i>0.0454</i>	-0.980431 <i>0.0720</i>	Exhibits PBC on both counts
Fiscal Deficit Including Grants (FISDIG)	(0, 0, 2)	-0.595787 <i>0.3544</i>	-0.954223 <i>0.0107</i>	Exhibits PBC on one count
Total Expenditure (TEXP)	(0, 1, 2)	3.693317 <i>0.0045</i>	1.913547 <i>0.0028</i>	Exhibits PBC on both counts
Recurrent Exp (CUREXP)	(2, 1, 2)	4.273408 <i>0.0007</i>	2.385528 <i>0.0002</i>	Exhibits PBC on both counts
Development Exp (DEVEXP)	(0, 0, 2)	1.269253 <i>0.0094</i>	0.959549 <i>0.0033</i>	Exhibits PBC on both counts
Emoluments (EMOL)	(0, 1, 2)	-1.123945 <i>0.0000</i>	0.758883 <i>0.0004</i>	Exhibits PBC on both counts
Revenue Excluding Grants (REVEG)	(0, 0, 1)	-0.854653 <i>0.0873</i>	-0.418204 <i>0.1033</i>	Exhibits PBC on one count
Revenue Including Grants (REVIG)	(0, 1, 2)	-1.240313 <i>0.0062</i>	-0.598902 <i>0.0042</i>	Exhibits PBC on both counts
<b>Monetary Outcome</b>				
Money Supply (M1) Growth (MONG)	(2, 0, 2)	10.69190 <i>0.0535</i>	-6.972012 <i>0.0040</i>	Exhibits PBC on both counts

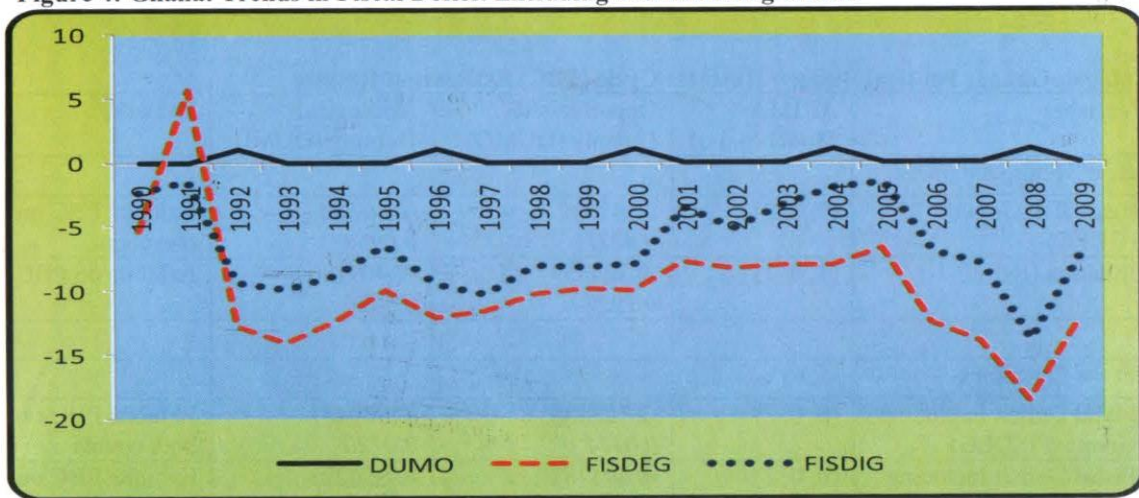
Source: Computed by WAMI Staff \*Figures in italics are probabilities of significance.



On the expenditure side of the budget, total expenditure and its key components such as recurrent expenditure, development expenditure and emoluments all followed PBC trends during the study period from both opportunistic and ideological perspectives of political behaviour (see Figure 5). It is clear from Table 6 that both the opportunistic and ideological dummies have positive coefficients implying that total

expenditure and its components escalated during election years and thereafter declined. From purely opportunistic perspective, emolument contracted during election years. The coefficient of the ideological dummy, however, indicates that emoluments increased relatively higher during election years than what prevailed during immediate post-election years.

**Figure 4: Ghana: Trends in Fiscal Deficit Excluding and Including Grants**



**Figure 5: Ghana: Trends in Total Expenditure and its Components**

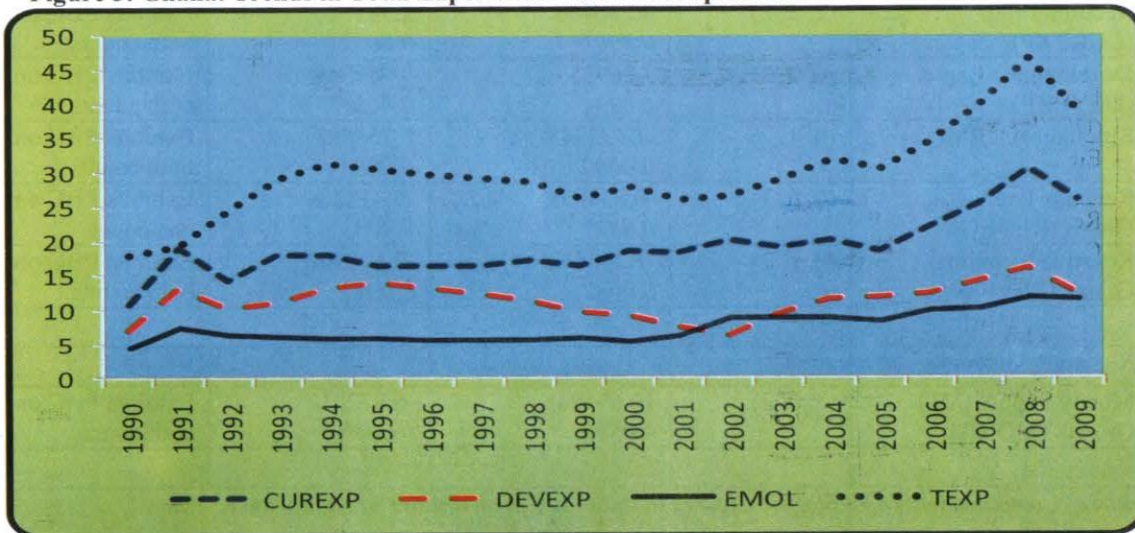
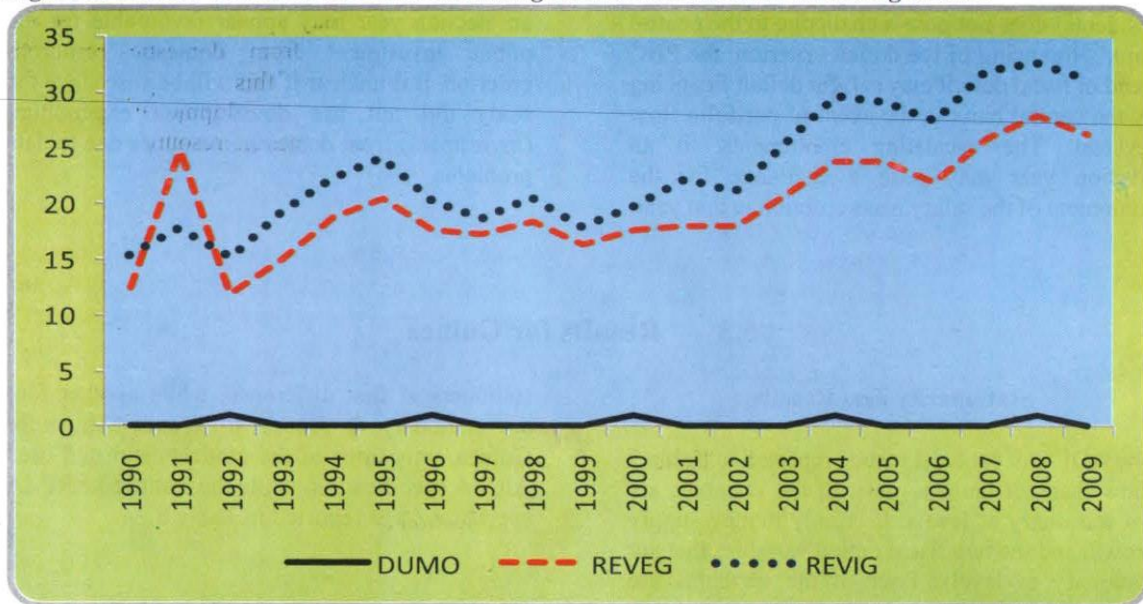


Figure 6: Ghana: Trends in Revenue Excluding Grants and Revenue Including Grants



On the other hand, total domestic revenue (revenue excluding grants) showed a PBC trend by contracting during election years from purely opportunistic political behaviour. The rationale for this behaviour of domestic revenue may be twofold: first, it may be attributed to reduced tax effort in an election year in order not to offend domestic tax payers who have the voting power. Secondly, the decline in domestic revenue in election years may be purely due to statistical reasons where an expanding real GDP in an election as observed above may tend to lower domestic revenue – GDP ratio even if tax effort remained constant and the rate of growth in revenue fell below real GDP growth rate. Total revenue including grants showed contraction in an election year and expansion in the years following the election judging from both the opportunistic and ideological perspectives (See Figure 6). This behaviour may be attributed to the receipt of bigger grants during immediate post-election years. This finding is in accord with the general observation that Ghana tends to reap democratic dividends in terms of receiving increased donor support after organising a successful election.

Concerning monetary outcomes, it is clear from Table 6 that money supply growth followed a

PBC trend during the study period considering the significant coefficient estimates of the opportunistic and ideological dummies. The coefficient estimates of the two dummies were obtained from the same model simultaneously. This means that the positive value of the opportunistic dummy's coefficient implies expansionary monetary policy in an election year, while the negative value of the ideological dummy's coefficient implied contractionary monetary policy following an election. Thus, monetary authorities appeared to be pursuing accommodative monetary policy in the face of expansionary fiscal policy in an election year and thereafter engaged in monetary tightening.

The findings emerging from the PBC estimation results for Ghana have serious implications for the country's performance on the convergence scale. First, though it is not clear from the results that attainment of the single-digit inflation criterion may follow a PBC trend, the fiscal and monetary PBC trends suggest that this may likely be the case in an out-of-sample scenario. Secondly, the results show that attainment of the fiscal deficit criterion may follow a PBC trend, suggesting that the criterion may be missed in an election year. Further, though the current mechanism of deficit



financing (issuance of 3-year notes to non-residents) does not pose a challenge to the central bank's financing of the deficit criterion, the PBC trend of fiscal deficit may call for deficit financing by the central bank in the event of portfolio flow reversal. The escalating emoluments in an election year may pose a challenge for the attainment of the salary mass criterion in that year.

Although development expenditure escalation in an election year may appear favourable for the public investment from domestic resources criterion, it is unclear if this will be case since the study did not use development expenditure (investment) from domestic resources due to data problems.

### 5.3 Results for Guinea

#### Stationarity Test Results

The ADF unit root test results reported in Table 7 show that, for Guinea, most of the variables are not stationary at levels. It is only money supply growth and the two fiscal deficit variables that are stationary at levels. Four of the variables are

stationary at first difference, while another four are stationary at second difference. Thus, for Guinea, only three of the models estimated used ARMA specification, while the rest used ARIMA specification as reported in Table 8.

**Table 7: Guinea: Unit Root Test Results**

Variable	ADF Statistic at level	ADF Statistic at First Difference	ADF Statistic at Second Difference	Order of Integration
Real GDP Growth (GDPG)	-0.497520 <i>0.8692</i>	-6.219259 <i>0.0001</i>	NA	I(1)
Inflation (INF)	-2.227041 <i>0.1988</i>	-2.571465 <i>0.1037</i>	-4.632405 <i>0.0003</i>	I(2)
Fiscal Deficit Excluding Grants (FISDEG)	-3.459550 <i>0.0241</i>	NA	NA	I(0)
Fiscal Deficit Including Grants (FISDIG)	-4.658981 <i>0.0024</i>	NA	NA	I(0)
Total Expenditure (TEXP)	-2.601068 <i>0.1109</i>	-2.446497 <i>0.1440</i>	-4.297378 <i>0.0049</i>	I(2)
Recurrent Exp (CUREXP)	0.004639 <i>0.9479</i>	-3.204950 <i>0.1145</i>	-5.744891 <i>0.0013</i>	I(2)
Development Exp (DEVEXP)	-2.537948 <i>0.1228</i>	-4.638606 <i>0.0020</i>	NA	I(1)
Emoluments (EMOL)	-1.884225 <i>0.3315</i>	-2.003846 <i>0.2826</i>	-5.492973 <i>0.0004</i>	I(2)
Revenue Excluding Grants (REVEG)	-0.961417 <i>0.7448</i>	-3.198690 <i>0.0370</i>	NA	I(1)
Revenue Including Grants (REVIG)	-2.513214 <i>0.1280</i>	-4.607602 <i>0.0022</i>	NA	I(1)
Money Supply (M1) Growth (MONG)	-4.195356 <i>0.0013</i>	NA	NA	I(0)

Source: Computed by WAMI Staff \*Figures in italics are probabilities of significance.

### PBC Estimation Results

From Table 8, the results indicate that real GDP growth did not follow a PBC trend in Guinea during the study period. However, inflation rate follows a PBC from both opportunistic and ideological perspectives. The coefficient estimates of the opportunistic and ideological dummies are significantly positive at the conventional levels in the inflation model. Thus, real sector issues, especially inflation, appeared to be electoral issues in Guinea during the study period.

Fiscal deficit variables also exhibit significant PBCs. Fiscal deficit excluding grants exhibits a PBC from opportunistic perspective. The coefficient of the opportunistic dummy is

significantly negative implying that the fiscal deficit excluding grants tended to worsen during election periods. However, there was no indication of the authorities trying to correct this during post-electoral periods since the coefficient of the ideological dummy was insignificant. Fiscal deficit including grants also exhibited a PBC from both the opportunistic and ideological perspectives. The negative and positive significant coefficients of the opportunistic and ideological dummies respectively suggest that the fiscal deficit including grants also get worsened during electoral periods but the magnitude of the deficit appeared to be lower during post-electoral periods. Figure 7 confirms this behaviour for the fiscal deficit variables.

**Table 8: Guinea: Political Budget/ Business Cycle (PBC) Estimation Results**

Variable	ARIMA Model (p d q)	Opportunistic Dummy (DUMO)	Ideological Dummy (DUMI)	Remark
<b>Real Sector Outcomes</b>				
Real GDP Growth (GDPG)	(0, 1, 1)	0.295563 <i>0.7821</i>	0.053055 <i>0.9539</i>	Exhibits no PBC
Inflation (INF)	(0, 2, 1)	0.586975 <i>0.0129</i>	0.359500 <i>0.0679</i>	Exhibits PBC on both counts
<b>Fiscal Outcomes</b>				
Fiscal Deficit Excluding Grants (FISDEG)	(0, 0, 1)	-2.005050 <i>0.0355</i>	-0.668495 <i>0.2451</i>	Exhibits PBC on one account
Fiscal Deficit Including Grants (FISDIG)	(0, 0, 1)	-1.912356 <i>0.0536</i>	0.925497 <i>0.0385</i>	Exhibits PBC on both counts
Total Expenditure (TEXP)	(1, 2, 1)	-4.947014 <i>0.0135</i>	-1.072366 <i>0.5450</i>	Exhibits PBC on one count
Recurrent Exp (CUREXP)	(2, 2, 1)	-1.993044 <i>0.0225</i>	-0.716354 <i>0.4687</i>	Exhibits PBC on one count
Development Exp (DEVEXP)	(1, 1, 2)	-2.887856 <i>0.0287</i>	-1.338062 <i>0.3299</i>	Exhibits PBC on one count
Emoluments (EMOL)	(0, 2, 1)	-0.739436 <i>0.0112</i>	-0.045995 <i>0.8285</i>	Exhibits PBC on one count
Revenue Excluding Grants (REVEG)	(1, 1, 1)	-1.524224 <i>0.0342</i>	-0.248619 <i>0.6146</i>	Exhibits PBC on one count
Revenue Including Grants (REVIG)	(1, 1, 2)	-1.821237 <i>0.0354</i>	0.238417 <i>0.7391</i>	Exhibits PBC on one count
<b>Monetary outcome</b>				
Money Supply (M1) Growth (MONG)	(2, 0, 2)	-15.44628 <i>0.0252</i>	-6.513299 <i>0.0912</i>	Exhibits PBC on both counts

Source: Computed by WAMI Staff \*Figures in italics are probabilities of significance.



Figure 7: Guinea: Trends in Fiscal Deficit Excluding and Including Grants

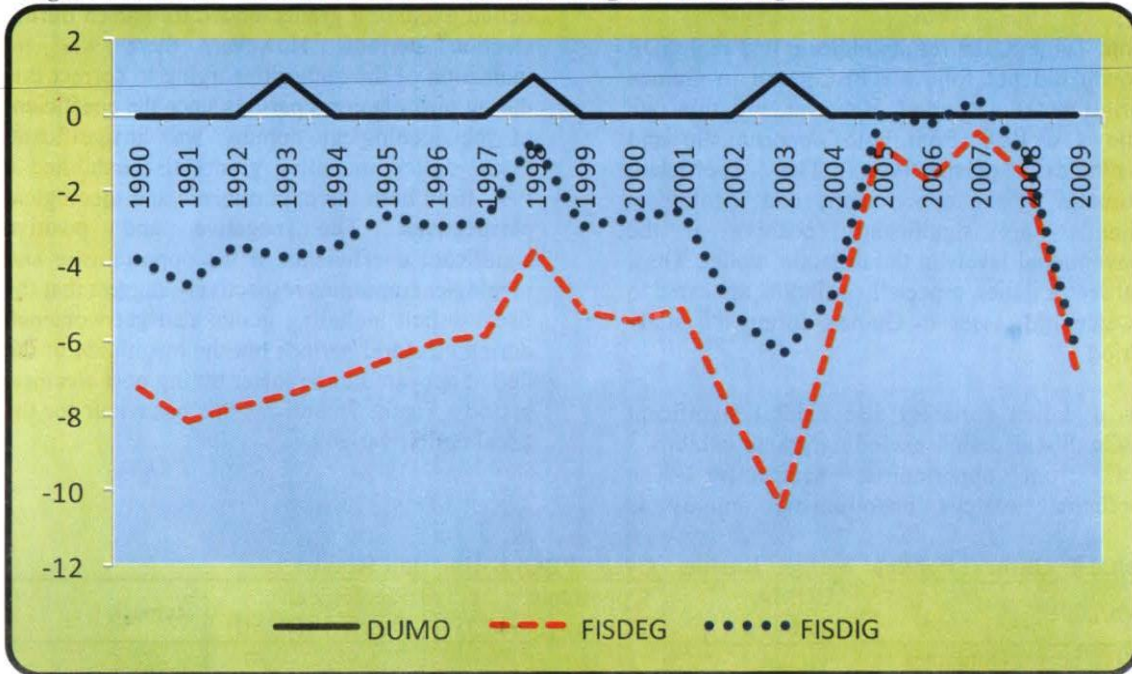


Figure 8: Guinea: Trends in Total Expenditure and Its Components

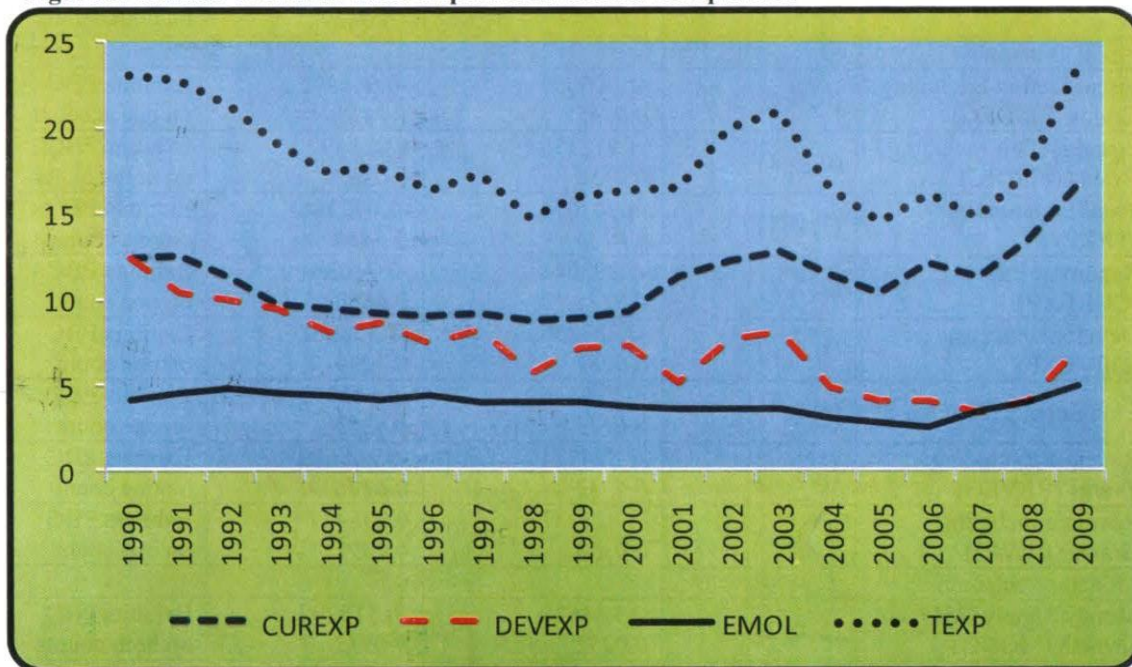
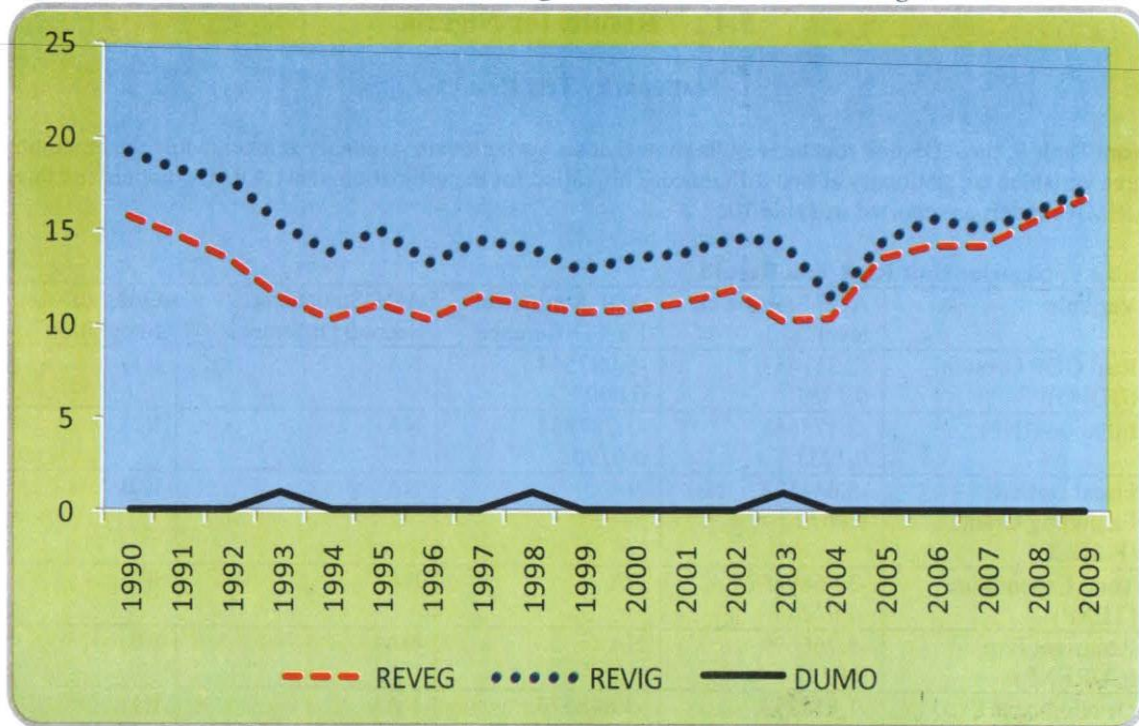


Figure 9: Guinea: Trends in Revenue Excluding Grants and Revenue Including Grants



All the expenditure and revenue variables exhibited PBCs from political opportunistic perspective only. The coefficient estimates of the expenditure and revenue variables carry negative signs, implying that both expenditure and revenue variables contracted in election years (see Figure 8). However, the findings that fiscal deficit variables worsened during election periods suggest that revenue was contracting more rapidly than expenditure during election years.

With regard to monetary outcomes, the coefficient estimates of the opportunistic and ideological dummies show that money supply growth followed a PBC trend in Guinea during the reference period. However, the negative signs of the coefficient estimates imply that money supply contracted during election periods and expanded thereafter. This PBC trend in money supply growth suggests that monetary authorities in Guinea did not engage in accommodative monetary policy. However, the trend in money

supply growth is generally flat, suggesting that money supply growth was generally stabilised at high levels to accommodate fiscal expansions either during election years or non-election years.

The convergence implications of these findings are that opportunistic and ideological political behaviour may affect Guinea's compliance with inflation, fiscal deficit and central bank financing criteria. Compliance with the secondary criteria may also be affected by PBC trend in revenue variables. With contraction in revenue during election years, the proportion of public investment financed from domestic resources as well as tax revenue- GDP ratios may reduce, suggesting likely misses on these criteria. Contraction in emoluments suggests some improvement in salary mass – tax revenue ratio but, as noted above, since it appears the rate of revenue contraction is higher than expenditure contraction, this ratio may actually increase during election years.



## 5.4 Results for Nigeria

### Stationarity Test Results

From Table 9, the ADF unit root test results show that six variables are stationary at level, while the remaining three variables are stationary at first difference. This called for the estimation of six ARMA models and three ARIMA models as reported in Table 10.

**Table 9: Nigeria: Unit Root Test Results**

Variable	ADF Statistic at level	ADF Statistic at First Difference	ADF Statistic at Second Difference	Order of Integration
Real GDP Growth (GDPG)	-2.311453 <i>0.1785</i>	-5.087544 <i>0.0008</i>	NA	I(1)
Inflation (INF)	-2.475668 <i>0.1253</i>	-3.287854 <i>0.0190</i>	NA	I(1)
Fiscal Deficit Excluding Grants (FISDEG)	-5.044528 <i>0.0012</i>	NA	NA	I(0)
Total Expenditure (TEXP)	-3.768966 <i>0.0126</i>	NA	NA	I(0)
Recurrent Exp (CUREXP)	-3.766699 <i>0.0127</i>	NA	NA	I(0)
Development Exp (DEVEXP)	-1.811333 <i>0.3627</i>	-3.848576 <i>0.0115</i>	NA	I(1)
Emoluments (EMOL)	-3.820560 <i>0.0114</i>	NA	NA	I(0)
Revenue Excluding Grants (REVEG)	-3.802653 <i>0.0118</i>	NA	NA	I(0)
Money Supply (M1) Growth (MONG)	-2.933004 <i>0.0461</i>	NA	NA	I(0)

Source: Computed by WAMI Staff \*Figures in italics are probabilities of significance.

### PBC Estimation Results

The PBC estimation results in Table 10 indicate that real GDP growth exhibited a PBC pattern in Nigeria during the study period. The coefficient estimates of opportunistic and ideological dummies are significantly positive, implying that real GDP growth increased relatively higher in election years than in post-election years. Inflation also exhibited a PBC from both opportunistic and ideological perspectives. The negative signs of the coefficient estimates imply

that there were reductions in inflation rates in election years and a rise immediately thereafter.

The fiscal deficit variable also followed PBC trends on both counts of political opportunism and ideology. The negative sign of the fiscal deficit coefficient suggests that fiscal deficit widened in election years but narrowed in the immediate post-election years (see Figure 10). The total expenditure and its components also exhibited opportunistic and ideological PBCs during the study period where they tended to be lower in election years than in post-election years (see

Figure 11). The revenue variable also showed a similar PBC pattern (see Figure 12).

The money supply growth reflected only opportunistic PBC. The positive coefficient estimate implies that money supply grew more rapidly in election years than in other years.

Juxtaposing this with the finding that the fiscal balance worsened in election years may suggest that the monetary authorities in Nigeria could be pursuing accommodative monetary policy in such election years. It appears the decline in expenditure variables in election years may be partly due to the rise in real GDP in those years.

**Table 10: Nigeria: Political Budget/ Business Cycle (PBC) Estimation Results**

Variable	ARIMA Model (p,d,q)	Opportunistic Dummy (DUMO)	Ideological Dummy (DUMI)	Remark
<b>Real Sector Outcomes</b>				
Real GDP Growth (GDPG)	(0, 1, 2)	1.508004 <i>0.0167</i>	0.889108 <i>0.0002</i>	Exhibits PBC on both counts
Inflation (INF)	(2, 1, 2)	-1.536027 <i>0.0202</i>	-1.664623 <i>0.0059</i>	Exhibits PBC on both counts
<b>Fiscal Outcomes</b>				
Fiscal Deficit excluding grants (FISDEG)	(0, 0, 2)	-5.204362 <i>0.0000</i>	-2.393808 <i>0.0000</i>	Exhibits PBC on both counts
Total expenditure (TEXP)	(0, 0, 2)	-61.22891 <i>0.0000</i>	-28.12329 <i>0.0003</i>	Exhibits PBC on both counts
Recurrent Exp (CUREXP)	(0, 0, 2)	-62.53341 <i>0.0000</i>	-29.08648 <i>0.0001</i>	Exhibits PBC on both counts
Development Exp (DEVEXP)	(0, 1, 2)	-11.98186 <i>0.0000</i>	-0.012515 <i>0.9906</i>	Exhibits PBC on one count
Emoluments (EMOL)	(0, 0, 2)	-5.248184 <i>0.0000</i>	-2.403903 <i>0.0001</i>	Exhibits PBC on both counts
Revenue excluding grants (REVEG)	(0, 0, 2)	-62.35223 <i>0.0000</i>	-32.57132 <i>0.0001</i>	Exhibits PBC on both counts
<b>Monetary outcome</b>				
Money Supply (M1) Growth (MONG)	(0, 0, 1)	8.574916 <i>0.0713</i>	0.895544 <i>0.7671</i>	Exhibits PBC on one count

Source: Computed by WAMI Staff \*Figures in italics are probabilities of significance.

The PBC patterns observed in the various variables do not pose too many serious challenges to Nigeria's compliance with the convergence criteria. Inflation rates were observed to be declining in election years and this should aid the country's compliance with the single-digit

inflation criterion. Given the PBC contraction of expenditure items, the attainment of some of the secondary criteria in an election year may not be difficult either. However, the fiscal deficit tends to widen in an election year, suggesting high probability of missing this criterion in such a year.



Figure 10: Nigeria: Trends in Fiscal Deficit Excluding Grants

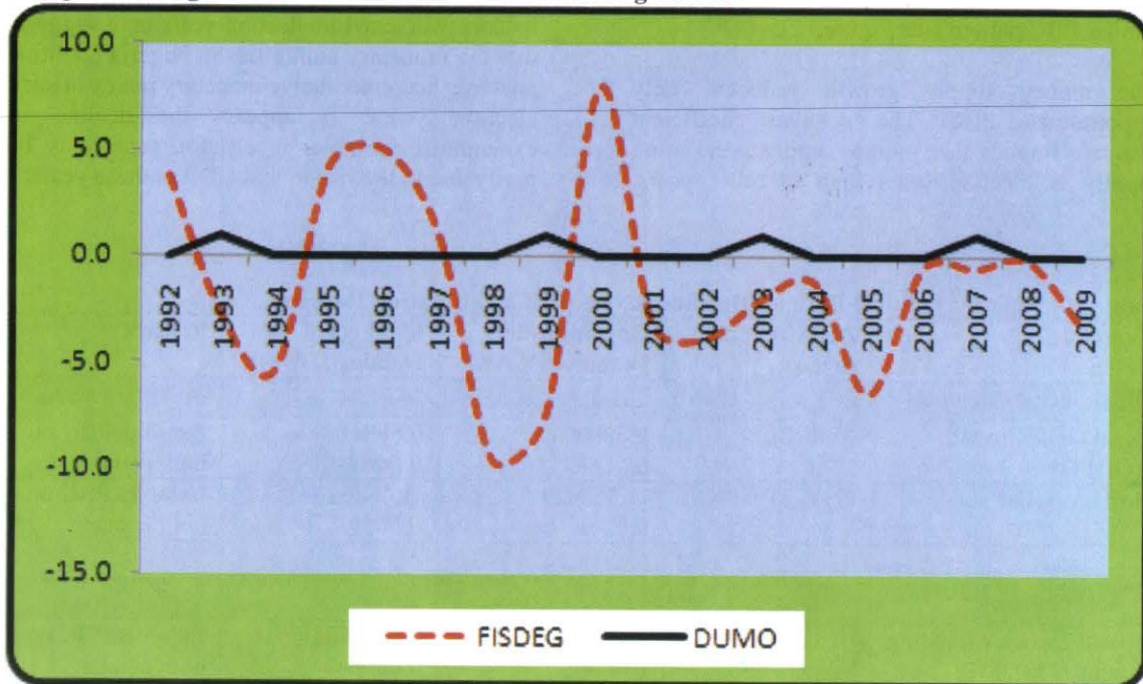


Figure 11: Nigeria: Trends in Total Expenditure and its Components

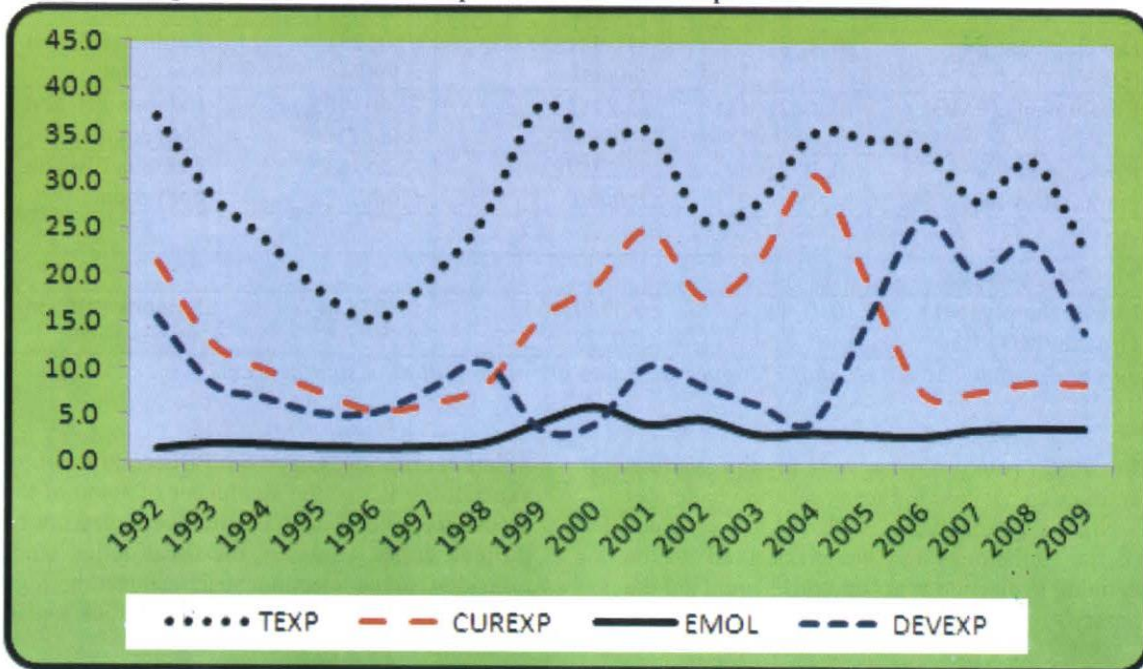
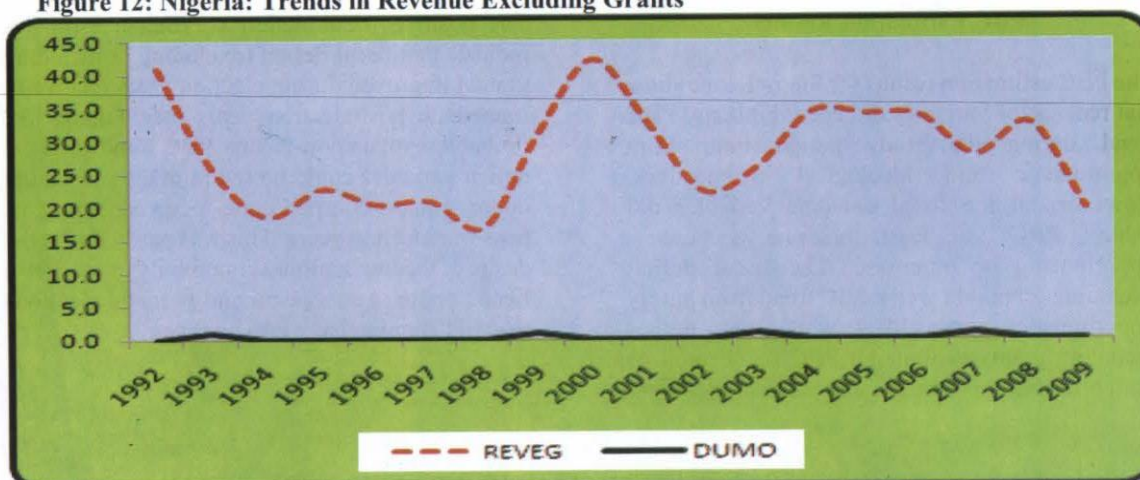


Figure 12: Nigeria: Trends in Revenue Excluding Grants



## 5.5 Results for Sierra Leone

### Stationarity Test Results

The ADF unit root test results show that six variables are stationary at level, while the remaining three are stationary at first difference (see Table 11). Again, based on these results, six

ARMA models and three ARIMA models were formulated to test the existence of PBC in Sierra Leone. The specific ARIMA models estimated for Sierra Leone are reported in Table 12

Table 11: Sierra Leone: Unit Root Test Results

Variable	ADF Statistic at level	ADF Statistic at First Difference	ADF Statistic at Second Difference	Order of Integration
Real GDP Growth (GDPG)	-2.635214 <i>0.1036</i>	-2.774900 <i>0.0853</i>	NA	I(1)
Inflation (INF)	-2.856006 <i>0.0552</i>	NA	NA	I(0)
Fiscal Deficit Excluding Grants (FISDEG)	-1.946802 <i>0.3053</i>	-2.983840 <i>0.0556</i>	NA	I(1)
Fiscal Deficit Including Grants (FISDIG)	-2.861829 <i>0.0721</i>	NA	NA	I(0)
Total Expenditure (TEXP)	-2.774511 <i>0.0807</i>	NA	NA	I(0)
Recurrent Exp (CUREXP)	-2.685092 <i>0.0958</i>	NA	NA	I(0)
Revenue Excluding Grants (REVEG)	-3.141520 <i>0.0403</i>	NA	NA	I(0)
Revenue Including Grants (REVIG)	-2.374605 <i>0.1613</i>	-4.375338 <i>0.0042</i>	NA	I(1)
Money Supply (M1) Growth (MONG)	-3.489708 <i>0.0109</i>	NA	NA	I(0)

Source: Computed by WAMI Staff \*Figures in italics are probabilities of significance.



### PBC Estimation Results

The PBC estimation results for Sierra Leone show that real sector variables did not exhibit any PBC trend during the study period both from opportunistic and ideological perspectives. However, all the fiscal outcome variables did exhibit PBCs, at least, on one account – opportunistic or otherwise. The fiscal deficit excluding grants showed a PBC trend from purely opportunistic perspective, while the deficit including grants exhibited a PBC on account of both political opportunism and partisan ideology.

The positive fiscal deficit coefficient estimates indicate that fiscal deficit (excluding or including grants) improved during election years relative to immediate post-election years (see Figure 13). Probable explanation to this PBC trend in fiscal deficit variables could be found in the substantial donor support Sierra Leone received during its post-war election years. This was partly due to the desire of the international community to see Sierra Leone organise successful and peaceful elections to avoid slipping back into civil war.

**Table 12: Sierra Leone: Political Budget/ Business Cycle (PBC) Estimation Results**

Variable	ARIMA Model (p d q)	Opportunistic Dummy (DUMO)	Ideological Dummy (DUMI)	Remark
<b>Real Sector Outcomes</b>				
Real GDP Growth (GDPG)	(0, 1, 2)	2.497443 <i>0.5213</i>	3.981814 <i>0.1252</i>	Exhibits no PBC
Inflation (INF)	(0, 0, 2)	-3.673962 <i>0.5592</i>	0.537749 <i>0.8765</i>	Exhibits no PBC
<b>Fiscal Outcomes</b>				
Fiscal Deficit Excluding Grants (FISDEG)	(0, 1, 2)	3.127745 <i>0.0307</i>	0.229728 <i>0.8471</i>	Exhibits PBC on one count
Fiscal deficit including grants (FISDIG)	(0, 0, 2)	1.944465 <i>0.0078</i>	0.581476 <i>0.0051</i>	Exhibits PBC on both counts
Total expenditure (TEXP)	(0, 0, 2)	-2.547624 <i>0.0466</i>	-1.127102 <i>0.0839</i>	Exhibits PBC on both counts
Recurrent Exp (CUREXP)	(0, 0, 2)	-3.187159 <i>0.0645</i>	-1.016233 <i>0.3099</i>	Exhibits PBC on one count
Revenue excluding grants (REVEG)	(0, 0, 2)	1.780900 <i>0.1103</i>	1.139890 <i>0.0456</i>	Exhibits PBC on one count
Revenue including grants (REVIG)	(0, 1, 2)	-5.876044 <i>0.0116</i>	-0.468687 <i>0.7466</i>	Exhibits PBC on one count
<b>Monetary outcome</b>				
Money Supply (M1) Growth (MONG)	(0, 0, 2)	-7.110686 <i>0.2506</i>	2.246711 <i>0.5899</i>	Exhibits no PBC

Source: Computed by WAMI Staff \*Figures in italics are probabilities of significance.

Total expenditure and recurrent expenditure showed PBC trends during the study period. Their negative coefficient estimates indicate that total and recurrent expenditures declined in election years but expanded in other years. Since real GDP growth did not show any sign of PBC, the contraction in expenditure in election year could not be attributed to statistical development. Probably, it might be due to the Sierra Leonean authorities' ability to contain people's expectations and agitations during election years or better still due to relatively low level of workers' agitation since most of them appreciated the fact that the country had just emerged from war. Money supply growth did not exhibit any PBC trend during the study period. Thus, monetary authorities in Sierra Leone might not have pursued any accommodative monetary policy during election years.

Overall, these findings do not pose serious challenges to Sierra Leone's compliance with the convergence criteria. Since inflation does not exhibit any PBC trend, it is not likely that elections per se will pose challenge to the attainment of this criterion. With regard to fiscal deficit, though it exhibits a PBC, it does not pose serious challenge given that, the deficit improve in an election year and worsen thereafter.. Whether the country will satisfy this criterion or not depends on the general level of the deficits and the magnitude of the contraction in an election year. The expansion in revenue excluding grants and contraction in recurrent expenditure in election years may aid the attainment of some secondary convergence criteria.

Figure 13: S. Leone: Trends in Fiscal Deficit Excluding and Including Grants

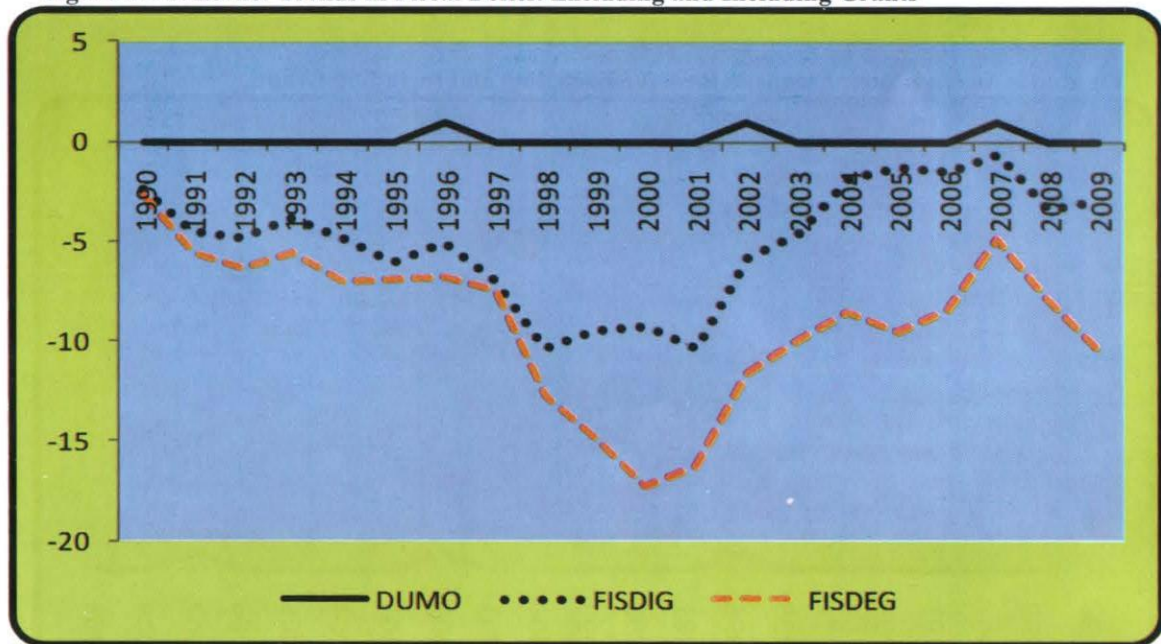




Figure 14: S. Leone: Trends in Recurrent Expenditure and Total Expenditure

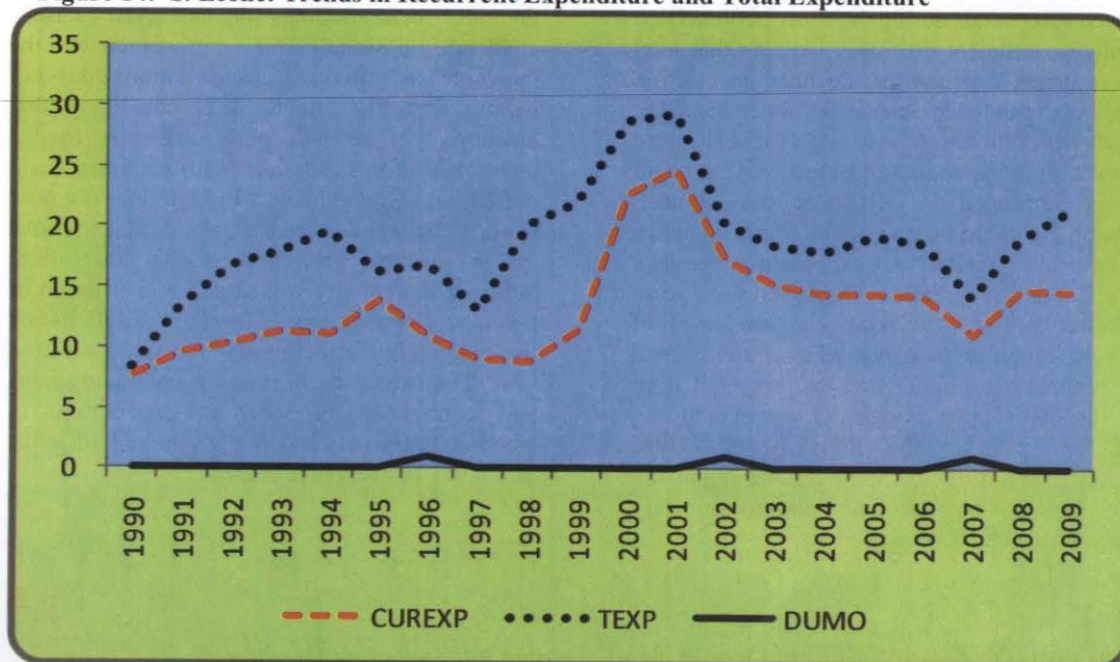
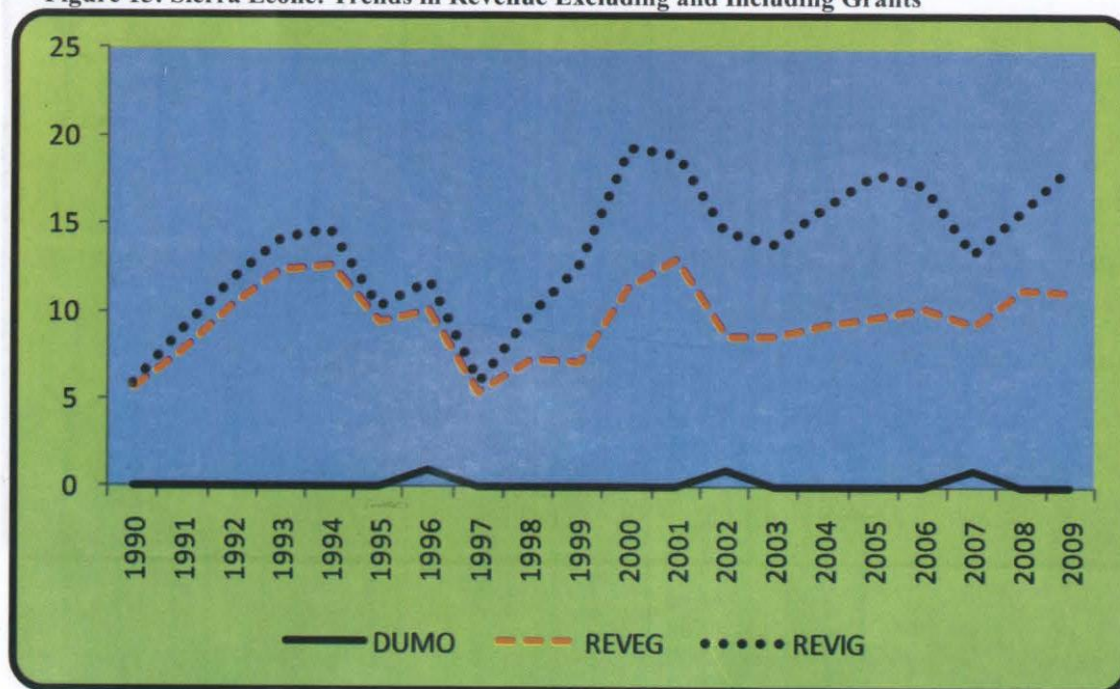


Figure 15: Sierra Leone: Trends in Revenue Excluding and Including Grants



## 6.0 SUMMARY OF THE FINDINGS AND POLICY RECOMMENDATIONS

This study sets out to establish the existence of political business cycles in the WAMZ countries. After thorough review of the literature, the paper formulates the theoretical framework and specifies the empirical models for estimation. The principal findings for the WAMZ countries are as follows:

In the Gambia, there is no evidence that inflation follows a PBC. Also, the fiscal deficit excluding grants did not exhibit a PBC in any form. In addition, there is no evidence that monetary authorities engage in accommodative monetary policy. Emoluments and revenue excluding grants do not follow a PBC trend either. Thus, on the whole, the Gambia's performance on both the primary and secondary convergence criteria may not suffer any challenge from PBC trends if the data generating processes in the Gambia remain unchanged.

For Ghana, inflation does not follow a PBC trend. However, there is significant evidence that fiscal outcomes and money supply do exhibit PBCs. Thus, it is highly likely that inflation may follow PBC trends if fiscal dominance persists and monetary authorities continue with their accommodative policies. Fiscal deficit exhibits a PBC, implying that deficit criterion may be missed in an election year. Further, though the current mechanism of deficit financing (issuance of 3-year notes to non-residents) does not pose a challenge to the central bank's financing of the deficit criterion, the PBC trend of fiscal deficit may call for deficit financing by the central bank in the event of portfolio flow reversal. It has also been established that emoluments follow PBC, suggesting that the attainment of the salary mass criterion in an election year may face serious challenge. Development expenditure escalates in an election year and this may appear favourable for the public investment from domestic resources criterion. However, it is unclear if this will be the case since the study did not use development

expenditure (investment) from domestic resources due to data problems.

Regarding Guinea, there is clear evidence that real sector variables and fiscal outcome variables follow PBCs. Inflation rate increased during election and immediate post-election years. Fiscal deficit excluding and including grants also widened during election years with fiscal deficit including grants narrowing during immediate post-election years. Money supply, however, exhibits a PBC with contraction coinciding with election years and expansion occurring in non-election years. On the whole, the convergence implications of these findings are that opportunistic and ideological political behaviour may significantly affect Guinea's compliance with inflation, fiscal deficit and central bank financing criteria. Compliance with the secondary criteria may also be affected by PBC trends in expenditure and revenue variables.

In Nigeria, inflation follows a PBC trend but with low levels occurring in election years and higher levels in non-election years. Thus, Nigeria's compliance with the single-digit inflation criterion may not be seriously challenged in election years. The fiscal deficit, on the other hand, follows a PBC trend with widening deficits in election years. This means that there are likely challenges for the attainment of the fiscal deficit criterion in election years in Nigeria. Besides, the money supply growth exhibits PBC behaviour with money supply growing more rapidly in election years than in other years, suggesting monetary accommodation in election years. The expenditure variables exhibit PBC in Nigeria but with decline in election years, which may be partly explained by the rise in real GDP in those years. Overall, the PBC patterns observed in the various variables do not pose too many serious challenges to Nigeria's compliance with the convergence criteria.



For Sierra Leone, real sector variables and money supply do not show signs of PBC. However, total and recurrent expenditures exhibit significant PBC trends but with contraction in election years, while revenue increases in those years. Thus, the fiscal deficit contracts in election years and expands in other years. On the whole, these findings do not pose serious challenges to Sierra Leone's compliance with the primary and secondary convergence criteria.

Generally, countries in which most macroeconomic indicators exhibit PBC are the dominant economies within the WAMZ (Nigeria and Ghana). Where compliance with the convergence criteria is most likely to be affected adversely by PBC is Ghana where multi-party democracy is considered to be deeply rooted. Thus, as multi-party democracy deepens in other WAMZ member countries, there is high probability that they will also tend to exhibit PBCs with adverse consequences on their compliance with the convergence criteria.

Thus, although PBCs in most member countries do not pose serious challenges, there is the need to check fiscal developments in all WAMZ countries especially during election years. To this

end, it is recommended that party financing especially in election years should be checked such that incumbency of the ruling party is not exploited to the detriment of the fiscal health of the respective economy. Further, relevant laws should be enacted to require political parties to disclose their sources of financing. Besides, member countries should avoid implementing haphazard and *ad hoc* infrastructural development programmes that are politically skewed to satisfy a segment of the electorate. In this light, efforts must be made by WAMZ countries to develop national development agenda which are widely acceptable by the electorates and sequentially implemented according to the nation's priority.

Overall, the PBC trends in majority of the WAMZ countries during the study period do not pose significant challenges to the attainment of the WAMZ macroeconomic convergence criteria. However, as democracy deepens there is a high probability that significant challenges may arise as evidenced by the findings on Ghana. There is therefore the need to impress upon fiscal and monetary authorities in WAMZ countries to take steps to minimise possible impacts of PBCs on their performance on the convergence scale.

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