POLITICAL BUSINESS CYCLE AND ITS EFFECTS ON THE GHANAIAN ECONOMY

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ABSTRACT

The abuse of incumbency during elections in order to retain power has become worldwide knowledge and a contentious issue in Political Economics. This paper seeks to establish the evidence of political business cycle in Ghana. Data for the estimations were sourced from WDI, 2014. The data spanned from 1990 to 2013 within which Ghana has had six uninterrupted democratic elections and consistent democratic rule. Three different models were specified. The method of Ordinary Least Squares estimation technique was employed to determine the impact of election years on Government Consumption Expenditure, Fiscal Deficit and Real GDP. The results suggest that there are no significant impacts of election years on the changes in Government Consumption Expenditure, Fiscal Deficit and Real GDP in Ghana. However, it was determined that Government Consumption Expenditure and Fiscal Deficit have positive relationships with election years in Ghana, though statistically insignificantly. The study recommends that there should be more fiscal discipline, especially close to/or in election years in Ghana.

Key words: Political Business Cycle, Incumbent, Economic Effects, Manipulations, Policies.

INTRODUCTION

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 (Tarawalie, 2011). According to the public choice theory, the interest of a politician in public office is likened to the interest of a businessman in the market who aims at maximizing profit. The incumbent always seeks re-election, sometimes by any means necessary. And the incumbent not only has certain controls over the economy through policies and programmes but also controls certain vital state institutions as well (Schuknecht, 1996).

It is against this background that over the past thirty-five years political economist have embarked on several 'journeys' to link election successes of incumbents (sometimes) to policy manipulations. The initial outburst of formal theoretical and empirical work on political business cycles, that is, on political determinants of macroeconomic cycles was Kramer (1971) influential study of economic determinants of U.S. congressional voting (Drazen, 2001). This was followed by the work of Tufte (1975; 1978) and Fair (1978).

Perhaps the most notable formal study of economic determinants of voting was that of Nordhaus (1975) a professor at the Yale University. His book, "Political Business Cycle" was published exactly thirty-nine years ago, pioneering formal model of the political business cycle (PBC) due to opportunistic pre-electoral manipulation (Drazen, 2001). Soon after, Hibbs (1977) presented a model of partisan policymakers (that is, policymakers having different macroeconomic goals) in an environment similar to that of the Nordhaus (1975) but where these partisan differences were the key driving force. And subsequently to these, there has been a large amount of further work all over the world aiming to establish a link between voting and economic manipulations by incumbents (Drazen, 2001).

Perhaps as influential in stimulating research was the 1972 Presidential election in the United States, in which the incumbent, Richard Nixon was justifiably viewed as engaging insignificant pre-electoral manipulation. Nixon was believed to have won the 1972 election through various economic 'gimmick', notable of all was his bill to congress to approve his control of interest rate a year before the presidential elections (Drazen, 2001).

Akin to the Nixon's case are various examples all over the world. However majority of these studies have no significant empirical evidence to prove the existence of political cycle.

The basic assumption of electoral business cycle common to all the models is that incumbents seek re-election and therefore would ensure it does whatever necessary to secure the electorates' votes. Thus, it follows that incumbents tend to either make economic conditions favourable close to election year through monetary expansion (lowering of interest rates), or fiscal manipulation: tax cuts, increase in public goods, increase in employment generation programmes, increase in subsidized goods etc -- in the case of opportunistic business cycle as propounded by Nordhaus (1975) -- or manipulating policy initiatives to prove its ideological commitment and competence; in the case partisan business cycle according to Hibbs (1977); Frey and Schneider (1978) and Alesina (1992).

In the developing world, manipulation of economic variables by incumbents for election success is very huge (Schuknecht, 1996). This is because there is not only massive poverty to ensure for example the effectiveness of transfer payments, increase in subsidized goods, increase in public goods as tools for campaign promises but also the existence of weak institutions, easily manipulated by incumbents. Schuknecht (1996) from a sample of 35 developing nations, argues that there should be more room for manipulation in developing countries, as checks and balances are weaker and the incumbent has more power over monetary and fiscal policy. He argues that in developing countries expenditure policies (such as distribution of free or subsidized goods or employment generation via public works programs) are probably more effective than tax cuts in affecting voter behavior. Several studies have found significant pre-electoral increases in public spending in India before elections. Block (2000) presents evidence of a political business cycle in both fiscal and monetary policy in a cross section of 44 sub-Saharan African countries. In Ghana as in other developing countries; as well as in some countries of the Organization for Economic Cooperation and Development (OECD countries), there are anecdotal/and theoretical evidence of fiscal and monetary manipulation in Ghana by incumbents. This is evident in the

pre-electoral expansionary policies in forms of subsidies, infrastructural improvement or increase in public good (targeted especially towards very deciding electorate), increase in money supply (M1), lower inflation rate, increase in employment programs to mention a few, a year or two before elections; which is quickly followed by contractionary policies after elections. But as to whether this "economic/policy gimmick" is empirically evident and significant enough to cause any macroeconomic imbalance in Ghana is what this study aims to establish.

According to Nordhaus (1975) the post electoral effect of policy manipulations on the economy includes higher inflation and higher unemployment which affects the utility of the electorate. This he proved by using the famous Philips curve trade off. His claim was further supported by some political economists. For example, Alesina *et al.* (1992) and Alesina *et al.* (1997) tested for a political cycle in inflation in 14 EOCD countries (measured as a growth rate of the CPI over a quarter period). Defining a political dummy variable of 1 in an election quarter and 0 otherwise for other quarters, they found a highly significant positive coefficient to support a political cycle effect on inflation in Germany, New Zealand, UK, Denmark, Italy and France. They also found a GNP growth rate which was seasonally adjusted especially towards the end of the president's term in office in USA. Kramer (1971) regressed votes received by the incumbent party in U.S. congressional elections on two measures of performance in the year of the election: the growth rate of real per capita income and the rate of inflation in that year, and found they were both significant determinants of vote totals. Fair (1978) as quoted by Drazen (2001) looked at presidential elections from 1916 through 1976. He found that the change in real economic activity in the year of the election, as measured either by the change in real per capita GNP or the change in unemployment in the election year, appears to have an important effect on votes for president, with a finding proving a 1% increase in the growth rate increases the incumbent's vote total by about 1%. Having highlighted the theory, the big question is whether the findings are consistent with Ghana as a case study. Is there evidence to prove Political Business Cycle in Ghana? And what effects does such cycle have on the economy of Ghana?

PROBLEM STATEMENT

The abuse of incumbency has become a global norm since time immemorial. In the developing world, especially the sub-Saharan Africa, the prevalence of such abuses is very glaring and worrisome. From corruption to intimidation of citizens (usually opposition) through state machinery; and to perpetuation of power by any means necessary, the incumbent does it with outmost impunity. Glaring examples can be found in countries like Zimbabwe, Nigeria, Mali, Gambia to mention a few, where such abuses are international knowledge (BBC Africa's report).

To perpetuate power, incumbents in Africa as aforementioned, in extreme cases, could intimidate voters, twist the system or even postpone date of elections. However, in less extreme cases, manipulation of policies (mainly monetary and/or fiscal policies) close to election periods to increases the chances of re-election is usually the option.

The theory of Political Business Cycle has it that, in the quest to gain re-election, incumbents usually manipulate public policies to influence macroeconomic variables close to election period in order to present a favourable economy to voters (Nordhaus, 1975). These manipulations include policies like tax cuts, increase in subsidies, increase in public good or infrastructural development, increase in money supply (to reduce interest rate and increase aggregate demand) and emergence of new employment programs, a year or two before election period (Schuknecht, 1996). However, such expansionary policies disappear a year or two after election, leaving the economy, most often, with higher inflation, higher unemployment and ultimately decrease in GDP.

It is the serious negative macroeconomic consequences of such manipulations (already established by various studies) that have necessitated the research on the topic "Political Business Cycle in Ghana and its effects on the economy". Although some signs, which are consistent with existing theory and some anecdotal findings suggest that manipulation of macroeconomic variable exists in Ghana; including the findings of Tarawalie (2011) this research aims at proving empirically (using a different approach and adding to the already meager literature available in Ghana concerning PBC) whether PBC exist in Ghana by testing some of the macroeconomic variables used as tools of manipulation by incumbents and establishing their effects on the economy. Therefore, the begging questions are;

i.   Does Political Business Cycle (PBC) exist in Ghana?
ii. What specific macroeconomic effects does PBC have on the Ghanaian economy?

OBJECTIVES

The following are the objectives of this study:
- To determine whether government consumption expenditure expands more in election years;
- To determine whether fiscal balance deteriorates more in election years and
- To determine if Real Gross Domestic Product (RGDP) expands more in election years.

HYPOTHESIS STATEMENT

H_0: Government Consumption expenditure is not higher in election years in Ghana

H_1: Government Consumption expenditure is higher in election years in Ghana

H_0: Fiscal Deficit does not deteriorate more in election years in Ghana.

H_1: Fiscal Deficit deteriorates more in election years in Ghana.

H_0: RGDP is not higher in election years in Ghana

H_1: RGDP is higher in election years in Ghana

LITERATURE REVIEW
THEORIES OF POLITICAL BUSINESS CYCLE
THE OPPORTUNITISTIC MODEL

Non-Rational Opportunistic Model

The opportunistic business cycle model, first propounded by Nordhaus (1975) has it that incumbent government in an attempt to seek re-election creates votes gaining incentives characterized by expansionary economic policies close to election period. According to

Nordhaus (1975) inflation tends to rise and unemployment fall close to election periods; an action which places most electorate in a better economic position, thereby necessitating the re-election of incumbent (who is viewed as competent). However, immediately after elections, a contractionary policy is preferred by incumbent. The assumption is that as election approaches, the incumbent studies the economic situations to weigh her chances of re-election. An unfavourable economic situation mainly characterized by high unemployment is quickly corrected (at least) by increasing government expenditure and money supply (to lower/through lowering interest rates) up to a point to achieve a fairly balanced short term Philips curve tradeoff. The trade-off relationship is of the form, **π = π (U) + $\alpha\pi^e$** where **π** is the inflation rate; **U** is the unemployment rate and **π^e** is inflation expectations. According to Nordhaus (1975) the incumbent would focus on the combination **π** and **U** that maximizes number of votes. Thus levels of monetary expansion (inflation) and unemployment are those which maximize voter's satisfaction in the period of elections. In the next election cycle, the same behaviour is repeated, with contractionary monetary policy to bring down inflation during periods leading to elections and expansion in spending and money supply during election periods (Sackey Gyimah and George, 2012). In other words, incumbent aims at expanding the economy.

Rational Opportunistic Model

Rogoff and Siebert (1988) and later Rogoff (1990) expanded the opportunistic model, and called it the Rational Opportunistic Model. However they focused on fiscal manipulation by the incumbent. According to them, the greater the incumbent is able to increase public good close to or during election periods the greater its chances to win over the electorate. Specifically, Rogoff (1990) has it that voters look to maximize their consumption of public and private good, g. The public good production function is of the form $g_t + k_{t-1} = \Upsilon_t + \mathcal{E}_t$ where **g** is the public consumption good, **k** is the public investment good, Υ is the lump-sum taxes and $\mathcal{E}_t$ is stochastic "competence" shock. But rather than assumption of voters naivety, the model assumed voters are rational enough to understand repeated cycle of economic manipulations but given the fact that voter have imperfect knowledge relating to government operations, they view any economic achievements through observing g_t and k_t (but not k_{t-1}) at such time as a result of the government competence. Implying thus that the public investment decided at time **t** only becomes visible and productive at time **t+1**. The argument is that the lower the share of information that voters have, the less they are able to distinguish between pre-electoral manipulations and incumbents competence (Rogoff, 1990).The rational opportunistic model was further supported and expanded by Persson and Tabellini (1990). Just like Rogoff and Siebert (1988) and later Rogoff (1990), they said the electorates 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 model 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 (Tarawalie, 2011)

THE PARTISAN MODEL

Non-Rational Partisan Model

Generally, for the partisan models, the idea is that electoral cycles are induced based on the political parties' interests (goals) and ideologies. However, the voter is non-rational, backward looking and naive. Propounded by Hibbs (1977) and further supported by Frey and Schneider (1978) the main assumption is that unemployment tends to be lower and inflation higher during the term of a left-wing (socialist) government whereas it is the opposite during the term of a right-wing (capitalist) government. 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 (Tarawalie, 2011). Thus, political business cycles often signify the economy's fluctuation around its long run behaviour being created by political pressures and interest groups (Paldman, 1997) as quoted by Tarawalie (2011). However unlike Hibbs (1977); Frey and Schneider (1978) theorized that there is a trade-off between ideology and opportunism at a point. In other words, an incumbent would be more ideological if its popularity doesn't suffer close to election period. However if an incumbent suffers a "Popularity Lead Deficit", the more opportunistic it will be.

Rational Partisan Model

The partisan model was further expanded by Alesina (1987) who introduced a rational partisan model. According to him, voters are not just rational in their expectations but are also aware of the party difference and vote for the party that offers them the outcomes that coincides with their preferences. According to Tarawalie (2011) generally, in rational partisan models, the ruling party pursues its ideology and the electorates are assumed to be rational or 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. The model predict that there will be no politically induced cycles since popularity follows a random walk, and like the non-rational model, the short-run partisan effects after elections won by the right wing includes 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 (socialists) is in office than when the right (capitalists) is in office (Tarawalie, 2011)

CONCEPTUAL CRITIQUING

Although Nordhaus assumptions might provide a fertile ground for opportunistic cycle, especially in the developing world, a few objections can be raised.

First, Nordhaus (1975) makes the assumptions that voter are so naïve (if not stupid) as not to recognize the repeated electoral cycle. This claim seems rather too unrealistic. However, it should be put that voters are discerning and may realize that "election-year economic/policy gimmick" may be used to influence their votes, hence may be skeptical of an economic upturn in months before election (Sackey Gyimah and George, 2012). Therefore, a more acceptable or realistic view should be that voters have less than perfect information about the causes of economic fluctuations and could view favourable economic performance to indicate incumbent's competence which is consistent with the Rational Opportunistic model.

Secondly, the monetary expansion by incumbent as assumed by Nordhaus (1975) model suggests that incumbent has a direct control of the central bank and therefore can manipulate interest rate at will. This is not realistic in the real world. However, one could relate to the assumption that central banks, as independent bodies, in order not to be accused of partisan politics as well as ensure a stable economy tends to accommodate monetary shocks created by increase in government expenditure close to election, so as to prevent a sharp rise of interest rates (Drazen, 2001).

With the Partisan model assuming that politician seek re-election to be able to apply ideological policies, with opposite preferences reflecting party colours, which have no post-election effects, suggest existence of pure partisan politicking. However, rarely is there pure partisanship in world politics. Again, voting is mostly done based on personality rather than party colours.

EMPIRICAL LITERATURE REVIEW

The empirics in political business cycle is one that has, over the years, taken different dimensions with some support and rejection of PBCs' existence.

Nordhaus (1975) the first formal empirical work done on opportunistic political business cycle, found the existence of PBC in some OECD countries. He concluded that, with active monetary expansion (manipulating interest rate), inflation and unemployment trended according to election periods given their fluctuations before and after elections, there exist PBC (especially significant In addition, Nordhaus (1975) findings predicted a political cycle in economic activity (growth), resulting from manipulation of inflation, unemployment (employment) and M1 before and after elections.

Mccallum (1978) however rejected the existence of PBC in the form of Nordhaus' model in the USA. Using a different methodology anchored on the Lucas-sergeant hypothesis and defining election dummies at different quarter cycle as well as using the unemployment variable, concluded that the departure of unemployment rate from its natural rate does not indicate electoral cycle, a claim consistent with findings of Alt and Chrystal (1983).

Defining a political dummy of 1 in an election year and zero otherwise and including a central bank independency variable, Wallner (2012) tested for election cycle on inflation using samples around the world in order to see the global perspective of electoral cycle. His findings suggest a non existence of PBC on a global front.

Alesina (1997) using a different approach and defining a political dummy of 1 in election year and T-1 years before elections and 0 otherwise in a pool cross-section time series regressions, found evidence of no significance of political business cycle in GNP growth or unemployment growth in the USA.

Similarly, outside the USA, Alesina (1997) found no opportunistic cycle in GNP growth for a sample of 18 OECD countries over the period of 1960-1993. However, a post-electoral increase in inflation (of the form of Nordhaus theory) was found significant in some countries

(using the same OECD sample). Defining a political dummy of 1 in election quarter (year) and T-1 (3 quarters following election) and 0 otherwise, in a measurement of the growth rate of the CPI in 4 quarter, found a highly significant positive sign coefficient to support a PBC trend in inflation in most of the OECD countries with countries like Germany, Italy, Denmark, France and New Zealand showing a very obvious results. Finally, econometric test on monetary surprise before elections shows significant result reflected in that of inflation after elections.

In a separate work, Alesina (1992) using the same political dummy as they did with GNP and inflation test (Later) in a pooled cross-section, time-series regressions, found a strong significant political effect for the annual growth rates in M1 in their sample of the OECD countries (mentioned earlier) with a very few countries showing less significance.

Kramer (1971) regressed votes received by the incumbent party in U.S. congressional elections on two measures of performance in the year of the election: the growth rate of real per capita income and the rate of inflation in that year, and found they were both significant opportunistic determinants of vote totals.

Fair (1978) looked at the US presidential elections from 1916 to 1976. He found that the change in real economic activity in the year of the election, as measured either by the change in real per capita GNP or the change in unemployment in the election year, appears to have an important effect on votes for president, with a finding proving a 1% increase in the GNP growth rate increases the incumbent's vote total by about 1%.

Taking a fiscal stance, Schuknecht (1996) found out from a sample of 35 developing countries that fiscal policies such as tax cuts, increase in government expenditure, transfer payments, subsidies are very prevalent in these countries as a tool for politico-economic manipulation given that there are wide spread of poverty and weak institutions available for incumbent to use.

Schuknecht (1998) in another study of the impact of electoral cycle on exchange rate in 25 developing countries, found that in countries with fixed exchange rate, monetary policies are rarely used, but there are significant opportunistic fiscal budget cycle.

Shi and Svensson (2006) from a sample of 85 countries investigated PBC using fiscal approach and found out that there is, on the average, almost a 1% increase in budget deficit in election quarter in developing countries; and a 0.6 increase in deficit in developed nations.

Rogoff (1990) using a discounted utility function for the voter to indicate a model showing fiscal manipulation, found that PBC exist when voters have higher utility.

Expanding the Rogoff model, Gonzales (1999) added two parameters - cost of removing an incumbent from office (degree of democracy) and the possible information availability to the public (transparency of the society). In her findings, she concluded that when there is a higher level of democracy, budget cycle is lower. However, at mid-level democracy, mostly common in developing world, there was a very level of political budget cycle.

Brender and Allan (2005) also taking a fiscal dimension, investigated the behaviours of fiscal balance, government expenditure and revenue from a sample of some OECD and developing nations; and found a positively significant coefficient that suggested political fiscal cycle in few countries especially the developing countries. However, they claimed that cycle existed because such nations are new democracies and claimed that maturity in electoral politics could erode cycle.

Block (2003) in a research that tested the extent of PBCs in new democracies in what they called "founding election" as well as the effect multiparty competitiveness to PBC, in a sample of 44 Sub-Saharan African nations, found evidence of electorally time interventions in fiscal, monetary and exchange rate policy exclusively in cases of competitive election. Defining dummies of presidential election dates and electoral contestability in separate measures of GDP growth, M1 growth, exchange rate devaluation and government consumption as a share of GDP, they found amongst others, specifically, a 13% point increase in rate of real money growth during competitive elections. However, in the new democracies (founding elections), there were little significant evidence of PBCs, much less than their expectation - consistent with Block (1999)

Tarawalie (2011) in a study to establish the existence of PBCs in the West African Monetary Zone (WAMZ) countries, using Ghana and Nigeria as case studies, found evidence to suggest existence of PBCs in both countries. Using the Autoregressive Integrated Moving Average (ARIMA) method on a model they so-called "hybrid of non-rational opportunistic and non-rational partisan"; and defining dummies for both elections and partisanship, they found trends that indicated electoral fiscal and monetary cycle in both opportunistic and partisan sense. Specifically, M1 and fiscal outcomes showed trend of PBCs looking with an opportunistic lens in both countries; and GDP growth showed trend of PBC but only in partisan perspective in Ghana. However, inflation did not show any trend of PBC in Ghana.

Sackey and Campah-Keyeke (2012) regressed GDP on inflation, M1, government expenditure and external debt of the state, in an attempt to establish the existence of PBC in Ghana. Using a sample data from 1992 to 2010 and defining an election dummy of 1 and zero otherwise, they found a non-significant positive coefficient to suggest PBC in Ghana.

From the review of the findings of PBC done by this study, it can be noted that only two (2) literature of PBCs concerning the Ghanaian economy can be found. Thus the choice of this study is not out of place since it would contribute to the already insufficient literature on Political Business Cycle with the Ghanaian economy in focus.

THE GHANAIAN POLITICAL TERRAIN AND ELECTIONS

Perhaps the understanding of PBCs in Ghana could be more pronounced if one knows the political terrain and the electoral cycle in Ghana. Ghana practices a unitary system of government which combines both parliamentary and presidential style of government. With a unicameral legislature, the presidential and parliamentary elections are held every four years in a nationwide contest. Ghana is classified as a new democracy having had six successive

democratic elections so far, after almost 3 decades of military rule. The last election was in 2012 which saw the ruling National Democratic Congress (NDC) retained in the presidency. However, the journey to democracy as reminiscent of most African nations is something worthy of note. After the struggle to gain independence in 1957, Ghana became a sovereign state in 1960 (republic) with Dr. Kwame Nkrumah as the president (from being a prime minister since 1957). The political terrain in Ghana then was such that there were no democratic elections, since the then president had succeeded in declaring himself president for life and making Ghana a one-party state with his party, CPP as the supreme party.

With opposition crushed and no elections, Nkrumah continued as President till 1966 when the military toppled his administration.

From 1966 to late 1968, political activities and for that matter, elections ceased due to military rule. Political activities returned with the 1969 elections, the first competitive nationwide political contest since 1956 between the two major political parties, Progress Party (PP) and the National Alliance of Liberals (NAL). The year 1970 saw the emergence of Dr. Busia as Prime Minister and Justice Edward Akuffo-Addo as President. However, after twenty-seven months, the Busia Administration was toppled by a military coup.

Military rule continued from 1972 through to 1979, when the third republic began but ended almost immediately. And the junta continued again from 1981 to 1992 (Wikipedia).

Perhaps the discussion of PBC in Ghana should begin from 1992, the year Ghana restarted democratic rule and has since then had six successive elections. Hence, one could say that the presence of democracy in Ghana has eroded the perpetuation of power or incumbency by means of force and intimidation. However, the modern day incumbents have found a new way to remain in power through the manipulation macroeconomic variables such employment level, GDP, inflation and so on through fiscal and monetary policies close to election or during election time.

In Ghana, it is not uncommon to see for instance a fall in interest rate as election draws closer. The theory is that incumbent initiate policies that increases M1, including buying of bond, thereby making borrowing cheaper and businesses well off.

Consider the trend of money supply in figure 1 below. Figure 1 below shows that money supply in Ghana has been unstable; with cycles that peaks especially in the years 1992 and 1997, 1999 through to 2000, 2003, 2007 through to 2009 and 2012; and these years are either election years or close to election years. And there are also corresponding falling trend in M1 after these years. Could this be as a result of election? According to Tarawalie (2011), monetary expansion is more active in election years more than any other years. From a sample of years 1990 - 2008, they established that in Ghana, money supply (M1) has consistently peaked in election years.
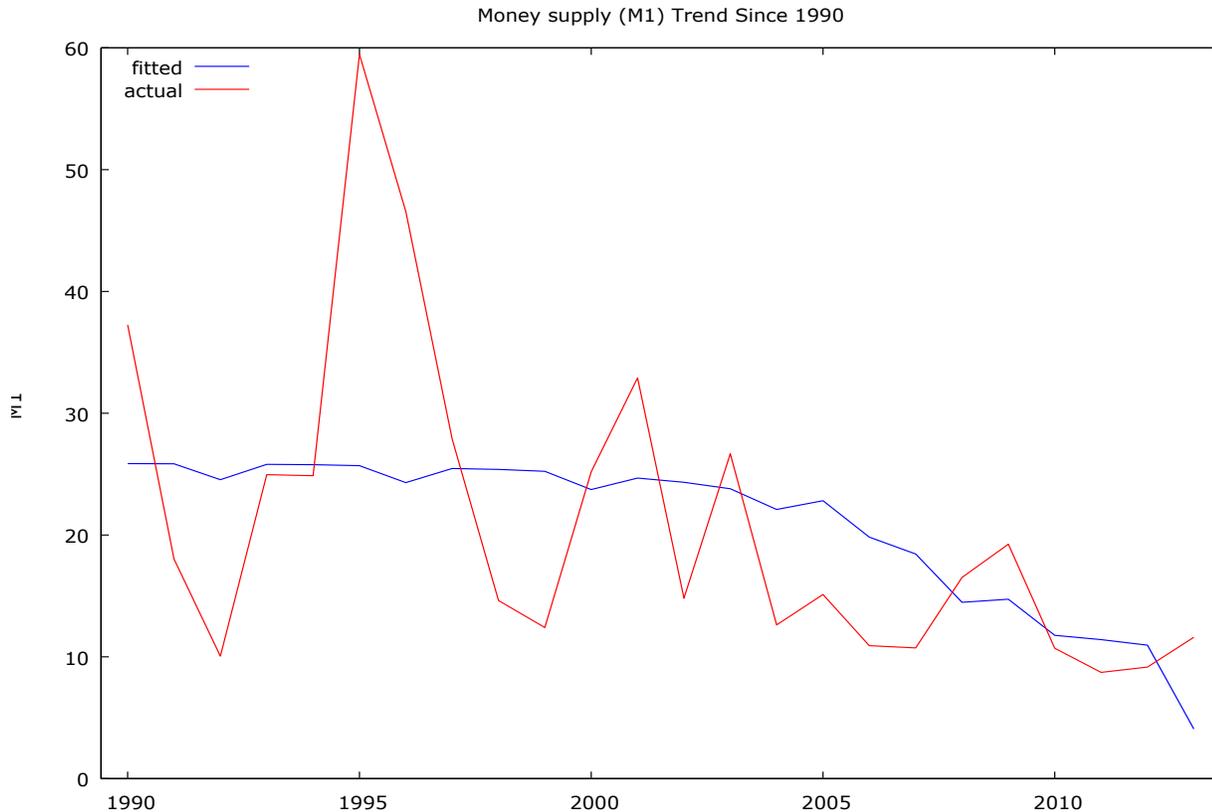
Money supply (M1) Trend Since 1990

Figure-1. Money Supply since 1992 - 2013**.**

Since 1992, the political contest in Ghana is one that is fraught with common features. One can identify very well with increase in public goods, increase petrol and liquefied petroleum gas (LPG) subsidies, direct distribution of goodies, increase in employment programmes, tax cuts and improvement in electricity stability; close to/during election periods. However these "gestures" gradually fizzle away just a year or two after elections. For instance in the campaign towards the 2008 elections, the then candidate, John Evans Atta Mills of the National Democratic Congress (NDC) used fuel price reduction as one his campaign messages. Surprisingly, a year after he won the 2008 election, fuel prices rather went up. Again, today, Ghana Youth Employment and Entrepreneurial Development Agency (GYEEDA), Savannah Accelerated Development Authority Ghana (SADA) and National Youth Employment Program (NYEP) are gradually fizzling away.

Furthermore, in Ghana, election years are usually associated with excessive use of public resources by the incumbents. Fiscal spending on the average has continuously expanded especially in election years, raising the suspicion of the opportunistic nature of incumbents in Ghana to win votes. For instance, in a 2004 report by the Center for Democratic Development, the Center decried the pervasive abuse of public resources by incumbent in the 2004 election, in advancing its political gains (Center for Democratic Development, 2004). Kwakye (2010) stated that government expenditure has consistently risen especially in election with spending on wages and salaries being the highest. According to the "Both the 1992 and 1996 resulted in high fiscal deficit in 1990s and the same pattern was observed

between 2000 and 2012. Government concerned about securing the support of the public service labour union granted substantial wage increase and embarked on an ambitious capital projects many of them unproductive" (Kwakye, 2010).

Consider figure 2 below. As can be seen below, the trend of government consumption expenditure, with peaks in years *1992,1995 to 1996 , 1999 through to 2000, 2005 through to 2009 and 2011,* makes one to question the pattern of such trend especially given that these are either election years or close to election years.
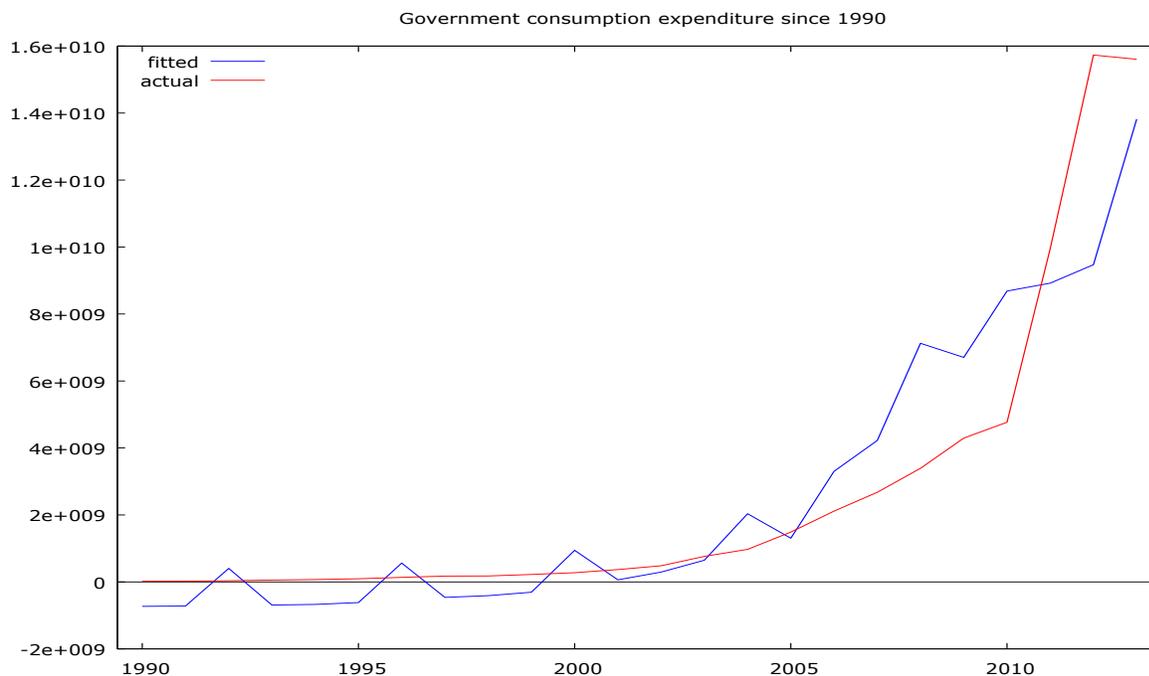

Figure-2. General Government Consumption Expenditure, 1990-2013

In addition, in Kwakye (2010) a particular sentence is worthy of note, "Both the 1992 and 1996 resulted in high fiscal deficit in 1990s and the same pattern was observed between 2000 and 2012. Government concerned about securing the support of the public service labour union granted substantial wage increase and embarked on an ambitious capital projects many of them unproductive" (Kwakye, 2010). Fiscal deficit deterioration in election years has also being raised by experts as one of the indicators of political business cycle in Ghana. Tarawalie (2011) found that fiscal deficit has deteriorated more in election years.

Figure 3 below captures the trend of fiscal deficit from 1900 - 2013. Figure 3 clearly shows the cycles in fiscal deficit, especially with the peaks in the election years; 1992, 1996, 2000, 2004, 2008 and 2012 or closer to these years. Again, raising eye brows on the issue political business cycle in Ghana.
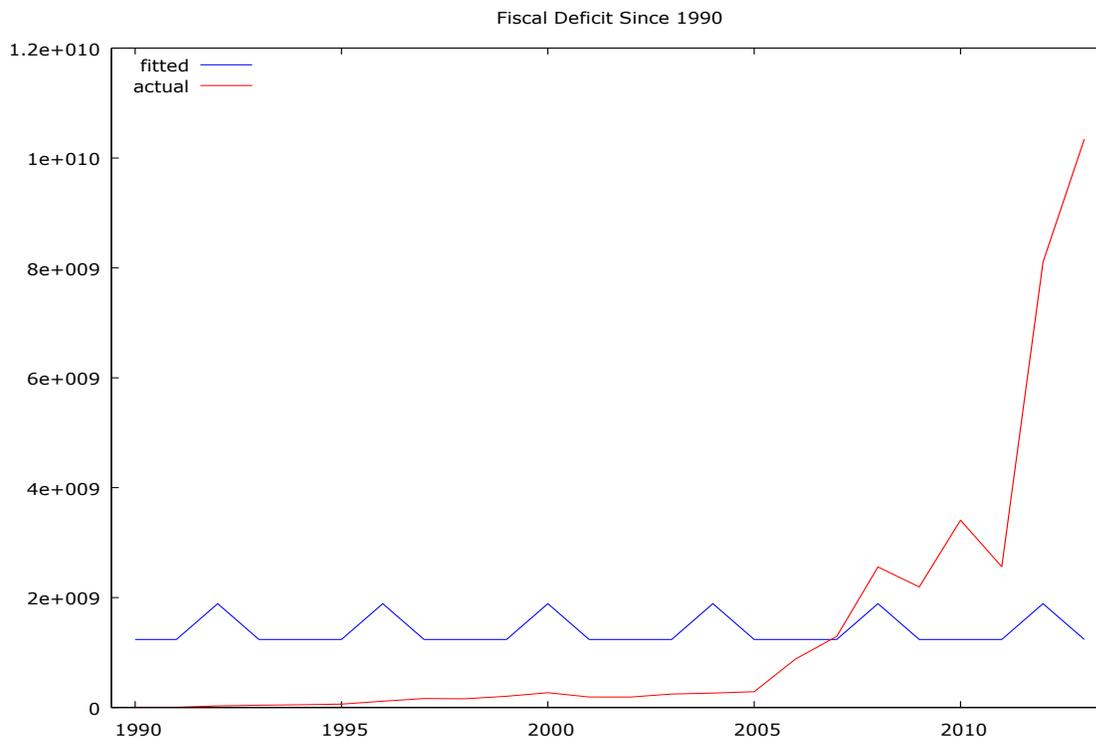
Figure-3. Fiscal Deficit from 1992 - 2013

Moreover, in Ghana, there is this general notion that the economy expands more in the election year. According to experts (though with no proof), with an expansion in the fiscal spending or what some people term as the incumbent supposedly "sharing the money" to ensure re-election, together with those (cash) doled out to electorates by the opposition, the larger majority become relatively well-off, creating an increase aggregate demand and thus economic boom in/close to election years-- a situation most electorates usually attribute to incumbents competence.

Consider figure 4 below. The years 1992 and 1995, 1999 through to 2000, 2003 through to 2004, 2007 through to 2009 and 2012 interestingly show the peak of RGDP (and these years are either election years or close to election years) followed by a corresponding falling trend in RGDP after these years. Does this trend have anything to "electoral-economic gimmick"?
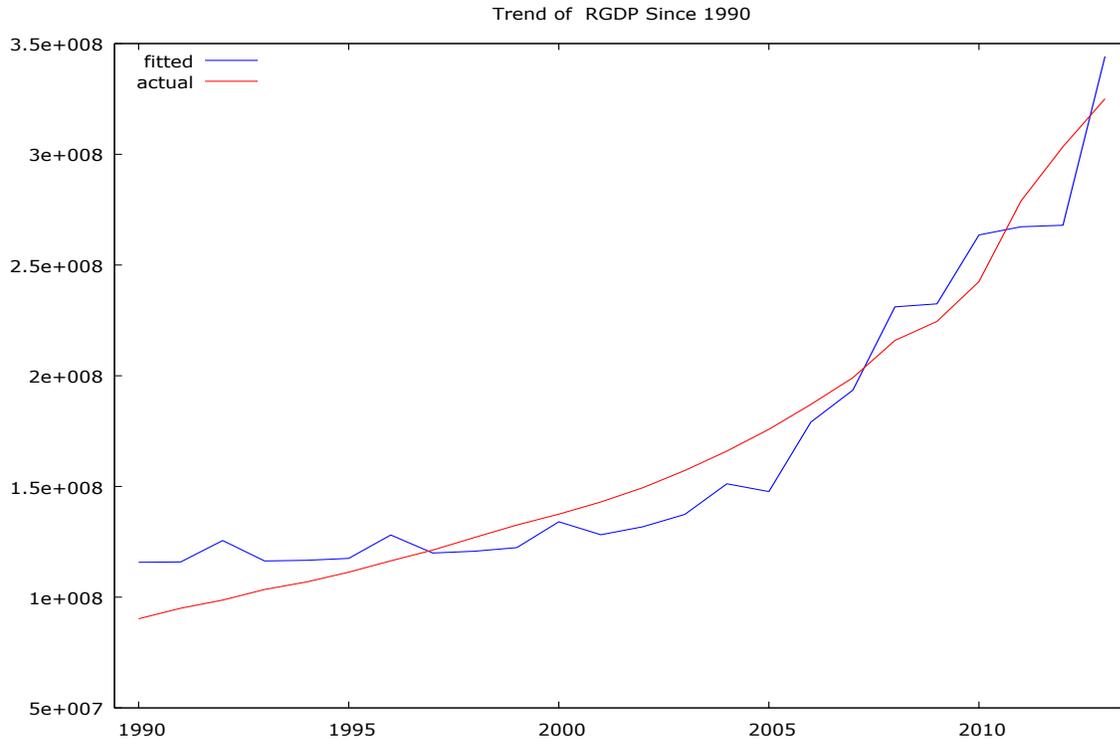
Figure-4.RGDP from 1992 - 2013

According to experts, the resultant effects of all these manipulations after election years are some serious economic problems such as higher inflation, higher unemployment, unfavourable economy, and abrupt halt of certain policies that are meant to be continuous, tax increase, subsidy review and so on.
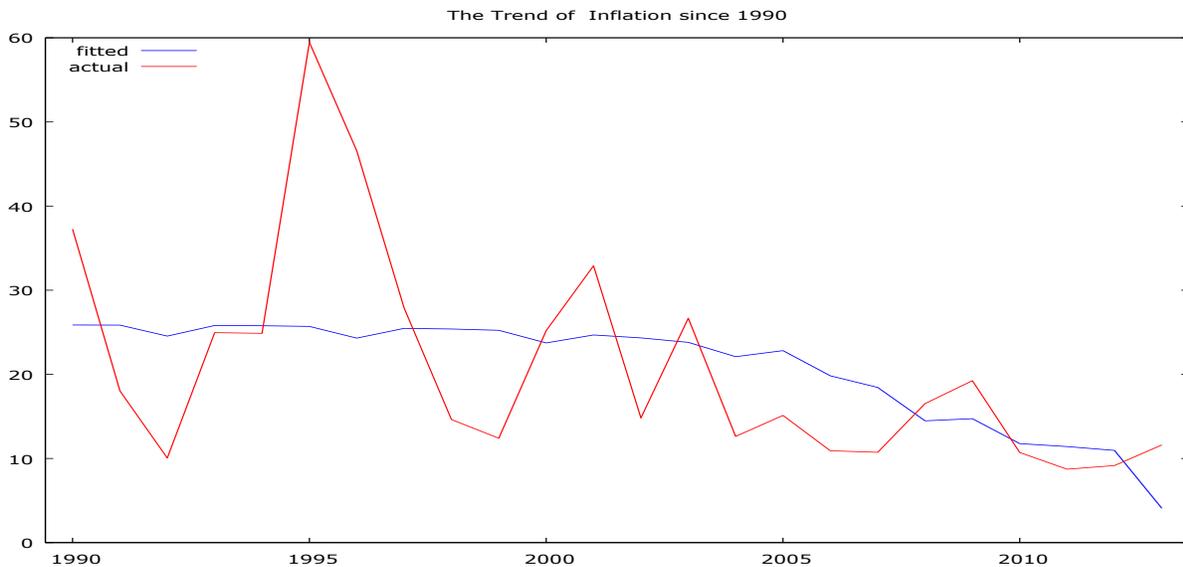

Figure-5. Inflation trend since 1990 - 2013

Figure 5 shows an unstable inflation trend with years close to election or election periods showing some higher or rising cycles. The years 1992, between 1995 and 1997, 1999 through to 2000, 2003, and 2007 through to 2009; all show rising trend and corresponding fall or stability in the preceding years. Clearly this raises questions of whether elections years influence inflation.

Although evidence of PBC in Ghana has been mostly anecdotal, the concern of many experts is that the trend of some macroeconomic variables close to/ in election years is a cause for worry; and therefore must be checked because the post-election consequences are very serious to be ignored. Policy think tank like the IEA, CEPA, IMANI, ISSER and other stakeholders are constantly calling on politicians to quit playing politics with the economy since such "gimmicks" holds no good for Ghana.

The tables below give a summary of some macroeconomic variables in Ghana and their values before and after elections of some selected election years.

Table-1.

Fiscal Deficit		
2 years before election in 2000	Election, year 2000	1 year after the election
158153232 (1998)		
204539468 (1999)	268613500	191395270

Table-2.

Government consumption Expenditure		
2 years before election in 2012	Election, year 2000	1 year after the election
4767800000 (2010)		
9955300000 (2011)	15731800000	1560640000

Table-3.

Government Transfers and Subsidies		
2 years before election in 2012	Election, year 2000	1 year after the election
20260550 (1998)		
29800800 (1999)	43242200	28960000

Clearly the trends of the macroeconomic variables presented in the graphs and tables above show some degree of cycles with peaks especially closer to or in election years. This obviously raises the question of why there exist such trends especially close to election years. Is there any association between elections and the cycles in macroeconomic variables in Ghana? And what impact does election have on the performances of these variables? Well these questions are better answered with an empirical backing which is sole aim the following chapters.

RESEARCH METHODOLOGY
THE EMPIRICAL FRAMEWORK SPECIFICATION

The empirics of this study are in four (3) parts.

Model 1: Fiscal Expansion (public and private goods expansion) model

This is an OLS modeled to reflect the Rogoff"s theoretical framework but with slight difference. This model captures the opportunistic nature of the incumbents using fiscal variables. The model is based on fiscal outcome. It's an attempt to establish that incumbents, as an election winning tool, expand spending in order to expand public and private goods. Rogoff (1990) considers fiscal policy as a tool for "politico-economic gimmick" by incumbent, a phenomenon that is more plausible given that incumbents are more directly involved with fiscal policy. Accordingly, the greater the incumbent is able to increase public good and private good during election periods, through fiscal spending, the greater its chances to win over the electorate. Thus, the first model is an attempt to establish the existence of electoral budget cycle in Ghana in terms of government spending.

The model include:
$$T.Gov\,C.\mathrm{Exp}_t = b_0 + b_1\,ELE.DUMM_t + b_2 T.Sub_t + e_t$$
where:

$T.Gov\,C.\mathrm{Exp}_t$ = the total government consumption expenditure at time t. Total government consumption expenditure is defined as all government current expenditures for purchases of goods and services (including compensation of employees as well as transfers).

$ELE.DUMM_t$ = the election dummy at time t, taking the value of one in the years of election and zero otherwise.

$T.Sub_t$ = the total subsidies and/or transfers at time t.

e_t = the error term at time t representing all other variables that cause changes in $T.Gov\,C.\mathrm{Exp}_t$ but are omitted in the model.

b_1 is expected to be positive and significantly greater than zero to show that total government consumption expenditure is higher in election years.

A priori, transfers increases in election years. Thus b_2 is expected to be positive. However, the coefficient sign of $T.Sub$ is not the focus. $T.Sub$ was only introduced as auxiliary variable capable of influencing total government consumption expenditure.

The focus however, is on the sign of b_1. The PBC theory has it that b_1 should be positive and statistically significant indicating total government consumption expenditure increases in election years more than any other years.

Model 2: Fiscal Deterioration Model.

This model reflects the idea that as incumbent uses "fiscal politico-economic" policies to expand the public and private goods, fiscal balance deteriorates. Specifically, Rogoff (1990) has it that voters look to maximize their consumption of public and private good. As a result government in an attempt to meet the expectation of the voter, operates a higher deficit in election years. Thus, this model is an attempt to establish if fiscal deficit worsens in election years more than any other years in Ghana.

The model includes:

$$FIS.DEF_t = b_0 + b_1 Tax.Rev_t + b_2 ELE.DUMM_t + e_t$$
where:
$FIS.DEF_t$ = the fiscal deficit at time t.
$ELE.DUMM_t$ = the election dummy at time t, taking the value of one in the year of election and zero otherwise.
$Tax.Rev_t$ = total tax revenue at time t.
e_t = the error term at time t representing all other variables that cause changes in fiscal balance but are omitted in the model.
b_2 is expected to be positive and significantly greater than zero to show fiscal deficit is higher in election years.

A priori, b_1 is expected to be negative. However, relationship between tax revenue and the dependent variable is not the focus. Tax revenue was only introduced as an auxiliary variable capable of influencing fiscal deficit.

The focus however, is on the sign of b_2. The PBC theory has it that b_2 should be positive and statistically significant indicating that fiscal deficit increases in election periods.

Model 3: GDP Expansion Model.

This third model was based on output expansion, as used by Alesina (1992). With the incumbent's goal of expanding GDP, the idea is to test for PBC in Ghana considering the fact the incumbents could also focus on expanding the economy during election years as a vote winning tool by making policies that reflects in GDP growth. Kramer (1971), Fair (1978) both establishes PBC trends on GNP per capita in the USA. Tarawalie (2011) and; Sackey and Campah-Keyeke (2012) also tested for PBCs trends on GDP growth in Ghana; however the findings of both of them suggested no evidence of PBC influencing GDP growth in an opportunistic sense. Hence this model was an attempt to find out if RGDP expands in election or close to election years more the any other years.

Thus,
$$RGDP_t = b_0 + b_1 ELE.DUMM_t + b_2 Cap.Exp_t + e_t$$
where :
$RGDP_t$ = the Real GDP at time t.
$ELE.DUMM_t$ = the election dummy, taking the value of one in the year of election and zero otherwise.
$Cap.Exp_t$ = the capital expenditure at time t.
e_t = the error term representing all other variables that influence RGDP but are omitted in the model. Whereas b_2 is expected to be positive on a priori grounds, showing that as capital expenditure rises, RGDP rises as well; it must however be stated that b_2 is not focus for prediction of this model. $Cap.Exp_t$ is only added as an auxiliary variable that affect RGDP other than election. The focus however is on the sign of b_1. It is expected to be positive and significantly greater than zero to show that the economy expands in election years than any other years.

METHODS OF ESTIMATION

Method of Correlation Analysis

The correlation matrix was used to study the associations between the sample data. The aim of analysis was to establish the nature of association between the sample variables. The possible outcomes include a positive linear relationship, a negative linear relationship, a curvilinear relationship or no relationship (Enu, 2014).

Regression Analysis

This study used the regression analysis for estimation of data samples. The Ordinary least squares method of estimation was used to determine the values of the respective parameter estimates. The method of ordinary least squares is attributed to Carl Friedrichgauss, a German mathematician. According to (Damodar and Sangeetha, 4th ed) as quoted by Enu (2014), under certain assumptions, the method of least squares has some very attractive statistical properties that have made it one of the most powerful and popular methods of regression analysis.

ROBUSTNESS OF THE MODELS

Descriptive Statistics

The summary descriptive statistics of the respective sample variables under consideration was run to check how distributed the data samples are. Generally, attention is usually paid to the standard deviation, kurtosis and skewness of the variable in question. The skewness is a measure of the departure from symmetry. Normally distributed variables are expected to be symmetric; that is the skewness should be zero, thus the closer the variables are to zero, the better and fairly normally distributed. Furthermore, kurtosis is usually three (3), thus a fairly normally distributed sample variable should be close to three, (3). And finally, the smaller the standard deviation for the respective variables the better and; fairly normally distributed the sample variables.

Coefficient of Determination (R^2)

The coefficient of determination was used to indicate how the explanatory variables included in the models best explain the total variation in the dependent variables. The closer it is to 1 be it positive or negative the better. The adjusted R^2 was used. The main weakness of the unadjusted R^2 is that it does not take the degrees of freedom into account, this weakness is corrected by using the adjusted R^2 (Enu, 2014).

The P- Value for Each Explanatory Variable

The p-value for each explanatory variable was used to check whether each coefficient is significantly different from zero or not. Its value should be lower than 0.05. If each explanatory variable of the models has a p-value inferior to the 0.05 critical values, then it confirms that all the explanatory variables have a significant impact upon the dependent variable. To quickly judge whether the models exhibited the problem of multicollinearity, the P-values were used. If the parameter estimates prove to be statistically significant, then it will mean that the problem of multicollinearity does not exist. (Enu, 2014).

The Global Significance Test

The global significance test was used to test if all the model coefficients were significantly different from zero. If the p-value for the global significance test is lower than the 0.05 critical value, then it means that all the explanatory variables included in the model have a statistically significant impact on the dependent variable or otherwise. That is, the overall multiple regression equation and the parameters estimates are statistically significant and the regression line performs well (Ewusi, 2013)

Durbin Watson Statistic (DW)

The DW test was used to test for the presence of autocorrelation. The traditional benchmark is 2.0. If DW value lies between 1.5 - 2.5 it means the assumption of non-autocorrelation is not violated.

Durbin Watson (DW) and R-Squared (R^2)

According to Granger and Newbold, as quoted by Enu (2014), if the value of the R-squared is greater than the value of the DW (R^2> DW), then there is a good rule of thumb to suspect that the estimated regression is spurious. The R^2 and the t-statistic from such a spurious regression are misleading, and the t-statistics are not distributed as t distribution and, therefore, cannot be used for testing hypotheses about the parameters.

Breusch-Godfrey (BG) Test of Autocorrelation

To further test for problem of autocorrelation, this study used the BG test. The rule of thumb is to reject H_0 if the observed LM is greater than the Critical LM (a Chi approx.). Alternatively, the null hypothesis that there is no autocorrelation is rejected if the p-value of the observed Chi-square is less than the chosen level of significance (Damodar and Porter, 2008).

The White Test and Heteroscadasticity

This study used the White's test to test for problem of Heteroscadasticity. The rule of thumb is to reject H_0 if the observed LM is greater than the Critical LM (a Chi approx.). Alternatively, the null hypothesis that there is no heteroscadasticity is rejected if the p-value of the observed Chi-square is less than the chosen level of significance (Damodar and Porter, 2008).

Multicollinearity and Correlation Coefficient

The simple correlation coefficient was used to check for how the independent variables were associated. The rule of thumb is that when r > 0.5 then the independent variables tend to be multicollinear (Damodar and Porter, 2008).

Multicollinearity and Variance Inflation Factor (VIF)

To further test for presence of collinearity, the VIF was also used. With the benchmark of 10, the rule of thumb is to reject the hypothesis of no multicollinearity if the VIF of the each independent variable is greater than 10.

ECONOMETRIC PACKAGE USED

Gretl was used to run the regression. This is because this statistical package has a unique and an all-encompassing feature, especially in result evaluation, that provide output that would be helpful in decision making.

DATA COLLECTION

Source of Data, Sample Variables and Sample Size

The data used in this research was mainly secondary data. Samples of inflation (measured in CPI), money supply (M1), used for trend analysis; as well as samples of fiscal outcome variables (government consumption expenditure, fiscal deficit, subsidies and transfers, tax revenue and capital expenditure) and GDP; all measured annually, were used for the estimates. The data samples were obtained online from World Development Indicator 2014 data base. The years considered for the data selection were from 1990 to 2013 during which Ghana had had six (6) successive democratic elections. Two years before 1992 (the year of the first democratic election in Ghana after many years of military rule) was considered just to create a gap of non-election periods close to the real democratic election. This gives a sample size of 24 which is less than the generally acceptable size of 30, thus the possibility that the findings might be affected. Therefore, readers should take note.

RESULTS AND DISCUSSION

Test of Normality

A test of normality was carried out to see how distributed the data samples are.

To determine if the variable sample are normally distributed. The descriptive statistics was run and the histogram of the residuals was plotted.

Descriptive Statistics

Table 4 below shows the summary descriptive statistics of the respective sample variable.

Table-4. Summary Statistics, Using the Observations 1990 - 2013

Variable	Mean	Median	Minimum	Maximum
RGDP	1.78077e+010	4.34664e+009	1.92079e+008	9.34610e+010
Govcexp	2.66254e+009	4.26270e+008	1.78855e+007	1.57318e+010
TaxRev	2.71066e+009	7.39719e+008	2.16363e+007	1.41337e+010
Transfers	8.78423e+008	7.85214e+007	2.46880e+006	6.50635e+009
ElecDum	0.250000	0.00000	0.00000	1.00000
CapitalExp	1.24331e+009	2.84053e+008	1.35203e+007	6.06999e+009
FiscalDef	1.40073e+009	2.24515e+008	3.84928e+006	1.03440e+010
Variable	**Std. Dev.**	**C.V.**	**Skewness**	**Ex. kurtosis**
RGDP	2.62403e+010	1.47354	1.63467	1.62209
Govcexp	4.60943e+009	1.73122	2.07925	3.09425
TaxRev	4.04488e+009	1.49221	1.73539	1.88422
Transfers	1.61252e+009	1.83570	2.35161	4.96637

Variable	5% Perc.	95% Perc.	IQ range	Missing obs.
ElecDum	0.442326	1.76930	1.15470	-0.666667
CapitalExp	1.70687e+009	1.37285	1.53898	1.34444
FiscalDef	2.62154e+009	1.87155	2.45499	5.14612
Variable	**5% Perc.**	**95% Perc.**	**IQ range**	**Missing obs.**
RGDP	2.04748e+008	8.88355e+010	2.75577e+010	0
Govcexp	1.91693e+007	1.57004e+010	3.10937e+009	0
TaxRev	2.36329e+007	1.36975e+010	3.77915e+009	0
ransfers	61358e+006	99922e+009	24689e+009	
lecDum	00000	00000	750000	
apitalExp	49024e+007	79532e+009	14904e+009	
iscalDef	08658e+006	78450e+009	89334e+009	

Source: *Authors Computation, 2015*

From table 4 above on the average, the RGDP, government consumption expenditure, total tax revenue, transfers and subsidies, capital expenditure; and fiscal deficit are 2.66254e+009, 2.71066e+009, 8.78423e+008, 1.24331e+009 and 1.40073e+009 respectively over the years between 1990-2013. Also, as it can be observed from the table, the deviations of the respective variables from their means are relatively not too large. Furthermore, but for the kurtosis of the government consumption expenditure (which was 3.1) the rest were both platykurtic and leptokurtic. Finally, the skewness result shows that all are positively skewed but not far off zero (0).

Histogram of the Residual

To further test the normality of the sample variables, the histogram of the residuals of the various specified models were plotted and the results can be seen below in figures 6, 7 and 8 respectively.
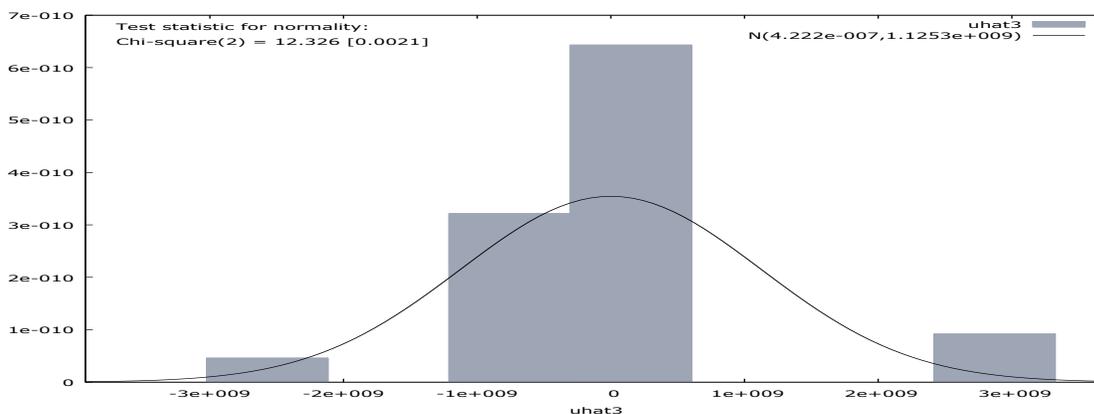

Figure-6. Residual Histogram for Model 1

Figure 6 above give a pictorial representation of the residual histogram of model 1. And as it can be seen, the pattern of the histogram suggests that if drawn, the shape of the residual frequency polygon would be fairly bell-shaped comparatively.
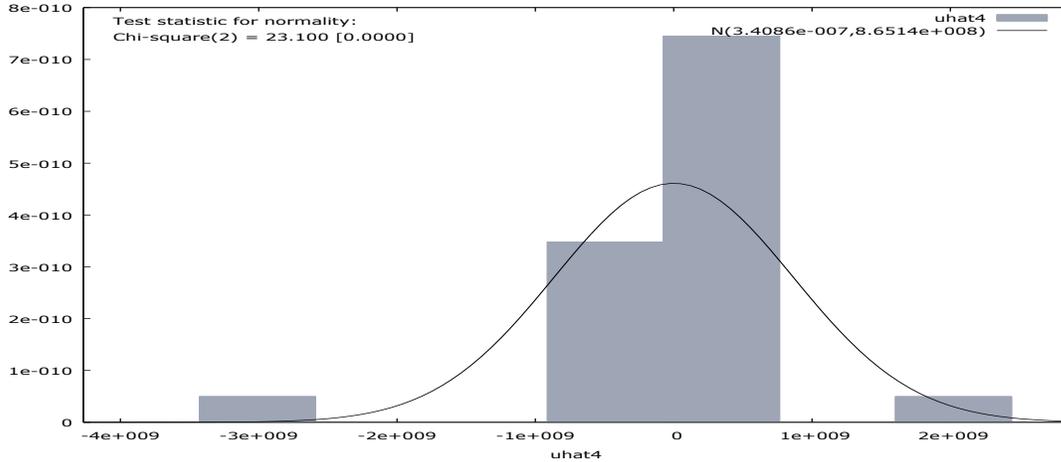
Figure-7. Residual Histogram for Model 2

Figure 7 above also shows a pictorial representation of the residual histogram of model 2. As it can be seen, the pattern of the histogram suggests that if drawn, the shape of the residual frequency polygon would be fairly bell-shaped comparatively. The peak of the histogram is also worthy of note; suggesting that values of sample variables are concentrated around the mean.
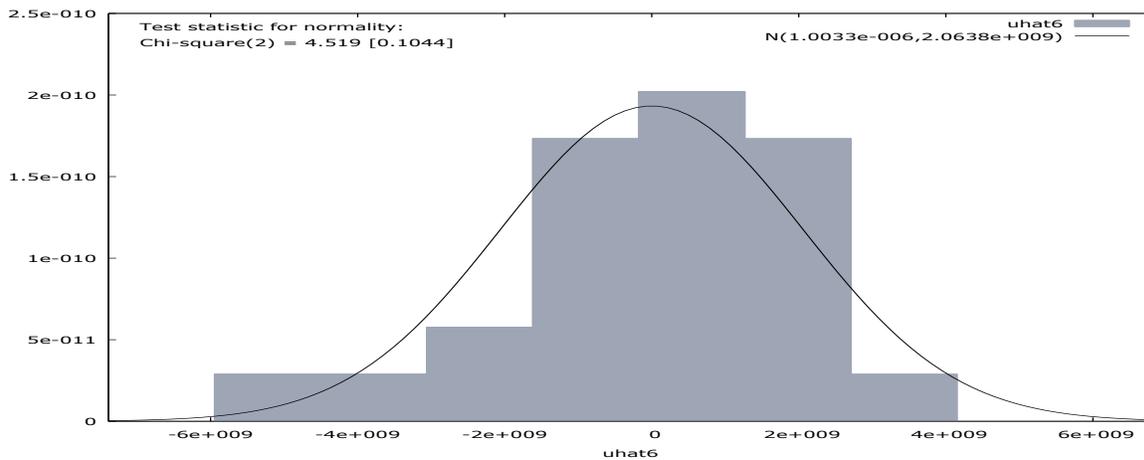

Figure-8. Residual Histogram for Model 3

Figure 8 above also shows a pictorial representation of the residual histogram of model 3. As it can be seen, the pattern of the histogram suggests that if drawn, the shape of the residual polygon would be fairly bell-shaped comparatively.

In summary, given as observed, the relatively bell-shapes of the residuals' frequency polygon (given the patterns of the respective residual histograms) of the three models, it thus can be concluded that the samples variables are relatively fairly normally distributed and hence follows a Guassian distribution; therefore the use of OLS as a method of estimation is justified (Damodar and Porter, 2008).

CORRELATION ANALYSIS

Correlation Matrix

The correlation matrix was used to study the associations between the sample data. The table gives the result.

Table-5. Correlation coefficients, using the observations 1990 – 20135% critical value (two-tailed) = 0.4044 for n = 24

RGDP	Govcexp	TaxRev	Transfers	FiscalDef	
1.0000	0.9738	0.9955	0.9728	0.9479	RGDP
	1.0000	0.9873	0.9719	0.9566	Govcexp
		1.0000	0.9729	0.9477	TaxRev
			1.0000	0.9888	Transfers
				1.0000	FiscalDef
			CapitalExp	ElecDum	
			0.9967	0.0390	RGDP
			0.9655	0.0974	Govcexp
			0.9918	0.0647	TaxRev
			0.9688	0.0667	Transfers
			0.9474	0.1100	FiscalDef
			1.0000	0.0708	CapitalExp
				1.0000	ElecDum

Source: Authors Computation, 2015

Table 5 above shows a correlation matrix for all the variables used in the study. The aim of the correlation matrix was an attempt to determine the association between the variables used for estimation. As it can be observed from the table 5, the variables are associated. In specific terms, the variables are all positively related.

Furthermore, as regards the specific relationships of the variables vis a vis the various models used for estimation; ELECTION DUMMY is positively related to RGDP, Government Consumption Expenditure and Fiscal Deficit. Also from the above, transfers, tax revenues and capital expenditure are positively related to Government Consumption Expenditure, Fiscal Deficit and RGDP respectively.

Finally, the highest powers of the correlation coefficients as seen above are all one (1).

Thus, given that there is a significant linear relationship between the sample variables, the use of the ordinary least square (OLS) method as a method of estimation in this study is hence justified.

Below are the scatter gram showing the correlation of the various sample variables (the auxiliary variables) considered in the specified models over time; 1990-2013.
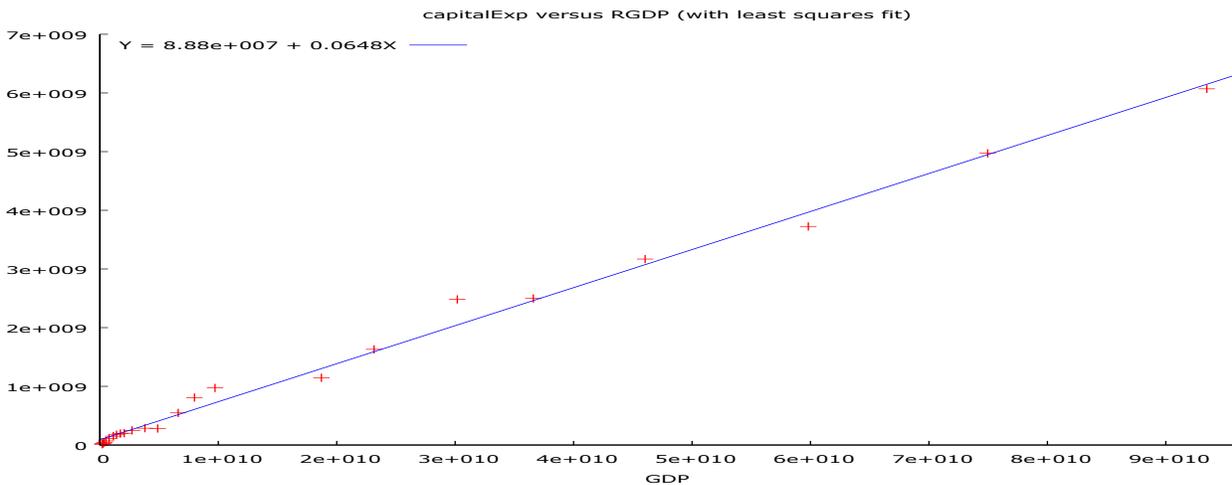
Scatter Grams

Figure-9. Scatter Gram between Capital Expenditure and Real Gross Domestic product (RGDP

Figure 9 above shows that a linear positive relationship between RGDP and capital expenditure. Showing that, as investment increases, RGDP will increase.
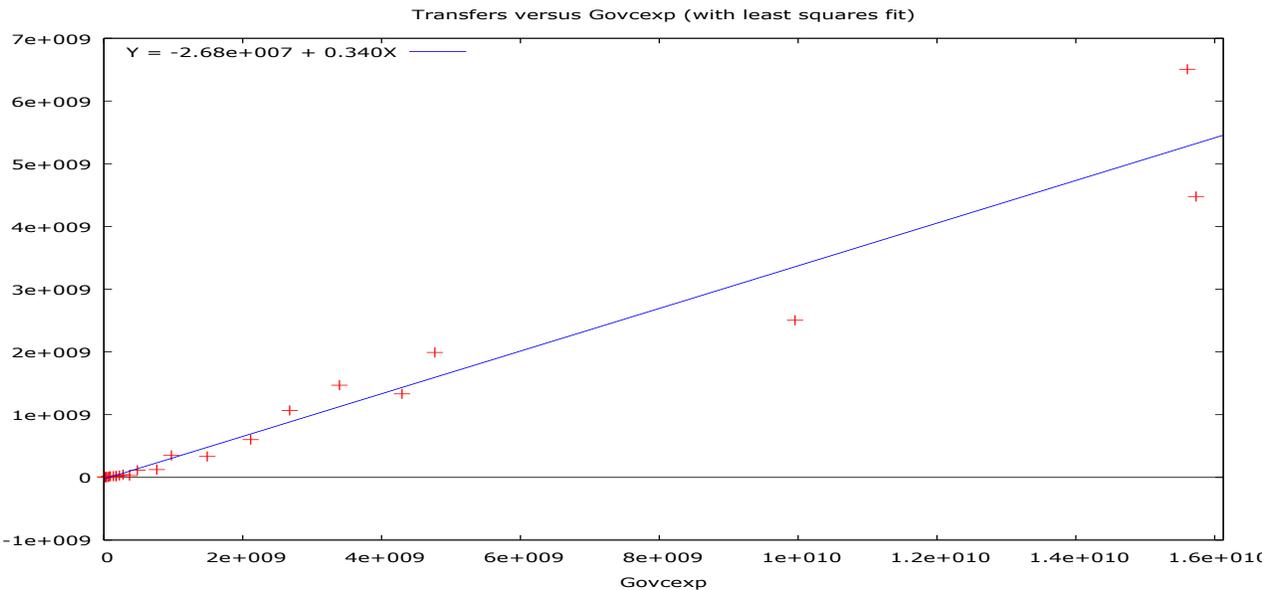

Figure-10. Scatter Gram of Association between Transfers/ Subsidies and Government Consumption Expenditure

Figure 10 shows a positive relationship between government consumption expenditure and transfers/ subsidies. The association of these variables thus justifies their inclusion in the specified model.
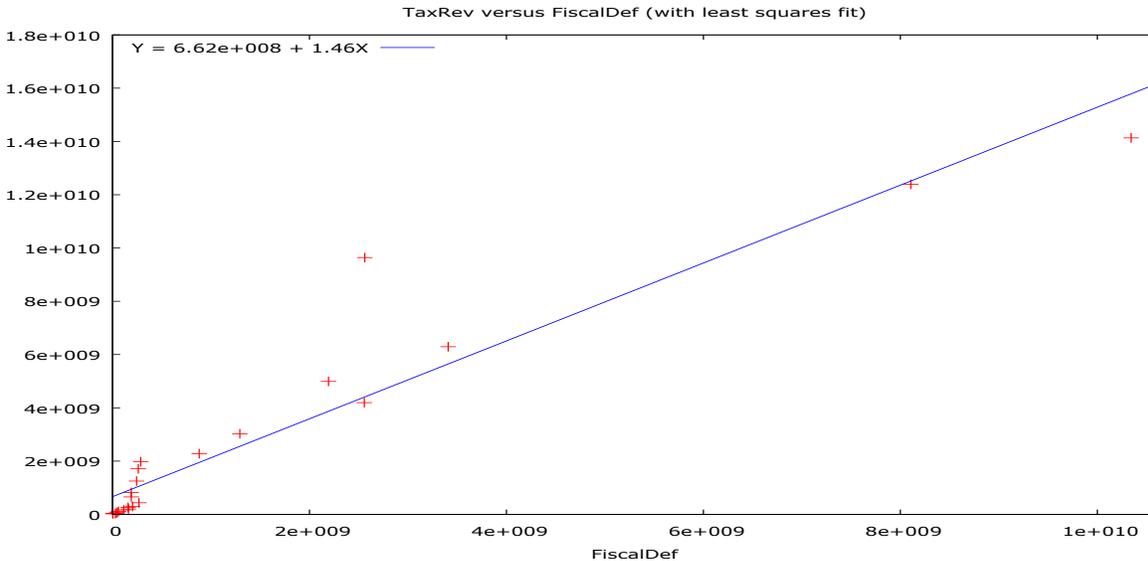
Figure-11. Scatter Gram of Association between Tax Revenue and Fiscal deficit

Figure 11 shows a positive relationship between total tax revenues and fiscal deficit. The association of these variables thus justifies their inclusion in the specified model of estimation.

ESTIMATION ANALYSIS

Table-6. Results for Model 1; Fiscal Expansion (public and private goods expansion) model/OLS, using observations 1990-2013 (T = 24)/ Dependent variable: Gov.C.Exp

	Coefficient	**Std. Error**	**t-ratio**	**p-value**
Const	1.42382e+08	2.90807e+08	0.4896	0.62949
ELE.DUMM	3.4117e+08	5.31657e+08	0.6417	0.52800
Sub.T	2.77186	0.145837	19.0065	<0.00001

Mean dependent var	2.66e+09	S.D. dependent var	4.61e+09
Sum squared resid	2.66e+19	S.E. of regression	1.13e+09
R-squared	0.945583	Adjusted R-squared	0.940400
F(2, 21)	182.4543	P-value(F)	5.31e-14
Log-likelihood	−532.6438	Akaike criterion	1071.288
Schwarz criterion	1074.822	Hannan-Quinn	1072.225
Rho	−0.117586	Durbin-Watson	1.927581

White's test for Heteroscadasticity
 Null hypothesis: Heteroscadasticity not present
Test statistic: LM = 18.4086
with p-value = P(Chi-square(4) > 18.4086) = 0.00102663

Correlation of ELE.DUMM and Sub.T

	ELE.DUMM	**Sub.T**
ELE.DUMM	1	
Sub.T	0.0667	1

r =0.0667

Table 6 above shows an R-squared of 94%, which implies that 94% of total variation in Government Consumption Expenditure at times t is explained by the variations in Subsidies/Transfers and Election periods. On the overall, the regression equation is statistically significant given that the P-value (F) is less than 0.05.

Moreover, DW = 1.927581>R^2. And 1.927581 lies within 1.5 and 2.5. Therefore there is no problem of autocorrelation; thus the model is sensible, acceptable and spurious free.

Again, the (White's) Heteroscadasticity test above indicates that the variance of the error terms is not same for all independent variables given that the p-value of the Observed LM (chi-square)<0.05. This could be because the sample size is less than 30 (as stated in the limitations). However, given that at least the standard errors of one of the estimates is relatively very small, the problem of Heteroscadasticity is not much to worry about (Damodar and Porter, 2008).

And finally, the simple correlation coefficient r, of the independent variables, given as 0.0667 shows that there is no problem of multicollinearity. Thus the high R^2 is not misleading at all.

On the explanatory variables, the coefficient of Subsidies/Transfers,b_2, is positive as expected; and as expected, b_1 is positive as well.

The above PBC estimation in table 6 indicates that, as expected, Elections has a positive relationship with Government Consumption Expenditure. Specifically, ceteris paribus, in an election year, government consumption expenditure (Gov.C.Exp) increased by 3.4117e+08.

However, this impact is not statistically significant at 5% level; thus it cannot be said categorically with empirical backing that there is an effect of election on the expansion of government expenditure. Hence, government consumption expenditure shows no PBC trend in Ghana. In other words, it means that, although ELE.DUMM coefficient shows the expected relationships with Gov.C.Exp, it is not enough to suggest as a "politico-electoral manipulation". This is contrary to the findings of Tarawalie (2011) for Ghanaian economy between the periods of 1990 to 2011, when they found that in opportunistic perspective, that fiscal expansion indicates electoral cycle.

Table-7. Results for Model 2; Fiscal Deterioration Model/OLS, using observations 1990-2013 (T = 24)/Dependent variable: FIS.DEF

	Coefficient	**Std. Error**	**t-ratio**	**p-value**
Const	−3.31098e+08	2.33879e+08	-1.4157	0.17153
TaxRev	0.612185	0.044692	13.6979	<0.00001
ELE.DUMM	2.89625e+08	4.08689e+08	0.7087	0.48632

Mean dependent var	1.40e+09	S.D. dependent var	2.62e+09
Sum squared resid	1.57e+19	S.E. of regression	8.65e+08
R-squared	0.900562	Adjusted R-squared	0.891092
F(2, 21)	95.09327	P-value(F)	2.98e-11
Log-likelihood	−526.3339	Akaike criterion	1058.668
Schwarz criterion	1062.202	Hannan-Quinn	1059.605
Rho	0.103976	Durbin-Watson	1.579270

White's test for Heteroscadasticity
Null hypothesis: Heteroscadasticity not present
Test statistic: LM = 13.0311
with p-value = P(Chi-square(4) > 13.0311) = 0.0111249

Correlation of ELE.DUMM and TaxRev.

	ELE.DUMM	**TaxRev**
ELE.DUMM	1	
TaxRev	0.0647	1

r =0.0647

Table 7 above shows an R-squared of 90%, which implies that 90% of total variation in Fiscal Deficit at times t is explained by the variations in Tax revenue and Election years . On the overall, the regression equation is statistically significant given that the P-value (F) is less than 0.05.

Moreover, DW = 1.579270>R^2. Therefore there is no problem of autocorrelation; thus the model is sensible, acceptable and spurious free.

Again, the (White's) Heteroscadasticity test above indicates that the variance of the error terms is not same for all independent variables given that the p-value of the Observed LM<0.05 significant level. This could also be because the sample size is less than 30 (as stated in the limitations). However, given that at least the standard error of one of the estimates is relatively very small, the problem of Heteroscadasticity is not much to worry about (Damodar and Porter, 2008).

And finally, the simple correlation coefficient r, of the independent variables, given as 0.0647 shows that there is no problem of Multicollinearity. Thus the explanatory variables are not highly associated. Hence R^2 is not misleading at all.

On the explanatory variables, the coefficient of TaxRev. (Tax revenue),b_1,is positive, contrary to expectation and also b_2 is positive as expected.

The above PBC estimation in table 7 indicates that, as expected, Elections has a positive relationship with the growth in Fiscal Deficit. Specifically, in any election year, fiscal deficit increased by 2.89625e+08. However, this impact is not statistically significant at 5% level. Therefore it cannot be said categorically with empirical backing that fiscal deficit deteriorates more in elections. Thus, Fiscal balance shows no PBC trend in Ghana. In other words,

although ELE.DUMM coefficient shows the expected relationships with FIS.DEF, it is not enough to suggest that it is as a result of a "politico-electoral manipulation". This is contrary to the findings of Tarawalie (2011) for Ghanaian economy between the periods of 1990 to 2011, when they found that in opportunistic perspective, that fiscal expansion indicates electoral cycle.

Table-8. Results for Model 3: RGDP Expansion Model/ OLS, using observations 1990-2013 (T = 24)/ Dependent variable: RGDP

	Coefficient	Std. Error	t-ratio	p-value
Const	−8.14362e+08	5.69919e+08	-1.4289	0.16774
ELE.DUMM	−1.88426e+09	9.75314e+08	-1.9320	0.06697
Cap.Exp	15.3568	0.252747	60.7593	<0.00001

Mean dependent var	1.78e+10	S.D. dependent var	2.62e+10
Sum squared resid	8.94e+19	S.E. of regression	2.06e+09
R-squared	0.994352	Adjusted R-squared	0.993814
F(2, 21)	1848.673	P-value(F)	2.48e-24
Log-likelihood	−547.1992	Akaike criterion	1100.398
Schwarz criterion	1103.933	Hannan-Quinn	1101.336
Rho	0.148041	Durbin-Watson	1.687941

White's test for Heteroscadasticity
 Null hypothesis: Heteroscadasticity not present
 Test statistic: LM = 8.18115
 with p-value = P(Chi-square(4) > 8.18115) = 0.0851633

Correlation of ELE.DUMM and Cap.Exp.

	LE.DUMM	ap.Exp,
LE.DUMM		
ap.Exp	07083252	

r =0.07083252

   Table 8 above shows an R-squared of 99%, which implies that 99% of total variation in Real GDP is explained by the variations in Capital Expenditure and Election years.

   On the overall, the regression equation is statistically significant given that the P-value (F) is less than 0.05. Moreover, DW = 1.6879>R^2. Therefore there is no problem of autocorrelation. Thus the model is sensible, acceptable and spurious free.

   Again, the (White's) heteroscedasticity test above indicates no problem of heteroscedasticity. Given that the p-value of the observed LM>0.05 level. Hence the variance of the error term is homoscedastic.

   And finally, the simple correlation coefficient r, of the independent variables, given as 0.0708 shows that there is no problem of multicollinearity.

On the explanatory variables, the coefficient of Cap.Exp. (Capital expenditure),b_2, is positive as expected. However, contrary to expectation, b_1 is not positive.

The above PBC estimation in table 8 indicates that contrary to expectation, elections have negative relationship with RGDP; indicating that election year has a negative impact on RGDP expansion. Specifically, in any election year, RGDP falls by 1.88426e+09, ceteris paribus. However, this impact is not statistically significant. Therefore, although, b_1 is not statistically significant at 5% level, this study still fails to reject the null hypothesis that RGDP does not expands in election years explicitly on the evidence that $b_1 < 0$; showing that RGDP actually contracts in election years. Thus, RGDP shows no PBC trend in Ghana. This is consistent with the findings of Tarawalie (2011) for Ghanaian economy between the periods of 1990 to 2011, when they found that in opportunistic perspective, GDP growth does not indicate electoral cycle. Sackey Gyimah and George (2012) also found no election influence on GDP growth for Ghanaian economy as well; and Alesina (1997) concluded the same for both the USA and OECD economies.

SUMMARY

This study set out to establish the existence of political business cycle (PBC) in Ghana and its macroeconomic effects. To achieve these, three objectives were set to:
- determine whether government consumption expenditure expands more in election years;
- determine whether fiscal balance deteriorates more in election years and
- determine if GDP expands more in election years.

The study focused on the opportunistic political business cycle as propounded by Nordhaus (1975) and Rogoff (1990) models as a theoretical framework. The examination of the empirical results of the study was achieved through the Ordinary Least Square (OLS) regression method. And the findings of the study are summarized as follows:

In Ghana, the expansion of government consumption expenditure is not significantly influenced by election periods. In other words, government consumption spending does not follow a PBC trend. However, given that there exist a positive relationship between election years and government consumption spending; and given also that the number of years of data samples considered is 24, less than the generally accepted standard of at least 30 samples, suggests strongly the likelihood that, with time, as democracy deepens, the evidence of political business cycle in Ghana as regards the government consumption spending could be empirically glaring.

On the fiscal deterioration model, the findings suggest no PBC trend. In other words fiscal balance in Ghana does not deteriorate more in election years. However, similar to the findings of the government consumption expenditure, fiscal deficit showed a positive relationship with election years. And given the limitation posed by the number of data samples, it is a very likely that with time, it could be establish that fiscal balance follows PBC trend.

Finally, the empirical result suggests that GDP growth does not follow a PBC trend. The relationship between GDP and election years shows an explicit negative sign. However, given that the empirical findings shows a positive relationship between government

consumption spending (fiscal expansion) and election years, there is a strong likelihood that, with time, GDP growth shall follow PBC trend.

RECOMMENDATIONS

The empirical findings of this study clearly suggest that PBC does not exist in Ghana, given that fiscal expansion, fiscal deterioration and GDP does not follow PBC trend. However, the results of the fiscal expansion and fiscal deterioration models met the necessary condition that could suggest PBC in Ghana as democracy deepens. In other words, fiscal policy could be a very strong tool that incumbent can readily exploit for vote winning in Ghana. To this end therefore, this study recommends fiscal discipline through:

- An intense parliamentary oversight of the government budget. Parliament must ensure that every government budget presented to it is well scrutinized even if it means contracting the services of external auditor.
- An adoption of a national development plan. This will reduce an unnecessary increase in fiscal spending in election years in the name of infrastructural development.
- An effective check and control of political parties' financing. Although a law already exist requiring parties to disclose its sources of finance, the ante must be upped through regular auditing by an independent body under the auspices of the judiciary. This way the incumbent's exploitation options will be limited.
- An effective monetary policy. The central bank must avoid any sort of monetary accommodation due to fiscal expansion or deficit financing especially in election years.

CONCLUSION

Although this study did not establish political business cycle (PBC) existence in Ghana, PBC has serious macroeconomic consequences and is quite prevalent in developing countries. Gonzales (1999); Schuknecht (1998); Schuknecht (1996); Brender and Allan (2005) and Block (2003) all established the existence and effects of Political Business Cycle (PBC) in developing countries including Sub-Saharan Africa. From higher inflation to higher unemployment, lower economic growth, fiscal balance deterioration and so much more; not to mention the multiplier effects as well, PBC can be a stumbling block to a nation's progress.

With time, as democracy deepens in Ghana, PBC could be well pronounced if not checked. The onus therefore lies on any citizen of this great nation who finds himself or herself in government or any key institution to think about Ghana first.

Fiscal and monetary authorities must ensure therefore that relevant and effective policies are undertaken. This will ensure that even as democracy deepens in Ghana, the likelihood of Political Business Cycle raising its ugly head in Ghana is reduced to the barest minimum.

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