

# AN ASSESSMENT OF FISCAL SUSTAINABILITY IN GHANA

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### Abstract

This study examines the sustainability of fiscal policy in Ghana by exploring government's reaction to rising public debt accumulation via the estimation of a fiscal reaction function. Our findings suggest that government's fiscal behaviour is consistent with the intertemporal budget constraint, but the fiscal adjustment appears to be very low. In particular, evidence of significant fiscal pressures in recent years persists, largely driven by fiscal excesses during election cycles. To ensure long term fiscal sustainability, the study supports deliberate policies such as fiscal anchors and a Fiscal Responsibility Act that could help to curtail expenditure overruns especially during election cycles, promote less expensive sources of borrowing and engender strong coordination between fiscal and monetary authorities.

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### 1. Introduction

Following decades of economic reform, Ghana signed onto the HIPC<sup>1</sup> Initiative in the early 2000s, with the aim of bringing down the country's external debt ratios to sustainable levels. Indeed in July 2004 Ghana reached the completion point in record time after it had made satisfactory progress on the implementation of most of the conditions for reaching the floating completion point. The fundamental principle behind the initiative was that, the country would be able to achieve "external debt sustainability" and would not require new rounds of debt forgiveness. The Initiative was apparently assumptive as to the role of fiscal policy in the post-HIPC era that will be consistent with debt sustainability. This would require considerations about fiscal sustainability which goes beyond the external debt profile, such as the sustainability of the entire public debt stock. By apparently ignoring the role of domestic debt, sustainability analyses based on external debt alone, often underestimate the magnitude of the fiscal effort required for stabilizing a country's debt. In the case of Ghana, the Initiative no doubt helped to reduce the overall level of fiscal deficit (cash basis) 9.81 percent of GDP<sup>2</sup> in 2000 to 2.96 percent of GDP in 2005. Similarly, the stock of public debt which stood at 187.3% of GDP in 2000, declined to 26.2% of GDP in 2006. Total interest payments as a share of total revenue also reduced from a high of 42.3 percent in 2000 to 15.3 percent in 2005, moderating the burden of debt service on public finance.

This notwithstanding, subsequent events from 2006 have exposed the inherent structural weakness in Ghana's fiscal policy regime, including revenue mobilization capacity and poor public financial management systems, in spite of significant reforms in these areas. The surge in government debt to GDP ratio since 2006 is largely attributable to persistent expenditure overruns despite government's resolve to vigorously pursue fiscal consolidation as stipulated in the successive annual budget statements. The fiscal slippages have been aggravated by the rising public sector wage bill due to the implementation of the single spine salary structure (SSSS) accompanied by the weakening revenue generation efforts, resulting in rapid government debt accumulation. From a three-decade low of 26% of GDP in 2006, Ghana's public debt to GDP ratio rose to 57.7% as at the end of 2013, only 2.3% below the IMF's critical debt threshold of 60% of GDP. Accordingly, the magnitude and rapid rate of Ghana's debt build-up implies a diminished likelihood to generate sufficient primary surplus to restrain debt accumulation in order to promote fiscal sustainability in the future. This pace of debt build-up has raised questions about types and consequences of fiscal and monetary policy adjustments needed to avoid insolvency in the future.

In terms of regional comparison for the period 2004-2013, Ghana's budget deficit exceeded all the regional averages and that of peer countries of middle income group of SSA<sup>3</sup>. For the same period, Ghana was among the top 5 most indebted middle income countries in SSA including Seychelles, Cape Verde, Mauritius and then Lesotho (IMF, April 2014). Against this background, the state of Ghana's public finances has continued to engage research attention lately. In the midst of this discourse, Ghana was downgraded by the ratings agencies including Moody's, Fitch and Standard &Poors, reinforcing the

<sup>&</sup>lt;sup>1</sup> Highly Indebted Poor Country Initiative

<sup>&</sup>lt;sup>2</sup> old series

<sup>&</sup>lt;sup>3</sup> Sub-Sahara Africa

risk of fiscal sustainability in the near term. On the contrary, Ghana remains among the fast growing economies in SSA with remarkable growth potentials bolstered by the nascent oil and gas industry. However, the rising public debt accumulation has increased government borrowing needs to service the debt and hence, compounding the government interest burden. It is estimated that interest payments alone have amounted on average to 15.3% of total government expenditure per year, over the last three (3) decades. The 2014 Fiscal Budget also indicated a projected 5.9% of GDP for interest payments, which was almost equal to the 5.7% of GDP budgeted for capital expenditures, and thereby confirming the looming concerns about Ghana's fiscal sustainability in the future.

On the other hand empirical evidence on fiscal sustainability issues on Ghana is rather sparse, as most of the empirical literature tends to concentrate largely on emerging Asian and Latin American economies. Doh-Nani (2011) in particular investigated the sustainability of Ghana's budget deficit by examining the long run relationship between government revenue and expenditure for the period 1960-2007. The author reported that both government revenue and expenditure were stationary and that there existed a long run relationship. Fedelino and Kudina (2003) also explored debt sustainability for post-HIPC countries in Africa, including Ghana. On the basis of the current fiscal policies, they reported that debt levels would remain unsustainable even after these countries graduated from the HIPC initiative. This study augments the available literature on Ghana's fiscal policy and its sustainability, and goes beyond the issue of whether or not Ghana's fiscal policy has stable long run behavior, by exploring a number of research questions:

- a. What is the nature of Ghana's framework to safeguard fiscal sustainability?
- b. Is Ghana's current fiscal profile sustainable? or
- c. Is the current fiscal policy satisfying the intertemporal budget constraint in the midst of economic challenges?

The objective is therefore to evaluate the sustainability of Ghana's public debt between 2000Q1 and 2014Q1, and to ascertain whether the link between public debt and primary balance satisfy the intertemporal budget constraints. The study also explored the extent to which government reacts to debt build-up by estimating the fiscal policy reaction function, and evaluates the medium term profile of debt dynamics by investigating the interest-adjusted growth rate over the period 1991-2016. We estimate the fiscal reaction function using the usual variables in the intertemporal government budget constraint (IBC), and following Bohn (1998) and Davig and Leeper (2006). Under IBC, primary surplus is regressed on government indebtedness, output gap and other variables peculiar to Ghana's fiscal environment.

The study is organized into six sections. The next section (section 2) discusses the background to developments in the fiscal sector in Ghana. Section 3 reviews the legal and institutional framework for fiscal policy in Ghana, and Section 4 provides the theoretical and empirical literature on fiscal sustainability. Section five describes the data and methodology for the study, and Section six presents the analysis of the empirical results. Section 7 concludes the study and provides some policy recommendations.

### 2. Background

Ghana's fiscal policy has long suffered from a structural narrow revenue base due to a large informal sector, as well as a reliance on few primary commodities which are highly susceptible to the vagaries of global economic conditions. On the other hand, there have been high tendencies for spending in line







with the desire to lay a foundation for economic take off by expanding the social and economic infrastructure, provision of reliable energy supply, improved road networks, educational and health facilities among others to meet the gaping developmental needs. In addition, poor expenditure management processes coupled with weak revenue forecasting capacity have resulted in a situation where it had been almost consistently impossible to synchronize revenue and spending targets for a very long period. These challenges have been compounded by an over-reliance on donor support for planning fiscal outturns, lack of flexibility in fiscal management due to significant resource earmarking and statutory payments, and uncontrolled spending during election years. These have led to persistent levels of fiscal deficits compared to the experience of the country's peers within the ECOWAS sub region and led to increasing levels of inflationary financing and mounting public debt. Unfortunately, the commercial production of oil in Ghana is yet to have significant impact on the fiscal profiles of the country.

As discussed in the introductory section, Ghana was on the path toward fiscal sustainability courtesy of the enhanced HIPC relief offered by both its multilateral and bilateral creditors since 2001. The authorities utilized the ensued fiscal space coupled with the introduction of some new taxes to successfully engineer a fiscal consolidation which saw the overall level of fiscal deficit (cash) reduced from 9.81 percent of GDP(old series) in 2000 to 2.96 percent of GDP (old series) in 2005. The stock of public debt which stood at 187.3% of GDP in 2000, declined to the depth of 26.2% of GDP in 2006. Total interest payments as a share of total revenue reduced from a high of 42.3 percent in

2000 to 15.3 percent in 2005, moderating the burden of debt service on public finance. Subsequent events, from 2006 up till now have however exposed the inherent structural weaknesses in Ghana's revenue mobilization capacity and poor public financial management systems, notwithstanding decades of reforms in these areas.







such, the country depends a lot on indirect and international trade taxes. Chart 1 demonstrates that though from 2009, direct taxes as a share of total taxes witnessed some improvement from an average of 31.2 percent over 2000-2008 to almost 37.0 percent, it has been difficult to cross the 45 percent mark, even in the presence of oil revenues from 2011. Another area of much concern is the issue of annual revenue targets. As seen in Chart 2, revenue targets have been missed for most of the years, from 2006 to 2013, suggesting either a defective forecasting framework or obtuse optimism about revenue measures gaining traction.

In 2009, the three tax revenue agencies, the Customs, Excise and Preventive Service (CEPS), the Internal Revenue Service (IRS), the Value Added Tax Service (VATS) and the Revenue Agencies Governing Board (RAGB) Secretariat were merged in accordance with Ghana Revenue Authority Act 2009, Act 791. This was done with the view to bring a number of benefits to taxpayers and tax administration; reduced administrative and tax compliance cost; better service delivery; departmental information flow; holistic Improved approach to domestic tax and customs administration; and enhanced revenue mobilization. This notwithstanding, the envisaged benefits from the restructuring of the revenue agencies are yet to be seen. In particular, this is made apparent by adjusting for oil revenues for 2011-2013 which contributed an average of 1.46 percent of GDP, as well as the upward revision in GDP numbers in 2011.

Government's spending since 2006 has been generally high both relative to domestic revenue outturns and annual spending ceilings (compare Chart 2 and 4). The surge in spending in 2006 was to address the energy

challenges in 2006, which probably started the new round of fiscal profligacy. In 2007, Ghana celebrated 50 years of nationhood with its associated large spending programs. Then the onset of the global financial crisis, coupled with some domestic activity regarding election 2008 and CAN 2008<sup>4</sup> widened significantly the gap between the end year spending outturn and the annual target. Spending restraint aimed at achieving some consolidation from 2009 was short-lived, as spending ceilings were

One of the banes of revenue mobilization in Ghana has been the existence of large informal sector. As

<sup>&</sup>lt;sup>4</sup> (French: Coupe d'Afrique des Nations, also referred to as African Cup of Nations, African Nations Cup)







breached consistently from 2010 to 2012. In particular, the relics of election 2012 coupled with the implementation of the Single Spine Pay Policy once again stretched the narrowed fiscal space which had placed public finance under severe stress resulting in austere fiscal measures in the 2014 budget statement aimed at some adjustment. It would be observed from figure 3, that disproportionately significant amount of government's spending has been executed in favour of recurrent expenditure, denying the country the opportunity to invest in critical capital projects to spearhead its growth agenda.

After almost two decades of implementing a public financial management reform program (PUFMARP) which culminated in the launching of the Ghana Integrated Financial Management and Information System (GIFMIS), efficient management of public finance with the view to eliminating waste and getting value for money is still a challenge. Ghana's fiscal operations are also susceptible to donors (both bilateral and multilateral) honouring their pledges to support the budget. There have been instances where due to perceived lack of domestic efforts and short falls in meeting some required conditions, donors failed to honour their pledges which normally had a severe toll on the economy. Donor resources<sup>5</sup> since 2006 has generally experienced significant shortfalls which have been replaced with higher levels of domestic financing with its resultant crowding out effects. The country's inability to synchronize its spending programmes with its revenue mobilization capacities has resulted in persistent fiscal deficit

levels at variance with programmed limits. With the exception of 2007, the fiscal targets have been consistently breached, a blow to the country's consolidation effort.

From Chart 6, it is evident that besides the significant portion of total budget financing being domestically driven, the legal limit set by the Bank of Ghana Act 2002, which restricts domestic financing of government's budget to the tune of 10 percent of projected revenues in the current year has hardly been met, not to think of the ECOWAS benchmark of central bank financing of 10 percent of

<sup>&</sup>lt;sup>5</sup> Define to include programme and project, loans and grants.

previous year's tax revenue. It stands to reason that years of running budget deficits with overshooting annual deficit targets have built some momentum in the evolution of the stock of public debt. The total public debt that amounted to US\$5,296.57 million (26.1% of GDP) in 2006, increased to US\$ 7,988.79 million (36.1% of GDP) in 2008 and further surged to US\$18,067.45 million (46.5% of GDP) and US\$23,454.55 million (55.2% of GDP) in 2012 and 2013 respectively. As seen in Chart 9, all the debt ratios are moving upward.

Ghana's access to concessional external borrowing has muted subsequent to completion of the enhanced HIPC initiative and the attainment of lower middle income status. Currently, the country borrows a lot from domestic sources and the international capital market with relatively higher debt servicing implications. From Chart 8, the average effective interest rate (defined as total interest payments/total stock of previous public debt) for 2006 to 2013 was 7.5 percent compared with an average real GDP growth rate of 8.1 percent (7.1% excluding 2011) for the same period. This implies that if this trend should continue, the cost of Ghana's total debt may outstrip the benefits generated from the debt.

Admittedly, Ghana's growth trajectory over the period has been above the average for the ECOWAS region of about 6.7 percent (between 2005 and 2013), however, to the extent that most of the growth happened in the services sector, which tended not to employ the mass of the labour force, the growth has not been broadly shared. The average growth rate of the services sector for the period 2007 to 2013 stood at 8.6 percent compared with that of the agriculture and industrial sectors of 3.8 percent and 13.2 percent (8.4% excluding the oil exploration impact) respectively. Related to the above is the fact that most of the fast growing activities<sup>6</sup> are not owned by Ghanaians because they are capital intensive with implications for capital flight. This cast doubts on the sustainability of the growth process to the extent that the growth is not broadly shared with limited job creating potential for Ghanaians, thus limiting the revenue buoyancy potentials.

Primary Convergence Criteria	2006	2007	2008	2009	2010	2011	2012	2013
Ratio of budget deficit (excluding grants) to Nominal GDP (commitment basis) ≤3% of GDP	-6.38	-8.86	-10.64	-7.04	-8.22	-3.03	-7.07	-8.07
Ceiling on central bank Financing of budget deficit ≤10 % of Prev. Yr Tax Rev.	-9.86	15.63	17.28	-2.16	-3.92	10.5	22.47	9.41
Secondary Convergence Criteria								
Tax revenue / GDP Ratio ≥ 20% of GDP	12.44	14.31	14.25	12.73	13.62	17.37	17.24	15.31
Salary mass / Tax revenue ratio ≤ 30% of Tax revenue	47.58	42.83	46.23	53.22	50.56	46.39	53.8	56.72
Capital expenditure/Tax revenue ≥ 20% of Tax revenue	24.43	27.28	36.39	15.07	18.05	20.08	19.67	11.82

Table 1: ECOWAS Convergence Criteria

Source: MOFEP and authors' calculations

From table 1, Ghana's performance relative to some of the primary and secondary convergence criteria of the ECOWAS has also not been encouraging. With the exception of the criteria on the ceiling for central bank financing of budget deficit where some successes were achieved on some occasions, the country almost failed to meet the fiscal indicators stated above.

<sup>&</sup>lt;sup>6</sup> Such as telecommunication, oil exploration, mining, shipping services and air transport.

### 3. Literature Review

Since an unsustainable debt path may eventually lead to sharp adjustment if not a crisis (to a generalized failure of economic agents to meet their obligation), the concept of fiscal sustainability is key (Ley, 2010). Contemporary literature has provided various definitions of fiscal sustainability. Examples include Buiter (1985) which defines fiscal policy as sustainable if the government's net worth to GDP ratio is maintained at its present level. In a similar fashion, Blanchard (1990) defines sustainable fiscal policy as a policy that ensures that the ratio of debt to GDP converges back towards its initial level. The major problem with these definitions is that there is no theoretical reason why the debt/GDP ratio should converge back towards the initial level and not to any other level (Krejdl, 2006).

This problem was resolved by the more general definition of fiscal sustainability, that fiscal policy is sustainability if the present value of future primary surpluses is equal to or greater than the current level of debt. In other words, fiscal sustainability requires that primary surplus to GDP ratio must not be less than the outstanding stock of sovereign non-interest bearing debt/GDP times the difference between the long-term real interest on debt and the long run growth rate of real GDP. Primary surplus, on the other hand, is defined as the overall budget balance minus debt service interest cost plus net interest income on assets plus the monetary issuance of the sovereign (that is, the change in the stock of base money issued by the central bank). Therefore, this definition of sustainability which is derived from the intertemporal budget constraint makes the requirement of convergence of the debt/GDP ratio towards its initial level only a special case.

However, the latter definition has also led some authors (including Artis and Marcellino, 2000; IMF, 2002) to distinguish between sustainability and solvency. The government is said to be solvent if it is capable, over an infinite horizon, of paying its debt via future primary surpluses. To put it differently, government is solvent if the intertemporal budget constraint is fulfilled, and hence, not engaging in "Ponzi" game financing. On the other hand, Artis et al (2000) defined sustainability as the ability of the government, under current policies, to achieve a pre-specified debt/GDP ratio in a finite time horizon. In other words, current fiscal policy, as defined by the current legislation and policy decisions determining the evolution of tax and spending ratios, is sustainable, if it can be maintained indefinitely without resulting in excessive debt accumulation. Besides, Balassone and Franco (2000) proposed different necessary conditions for sustainability from non ever-rising tax rate to an intertemporal discounted budget constraint.

As the definition of fiscal sustainability based on government intertemporal budget constraint (IBC) is most widely acceptable, the analysis in the literature has relied mainly on the following;

 $G_t + (1+i_{t-1})D_{t-1} = T_t + D_t, \dots \dots \dots \dots \dots \dots (1)$ 

Bohn (1998) however simplified equation (1) into the form;

From equation (1), government's total receipts including tax  $(T_t)$  and borrowing  $(D_t)$  of the current period should equal the government's total spending  $(G_t)$  plus debt service (including principal from the previous period  $(D_{t-1})$  and interest payment  $(i_{t-1}D_{t-1})$ ). Equation (2) explores the relationship among government debt  $(D_t)$ , primary balance  $(Pb_t)$ , which is revenue minus non-interest government

expenditure (+ surplus; - deficit), and the gross interest factor  $(R_{t-1})$ . These equations of the government intertemporal budget constraint state that the net present value of future primary balances must be sufficient to pay back the initial debt. That is, debt principal and the interest accumulated along the way will eventually have to be paid through large enough primary surpluses (Escolano, 2010). These equations have also been iterated by various researchers to produce different fiscal reaction function to suit specific conditions of their research. Generally, fiscal reaction function is a rule that helps government forecast and prepare to react against some macroeconomic changes. Thus, for fiscal policy and public finance to be sound and stable, there is need for a right fiscal reaction function.

Consequently, the literature is replete with different approaches in the studies of fiscal sustainability from the government intertemporal budget constraints. The first approach is purely model-based where the fiscal reaction functions are achieved by iterating the government budget constraint. In deriving the model-based fiscal reaction function, both sides of equation (1) are divided by GDP ( $Y_t$ ) for the period t, and after rearranging, we get;

or

Where  $d_t$ , ps,  $\gamma$  and i denote debt/GDP ratio, primary surplus/GDP ratio, growth rate of GDP and interest rate respectively, with the last two variables assumed to be constant. Solving forward while expressing the current debt/GDP ratio as a function of the future debt/GDP ratio and the future primary surplus, we get;

Equation 5 indicates that the current debt/GDP ratio must be equal to the present discount value of future debt/GDP ratio and the series of future primary surpluses. That is, the fiscal sustainability requires that the present value of debt/GDP ratio after some distant future 'n' must decline toward zero. In other words, future government debt (principal and interest) will mature and will eventually be repaid in full. This connotes that the debt/GDP ratio cannot asymptotically grow at a rate equal or higher than the growth-adjusted interest rate by systematically issuing new debts (Cuddington, 1996; Escolano, 2010). This is known as "Transversality condition (also called no Ponzi Game condition)". That is, under the no Ponzi game condition, debt and interest payment cannot be postponed forever. This is based on the premise that the market places greater emphasis on a reasonably low and stable debt/GDP ratio. As a result, a high and growing debt ratio is usually interpreted as a signal of looming government insolvency. Accordingly, a sufficient and necessary condition for fiscal sustainability under the transversality condition (TC) is that as n approaches infinity:

$$\lim_{n\to\infty}\Psi^n\,d_n=0,\ldots\ldots\ldots\ldots\ldots(5a)$$

Where  $\Psi = \left(\frac{1+i}{1+\gamma}\right)$ .

From equation (5*a*), the TC holds if  $\Psi_t$  follows a stochastic process bounded by  $1 + \Psi$  ( $\Psi > 0$ ). Thus, the TC is tested against the alternative that the limit exists and is strictly positive using unit root tests. The null hypothesis ( $\Psi = 0$ ) corresponds to  $d_t$  stationary against the alternative hypothesis that the agents anticipate part of the debt never to be repaid, hence  $\Psi_t$  follows a non-stationary process ( $\Psi_t \neq 0$ ).

As a result, studies that have followed the model-based approach to appraise the mean-reverting properties based on data generating process charactering the debt variable by using unit root test techniques. This was first developed by Hamilton and Flavin (1986) to analyze the US debt situation in the 1980s. They argued that a given debt situation is only sustainable if the stock of the outstanding

debt $(d_{t-1})$  follows a trend stationary process (mean-reverting) such that  $d_t = \sum_{t=1}^n \left(\frac{1+i}{1+\nu}\right)^t ps_t$ . This implies that for government debt/GDP to be sustainable, the present debt must be equal to the present value of expected primary surpluses. Therefore, unit root test was applied to find out whether the real primary surplus is stationary time series (see, Wilcox, 1989)<sup>7</sup>. In the second step, they test real debt for stationarity. If the stationarity of debt is rejected and that of primary surplus is accepted, the Hamilton-Flavin test indicates unsustainability. The Hamilton-Flavin procedure was criticized on the premises that in a growing economy it does not make sense to assume a stationary primary surplus or to demand a stationary real debt series (Heinemann, 1992). Consequently, Trehan and Walsh (1988) suggest a more general approach which showed that the primary surplus can be a non-stationary time-series but it has only to be cointegrated with debt. Otherwise, the adjustment of the necessary stabilizing measure to restore the deficit and public debt at sustainable levels is inevitable. Accordingly, the IBC imposes restrictions on the long run fiscal behavior concerning the link between revenues and expenditures. One of the restrictions is that they do not drift away from one another, by avoiding the creation of large negative imbalances between them. The second restriction requires the government to generate enough future net primary surpluses to repay the outstanding stock of debt. Trahan et al (1991) therefore used primary surplus  $(ps_t)$  and debt  $(d_{t-1})$  to show that transversality condition (TC) holds if these variables are cointegrated (with cointegrating vector  $(1, \alpha)$ ) and if the primary surplus follows an AR(1) process;

On the other hand, the literature on empirically-based approach was ignited by Bohn's (1998) influential study on the US fiscal policy for the period 1916-1995 that used the following simple fiscal reaction function:

where

In this equation,  $ps_t$  and  $d_t$  are the primary balance/GDP ratio - and debt/GDP ratio - respectively,  $\Psi$  is the coefficient of debt/GDP ratio (i.e. reaction of  $ps_t$  to changes in  $d_t$ ),  $Z_t$  is a set of other determinants

<sup>&</sup>lt;sup>7</sup> Wilcox (1989) argued that the stationarity of the undiscounted primary surplus is sufficient for stationarity of the sum of the expected discounted primary surpluses (assuming a positive real interest rate).

of the primary surplus and  $\varepsilon_t$  is an error term. Bohn (1998) argued that the assumption in equation (6a) raises question about the time series properties of primary balance and public debt series. If primary balance and public debt are both non-stationary while  $\mu_t$  is stationary, one could interpret a simple regression of  $ps_t$  on  $d_t$  as a cointegrating regression without having to model the  $\mu_t$  process explicitly. But if primary balance and debt do not have unit root, then a regression of  $ps_t$  on  $d_t$  that omit other determinants of the primary surplus will produce inconsistent estimates due to omitted variable bias. Due to omitted variable bias, Bohn therefore caution that empirical analyses should be based on an explicit theoretical model for fiscal policy. Following Barro's (1979) tax-smoothing model, Bohn extended the model in equation (6b) to include temporal government spending ( $GVAR_t$ ) and business cycle indicator ( $YVAR_t$ );

$$ps_t = \Psi d_{t-1} + \alpha_0 + \alpha_G GVAR_t + \alpha_Y YVAR_t + \mu_t, \dots \dots \dots \dots (6b)$$

Bohn's (1998) multivariate OLS estimation including government expenditure and business cycle indicator yielded significant positive response of primary surplus to changes in debt/GDP in the USA. He argued that the positive coefficient provide reliable information about sustainability irrespective of how interest rate and GDP growth compare. Thus, if debt/GDP ratio keeps growing, a sustainable fiscal policy must ultimately respond by moving towards primary surpluses. He emphasized that a strict positive and at least linear response of the primary surplus to changes in the debt/GDP ratio turns out to be sufficient for sustainability. The potency of this sustainability test is that it does not entail any assumption about interest rate dynamics. In addition, it is applicable to economies with indiscriminate debt management policies, uncertainty, risk aversion and whether or not interest rates are above or below growth rate.

Following Bohn (1998), Khalid et al (2007) also estimated the fiscal reaction function for Pakistan using VAR technique with three main variables including fiscal deficit, output gap and inflation. Turrini (2008) estimated the fiscal reaction function of European Union in good and bad time by regressing business-cycle adjusted fiscal balance on lag of the business-cycle adjusted fiscal balance, debt, output gap and election dummy. Alfonso and Hauptmeier (2009) and Eggert (2010) have followed the same line of research which incorporates business-cycle variable to the function as an independent variable.

Burger et al (2011) extended the model with lag of primary balance and output gap to examine the fiscal sustainability and fiscal reaction function of South Africa using OLS, VAR, GMM, State-Space, threshold VAR and VECM models. They found that the South African government indeed did tighten fiscal policies when facing shocks to the debt/GDP position during the sample period. Similarly, Doi, Hoshi and Okimoto (2011) examined Japan's fiscal sustainability incorporating a quadratic term (a deviation of the previous debt from the mean), output gap and government expenditure using both simple linear (OLS) and non-linear Markov-Switching models. Doi et al. (2011) found Japan's government debt to be explosive as both models showed significant negative response of primary balance to changes in debt/GDP ratio. In line with Doi et al (2011), Hall (2013) examined US fiscal reaction function with the assumption that the economy follows a Markov process. He found that the US fiscal policy has a strong tendency to lower primary deficit when debt/GDP ratio is high.

In estimating the fiscal reaction function of India, Nguyen (2013) used Autoregressive Distributed Lag Model (ARDL) which regressed tax revenue/GDP on debt/GDP, output gap, interest rate, inflation and lagged tax revenue were independent variables. The estimates show that India government follows a fiscal policy rule strictly such that this rule prevents any sudden shock that could be deleterious for economic growth. In estimating the fiscal reaction function for Brazil in the 1990s, de Mello (2005) extended the Bohn's model by including monetary indicators to capture the role of monetary policy in the government budget constraints. This makes use of the argument in Gali and Perotti (2003) about the fiscal –monetary relationship. De Mello established a cointegration relationship among the variables, indicating a stable fiscal reaction function for Brazil (also see, Budina et al, 2008).

The above studies about fiscal reaction function show that most models are for closed economies based on the premise that government may want to address the fiscal problem independently and avoid depending on foreign resources. Moreover, there are a number of papers that have studied the fiscal reaction function in an open economy context. Key among these studies is Penalver and Thwaites (2006) that incorporates both domestic and foreign interest rates in their model. Using VAR method with quarterly data, Penalver et al (2006) examines the roles of interest rate, exchange rate and output growth in the process of debt management in Brazil for the period 1999-2005. Afterwards, Adedeji and Williams (2007) estimated a fiscal reaction function for the CFA franc zone in West and Central Africa that included terms of trade in the regressors. According to Nguyen (2013), however, the comparison between closed and opened economy versions of fiscal reaction function show that the former always fit better in terms of precision and availability.

Since the preceding two approaches are based on the premise of no-Ponzi game condition which stipulates that under a sensible condition, at least in the long term, when interest rate exceeds growth rate ( $\Psi > 0$ ), the following conditions hold: (i) debt and interest rate are not rolled over systematically; (ii) existing debt is eventually paid in full through future primary surplus and (iii) debt ratio is kept below a ceiling. However, the no Ponzi game condition fails to hold in an economy where growth rate exceeds interest rate, (i.e.  $\Psi < 0$ ). Conventional economic theory suggests that in those cases, the intertemporal allocation could be improved. That is, government can incur a given amount of debt and postpone payments as long as GDP growth rate exceeds interest rate without growing the debt<sup>8</sup>. This is because the decline in debt ratio due to economic growth will (more than) counteract the increase in the debt ratio originating from capitalization on interest (Escolano, 2010). Therefore, keeping the debt ratio stable no longer implies abiding by the no-Ponzi game condition.

Consequently, the literature documents a third approach that analysis the debt dynamics by investigating how interest rate and GDP growth rate compares over the years. This approach is predominantly used by the IMF (especially Article IV assessment) and others economies (EU) in the medium-term debt sustainability assessment (DSA) frameworks, usually 5-10 years horizon. In particular, given the initial debt/GDP ratio ( $d_0$ ) and a target debt/GDP ratio ( $d_n^*$ ) to be achieved in the future period, (n), the

stabilizing primary balance  $(ps^*)$  that is compatible to reach the targeted constant debt/GDP ratio in finite time (n) is determined by the following formula:

The corresponding formula for the constant budget balance  $(b^*)$  that reaches the target debt ratio in the finite periods, n, is the following:

$$b^* = \frac{-\gamma}{(1+\gamma)((1+\gamma)^{-n}-1)}((1+\gamma)^n d_n^* - d_0), \dots \dots \dots \dots \dots \dots \dots (8)$$

Technically, it should be noted that both primary balance  $(ps^*)$  in equation (7) and budget balance  $(b^*)$  in equation (8) can simultaneously be kept at constant, if and only if  $d_0 = d_n^*$ . In the latter case, equations (7) and (8) respectively become equations (9) and (10) below (Escolano, 2010):

Where  $\Psi = \frac{i-\gamma}{1+\gamma} = \frac{r-g}{1+g}$ , with *i* (*r*) is nominal (real) interest rate and  $\gamma$  (*g*) denotes nominal (real) GDP growth, *ps*<sup>\*</sup> is constant primary balance, *b*<sup>\*</sup> is constant budget balance, while *d*<sup>\*</sup> represents constant debt/GDP ratio at a finite future.

### 4. Methodology

### 4.1 Data and Data Source

The study employs quarterly time series spanning the period 2000Q1 -2014Q1. These were obtained mainly from secondary sources, including Bank of Ghana, Ministry of Finance and Ghana statistical Services. The choice of the sample period was based on data availability and, above all, to empirically evaluate the fiscal stance during and after the adoption of HIPC initiative with its attendant multilateral debt relief which engendered a decline in external debt to 10.7% of GDP in 2006, from a peak of 157.3% of GDP in 2000. Since the study attempted to empirically evaluate how government reacts to rising public debt level, the key variables used in the study included primary balance and public debt, following the intertemporal budget constraints. The primary balance is simply defined as the sum of revenues excluding non-interest expenditure (that is total expenditure minus interest payment), while public debt is the sum of domestic and external debt (including government guaranteed debt). The choice of primary balance was reasonable, given the fact that the primary expenditures are more easily controlled by government. Besides, the use of primary balance helps to evaluate the impact of automatic stabilizers and discretionary policy action while recognizing the effect of debt services over business cycle. However, following other empirical studies (such as Shijaku, 2012), the study opted for the unadjusted primary balance, mainly to avoid any computing error regarding cyclically-adjusted primary balance<sup>9</sup> which relates to trend/potential output. To meet the solvency condition, the variables on primary balance and public debt were scaled by nominal GDP.

## 4.2 Modeling Primary Balance Performance

The study adopts the standard econometric techniques by first testing for unit roots. Secondly, the Bounds Testing autoregressive distributed lag (ARDL) method was employed, since the technique is robust and indifferent about the order of integration of the economic and financial time series. The empirical model used here draws from the works of Bohn (1998), Abiad et al. (2005), Davig et al (2006), Khalid et al (2007) and Nguyen (2013) which is based on the government intertemporal budget constraints (IBC). In particular, Bohn (1998) argued that the implication of IBC is that in a regression of the primary surplus against the lagged level of public debt, the coefficient on the latter should be positive and significant. This implies that the satisfaction of the IBC requires that an increase in public debt should warrant an increase in the primary surplus to ensure that public debt does not explode. To this end, Bohn showed that a strictly positive coefficient on public debt is sufficient to establish long run sustainability of the debt position. However, since the level of primary surplus a country runs is likely to be influenced by a number of other variables apart from debt level, we augmented the model to include a range of potential country-specific determinants of primary surplus behaviour, besides the level of public debt. The rationale for the inclusion of additional variables is to evaluate the contribution of economic, political and institutional factors in fiscal effort. Our reduced-form long run specification of primary balance is of the form:

<sup>&</sup>lt;sup>9</sup> Adjusted primary balance is extracted from actual primary balance using the estimation of output gap and the categories of revenues and expenditures that are sensitive to change in GDP.

$$pb_{t} = \alpha_{0} + \beta_{1}d_{t-1} + \lambda_{j}Z_{t-1} + v_{t}, \dots \dots \dots (11)$$

Where

 $pb_t$  is the ratio of primary balance to GDP,  $d_{t-1}$  is public debt-to-GDP ratio at the end of the previous period,  $Z_i$  includes other variables that influence the long run solvency requirement;  $v_t$  is an error term with zero mean and constant variance  $(\delta^2)$ , while  $\beta_1$  and  $\lambda_j (j=2, 3, ...)$  are parameters to be estimated. We followed the arguments by Abiad et al (2005) in selecting the range of country-specific variables for the  $Z_i$ . In particular, the economic determinants of primary balance behaviour used in this study include GDP gap<sup>10</sup> to capture the influence of business cycles (see, Bohn, 1998; de Mello, 2005); commodity prices<sup>11</sup> to capture the effects of price movement on the fiscal position; CPI inflation to capture inflation effect on fiscal balance; and most importantly, exchange rate depreciation to capture the effect of persistent depreciation on fiscal position regarding external debt services and the pass through effect on inflation. Also we include a dummy, dubbed HIPC, to capture the effect of Heavily Indebted Poor Countries' initiative and its accompanying multilateral debt relief (especially between 2001 and 2006) of the behaviour of primary balance.

Also, we allowed for possible nonlinear relationships between debt and fiscal effort by including a spline for debt at a threshold of 80 percent of GDP. Among the various spline thresholds, a threshold at a debt-to-GDP ratio of 80 percent optimizes the adjusted R-squared, log-likelihood and residual sum of squares.

A key noneconomic but influential factor of Ghana's fiscal stance is the parliamentary and presidential elections which tend to be accompanied by excessive budget overruns. Therefore, a dummy variable was introduced to capture possibly electoral effects. We also proxied the capacity of the fiscal institution to deliver a primary surplus with lagged revenue-to-GDP ratio. This was motivated by the fact that the key factor distinguishing fiscal structures between developing countries and developed economies is the relatively lower revenue-to-GDP base of the former (see, Abiad et al, 2005). The use of the lagged term of revenue-to-GDP ratio is mainly to try to avoid the shortcoming as it is related to primary balance through an accounting identity. Last but not the least, the model also allows for a policy inertia by including a lagged dependent variable. It is however essential to note that the inclusion (or exclusion) of these auxiliary variables in the final parsimonious model was strictly judged by the model suitability in terms of satisfying the diagnostic test.

If the long run equation, as displayed in equation (11), is a valid cointegration equation, it will also have an equivalent parsimonious short run error correction model (ECM), shown in equation (12) below;

 $\Delta p b_t = \beta_0 + \beta_i \Delta d_{t-i} + \lambda_i \Delta Z_{t-i} + \gamma_1 \Psi_{t-1} + \Omega_t, \dots \dots \dots (12)$ 

Where  $\Psi_{t-1}$  is the lagged error term from the co-integrating equation shown in equation 10,  $\Omega_t$  is an error term with zero mean and constant variance  $(\delta^2)$ ,  $\Delta$  is the first difference operator.

<sup>&</sup>lt;sup>10</sup> GDP gap was measured as a deviation of the Hodrick-Prescott trend.

<sup>&</sup>lt;sup>11</sup> As a net importer of crude oil and also highly reliant on cocoa and gold exports, we used two commodity price indices namely the crude oil price index and a weighted average of cocoa beans and gold price index. The base year for index was 2006.

However, the key parameter to judge for policy solvency is  $\beta_1$  in equation (11). A positive value of  $\beta_1$  (that is  $\beta_1 > 0$ ) shows that the government tries to increase primary surplus to react to debt build-up in order to comply with the IBC. The literature also suggests that the solvency condition requires that the size of the coefficient should be closer to one and statistically significant (see, Alfonso, 2005).

### 5. Empirical Results and Inferences

### 5.1 Unit Root Tests

The results of the four standard unit root tests including Augmented Dickey-Fuller (ADF), Kwiatkowski-Philips-Smith-Shin (KPSS), Philip-Perron (PP) and Dickey-Fuller GLS (ERS) methods, incorporating both full and sub-sample analyses are reported in table 2. Using the ADF test, the unit root test showed that primary balance was stationary at level, that is I(0). This was corroborated by all the other tests. The tests on public debt however yielded mixed results. The ADF, KPSS and PP tests showed public debt to be stationary with drift and/or trend, while DF-GLS test indicated a nonstationary series. Following the mixed results from the unit tests for public debt, one cannot firmly conclude on policy solvency using data generation approach for the sample period.

	ADF		KPSS		рр		DF-GLS (ERS)					
	Intercept	Intercept & Trend	First Difference	Intercept	Intercept & Trend	First Difference	Intercept	Intercept & Trend	First Difference	Intercept	Intercept & Trend	First Difference
Primary Balance/GDP												
2001q1 -2014q1	[-4.5354]*	[-4.6150]*	[-9.0964]*	[0.2327]*	[0.1599]*	[0.0669]	[-4.7465]*	[-4.8726]*	[-13.7656]*	[-1.6572]***	[-4.6112]*	[-8.3195]*
Public Debt/GDP	Public Debt/GDP											
2001q1 -2014q1	[-3.5286]**	[-0.3527]	[-4.4523]*	[0.7242]	[0.2372]*	[0.3807]	[-3.5173]*	[-2.2346]	[-10.3741]*	[-1.32101]	[-1.5652]	[-0.4627]
Vote: Numbers in [] denote test statistics *, ** & *** denotes 1%, 5% & 10% significance levels respectively												

Table 2: UNIT ROOT TEST AT LEVELS

## 5.2 ARDL Cointegration Results

Given the mixture of stationary and non-stationary variables in the model as established from the standard four unit root test, the ARDL co-integration technique is the ideal method to estimate the fiscal policy reaction function of Ghana. The report for the optimal ARDL model based on the Akaike Information Criterion (AIC) are reported in table 3. The model satisfied the conditions on stability (functional form), autocorrelation, normality and heteroskedasticity test. In particular, the fulfillment of the normality condition connotes that the student t-values were valid for projecting the sample result to the unknown population. Empirical results (Table 3) also suggest the existence of long run relationship

between primary balance, public debt and the other economic and non-economic factors in the ARDL model as the computed F-statistic exceeded the critical upper bound at 99% confidence interval (1% alpha level). Consequently, with the absence of any significant econometric problem and a reasonably high explanatory power of the model, long run parameters estimates were derived. These long run parameter estimates are reported in Table 4 and all variables are correctly signed.

Specifically, the long run coefficients of public debt (pubdg) is positive and statistically significant, indicating that fiscal authorities react systematically to rising public debt ratio to ensure fiscal sustainability. Fiscal authorities moderate primary deficit to GDP by 0.02% when there is a percentage increase in public debt to GDP in the long run. Also, there is evidence of non-linear relationship between primary balance and public debt as the coefficient of debt threshold (in this case, at least 80% of GDP) is positive and statistically significant. Besides, the coefficient of the debt threshold has a much larger magnitude than that of low to moderate debt levels. The long run estimates show that a debt level beyond 80% of GDP warrants the attainment of primary surplus to the tune of approximately 2.3% of GDP ratio to avert debt explosion in the long run. Contrary to Bohn (1998), IMF (2003) and Abiad et al (2005), our result suggests a much stronger response of Ghana's fiscal authorities to sufficiently higher debt levels than the response to low-to-moderate debt levels, indicating the desire to satisfy the intertemporal budget constraint in the long run.

Consistent with Abiad et al (2005), long run coefficients of commodity prices, both oil (LOILP) and non-oil (LOGCPINDE) were positive and statistically significant as expected. In particular, Ghana is a net-importer of crude oil, so increases in oil prices tend to increase government expenditure which warrants the accumulation of higher primary surpluses to stabilise the debt. However, as an exporter of cocoa beans and gold, increases in their prices are expected to boost primary surpluses. In addition, the long run response of primary balance to exchange rate depreciation is positive and statistically significant. The positive effect of exchange rate depreciation on primary balance may result from either the pass through effect of the former to inflation and hence, higher real interest rate or via increases in external debt stock. Any of these exchange rate channels requires greater fiscal effort to preserve fiscal sustainability. Also, the long run response of primary balance to output gap was negative but statistically insignificant, implying a weak pro-cyclical policy. Furthermore, coefficient of HIPC dummy had the expected negative sign but was statistically insignificant. This suggests that the HIPC inflows during 2001-2006 seemed to be associated with worsening primary deficit (or lower the primary surplus) in Ghana, on the back of a declining public debt trajectory owing to debt cancellation.

There is also crucial role played by political and institutional variables in the long run behaviour of primary balance in Ghana. Primary balance significantly deteriorates during election years in Ghana as expected and this result was robust to different specifications. This suggests that the expenditure overruns associated with the parliamentary and presidential elections threaten the long term fiscal sustainability of Ghana's public finance. The result also shows a weak surplus generating capacity of the fiscal institution, proxied by lagged revenue ratio, in the long run as the coefficient was positive but statistically insignificant. This suggests weak fiscal institutions which contradicts the findings by Abiad et al (2005) on emerging economies.

The parsimonious short run error correction model linked to the long run function was also estimated and the results are reported in table 5. The results show that the long run explanatory variables also affect the dependent variable in short run and most of these variables maintained their long run signs. The parameter of the error correction was approximately -0.798 and statistically significant (refer to table 5). This suggests that the long run equilibrium would be restored after approximately 1.3 quarters or about four months of disequilibrium caused by shocks. Also, the significant of the error correction term indicates that the explanatory variables Granger-cause primary balance in the long run model. This accentuates the use of single equation model in this study. The empirical result shows that primary balance is negatively linked to its previous development, implying that Ghanaian fiscal policy-makers do analyze the evolution of the previous deficit indicator within the decision-making process.

Like the long run estimates, there is a clear tendency for fiscal authorities to response aggressively to higher debt level than that of low to moderate debt levels in the short run. This suggests both short run and long run non-linear relationships between primary balance and public debt in Ghana. The results show that a debt level beyond 80% of GDP requires the achievement of primary surplus (or moderation of primary deficit) to the tune of approximately 1.8% of GDP in the short run to safeguard fiscal sustainability in Ghana. In general, the short run response of primary balance to changes in public debt is negative after controlling for higher debt levels. This reinforces the low appetite for authorities to make significant buffer at low to moderate levels of debt/GDP.

In the short run, primary balance responds negatively to election dummy and previous exchange rate depreciation. In particular, the short run estimates show that the fiscal excesses during an election year in Ghana lead to a deterioration of primary balance to the tune of approximately 1.1% of GDP in the short run, threatening the sustainability of the fiscal policy. In other words, the expenditure overruns during an election year would require an improvement in primary deficit by 1.1% of GDP to restore fiscal sustainability, ceteris paribus. However, the short run response of primary balance to current change in both exchange rate and non-oil commodity prices was positive but insignificant. Similar to the long run estimates, HIPC dummy, output gap and revenue ratio maintained their long run signs but were all insignificant. The short run effect of crude oil price however maintained its positive influence on primary balance.

Considering the evidence of non-linear link between primary balance debt level and the significance of structural break dummy (in table 3) coupled with the fact that fiscal authorities seem to undertake low adjustment during regimes of relatively low to moderate debt levels, we check the robustness of our result using a bivariate ARDL model. This would also help to pin down the exact periods of stability or otherwise of fiscal policy in Ghana. This analysis was deemed very critical as it enables the determination of fiscal sustainability for the immediate past policy, preferably, since 2006 as the period is associated with rapid upsurge in public debt. Against this background, we used OLS regression with breaks to examine the link between primary balance and debt during different regimes. In this regard, the break type was identified with Bai-Perron (1998 & 2003) tests with the null of L+1 versus L breakpoints that combines the global and sequential testing approaches. Each test begins with the set of

L global optimizing breakpoints and performs a single test of parameter constancy using the sub-sample break that minimizes the-sum-of-squared residuals (see Eviews 8 manual).

In this model, we allowed a maximum of 5 breaks at 95% confidence interval and employed a trimming percentage of 15% (minimum sample size for estimating a break). Essentially, the model permits the error distribution to differ across breaks<sup>12</sup> with the standard errors and covariance matrix computed by heteroskedasticity and autocorrelation consistent (HAC) estimation. That is, the estimation allows for serial correlation that differs across regimes through the use of HAC covariance estimation. The results from the bivariate OLS with breakpoints are reported in table 6 with the test statistic identifying three major breaks for the sample period (2000Q1-2014Q1). The three (3) breaks identified were 2006Q3, 2009Q1 and 2011Q1. Our study followed EViews's convention to define the breakpoint as the first date of the subsequent regime.

Accordingly, the three detected breakpoints in turn yielded four sub-sample estimation results which are reported in table 7. The model fulfilled all the diagnostic tests including normal distribution, autocorrelation, and heteroskedasticity assumptions while the residuals lay within the 95% confidence interval of Cusum and Cusum of squares tests<sup>13</sup>. In addition, results from the PP, ADF and KPSS unit root tests showed that the residual terms are stationary at levels. In particular, the computed F-statistic exceeded the ARDL upper critical bound (for K=2) at 95% confidence interval, confirming the existence of long run relationship between primary balance and public debt of Ghana.

In sync with the multivariate ARDL estimation results, the empirical result from the bivariate OLS with breakpoints show that the magnitude of fiscal response to rising public debt for various regimes range between a highest positive of 0.15% to minus 0.22% of GDP. Following the argument of Alfonso (2005), the positive response of primary balance is not too close to one to guarantee long term sustainability of fiscal policy. In particular, as indicated in table 7, fiscal situation improved remarkably during the regime 2000Q1-2006Q2 as the level coefficient of previous lagged public debt to GDP ratio assumed a significant positive sign. This is consistent as the debt trajectory reversed significantly downwards to a trough of 26.2% of GDP in 2006 following HIPC initiative, after reaching its peak in 2000.

The fiscal situation however deteriorated during the period 2006Q3-2008Q4 as the coefficients of both previous lagged (level) and contemporaneous term of public debt to GDP ratios were negative and statistically significant at 99% confidence interval. The deterioration in the primary balance during this regime may largely be underpinned by a number of factors including the energy-related expenditure during the 2006 energy crisis, the expenditures related to the golden jubilee celebration in 2007, the hosting of African Cup of Nations and election expenses in 2008. Although the fiscal situation seems to have relatively improved since 2009Q1, the positive coefficient of lagged public debt was found to be

<sup>&</sup>lt;sup>12</sup>Selecting this option will provide robustness of the test to error distribution variation at the cost of power if the error distributions are the same across regimes (Bai-Perron, 2003). However, the estimated model was robust as it minimized the residual sum of squares and optimized the log-likelihood when compared to the model that assumed common error distribution.

<sup>&</sup>lt;sup>13</sup> Ramsey Reset test did not apply as it requires homogeneous error distribution.

insignificant, indicating a weak long run fiscal adjustment to public debt accumulation. In the same vein, the contemporaneous coefficient of public debt during 2011Q1-2014Q1 regime is negative and highly significant (at 99% confidence interval), also suggesting short run debt explosion in Ghana.

In sum, the empirical results affirm the existence of fiscal pressures since 2006 which threatens long term sustainability of Ghana's public finance. The results suggest that the fiscal adjustment through the accumulation of primary surpluses appears not too commensurate with the rate of accumulation in public debt to GDP. Accordingly, our study reveals that the current fiscal policy stance, if maintained, is more likely to engender debt explosion, going forward. This therefore warrants a drastic change in policy direction that would ensure long term fiscal sustainability and hence, enhance investors' confidence in the economy.

# 5.3 Debt Dynamics: Interest-Adjusted Growth Rate

In view of the fact that above deliberations rest on the principle of 'no Ponzi game' which assumed a positive interest-adjusted growth rates, this section assesses the robustness of the results by analyzing the historical and medium term debt dynamics using interest-adjusted growth rate from 1991 to 2016. This is motivated by the fact that principle of 'no Ponzi game' does not attain for higher growing economy (see, Escolano, 2010). Against this background, Ghana is among the fastest growing economies in SSA but at the same saddled with escalating interest payments. Besides, the fundamental requirement of sustainability is that resources are available to the borrower in the future to service the debt that has been built up in the past. So, we investigated Ghana's capacity to service its debt especially over the medium term. In this case, we appraise fiscal sustainability by how interest rate and GDP growth in Ghana compares by assuming zero primary balance and no seigniorage. As usual, we used GDP growth as a proxy for future source of income to the economy. To avoid computational errors, we used real effective interest rate as the weighted average of domestic and foreign interest rate for Ghana. The effective interest rate was computed as a ratio of current total interest payment to previous debt stock (multiply by 100). The medium term estimates of GDP growth and interest payments for 2014-2016 were obtained from the 2014 fiscal budget of Ghana, while data on new government borrowings (domestic and foreign) and amortization (principal repayments) for the same period were obtained from Bank of Ghana.

The interest-adjusted growth rate was computed as the difference between real effective interest rate and real GDP growth rate (i.e.  $r_t \cdot g_t$ ). In this case, zero becomes the threshold level. If interest-adjusted growth rate is negative, ( $r_t \cdot g_t < 0$ ), then the debt converges, and hence the evolution of public debt is sustainable. On the other hand, if interest-adjusted growth rate is positive, ( $r_t \cdot g_t > 0$ ), then the debt explodes, and hence the evolution of public debt is unsustainable. In addition, the closer the blue line to the zero line, the higher the fiscal pressures. Figure 10 presents the historical and projected interest adjusted growth rate in Ghana from 1991 to 2016 which strongly corroborates with the bivariate ARDL results in section 6.2.

As shown in figure 10, the fiscal pressures have persisted since 1992. However, the pressure relatively subsided between 2001 and 2006 following the adoption of HIPC with its attendant decline in external

debt stock and significant drop total interest payment via debt forgiveness. The debt dynamics however deteriorated between 2007 and 2009 driven by a subdued economic growth (due to post election fiscal consolidation in 2009) amid rapid increase in interest payment driving by increased government expenditures in 2007-8. Some moderation was observed in 2010 following a strong economic growth of 8.0%. The onset of oil production in 2011 which resulted in a recorded GDP growth of 15% for the year significantly enhanced the sustainability of Ghana's fiscal policy. However, this has been short-lived as the fiscal profile has deteriorated again since 2012, largely driven the election cycle.



Regarding the medium term, the result shows that fiscal pressures are expected to persist between 2014 and 2015 but expected to improve significantly in 2016. We however emphasized that the medium term fiscal profile is highly subject to the attainment of the economic growth forecasts of 8.0%, 8.2% and 10.0% for 2014, 2015 and 2016 respectively. In sum, the empirical results suggest significant fiscal pressure which poses remarkable risk to fiscal sustainability. To avert possible insolvency, the results suggest that fiscal authorities will have to make considerable fiscal adjustment by accumulating sufficient primary surpluses in 2014 and 2015 to ensure fiscal sustainability.

### 6. Conclusion and Policy Recommendations

### 6.1 Conclusion

The study focuses on evaluating the long run sustainability of Ghana's public finance by estimating areaction function of government to ascertain whether the authorities pursued appropriate policies to avert excessive debt accumulation. Our findings demonstrate the existence of both short run and long run linear and non-linear relationships between primary balance and previous public debt for the period. Accordingly, fiscal authorities react systematically to increasing debt ratios in both short run and long run by generating future surpluses (or improving the primary balance). Under the short run fiscal reaction function, the primary balance is negatively linked to its previous development and positively to rising debt ratios, implying that Ghanaian fiscal policy-makers do analyze the evolution of the previous deficit indicator within the decision-making process. This result corroborates with the findings of Shijaku (2012) on Albania. In the nutshell, government fiscal behaviour during the sample period can be

considered as coherent with intertemporal budget constraint even though the fiscal adjustment appears to be low. However, there are also some evidences of looming fiscal pressures in Ghana's public finance since 2006, exacerbated by high government expenditures particularly during election cycles.

With regard to other determining factors, the results suggest that expenditure excesses during election cycles severely render fiscal sustainability at risk for the sample period. The primary balance responds positively to rising international commodities prices (including crude oil, cocoa beans and gold), and exchange rate depreciation also poses challenges to fiscal sustainability.

# 6.2 Policy Recommendations

In the light of the findings in the study, the following policy recommendations are offered:

- i. To avert potential short term insolvency due to recent development in interest payments and the wage bill, government should emphasize more concessional sources of borrowing (e.g. World Bank), rather than the resort to non-concessional borrowing from capital and money markets which has serious implications for debt dynamics.
- ii. To minimize loss of effort and improve the efficiency of revenue mobilization of the Ghana Revenue Authority, the various agencies should be streamlined further to enhance efficiency whilst putting measures in place to ensure fair service conditions to staff in order to boost efficiency.
- iii. In view of the difficulty of expanding the tax net to embrace the large self-employed sector of the economy, the authorities could consider more innovative ways such as employing the services of cooperatives and associations to reach out to the informal sector or the self employed.
- iv. The authorities may also consider reducing tax exemptions and minimizing the list of beneficiaries, and to rake-in potential revenues which tend to leak out through such conduits.
- v. Payroll management should incorporate deterrent punishment for those identified to have abused the system.
- vi. Government should infuse some flexibility in the structure of the budget to reduce earmarking and introducing more allignment.
- vii. To ensure long term fiscal sustainability, there is the need to introduce fiscal anchors such as a Fiscal Responsibility Act with expenditure rules to curtail overruns especially during election cycles. In addition, proper coordination between fiscal and monetary authorities should be fostered.

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# **APPENDIX 1: Tables**

	(1)	(2)	(3)	(4)			
Regressors	Coeff [T-Ratio]	Coeff [T-Ratio]	Coeff [T-Ratio]	Coeff [T-Ratio]			
PRIMBG <sub>t-3</sub>	0.2797[2.129]**	0.3901 [2.568]**	0.3897[2.701]**	0.3545[2.539]**			
PUBDG <sub>t-1</sub>	0.0157[2.017]***	0.0106 [0.933]	0.0076[0.706]	-0.0021[-0.142]			
PUBDG <sub>t-2</sub>		0.0219 [1.876]***	0.0198[1.746]***	0.0196[1.588]			
PUBDG ≥ 80%	1.8792[2.777]*	1.7720[2.429]**	1.8855[2.613]**	1.5731[2.165]**			
LOGCPINDE <sub>t-1</sub>	-5.5017[-1.349]	-7.1082[-1.682]	-10.3343[-2.338]**	-7.0329[-1.680]			
LOGCPINDE <sub>t-2</sub>	5.7199[1.837]***	6.6334[2.108]**	7.4936[2.365]**	7.3543[2.325]**			
Depreciation <sub>t-3</sub>	0.0107[1.848]***	0.0174[2.646]**	0.0111[1.885]***	0.0156[2.395]**			
LOIIPt	6.6811[2.973]*	7.8360[3.286]*	5.9721[2.566]**	6.7654[2.306]**			
CONSTANT	-10.8026[-3.404]*	-10.3091[-1.926]***	-8.1882[-1.506]	-13.4028[-3.587]			
DUMELECT	-1.0884[-3.336]*	-1.2210[-3.414]*	-1.0692[-3.061]*	-1.1173[-3.411]*			
HIPC		-0.7344[-0.956] -0.1691[-0.221]					
Structural Dummy			-0.4779[-1.826]***				
DREVG <sub>t-1</sub>				0.1162[0.540]			
YGAPt				-0.9911[-0.842]			
		DIAGN	IOSTICS				
R-Square	0.694	0.739	0.745	0.748			
Log-Likelihood	-55.782	-51.503	-50.844	-50.530			
Residual Sum of Squares	24.955	21.298	20.785	20.545			
DW-Statistic	2.287	2.316	2.184	2.195			
Serial Correlation	0.498	0.414	0.414	0.766			
Functional Form	0.087	0.230	0.361	0.118			
Normality	0.940	0.862	0.602	0.924			
Heteroskedasticity	0.646	0.712	0.700	0.831			
F-Statistic	[5.741]*	[4.665]*	[4.821]*	[4.5217]*			
Lower Critical Bound	[2.607] @ 99% CI						
Upper Critical Bound		[3.888] (	@ 99% CI				

Table 3: Results of estimated optimal ARDL model of Primary Balance/GDP in Ghana based on data from 2000Q1 to 2014Q1.

Note: \*, \*\* & \*\*\* denote 1%, 5% & 10% significant levels respectively.

#### Table 4: Results of estimated long run relationship derived from the optimal ARDL model of Primary Balance/GDP in Ghana

	Dependent Variable: PRIMBG t						
	(1)	(2)	(3)	(4)			
Regressors	Coeff [T-Ratio]	Coeff [T-Ratio]	Coeff [T-Ratio]	Coeff [T-Ratio]			
CONSTANT	-14.3369[-3.482]*	-12.3352[-2.631]**	-12.5667[-2.143]**	-14.0477[-4.090]*			
PUBDGt	0.0209[2.305]**	0.0316[2.985]*	0.0161[1.112]	0.0228[2.218]**			
PUBDG ≥ 80%	2.4941[2.382]**	2.1203[1.850]***	2.8937[1.736]***	1.6488[1.843]***			
LOILPt	4.9865[2.294]**	4.6488[2.267]**	5.0933[1.951]***	3.3570[1.486]			
LOGCPINDEt	1.6108[1.034]	0.7918[0.365]	1.0125[0.374]	2.5523[1.736]***			
Depreciation <sub>t</sub>	0.0301[1.911]***	0.0433[1.952]***	0.0359[1.455]	0.0291[1.902]***			
DUMELECT	-1.4445[-2.793]*	-1.4609[-2.275]**	-1.6409[-1.907]***	-1.1711[-2.851]*			
нірс		-0.8788[-0.814]	-0.2594[-0.212]				
Structural Dummy			-0.7335[-1.4183]				
DREVGt				0.1217[0.561]			
YGAPt				-1.0387[-0.777]			

Note: \*, \*\* & \*\*\* denote 1%, 5% & 10% significant levels respectively.

	Dependent Variable: ΔPRIMBG t						
	(1)	(2)	(3)	(4)			
Regressors	Coeff [T-Ratio]	Coeff [T-Ratio]	Coeff [T-Ratio]	Coeff [T-Ratio]			
ΔPRIMBG <sub>t-1</sub>	-0.3121[-1.939]***	-0.3389[-1.588]	-0.3606[-1.806]***	-0.2612[-1.455]			
$\Delta PRIMBG_{t-2}$	-0.2797[-2.129]**	-0.3901[-2.568]**	-0.3897[-2.701]**	-0.3545[-2.539]**			
ΔPUBDGt		-0.0062[-0.528]	-0.0035[-0.307]	0.0042[0.382]			
$\Delta PUBDG_{t-1}$	0.0157[2.017]***	-0.0219[-1.876]***	-0.0064[-0.488]	-0.0196[-1.588]			
PUBDG ≥ 80%	1.8792[2.777]*	1.7720[2.429]	1.8855[2.613]**	1.5731[2.165]**			
ΔLOILPt	6.6811[2.973]*	7.8360[3.286]*	5.9721[2.566]**	6.7654[2.306]**			
ΔLOILP <sub>t-1</sub>		3.6841[1.712]***		3.6044[1.682]			
ΔLOGCPINDE <sub>t</sub>	0.995[0.303]	1.1366[0.324]	3.5005[1.012]	2.1137[0.578]			
$\Delta LOGCPINDE_{t-1}$	-5.7199[-1.837]***	-6.6334[-2.108]**	-7.4936[-2.365]**	-7.3543[-2.325]**			
ΔDEPt	0.0018[0.333]	0.0092[0.155]	-0.0023[-0.039]	-0.0013[-0.236]			
ΔDEP <sub>t-1</sub>	-0.0166[-2.676]**	-0.0261[-3.373]*	-0.0142[-2.184]**	-0.0200[-2.443]**			
$\Delta DEP_{t-2}$	-0.0108[-1.848]***	-0.0174[-2.646]**	-0.0112[-1.885]***	-0.0156[-2.395]**			
CONSTANT	-10.8026[-3.404]*	-10.3091[-1.926]***	-8.1882[-1.506]	-13.4028[-3.587]*			
DUMELECT	-1.0884[-3.336]*	-1.2210[-3.414]*	-1.0692[-3.061]*	-1.1173[-3.411]*			
нірс		-0.7344[-0.956]	-0.1691[-0.221]				
Structural Dummy			-0.4779[-1.826]***				
ΔDREVG <sub>t-1</sub>				0.1162[0.540]			
ΔYGAP <sub>t</sub>				-0.9911[-0.842]			
ECM <sub>t-1</sub>	-0.7534[-3.953]*	-0.8357[-3.347]*	-0.6515[-2.641]**	-0.9541[-4.129]*			

Note: \*, \*\* & \*\*\* denote 1%, 5% & 10% significant levels respectively.

### Table 6: Test for Breakpoints

		Scaled	Critical
Break Test	F-statistic	F-statistic	Value**
0 vs. 1 *	6.357737	31.78868	18.23
1 vs. 2 *	20.08887	100.4443	19.91
2 vs. 3 *	14.92208	74.61039	20.99
3 vs. 4	4.036029	20.18015	21.71
Break dates:			
	Sequential	Repartition	
1	2009Q1	2006Q3	
2	2006Q3	2009Q1	
3	2011Q1	2011Q1	
* Significant at the C	0.05 level.		
** Bai-Perron (Econo	ometric Journal, 2003) d	critical values.	

Method: Least Squares with Breaks									
Dependent Variable: PRIMBG									
Sample: 2000Q1 2014Q1 Brook type: Bai Barren tests of Li 1 vs. Leoguentially datarmined brooks									
Breaks Detected: 2006O3, 2009O1, 2011O1									
Variable	Coefficient	Std. Error	t-Statistic	Prob.					
2000Q1 - 2006Q2									
С	-0.162	0.430	-0.377	0.708					
PRIMBG <sub>t-1</sub>	-1.496	0.509	-2.942	0.006					
PUBDG <sub>t-1</sub>	0.014	0.003	4.295	0.000					
ΔPUBDG	0.013	0.007	1.808	0.079					
	0.788	0.291	2.707	0.010					
	2006	Q3 - 2008Q4							
С	4.327	1.703	2.541	0.015					
PRIMBG <sub>t-1</sub>	0.076	0.302	0.251	0.803					
PUBDG <sub>t-1</sub>	-0.220	0.056	-3.959	0.000					
ΔPUBDG <sub>t</sub>	-0.201	0.049	-4.124	0.000					
ΔPRIMBG <sub>t-1</sub>	0.081	0.375	0.217	0.829					
	2009	01 - 201004							
С	-5.270	3.923	-1.343	0.187					
PRIMBG <sub>t-1</sub>	-0.541	0.127	-4.258	0.000					
PUBDG <sub>t-1</sub>	0.152	0.114	1.330	0.192					
ΔPUBDGt	0.165	0.083	1.993	0.054					
	0.054	0.226	0.237	0.814					
	2011	Q1 - 2014Q1							
С	-1.090	1.267	-0.861	0.395					
PRIMBG <sub>t-1</sub>	0.204	0.301	0.676	0.503					
PUBDG <sub>t-1</sub>	0.033	0.030	1.110	0.274					
ΔPUBDGt	-0.147	0.031	-4.753	0.000					
ΔPRIMBG <sub>t-1</sub>	0.049	0.144	0.337	0.738					
	DIA	GNOSTICS							
R-squared	0 725	Akaike info critoric	n -	2 610					
Sum squared resid 22		Schwarz criterion	3.327						
Log likelihood -54		Durbin-Watson sta	2.061						
F-statistic	5.399	Prob (LM Serial Correlation Test)		0.459					
Prob(F-statistic)	0.000	Prob (Heteroskedasticity Test)		0.971					
Prob (PP Unit Root)	0.000	Prob (Normality Test)		0.416					
Prob (ADF Unit Root)	0.000	ARDL Lower Bound	<i>3.793</i>						
Test Statistic (KPSS Unit Root)	0.039	ARDL Upper Bound	l for K=2 (@ 95% CI)	4.855					

### Table 7: Results of Bivariate ARDL using OLS with Breakpoints

### APPENDIX 2: Legal and Institutional Framework for Fiscal Policy in Ghana

#### Legal Regime

Ghana's fiscal regime is governed by numerous legislative instruments. Key amongst them are the Financial Administration Act (2003), the Loans Act (1970), the Public Procurement Act (2003), the Bank of Ghana Act (2002), the Audit Service Act (2000), the Internal Audit Agency Act (2003) which are all based on the 1992 Constitution of Ghana.

#### The 1992 Constitution of the Republic of Ghana

The 1992 constitution broadly outlines the responsibilities of the various arms of government. The constitution provides for the establishment of the Consolidated Fund, the Contingency Fund and such other public funds as may be established by or under the authority of an Act of Parliament as well as the basis for resource mobilization and their spending. With the exception of those resources that may be payable to some other specific fund established by an Act of Parliament, the Consolidated Fund shall be the sole receptacle for all government's revenues and moneys. The President in collaboration with Cabinet are charged with the general socio-economic policy of government. The authority to spend by the President is contingent on the submission of estimates of revenue and expenditure to Parliament for approval. This includes both estimates of revenue and expenditure relative to a fiscal year as well as supplementary budget estimates. The constitution requires the authority of an Act of Parliament before the government contracts loans. The office of an independent Auditor-General is established under the 1992 constitution with the power to access all public financial and expenditure documentation. The Auditor-General is obligated to submit audit reports within six months after the end of the immediately preceding financial year to parliament and shall, in that report, draw attention to any irregularities in the accounts audited and to any other matter necessary for parliamentary notice. The constitution provides for the establishment of an Audit Service and the Bank of Ghana as the Central Bank and their respective roles regarding public finance. The role of the Minister with respect to public funds finds a lot expression in the Financial Administration Act, 2003.

#### The Financial Administration Act (2003) Act 654

The Financial Administration Act, 2003, seeks to regulate the financial management of the public sector by prescribing the responsibilities of persons entrusted with financial management in the government. These officials are to ensure the effective and efficient management of state revenue, expenditure, assets, liabilities, resources of the government, the Consolidated Fund and other public funds. According to the Act, the Minister is responsible for formulation and execution of fiscal policy and all associated issues. The Controller and Accountant-General and the deputies are responsible to the Minister for the custody, safety and integrity of the Consolidated Fund and other designated public funds. As the Chief Accounting Officer of the Government he/she also has responsibility to keep, render and publish statements of public accounts and recommends the appropriate accounting standards for the various departments of government. The person appointed should ensure that all revenues and moneys collected on behalf of government are deposited into the Consolidated Fund and its agents as are considered necessary for the deposit of the moneys. A bank account shall not be opened for any department except under the authority of the Controller and Accountant-General and a bank shall not open an account for any department without the authority of the Controller and Accountant-General.

According to the Act, a person who collects or receives public moneys or moneys in trust for Government shall keep a record of receipts and deposits in a form and manner that the Controller and Accountant-General may prescribe. Any person who collects or receives any public moneys or moneys in trust for Government without the prior authority of the Controller and Accountant-General shall immediately pay the moneys into the Consolidated Fund and explain to the Controller and Accountant-General the circumstances under which these moneys came into the possession of that person.

Under the Financial Administrative Act, 2003, the Controller and Accountant-General is required to prepare and submit monthly financial statements of the Consolidated Fund to the Minister and the Auditor General within 15 days of the close of each monthly. These reports should comprise a statement of revenue and expenditure, a balance sheet and a cash flow statement and should be published in the Government Gazette. Similarly the annual financial statements of the Consolidated Fund should be transmitted to the Minister and the Auditor General within three months of the close of the fiscal year. The various heads of departments are responsible for preparing their respective complete set of financial statements on the departments financial transactions.

Relevant clauses are provided in case of unexpended balances supposed to revert to the Consolidated Fund. This is to ensure continuity of government's programmes and projects and minimize suspension of projects for which the state has committed resources. In this regard every head of department is required to prepare and submit to the Minister a statement of the commitments entered into but undischarged before the end of the financial year in which they were incurred. To the extent that the Minister is satisfied that the undischarged commitments may be properly carried forward and that unexpended balances of the previous year's appropriation are available to finance their discharge, the Minister may issue a warrant to be known as the revote warrant to provide for their due discharge.

The Act prescribes that any amount voted in excess of appropriation for the fiscal year must be submitted in the form of a supplementary budget by the Minister for parliamentary approval.

A critical assessment of the Act suggests that a lot of power is vested in the Minister, to the extent that professional positions of the Controller and Accountant General could be subservient to or overruled by the Minister. And to the extent that the Minister can explain away or rationalize any excess spending, this could suggest potential for fiscal profligacy and over commitment of successive regimes by incumbent governments. In a related development, the Act does not set limits on the level of national debt accumulation. It should be noted that there is no explicit role given to either opposition parties or civil society organizations to ensure effective public finance management except that of Parliament which is largely partisan. Equally worth mentioning is the absence of specific clauses to prevent successive governments abandoning projects of their predecessors thus preventing wastage of public resources.

#### Public Procurement Act, 2003, Act 663

The government of Ghana enacted the Public Procurement Act in 2003 which established the basis for standardized procurement system that takes into account the country's decentralization and local industry development policies. According Ronald etal (2010), the Public Procurement Act, 2003 establishes competitive tendering as the preferred procurement method. It sets thresholds for procurement methods that guide the use of less competitive methods. The Act provides for the establishment of a Public Procurement Board aimed at harmonizing the processes of public procurement in the public service to secure a judicious, economic and efficient use of state resources in public procurement and to ensure that public procurement is carried out in a fair, transparent and non-discriminatory manner. The Public Procurement Board has the responsibility for policy, regulatory oversight, publications of contract awards, the development of professionals with procurement skills, maintaining a procurement database and administrative review. The Act also requires the setting up of a Tender Committee, Tender Evaluation Panel and a Tender Review Boards to collectively ensure that the sanctity of the Public Procurement Act is duly respected. In the event a dispute arising in the bidding processes, an administrative dispute resolution process is in place by the Act, to promote the effective and expeditious resolution of the dispute. In a related development, the Act stipulates a mandatory 21 day standstill period between contract award letter and the signing of the contract.

#### Bank of Ghana Act, 2002 Act 612

It is normally expected that government may be faced with the challenge of synchronizing its resources mobilization with its spending programmes especially in the early part of a fiscal year. And to avoid the problem of fiscal dominance, the Bank of Ghana Act 2002 provide for a constrained temporary advance to government. According to the Act, the Bank of Ghana can make advances and loans to the Government on overdraft or in any other form that the Board may determine. However the total of the loans, advances, purchase of treasury bills and securities together with money borrowed by the Government from other banking institutions and the public at the close of a financial year shall not exceed 10 percent of the total revenue of the fiscal year in which the advances were made. Any advance made shall be repaid within three months after the grant of the advance, and where that advance remains unpaid after the due date, the power of the Bank of Ghana to make further advances in a subsequent financial year shall not be exercised unless the amounts due in respect of outstanding advances have been repaid. Where repayment of the advances and overdrafts is unduly delayed, the Bank may transfer the debt to the public through the sale of treasury bills.

#### Loans Act 1970, Act 335

The Act grants the government the permission to raise loans, both domestic and external, whether on behalf of itself or any other public institution or authority as may be agreed between the Government and the lender. These are conditional on the fact that the agreement for any such loans shall be submitted to Cabinet for its approval subject to consultation with the Minister. No statutory corporation shall raise any loan without the prior approval of the Minister. The terms and conditions of any loans obtained by the Government shall not come into operation unless they have been laid before the Parliament and approved by Parliamentary resolution. Any agreement providing for a guarantee by the Government of any loan may be signed by the Minister but Parliament approval is highly enforced. Parliament may prescribe debt limits without the need for further approval by Parliament as might become necessary in the case of domestic debt instruments such as Treasury Bills.

#### Internal Audit Agency Act, 2003 Act 658

The internal Audit Agency Act, 2003 provides for the establishment of an Audit Agency as a central agency to coordinate, facilitate, monitor and supervise internal audit activities within Ministries, Departments and Agencies (MDAs) and Metropolitan, Municipal and District Assemblies (MMDAs). This is to secure quality assurance of internal audit within these institutions. The Act also provides for the setting up of the Board of the Internal Audit Agency and their responsibilities. Among others, the Agency is to safeguard public funds, ensure compliance with the legal and regulatory framework, policies, plans and standards and to ensure that financial reports are accurate, regular and timely, and that risks are managed effectively. It is also responsible for promoting economy, efficiency and effectiveness in the implementation of government programmes. The MDA and MMDA are supposed to have Internal Audit Units whilst the responsibility of implementing internal audits recommendations rest with the Audit Report Implementation Committees.

#### The Audit Service Act 2000, Act 584

The operations of the Ghana Audit Service are governed by the Audit Service Act, 2000. The Act grants the Ghana Audit Service jurisdiction over auditing the public accounts of the central government, the local authorities, the courts, the public corporations and all bodies established by an Act of Parliament. The Act gives some operational independence to the Auditor General in the discharge of its core responsibilities. The Auditor General has a fixed tenure determined by the President. Any attempt to remove the Auditor General requires the consent of the Chief Justice supported by a resolution voted on by at least two thirds of all members of the Judicial Council. The basis for removal is limited to stated misdemeanor, incompetence or inability to carry out responsibilities resulting from weakness of body or mind. Decisions regarding the appointment of the entire staff of the Ghana Audit Service as well as the publication and dissemination of audit reports are within the remit of the Auditor General. The Auditor-General is required to submit audit reports to Parliament within six months after the close of the fiscal year. The Audit Service Act establishes the Audit Report Implementation Committees to be responsible for the implementation of audit findings and recommendations of the Public Accounts Committee.

#### The Case for a Fiscal Responsibility Law

Most countries introduce a Fiscal Responsibility Law to address long periods of fiscal imbalance which cripples their quest to achieve sustained periods of macroeconomic stability and associated job creation potential. Ghana has over the years been making efforts to contain its fiscal deficit within reasonable bounds. This experience has been extremely challenging in the face of developments in the global economy which adversely impacts on its major commodities and some domestic reckless economic decisions normally close to election periods. As indicated above in Ghana's case, some legislative measures have been put in place to ensure some fiscal discipline. Ghana also is a signatory to the regional body, WAMZ, whose convergence criteria for economic harmonization seek to impose some restriction on the level of fiscal deficit.

However, these legislations together do not give much weight to a long term view of fiscal planning. In order words the tendency for fiscal authorities to sacrifice long term gains on the altar of short term benefits is real. Also, in the absence of a unified and succinct legislative framework governing fiscal management and the conduct of fiscal policy, with specific target/indicators prescribed for fiscal deficit, government borrowing and public debt, fiscal accountability would hardly be enforced. Related to these are measures which can insulate fiscal policy from the excess of political period spending. It should be possible to apply some punishment for public officials whose activities result in the breach of these targets.

Ghana should therefore be proactive and to put in place measures that could forestall any future potential fiscal mayhem. In fact an earlier attempt in the 2007 Budget Statement to introduce a Fiscal Responsibility Law in Ghana has been shelved. To this end, it is recommended that Ghana pulls together all its legislations on fiscal management and conduct of fiscal policy in a set of comprehensive and coherent form. This legislation should be cast in the light of a fiscal accountability law, where specific targets are prescribed for some fiscal indicators. It is believed that such a law would engender planned and transparent actions, averting risks and correcting deviations that may upset the balance between revenue and expenditure. Also, this increases predictability about, and stability in, fiscal policy settings, which helps promote economic growth and gives people a degree of certainty about the on-going provision of government services and transfers.

#### B Institutional Regime

In Ghana, some of the key fiscal institutions are the Ministry for Finance and Economic Planning, Ghana Revenue Authority, Controller and Accountant General's Department, Ghana Audit Service, The Public Accounts Committee and Finance Committee of Parliament and the Bank of Ghana.

#### **Ministry of Finance and Economic Planning**

The Ministry is broadly tasked to formulate and implement sound fiscal and financial policies, ensure effective mobilization and efficient allocation of resources and improve public financial management. Specifically the Ministry has the responsibility to mobilize both external and internal resources and make budgetary allocation to all sectors of the economic to support growth and wealth creation. The Ministry should ensure efficient management of public expenditure and financing options to ensure sustainability of public debt. It equally has to support the development and implementation of financial sector policies to enhance the delivery of financial services. To discharge these responsibilities the Ministry has been divided into sections to ensure efficiency.

#### **Debt Management Division**

In accordance with the article 171 of the 1992 Constitution of the Republic of Ghana and the Loans act of 1970, Act 335, the Minister of Finance has the sole mandate to borrow on behalf of the Government of the Republic of Ghana. This mandate is operationally conferred on the Aid and Debt Management Division of the Ministry of Finance and Economic Planning to source, administer and manage the public and quasi public debts, and to develop strategies for effective public debt management. The division has as its mission to assist in raising adequate levels of funding for sustainable growth and development whiles pursuing policies and strategies in line with best practice to maintain overall national debt sustainability with highly competent and motivated staff and efficient operational capabilities.

#### **Fiscal Decentralization Unit**

To promote fiscal decentralization, the Ministry of Finance established the Fiscal Decentralization Unit (FDU) within the Budget Department in 2011. The Unit is expected to support the Intergovernmental Fiscal Framework aimed at providing a comprehensive framework for the long-term development of intergovernmental fiscal arrangements, including the assignment of expenditure responsibilities, revenue responsibilities (internally generated funds), intergovernmental transfers, borrowing and institutional arrangements. It also has the primary aim to develop and formulate financing policies and funding arrangements for effective functioning of the Metropolitan, Municipal and Districts Assemblies (MMDAs). To this end, the Unit is tasked to:

- 1. Support and monitor the design and implementation of fiscal decentralization guidelines,
- 2. Facilitate the coordination with political and administrative decentralization components, overall fiscal policy and public financial management reforms,
- 3. Monitor, review, and rationalize the intergovernmental fiscal transfer framework to ensure consistency, coordination and integration with government-wide fiscal policy, public financial management and fiscal decentralization objectives,
- 4. Support improved policy and administration related to MMDA IGF mobilization and MMDA-level borrowing, and
- 5. Support and monitor improved MMDA-level composite budget formulation, implementation, reporting, and auditing

#### Multi-Donor Budget Support Unit

Multi-Donor Budget Support (MDBS) is a joint support mechanism of eleven Development Partners (DPs) and the Government of Ghana (GoG). It is based on the contribution of financial resources by DPs directly to the Government's treasury to complement Ghana's domestically generated revenues. The contribution of MDBS facilitates the implementation of Ghana's development and poverty reduction policies. There are eleven members of the MDBS group, namely: the African Development Bank, Canada, Denmark, the European Union, France, Germany, Japan, the Netherlands, Switzerland, UK and the World Bank.

The Unit organizes annual joint review sessions, a platform for both the DPs and the GoG to take a close look at progress being made by the GoG in meeting the objectives set out in Ghana's medium term development agenda such as the Growth and Poverty Reduction Strategy II, which ended in 2009 and the Ghana Shared Growth and Development Agenda (GSGDA) 2010-2013. The Reviews also offer the opportunity to look at all the development issues facing Ghana including those related to health, energy, education, agriculture, as well as governance and public sector reform. Additionally, the occasion is used to map out development priorities for assessment in the following year. Conclusions reached at the annual review influence DPs disbursement decisions in the following year.

#### **Public Expenditure Monitoring Unit**

The Public Expenditure Monitoring Unit of the Ministry of Finance exists to ensure prudent public financial management through effective and efficient expenditure monitoring and evaluation as well as feed the results into the fiscal planning, policies and decision-making process of the Ministry.

#### **Public Investment Division**

This division is responsible for developing a national public investment policy, ensure efficient allocation of resources for public investments as well as the coordination and implementation of the National Public Private Partnership program. It also has oversight management of state investments in State Own

Enterprise's and Joint Ventures, and the same time provides interdepartmental coordination and strategic direction for projects of immense economic and social significance to Government.

#### **Ghana Revenue Authority**

The Authority has the responsibility to assess and collect taxes, interest and penalties on taxes due to the Republic of Ghana with optimum efficiency. It is to pay the amounts collected into the Consolidated Fund unless otherwise provided by relevant Acts. Other responsibilities of the Authority includes; Promotion of tax compliance and tax education; Combating tax fraud and evasion and co-operate to that effect with other competent law enforcement agencies and revenue agencies in other countries; Advise District Assemblies on the assessment and collection of their revenue; Preparing and publishing reports and statistics related to its revenue collection; offer recommendations to the Minister on revenue collection policy; And perform any other function in relation to revenue as directed by the Minister or assigned to it under any other enactment.

The Authority is headed by a Commissioner-General superintending over three major Divisions - Domestic Tax Revenue, Customs and Support Services with each headed by a Commissioner. Taxpayers are segmented into three identifiable groups based on defined criteria (Large, Medium and Small). Also, tax collection is organized on functional lines rather than tax types.

#### **Controller and Accountant General's Department**

The Controller and Accountant - General's Department is mandated by Financial Administrative Act, 2003 (Act 654) to:

- i. Receive all Public and Trust monies payable into the Consolidated Fund(done through its staff stationed in all government departments including the revenue collecting ones)
- ii. Provide secure custody of Public and Trust monies (with the support of the Ministry of Finance and Bank of Ghana)
- iii. Make disbursements on behalf of the Government(includes the payment of monthly salaries to government employees in active service; pension gratuity and monthly pension payment to those on retirement; and releases of funds to prosecute government projects and development throughout the country)
- iv. Pay all Government Workers' wages, salaries and allowances;
- v. Process and pay all Pension gratuity for the Civil Service;
- vi. Establish, on behalf of government, such accounts with the Bank of Ghana and its agents for the deposit of Public and Trust monies;
- vii. Be solely responsible for the opening of bank accounts for any government department;
- viii. Keep, prepare, render and publish financial statements on the Consolidated Fund of Ghana both monthly and annually (not later than three months after the end of the financial year. The Auditor General is furnished with the necessary financial statements for his scrutiny and onward transmission to parliament and eventual gazetting)
- ix. Approve accounting instructions for Government Departments;
- x. Promote the development of efficient accounting systems in all Government Departments

#### Bank of Ghana

The Bank of Ghana is the Central Bank of Ghana with the sole authority to issue the currency of Ghana. The Bank is mandated to promote and maintain the stability of the currency of Ghana whilst at the same time ensuring that it directs and regulates the currency system in the interest of the economic progress of Ghana. In addition, the Bank is the sole custodian of State funds of Ghana both in and outside Ghana. As one of the key macroeconomic management institutions, the Bank is to encourage and promote economic development as well as the efficient utilization of the resources of Ghana through effective and efficient operation of a banking and credit system in Ghana. It keeps track of all public sector borrowing. The Bank publishes fiscal statistics and information in its Quarterly Statistical Bulletins and Annual Economic Reports.

#### **The Ghana Audit Service**

The Ghana Audit Service, headed by the Auditor-General, is the highest audit institution in Ghana. The service is supervised by a seven member committee which includes the Auditor General and the Head of the Civil Service. The Service is granted operational independence by the constitution of Ghana and is accountable to the Parliament. The Auditor-General is mandated to audit any and all government entities including security agencies. It is obligated to report on its activities and the performance of its functions to Parliament at least once a year.

#### Audit Report Implementation Committees (ARIC)

According to Section 30 of the Audit Service Act, 2000, an institution, body or organization, subject to auditing by the Auditor-General should establish an Audit Report Implementation Committee, comprising members of the Governing Board or Council of that institution, body or organization; or a Ministerial Committee for Ministries, Departments and Agencies of the Central Government, or a Special Committee of the District Assembly. The Audit Report Implementation Committee should ensure that the head of an institution, body or organization, pursues the implementation of matters in all audit reports as well as the Auditor-General's reports endorsed by Public Account Committee of Parliament. The ARIC is to prepare annual statements showing the status of implementation of recommendation made in all audit reports as well as the Auditor-General's reports which have been accepted by Parliament. The statement should also demonstrate remedial actions taken or proposed to be taken to avoid or minimize the recurrence of undesirable features in the accounts and operations of the institution, body or organisation and the time frame for action to be completed.

#### **Public Accounts Committee of Parliament**

The primary function of the Committee according to Order 165(2) is to examine the audited accounts of government showing sums granted by Parliament to meet public expenditure and of such other accounts laid before Parliament.