BUDGETING AND FISCAL ADMINISTRATION IN DEVELOPING ECONOMIES: A COMPARATIVE STUDY OF SELECTED SUB SAHARAN AFRICAN COUNTRIES

BY

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DECEMBER, 2016

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BEING A DISSERTATION PRESENTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF DEGREE OF DOCTOR OF PHILOSOPHY (PhD) IN ACCOUNTANCY

SUPERVISOR: Prof B. C. OSISIOMA

DECEMBER, 2016

DECLARATION

I hereby declare that this dissertation on Budgeting And Fiscal Administration In Developing Economies: A Comparative Study Of Selected Sub Saharan African Countries was written by me and it is a report of my research work. It has not been presented in any previous application for PhD or any other degree. All quotations are indicated and sources of information specifically acknowledged by means of references.

EZINANDO, EMENIKE EDWIN EKENECHUKWU 2008407005P

CERTIFICATION

This dissertation on "Budgeting and Fiscal Administration in Developing Economies: A Comparative Study of Selected Sub Saharan African Countries" meets the regulations governing the award of degree of Doctor of Philosophy (PhD) in Accountancy, of the Nnamdi Azikiwe University, Awka for its contribution to knowledge and literary presentation.

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DEDICATION

To The Glory of My Creator

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It is not by might, nor by power, but by the special Grace of God anchored on determination that this feat is achieved.

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ABSTRACT

This study examines budgeting and fiscal administration in developing countries, with evidence from selected countries in Sub-Saharan Africa. This is predicated on the backdrop that the problem of budgetary allocations/mismatch and variances has remained a recurring decimal across countries in Sub-Saharan Africa, yet only few studies have been conducted to ascertain the cause of such trends, by establishing the extent to which budgeting of countries in the region have been affected by fiscal deficit financing. In order to achieve the objective of this study, research questions and hypotheses were formulated. This study relied on secondary data which were obtained from the statistical bulletin of the African Development Bank and that of the Central Banks of the selected countries for a period of fifteen (15) years spanning from 2000 – 2014. By adopting the expost-facto research design, the data obtained for this study were presented and analysed by means of the correlation and regression techniques. Findings from this study indicated among others that while tax revenue had significant relationship with government budgets among countries in Sub Saharan Africa, government budgets across the region were not found to have significantly affected by non-tax revenue of countries in Sub Saharan African. We also found that prior year expenditure (capital and recurrent) and fiscal deficit financing respectively had significant impact on the budgets of countries in Sub-Sahara Africa. On the basis of the above findings, the study recommends among others that concerted efforts must be made by the governments of the region to reduce the cost of governance and duplication of offices and portfolios that have over the years increased government spending. Also, efforts must be made to discourage external borrowings to reduce the costs associated with such borrowings/debt profile, by looking inwards towards revenue generation from within.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The central issue widely discussed in government accounting and finance, and by governments generally, is having access to the required resources needed to finance government programmes and service delivery. Most importantly, there are concerns on how to mobilize and manage financial resources, how to create systems for efficient, accountable and transparent financial transactions and the match between government revenues and expenditures (Aruwa, 2010). In order to achieve this, government annual budget, which has become one single most important and persuasive instrument for resource allocation, management and control comes in.

According to Mhome (2003), despite the fact that budgeting in African nations has witnessed lots of revolutions within the last few decades, no meaningful developments have been experienced. Accordingly, the Collaborative Africa Budget Reform Initiative – CABRI (2014) asssert that on the average, African countries have weak budget execution system, weak cash management, poor internal controls and irregular accounting practices. These problems have continued to generate serious concerns among scholars, thus raising questions on the strength of budgeting patterns and fiscal administration in the sub region. In line with the above, Ajakaiye & Akinbinu (2000) argue that the problem of budgets and budgeting in Africa could be traced to ineffective budgetary system and poor

regulatory framework which have compounded the budgeting process, thus giving rise to significant budget variances that has become a recurring decimal in Africa.

Given the above, this study is designed to examine the concept of fiscal administration as it affects budgeting in Sub-Saharan Africa.

1.2 Statement of the Problem:

Government budgets have remained crucial to the operation of various economies, and its relationship with economic growth has continued to generate series of debates among scholars. Taiwo & Abayomi (2011) opine that the size and structure of public expenditure for instance is a determinant of the pattern and form of growth in output of an economy; yet, the effect of such spending on economic growth remains an unresolved issue theoretically and empirically. In the view of Aigheyisi (2013), the effectiveness of government actual expenditure (which is presumed to be a function of budgeted expenditure) in expanding the economy and fostering rapid economic growth depends on whether such expenditure is productive or unproductive.

Notwitstanding however, Obinyeluaku (2013) reiterated that in all the regions of sub Saharan Africa (East Africa, Mid Africa, Southern Africa and West Africa), public expenditure consistently exceeded revenue almost throughout the period 1980-2012. Government revenue is also believed to have fallen from an average of 22 percent of GDP which was recorded during the 1980s while at the same time, public spending is believed to have grown at an unprecedented pace to reach over 28 percent of GDP on the average (Nurudeen & Usman, 2010; Obinyeluaku, 2013; Aigheyisi, 2013; and Chude & Chude, 2013).

While there are notable studies on the relationship between government budget and economic growth, it is pertinent to note that only few studies have been conducted to analyse how governments at all levels and jurisdictions generate the needed resources to finance their budgets by seriously considering the match between budgeted and actual revenues and expenditures.

1.3 Objectives of the Study

The general objective of this study is to assess the relationship between budgeting and fiscal administration among selected Sub Saharan countries in Africa. The specific objectives of the study are:

- 1. To determine the relationship between tax revenue and government budgets of countries in Sub Saharan Africa.
- 2. To ascertain the extent to which non-tax revenue affects government budgets of countries in Sub Saharan Africa.
- 3. To assess the extent to which prior year capital expenditure affects the budgets of countries in Sub Saharan Africa.
- 4. To evaluate the relationship between recurrent expenditure and government budgets of countries in Sub Saharan Africa.

- 5. To determine the extent to which budgeting of countries in Sub Saharan Africa is affected by fiscal deficit financing.
- To establish whether there is a significant relationship between budgeting/budgeting patterns and fiscal administration among countries in Sub Saharan Africa.

1.4 Research Questions

In view of the above research objectives, the following research questions are posed:

- 1. What is the relationship between tax revenue and government budgets of countries in Sub Saharan Africa?
- To what extent does non-tax revenue affect government budgets of countries in Sub Saharan Africa?
- 3. How significant is the effect of prior year capital expenditure on budgets of countries in Sub Saharan Africa?
- 4. What is the relationship between recurrent expenditure and government budgets of countries in Sub Saharan Africa?
- 5. To what extent does fiscal deficit financing affect budgeting of countries in Sub Saharan Africa?
- 6. How significant is the relationship between budgeting/budgeting patterns and fiscal administration among countries in Sub Saharan Africa?

1.5 Statement of the Research Hypotheses

In order to achieve the objectives of this study and to find answers to the research questions stated above, research hypotheses were formulated and stated in their null forms as follows:

- H₀₁: Tax revenue does not have significant relationship with government budgets of countries in Sub Saharan Africa.
- H₀₂: Government budgets are not significantly affected by non-tax revenue of countries in Sub Saharan Africa.
- H₀₃: Prior year capital expenditure does not have significant effect on the budgets of countries in Sub Saharan Africa.
- H₀₄: There is no significant relationship between recurrent expenditure and government budgets of countries in Sub Saharan Africa.
- H₀₅: Fiscal deficit financing does not have any significant effect on budgeting in Sub Saharan Africa.
- H₀₆: There is no significant relationship between budgeting/budgeting patterns and fiscal administration among countries in Sub Saharan Africa.

1.6 Significance of the Study:

The outcome of the study will be useful to regional and national governments by providing informed basis for peer review and hence policy improvement. To development partners and donor agencies, it is the view of the researcher that they will be better informed of strengths and weaknesses in the financial operations of countries in Sub Sahara Africa with a view to improving channels of aids and or attention. Individuals and businesses will be better equipped to take advantage of policy direction for their respective business plans. To the academia, it is expected that the study will provoke thought and interest, thus opening areas for future research. The citizenry are not left out as they will be in a better position to objectively assess the performance of their respective governments.

1.7 Scope of the Study:

The study was carried out on Sub Saharan African countries using a sample of twelve countries (Kenya, Ethiopia, Tanzania, Angola, D.R. Congo, Cameroon, South Africa, Botswana, Namibia, Nigeria, Ghana and Cote d'Ivoire). These countries were selected from each of the four regions of Sub-Sahara Africa using the amount/size of their GDP at US current price as specified by Worldbank (2014). On the basis of this parameter, the researcher therefore selected the three (3) largest economies in each of the four constituent regions of the fifty (50) countries in Sub-Saharan Africa (Library of Congress, 2010). These countries are believed to be typical developing and leading economies in the continent given their sizes by GDP classification (Worldbank, 2014). The study covers a fifteen year period, 2000 - 2014.

1.8 Limitations of the Study

Expectedly, a study of this nature contends with data limitation as empirical research requires accurate and comprehensive data. It has however been asserted that finding complete data series for countries like South Africa is very difficult (Sunkide, 2012). This is the case with the entire continent of Africa (Oguyiaba, Steigler & Onoju, 2012).

The researcher however states categorically that the above limitations did not significantly affect the research procedure adopted, nor the findings and conclusions of the study.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Conceptual Review

2.1.1 Overview of Government Budgeting

A budget is a prominent financial document both in the public and private sectors. The word budget according to Edame & Ejue (2013) was derived from a French word "Bourgettee" which meant leather bag or wallet. Today, the meaning of the term has gone beyond just a wallet that contained papers on the financial plans for any country or organization, but has become a principal instrument of fiscal policy that exercises control over size and relationship of government receipts (revenue) and expenditures (Edame, 2010; and Edame & Ejue, 2013).

According to Omolehinwa (2003), budgets are statements of expenditure preferences expressed in monetary terms and subject to the constraints imposed by the environment, indicating how the available resources may be utilised to achieve whatever the dominant individuals within the political leadership agree to be the government's priorities. In line with this, Osiyemi (2005) sees budgets as monetized expressions of targets to be accomplished in a given year by an individual, organization or nation. It is a deliberate attempt to achieve superior targets over time with available and expected resources that reflects government priorities and citizens' preferences (Rubin, 2006).

Besides, Agbakoba & Ogbonna (2004), also defines budget as the translation in financial terms, government policies and fiscal estimations of what government plans to do, and

how they intend to source the funds required to accomplish such tasks. In another vein, Meig & Meig (2004) defined budgets as comprehensive financial plans, setting forth the expected route for achieving the financial and operational goals of an organization. It is a framework for revenue and expenditure out lays over a specified period usually one year (Olurankise, 2012).

In the views of Brooks (1992), government budgets provide the legal authority for taxing citizens and spending public funds. Broadly speaking, the purposes and features of public sector budget may be viewed from three perspectives - a tool of accountability, a tool of management and a tool of economic policy (Anyafo, 1996). Budgets operate to determine growth and investment goals, as well as being concerned with macro – economic balance in the economy based on policy choices (fiscal and monetary policies).

In addition to the above, budgets can also be described as documents that contain the estimates of expected revenue and expenditure of any given country for a specified fixed period of time, usually one year. It is what Malgwi & Unegbu (2012) described as a plan for the future (anticipated revenues and anticipated expenditures) usually expressed in formal and quantitative terms. In this regards, anticipated revenues of government includes, but not limited to consolidated revenues, recurrent revenues, incomes from rented government properties, grants, fines and licenses, federal allocations amongst others. On the other hand, anticipated expenditures comprise recurrent expenditures, administration and maintenance costs, personnel costs, and capital expenditures. In the views of Omolehinwa (2003; 2005; and 2012), budget is the principal means of securing

accountability and control over the use of public funds. Omolehinwa (2012) further stressed the importance of budgets for the purpose of accountability pointing out the extent to which budgets could be used as standards for judging the annual accounts of countries and jurisdictions.

Government budgets set forth a plan for allocating resources between the public and private sectors and within the public sector, to meet national objectives. Thus, government budget represents the chosen mix of public and private sector use of national resources. Expenditure decisions are therefore made through a political process that is governed by a set of laws designed to provide open deliberations about options to ensure accountability and prevent corruption, thereby providing a mechanism for fiscal control (Mikesell, 2014)

Prior studies (Edame & Ejue, 2013) revealed that public budgeting systems are systems for making choices of ends and means that are guided by theory, selfishness, partisan politics, and individual value judgments. The argument here is that governments at various levels and in different countries are not spending their own money; rather, they are spending constituents' money, tax payers' money, as well as aids and grants available at their disposal. Most importantly is the fact that the governments in place at a given point in time for any country, state or local council are entrusted with the management of the assets and liabilities that may have been built up over decades, and which will have various impacts on the welfare of the citizenry and for decades to come. Just like every investor, tax payers have the right to all the necessary information that will enable them judge the level of accountability of any government in place in the area of proper use of public resources. Achieving accountability in this regards has a lot to do with the appropriate basis of accounting for the budget in place at that particular point in time. This is why Omolehinwa (2005), Wynne (2007), Edame (2010) and Edame & Ejue (2013) assert that regardless of the form it takes, through budgets, governments can engage constituents in the polity's process, and engender confidence by a clear – cut representation of the interests of the people that it governs. Budgets are therefore seen as tools that can be effectively used to boost economic growth among nations (Devarajan, Swaroop & Zou, 1996; Raux 1994; Okojie 1995; and Morrison & Schwartz 1996).

Evidence from empirical works suggests positive correlation between expenditure on infrastructure investment cum productive activities (capital expenditure) and economic growth (Josaphat & Oliver 2000; Abdullah, 2000; Al-Yousif, 2000; Niloy, Emranul & Osborn, 2003; Gregerious & Ghosh 2007; Olorunfemi & Dotun 2008; Ranjan & Sharma, 2008; and Corray, 2009). Others have however been cautious, warning that growth in government spending mainly based on non-productive items (recurrent) draws higher negative impact on the overall economy (Laudau, 1986; Barro, 1991; Engen & Skinner 1992, Glomm & Ravikumar, 1997; Folster & Henrekson, 2001; Mitchell, 2005; Sudha 2007 and Nurudeen & Usman, 2010).

While there are notable studies on the relationship between government budget and economic growth (Barro, 1991; Ekpo, 1994; Ekpo, 1995; Nurudeen & Usman, 2010;

Keho, 2010; Taiwo & Abayomi, 2011; Oyinlola & Akinibosun, 2013; Oke, 2013; Maku, 2014; Olulu, Eravwoke & Ukavwe 2014; and Ehiedu & Odita, 2014), it is pertinent to note that the crux of the growing debates in public sector accounting and finance centers on the efforts of governments at all levels towards having access to the needed resources to finance their programmes and service delivery. This has informed the major concern of stakeholders which according to Aruwa & Abu (2006) and Aruwa (2010) dwell on how governments across jurisdictions are able to mobilize and manage financial resources and create systems for efficient, accountable and transparent financial transactions by seriously considering the match between budgeted and actual revenues and expenditures. A major argument in this direction is that the past three decades have witnessed a persistent increase in budget deficits among countries in sub Saharan Africa (Okoye, 2000; Gollwitzer, 2010; Obinyeluaku, 2013; Osisioma, 2013; and Tchouassi & Ngwen 2015), occasioned by what Aruwa & Abu (2006) described as faulty budgeting process and weak public financial management in the area of revenue and expenditure forecasting.

With the aforementioned, it is expected that with a reliable budget and efficient fiscal administration in place, any given government should be able to match the expectations/interests of the citizenry with available resources to achieve a win – win scenario. This to an extent may guarantee and improve constituents' confidence in those that govern them. On a sad note though, this situation seem to be different in African countries as the findings from prior studies reveal that poor budget management by

governments tend to be predominant in most economies as government decision making in general lacks the required standards for measuring activities (Iweala, 2011; and Edame & Ejue 2013)

According to Lee, Johnson & Joyce (2008), there is a large difference between the inclination of governments internationally to act to enhance private sector performance and the relative lack of urgency devoted to improving their own budgeting system and financial management. Resulting from this argument therefore, the attempt to improve the state of financial management in governments gave rise to the clamor for accrual budgeting over the traditional cash budgeting that was common in the public sector. This concept of accrual budgeting in the public sector according to McPhee (2006), have come a long way. It is what Edame & Ejue (2013) described as an important element in the suite of public sector reforms directed at improving the efficiency and responsiveness of government services, and enhancing accountability for the use of public resources.

In his argument, McPhee (2006) further opined that some of the concepts applied in the traditional budgeting process needed certain additional considerations, and in some cases, modifications for onward application in the public sector environment. Although this tend to be a very important innovation (not without its wrinkles), it is indeed a major achievement in linking the idea of transparency and accountability to government budgetary systems. Studies have shown that most governments that have implemented accrual accounting have not uniformly applied the accrual basis to the fullest (Athukorala & Reld, 2003). Resulting from this, we find out that there are situations where budgets

were prepared on a modified accrual accounting basis, whereas appropriations were prepared on the cash basis, while reports on their part were made on the accrual basis.

2.1.2 Budgeting and Budgetary Innovations:

On the global scene, governments at various levels are encumbered with the task of making available, certain basic infrastructures needed by the citizenry. Notable of such infrastructures are portable water, good roads, railway lines, ports (air and sea), bridges, schools, hospitals, amongst others. According to Miller & Oats (2009), and Abiola & Asiweh (2012), the monopolistic nature of most private concerns, and the need to stabilize the economy through income redistribution, has prompted governments at all levels to take practical steps in providing certain public goods needed by the individuals in the economy.

Since the provision of public goods cannot be left to the market forces of demand and supply as well as other instruments of stabilization such as monetary and exchange rate policies among others (Ndiyo & Udah 2003; Miller & Oats, 2009; Abiola & Asiweh, 2012, and Audu, 2012), the need to find a more realistic way of meeting the aspirations of the citizenry and curing the problems of the society cannot be overemphasized. Thus, at various times and jurisdictions, governments had either increased or decreased taxes or government expenditures which constitute the bedrock of fiscal policy. In reality however, it is argued that government policy requires a mixture of both fiscal and monetary policy instruments in order to stabilize any given economy because no single policy instrument can best be applied to cure the numerous problems in the economy

(Ndiyo & Udah, 2003). This is where the concept of budgeting and fiscal administration comes in; thus, forming a mixture of policy measures required for the stabilization of economies especially in Sub Saharan Africa, and the world over.

Budgets at both management and operating levels, looks at the future and lays down what has to be achieved. It has grown beyond a mere financial tool, to the best management tool that gives a reasonable opinion on whether key resources, especially performance resources are assigned to priorities and to result oriented activities. It follows that budgets should not only assign authority and responsibility, but must have realistic goals, while adequate information must also be made available at each stage of implementation.

It is in view of the aforementioned that Tella (2012) asserts that governments use budgets as instruments of economic policy to make predictions of both revenue and expenditure for the coming year. According to Khan & Hildreth (2002) at the initial phase of development, the act of budgeting was basically directed at the preparation and presentation of credible information that would form the basis of accountability, adequate performance evaluation and consequently, effective rewards systems.

However, over the years, the functions and focus of budgeting as noted by Adongo & Jagongo (2013) has shifted considerably as national economies and businesses became more complex and dynamic in nature. In this vein, Bartle (2008) is of the view that budgets have in recent times provided a focus for various countries as they facilitate the coordination and control of governments' programmes and activities.

It is noteworthy that several developing countries in Africa have at various times employed detailed planning exercises of various forms especially after independence and this has resulted to a wide range of literature on planning, budgeting and fiscal administration (Adongo & Jagongo, 2013).

Before now, attention on budgetary controls was in lip service because budgetary controls were generally believed to be instruments for resource allocation to specific recurrent and development activities. In recent years, however, budget systems have received more attention and the literature on public expenditure management has become more common and robust. (Adongo & Jagongo, 2013). This is why budgets are increasingly recognized as the key tool for economic management (Kiringai, 2002). It is nevertheless also recognized that a country can have a sound budget and financial system and still fail to achieve its intended targets. This suggests that the rules of the game by which the budget is formulated and implemented are equally important and that they do influence outcomes (Schick, 2007). It is the recognition of this assertion that gave rise to series of budget reform systems that have broader focus on public expenditure management.

2.1.3 Budgeting Techniques and Reforms

(a) Budgeting Techniques

Budgeting techniques according to Ehiedu & Odita (2014) refers to all management processes designed to provide the framework for the acquisition, allocation and

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utilization of resources by presenting decision rules and other operational criteria, which govern the entire allocative procedures in the budgeting process. These techniques could either be in the form of incremental budgeting, zero-based budgeting or planning programming budgeting system. Ehiedu & Odita (2014) views incremental budgeting as a model in which cost level is frequently determined by what was spent previously plus a certain percentage based on level of inflation in the economy. Drawing from Chartered Institute for Public Finance and Accounting (CIPFA), Ehiedu & Odita (2014) argue that the use of this model requires a relatively stable form of representative government.

In the views of Malgwi & Unegbu (2012), previous budgets help governments to track the level of success or failure achieved over the years. Thus in order to keep track of activities that need to be included in the Budget document, many government organizations prepare their budgets based on incremental rather than other types of budgeting. It is observed by Langfield, Thorne & Hilton (2006) that the use of the revised current year estimates of income and expenditure as a starting point for determining the budget for next year is frequently claimed to be one of the most fundamental weakness of the budgetary process. It is argued that such an approach failed to consider whether a particular item was still required or whether the amount currently incurred was reasonable. Once an item appeared in the budget at inception, its inclusion in future budgets was taken for granted and only incremental changes in the item were considered. In this type of situation, attention was therefore focused on the marginal or incremental difference between current year's budget and previous year's budget rather than the budget on the whole, and it is this that gives rise to the term incremental budgeting.

In Nigeria for instance, to overcome the lapses of incremental budgeting, the clean slate type of budgeting which is otherwise known as the zero based budgeting is currently encouraged. Under this method, all unspent amounts are expected to be returned to the government treasury at the end of every year. This situation has however led to situations where Ministries, Departments and Agencies of Government that find it difficult to return such money resort to looking for avenues and activities that would enable them spend such monies in a bid to spend their entire budget allocation in a given fiscal year (Malgwi & Unegbu, 2012).

This act as noted by Malgwi & Unegbu (2012) has prompted a new terminology referred to in the literature as 'Budget Engineering' which is commonly found in countries, ministries, parastatals and organizations that practice either the incremental or zero based budgeting system. It is believed that with a balanced scorecard budget, the problem of budget engineering to a large extent could be obviated. In view of this notion, Secrett (1993), maintained that for budgets to be translated into concrete development and growth, there must be a real forecast of goals or targets at all the tiers of governments. This is because the essence of reliance on budgets by various governments and their agencies is because budgets serve as a veritable map of the various activities of government at all levels and jurisdiction.

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Malgwi & Unegbu (2012) further opined that in order to draw governmental map of activities, budget may be formed from what they described as 'Balanced' or 'Unbalanced' locus. Quoting SAP (2010), Malgwi & Unegbu (2012) described a balanced budget as a situation where estimated revenue of the Government during a fiscal year tend equal to its anticipated expenditure. On the other hand, they described unbalanced budget as that in which income and expenditure are not equal in a given fiscal year, thus resulting to either a surplus or deficit budget.

(b) Budget Reforms

Veiga, Kurian & Ardakanian (2015) maintained that the global trend in budgeting is to supplement traditional budgets with performance budgets. These according to them move the attention of governments away from the control of expenses and revenues towards responsibility for service outcomes or results. In performance budgets, expenditures are associated with outputs or outcomes. One good example of performance budget is the program budget which is designed in such a way that resources and results are associated with specific programs. While subnational governments may lack technical skills in statistical monitoring and may be unable to produce a sophisticated evaluation of results (Kopits, 2001; Hagemann, 2011 and Veiga, Kurian & Ardakanian, 2015), it is expected that at all times, efforts must be put in place to make up for such deficiencies with their greater proximity to the citizenry being served.

In view of the above issues that are associated with unbalanced budgets which is predominant among nations, governments across Sub Saharan African countries have made efforts over the years to see how the problems associated with unbalanced budgets could be managed with efficiency. One effort in this direction is the development of budget reforms. It is pertinent to note that budget reforms have been attempted in several Sub Saharan African countries far back as the early 1970s but the results have not been encouraging (Adongo & Jagongo, 2013). In recent years, a key recommendation has been to shift the focus from the traditional annual budget to a Medium-Term Expenditure Framework (MTEF) approach to budgeting. This according to Veiga, Kurian & Ardakanian (2015), is an important change in budgeting and public financial management in recent time.

According to World Bank (2013), by the end of 2008, more than 75 % of all countries had adopted a MTEF. Most public programs require resources and generate benefits over several years. Under these circumstances, single-year budgets may not provide adequate information. MTEFs ensure a multiyear commitment of resources to policies and are, therefore, important for expenditure prioritization and for fostering government performance over the medium term (Veiga, Kurian & Ardakanian, 2015). Accordingly, World Bank (2013) provides strong empirical evidence, based on case studies and econometric analysis, that MTEFs enhance fiscal discipline and allocative efficiency. In line with this, Kiringai (2002) opined that the goals of adopting the MTEF approach was to achieve fiscal discipline - expenditure by line agencies must adhere to hard budget ceilings in order to remain within aggregate resource constraints. The focus of the MTEF was on two core issues: **Allocative efficiency** whose emphasis is on the fact that

expenditure allocation should address national development priorities; and **Operational** (**technical**) **efficiency** which reiterates that public expenditure should achieve explicit outputs at minimum cost by applying performance targets of output relative to inputs.

The MTEF Argument:

In order to fast track the much needed economic development in Nigeria (and indeed economies of Sub Saharan Africa), it has been argued that there is a need for a conscious transformation of the budgeting procedures (Obademi & Sokefun, 2009). They asserted that MTEF has been experimented in other developing economies with commendable results. MTEF approach proposed by the World Bank followed Public Expenditure Review in many countries and its popularity dates back to late 1990s. The thrust of MTEF is that it helps provide the linking framework that allows expenditure to be driven by policy priorities and disciplined by budget realities (World Bank, 1998). It has since become a major issue in Public Expenditure Management Reforms.

The general consensus among scholars is that a good budget and budget process is germane to any attempt by a country that desires to achieve socio-economic transformation and sustainable development. Kwabena (1998) opines that MTEF is a tool for determining the available resources and the allocation of these resources in tandem with government priorities and macroeconomic policies. The approach is based on the premise that financial resources are limited and are unlikely to increase significantly in real terms for the medium term. There is therefore the need to focus on "value for money" in the allocation of public resources. Hence, Obademi & Sokefun (2009) warned

that budgeting must be done with a sense of seriousness; hence the need for an innovative approach to always make the process efficient and result oriented. Consequently, to support the general macroeconomic model with MTEF, sectors normally engage in bottom-up review with emphasis on sector policies and activities. MTEF thus seeks to address the previous policy making, planning and budgeting disconnect.

2.1.4 The Budgeting Process

Every budget undergoes some processes before it becomes both an economic tool and a legal document. Ugoh & Ukpere (2009) opine that the roots of budget system are linked to the emergence of parliamentary control over the Crown in Britain. In a study on the politics of the budget in Malawi, Rakner, Mukubvu, Naomi, Kimberly & Aaron (2004) argue that the budget process is a "theatre" that masks the real distribution of public spending. It is an arena of political confrontation between competing interests. The budget process is a complex system that involves different actors at different stages lumped in an interlocked sub-system. According to the Department For International Development (DFID) (2007), budget sub-systems include planning, programming, treasury, cash management, public procurement, central oversight, internal control, government accounting, external auditing and legislative oversight.

According to Premchand (1983), government budget in the early stages of its evolution was concerned with serving the purpose of legislative accountability but has since expanded to an important tool in governance and most relevant to the economic policy; second only to the constitution of any nation. Ugoh & Ukpere (2009), pointed that the
fundamental principles that accompany the budgeting process include comprehensiveness, clarity, regularity, publicity, exclusiveness, accuracy and adequacy. To Osiyemi (2005), the budget process is a cycle of a complete set of events occurring in the same sequence every year.

No doubt, the process of budgeting varies considerably across nations in Sub Saharan Africa and depends basically on each country's legal framework and organizational structure of the incumbent government (Guess & Leloup, 2010). According to Veiga, Kurian & Ardakanian (2015), the budgeting process involves interaction among numerous participants, from citizens to firms, and includes officials from various levels of government. In view of this, Oshisami (1992) noted that in most governments where separation of power exists, four phases of a budget are discernible; namely:–

- Executive preparation and submission,

- Legislative consideration and enactment,

- Implementation/execution, and monitoring, and

- Audit review and reporting

In consonance with the views of Oshisami (1992), Veiga, Kurian & Ardakanian (2015) noted that though budgets are usually set for one fiscal year, the budgeting process usually extends for a considerably longer period of time and is best understood as a cycle with overlapping phases, as shown in Fig. 2.1 below:

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Figure 2.1: The Budgeting Cycle



Source: Veiga, Kurian & Ardakanian (2015)

Tella (2012) agrees with the four phases of a budget process, but simply identified them as drafting, legislating, implementing and auditing. In each phase of the budget process, both the executive and the legislature have roles to play (Izedonmi, 1997; and Rapu, 2003). According to National Democratic Institute for International Affairs (2003), the development of a nation's budget is usually the government's single most important activity in any given year.

In view of the aforementioned, four key phases of the budgeting process have been identified and discussed in line with the views of Veiga, Kurian & Ardakanian (2015) as follows:

(i) Formulation and submission: The common practice among nations is that the responsibility for budget formulation and submission rests in the hands of the executive arm of government who prepares and submits same to the legislative arm for approval. This stage involves the flow of information on spending requests and estimates of the

available resources in addition to decisions on how the scarce resources should be allocated in a bid to attaining the overall goals and objectives of government.

(ii) **Debate and adoption:** On receipt of the budget proposals submitted by the executive arm, the legislative arm of government analyzes, debates, and proposes changes where applicable to the budget proposal. At this stage, the budget proposal is expected to be made public. After deliberations and approval by the legislative arm, the amended budget is officially adopted by the legislature and is put into effect.

(iii) Execution: After the legislative approval, the executive arm takes the responsibility of implementing the budget by operationalising plans, collecting revenues and spending money. In most cases, different control mechanisms are adopted during the implementation stage. Such mechanism includes but not limited to cash management, audit-systems, appropriation and allotment rules, and transfers of authority. Note also that accounting and reporting procedures are often implemented to ensure that revenues and expenditures are continuously monitored to avoid or reduce variance.

(iv) Reporting, auditing and evaluating: For the purpose of accountability, frequent evaluation and reporting measures are critical in the budget process. Although most citizens lack the time or knowledge to read governments' financial reports, government officials are often exposed to debates during electoral periods. Thus before, during and after the budget execution, several types of audits are expected to be conducted to verify the accuracy of expenditure and revenue records, and to determine if actual financial results were in consonance with the legally approved and adopted budget.

Bearing the foregoing in mind, it is pertinent to mention that the increase of governments' deficits and debts during the recent global crisis, has led to the creation of independent fiscal institutions in a growing number of countries (Hagemann, 2011; Kopits, 2001 and Hemming & Joyce, 2013). Common functions of these councils as noted by Veiga, Kurian & Ardakanian (2015) include the analysis of fiscal policy and budget proposals, the production or endorsement of macroeconomic forecasts, monitoring compliance with fiscal rules, and analysis of long-term fiscal sustainability. Essentially, these entities were created to increase fiscal policy transparency and soundness. Based on our discussion so far, we present in Fig.2.2 below, the key actors in the budget process.

Figure 2.2. Actors in the budget arena



Source: Santiso 2006.

2.1.5 Legislative Role in the Budget Process

For practical reasons, it is widely acknowledged by budgeting experts and researchers that the initial preparation of budget for any fiscal year is best left to the government (Shulian & Jun, 2011). Only a few countries have legislatures with the capacity to put a budget from the scratch on their own, the authors assert. Practical legislative involvement starts at the review and adoption stage. The legislature exercises its power by reviewing executive proposal, organizing public hearing, gathering more information, revising the estimates and passing the bill into law. The ability to revise the budget lies at the heart of legislative oversight and decision making power such that once the bill is passed into law,

it becomes legally binding on the government who cannot make any change(s) without legislative approval (Shulian & Jun, 2011).

Since changes or adjustments to budgets are inevitable due to deviations of actual over the course of implementation, executive periodic reports form bases for possible legislative changes. According to Santiso (2015), the parliaments and audit agencies have critical and complementary roles in the oversight of the budget and the enforcement of government accountability, yet, the nexus between parliaments and audit agencies is one of the weakest links in the accountability chain, generating an accountability gap in the budget process. Resulting from this argument, there seem to be a critical synergy between the oversight of the budget performed by audit agencies and the accountability functions of the parliaments, not withstanding the absence of needed effectiveness of the linkages. Johnson et al (2012) opine that even the most detailed and robust audit reports are unlikely to have much effect without effective budgetary oversight and scrutiny by parliament, and ability to hold ministries to account.

To show its accountability to the public and the legislature, once the fiscal year ends, it is expected that government should not only report the final revenue and spending figures, but also relate them to the adopted budget, providing explanation for any major discrepancies. The legal authority for the public budget imposes firm constraint on government financial discretion so that the outcome reflects the collective wish of the majority of tax payers. This can only be achieved through desired budget interaction which is presented in Fig.2.3 below:

Figure 2.3: Budget Interactions.



Source: Rakner et al. 2004

2.1.6 Requirements of Legislative Involvement

One of the most fundamental principles of public finance is the separation of the ownership of, decision making on, and management of public funds (Shulian & Jun, 2011). Taxpayers collectively own public funds. Decision making on the funds usage

reside with the legislative body, while management of the funds is carried out by the government.

Despite the theoretical underpinning of the importance of the legislative role in the public budgeting process, the legislature has not been playing as active a role as expected until more recently (Schick, 2002; Posner & Park, 2007). One important reason adduced for this is the growth in the size of the state and of the complexity of its structures, financing mechanisms and expenditure agenda, which makes it increasingly difficult for the legislature to get a full picture of the government and to assess individual proposals for both spending and revenue. Stapenhurst (2004) also discussed five reasons why the legislature is not active in some countries, two of which are the absence of legislative budget research capacity and a specialized budget committee.

Therefore, prerequisites for the safeguard of the interest are that the legislative body – considered in this case to be the guardian of the taxpayers' purse – has the final decision-making authority in a budget before it can be executed by the government, and that a budget so approved by the legislature is legally binding on the government (Shulian & Jun, 2011).

Consequently, the budget is a legal contract between the government and the legislature about what the government should do in the new fiscal year (Wildavsky & Caiden, 2004), and it is a powerful tool of accountability for citizens to know how the government spends their money (Rubin, 2006; Lee, Johnson & Joyce, 2008). According to NDI (2003), a variety of means are available to legislatures to influence financial operations of the government; including enacting the Appropriation Act, helping to set tax (and other revenue) policy, and engaging in oversight of the executive's use of the appropriated funds. A number of factors however affect the effectiveness of these roles. Shulian & Jun (2011) identified three improvement factors of legislative role in public budgeting process to include legal authority, organizational (committee) structure and technical capacity.

2.1.7 Power and Responsibility Sharing

In general, legislatures have played three basic roles in the budget process: budget making, budget influencing and budget approving (NDI, 2003). Besides its accepted working definition, the budget is also a high profile political document that creates a blue-print for allocating available resources among competing demands. As such, it is perhaps the most effective barometer for gauging the executive and legislature's relative priorities and the single most powerful tool for accomplishing public goals. It is no wonder that executives so frequently exercise a strong hand in the budget process and that legislatures seek to play active roles as depicted in Table 2.1 below:

ROLE	CHARACTERISTICS	EXAMPLES
Budget	Capacity to amend or reject the executive's	United States
Making	budget proposal and capacity to formulate a	
	budget of its own	
Budget	Capacity to amend or reject the executive's	Germany, Philipines,
Influencing	budget proposal, but lacks capacity to formulate	Poland, India,
	and substitute budget of its own	Hungary.
Budget	Lacks capacity to amend or reject the executive's	South Africa, Isreal,
Approving	budget proposal or to formulate a budget of its	Namibia, United
	own. Confines itself to assenting to the budget	Kingdom, Canada.
	that is placed before it.	

 Table 2.1:
 Legislative Budget Roles

Source: Adopted from Krafchik & Wehner (1998a) and Krafchik & Wehner (1998b)

In developed presidential and parliamentary systems, the executive and legislative branches have traditionally struggled to find an equitable balance of power over financial matters. Legislatures in presidential systems have more potential influence over the budget and funding allocations than in parliaments (NDI, 2003). This is attributed to checks and balances built into the presidential system which supports legislature active role. A study by the Organization for Economic Cooperation and Development (OECD) identified emerging trend in legislative role to include:

- Increased coordination between government and the legislature on "aggregate fiscal policy statements".
- Increased "role of committees" towards expertise in budget analysis.
- Improved "reporting to the legislature".
- Greater "resources for the legislature" towards professionalism and independence. (NDI, 2003).

A legislature's budget role is usually based on the constitution. In democracies with no written constitution, like United Kingdom, traditions and precedence dictate parliament's prerogatives in the budget sphere. For some constitutions, the role is restricted, for others, not developed, and yet, some changing. These, more often than not, are influenced by notable barriers such as executive dominance, legislative hesitancy as well as external forces. According to NDI (2003), James Madison, an American legislator who later became president highlighted that:

This power over the purse, may in fact be regarded as the most complete and effectual weapon with which any constitution can arm the immediate representatives of the people for obtaining the redress of every grievance, and for carrying into effect every just and salutary measure.

The role of legislative oversight is to ensure that public funds are expended as outlined in the budget and if not, to effectuate corrective actions by:

- Identifying fiscal irregularities
- Public exposure
- Legal action
- Legislative action, and
- Vote of no confidence

Diamond (1999) concludes that legislatures particularly in developing economies may be hindered from influencing budget policy because they lack the organization, financial resources, equipment, experienced members and staff to serve as an autonomous point of deliberation in the policy process.

2.1.8 Fiscal Administration

Government as an institution, no doubt is saddled with a myriad of functions. The way and manner in which these functions are carried out however vary from one country to another. Prior to the Great Depression of the 1930s, there was the general belief that the market system was sacrosanct. At the nucleus of this belief was the famous law of the market, "Supply creates its own Demand". Consequently, the market system was adjudged capable of allocating societal resources equitably to all manner of citizens (Medee & Nenbee, 2011). The implication is that people were made to fold their hands and allow the forces of demand and supply to dictate their economic fortune. The resulting complications under this era gave impetus for the increasing call for a functioning fiscal administration.

Fiscal administration is a complex concept with varying connotations. It is the act of managing incoming and outgoing monetary transactions and budgets for governments, educational institutions, non-profit organizations, and other public service entities. It is clearly a concept that recognizes the divides of intent between private sector (profit oriented) and public service (non-profit) entities. It is believed to be a measure that shows the reality of government and public organization in their provision of public goods or services for the citizenry. It is an independent subject from accounting, economic, political, and legal science, which is interdisciplinary and strives for any distinct goal of studies.

Fiscal administration is expected to provide a structure for restraining expenditures to the revenue available and ensuring that expenditure and revenue plans are executed as adopted by preserving the legality of agency expenditures. It establishes a clear trail of agency responsibility for resources intended for use in the provision of public services by accommodating systems of governance in which government finances serve the interests of the citizenry (Mikesell, 2007)

Fiscal administration provides fiscal discipline and responsibility, by ensuring responsible resource allocation and fostering efficient and effective government

operations (Campos & Pradhan, 1996). The system is expected to function with transparency of policy decisions, programmes, results, and finances, both within the government and the economy at large. Transparency is a critical element of greater involvement. Otenyo & Lind (2004) identified five phases of transparency reforms in government. These are (a) transparency as representative of government (government legitimacy). (b) transparency as a means of judging the distribution of policy benefits (service delivery). (c) transparency as a response to maladministration (eradicating corruption). (d) transparency to enhance accountability (information and decision making disclosures). and (e) transparency as open government (technology, electronic democracy, and governance). For transparency to be effective, fiscal decisions on taxing, spending and borrowing need to be made in an open process, not in a closed hearing rooms or so quickly that there is no opportunity for public scrutiny (Mikesell, 2007)

Fiscal administration in government, especially federal, creates many opportunities for error. By their very nature, governmental organizations are large and complex; requiring numerous divisions, departments, committees and other bodies. While revenue streams follow only a few paths through these many departments, disbursements and expenses come from all areas.

2.1.9 The Concept of Fiscal Policy

Fiscal and Monetary policies remain the two basic tools used by the State to achieve its macroeconomic objectives. These goals are multifarious and may be one or a

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combination of increase in per capita income, low employment rate, low unemployment rate, positive balance of payment or price cum wage stability. Frequently, fiscal policies are used in tandem with monetary policies to achieve defined goals (Encyclopedia Britanica, 2014).

Fiscal Policy is defined as the aspect of government policy relating to the raising of revenue through taxation and other means, and choosing the level and pattern of expenditure for the purpose of manipulating economic activities or achieving some needed macro-economic goals (Anyanwu & Ohahenam, 1995). Medee & Nenbee (2011) included the ultimate objective of such policies. They therefore view fiscal policy as the management of the economy through the manipulation of government's income and spending power to achieve certain desired macroeconomic objectives (goals) amongst which is economic growth. It consists of measures employed by governments to stabilize the economy, specifically by manipulating the levels and allocations of taxes and government expenditures (Encyclopedia Britanica, 2014 ed).

While agreeing that fiscal policy is a purposeful use of government revenue mainly taxes and expenditure to manipulate the level of economic activities in a country, Akpapam (1994) adds that it is a tool for macroeconomic management. For Olajide (2012), fiscal policy means a combination of measures in government revenue and expenditure to achieve overall economic objectives of a nation; identifying key variables to include taxation, public expenditure, relief, concessions and fiscal incentive policies, among others. It involves the use of government spending, taxation and borrowing to affect the level and direction of the economy.

Oke (2013) argues that fiscal policy is a fundamental instrument that can be used to lessen short run fluctuations in output and employment. The author further asserts that in macroeconomic issues such as high unemployment, inadequate national savings, excessive budget deficits and large public debt burdens, fiscal policy has been acknowledged to hold center stage policy debate in both developed and developing economies. It defines and regulates the pattern of public expenditure and as Jhingan (2007) argued, the use of taxation, public borrowing and expenditure by government for the purposes of stabilization and development. These are used to stimulate aggregate economic development in line with the needs of the populace (Salawu, 2005).

The Keynesian philosophy of economic management advocated the use of fiscal policy to promote economic stability and capital formation across levels of government. Tax incentives, budgetary measures, tariff measures and public debt management are fiscal policy measures put in place to bring about economic stability at all tiers of government.

According to Yaaba (2014), there are contrasting views in the literature with regard to which tier of government to do or get what. The author also observed that early "layer cake" models of assignments of governmental functions assumed that services can be unambiguously aggregated into Musgravian tripartite categories - macroeconomic stabilization, income redistribution and resource allocation. Under this classic theory of

public finance, it is suggested that the degree of responsibility of government should determine which tax assignment (tax power) to assign to a tier of government.

The conventional wisdom in the theory of public goods and public choice is that both the redistribution and stabilization functions be performed by the central government (Oates, 1972). This according to the proponents is true for several reasons. First, sub-national government can hardly affect macroeconomic conditions within their limited boundaries due to high possibility of leakage and resultant ineffectiveness. Second, sub national governments lack the capability to effectively carry out stabilization programme. This is because they cannot vary money supply since their borrowing power is limited and they lack power to print money. Finally, any attempt by sub national governments at income redistribution is most likely to be ineffective as it could lead to massive movement of economic agents from one location to another. This is capable of igniting distortion in the geographical allocation of economic resources.

2.1.10 Nature of Government Fiscal Policy Measures

According to Olajide (2012), government policy measures can be categorized into two. The first is referred to as Automatic Stabilizers. These are government spending or taxation actions that take place without any deliberate government control and which tend to dampen the business cycle. Next are Discretionary Fiscal Policy Measures. They are government spending and taxation actions that have been deliberately taken to achieve desired macroeconomic goals. More often than not, these actions are re-directional, or geared towards increased or decreased activity rate in whole or segment thereof. Theoretically, Basci, Fatih & Yulek (2004) proposed two alternative fiscal policy rules in terms of their impact on debt sustainability. First is the fixed Surplus Rule. It is a rule that fixes the ratio of primary surplus to GDP. On the other hand, the rule that sets the primary surplus as a linear function of debt to GDP ratio is referred to as Variable Surplus Rule. From spending perspective, fiscal policies are seen as expansionary when government increases her level of public expenditure.

2.1.11 Outlook of Sub-Saharan African Countries:

Budgeting in African nations has witnessed a lot of revolutions within the last few decades without any meaningful developments (Mhome, 2003). Poor level of accountability of public resources which is traceable to ineffective budgetary system and poor regulatory framework has become alarming (Ajakaiye & Akinbinu, 2000). Aruwa (2010) decries pervading lack of definite economic objectives, non-alignment of economic objectives with budgetary allocations and series of cases of non-implementation of appropriation acts and supplementary appropriation acts as key factors. These lags have severally manifested themselves in a number of indicators, just a few examples of which are singled out to illustrate.

2.1.11.1 Regional Competitiveness

a. Education and Related Areas

Education is fundamental to any meaningful socio-economic development. Following the launch of the Millennium Development Goals (MDGs), most of the Sub Sahara African countries have made conscious efforts towards achieving universal primary education.

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On the whole, Sub-Saharan Africa is believed to have demonstrated improvement in primary and secondary school education enrollments, although, when compared to other regions of the world, one would notice that the number of pupils' enrolment is still low. This is because in most countries of the region, the education system is noticeably feeble, and the available school infrastructures are not adequate, and the quality of instruction is also believed to be poor.

Below is the situation of Sub-Saharan Africa among the six world zones as well as world average. The strength of the sampled countries used in this study is also demonstrated as part of the table.

Altas.					
Regions/Countries	Population	GNI per	PSER	SSER	TER
0	(million) 2014	Capita	Rate	(%)	(%)
		(\$) 2014	2014	2014	2014
Sub – Saharan Africa	974	3,363	N/A	15	1
East Asia & Pacific	2,264	11,449	105	44	N/A
Europe & Central Asia	904	12,791	N/A	86	31
Latin America & Caribbean	626	14,242	N/A	42	14
Arab States	384	15,722	86	42	11
South Asia	1,721	5,605	74	27	5
World Average	7,261	14,301	N/A	49	6
Sampled Economies:					
Kenya	42.9	1339.9	22.9	5.4	1.5
Ethiopia	96.5	470.0	15.1	4.9	0.6
Tanzania	50.7	630.0	16.2	3.6	0.1
Angola	22.1	5170.0	22.7	4.0	N/A
DR Congo	69.4	430.0	17.3	5.6	0.6
Cameroon	22.8	1290.0	18.2	8.9	1.5
South Africa	53.1	7190.0	13.3	9.9	N/A
Botswana	2.1	7770.0	15.7	8.1	2.4
Namibia	2.4	5870.0	17.7	6.7	1.5
Nigeria	178.5	2710.0	12.1	5.1	0.8
Ghana	26.4	1770.0	15.6	8.6	1.0
Cote D' Ivoire	20.8	1450.0	14.5	6.0	0.4

 Table 2.2: Selected Indicators of Africa's Competitiveness in Education and Related Areas.

Source: World Bank, World Development Indicator Database (various issues), and AfDB (2015)
 Key: (a) PSER = Primary School Enrolment Rate (b) SSER = Secondary School Enrolment Rate (c) TER = Tertiary Enrolment Rate

b. Human Development Index

On the perspective of Human Development Index (HDI) which is the composite statistic of life expectancy, education and per capita income indicators, the position of the region among the committee of five other regions is at best pitiable. On individual nation basis, none of the Sub-Saharan African countries made the least of 102 "Very High" and "High" ranking ratings. Below are tables showing the trends and components of HDI across regions and selected countries.

Countries	HDI Rank	HDI Value	Life Expectancy at Birth	Expected years of schooling	Mean years of schooling	GNI per capita (2011 PPP\$)	Human Dev. Remarks	
Selected Countries outside Africa								
Netherlands	5	0.922	81.6	17.90	11.9	45,435	Very High	
Belgium	21	0.89	80.8	16.30	11.3	41,187	Very High	
New	9	0.913	81.8	19.20	12.5	32,689	Very High	
Zealand								
Israel	18	0.894	82.4	16.00	12.5	30,676	Very High	
Rep of	17	0.898	81.9	16.90	11.9	33,890	Very High	
Korea	26	0.042	77 4	15 50	11.0	00 177	X 7 XY 1	
Poland	36	0.843	77.4	15.50	11.8	23,177	Very High	
Brazil	75	0.755	74.5	15.20	7.7	15,175	High	
Mexico	74	0.756	76.8	13.10	8.5	16,056	High	
Malaysia	62	0.779	74.7	12.71	10.0	22,762	High	
China	90	0.727	75.8	13.10	7.5	12,547	High	
Indonesia	110	0.684	68.9	13.00	7.6	9,788	Medium	
India	130	0.609	68.0	11.70	5.4	5,497	Medium	
Selected Sub	Saharai	n African	Countries					
Kenya	145	0.548	61.6	11.0	6.3	2,762	Low	
Ethiopia	174	0.442	64.1	8.5	2.4	1,428	Low	
Tanzania	151	0.521	65.0	9.2	5.1	2,411	Low	
Angola	149	0.532	52.3	11.4	4.7	6,822	Low	
DR Congo	176	0.433	58.7	9.8	6	690	Low	
Cameroon	153	0.512	55.5	10.4	6	2,803	Low	
South Africa	116	0.666	57.4	13.6	9.9	12.122	Medium	
Botswana	106	0.698	64.5	12.5	8.9	16,646	Medium	
Namibia	126	0.628	64.8	11.3	6.2	9,418	Medium	
Nigeria	152	0.514	52.8	9.0	5.9	5,341	Low	
Ghana	140	0.579	61.4	11.5	7	3,852	Medium	
Cote D'Ivoire	172	0.462	51.5	8.9	4.3	3,171	Low	

Table 2.3aHDI Components for Selected Countries as at 2014

Source: UNDP (2015)

Table 2.50. Human Development mutex Trend (1960-2012) by Regions								
Year	Arab	East Asia	Europe &	z Latin	South	Sub		
	States	& Pacific	Central	America &	Asia	Sahara		
			Asia	Caribbean		Africa		
1980	0.443	0.432	0.651	0.574	0.357	0.366		
1990	0.517	0.502	0.701	0.623	0.418	0.387		
2000	0.583	0.584	0.709	0.683	0.470	0.405		
2005	0.622	0.626	0.743	0.708	0.514	0.432		
2007	0.633	0.649	0.757	0.722	0.531	0.449		
2010	0.648	0.623	0.766	0.736	0.552	0.468		
2011	0.650	0.678	0.769	0.739	0.555	0.472		
2012	0.652	0.683	0.771	0.741	0.558	0.475		
Courses		(12)						

 Table 2.3b: Human Development Index Trend (1980-2012) By Regions

Source: UNDP (2013)

Tuble 2.5c. IIDT components for the Regions us at 2011								
Regions	HDI Value	Life Expectancy at Birth	Expected years of schooling	Mean years of schooling	GNI per capita			
Arab States	0.686	70.6	12	6.4	15,722			
East Asia & the Pacific	0.71	74	12.7	7.5	11,449			
Europe & Central Asia	0.748	72.3	13.6	10	12,791			
Latin America & the Caribbean	0.748	75	14	8.2	14,242			
South Asia	0.607	68.4	11.2	5.5	5,605			
World Average	0.711	71.5	12.2	7.9	14,301			
Developing Countries	0.660	69.8	11.7	6.8	9,071			
Sub Saharan Africa	0.518	58.5	9.6	5.2	3,363			

 Table 2.3c:
 HDI Components for the Regions as at 2014

Source: UNDP (2015)

c. Structural Patterns of Gross Domestic Products

Considered equally of significant essence is the pattern of GDP of the Sub – Saharan economies. This is particularly informative given the decomposition into sectors like agriculture mining and quarrying, manufacturing and construction and public works (see Table below).

Countries	Agric	ulture	Mining & Quarrying		Manufacturing		Constr. & Pub. Works	
	2013	2014	2013	2014	2013	2014	2013	2014
Kenya	5.1	N/A	-9.0	N/A	5.9	N/A	5.5	N/A
Ethiopia	7.1	5.4	6.3	-3.4	16.9	11.3	38.7	36.4
Tanzania	3.2	N/A	3.9	N/A	6.6	N/A	18.9	N/A
Angola	7.8	N/A	-0.5	N/A	12.6	N/A	3.4	N/A
DR Congo	4.2	3.4	10.1	12.4	10.1	7.2	14.1	8
Cameroo n	3.7	4.1	8.7	21.4	3.6	5.6	12.9	7.8
South Africa	1.5	5.6	4.0	-1.6	0.7	0.0	2.7	2.9
Botswana	1.3	-0.3	23.9	4.5	6.5	0.4	5.1	2.8
Namibia	-16.9	N/A	0.6	N/A	1.9	N/A	29.8	N/A
Nigeria	2.9	4.3	-12.8	-1.1	21.8	14.7	14.2	13
Ghana	5.2	5.2	11.6	2.9	-0.5	1.0	8.6	7.4
Cote D'Ivoire	6.8	N/A	6.6	N/A	6.8	N/A	27.9	N/A

Table 2.4: Annual Growth rates of GDP by kind of economic activities (Constant Price)

Source: AfDB (2015)

The growth rates shown in the table above perhaps contributes to the high index of population living below international poverty line among the citizenry of the region.

d. Power and Related Infrastructures

One fundamental pre-requisite for industrialization/manufacturing (which is a key factor of meaningful economic growth and development) is power infrastructure. Regrettably, countries in Sub Saharan Africa is among top ranked countries with infrastructural deficit when it comes to power. A comparison of the trend of power generation of countries within the sub region as captured by Ekeke & Olise (2011) and AfDB (2015) is shown in

the Tables below.

Country Population (millions) Installed Capacity (MN) USA 300 900,000 United Kingdom 60 70,000 Brazil 180 90,000 Germany 83 115,000 Thailand 70 40,000 Zambia 11 2,000	Table 2.5. Instance Capacity of Electricity in Selected Countries.								
USA300900,000United Kingdom6070,000Brazil18090,000Germany83115,000Thailand7040,000Zambia112,000	Country	Population (millions)	Installed Capacity (MN)						
United Kingdom6070,000Brazil18090,000Germany83115,000Thailand7040,000Zambia112,000	USA	300	900,000						
Brazil18090,000Germany83115,000Thailand7040,000Zambia112,000	United Kingdom	60	70,000						
Germany83115,000Thailand7040,000Zambia112,000	Brazil	180	90,000						
Thailand 70 40,000 Zambia 11 2,000	Germany	83	115,000						
Zambia 11 2,000	Thailand	70	40,000						
	Zambia	11	2,000						

Table 2.5: Installed Ca	pacity of Electricity	y in Selected Countries:
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Source: Ekeke & Olise (2011).(adopted)

1 abic 2.0.		ny oene	1 ation n	Denetic	u Count	i ies in ti	ic Regio		•
Countries	2006	2007	2008	2009	2010	2011	2012	2013	2014
Kenya									N/A
-	6,785	6,670	6,776	6,875	7,467	7,875	8,540	8,989	
Ethiopia									N/A
	3,332	3,532	3,728	3,982	4,931	7,308	7,567	8,461	
Tanzania									N/A
	2,776	4,175	4,414	4,628	5,080	6,294	5,871	6,051	
Angola									N/A
	2,959	3,217	3,930	4,172	5,448	5,654	6,000	6,370	
DR Congo							/		N/A
	7,312	7,582	7,228	7,526	7,600	7,273	7,274	7,278	
Cameroon									N/A
	4,018	5,252	5,690	5,874	5,958	5,874	6,167	6,523	
South									N/A
Africa	231,050	238,992	236,564	240,444	245,840	279,585	258,237	283,728	
Botswana									N/A
	1,042	659	583	444	430	699	2,257	2,626	
Namibia									N/A
	1,512	1,694	1,545	1,510	1,293	1,424	1,454	1,496	
Nigeria									N/A
	23,110	22,978	21,110	19,777	26,057	27,034	25,391	25,200	
Ghana	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A
			8,324						
Cote									N/A
D'Ivoire	5,768	5,746	5,918	5,953	6,052	6,208	8,977	9,102	

Table 2.6: Electricity	Generation	in Selected	Countries in	the Region	(GWh)
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Source: AfDB (2015)

Not only does Africa have very limited infrastructure, but the associated services are very expensive by global standards. In many cases, the cost of using infrastructure in Africa is

more than twice that in other developing regions, and for some countries and sectors, the differential can be much larger. The table below shows the comparative tariffs for infrastructure services.

Table 2.7. Comparative Tarms for	init astructure per vices	
High end Costs for Sub-Saharan	Sub Saharan Africa	Other Low Income
Africa and other regions	Low Income Countries	Countries
Power tariffs (\$/kWh)	0.46	0.10
Water tariffs (\$/m ³)	6.56	0.60
Road freight (\$/ton-km)	0.14	0.04
Mobile telephony (\$/month)	21.0	9.9
International telephony (\$/min)	12.5	2.0
Internet dial-up service (\$/month)	148.0	11.0
<i>Source:</i> CABRI (2010)		

Table 2.7: Comparative Tariffs for Infrastructure Services

All these have direct relationship with budgeting, budgetary implementation and fiscal administration of any economy. The consequence of failure impacts directly on the health of the economies of the region and the overall well being of their citizenry. For instance, Travel and Tourism Competitiveness Index 2011 and 2009 comparison showed that only South Africa scored 4.1 above North African average of 3.8; but below South East Asian average of 4.2 to rank 66 out 139; Ghana for instance made 3.4, which is just above the Sub Saharan African average of 3.3, thus making it to rank 108; and Nigeria ranked 130 at a score of 3.1 (Ollor, 2012).

e. Budgetary and Fiscal Positions Sub-Saharan Africa

Available data indicates that growth in the region tend to be robust in 2014 since GDP expanded in 2014. This is broadly in line with the 5.0% increase tallied in 2013 (FocusEconomics, 2015). The growth may have resulted from efforts on private

consumption and resilient investment in mining and infrastructure. This situation is not the same for South Africa whose economic activities may probably have suffered severely in 2014 from cases of strikes and power shortages in.

However, with the decline in oil prices, growth in Nigeria and Angola were seen to have softened around 2014. In Kenya, economic activity remained more dynamic on strong domestic demand and a smaller oil import bill.

The Real GDP growth rate of the countries according to AfDB (2015) for a period of 6 years (2009-2014) is presented hereunder, showing trend of unpredictability.

Table 2.8: Keal GDF Growth Kate at Constant Market Price 2009 – 2014									
Countries	2009	2010	2011	2012	2013	2014			
Kenya	6.0	7.0	6.4	6.9	7.0	4.5			
Ethiopia	10.0	10.6	11.4	8.8	9.7	10.3			
Tanzania	6.0	7.0	6.4	6.9	7.3	7.4			
Angola	2.4	3.4	3.9	5.2	6.8	4.5			
DR Congo	3.8	2.4	-4.7	9.8	8.7	8.3			
Cameroon	1.9	3.3	4.1	4.6	5.5	5.3			
South Africa	-1.5	3.0	3.2	2.2	2.2	1.4			
Botswana	-7.8	8.6	6.2	4.3	5.9	4.8			
Namibia	0.3	6.0	5.1	5.1	5.1	5.3			
Nigeria	7.0	10.6	4.9	4.3	5.4	6.3			
Ghana	4.0	3.4	14.0	9.3	7.3	4.2			
Cote D'Ivoire	2.8	7.2	6.9	7.2	8.5	8.9			

 Table 2.8: Real GDP Growth Rate at Constant Market Price 2009 – 2014

Source: AfDB (2015)

Besides the general performance denominated in GDP and attendant growth rate as point of view of the selected economies, an overview of other budgetary and fiscal performance indicators is presented. This is summarized in the Table below.

Countries							
Countries	Fiscal B	alance (%	of GDP)	Public Debt (% of GDP)			
	2012	2013	2014	2012	2013	2014	
Kenya	-6.0	-6.8	-6.2	44.4	49.1	51.4	
Ethiopia	-2.0	-2.6	-2.8	21.6	21.9	23.2	
Tanzania	-4.1	-4.0	-5.0	31.4	33.0	34.9	
Angola	4.6	-0.3	-3.4	35.2	37.0	42.7	
DR Congo	1.8	3.1	-1.0	18.9	21.6	22.3	
Cameroon	N/A	N/A	N/A	N/A	N/A	N/A	
South Africa	-4.5	-4.1	-3.7	44.2	47.1	46.8	
Botswana	0.8	1.8	1.6	17.5	15.2	13.8	
Namibia	4.6	4.0	3.6	N/A	N/A	N/A	
Nigeria	-1.4	-1.4	-1.4	10.5	11.7	13.7	
Ghana	-12.2	-10.9	-9.3	55.1	65.0	67.6	
Cote D'Ivoire	-3.1	-2.3	-2.5	39.9	39.6	43.2	

Table 2.9: Summary of Fiscal Balance and Public Debt (% of GDP) for Selected Countries

Source: FocusEconomics (2015)

The fiscal positions of most countries in Sub-Saharan Africa seem to be significantly weak. More specifically, despite the growth in GDP in the last few years (see Table 2.8), the fiscal balance was weaker for most countries at the end of 2014. This therefore calls for more efforts towards upgrade of infrastructure, thereby requiring gross external financing needs in excess of at least 10% of GDP in economies like South Africa, Ethiopia, Tanzania, Ghana, Kenya, etc. This might be difficult, very expensive and at worst, impossible, thus forcing hasty fiscal adjustments by affected economies.

Financing needs is also believed to be on the increase especially for oil-exporting countries like Nigeria and Angola. This is as a result of the oil price shock, as the fiscal adjustment to lower revenue flows is being smoothed over time (FocusEconomics, 2015).

With the trend of fiscal deficits in the countries of Sub-Saharan Africa, the tendencies of substantial increase in debts (with its associated costs) cannot be overemphasized. This may have accounted for the trend portrayed by public debts which to a large extent may have effect on the growth of countries in the region. No doubt, due to the relatively large share of the existing stock of debt, FocusEconomics (2015) averred that Sub Saharan African countries seem to be less exposed to sharp increases in risk premiums compared to what is obtainable at the global scene.

2.1.11.2 General Overview of the Outlook of Nigeria and South Africa

In this section, an overview of the outlook of Nigeria and South Africa is presented. The choice of these two countries is based on the fact that according to World Bank (2015), Nigeria and South Africa are the first two largest economies in Sub-Saharan Africa.

a. Nigeria

With a population of over 177 million people, Nigeria is adjudge one of the largest countries in Africa and accounts for about 47% of West Africa's population. It is also the biggest oil exporter, with the largest natural gas reserves in the continent (World Bank, 2014). According to Effoduh (2015), Nigeria is the 12th largest producer of petroleum product in the world, 8th largest exporter and 10th largest proven reserve; accounting for 40% of her GDP and 80% of government spending. Sanusi (2010) argues that it has the 6th largest gas reserve and 8th largest crude oil reserve in the world in addition to commercial quantities of about 37 solid minerals and over 150 million people.

Given these reserves of human and natural resources, the country has significant potential to build a prosperous economy characterized by rapid economic growth that can significantly reduce poverty, inequality and improve living standard. This, however, seems to have remained elusive.

According to Medee & Nenbee (2011),

Nigeria is endowed with enormous potential for growth and development with her vast oil and gas resources, rich and expansive agricultural land, solid minerals and abundant human resources. Despite these factors, since 1960 when she got her independent (sic) from Britain, the successive governments have not done enough to put the nation's resources to effective productive use as to chart the part of growth and development. The net result is that the Nigerian economy is now performing below her potentials as the Crown prince of the Gulf of Guinea.

Nigeria's Economic Outlook

Nigeria is ranked 30th (40th in 2005, 52nd in 2000) in the world in terms of GDP (PPP) as of 2013, and the 2nd largest in Africa (behind South Africa) (World Bank, 2014). With the official announcement of her new rebased GDP of N80.2 trillion (USD509.9bn) on 6th April, 2014 by the Statistician General, Kale in Effoduh (2015), Nigeria is now ranked the 26th economy in the world and the largest in Africa. The structural diversification of the economy shifted thus:

- ➢ Agriculture down from 33 to 22% of GDP
- Service Sector up from 26 to 51%
- ➢ Oil and Gas
 15%
- ➤ Manufacturing 6.7%
- ➤ Telecommunications 8.7%, and
- ➢ Nollywood 12%

The table below shows these contributions in absolute terms.

	OLD SERI	ES (NM)			NEW SER	IES (NM)		
	2010	2011	2012	2013	2010	2011	2012	2013
Agriculture	10310656	11593434	13413842	14709105	12988809	14421929	15918632	17625143
Industry	15659521	16569292	16456457	15374555	13992439	17313556	18667775	20083371
-Crude	14505759	15285004	15695655	13750727	8402676	11080795	11315033	11554224
Manufacturing	643070	694814	761467	823860	3578642	4085393	4744699	5476030
Services	8014578	9247135	10673800	12313106	27223547	31221113	36243581	41925034
-Telecomm- unications and information services	260708	292539	331503	364500	4931991	5530155	6213794	6974681
-Motion pictures, Sound recording	-	-	-	-	479195	639245	853937	1139943
Total Nominal GDP	33984754	37409861	40544100	42396766	54204795	63258579	71186535	80222128

Table 2.10:Sectoral Composition of GDP before and after N80.22trillion (\$510Billion) Rebasing

Source: Effoduh (2015) (Adopted)

After fifty years of political independence, the productive base of the Nigerian economy remains weak, narrow and externally oriented, with primary production activities of agriculture, mining, and quarrying (including crude oil and gas) accounting for about 65% of the real gross output and over 80% of government revenues. (NBS, 2014). In addition, primary production activities account for over 90% of foreign exchange earnings and 75% of employment, it adds. World Bank citied in Onuah (2006) observed that Nigeria is still classified as a mixed economy and an emerging market, and has already reached middle income status. Both the financial, service, communication, technology and entertainment sectors are expanding.

Effodule (2015) observed that the process of colonial rule and formal economic exploitation ended in 1960 but left Nigeria a relatively strong but undiversified economy.

For Sanusi (2010), Nigeria's economic aspirations since independence has remained that of altering the structure of production and consumption patterns, diversifying the economic base and reducing dependence on oil, with the aim of putting the economy on a part of sustainable, all-inclusive and noninflationary growth. He regretted that successive governments have pursued this agenda without much success. The table below is very instructive

			0			
S/N	Activity Sector	1960-70	1971-80	1981-90	1991-00	2001-09
1	Agriculture	55.8	28.4	32.3	34.2	40.3
2	Industry	11.3	29.1	41.0	38.6	28.4
3	Manufacturing	6.6	7.3	6.1	4.9	3.9
4	Building & Constr.	4.8	8.3	2.3	1.8	1.8
5	Wholesale & Retail	12.8	17.6	14.5	13.8	14.0
	Trade					
6	Services	15.3	16.5	9.8	11.5	15.5
	Total Value Added	100.0	100.0	100.0	100.0	100.0
	Diversification Index	0.2	0.4	0.4	0.4	0.3
~	a					

Table 2.11: Sectoral Contribution to Nigerian GDP

Source: Sanusi (2010)

The stability or improvement in diversification index recorded between the period 1971 and 2000 could not be sustained thereafter. This negative development is confirmed by the trend in composition of Nigerian exports as depicted below.

Table 2.12: Composition of Nigerian Exports							
Component	2004	2005	2006	2007	2008	2009	
Oil Exports	97.5	98.3	97.8	97.9	99.0	95.8	
Total Non-Oil Export	2.5	1.7	2.2	2.1	1.0	4.2	
Non-Oil:							
Agriculture	33.0	41.9	37.8	39.7	58.3	46.9	
Minerals	2.0	4.0	8.5	6.3	7.7	6.7	
Semi Manufactured	48.9	40.6	37.9	39.4	17.0	29.2	
Manufactured	5.0	9.8	11.1	10.3	8.7	9.1	
Other Exports	11.2	3.9	4.7	4.3	8.3	8.1	

Source: Central Bank of Nigeria (2009).

Against the claim that restoration of democracy and subsequent economic reform has successfully put Nigeria back on track towards achieving its full economic potential (Effoduh, 2015), the picture falls short of expectation. With the production of only about 2.7% of world's oil supply (Russia 12.9; Saudi Arabia 12.7 and USA 8.6%) and an estimated export rate of 1.9 mbl/d (300 000 m³/d) at a projected price of USD 65/barrel in 2011, Nigeria's anticipated oil revenue is about USD 52.2bn, representing 11.6% of 2012 USD451bn GDP or 8% if informal sector is included (Solow, 2007). Deductively, though important, the petroleum sector remains in fact a small part of the country's overall vibrant and diversified economy.

Sanusi (2010) decries this pitiable situation which is better understood when viewed side by side some selected countries. The following table is a clear illustration.

Countries	Export as a	% Share of	% Share of
	% of GDP	Primary	Manufactured
		Commodities	Goods
Developing			
Countries			
Malaysia	11.0	20	80
Indonesia	40.7	46	54
Jamaica	19.6	30	70
Philippines	53.2	59	41
Bangladesh	11.9	9	91
Nigeria	48.7	99	1
Venezuela	27.2	88	12
Sri Lanka	33.0	25	75
Kenya	15.9	77	23
South Korea	37.8	9	91
Togo	25.0	82	18
Mexico	29.0	15	85
India	8.3	24	76
Brazil	9.4	46	54
China Excluding	23.1	12	88
(Hong Kong)			
Developed			
Countries			
UK	19.8	17	83
US	7.9	17	83
Japan	10.2	6	94

 Table 2.13: Composition of Exports in Selected Developed and Developing Countries, 2000.

Source: World Bank (2001) and Sanusi (2010).

Using critical fiscal indicators for 2009 and 2010, National Bureau of Statistics (NBS) in

its publication, Nigerian Economy, summarized it all as in this table.

Components	2009	2010	
	Baseline	Actual	Target
	N	Billions	
Total Federally Collected Revenues	4332.58	6362.56	6367.6
Total Oil And Gas Revenues	2999.58	5396.19	4211.4
Total Non Oil Revenues	864.61	966.47	2156.2
FAAC Revenues	3864.19	4417.01	6367.63
VAT Revenues	468.39	562.04	568.40
Capital Expenditures	562.37	912.30	1853.91
Govt. Expenditure as % of GDP	10.9	16.3	18.1
Govt. Expenditure as % of Budget	84.2	78.0	90.0
Collected Total Revenues as % of GDP	5.7	6.8	9.0
Govt. Operating Revenue as %Budgeted	91.5	89.8	95.0
Rev			
External Debt Stock (USD Billion)	3.95	4.58	4.03
External Debt Growth (%)	0.06	15.95	2.0
External Debt as % of GDP	2.38	2.36	2.18

Table 2.14: Fiscal Indicators of Nigeria 2009 & 2010

Source: Budget Office of the Federation, Office of the Accountant General of the Federation and NPC.

A moving average of these key indicators is believed to be more informative and

elucidating. Consequently, Sanusi (2010) provided the table below.

				•• • = • •	2			
Indicator	2003	2004	2005	2006	2007	2008	2009	Aver age
Real GDP Growth Rate	9.57	6.58	6.51	6.0	6.5	6.4	6.7	6.2
Inflation (year on year)	13.9	15.4	17.9	8.5	6.6	15.1	12.0	13.3
Growth in M ₂	24.97	12.26	34.61	30.6	44.2	58.0	17.1	31.8
Current Account	6.95	17.62	28.23	18.5	11.8	17.5	11.9	13.4
Bal/GDP								
FDI (USD Billion)	2.0	1.86	4.98	13.9	5.6	5.8	-	4.3
External Reserve (USD	7.47	16.95	28.3	42.3	51.3	53.0	42.4	27.0
Billion)								
Exchange Rate (end	129.4	133.5	132.15	128.2	117.9	132.5	149.58	125.8
Period)								
External Debt (USD Billion)	3.3	3.5	2.0	3.5	3.6	3.7	3.9	3.21
Dimon								

Table 2.13. Selected Maci beconvine indicators 2003-2002	Tε	able	2.1	15:	Selected	N	lacroeconomic	:]	Indicators	2003-	-2009
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Source: CBN Annual Report & Statement of Accounts various Issues.

For decades, inclusive of the above period, average growth rate of real GDP is as well informative as to the performance of the economy.

Table 2.16: Average Growth Rate of Real GDP (%)						
Period	Real GDP					
1960 – 70	5.9					
1971 – 73	8.0					
1976 - 80	3.2					
1982 - 90	3.2					
1991 – 98	1.9					
1999 – 07	8.3					
2008 - 09	6.3					

Source: Sanusi (2010).

Indeed, Nigeria's poor economic performance, particularly in the last forty years, is better understood when compared to China (now 2nd largest economy in the world) which ranked 114th with GDP per capita of USD 111.82 behind Nigeria's 88th ranking on GDP per capita of USD 233.35 in 1970 (Sanusi 2010). He blamed it all on political instability, lack of focused and visionary leadership, economic mismanagement and corruption.

Notwithstanding, a different school of thought exists. This school believes that the Nigerian economy is on track and has a bright future. According to Citigroup cited in Effoduh (2015), one of the two African countries among II Global Growth Generator countries, Nigeria will get the highest average GDP growth in the world between 2010 and 2050. Wele (2013) argues, however that the Nigeria economic growth (including projected) has not translated into job creation or poverty alleviation. A common opinion is that the Nigerian economic growth is berated with structural problems and lacks diversification.

Complementing Transparency International, statistics from Economic and Financial Crimes Commission (EFCC) (2015) shows that between 2011 and 2014, a total of 1792 corruption cases were filed in court. It is regrettable, however that only a minimal 397 of them were reported convicted. According to a report of the Transparency International (2014), Nigeria ranked 144th with score of 25 out of 177 and 136th with a score of 27 out of 174 in 2013 and 2014 respectively. Nnabuife & Ikon (2008) summarized corruption as:

Likened to the mathematical symbol zero. Whatever is multiplied by zero becomes zero. One billion or trillions of naira in excellent planning and budgeting when set in a multiplicative function against zero, is zero. The national problem is thus, not primarily that of poor infrastructure, nor poor human resource development, nor even our mono-crop with its over dependence on oil. Our problem is zero values and ethical bankruptcy in national life.

It is disheartening that national anti-graft agencies appear incapacitated when corruption information concern high profile individuals and politicians. Citied in Odum, Ifurueze & Odum (2012), World Bank in 2006 made a publication- "Looted Nigerian money discovered in foreign banks". The list of 21 profile individuals and four bank locations of London, Swiss, USA and Germany, indicated the full names and amounts involved. Interestingly, these odds have not completely weighed the nation down nor vied it off track over these years. By April 2006, Nigeria became the first African country to fully pay off her debt to Paris Club though USD 18bn in structured debit and the balance of USD 12bn in cash. The global ranking of the Nigerian economy by GDP (PPP) for USD exchange for \aleph 1 moved up from 52 in 2005 to 30 in 2012 as presented below.

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Ranking	52	47	38	37	34	31	31	30	23	20
<i>Source:</i> IMF (2013)										

Table 2.17: Global Ranking of Nigeria Economy

The picture painted above toes identical gradient with the performance trend of the economy for same period. Presentation of the trend based on GDP at market prices as estimated by the International Monetary Fund (IMF) in USD billions is made in the table below.

Table 2		ince frend of fuge		
Year	GDP (PPP,	USD Exchange	Inflation Index	Per Capita Income
	in Billions)	Rate	(2000=100)	(PCI) (as % of GDP
				@ US current Price)
1980	58	<u>₩</u> 1	1.30	7%
1985	82	N 3	3.20	5%
1990	118	₩9	8.10	2.5%
1995	155	N 50	56	3%
2000	170	N 100	100	3.5%
2005	291	N 130	207	4%
2010	392	N 150	108	5%
2012	451	N 158	121	7%
2014	972	N 180	-	11%

 Table 2.18: Performance Trend of Nigerian Economy

Source: IMF (2013)

Budget Process and Procedures in Nigeria

In Nigeria, the preparation of the budget is a shared responsibility of the Executive and the Legislative arm of the Federal Government (Ekeocha, 2012). The budget, referred to as the Appropriation Act, is introduced by the Executive, approved by the Legislative and signed into law by the President. At the federal level, the responsibility of the President for preparation and submission of budget is well established. The Budget Office of the Ministry of Finance develops the budget in accordance with government's fiscal policy.
The Budget Office meets early in the year with key revenue generating agencies (including the FIRS, Nigerian Custom Services, and the NNPC) as well as key economic agencies (including National Planning Commission (NPC), NBS and CBN) to assess and determine trends in revenue performance and macroeconomic indicators and the implication for the next three fiscal years. This is preparatory to a Medium Term Revenue Framework (MTRF) decomposed into oil and non-oil sources. Upon this, a Medium Term Expenditure Framework (MTEF) is developed, outlining key expenditure areas – statutory transfers, debt services, MDAs' expenditures-as well as the projected fiscal balance. Where the projected balance is deficit, source of funding is also considered. Allocations to MDAs are further decomposed into capital and recurrent.

The Medium Term Sector Strategies:

The government has, Ekeocha (2012) asserts, since 2005 used the Medium Term Sector Strategies (MTSS) to priorities and align the capital expenditure of heavy spending MDAs with development objectives of the government – focused on the NEEDS, the MDGs, and more recently the vision 20: 2020. The MTEF is further developed into a formal MTEF Report which covers Fiscal Strategy Paper (FSP) and expenditure ceilings of MDAs. This form of MTEF/FSP is required under the Fiscal Responsibility Act (FRA) (2007), to be presented by the Minister of Finance first to the Federal Executive Council (FEC) and them to the National Assembly for consideration and approval.

The Approved Budget:

Once the MTEF, the FSP and the expenditure ceiling of MDAs are approved by FEC, the Budget Office under the supervision of the Finance Minister, issues "Call Circular" directing MDAs to allocate their allotted capital expenditure ceilings across existing and new projects, programmes and other initiatives, as well as estimates of their recurrent expenditure requirements for personnel and overheads. The Office evaluates and consolidates these submissions into a draft budget which is presented to the President for approval by the Minister. The Approved Budget, with the supporting documents, is presented to a joint session of the National Assembly for consideration and appropriation.

The presentation of the Approved Budget serves as the first of the three mandatory readings. The two chambers of the National Assembly separately consider the proposal before harmonizing. The harmonized bill is approved separately by each chamber and then presented to the President for his assent that turns it into an Act. If the President with holds his assent beyond 30 days of presentation of the Bill, two-thirds majority of both chambers sitting in a joint session over rides his veto. (Anyafo, 1994; Aruwa, 2010).

The Legal Framework:

The fiscal year of Nigeria coincides with the calendar year – January to December. The 1999 Constitution as amended provides for the essential features of financial management procedures that should be followed in the Nigerian public sector. Sections 80 - 82 are apt.

The Constitution grants the power of the "purse" to the legislature without providing for any specific legislative procedure (Ekeocha 2012). Section 81 provides for the Presidential submission of the Budget Draft to each House of the National Assembly in every given year. The President is authorized by virtue of S.82 to withdraw from the Consolidated Revenue Fund (CRF) of the Federation for a period not exceeding six months if the bill is not enacted, sums necessary for appropriated expenditures. There are other relevant enabling laws and regulations. Examples include Finance (Control and Management) Act 1958, Fiscal Responsibility Act 2007, Public Procurement Act 2007, Allocation of Revenue (Federation Account, etc) 2004, Senate Rules and the House Standing Orders.

Nigerian Budgeting Experience:

That there are serious problems in the Nigerian budgeting process is not only well known but fairly indicated by the magnitude of budget variances recorded over the years, 1970-2002 (Aruwa, 2010). Tella (2012) laments that Budget presentation in Nigeria has become more of a fanfare in recent time than a serious business it was up to the mid 1980s; contending that budget documents have reflected wide gaps between proposals and actual achievements over the years.Very recently, budgeting in Nigeria has continued to spring up various controversies as to the modality for preparation/administration due to continuous change in government and consequential change in policy and ideology (Oke, 2013). Ekeocha (2012) notes that the public and civil societies alike have adjudged the current federal budget process weak and unable to address the nagging fiscal challenge – timeliness. There are other observed problems of bribe-for-budget syndrome, budget passage delays, oil windfall crisis, disagreement on oil price benchmark for budgeting between the Executive and the Legislature, lack of definite economic objectives and commitment to delivering them, non-alignment of economic objectives and budgetary allocations, and series of cases of non-implementation of Appropriation Acts and Supplementary Appropriation Acts, he contends. Budgeting and its process in Nigeria remain problematic both in the areas of preparation and implementation, hence the need for adequate control aimed at improving effective resources utilization at the budget implementation stage (Oke, 2013).

In Nigeria, before ministries and spending agencies of governmental can incur an obligation to make expenditure, they must secure spending authorization from the Ministry of Finance through the use of warrants. Oke (2013) observes that during the phase of budget implementations, there are many possibilities for interventions and manipulations in view of the fact that officials have a great amount of discretionary power to decide which spending ministry or agency will be granted spending authorization, thus making the commitment phase of the expenditure process a fertile ground for corrupt activities. These observations have far reaching implications for national development. Table below captures national experience since over a decade.

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Fiscal Year	Date NASS	Date Bill sent	Date President	Time Frame	Time Lag
	Received	to President	Assented to	Between the	Between 1 st
	Estimates	for Assent	Budget	President's	Jan & Date of
	from President			Presentation &	Take off
	Α	В	С	Signature	
				D	Ε
2000	24/11/99	14/4/00	5/5/00	5m 11d	4m 5d
2001	9/11/00	21/12/00	21/12/00	1m 12d	Nil
2002	7/11/0 1	28/3/02	28/3/02	4m 21d	2m 28d
2003	20/11/02	11/3/03	10 /4/03	4m 21d	3m 10d
2004	18/12/03	20/4/04	21/4/04	4m 3d	3m 21d
2005	12/10/04	18/3/05	12/4/05	6m	3m 12d
2006	6/12/05	21/2/06	22/4/06	2m 16d	3m 22d
2007	6/10/06	22/12/06	22/12/06	2m 12d	Nil
2008	8/11/07	27/3/08	14/4/08	5m 7d	3m 14d
2009	2/12/08	3/2/09	10/3/09	3m 8d	2m 10d
2010	23/11/09	25/3/10	22/4/10	4m 29d	3m 22d
2011	15/12/10	25/5/11	26/5/11	5m 11d	4m 26d
2012	13/12/11	15/3/12	13/4/12	4m	3m 13d

Table 2.19: Time Frame Showing Federal Budget Preparation And Enactment(2000 – 2012)

Source: National Assembly in Ekeocha, 2012.

Key: m = month; d = day.

Incidentally, Ekeocha (2012) argued that few studies on the subject did not contextually situate the federal budget process, let alone considering the institutional buttlenecks. Admittedly, the Nigerian budget structure consists of macroeconomic policy and framework and expenditure budget used to direct the economy. Below is the allocation for the period 2004 to 2013.

Table 2.20: Budgetary Allocation Between Recurrent and Capital Expenditures in Nigeria 2004 – 2013 (=N=bn)

		5		· · · ·	/						
Budget	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Total
R E	568	1000	1337	1485	1819	2014	2755	2481	2472	2629	18620
СE	350	617	539	782	673	797	1854	1005	1320	1620	9556
Total	918	1618	1876	2266	2492	2871	4609	3486	3792	4249	28177
CE%	38.2	38.2	29	34.5	27	28	40	29	28	32	37
AI%	50	92	92	60	30	20	20	-	92	-	56.5

Source: CBN Annual Report various issues.

Key: RE=Recurrent Expenditure; CE=Capital Expenditure; AI%=Average Implementation percentage.

An indepth analysis of a particular year budget segment may be more revealing. From the preceding table, it is clearly admissible that 2012 is a high performing year with average implementation percentage of 92. It is consequently considered representative enough for an assessment of the government's budgetary allocation to priority areas. These are demonstrated in the two tables below.

S/N	Sector	Capital Expenditure	Recurrent Expenditure	Total Expenditure	% of Total for
		(N bn)	(N bn)	(N bn)	Priority
1	Agriculture & Rural Dev.	41.19	37.79	78.98	4.02
2	Education	55.06	345.09	400.15	20.34
3	Health	57.01	225.76	282.77	14.38
4	Niger Delta	57.00	2.72	59.72	3.04
5	Power	70.30	91.12	161.42	8.31
6	Security	110.44	653.75	764.19	38.85
7	Water Resources	30.40	8.60	39.00	1.98
8	Works	149.20	31.60	180.80	9.19
	Total			1967.03	

 Table 2.21: Budget Allocation to Priority Areas in 2012

Source: Budget Speech and Appropriation Bill (2012) in Tella (2012).

Table 2.22 Breakdown of Budget Allocation to Security in 20	Allocation to Security in 2	2012
---	-----------------------------	------

S/N	Sector	Total Expenditure (N bn)	Capital Expenditure (N bn)
1	Police Affairs/formation and Commands	313.97	11.54
2	Defence/Mod/Army/Air force/Navy	326.35	34.67
3	Office of National Security Adviser (O. NSA)	123.87	64.23
		764.19	110.44
~			

Source: Budget Speech and Appropriation Bill (2012) in Tella (2012).

To further devalue Nigerian budget system and procedures, Traders Association threw their weight behind the criticism. The Association saw 2012 Federal Budget as misplacement of priority, a budget of insensitivity. The Association captured a few of the

budget's irritating provisions rather mockingly thus:

S/N	Description of Items	Budget
		Proposal (N)
1	2 bullet Mercedes Benz Salon book Guard @ N140m	280m
2	New vehicles in the Presidential fleet	356.72m
3	5 Mercedes Benz 350 (Semi Plain/Partial Bullet Proof At N 25m,	250m
	10 Jeeps (Assorted Range Rover, Prado And Land Cruiser) at	
	N10m, plus accessories at N 25m	
4	Overhaul power generating set	127.50m
5	Refurbishment of the family wing of the main residence	512.39m
6	Land reclamation at the State House Medical Centre	385.35m
7	Rehabilitation of transformer substation at the Villa	101.67m
8	Rehabilitation of 10 Presidential Houses at 1. Taiwo Street Abuja	52.87m
	(N 101m to same last year)	
9	Rehabilitation of State House and Dordan barracks (N628.64m	530.57m
	spent earlier on them)	
10	Repairs and renovation of Admin Building at the Villa (N 302m	357.73m
	spent on same last year)	
11	Rehabilitation of the Banquet Hall dome roof (N 81m allocated	62.23m
	on same last year)	
12	Feeding for President and Vice President	992.57m
13	New Presidential jet	USD 110m

 Table 2.23: Fiscal Consolidation or Fiscal Profligacy?

Source: National Association of Nigerian Traders 2012 in Tella (2012).

The Association lamented that these allocations are at the time when poverty level and unemployment index are frightening, raising doubt as to whether the Budget is Fiscal Consolidation or Fiscal Profligacy (Tella, 2012).





Source: Manufacturers Association Journal (2010) in Tella (2012)

Borrowing from 2002 experience of Portugal as presented below, the misplacement of Nigeria's budgetary priorities becomes more glaring and disheartening.

Table 2.24: Public Expenditure in Portugal 20	Table 2.24. Fublic Expenditure in Fortugal 2002 Functional Classification					
Item	As % of Total Expenditure					
General Public Service	14.0%					
Defence	3.7					
Public Order and Safety	4.4					
Health	15.0					
Education	15.3					
Social Protection	30.4					
Others	5.7					

Source: Cunha and Braz (2006)

Deviations of other key macroeconomic indicators did not fare better within the period as

sampled in the following table.

Variables/Year	2006	2007	2008	2009	2010
Inflation:					
Actual	8.55	6.56	15.06	13.93	11.80
Target	9.00	9.00	9.00	9.00	11.20
Variance	0.45	2.44	-6.06	-4.93	-0.60
Real GDP:					
Actual	6.03	6.45	5.98	6.96	7.87
Target	7.00	10.00	7.50	5.00	6.10
Variance	-0.97	-3.55	-1.52	1.96	1.77
M ₁ :					
Actual	32.18	37.63	56.07	2.41	11.05
Target	-	-	-	32.20	22.40
Variance	-	-	_	-29.79	-11.35

 Table 2.25: Some Key macroeconomic Indicators (Growth rates). The Variance Level

Source: CBN (2011)

Omopariola (1989) in Omopariola (2002) concluded that what Nigeria has annually are "budgets" without budgeting. It is pertinent to note that Nigeria adopts a common stand regarding national resources. Under the system, these resources are pooled at the centre and shared in agreed but time changing ratio among her three levels of government. Currently, the formula referred to as Revenue Sharing Formula is

Federal Government	52.68%
State Governments	26.72%
Local Governments	20.60%

The pattern has remained skewed in favour of the Federal Government since ages despite agitations.

b. South Africa

The South African economy is predominantly mineral exporting; agriculture, manufacturing, services and trade, nonetheless, remain significant. The end of apartheid and democratization of the political landscape in 1994 marked a turning point in the economic fortune of South Africa (Ogunjiuba, Stiegler & Omoju 2012). Since the democratic transition (in 1994), South Africa has displayed remarkable socio-political stability which has resulted in a strong influence in Africa and internationally, becoming the most advanced, diversified and largest economy in Africa (Ncube et al, 2012).

Democracy together with macroeconomics stability helped to transform South Africa into a regional economic power with a strong influence in Africa and around the world, ascending to the position of leading emerging economy by adding an 'S' to the BRIC (Brazil, Russia, India and China) group in 2011, Ncube, et al (2012) adds. Smallest of the BRICS in terms of population (about 49 million in 2010) and land area (1.22 million km²), South Africa ranked third in 2011 before China and India in terms of nominal GDP per capita (USD 8,342 at PPP) and remained the only meaningful economic power in the Southern Africa region and in Africa (Kappel, 2010). Its geographical position grants it a privileged role as gateway to Sub-Saharan African and through its membership in various regional and sub-regional groupings, the country supports efforts to deepen economic integration in Southern Africa and the continent (Ncube, et al, 2012).

The economic performance of post-apartheid South Africa has attracted the attention of policy makers, with macroeconomic cum fiscal management and favourable global

conditions identified as core underlying factors (Ogunjiuba et al, 2012). Public investment, low cost of input, export growth, growth in manufacturing and service sectors as well as good governance were identified as specific factors. Hanival & Maia (2008) argue that volatile currency, poor logistic system, shortage of skilled manpower, limited investment opportunities, poor regulatory environment and deficiencies governance constrained economic growth in the country.

South African Policy Initiatives

According to Collier & Dollar (2001), some studies have posited that economic growth anywhere is a product of sound and quality economic policies.

The South African economy has grown by about 40% between 1993 and 2007; and is expected to grow by 6.5% and 8% by 2010 and 2011 respectively. As at 2006, the economy has grown consistently and consecutively for over eight years which is regarded as the longest since 1945. This substantial economic expansion has also been by employment growth, increase in labour productivity, tax relief, high real wages, and increase in social grants; all culminating in increasing the level of household income and consumption, and reduction in poverty level. (Manuel, 2007)

The first few years of post-apartheid era witnessed series of fiscal adjustments, hence initiation of Reconstruction and Development Programme (RDP) and "Growth Employment and Redistribution" (GEAR) policy that prioritized government spending to the poorest segment. Furthermore, Accelerated and Shared Growth Initiative for South Africa (AsgiSA) aimed at sustainable 6% average annual growth rate between 2010 and 2014, reducing level of poverty and unemployment by 50% by 2014; with emphasis on infrastructural development, was launched (Oguyiaba et al, 2012).

Monetary and Fiscal Policy in South Africa

Before 2000, the South African monetary authority was emphasizing financial stability at the expense of economic growth by maintaining high interest rate (Khamfula, 2005). Nonetheless, the massive capital inflow that greeted the political liberation in 1994 together with the introduction of capital account liberalization by the South African Reserve Bank led to increase in money supply (Oguyiaba, et al 2012).

From the perspective of fiscal policy, significant adjustment started in the system of public expenditure management, financial planning and reporting. The budget was based on the MTEF; output-linked performance indicators and regulatory framework were established towards stringent controls in government institutions, resulting in fiscal deficit being kept below 3% of GDP (Manuel, 2007). The level of public debt as a percentage of GDP dropped from 50% to less than 40% (Khamfula, 2005).

As a result, there was a steady progress in access to education, healthcare, electricity supply, telecommunications and transport facilities. Thus by Community Survey released late 2007, over 88% of the populace has access to piped water and 70% to good housing compared to 50% and 64% respectively in 1996 (Oguyiaba et al, 2012).

South African Budgeting Experience:

According to NDI (2003),

The Government of South Africa has made progress in making the budget and government financial activities transparent and relevant to the parliament and the public. The government prepares annually a National Expenditure Survey, an Intergovernmental Fiscal Review, and a Medium-Term Budget Policy Statement, all of which are designed to improve management and provide relevant information to parliament. In addition, the Public Finance Management Act of 1999 creates a solid and transparent framework for management of government finances.

South Africa emphasises participation in crafting the Medium Term Expenditure Framework (MTEF), a non-binding three-year forecast of government spending. South Africa's parliament has between three and four months to consider the executive's budget prior to the beginning of the fiscal year; and hence falls within international norms, Under the 1996 Constitution, the parliament has power to offer amendments to the executive's budget only if the procedure is provided. In the absence of this procedure, South African parliament remains one of the least empowered national legislative bodies on budgetary issues; debating but never amending the government's budget proposal, (NDI, 2003).

The Constitution however extends broad powers to the parliament and each of its committees to compel individuals to provide testimony at public hearings, having provided explicitly for public access and participation. Interested parties nonetheless have argued that their voice is never heard.

According to a trade union official testifying before the Parliament's Finance Committee in 1997 cited in NDI (2003).

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We are frustrated by the constraining nature of the budget process, which renders meaningless both contributions of civil society and the deliberations of the elected people's representatives. For this reason, after some deliberations, we have decided that unless the budget process is fundamentally transformed to accommodate real public input, and effective parliamentary oversight, this submission on the 1997/8 budget will be our last. We will only participate in future parliamentary budget hearings if meaningful participation is made possible through a reformed budget process.

Notwithstanding, it must be acknowledged that South Africa over the years has evolved a

consistent budgeting process as in the figure below:



Figure 2.5: The Budget Process in South Africa

Notes: Lekgotia is Cabinet's periodic strategic planning (see Section 2.2.9). DOR: Division of revenue MTBPS: Medium-term Budget policy Statement. MTEC: medium-term Expenditure Committee. MTEF: Medium-term Expenditure Framework.

The Challenges of Post-Apartheid Strategies

Inspite of her strong democracy, good macroeconomic performances and clear engagement in regional and global affairs, South Africa faces serious development challenges (Ncube et al., 2012). The country's well developed economy coexist with an underdeveloped and marginalized economy. Income inequality and unemployment in South Africa are among the highest in the world, while violent crime, high degree of insecurity and HIV/AIDS pandemic constitute considerable social challenges, they further argue. Rodrik (2006) contends that South Africa has one of the highest unemployment rates in the world, close to 48%. The political and economic oppression of the blacks has indeed skewed the country's poverty profile along geo-racial lines and high rate of economic informality (Duclos and Verdier – Chouchane, 2011). Below is a figure depicting the poverty profile of South Africa



Figure 2.6: Poverty (Headcount) in South Africa with a Poverty Line of USD 3

Source: Duclos & Verdier-Chouchane (2011).

2.2 Theoretical Review

2.2.1 Peacock and Wiseman Theory of Public Expenditure:

As a result of their 1961 study in England, Peacock & Wiseman (1967) argued that growth in public expenditure does not follow the theory of Wagner. They inclined to political instead where it is deemed that government like to spend money, people do not like increasing taxation and the population voting for ever-increasing social services.

There may be divergence of ideas about desirable public spending and limitation of taxation but these can be narrowed by larger scale disturbances like major war. According to Peacock & Wiseman (1967), these disturbances will cause displacement effect, shifting public revenue and expenditures to new levels. Government will fall short of revenue to be followed by upward review of taxation. Initially, all citizens will exhibit resistance only to accept the verdict later in times of crisis. This will create a new level of "tax tolerance". Furthermore, the public expect the state to heal up the economy and adjust to the new social order to avoid inspection effect.

Peacock and Wiseman saw the period of displacement as reducing barriers that protect the local autonomy, thereby increasing the concentration of power over public expenditure to the central government. During this public expenditure centralization, the role of state activities tends to grow more and more. This is referred to as public sector activities".Today, growth in public expenditure has become inevitable that disturbance situations matter a little.

2.3 Theoretical Framework

From a normative point of view, every activity that involves budgetary decision must have a goal, explicit or implicit. Such goal are expected to provide the basis for undertaking such activities; be it the provision of new services or the expansion of existing ones. This however, is the argument of Rubin (1990) in his budget decision process theory which this study is hinged on.

2.3.1 Rubin's Budget Decision Process Theory (1990)

According to Rubin (1990), budgeting can be construed as the means that gives viability to the activities a government undertakes to achieve a defined goal or objective. It was this ideology that gave birth to his theory, "Budget Decision Process Theory".

An important aspect of the decision process theory is that when a government undertakes an activity or allocates funds for it, it is often considered not in isolation but together in combination with other activities. Both descriptive and normative theories fail to recognize this simple yet critical difference. The rationale behind this argument is that an activity that may not have an appeal when considered in isolation may appear attractive when considered in combination, as a package with other activities.

Anyone familiar with public budgeting knows that each year, budget managers in government receive funding requests for scores of activities from various operating agencies that far exceed the available resources. This puts a restriction on the number of activities that can be realistically funded with a given budget. Given that the number of activities for which funding is requested generally exceed the available resources, it is possible to organize these activities into different combinations or packages, defined here as *portfolios*. Theoretically, one can have *n* number of such portfolios, each with its own budget that would constitute the choice set from which a budget manager must make his or her decision. This notion of budgeting as a decision-making exercise involving multiple packages or combinations is consistent with *portfolio theory* used for a long time in financial decision making in the private sector. Developed by Harry Markowitz in the 1950s to deal with the problem of asset management under conditions of risk and uncertainty, the theory states that activities (assets in this case) that may not be acceptable when considered individually tend to merit acceptance when an optimum combination of new and existing activities is taken into consideration. This may result from favourable interaction, called *portfolio effects*, among these activities.

2.3.2 The Concept of Expected Return in Rubin's Theory

Our discussion starts with a simple assumption that for every activity in government for which funding is requested, there is an expected return, which may be monetary or non monetary. The notion of expected return is critical in budget decision making because without this there would be no rational basis for allocating funds. For instance, when funds are allocated for education, the expected return may be the greatest number of children that can receive education. Similarly, when funds are allocated for library or public safety or transportation, the expected return may be an increase in the number of readership, a reduction in the number of vehicle accidents, and a lowering of traffic congestion by certain percentage, in that order. In each instance, the expected return is a target value (i.e., an objective) that may or may not be fully achieved. In the latter case, this may be due to factors unknown to the decision makers at the time of decision making, or, even if they are known subsequently, the decision makers may not have enough control over them to affect their final outcome. Since the decision makers can never know for sure whether a target value will be fully realized, we can formally define the expected return of a portfolio as the weighted average of the expected rates of return of the activities it contains. The weights, in most instances, represent the probability assigned to the realization of a target value for the proportion of total funds (budget) allocated to an activity. Obviously, the more an activity realizes its target value, the greater the weight assigned to that activity. In general, for a portfolio containing two activities, 1 and 2, the expected return can be written as:

 $E(Rp) = E(X_1 R_1 + X_2 R_2)$ or

 $E(Rp) = X_1 E(R_1) + X_2 E(R_2)$

Where: Rp is the portfolio return,

 X_1 is the proportion of the total budget allocated to activity 1,

 $X_2 = (1 - X_1)$ is the proportion of the budget allocated to activity 2, and

 R_1 and R_2 are the returns on activities 1 and 2, respectively.

2.3.3 The Concept of Variance/Covariance in Rubin's Theory

When an activity fails to achieve its target value, it indicates a departure from expectation. The departure, commonly known as *variance*, is a statistical expression for dispersion from an expected return. Because of its stochastic, that is, unpredictable

nature, the variance of a portfolio is frequently defined in terms of *risks* associated with it. We can define risk as the chance one takes when making a decision, such as betting on a horse or skydiving. The term is often used interchangeably with uncertainty. The difference nonetheless is that with risks the decision makers can assign a probability on the occurrence of the outcomes of those decisions, while with uncertainty it may be difficult to do so. However, it may be possible to reduce problems with uncertainty to those of risks with more information, although there may be a cost associated with it. Theoretically, for every expected return, there is a corresponding variance or risk that measures the departure from that expected value. In portfolio literature, the variance of a portfolio indicates not only a departure from an expected value but also a covariance among all its activities. A *covariance* therefore is a measure of the degree to which a pair of activities moves together or covaries. In other words, it measures the effect the interaction between a pair of activities produces in a portfolio.

2.3.4 The Concept of Dominance in Rubin's Theory

Our discussion of expected return and variance brings us to another important concept in portfolio theory, called *dominance*. Dominance is a situation where one or more activities in a portfolio dominate others, meaning that when faced with a situation involving multiple activities, a decision maker will most likely prefer some activities more than others in a portfolio. The activities that are preferred dominate those that are not. The underlying notion behind dominance in portfolio theory is the desire to make the best possible decision based on expected returns and risks of the activities in a portfolio. For instance, when we pay less for a commodity, what- ever that may be, it increases our return for that commodity. Thus, the cost of an activity is measured by the amount one pays and the risk one assumes when purchasing that commodity. For government, the funds allocated for different activities in a portfolio must reflect the expected return and, given the allocation, it must also reflect the assumption of as little risk (i.e., variance) as possible for those activities. Based on this simple knowledge of portfolio theory, we can now extend our discussion to multiple portfolios and try to explain the role these concepts play in determining the best from a set of efficient portfolios or budgets

2.3.5 Justification of Efficient Portfolios (Budgets) - Rubin's Theory

As noted earlier, this study is anchored on the Rubin's budget decision process theory. While there is no way to ensure that an expected return will eventually become a realized return, the decision maker must make some trade-offs between risk (i.e., variance) and return (i.e., its target value). This also applies to budget managers in government. Faced with the option to choose from several different portfolios or budgets, the budget manager is expected to select the portfolio that would maximize the expected return and minimize the variance. In other words, select the portfolio that for any given expected return will have minimum variance, or select a portfolio that for any given variance will have the maximum expected return, that is, it will be efficient. A portfolio is efficient if there does not exist another portfolio with a higher expected return and a lower (or same) variance. Ideally, a prudent manager will try to eliminate as many of the inefficient portfolios (budgets) as possible from the set of all possible portfolios and retain the ones that are efficient.

2.4 Empirical Literature

There are several studies that have extensively investigated the effect of government budgeting and fiscal administration in both developed and developing nations. These studies however, dealt with a specific time frame. Aside from the time frame, comparative studies on countries in Sub-Saharan Africa seem to be scanty. In this section empirical studies have been reviewed in line with the objectives and variables of focus of this study as follows:

2.4.1 Studies on Government Budget Performance and Implementation

Fenno (2006) investigated budgetary performance and political stability in Ghana. The study adopted the surevy design that included 500 workers of the Budget Office in the country. Primary data were obtained through the use of questionnaire and interview. The data obtained were analysed by means of descriptive statistics and simple percentages. Findings from the study indicate that 400(80%) agreed that political instability have the tendency of influencing budgetary performance while 100(20%) had a contray opinion. It was therefore concluded that political instability have largely influenced budgetary performance in Ghana during the study period.

In another study, Cochran (2007) investigated how budget performance influenced economic growth in South Africa. Again, this study adopted the survey design and 122 workers of the Budget Office in South Africa were included in the study. Questionnaire

were designed and distributed to elicit primary data for the purpose of analysis and inference. The data obtained were analysed by means of tables, charts and simple percentages. Overall, the study found that 73(59.84%) of the total respondents were of the view that budget performance greatly influenced economic growth in South Africa, while 49(40.16%) had a contrary opinion. The study thus concluded that for the period under study, budget performance significantly influenced economic growth in South Africa Africa

Gollwitzer (2010) developed an index measuring the adequacy of the institutions, rules and procedures governing the budget process in 46 African countries. It thus presents the most comprehensive analysis of African budget institutions hitherto conducted. The index includes the three stages of the budget process: negotiation, legislative approval, and implementation. At each stage the quality of the budget process was measured along five criteria: centralization, rules and controls, sustainability and credibility, comprehensiveness, and transparency. A wide dispersion in institutional quality was found across the continent. Furthermore, an empirical analysis based on ordinary least square shows that budget institutions have a disciplining effect on central government gross debt and on the overall and primary central government balance.

In Nigeria, Abiola & Asiweh (2012) unearths the impact of tax administration on government revenue in Nigeria. The study adopted the survey research design that included 121 online survey questionnaires containing 25 relevant questions. Descriptive

statistics were used to analyse 93 usable responses. The study found among other things that increasing tax revenue is a function of effective enforcement strategy which is the pure responsibility of tax administration.

Similary, Afuberoh & Okoye (2014) examined the impact of taxation on revenue generation in Nigeria, with reference to the Federal Capital Territory (FCT) and some selected states in the country. Primary data were heavily relied on this study and responses were elicited from a total of 396 respondents that took part in the study. The data obtained were presented and analyzed by means of tables and simple percentages. The testing of the hypotheses of the study was done using regression analysis computed with the aid of SPSS version 17.0. The study found among others that, taxation has a significant contribution to revenue generation and taxation has a significant contribution on Gross Domestic Product (GDP) of Nigeria.

Agu, Idike, Okwo & Ugwunta (2014), uncovers the impact of various components of fiscal policy on the Nigerian economy. The study employed descriptive statistics to show contribution of government fiscal policy to economic growth, ascertain and explain growth rates, and an ordinary least square in a multiple form to ascertain the relationship between economic growth and government expenditure components after ensuring data stationarity. Findings revealed that total government expenditures have tended to increase with government revenue, with expenditures peaking faster than revenue. Investment expenditures were much lower than recurrent expenditures evidencing the poor growth in

the country's economy. In addition, there is evidence of positive correlation between government expenditure on economic services and economic growth.

In a more recent study, Nwaorgu (2015) theoretically examined the effect of dominant individuals on budget implementations in Nigeria. The methodology used in the study was content analysis method. The literature and empirical review revealed that the activities of dominant individuals range from manipulation of budget items before and after approval of annual estimate: embezzlement and fraudulent activities: lack of proper budgeting processes are responsible for the failure of budgets in Nigeria.

Onyiah, Ezeamama, Ugwu & Mgbodile (2016) investigated the impact of budget implementation and control reforms of the Federal Government of Nigeria so as to analyze their impact on resource management, productivity level, efficiency, personnel and overhead costs. The study employed expost-facto descriptive research design. The respondents involved Accountants and Economists who are in the federal civil service in Enugu State. The questionnaires were distributed to a sample of 308 and data obtained analyzed using Analysis of Variance (ANOVA). Findings revealed that poor project conceptualization, design or planning practices by Ministries, Departments and Agencies (MDAs) resulted into low resources management. Furthermore, respondents also perceived that there is no significant reduction in the personnel and overhead cost budgets allocated to the public service.

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2.4.2 Studies on Government Budgets and Expenditure

Herath (2004) worked on the relationship between public expenditure and economic growth in Sri Lanka from 1959 to 2003. The study found that government expenditure has a positive effect on growth. Within the same period, De-Bonis & Della-Posta (2005) provided an analytical framework for the analysis of the monetary and fiscal interactions in an environment, which may represent the current European situation, characterized by a single monetary authority (ECB) and several fiscal authorities. Considering macroeconomic policy as implemented through two instruments, monetary and fiscal policy, and defined by two objectives, price and output stabilization, they justify the introduction of fiscal rule like those contained in the SGP.

In addition to the above, Loizides & Vamvoukas (2005) used bivariate causality test to examine the relationship between government spending and economic growth based on secondary data obtained from Greece, United Kingdom and Ireland. The study found that government expenditure granger causes economic growth in all the countries.

Adeoye (2006) examined the effects of fiscal policy on growth of the Nigerian economy (1970-2002). The study utilized the regression estimation model to find out the effect which fiscal policy had on the growth of the Nigerian economy. The result showed that capital expenditure as a ratio of GDP (used as proxy for public investment) exerted a negative impact on output growth by having a crowding-out effect on private investment.

Besfamille & Lockwood (2007) analysed hard and soft budget constraints in a federation, where there is amoral hazard problem between the central and the regional governments. The theoretical study showed that the mode of fiscal federalism and hard budget constraints do not necessarily solve the problems generated by soft budget constraints.

Aregbeyen's (2007) study of a panel of 40 African countries (including Nigeria) revealed that Government Capital and public investment expenditures were significantly positively associated with economic growth while current and consumption expenditures were negatively associated. The former category of expenditure was in less proportion of government total expenditure than the latter category.

Bingxin et al (2009) examined the impact of the composition of public expenditure on the economy of developing countries. Their study employed the Generalized Moment Model (GMM) and a panel data set for 44 developing countries between 1980 and 2004. The result revealed different impact for various types of government spending, specifically in Asia, capital formation for agriculture and education expenditure had the strongest growth promoting effect; this case was different in Latin America where none of the expenditure items had significant impact on economic growth.

In a study by Afzal & Abbas (2010), the traditional and time series econometrics techniques were used to reinvestigate whether the Wagner's hypothesis still holds in Pakistan. Secondary data were obtained for the study period which covered 1960 -2007. To achieve the aim of the study, fiscal deficit and population growth were added to the

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functional form of the law. The study examined data for four different time periods in order to take care of the structural changes that occurred during the study period. The data obtained were further analysed by means of cointegration technique, blended with the Augmented Dickey-Fuller (ADF) test. Results from the study indicate that Wagner's hypothesis did not hold for aggregate public spending and income for three periods (1961 - 2007, 1973 - 1990, 1991 - 2007).

Verma & Arora (2013) examined the validity of Wagner's law in India between 1950/51 and 2007/8. Six versions of Wagner's hypothesis that supported the existence of longrun relationship between economic growth and growth of public expenditure were estimated. The cointegration technique and the error correction mechanism were applied to test the empirical postulates of this study. Empirical evidence refutes the existence of any relationship between the size of government expenditure and economic growth in the short-run.

In a more recent study, Odhiambo (2015) examined the dynamic causal relationship between government expenditure and economic growth by obtaining data from South Africa. The study utilized the auto-regressive distributed lag model (ARDL) - bounds testing approach to examine this linkage. With a view to address the omission of variable bias, the study incorporated unemployment as an intermittent variable between economic growth and government spending, thus creating a simple multivariate model. Findings indicated that, although both government expenditure and economic growth Granger-caused each other in the short run, in the long run, it was economic growth that Granger-caused government expenditure.

2.4.3 Studies on Budgets and Fiscal Deficits

In relation to budgets and fiscal deficits, Nachega (2005) examined fiscal dominance hypothesis in the Democratic Republic of the Congo (DRC) by focusing on the period 1981 to 2003. For this purpose, secondary data were obtained and analysed with the multivariate cointegration analysis and vector error correction model. Results from the study indicated however that a strong and significant long - run relationship existed between budget deficits and seigniorage, and between money creation and inflation.

In another study, Funke & Nickel (2006) examined the empirical relationship between fiscal policy and the trade account, while taking into consideration the components of private and public demand in the import demand equation, which exhibited different elasticities. The study used pooled mean group estimation for annual panel data of the G7 countries for the period 1970 to 2002. The results revealed that the composition of overall demand, (the distribution among public demand, private demand and export demand) significantly affected the magnitude of trade account deficit among the sampled countries.

In a Nigerian study, Onafowora & Owoye (2006) examined the long run relationship between the fiscal deficits and trade deficits using yearly time series data from 1970-2001. The variables of interest in this study included trade deficits, budget deficits, broad money supply, industrial production (as a proxy for domestic income), three-month discount rate and the real exchange rate. The Johansen multivariate cointegration techniques with the vector error correction model were adopted for the estimation of the model developed in the course of this study. Results however indicate the existence of a long-run equilibrium relationship between the fiscal deficit and trade deficit. In further attempt to estimate the vector error correction model of the study, it was discovered that the error correction was negative and statistically significant, portraying convergence to equilibrium.

In Ethiopia, Wolde-Rufael (2008) examined the causal relationship between fiscal deficits, money growth and innovation in Ethiopia. The study period spanned from 1964-2003 and secondary data were obtained for the purpose of analysis and making inference. Four cointegration approaches were adopted in this study (the Autoregressive Distributed Lag (ARDL), the Dynamic Ordinary Least Squares (DOLS), the Fully Modified Ordinary Least Squares (FMOLS) and the Johansen cointegration technique. Interestingly, the results from the four approaches indicated evidence of long-run relationship between fiscal deficits and innovation. Results also show that in the short-run, fiscal deficits was not having significant effect on innovation.

Mohammadi & Moshrefi (2012) examine the long-run and short-run dynamics of fiscal policy and current account deficits using time series data for four East Asian countries (South Korea, Malaysia, Singapore and Thailand). In order to estimate the model and test

the relevant hypotheses, the study employed among others, the Augmented Dickey-Fuller (ADF) unit root test. Interestingly, the study failed to reject the null hypothesis of unit roots at levels since most of the variables of interest were stationary at first differences. By further employing the maximum eigen-value and trace tests, the study found the presence of long-run relationship among the variables for all four countries. The coefficient of the lagged error correction term was found to be negative in three out of four countries (South Korea, Singapore and Thailand) but was statistically significant in Thailand.

Magnus & Kehinde (2012) examined the link between fiscal deficit and short-term changes in major macroeconomic variables such as real output, interest rate, exchange rate, inflation rate and crude oil price in Nigeria. Empirical results showed that the model adequately explained the behaviour of government fiscal deficit and that while the accumulation of deficit was not at all detrimental to the economy per se, prudence ought to be exercised in the financing options adopted and more so the appropriate application of such funds to self-financing projects.

Xolani & Amanja (2015) investigated empirically the nature of relationship between fiscal deficits and economic growth in the Kingdom of Swaziland using time series secondary data from 1981-2013. The Autoregressive Distribution Lag (ARDL) approach and other econometric tests such as Augmented Dickey Fuller (ADF) and Phillips-Perron (PP) for Unit Root were employed. The findings revealed that fiscal deficit and government recurrent expenditure negatively affected economic growth whereas government investment and inflation had positive effect on growth.

Nkalu (2015) investigated the effects of budget deficits on selected macroeconomic variables in Nigeria and Ghana using annual time-series data of both economies covering from 1970 to 2013. Variables of interest in this study included budget deficits interest rates, inflation, and indicators of economic growth in Nigeria and Ghana within the methodological framework of Seemingly Unrelated Regression (SUR) model and Two-Stage Least Squares (2SLS). Empirical findings demonstrated that budget deficit had statistical negative effect on interest rate, inflation, and economic growth, thus supporting the neoclassical argument in the literature that budget deficit slow growth of the economy through resources crowding-out.

2.4.4 Studies on Government Budgets and Fiscal Administration

Omitogun & Ayinla (2007) conducted a study on fiscal policy and the Nigerian economy. Data were obtained for a 24 year period that spanned from 1981 to 2004. Gross domestic product was used as proxy for economic growth representing the dependent variable while fiscal deficit ratio, debt financed deficits and money printing financed deficits were used as explanatory variables. The study followed the pattern of the Solow-Growth model which was estimated with the ordinary least square regression method. Findings indicate that fiscal policy has not been effective in promoting sustainable economic growth. They concluded that factors like wasteful spending, poor policy implementation and lack of feedback mechanism for implemented policy evident in Nigeria are indeed capable of hampering the effectiveness of fiscal policy and budget implementation process in the country

Adefeso & Mobalaji (2010) conducted a study on fiscal-monetary policy and economic growth in Nigeria. Their major objective was to re-estimate and re-examine the relative effectiveness of fiscal and monetary policies on economic growth in Nigeria using annual data from 1970-2007. The Error correction mechanism and co-integration technique were employed to analyze the data and draw policy inferences. Their result showed that the effect of monetary policy was much stronger than fiscal policy. They suggested that there should be more emphasis and reliance on monetary policy for the purpose of economic stabilization in Nigeria.

Similarly, Chukwu (2010) used quarterly data to explore the monetary and fiscal policy interactions in Nigeria between 1970-2008. The study examined the nature of fiscal policies in Nigeria using vector auto-regression (VAR) model. Evidence from the study indicated that monetary and fiscal policies in Nigeria have interacted in a counteractive manner for most of the sample period (1980-1994) while at other periods no symmetric pattern of interaction between the two policy variables was observed.

Peter & Simeon (2011) adopted vector auto regression (VAR) and error correction mechanism techniques to ascertain the impact of fiscal policy variables on Nigerian economic growth between 1970 and 2009. The study revealed that there is a long-run

relationship between fiscal policy variables and economic growth in Nigeria. Nevertheless, the research failed to consider other variables such as interest rate and exchange rate in defining fiscal policy and its influence on economic growth.

Sikiru & Umaru (2011) studied the causal link between fiscal policy and economic growth in Nigeria, using Engle-Granger approach and error correction models which was estimated to take care of short-run dynamics. The result indicated that productive expenditure positively impacted on economic growth during the period covered. They also failed to confirm the other element in the link whereby fiscal policy should be more strongly associated with output and input measures in the economy.

Mueller (2011) investigated economic, political and institutional constraints to fiscal policy implementation in sub-Saharan Africa. It was found that planned fiscal adjustments or expansions are less likely to be implemented. The larger they are, the more inaccurate the growth forecasts they are based on. The finding supports on-going efforts in the region to improve the quality and timeliness of economic data, enhance forecasting capacity, adopt realistic fiscal plans, and strengthen governance, budgetary institutions, and public financial management procedures.

Iyeli & Ijeomah (2013) investigated the impact of fiscal policy variables on Nigeria's growth between 1970 and 2011. In order to reduce the problem of non-stationarity usually associated with time series data, the study adopted the co-integration and error correction

mechanism techniques. The result revealed that there exist a long run equilibrium relationship between economic growth and fiscal policy variables in Nigeria.

Ehiedu & Odita (2014) examined the application of budgeting techniques in fiscal institutions in Nigeria. The study specifically examined the level at which efficient budgeting techniques improved the revenue of fiscal institutions. The expost-facto research design was used and the purposive sampling technique was employed. The statistical technique adopted was the regression method. The research findings revealed that budgeting helped to control the differences between budgeted and actual revenue, as well as recurrent and capital expenditure to ensure better economic performance. The results from the study by Ehiedu & Odita (2014) also indicated that the relationship between budgeted recurrent expenditure and actual recurrent expenditure was statistically significant while capital expenditure recorded similar outcome.

Guinigundo (n.d) investigated the the link between fiscal policy, public debt management and government bond markets in Philippines. The study employed a descriptive approach to establish whether or not fiscal policy had significantly improved debt management and government bond markets over the past decade. The study found that despite the dividends from reforms, challenges remain for the Philippines on the fiscal side. However, Policy coordination, primarily through the Development of Budget Coordinating Committee, was considered to be an option that would help to reduce the need for policy sterilisation.

2.5 Summary of Review/Gap

This study dealt with budgeting and fiscal administration in Sub-Saharan African countries. Concepts like government budgeting, budgeting process, techniques and reforms, fiscal administration among others were examined. Under the review of literature, it was observed that most results of studies on panel data for both developed and developing countries were having conflicting results. This could be explained by the difference in the choice of methodology, use of different time frames coupled with the fact that structural breaks and regime shifts were ignored in most of these studies except for few studies in the US and some Asian countries.

The above situations however created empirical gaps for studies like this that focused on countries in Sub-Saharan Africa. From the review of empirical studies, one would clearly observe that there seem to be no study that comparatively examined budgeting and fiscal administration in developing economies by specifically focusing on countries in Sub-Saharan Africa.
CHAPTER THREE

METHODOLOGY

The selection of the method to be applied in any research undertaking is paramount to its success. The methodology applied in any study refers to the methods, procedures or modalities by which the researcher intends to accomplish the objectives of his research project (Agbonifoh & Yomere, 1999). It elucidates the methods adopted in the analysis of data in any research undertaking. In the light of the above, this chapter specifically outlined the basic methodological procedures adopted in the conduct of this study. These procedures consist of design of the study, population, sample size and sampling technique adopted. They also cover sources and methods of data collection as well as model specification and procedure for data analysis.

3.1 Research Design

The *ex-post facto* research design according to Simon & Goes (2013) is ideal for conducting social research when it is not possible or acceptable to manipulate the characteristics of the participants or the data obtained for the study. In view of this, the *ex-post facto* research design was adopted in this study. Our justification for this choice is because the design enabled us to observe and measure existing data that are both quantitative and qualitative in nature over a long period of time without any form of manipulation of data. It also helped in establishing the cause-and-effect relationship between the variables of interest in this study.

3.2 Population of the Study

The population of the study consists of the fifty (50) countries of the sub Saharan African region (Library of Congress, 2010). These countries are similarly referred to in this work as economies. They are all rated and classified as developing economies within the four regions of Sub-Sahara Africa (East Africa, Mid Africa, Southern Africa and West Africa).

3.3 Sample Size and Sampling Techniques

The sample size consists of twelve (12) countries of Sub-Saharan Africa. The economies sampled are Kenya, Ethiopia, Tanzania, Angola, D.R. Congo, Cameroon, South Africa, Botswana, Namibia, Nigeria, Ghana and Cote D'Ivoire. We selected the samples using Purposive/Judgmental Sampling Technique. According to Asika (2004) and Olannye (2006), in applying purposive sampling, the researcher might be guided by what he considers typical cases which are most likely to provide him with the requisite data or information. In view of this, the sample for this study was selected to cover the four regions of Sub-Saharan Africa. Using the size of GDP at current \$USD as at 2014, the largest 3 economies in each region (East Africa, Mid Africa, Southern Africa and West Africa) were selected and included as the sample for this study. The size of GDP which ranged between \$12.9 billion (Namibia) and \$568.5 billion (Nigeria) was based on available data of Worldbank (2014) and African Development Bank (2015).

3.4 Method of Data Collection

Basically, for dependable and unbiased analysis, secondary data were sourced for this study. The data were however sourced from publications of respective ministries of finance and monetary authorities including apex banks of the selected countries. Data were also sourced from the African Statistical Year Book (a publication of the African Development Bank) for the relevant years.

3.5 Method of Data Analysis

In this study, we adopted the regression technique as our basic statistical tool for data analysis using the Ordinary Least Square (OLS) regression method. The analyses were done in sections: descriptive statistics for the variables involving mean, standard deviation, minimum and maximum value; and the analyses of correlation matrices. The Pearson Correlation Coefficient and the variance inflation factor (VIF) tests were conducted. The result of the VIF test was used to ascertain the presence or otherwise of multicollinearity among the independent variables. The rule is that where the mean VIF is above 10 (the maximum), there is the presence of multicollinearity among the independent variables. The rule is test was also conducted to test for the presence or otherwise of heteroskedasticity in the data set. In order to measure the level of statistical association between the dependent and independent variables used in this study, a 5% level of test of significance was employed.

3.6 Model Specification and Estimation Procedure

According to Asogu (1998) and Adefeso & Mobolaji (2010), policy makers have two major policies with which to stabilize the economy. These are monetary and fiscal policies. Fiscal policy provides two basic instruments with which any fluctuations in the economy are moderated. The instruments are taxes and government expenditure (fiscal administration). Since the focus of this study is on budgeting and fiscal administration in Sub Saharan African countries, the model specified in this study concentrated on variables considered to be relevant in measuring government budgets and fiscal administration.

In using the Ordinary Least Square (OLS) technique, the models formulated in this study followed the traditional OLS form which is stated below:

$$y_t = a_0 + a_1\beta_1 + a_2\beta_2 + a_3\beta_3 + \dots + a_6\beta_6 + U_t$$

Source: McManus (2011)

Where y_i is the dependent variable (Government Budget) and U_t the error term. β_1 , β_2 , β_3 , ..., β_6 are the regression coefficients with unknown values to be estimated; tax revenue, non tax revenue, capital expenditure, recurrent expenditure, budget variance and fiscal deficit financing are the independent variables (measuring fiscal administration). The apriori expectation is such that $\beta > 0$ (i =1 - ...n). The data used in this study covered the period 2000-2014.

3.7 Correlation and Regression Analysis

Correlation is a statistical technique which measures degree and direction of relationship between the variables. It always lies between ± 1 . It is a relative measure. While regression measures the nature and extent of average relationship in terms of the original units of the data. If one of the regression coefficients is greater than unit the other must be less than unit. It is an absolute measure of relationship. Correlation analysis is a method of determining whether two sets of data are related in a manner such that they increase together, if one increases, the other decreases. Regression analysis, on the other hand, hypothesizes a particular direction of the relationship. With regression one variable is determined by the others. With the above in mind, it is pertinent to mention that in the course of analyzing the data for this study, we also employed the correlation and regression techniques.

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.1 Data Presentation

This study investigated "Budgeting and Fiscal Administration among sub-saharan African countries". This was achieved by obtaining secondary data from the statistical year book of the African Development Bank for the relevant years spanning from 2000 - 2014 (i.e. a period of 15 years). The data used in this study were obtained from twelve countries drawn from the four zones of the countries within Sub-Sahara Africa (Kenya, Ethiopia, Tanzania, Angola, D.R.of Congo, Cameroon, South Africa, Botswana, Namibia, Nigeria, Ghana and Cote D'Ivoire). The data obtained for this study are contained in Appendix II of this research report.

4.2 Analysis of Results and Descriptive Statistics

This study sampled the selected countries in general and then went ahead to study the various sampled countries independently. In order to examine budgeting and fiscal administration patterns in the region, we adopted the panel data analysis approach in a bid to identifying the possible patterns of fiscal deficit imbalance as it affects budgeting in sub-sahara Africa. To this end, we conducted a descriptive statistics, correlation matrix and variance inflation test. Panel data regression corrected for heteroschadaticity was also conducted to determine the effect of the independent variables in the models.

It is noteworthy however to mention that the variables analysed in this study include Government Budget Performance (*GovBPerf*) as the dependent variable while the independent variables were Tax revenue (*TaxRev*), Non Tax revenue (*NTaxRev*), Capital Expenditure (*CapExp*), Recurrent Expenditure (*RecExp*), Budget Variance (*Bvar*) and Borrowed Fund used in financing budget deficit (*FisDefF*).

The data with respect to the variables used in this study which we obtained for the 12 sampled countries listed in Appendix I of this research report are analysed in the following section.

4.2.1 Descriptive Statistics for Entire Panel Data

In this section, we presented the descriptive statistics of the summarised variables for the entire panel data. Below is a table showing the summarised results of the descriptive statistics.

Jarque-Bera 161.61(0.00)** 197.83(0.00)** 84.17(0.00)** 241.79(0.00)**

222.13(0.00)**

210.47(0.00)**

Table 4.1: Descriptive Statistics							
Variables	Mean	Std. Dev.	Min. Value	Max. Value			
Budget Perf (GovBPerf)	-1.1948	12.5582	-78.81	33.08			
Tax Revenue (TaxRev)	24.5681	29.9445	0.95	213			
Non Tax Revenue (NTaxRev)	3.3765	4.1469	0	20.69			
Rec. Expenditure (<i>RecExp</i>)	8.2922	16.2803	0.08	128			

22.7314

11.9659

0.3500

30.6836

36.1664

0.4783

1.53

0

0

209.01

275.33

1

Table 4.1: Descriptive Statistics

Cap. Expenditure (*CapExp*)

Budget Variance (*BVar*)

Debt/Borrowed

(FDefF)

Source: Author's Computation Using Stata Software, 2016

Funds

4.2.2 Correlation Analysis for Entire Panel Data

In order to examine the direction and relationship among the variables, we adopted the Pearson Correlation Coefficient (PCC) matrix. This is because, with the result from the PCC, one is able to establish whether or not the variables are related. It also tells us the direction of the relationship between and among the variables used in a given study. By implication, the result of the correlation coefficient should be able to give s a signal on whether there is the presence of multicollinearity in the independent variables used in the study. In view of the aforementioned, the results of the PCC are presented in Table 4.2 below.

		mary sis (1	nui e i unei	Dutu)				
Variables	GovBPerf	TaxRev	NTaxRev	CapExp	RecExp	FDefF	Bvar	
GovBperf	1.0000							
TaxRev	-0.6857	1.0000						
NTaxRev	-0.0294	0.3374	1.0000					
CapExp	-0.7277	0.8730	0.3442	1.0000				
RecExp	-0.7098	0.8046	0.2863	0.8292	1.0000			
FDefF	-0.7131	0.7069	0.5414	0.7784	0.7977	1.0000		
Bvar	0.5005	-0.0368	0.3082	-0.0959	-0.1662	-0.0082	1.0000	
								-

 Table 4.2 Correlation Analysis (Entire Panel Data)

Source: Author's Computation Using Stata Software, 2016

4.2.3 Multicollinearity Test for Entire Panel Data

It has been argued that the existence of multicollinearity between the independent variables used in any given study can lead to wrong signs or implausible magnitudes in the estimated model coefficients, and in the long run, a bias of the standard errors of the coefficients. On the basis of this argument, we conducted a test for multicollinearity for the independent variables used in this study by relying on the results from the Variance Inflation Factors (VIF) for the independent variables.

4.3 Analysis of Budgeting and Fiscal Administration Across Sub-Saharan Africa

In this section, we analysed the relationship between budgeting and fiscal administration using the entire panel data for the sampled countries across the four regions of sub-sahara Africa. First, we did a general analysis of the entire panel data along with the test for whether or not, there is the presence of heteroskedasticity in the variables used in this study. Next, we present the result of a country by country analysis, before proceeding to the next section where we tested the hypotheses formulated in this study.

4.3.1 Analysis of Entire Panel Data of Sampled Countries

In order to analyse the relationship between the dependent variable (budgeting, which was measured by budget performance) and the independent variables (government revenue, government expenditure and budget variance), and to test our formulated hypotheses we used panel data regression. The regression results from the analysis of the entire panel data for the sampled countries are presented in Table 4.4.

Table 4.4 shows the outcomes for the relationship between the budget performance of countries in Sub-Sahara Africa and the combination of Tax Revenue (*TaxRev*), Non Tax revenue (*NTaxRev*), Capital Expenditure (*CapExp*), Recurrent Expenditure (*RecExp*), Budget Variance (*Bvar*) and Borrowed Fund used in financing budget deficit (*FisDefF*). for the 180 observations. The R^2 is 0.8759 which suggests an 87.59% explanatory ability

of the estimation for the systematic variations in the dependent variable with an adjusted value of 0.8716 (87.16%).

Evaluating the slope coefficients of the explanatory variables reveals the presence of positive relationship between budget performance (*GovBPerf*) and non tax revenue (0.8466597) as well as between budget performance (*GovBPerf*) and recurrent expenditure (0.0409476) and budget variance (9.420706). Other explanatory variables, like tax revenue (-0.059375), capital expenditure (-0.125091), and debt/borrowed funds (-0.194077), were carrying a negative sign.

4.3.3 Comparative Analysis of The Results of Sampled Countries

In this section, we present a comparative analysis of the results on the relationship between budgeting and fiscal administration with regards to the sampled countries across Sub-Saharan Africa.

and Dudget i erformance (Govbi erf)								
Country	Tax	Revenue	(TaxRev)		Non-Tax	Revenue	(NTaxRev)
	Coefficient	Std. Error	T-stat.	Prob	Coefficient	Std. Error	T-stat.	Prob
Kenya	1.005701	0.1808706	5.56	0.001	1.0481250	0.2350708	4.46	0.002
Ethiopia	0.099720	0.0041232	242.46	0.000	1.0009430	0.0026378	379.47	0.000
Tanzania	-0.0062791	0.1693154	0.971	0.494	-2.4038980	3.369888	-0.71	0.494
Angola	1.0118640	0.0137762	73.45	0.000	0.8991780	0.0976766	9.21	0.000
DR. Congo	0.1096335	0.2516469	0.44	0.675	-1.0393890	1.052176	-0.99	0.352
Cameroon	-0.0736513	0.0776337	-0.95	0.371	0.9278371	0.9069982	1.02	0.336
South Africa	1.59996700	0.2933873	5.45	0.002	0.7976875	1.223511	0.65	0.539
Botswana	0.76450490	0.2993235	2.55	0.034	0.9545712	0.4945752	1.93	0.090
Namibia	0.88256636	0.3310790	2.67	0.029	0.5393500	1.013558	0.53	0.609
Nigeria	0.95176860	0.6724450	14.15	0.000	5.8767160	1.625357	3.62	0.009
Ghana	0.87201770	0.0052402	166.41	0.000	1.7359630	0.0080392	215.94	0.000
Cote D'Ivoire	0.16073960	0.8587370	1.87	0.098	0.8082574	0.7443051	1.09	0.309

 Table 4.59: Relationship Between Government Revenue (TaxRev and NTaxRev) and Budget Performance (GovBPerf)

Source: Author's Computation Using Stata Software, 2016

Table 4.59 above reports the comparative analysis of the results of sampled countries. It is clear from the table above that the coefficients of all the sampled countries except Tanzania (-0.0062791) and Cameroun (-0.0736513) are carrying positive signs for tax revenue. The coefficients of non-tax revenue for Tanzania (-2.403898) and DR. Congo (-1.039389) are also carrying negative signs. The negative sign in the coefficient for Tanzania and Cameroon (Tax Revenue) is an indication that government revenue negatively influenced budget performance for the period.

However, government revenue has some insightful revelations; first, tax revenue (TaxRev) is stastistically significant for countries like Kenya, Ethiopia, Angola, South Africa, Botswana, Namibia, Nigeria, Ghana and Cote D'Ivoire except that for countries like Tanzania, DR. Congo and Cameroon, the results were statistically flawed (see p-values for tax revenue). Secondly, non-tax revenue (NTaxRev) was found to be statistically significant for some of the countries (Kenya, Ethiopia, Angola, Botswana, Nigeria and Ghana). although, for countries like Tanzania, DR. Congo, Cameroon, South Africa, Namibia and Cote D'Ivoire the results were statistically flawed (see p-values for non-tax revenue). On the whole, we found that budget performance was positively influenced bygovernment revenue for most of the countries in Sub-Saharan Africa.

)	D (D	7.		
Country	Capital Expe	enditure			kecurrent Expenditure			
	Coefficient	Std. Error	T-stat.	Prob	Coefficient	Std. Error	T-stat.	Prob
Kenya	-1.0239210	0.1353385	-7.57	0.000	-0.8439471	0.1203256	-7.01	0.000
Ethiopia	0.0016276	0.0040591	0.40	0.699	-0.0001721	0.0039655	-0.04	0.966
Tanzania	-0.8488457	0.4401252	-1.97	0.080	-1.0917150	0.4828981	-2.26	0.050
Angola	-1.0159090	0.0160989	-63.10	0.000	-1.0026490	0.0017450	-57.46	0.000
DR. Congo	-0.6709357	0.2319099	-2.89	0.020	0.3201343	0.3068439	1.04	0.327
Cameroon	0.1279619	2.5908460	0.05	0.962	-1.0747350	2.5056050	-0.43	0.679
South Africa	-1.7634090	0.8866989	-1.99	0.094	-1.2633400	0.3789415	-3.33	0.016
Botswana	-0.0954600	0.5574394	-0.17	0.868	-1.1998030	0.6123960	-1.96	0.086
Namibia	-0.5429181	0.3442453	1.58	0.153	0.5335026	0.2597346	-2.05	0.074
Nigeria	-2.1713350	0.2345263	-9.26	0.000	-0.3057325	0.2660539	-1.15	0.288
Ghana	-0.5116999	0.0038163	-134.1	0.000	-1.3488460	0.0060526	-222.9	0.000
Cote D'Ivoire	-0.1918193	0.3727256	-0.51	0.621	-0.0445840	0.0645718	-0.69	0.509

 Table 4.60: Relationship Between Government Expenditure (CapExp and RecExp) and Budget Performance (GovBPerf)

Source: Author's Computation Using Stata Software, 2016

Table 4.60 presents the results of the comparative analysis of the results with regards to budget performance and government expenditure of sampled countries across Sub-Saharan Africa. The results indicate that the coefficients of all the sampled countries except for Ethiopia (0.0016276) and Cameroun (0.1279619) are carrying negative signs for capital expenditure. Similarly, the coefficients of recurrent expenditure for all countries except for Namibia (0.5335026) and DR. Congo (0.3201343) are also carrying negative signs. The above simply means that for most of the countries in the region, capital expenditure had negative relationship with budget performance. The relationship was found to be stastistically significant for countries like Kenya, Angola, Nigeria, Ghana and DR. Congo. For recurrent expenditure, we found that the relationship between government budget performance and government recurrent expenditure was statistically significant for countries like Kenya, Tanzania, Angola, South Africa and Ghana whereas for Ethiopia, Cameroon, DR. Congo, Botswana, Namibia, Nigeria and Cote D' Ivoire, the relationship was not found to be statistically significant. On the whole, we found that budget performance has negative relationship with government expenditure for most of the countries in Sub-Saharan Africa.

(FISDe	(FISDEIF) and Budget Performance (GovBPerf)								
Country	Budget Varia	ance			Fiscal Defici	Fiscal Deficit Financing			
	Coefficient	Std. Error	T-stat.	Prob	Coefficient	Std. Error	T-stat.	Prob	
Kenya	-0.1503788	0.5004901	-0.30	0.771	-1.222106	2.439577	-0.50	0.630	
Ethiopia	0.000	0.0000	0.000	N/A	-0.0018934	0.0035775	-0.53	0.611	
Tanzania	0.000	0.0000	0.000	N/A	5.088799	7.919222	0.64	0.537	
Angola	-0.897006	0.198481	-0.45	0.665	-0.0821954	0.0545451	-1.51	0.176	
DR. Congo	6.374883	0.8587954	7.42	0.000	2.29913	2.178947	1.06	0.322	
Cameroon	8.740541	7.052753	1.24	0.250	-0.1302394	0.0751636	-1.73	0.121	
South Africa	-0.4208329	0.7350332	-0.57	0.588	0.1048067	0.5709052	0.18	0.860	
Botswana	3.38071	2.996075	1.13	0.292	-1.183426	0.7109324	-1.66	0.135	
Namibia	1.299217	1.748617	0.74	0.479	-0.0617102	0.6490467	-0.10	0.927	
Nigeria	-0.8726716	0.8122976	-1.07	0.318	-14.87401	2.083834	-7.14	0.000	
Ghana	0.000	0.0000	0.000	N/A	-0.1107976	0.0028459	-38.93	0.000	
Cote D'Ivoire	2.362154	0.701214	-1.57	0.155	2.851573	7.041296	0.40	0.696	

 Table 4.61: Relationship Between Budget Variance (Bvar), Fiscal Deficit Financing (FisDefF) and Budget Performance (GovBPerf)

Source: Author's Computation Using Stata Software, 2016

Table 4.61 above reports the comparative analysis of the results of sampled countries with respect to budget variance, fiscal deficit financing and their relationship with budget performance. It is clear from the table above that apart from Kenya, Angola, South Africa and Nigeria, the coefficients of most of the sampled countries carried positive signs for budget variance. The coefficients of fiscal deficit financing for Tanzania (5.088799), DR. Congo (2.29913), South Africa (0.1048067) and Cote D' Ivoire (2.851573) are also carrying positive signs. These positive signs indicate that government budget performance had positive relationship budget variance and fiscal deficit financing

where applicable. However, for countries like Kenya, Angola, South Africa and Nigeria, we observe that budget variance had a negative relationship with budget performance. Similarly, fiscal deficit financing was found to be negatively related with budget performance for countries like Kenya, Ethiopia, Angola, Cameroon, Botswana, Namibia, Nigeria and Ghana. This relationship was statistically flawed for most of the countries except for Nigeria and Ghana.

4.4 Test of Hypotheses

In this section, we tested the research hypotheses formulated in earlier chapter of the study. However, six (6) research hypotheses were formulated and they are hereby restated and tested as follows:

4.4.1 Test of Hypothesis I

*H*_{ol}: Tax revenue does not have any significant relationship with government budgets of countries in Sub-Saharan Africa

Decision Rule

Reject the null hypothesis (\mathbf{H}_0) where the value of the F-calculated is found to be higher than that of the F-tabulated ($F_{cal} \ge F_{critical value}$) and accept the alternate hypothesis. Conversely, if the value of the F-calculated is found to be less than that of the F-tabulated ($F_{cal} \le F_{critical value}$), accept the null hypothesis (\mathbf{H}_0) and reject the alternate hypothesis.

In order to test the hypothesis 1 of this study, we analyzed the relationship between tax revenue and government budgets as expressed in model 1 of this study.

Dependent Variable: Govern	Obs. = 180			
Variable	Coefficient	Std. Error	t-Statistic	Prob.
С	5.870199	0.8847666	6.63	0.000
Tax Revenue (TaxRev)	-0.2875676	0.8847666	6.63	0.000
R-squared	0.4702	Mean Sq. 1	Resid	84.0275272
Adjusted R-squared	0.4672	Sum. Sq. F	Resid.	14956.9079
F (1, 178)	157.96	Root MSE		9.1667
Prob > F	0.0000	Df		1/178

 Table 4.62: Model Summary (Tax Revenue and Government Budgets)

Source: Author's Computation Using Stata Software, 2016

Table 4.62 presents the model summary as regards tax revenue (TaxRev) and government budget (GovBPerf). It can be seen that the R^2 is 0.4702 which suggests a 47.02% explanatory ability of the estimation for the systematic variations in the dependent variable with an adjusted value of 0.4672 (46.72%). The F-stat (157.96) and p-value (0.000) indicate a significant linear relationship between the dependent variable (government budget) and independent variable (tax revenue).

Decision

Since the computed value of the F-stat (157.96) is greater that that of the table value, with a p-value of 0.000, it implies that there is a significant relationship between the dependent variable (government budget) and independent variable (tax revenue). Thus, the null hypothesis is rejected, while the alternate hypothesis accepted. The conclusion is that tax revenue has significant relationship with government budgets in Sub-Saharan Africa.

4.4.2 Test of Hypothesis II

*H*_{o2}: Government budgets are not significantly affected by non-tax revenue of countries in Sub-Saharan Africa.

Decision Rule

Reject the null hypothesis (**H**₀) where the value of the F-calculated is found to be higher than that of the F-tabulated ($F_{cal} \ge F_{critical \ value}$) and accept the alternate hypothesis. Conversely, if the value of the F-calculated is found to be less than that of the F-tabulated ($F_{cal} \le F_{critical \ value}$), accept the null hypothesis (**H**₀) and reject the alternate hypothesis.

In order to test the hypothesis 2 of this study, we analyzed the relationship between government budget and non-tax revenue as expressed in model 2 of this study.

Dependent variable: Government Budget Performance (GovBPerf) Obs. = 180							
Variable	Coefficient	Std. Error	t-Statistic	Prob.			
С	-0.8939975	1.211278	-0.74	0.461			
Non Tax Revenue	-0.0890805	0.2268851	-0.39	0.6951			
(NTaxRev)							
R-squared	0.0009	Mean Sq. 1	Resid	158.457412			
Adjusted R-squared	-0.0047	Sum. Sq. F	Resid.	28205.4193			
F (1, 178)	0.157	Root MSE		12.588			
Prob > F	0.6951	Df		1/178			

 Table 4.63: Model Summary (Government Budgets and Non-Tax Revenue)

 Dependent Variable: Government Budget Performance (GovBPerf)
 Obs - 180

Source: Author's Computation Using Stata Software, 2016

Table 4.63 presents the model summary as regards non-tax revenue (NTaxRev) and government budget (GovBPerf). It can be seen that the R^2 is 0.0009 which suggests a 0.9% explanatory ability of the estimation for the systematic variations in the dependent variable with an adjusted value of -0.0047 (-0.47%). From the table, it could be observed that the F-stat was 0.157, with a p-value of 0.6951.

Decision

Since the computed value of F-Stat. of 0.157 is less than that of the table value, with a p-value of 0.6951 which is higher than 0.05 (level of significance), there is an indication that there is no significant linear relationship between the dependent variable (government budget) and independent variable (non-tax revenue). The implication is an outright rejection of the alternate hypothesis and acceptance of the null hypothesis. The conclusion is that government budgets are not significantly affected by non-tax revenue of countries in Sub-Saharan Africa.

4.4.3 Test of Hypothesis III

 H_{o3} : Prior year capital expenditure does not have significant effect on the budgets of countries in Sub-Saharan Africa.

Decision Rule

Reject the null hypothesis (**H**₀) where the value of the F-calculated is found to be higher than that of the F-tabulated ($F_{cal} \ge F_{critical \ value}$) and accept the alternate hypothesis. Conversely, if the value of the F-calculated is found to be less than that of the F-tabulated ($F_{cal} \le F_{critical \ value}$), accept the null hypothesis (**H**₀) and reject the alternate hypothesis.

In order to test the hypothesis 3 of this study, we analyzed the relationship between prior

year capital expenditure and government budgets as expressed in model 3 of this study.

 Table 4.64: Model Summary (Prior Year Capital Expenditure and Government Budgets)

Dependent Variable: Government Budget Performance (GovBPerf)Obs. = 180						
Variable	Coefficient	Std. Error	t-Statistic	Prob.		
С	3.460176	0.7228916	4.79	0.000		
Cap. Expenditure (<i>CapExp</i>)	-0.5613638	0.396538	-14.16	0.000		
R-squared	0.5296	Mean Sq. R	esid	74.6011836		

Adjusted R-squared	0.5270	Sum. Sq. Resid.	13279.0107
F (1, 178)	200.41	Root MSE	8.6372
Prob > F	0.0000	Df	1/178

Source: Author's Computation Using Stata Software, 2016

Table 4.64 presents the model summary as regards prior year capital expenditure (CapExp) and government budget (GovBPerf). It can be seen that the R^2 is 0.5296 which suggests a 52.96% explanatory ability of the estimation for the systematic variations in the dependent variable with an adjusted value of 0.5270 (52.70%). The table also indicates that the computed value of F-stat is 200.41, with a p-value of 0.000.

Decision

Given the computed value of the F-stat (200.41), with a p-value of 0.000, the indication is that a significant linear relationship exists between the dependent variable (government budget) and independent variable (prior year capital expenditure). This means that the null hypothesis must be rejected, thus leading to the acceptance of the alternate hypothesis. We therefore conclude that prior year capital expenditure has significant effect on the budgets of countries in Sub-Saharan Africa.

4.4.4 Test of Hypothesis IV

 H_{o4} : There is no significant relationship between recurrent expenditure and government budgets of countries in Sub Saharan Africa.

Decision Rule

Reject the null hypothesis (**H**₀) where the value of the F-calculated is found to be higher than that of the F-tabulated ($F_{cal} \ge F_{critical value}$) and accept the alternate hypothesis. Conversely, if the value of the F-calculated is found to be less than that of the F-tabulated ($F_{cal} \leq F_{critical value}$),

accept the null hypothesis (H_0) and reject the alternate hypothesis.

In order to test the hypothesis 4 of this study, we analyzed the relationship between recurrent expenditure and government budgets as expressed in model 4 of this study.

Dependent Variable: Govern	Obs. = 180			
Variable	Coefficient	Std. Error	t-Statistic	Prob.
С	6.339388	0.6860311	9.24	0.000
Rec. Expenditure (<i>RecExp</i>)	-0.3314425	0.0179976	-18.42	0.000
R-squared	0.6558	Mean Sq.	Resid	54.5878588
Adjusted R-squared	0.6539	Sum. Sq. I	Resid.	9716.63888
F (1, 178)	339.15	7.3884		
Prob > F	0.0000	Df		1/178

 Table 4.65: Model Summary (Recurrent Expenditure and Government Budgets)

 Dependent Variable: Government Budget Performance (GovBPerf)
 Obs = 180

Source: Author's Computation Using Stata Software, 2016

Table 4.65 presents the model summary as regards recurrent expenditure (RecExp) and government budget (GovBPerf). It can be seen that the R^2 is 0.6558 which suggests a 65.58% explanatory ability of the estimation for the systematic variations in the dependent variable with an adjusted value of 0.6539 (65.39%). Results from the table also reveal that the value of the computed F-stat is 339.15, with a p-value of 0.000.

Decision

Since the computed value of the F-stat is 339.15 (p-value = 0.000 < 0.05), a significant linear relationship is therefore found between the dependent variable (government budget) and independent variable (recurrent expenditure). By this result, the null hypothesis is rejected, while the alternate hypothesis is accepted. This means that there is

significant relationship between recurrent expenditure and government budgets in Sub Sahara Africa.

4.4.5 Test of Hypothesis V

*H*_{o5}: Fiscal deficit financing does not have any significant effect on budgeting in Sub Saharan Africa.

Decision Rule

Reject the null hypothesis (\mathbf{H}_0) where the value of the F-calculated is found to be higher than that of the F-tabulated ($F_{cal} \ge F_{critical \ value}$) and accept the alternate hypothesis. Conversely, if the value of the F-calculated is found to be less than that of the F-tabulated ($F_{cal} \le F_{critical \ value}$), accept the null hypothesis (\mathbf{H}_0) and reject the alternate hypothesis.

In order to test the hypothesis 5 of this study, we analyzed the relationship between fiscal deficit (proxied by debt/borrowed funds) and government budgets as expressed in model 5 of this study.

Table 4.66: Model Summary (Fiscal Deficit and Government Budgets)Dependent Variable: Government Budget Performance (GovBPerf)Obs. = 180

Variable		Coefficient	Std. Error	t-Statistic	Prob.
С		1.76805	0.6933548	2.55	0.012
Debt/Borrowed	Funds	-0.247605	0.0182467	-13.57	0.000
(FDefF)					
R-squared		0.5085	Mean Sq. l	Resid	77.952457
Adjusted R-squared		0.5057	Sum. Sq. F	Resid.	13875.5374
F (1, 178)		184.14	Root MSE		8.8291
Prob > F		0.0000	Df		1/178

Source: Author's Computation Using Stata Software, 2016

Table 4.66 presents the model summary as regards fiscal deficit (proxied by debt/borrowed funds) and government budget (GovBPerf). It can be seen that the R^2 is 0.5085 which suggests a 50.85% explanatory ability of the estimation for the systematic variations in the dependent variable with an adjusted value of 0.5057 (50.57%). With the result in respect of the F-stat (184.14) and p-value (0.000), there is an indication of a significant relationship between the dependent variable (government budget) and independent variable (fiscal deficit).

Decision

Since the computed value of the F-stat of 184.14 is greater than the table value (p-value = 0.000 < 0.05) it means that a significant linear relationship exists between the dependent variable (government budget) and independent variable (fiscal deficit). The null hypothesis is therefore rejected, thereby leading to the acceptance of the alternate hypothesis. The conclusion is that fiscal deficit financing has significant effect on budgeting in Sub Saharan Africa.

4.4.6 Test of Hypothesis VI

*H*_{o6}: There is no significant relationship between budgeting/budgeting patterns and fiscal administration among countries in Sub Saharan Africa.

Decision Rule

Reject the null hypothesis (**H**₀) where the value of the F-calculated is found to be higher than that of the F-tabulated ($F_{cal} \ge F_{critical value}$) and accept the alternate hypothesis. Conversely, if the value of the F-calculated is found to be less than that of the F-tabulated ($F_{cal} \leq F_{critical value}$),

accept the null hypothesis (H_0) and reject the alternate hypothesis.

In order to test the hypothesis 6 of this study, we analyzed the relationship between budgeting/budgeting patterns and fiscal administration as expressed in model 6 of this

study.

 Table 4.67: Model Summary (Fiscal Administration and Budgeting/Budgeting pattern)

Dependent Variable: Government Budget Performance (GovBPerf) Obs. = 180						
Variable	Coefficient	Std. Error	t-Statistic	Prob.		
С	-1.065774	0.644671	-1.65	0.100		
Tax Revenue (TaxRev)	-0.059375	0.0285045	-2.08	0.039		
Non Tax Revenue	0.8466597	0.1087533	7.79	0.000		
(NTaxRev)						
Rec. Expenditure (<i>RecExp</i>)	-0.125091	0.0408266	-3.06	0.003		
Cap. Expenditure (<i>CapExp</i>)	0.0409476	0.0585065	0.70	0.485		
Debt/Borrowed Funds	-0.194077	0.0188105	-10.32	0.000		
(FDefF)						
Budget Variance (Bvar)	9.420706	0.7906837	11.91	0.000		
R-squared	0.8759	Mean Sq. 1	Resid	4120.95801		
Adjusted R-squared	0.8716	Sum. Sq. F	Resid.	3504.09799		
F (6, 173)	203.45	Root MSE		4.5005		
Prob > F	0.0000	Df		6/173		

Source: Author's Computation Using Stata Software, 2016

Table 4.67 presents the model summary as regards budgeting/budgeting patterns and fiscal administration. It can be seen that the R^2 is 0.8759 which suggests a 87.59% explanatory ability of the estimation for the systematic variations in the dependent variable with an adjusted value of 0.8716 (87.16%).

Decision

The F-stat (203.45) and p-value (0.0000) indicate a significant linear relationship between budgeting/budgeting dependent variable (government budget) and independent

variables (fiscal administration – tax revenue, non-tax revenue, recurrent and capital expenditure, debt/borrowed funds and budget variance). This implies the rejection of the null hypothesis and acceptance of the alternate hypothesis. This means that there is significant relationship between budgeting/budgeting patterns and fiscal administration among countries in Sub Saharan Africa.

4.5 Discussion of Results

This study was designed to empirically examine the relationship between budgeting and fiscal administration among selected Sub Saharan countries in Africa. In this chapter, we have so far reported results of the descriptive statistics in addition to the correlation matrix for all the models specified in this study. We analyzed the individual models as well as the composite model to testing our hypotheses. The dependent variable is budgeting/budgeting patterns and independent variables (tax revenue, non-tax revenue, recurrent expenditure, capital expenditure, debt/borrowed fund and budget variance) during the period 2000 - 2014.

From the results of the descriptive statistics of the summarized variables over the entire panel of government budget to the independent variables (tax revenue, non-tax revenue, recurrent expenditure, capital expenditure, debt/borrowed fund and budget variance), we can see the mean (average) for all the variables, their standard deviation (degree of dispersion), minimum and maximum values as well as their Jarque-Bera (JB) statistics (normality test). The result (as presented in Table 4.1) provides insight into the nature of the selected countries that were examined by this study. As can be observed, tax revenue recorded the highest average with a mean of 24.5678, and was followed by recurrent expenditure which recorded a mean of 22.7314, and debt/borrowed funds (11.9659), capital expenditure (8.2922), non tax revenue (3.3765) and budget variance (0.35). The level of debt incurred by Governments to finance budget deficits recorded the highest dispersion with a standard deviation of 36.1664, while the least was budget variance (0.4783) and tax revenue (4.1469). The value of dispersion of 36.1664 for debt/borrowed funds is an indication that the level of reliance by governments of countries in sub-Saharan Africa is dispersed from each other. However, the result of the Jarque-Bera (JB) statistics also presented in Table 4.1 indicates that most of the variables are normally distributed at 1% level of significance.

In addition, the result of the correlation matrix for the variables used in this study revealed that the dependent variable (*GovBPerf*) is positively related to budget variance (*Bvar*). The result also indicates that *GovPerf* is negatively related to government revenue (*TaxRev and NTaxRev*), government expenditure (*CapExp* and *RecExp*) and government debt/borrowed funds (*FDefF*). From the multicollinearity result, the value of the Mean VIF of 5.91 is less than the maximum acceptable value of VIF (10), indicating the absence of multicollinearity problem in the aggregate model. We analysed the relationship between budgeting and fiscal administration using the entire panel data for the sampled countries across the four regions of sub-sahara Africa. First, we did a general analysis of the entire panel data along with the test for the presence or otherwise of heteroskedasticity in the variables used in this study. Next, we present the result of a

country by country analysis, before proceeding to the next section where we tested the hypotheses formulated in this study.

In Kenya (East Africa region), it was observed that capital expenditure recorded the highest average with a mean of 17.4093, and was followed by tax revenue which recorded a mean of 16.6353, and recurrent expenditure (4.6433), non-tax revenue (1.9667), debt/borrowed funds (0.3527) and budget variance (0.1333). Government recurrent expenditure recorded the highest dispersion with a standard deviation of 2.14848, while the least was debt/borrowed funds (0.095129). The value of dispersion of 2.14848 for government recurrent expenditure is an indication that the government of Kenya committed more of the nation's resources on recurrent expenditure and is dispersed from the government's capital expenditure. Also, the dependent variable (*GovBPerf*) is positively related to budget variance (*Bvar*), government revenue (*TaxRev*) as well as government debt/borrowed funds (FDefF). The result also indicates that GovPerf is negatively related to government expenditure (*CapExp and RecExp*) as well as government revenue (NTaxRev). The value of the Mean VIF of 5.24 is less than the maximum acceptable value of VIF (10), indicating the absence of multicollinearity problem in our model. On the overall, based on the combined effect of the explanatory variables result, we noticed that the F-cal of 48.55 which is greater than F-tab of 3.58 implies that budget performance was jointly influenced by the explanatory variables (TaxRev, NTaxRev, CapExp, RecExp and Bvar). The relationship is also statistically

significant at 5% level (p=0.0000<0.05). The above findings are in consonance with that of Kosimbei (2009).

In Ethiopia (East Africa region), we observed that recurrent expenditure recorded the highest average with a mean of 11.61067, and was followed by tax revenue which recorded a mean of 11.07333, and capital expenditure (9.275333), debt/borrowed funds (7.063333), non-tax revenue (6.311333), and budget variance (1.0000). Government recurrent expenditure recorded the highest dispersion with a standard deviation of 4.469437, while the least was debt/borrowed funds (0.0000). The value of dispersion of 4.469437 for government recurrent expenditure is an indication that the government of Ethiopia committed more of the nation's resources on recurrent expenditure and is dispersed from the government's capital expenditure. Also, the result of the correlation matrix for the variables used in this study showed that the dependent variable (GovBPerf) is positively related to all the explanatory variables (TaxRev, NTaxRev, CapExp, RecExp, FDefF and Bvar). None of the explanatory variables were negatively related to *GovPerf.* The value of the Mean VIF of 30.46 is greater than the maximum benchmark of 10. This implies that there is the presence of multicollinearity problem in our model based on country differentials. In view of this, a robust regression analysis was conducted to correct the problem of collinearity in the model. We also conducted the heteroskedasticity test. However, the Breusch-Pagan/Cook-Weisberg Heteroskedasticity test result for Ethiopia data showed a fitted f-value (4.8) greater than F-tab of 3.48, thus indicating that the data used did not fail the normality test. On the basis of these, our

inference was made from the result of the robust regression analysis. We noticed that the F-cal of 4.80 which is greater than F-tab of 3.48 implies that budget performance was jointly influenced by the explanatory variables (TaxRev, NTaxRev, CapExp, RecExp and Bvar). The relationship is also statistically significant at 5% level (p=0.0000<0.05).

In Tanzania (East Africa region), recurrent expenditure recorded the highest average with a mean of 11.982, and was followed by tax revenue which recorded a mean of 10.71667, and capital expenditure (5.186), non-tax revenue (0.7446667), debt/borrowed funds (0.042) and budget variance (0.0000). tax revenue recorded the highest dispersion with a standard deviation of 1.946461, while the least was debt/borrowed funds (0.0358967). The value of dispersion of 1.946461 for tax revenue is an indication that the government of Ethiopia gets majority of its revenues from tax and this forms the bulk of the nation's resources and is dispersed from non-tax revenue. As revealed from the correlation matrix, the dependent variable (GovBPerf) is positively related to non-tax revenue (NTaxRev) and government debt/borrowed funds (FDefF). The result also indicates that GovPerf is negatively related to tax revenue (TaxRev) and government expenditures (CapExp and *RecExp*) while budget variance (*Bvar*) was omitted from the correlation result. Also, the value of the Mean VIF of 4.40 is less than the maximum benchmark of 10, indicating the absence of multicollinearity problem in our model. On the overall, we found that the Fcal of 5.89 which is greater than F-tab of 3.48 implies that budget performance was jointly influenced by the explanatory variables (TaxRev, NTaxRev, CapExp, RecExp and Bvar). The relationship is also statistically significant at 5% level (p=0.0000<0.05).

In Angola (Mid Africa), we observed that tax revenue recorded the highest average with a mean of 35.608, and was followed by recurrent expenditure with a mean of 27.83933, capital expenditure (8.947333), debt/borrowed funds (1.214667), non-tax revenue (1.168), and budget variance (0.4666667). Tax revenue recorded the highest dispersion with a standard deviation of 11.05704, while the least was debt/borrowed funds (0.5163978). The value of dispersion of 11.05704 for tax revenue is an indication that the government of Angola generates more of its resources from tax and is dispersed from the non-tax revenue. Also, the correlation matrix showed that the dependent variable (GovBPerf) is positively related to the explanatory variables (TaxRev, NTaxRev and Bvar). Other explanatory variables like (CapExp, RecExp and FDefF) were negatively related to *GovPerf*. The value of the Mean VIF of 12.29 is greater than the maximum acceptable value of VIF (10). This implies that there is the presence of multicollinearity problem in our model based on country differentials (Angola). On the basis of the VIF outcome, we conducted the heteroskedasticity test. The result of the Breusch-Pagan/Cook-Weisberg Heteroskedasticity test for Angola data revealed that the data followed a normal distribution. The fitted f-value (5639.79) is greater than the F-tab of 3.87. On the overall, we noticed that the F-cal of 5,639.79 which is far greater than F-tab of 3.87 implies that budget performance was jointly influenced by the explanatory variables (TaxRev, NTaxRev, CapExp, RecExp and Bvar). The relationship is also statistically significant at 5% level (p=0.0000<0.05).

In Dr. Congo (Mid Africa), we found that recurrent expenditure recorded the highest average with a mean of 10.04867, and was followed by tax revenue (8.937333), capital expenditure (3.828667), non-tax revenue (0.3053333), debt/borrowed funds (0.2233333) and budget variance (0.1333333). Tax revenue recorded the highest dispersion with a standard deviation of 4.750555, while the least was debt/borrowed funds (0.2584477). The value of dispersion of 4.750555 for tax revenue is an indication that the government of Dr. Congo generates more of its resources from tax and is dispersed from the non-tax revenue. The correlation matrix result shows that the dependent variable (GovBPerf) is positively related to the explanatory variable (Bvar). Other explanatory variables like (CapExp, RecExp, TaxRev, NTaxRev and FDefF) were negatively related to GovPerf. Also, the value of the Mean VIF of 14.83 is greater than the maximum acceptable value of VIF (10). This implies that there is the presence of multicollinearity problem in our model based on country differentials (DR. Congo). We conducted the heteroskedasticity test to ascertain the level of normality of our data stream for DR. Congo. The Breusch-Pagan/Cook-Weisberg Heteroskedasticity test result for DR Congo with fitted f-value (12.86) is greater than F-tab of 2.0986. Overall, the combined effect of the explanatory variables result, with F-cal of 12.86 which is greater than F-tab of 3.87 implies that budget performance was jointly influenced by the explanatory variables (TaxRev, NTaxRev, CapExp, RecExp and Bvar). The relationship is also statistically significant at 5% level (p=0.0000<0.05).

In Cameroon (Mid Africa) we observed that debt/borrowed funds recorded the highest average with a mean of 43.966, and was followed by tax revenue with a mean of 23.68533, non-tax revenue (13.32733), recurrent expenditure (12.886), capital expenditure (4.09667) and budget variance (0.66666667). Debt/borrowed funds recorded the highest dispersion with a standard deviation of 37.69397, while the least was budget variance (0.48795). The value of dispersion of 37.69397 for debt/borrowed funds is an indication that the government of Cameroon financed its budget majorly from external borrowing and is dispersed from the internally generated revenue like tax revenue. The correlation matrix revealed that the dependent variable (GovBPerf) is positively related to the explanatory variables (NTaxRev and Bvar). Other explanatory variables like (TaxRev, CapExp, RecExp and FDefF) were negatively related to GovPerf. The correlation matrix also revealed that no two explanatory variables were perfectly correlated. Also, the value of the Mean VIF of 2.50 is lesser than the maximum acceptable value of VIF (10). This implies that there is the absence of multicollinearity problem in our model. Overall, the combined effect of the explanatory variables with value F-cal of 1.52 which is lesser than F-tab of 3.87 implies that budget performance was not jointly influenced by the explanatory variables (TaxRev, NTaxRev, CapExp, RecExp and Bvar). The relationship is also statistically flawed at 5% level (p=0.0000>0.05).

In South Africa (Southern Africa), we found that recurrent expenditure recorded the highest average with a mean of 24.05, and was followed by tax revenue (21.90067),

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debt/borrowed fund (3.13667), capital expenditure (1.543333), non-tax revenue (1.254) and budget variance (0.1333333). Recurrent expenditure recorded the highest dispersion with a standard deviation of 2.3676, while the least was budget variance (0.3518658). The value of dispersion of 2.3676 for recurrent expenditure is an indication that the government of South Africa channeled most of its resources on recurrent expenditure and is dispersed from the capital expenditure. The correlation matrix showed that the dependent variable (*GovBPerf*) is positively related to the explanatory variable (TaxRev and Bvar).

Other explanatory variables like (NTaxRev, CapExp, RecExp, TaxRev and FDefF) were negatively related to *GovPerf.* The value of the Mean VIF of 11.45 is greater than the maximum acceptable value of VIF (10). This implies that there is the presence of multicollinearity problem in our model based on country differentials (South Africa). We also conducted the heteroskedasticity test using the Breusch-Pagan/Cook-Weisberg Heteroskedasticity test on the data for South Africa. With fitted f-value of 24.65 which is greater than the F-tab of 2.0986, it was evident that the data used in this study for South Africa were normally distributed. Overall, we noticed that the F-cal of 24.65 which is greater than F-tab of 3.87 implies that budget performance was jointly influenced by the explanatory variables (TaxRev, NTaxRev, CapExp, RecExp and Bvar). The relationship is also statistically significant at 5% level (p=0.0000<0.05).

In Botswana (Southern Africa) we observed, tax revenue recorded the highest average with a mean of 31.798, and was followed by recurrent expenditure with a mean of

26.846, capital expenditure (9.693333), non-tax revenue (4.755333), debt/borrowed funds (3.372) and budget variance (0.4666667). Tax revenue recorded the highest dispersion with a standard deviation of 4.081399, while the least was budget variance (0.5163978). The value of dispersion of 4.081399 for tax revenue is an indication that the government of Botswana generated most of its revenues from tax and is dispersed from the non-tax The correlation matrix showed that the dependent variable (GovBPerf) is revenue. positively related to the explanatory variables (TaxRev, NTaxRev and Bvar). Other explanatory variables like (CapExp, RecExp and FDefF) were negatively related to GovPerf. The value of the Mean VIF of 3.01 is lesser than the accepted value of VIF (10). This implies that there is the absence of multicollinearity problem in our model. However, based on the combined effect of the explanatory variables result, we notice that the F-cal of 8.38 which is greater than F-tab of 3.87 implies that budget performance was jointly influenced by the explanatory variables (TaxRev, NTaxRev, CapExp, RecExp and Bvar). The relationship is also statistically significant at 5% level (p=0.0000>0.05).

In Namibia (Southern Africa), we observed that tax revenue recorded the highest average with a mean of 25.16, and was followed by recurrent expenditure with a mean of 24.00533, capital expenditure (4.102667), debt/borrowed funds (3.822667), non-tax revenue (2.21) and budget variance (0.333333). Tax revenue recorded the highest dispersion with a standard deviation of 2.643107, while the least was non-tax revenue (0.4098083). The value of dispersion of 2.643107 for tax revenue is an indication that

the government of Namibia generated most of its revenues from tax and is dispersed from the non-tax revenue.

The correlation matrix showed that the dependent variable (*GovBPerf*) is positively related to the explanatory variables (TaxRev, NTaxRev and Bvar). Other explanatory variables like (CapExp, RecExp and FDefF) were negatively related to *GovPerf*. The value of the Mean VIF of 2.61 is lesser than the accepted value of VIF (10). This implies that there is the absence of multicollinearity problem in our model. Overall, we noticed that the F-cal of 11.04 which is greater than F-tab of 3.87 implies that budget performance was jointly influenced by the explanatory variables (TaxRev, NTaxRev, CapExp, RecExp and Bvar). The relationship is also statistically significant at 5% level (p=0.0000>0.05). It is worthy to mention that the same trend was repeated for all countries in Southern Africa. These results however, are as expected in the literature (Tabelini, 1986; Hanival & Maia, 2008; Duclos & Verdier-Chouchane, 2011; Feger, 2014 and Xolani & Amanja, 2015)

In Nigeria, (West Africa), we discovered that tax revenue recorded the highest average with a mean of 25.558, and was followed by recurrent expenditure (12.87267), capital expenditure (7.724), non-tax revenue (0.958), budget variance (0.6) and debt/borrowed fund (0.1373333). Tax revenue recorded the highest dispersion with a standard deviation of 10.98176, while the least was debt/borrowed fund (0.1944026). The value of dispersion of 10.98176 for tax revenue is an indication that the government of Nigeria

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generated most of its resources from tax revenue and is dispersed from the non-tax revenue.

The correlation matrix showed that the dependent variable (*GovBPerf*) is positively related to the explanatory variable (TaxRev and Bvar). Other explanatory variables like (NTaxRev, CapExp, RecExp, TaxRev and FDefF) were negatively related to *GovPerf*. The value of the Mean VIF of 12.03 is greater than the accepted value of VIF (10). This implies that there is the presence of multicollinearity problem in our model based on country differentials (Nigeria). On the basis of the VIF outcome, we conducted heteroskedasticity test. The Breusch-Pagan/Cook-Weisberg Heteroskedasticity test result for Nigeria showed a fitted f-value of 191.09 which is greater than F-tab of 2.0986. This means that the data for Nigeria were normally distributed.

However, based on the combined effect of the explanatory variables result, we notice that the F-cal of 191.09 which is greater than F-tab of 3.87 implies that budget performance was jointly influenced by the explanatory variables (TaxRev, NTaxRev, CapExp, RecExp and Bvar). The relationship is also statistically significant at 5% level (p=0.0000<0.05). These findings are as expected in the literature (Peter & Simeon, 2011; Sikiru & Umaru, 2011; Tella, 2012; Malgwi & Unegbu, 2012, and Kanayo & Okafor, 2013).

In Ghana (West Africa), we observed that debt/borrowed funds recorded the highest average with a mean of 80.102, and was followed by recurrent expenditure (78.54467), tax revenue (69.97133), capital expenditure (37.304), non-tax revenue (5.167333) and

budget variance (0). Debt/borrowed funds recorded the highest dispersion with a standard deviation of 89.90314, while the least was budget variance (0). The value of dispersion of 89.90314 for debt/borrowed fund is an indication that the government of Ghana financed major part of the budgets during the period under investigation via debt/borrowed fund and is dispersed from the budget performance.

The correlation matrix revealed that the dependent variable (*GovBPerf*) is negatively related to all the explanatory variables (TaxRev, NTaxRev, CapExp, RecExp, FDefF and Bvar). None of the explanatory variables were positively related to *GovPerf*. The value of the Mean VIF of 65.20 is greater than the accepted value of VIF (10). This implies that there is the presence of multicollinearity problem in our model based on country differentials (Ghana). Again, we also conducted the heteroskedasticity test using the Breusch-Pagan/Cook-Weisberg Heteroskedasticity test result for Ghana with fitted f-value (33479.76) is greater than F-tab of 9.01. This means that based on the heteroskedasticity result, the variables the variables used were normally distributed. Overall, in the combined effect of the explanatory variables result, we noticed that the F-cal of 3,3479.76 which is far greater than F-tab of 3.48 implies that budget performance was jointly influenced by the explanatory variables (TaxRev, NTaxRev, CapExp, RecExp and Bvar). The relationship is also statistically significant at 5% level (p=0.0000<0.05).

In Cote D'Ivoire (West Africa), we found that recurrent expenditure recorded the highest average with a mean of 14.68267, and was followed by tax revenue with a mean of

13.77267, capital expenditure (3.164), non-tax revenue (2.35), budget variance (0.2666667) and debt/borrowed funds (0.1686667). Recurrent expenditure recorded the highest dispersion with a standard deviation of 3.706202, while the least was debt/borrowed fund (0.0546243). The value of dispersion of 3.706202 for recurrent expenditure is an indication that the government of Cote D'Ivoire devoted more of the budgetary allocation to recurrent expenditures and is dispersed from the capital expenditures.

The correlation matrix revealed that the dependent variable (*GovBPerf*) is positively related to the explanatory variables (NTaxRev, FDefF and Bvar). Other explanatory variables like (TaxRev, CapExp and RecExp) were negatively related to *GovPerf*. The value of the Mean VIF of 2.44 is lesser than the maximum acceptable value of VIF (10). This implies that there is the absence of multicollinearity problem in our model. However, based on the combined effect of the explanatory variables result, we noticed that the F-cal of 5.48 which is greater than F-tab of 3.87 implies that budget performance was jointly influenced by the explanatory variables (TaxRev, NTaxRev, CapExp, RecExp and Bvar). The relationship is also statistically significant at 5% level (p=0.0000>0.05). It is worthy to mention that the selected countries in West Africa had similar behaviour in their trend. However, these results are in consonance with the findings of prior studies like Aregbeyen (2007), Feger (2014), Kwakye & Owoo (2014) and Mensa (2014).

In addition, the result of the correlation matrix for the variables used in this study revealed that the dependent variable (*GovBPerf*) is positively related to budget variance
(*Bvar*). The result also indicates that *GovPerf* is negatively related to government revenue (*TaxRev and NTaxRev*), government expenditure (*CapExp* and *RecExp*) and government debt/borrowed funds (*FDefF*). From the multicollinearity result, the value of the Mean VIF of 5.91 is less than the maximum acceptable value of VIF (10), indicating the absence of multicollinearity problem in the aggregate model. We analysed the relationship between budgeting and fiscal administration using the entire panel data for the sampled countries across the four regions of sub-sahara Africa. First, we did a general analysis of the entire panel data along with the test for the presence or otherwise of heteroskedasticity in the variables used in this study. Next, we present the result of a country by country analysis, before proceeding to the next section where we tested the hypotheses formulated in this study.

In Kenya (East Africa region), it was observed that capital expenditure recorded the highest average with a mean of 17.4093, and was followed by tax revenue which recorded a mean of 16.6353, and recurrent expenditure (4.6433), non-tax revenue (1.9667), debt/borrowed funds (0.3527) and budget variance (0.1333). Government recurrent expenditure recorded the highest dispersion with a standard deviation of 2.14848, while the least was debt/borrowed funds (0.095129). The value of dispersion of 2.14848 for government recurrent expenditure is an indication that the government of Kenya committed more of the nation's resources on recurrent expenditure and is dispersed from the government's capital expenditure. Also, the dependent variable (*GovBPerf*) is positively related to budget variance (*Bvar*), government revenue (*TaxRev*)

as well as government debt/borrowed funds (*FDefF*). The result also indicates that *GovPerf* is negatively related to government expenditure (*CapExp and RecExp*) as well as government revenue (*NTaxRev*). The value of the Mean VIF of 5.24 is less than the maximum acceptable value of VIF (10), indicating the absence of multicollinearity problem in our model. On the overall, based on the combined effect of the explanatory variables result, we noticed that the F-cal of 48.55 which is greater than F-tab of 3.58 implies that budget performance was jointly influenced by the explanatory variables (TaxRev, NTaxRev, CapExp, RecExp and Bvar). The relationship is also statistically significant at 5% level (p=0.0000<0.05). The above findings are in consonance with that of Kosimbei (2009).

In Ethiopia (East Africa region), we observed that recurrent expenditure recorded the highest average with a mean of 11.61067, and was followed by tax revenue which recorded a mean of 11.07333, and capital expenditure (9.275333), debt/borrowed funds (7.063333), non-tax revenue (6.311333), and budget variance (1.0000). Government recurrent expenditure recorded the highest dispersion with a standard deviation of 4.469437, while the least was debt/borrowed funds (0.0000). The value of dispersion of 4.469437 for government recurrent expenditure is an indication that the government of Ethiopia committed more of the nation's resources on recurrent expenditure and is dispersed from the government's capital expenditure. Also, the result of the correlation matrix for the variables used in this study showed that the dependent variable (*GovBPerf*) is positively related to all the explanatory variables (TaxRev, NTaxRev, CapExp,

RecExp, FDefF and Bvar). None of the explanatory variables were negatively related to *GovPerf.* The value of the Mean VIF of 30.46 is greater than the maximum benchmark of 10. This implies that there is the presence of multicollinearity problem in our model based on country differentials. In view of this, a robust regression analysis was conducted to correct the problem of collinearity in the model. We also conducted the heteroskedasticity test. However, the Breusch-Pagan/Cook-Weisberg Heteroskedasticity test result for Ethiopia data showed a fitted f-value (4.8) greater than F-tab of 3.48, thus indicating that the data used did not fail the normality test. On the basis of these, our inference was made from the result of the robust regression analysis. We noticed that the F-cal of 4.80 which is greater than F-tab of 3.48 implies that budget performance was jointly influenced by the explanatory variables (TaxRev, NTaxRev, CapExp, RecExp and Bvar). The relationship is also statistically significant at 5% level (p=0.0000<0.05).

In Tanzania (East Africa region), recurrent expenditure recorded the highest average with a mean of 11.982, and was followed by tax revenue which recorded a mean of 10.71667, and capital expenditure (5.186), non-tax revenue (0.7446667), debt/borrowed funds (0.042) and budget variance (0.0000). tax revenue recorded the highest dispersion with a standard deviation of 1.946461, while the least was debt/borrowed funds (0.0358967). The value of dispersion of 1.946461 for tax revenue is an indication that the government of Ethiopia gets majority of its revenues from tax and this forms the bulk of the nation's resources and is dispersed from non-tax revenue. As revealed from the correlation matrix, the dependent variable (*GovBPerf*) is positively related to non-tax revenue (*NTaxRev*)

and government debt/borrowed funds (*FDefF*). The result also indicates that *GovPerf* is negatively related to tax revenue (*TaxRev*) and government expenditures (*CapExp and RecExp*) while budget variance (*Bvar*) was omitted from the correlation result. Also, the value of the Mean VIF of 4.40 is less than the maximum benchmark of 10, indicating the absence of multicollinearity problem in our model. On the overall, we found that the Fcal of 5.89 which is greater than F-tab of 3.48 implies that budget performance was jointly influenced by the explanatory variables (TaxRev, NTaxRev, CapExp, RecExp and Bvar). The relationship is also statistically significant at 5% level (p=0.0000<0.05).

In Angola (Mid Africa), we observed that tax revenue recorded the highest average with a mean of 35.608, and was followed by recurrent expenditure with a mean of 27.83933, capital expenditure (8.947333), debt/borrowed funds (1.214667), non-tax revenue (1.168), and budget variance (0.4666667). Tax revenue recorded the highest dispersion with a standard deviation of 11.05704, while the least was debt/borrowed funds (0.5163978). The value of dispersion of 11.05704 for tax revenue is an indication that the government of Angola generates more of its resources from tax and is dispersed from the non-tax revenue. Also, the correlation matrix showed that the dependent variable (*GovBPerf*) is positively related to the explanatory variables (TaxRev, NTaxRev and Bvar). Other explanatory variables like (CapExp, RecExp and FDefF) were negatively related to *GovPerf*. The value of the Mean VIF of 12.29 is greater than the maximum acceptable value of VIF (10). This implies that there is the presence of multicollinearity problem in our model based on country differentials (Angola). On the basis of the VIF

outcome, we conducted the heteroskedasticity test. The result of the Breusch-Pagan/Cook-Weisberg Heteroskedasticity test for Angola data revealed that the data followed a normal distribution. The fitted f-value (5639.79) is greater than the F-tab of 3.87. On the overall, we noticed that the F-cal of 5,639.79 which is far greater than F-tab of 3.87 implies that budget performance was jointly influenced by the explanatory variables (TaxRev, NTaxRev, CapExp, RecExp and Bvar). The relationship is also statistically significant at 5% level (p=0.0000<0.05).

In Dr. Congo (Mid Africa), we found that recurrent expenditure recorded the highest average with a mean of 10.04867, and was followed by tax revenue (8.937333), capital expenditure (3.828667), non-tax revenue (0.3053333), debt/borrowed funds (0.2233333) and budget variance (0.1333333). Tax revenue recorded the highest dispersion with a standard deviation of 4.750555, while the least was debt/borrowed funds (0.2584477). The value of dispersion of 4.750555 for tax revenue is an indication that the government of Dr. Congo generates more of its resources from tax and is dispersed from the non-tax revenue. The correlation matrix result shows that the dependent variable (GovBPerf) is positively related to the explanatory variable (Bvar). Other explanatory variables like (CapExp, RecExp, TaxRev, NTaxRev and FDefF) were negatively related to GovPerf. Also, the value of the Mean VIF of 14.83 is greater than the maximum acceptable value of VIF (10). This implies that there is the presence of multicollinearity problem in our model based on country differentials (DR. Congo). We conducted the heteroskedasticity test to ascertain the level of normality of our data stream for DR. Congo. The BreuschPagan/Cook-Weisberg Heteroskedasticity test result for DR Congo with fitted f-value (12.86) is greater than F-tab of 2.0986. Overall, the combined effect of the explanatory variables result, with F-cal of 12.86 which is greater than F-tab of 3.87 implies that budget performance was jointly influenced by the explanatory variables (TaxRev, NTaxRev, CapExp, RecExp and Bvar). The relationship is also statistically significant at 5% level (p=0.0000<0.05).

In Cameroon (Mid Africa) we observed that debt/borrowed funds recorded the highest average with a mean of 43.966, and was followed by tax revenue with a mean of 23.68533, non-tax revenue (13.32733), recurrent expenditure (12.886), capital expenditure (4.09667) and budget variance (0.66666667). Debt/borrowed funds recorded the highest dispersion with a standard deviation of 37.69397, while the least was budget variance (0.48795). The value of dispersion of 37.69397 for debt/borrowed funds is an indication that the government of Cameroon financed its budget majorly from external borrowing and is dispersed from the internally generated revenue like tax revenue. The correlation matrix revealed that the dependent variable (GovBPerf) is positively related to the explanatory variables (NTaxRev and Bvar). Other explanatory variables like (TaxRev, CapExp, RecExp and FDefF) were negatively related to GovPerf. The correlation matrix also revealed that no two explanatory variables were perfectly correlated. Also, the value of the Mean VIF of 2.50 is lesser than the maximum acceptable value of VIF (10). This implies that there is the absence of multicollinearity problem in our model. Overall, the combined effect of the explanatory variables with value F-cal of 1.52 which is lesser than F-tab of 3.87 implies that budget performance was not jointly influenced by the explanatory variables (TaxRev, NTaxRev, CapExp, RecExp and Bvar). The relationship is also statistically flawed at 5% level (p=0.0000>0.05).

In South Africa (Southern Africa), we found that recurrent expenditure recorded the highest average with a mean of 24.05, and was followed by tax revenue (21.90067), debt/borrowed fund (3.13667), capital expenditure (1.543333), non-tax revenue (1.254) and budget variance (0.1333333). Recurrent expenditure recorded the highest dispersion with a standard deviation of 2.3676, while the least was budget variance (0.3518658). The value of dispersion of 2.3676 for recurrent expenditure is an indication that the government of South Africa channeled most of its resources on recurrent expenditure and is dispersed from the capital expenditure. The correlation matrix showed that the dependent variable (*GovBPerf*) is positively related to the explanatory variable (TaxRev and Bvar).

Other explanatory variables like (NTaxRev, CapExp, RecExp, TaxRev and FDefF) were negatively related to *GovPerf*. The value of the Mean VIF of 11.45 is greater than the maximum acceptable value of VIF (10). This implies that there is the presence of multicollinearity problem in our model based on country differentials (South Africa). We also conducted the heteroskedasticity test using the Breusch-Pagan/Cook-Weisberg Heteroskedasticity test on the data for South Africa. With fitted f-value of 24.65 which is greater than the F-tab of 2.0986, it was evident that the data used in this study for South Africa were normally distributed. Overall, we noticed that the F-cal of 24.65 which is greater than F-tab of 3.87 implies that budget performance was jointly influenced by the explanatory variables (TaxRev, NTaxRev, CapExp, RecExp and Bvar). The relationship is also statistically significant at 5% level (p=0.0000<0.05).

In Botswana (Southern Africa) we observed, tax revenue recorded the highest average with a mean of 31.798, and was followed by recurrent expenditure with a mean of 26.846, capital expenditure (9.693333), non-tax revenue (4.755333), debt/borrowed funds (3.372) and budget variance (0.4666667). Tax revenue recorded the highest dispersion with a standard deviation of 4.081399, while the least was budget variance (0.5163978). The value of dispersion of 4.081399 for tax revenue is an indication that the government of Botswana generated most of its revenues from tax and is dispersed from the non-tax The correlation matrix showed that the dependent variable (GovBPerf) is revenue. positively related to the explanatory variables (TaxRev, NTaxRev and Bvar). Other explanatory variables like (CapExp, RecExp and FDefF) were negatively related to GovPerf. The value of the Mean VIF of 3.01 is lesser than the accepted value of VIF (10). This implies that there is the absence of multicollinearity problem in our model. However, based on the combined effect of the explanatory variables result, we notice that the F-cal of 8.38 which is greater than F-tab of 3.87 implies that budget performance was jointly influenced by the explanatory variables (TaxRev, NTaxRev, CapExp, RecExp and Bvar). The relationship is also statistically significant at 5% level (p=0.0000>0.05).

In Namibia (Southern Africa), we observed that tax revenue recorded the highest average with a mean of 25.16, and was followed by recurrent expenditure with a mean of 24.00533, capital expenditure (4.102667), debt/borrowed funds (3.822667), non-tax revenue (2.21) and budget variance (0.333333). Tax revenue recorded the highest dispersion with a standard deviation of 2.643107, while the least was non-tax revenue (0.4098083). The value of dispersion of 2.643107 for tax revenue is an indication that the government of Namibia generated most of its revenues from tax and is dispersed from the non-tax revenue.

The correlation matrix showed that the dependent variable (*GovBPerf*) is positively related to the explanatory variables (TaxRev, NTaxRev and Bvar). Other explanatory variables like (CapExp, RecExp and FDefF) were negatively related to *GovPerf*. The value of the Mean VIF of 2.61 is lesser than the accepted value of VIF (10). This implies that there is the absence of multicollinearity problem in our model. Overall, we noticed that the F-cal of 11.04 which is greater than F-tab of 3.87 implies that budget performance was jointly influenced by the explanatory variables (TaxRev, NTaxRev, CapExp, RecExp and Bvar). The relationship is also statistically significant at 5% level (p=0.0000>0.05). It is worthy to mention that the same trend was repeated for all countries in Southern Africa. These results however, are as expected in the literature (Tabelini, 1986; Hanival & Maia, 2008; Duclos & Verdier-Chouchane, 2011; Feger, 2014 and Xolani & Amanja, 2015)

In Nigeria, (West Africa), we discovered that tax revenue recorded the highest average with a mean of 25.558, and was followed by recurrent expenditure (12.87267), capital expenditure (7.724), non-tax revenue (0.958), budget variance (0.6) and debt/borrowed fund (0.1373333). Tax revenue recorded the highest dispersion with a standard deviation of 10.98176, while the least was debt/borrowed fund (0.1944026). The value of dispersion of 10.98176 for tax revenue is an indication that the government of Nigeria generated most of its resources from tax revenue and is dispersed from the non-tax revenue.

The correlation matrix showed that the dependent variable (*GovBPerf*) is positively related to the explanatory variable (TaxRev and Bvar). Other explanatory variables like (NTaxRev, CapExp, RecExp, TaxRev and FDefF) were negatively related to *GovPerf*. The value of the Mean VIF of 12.03 is greater than the accepted value of VIF (10). This implies that there is the presence of multicollinearity problem in our model based on country differentials (Nigeria). On the basis of the VIF outcome, we conducted heteroskedasticity test. The Breusch-Pagan/Cook-Weisberg Heteroskedasticity test result for Nigeria showed a fitted f-value of 191.09 which is greater than F-tab of 2.0986. This means that the data for Nigeria were normally distributed.

However, based on the combined effect of the explanatory variables result, we notice that the F-cal of 191.09 which is greater than F-tab of 3.87 implies that budget performance was jointly influenced by the explanatory variables (TaxRev, NTaxRev, CapExp, RecExp and Bvar). The relationship is also statistically significant at 5% level (p=0.0000<0.05).

These findings are as expected in the literature (Peter & Simeon, 2011; Sikiru & Umaru, 2011; Tella, 2012; Malgwi & Unegbu, 2012, and Kanayo & Okafor, 2013).

In Ghana (West Africa), we observed that debt/borrowed funds recorded the highest average with a mean of 80.102, and was followed by recurrent expenditure (78.54467), tax revenue (69.97133), capital expenditure (37.304), non-tax revenue (5.167333) and budget variance (0). Debt/borrowed funds recorded the highest dispersion with a standard deviation of 89.90314, while the least was budget variance (0). The value of dispersion of 89.90314 for debt/borrowed fund is an indication that the government of Ghana financed major part of the budgets during the period under investigation via debt/borrowed fund and is dispersed from the budget performance.

The correlation matrix revealed that the dependent variable (*GovBPerf*) is negatively related to all the explanatory variables (TaxRev, NTaxRev, CapExp, RecExp, FDefF and Bvar). None of the explanatory variables were positively related to *GovPerf*. The value of the Mean VIF of 65.20 is greater than the accepted value of VIF (10). This implies that there is the presence of multicollinearity problem in our model based on country differentials (Ghana). Again, we also conducted the heteroskedasticity test using the Breusch-Pagan/Cook-Weisberg Heteroskedasticity test result for Ghana with fitted f-value (33479.76) is greater than F-tab of 9.01. This means that based on the heteroskedasticity result, the variables the variables used were normally distributed. Overall, in the combined effect of the explanatory variables result, we noticed that the F-

cal of 3,3479.76 which is far greater than F-tab of 3.48 implies that budget performance was jointly influenced by the explanatory variables (TaxRev, NTaxRev, CapExp, RecExp and Bvar). The relationship is also statistically significant at 5% level (p=0.0000<0.05).

In Cote D'Ivoire (West Africa), we found that recurrent expenditure recorded the highest average with a mean of 14.68267, and was followed by tax revenue with a mean of 13.77267, capital expenditure (3.164), non-tax revenue (2.35), budget variance (0.2666667) and debt/borrowed funds (0.1686667). Recurrent expenditure recorded the highest dispersion with a standard deviation of 3.706202, while the least was debt/borrowed fund (0.0546243). The value of dispersion of 3.706202 for recurrent expenditure is an indication that the government of Cote D'Ivoire devoted more of the budgetary allocation to recurrent expenditures and is dispersed from the capital expenditures.

The correlation matrix revealed that the dependent variable (*GovBPerf*) is positively related to the explanatory variables (NTaxRev, FDefF and Bvar). Other explanatory variables like (TaxRev, CapExp and RecExp) were negatively related to *GovPerf*. The value of the Mean VIF of 2.44 is lesser than the maximum acceptable value of VIF (10). This implies that there is the absence of multicollinearity problem in our model. However, based on the combined effect of the explanatory variables result, we noticed that the F-cal of 5.48 which is greater than F-tab of 3.87 implies that budget performance was jointly influenced by the explanatory variables (TaxRev, NTaxRev, CapExp, RecExp and Bvar). The relationship is also statistically significant at 5% level (p=0.0000>0.05).

It is worthy to mention that the selected countries in West Africa had similar behaviour in their trend. However, these results are in consonance with the findings of prior studies like Aregbeyen (2007), Feger (2014), Kwakye & Owoo (2014) and Mensa (2014).

In addition, the result of the correlation matrix for the variables used in this study revealed that the dependent variable (*GovBPerf*) is positively related to budget variance (*Bvar*). The result also indicates that *GovPerf* is negatively related to government revenue (*TaxRev and NTaxRev*), government expenditure (*CapExp* and *RecExp*) and government debt/borrowed funds (*FDefF*). From the multicollinearity result, the value of the Mean VIF of 5.91 is less than the maximum acceptable value of VIF (10), indicating the absence of multicollinearity problem in the aggregate model. We analysed the relationship between budgeting and fiscal administration using the entire panel data for the sampled countries across the four regions of sub-sahara Africa. First, we did a general analysis of the entire panel data along with the test for the presence or otherwise of heteroskedasticity in the variables used in this study. Next, we present the result of a country by country analysis, before proceeding to the next section where we tested the hypotheses formulated in this study.

In Kenya (East Africa region), it was observed that capital expenditure recorded the highest average with a mean of 17.4093, and was followed by tax revenue which recorded a mean of 16.6353, and recurrent expenditure (4.6433), non-tax revenue (1.9667), debt/borrowed funds (0.3527) and budget variance (0.1333). Government recurrent expenditure recorded the highest dispersion with a standard deviation of

2.14848, while the least was debt/borrowed funds (0.095129). The value of dispersion of 2.14848 for government recurrent expenditure is an indication that the government of Kenya committed more of the nation's resources on recurrent expenditure and is dispersed from the government's capital expenditure. Also, the dependent variable (*GovBPerf*) is positively related to budget variance (*Bvar*), government revenue (*TaxRev*) as well as government debt/borrowed funds (FDefF). The result also indicates that GovPerf is negatively related to government expenditure (*CapExp and RecExp*) as well as government revenue (*NTaxRev*). The value of the Mean VIF of 5.24 is less than the maximum acceptable value of VIF (10), indicating the absence of multicollinearity problem in our model. On the overall, based on the combined effect of the explanatory variables result, we noticed that the F-cal of 48.55 which is greater than F-tab of 3.58 implies that budget performance was jointly influenced by the explanatory variables (TaxRev, NTaxRev, CapExp, RecExp and Bvar). The relationship is also statistically significant at 5% level (p=0.0000<0.05). The above findings are in consonance with that of Kosimbei (2009).

In Ethiopia (East Africa region), we observed that recurrent expenditure recorded the highest average with a mean of 11.61067, and was followed by tax revenue which recorded a mean of 11.07333, and capital expenditure (9.275333), debt/borrowed funds (7.063333), non-tax revenue (6.311333), and budget variance (1.0000). Government recurrent expenditure recorded the highest dispersion with a standard deviation of 4.469437, while the least was debt/borrowed funds (0.0000). The value of dispersion of

4.469437 for government recurrent expenditure is an indication that the government of Ethiopia committed more of the nation's resources on recurrent expenditure and is dispersed from the government's capital expenditure. Also, the result of the correlation matrix for the variables used in this study showed that the dependent variable (GovBPerf) is positively related to all the explanatory variables (TaxRev, NTaxRev, CapExp, RecExp, FDefF and Bvar). None of the explanatory variables were negatively related to *GovPerf.* The value of the Mean VIF of 30.46 is greater than the maximum benchmark of 10. This implies that there is the presence of multicollinearity problem in our model based on country differentials. In view of this, a robust regression analysis was conducted to correct the problem of collinearity in the model. We also conducted the heteroskedasticity test. However, the Breusch-Pagan/Cook-Weisberg Heteroskedasticity test result for Ethiopia data showed a fitted f-value (4.8) greater than F-tab of 3.48, thus indicating that the data used did not fail the normality test. On the basis of these, our inference was made from the result of the robust regression analysis. We noticed that the F-cal of 4.80 which is greater than F-tab of 3.48 implies that budget performance was jointly influenced by the explanatory variables (TaxRev, NTaxRev, CapExp, RecExp and Bvar). The relationship is also statistically significant at 5% level (p=0.0000<0.05).

In Tanzania (East Africa region), recurrent expenditure recorded the highest average with a mean of 11.982, and was followed by tax revenue which recorded a mean of 10.71667, and capital expenditure (5.186), non-tax revenue (0.7446667), debt/borrowed funds (0.042) and budget variance (0.0000). tax revenue recorded the highest dispersion with a

standard deviation of 1.946461, while the least was debt/borrowed funds (0.0358967). The value of dispersion of 1.946461 for tax revenue is an indication that the government of Ethiopia gets majority of its revenues from tax and this forms the bulk of the nation's resources and is dispersed from non-tax revenue. As revealed from the correlation matrix, the dependent variable (GovBPerf) is positively related to non-tax revenue (NTaxRev) and government debt/borrowed funds (FDefF). The result also indicates that GovPerf is negatively related to tax revenue (TaxRev) and government expenditures (CapExp and RecExp) while budget variance (Bvar) was omitted from the correlation result. Also, the value of the Mean VIF of 4.40 is less than the maximum benchmark of 10, indicating the absence of multicollinearity problem in our model. On the overall, we found that the F-cal of 5.89 which is greater than F-tab of 3.48 implies that budget performance was jointly influenced by the explanatory variables (TaxRev, NTaxRev, CapExp, RecExp and Bvar). The relationship is also statistically significant at 5% level (p=0.0000<0.05).

In Angola (Mid Africa), we observed that tax revenue recorded the highest average with a mean of 35.608, and was followed by recurrent expenditure with a mean of 27.83933, capital expenditure (8.947333), debt/borrowed funds (1.214667), non-tax revenue (1.168), and budget variance (0.4666667). Tax revenue recorded the highest dispersion with a standard deviation of 11.05704, while the least was debt/borrowed funds (0.5163978). The value of dispersion of 11.05704 for tax revenue is an indication that the government of Angola generates more of its resources from tax and is dispersed from the non-tax revenue. Also, the correlation matrix showed that the dependent variable

(*GovBPerf*) is positively related to the explanatory variables (TaxRev, NTaxRev and Bvar). Other explanatory variables like (CapExp, RecExp and FDefF) were negatively related to *GovPerf*. The value of the Mean VIF of 12.29 is greater than the maximum acceptable value of VIF (10). This implies that there is the presence of multicollinearity problem in our model based on country differentials (Angola). On the basis of the VIF outcome, we conducted the heteroskedasticity test. The result of the Breusch-Pagan/Cook-Weisberg Heteroskedasticity test for Angola data revealed that the data followed a normal distribution. The fitted f-value (5639.79) is greater than the F-tab of 3.87. On the overall, we noticed that the F-cal of 5,639.79 which is far greater than F-tab of 3.87 implies that budget performance was jointly influenced by the explanatory variables (TaxRev, NTaxRev, CapExp, RecExp and Bvar). The relationship is also statistically significant at 5% level (p=0.0000<0.05).

In Dr. Congo (Mid Africa), we found that recurrent expenditure recorded the highest average with a mean of 10.04867, and was followed by tax revenue (8.937333), capital expenditure (3.828667), non-tax revenue (0.3053333), debt/borrowed funds (0.2233333) and budget variance (0.1333333). Tax revenue recorded the highest dispersion with a standard deviation of 4.750555, while the least was debt/borrowed funds (0.2584477). The value of dispersion of 4.750555 for tax revenue is an indication that the government of Dr. Congo generates more of its resources from tax and is dispersed from the non-tax revenue. The correlation matrix result shows that the dependent variable (*GovBPerf*) is positively related to the explanatory variable (Bvar). Other explanatory variables like

(CapExp, RecExp, TaxRev, NTaxRev and FDefF) were negatively related to *GovPerf*. Also, the value of the Mean VIF of 14.83 is greater than the maximum acceptable value of VIF (10). This implies that there is the presence of multicollinearity problem in our model based on country differentials (DR. Congo). We conducted the heteroskedasticity test to ascertain the level of normality of our data stream for DR. Congo. The Breusch-Pagan/Cook-Weisberg Heteroskedasticity test result for DR Congo with fitted f-value (12.86) is greater than F-tab of 2.0986. Overall, the combined effect of the explanatory variables result, with F-cal of 12.86 which is greater than F-tab of 3.87 implies that budget performance was jointly influenced by the explanatory variables (TaxRev, NTaxRev, CapExp, RecExp and Bvar). The relationship is also statistically significant at 5% level (p=0.0000<0.05).

In Cameroon (Mid Africa) we observed that debt/borrowed funds recorded the highest average with a mean of 43.966, and was followed by tax revenue with a mean of 23.68533, non-tax revenue (13.32733), recurrent expenditure (12.886), capital expenditure (4.09667) and budget variance (0.66666667). Debt/borrowed funds recorded the highest dispersion with a standard deviation of 37.69397, while the least was budget variance (0.48795). The value of dispersion of 37.69397 for debt/borrowed funds is an indication that the government of Cameroon financed its budget majorly from external borrowing and is dispersed from the internally generated revenue like tax revenue. The correlation matrix revealed that the dependent variable (*GovBPerf*) is positively related to the explanatory variables (NTaxRev and Bvar). Other explanatory variables like

(TaxRev, CapExp, RecExp and FDefF) were negatively related to *GovPerf*. The correlation matrix also revealed that no two explanatory variables were perfectly correlated. Also, the value of the Mean VIF of 2.50 is lesser than the maximum acceptable value of VIF (10). This implies that there is the absence of multicollinearity problem in our model. Overall, the combined effect of the explanatory variables with value F-cal of 1.52 which is lesser than F-tab of 3.87 implies that budget performance was not jointly influenced by the explanatory variables (TaxRev, NTaxRev, CapExp, RecExp and Bvar). The relationship is also statistically flawed at 5% level (p=0.0000>0.05).

In South Africa (Southern Africa), we found that recurrent expenditure recorded the highest average with a mean of 24.05, and was followed by tax revenue (21.90067), debt/borrowed fund (3.13667), capital expenditure (1.543333), non-tax revenue (1.254) and budget variance (0.1333333). Recurrent expenditure recorded the highest dispersion with a standard deviation of 2.3676, while the least was budget variance (0.3518658). The value of dispersion of 2.3676 for recurrent expenditure is an indication that the government of South Africa channeled most of its resources on recurrent expenditure and is dispersed from the capital expenditure. The correlation matrix showed that the dependent variable (*GovBPerf*) is positively related to the explanatory variable (TaxRev and Bvar).

Other explanatory variables like (NTaxRev, CapExp, RecExp, TaxRev and FDefF) were negatively related to *GovPerf*. The value of the Mean VIF of 11.45 is greater than the

maximum acceptable value of VIF (10). This implies that there is the presence of multicollinearity problem in our model based on country differentials (South Africa). We also conducted the heteroskedasticity test using the Breusch-Pagan/Cook-Weisberg Heteroskedasticity test on the data for South Africa. With fitted f-value of 24.65 which is greater than the F-tab of 2.0986, it was evident that the data used in this study for South Africa were normally distributed. Overall, we noticed that the F-cal of 24.65 which is greater than F-tab of 3.87 implies that budget performance was jointly influenced by the explanatory variables (TaxRev, NTaxRev, CapExp, RecExp and Bvar). The relationship is also statistically significant at 5% level (p=0.0000<0.05).

In Botswana (Southern Africa) we observed, tax revenue recorded the highest average with a mean of 31.798, and was followed by recurrent expenditure with a mean of 26.846, capital expenditure (9.693333), non-tax revenue (4.755333), debt/borrowed funds (3.372) and budget variance (0.4666667). Tax revenue recorded the highest dispersion with a standard deviation of 4.081399, while the least was budget variance (0.5163978). The value of dispersion of 4.081399 for tax revenue is an indication that the government of Botswana generated most of its revenues from tax and is dispersed from the non-tax revenue. The correlation matrix showed that the dependent variable (*GovBPerf*) is positively related to the explanatory variables (TaxRev, NTaxRev and Bvar). Other explanatory variables like (CapExp, RecExp and FDefF) were negatively related to *GovPerf*. The value of the Mean VIF of 3.01 is lesser than the accepted value of VIF (10). This implies that there is the absence of multicollinearity problem in our model.

However, based on the combined effect of the explanatory variables result, we notice that the F-cal of 8.38 which is greater than F-tab of 3.87 implies that budget performance was jointly influenced by the explanatory variables (TaxRev, NTaxRev, CapExp, RecExp and Bvar). The relationship is also statistically significant at 5% level (p=0.0000>0.05).

In Namibia (Southern Africa), we observed that tax revenue recorded the highest average with a mean of 25.16, and was followed by recurrent expenditure with a mean of 24.00533, capital expenditure (4.102667), debt/borrowed funds (3.822667), non-tax revenue (2.21) and budget variance (0.333333). Tax revenue recorded the highest dispersion with a standard deviation of 2.643107, while the least was non-tax revenue (0.4098083). The value of dispersion of 2.643107 for tax revenue is an indication that the government of Namibia generated most of its revenues from tax and is dispersed from the non-tax revenue.

The correlation matrix showed that the dependent variable (*GovBPerf*) is positively related to the explanatory variables (TaxRev, NTaxRev and Bvar). Other explanatory variables like (CapExp, RecExp and FDefF) were negatively related to *GovPerf*. The value of the Mean VIF of 2.61 is lesser than the accepted value of VIF (10). This implies that there is the absence of multicollinearity problem in our model. Overall, we noticed that the F-cal of 11.04 which is greater than F-tab of 3.87 implies that budget performance was jointly influenced by the explanatory variables (TaxRev, NTaxRev, CapExp, RecExp and Bvar). The relationship is also statistically significant at 5% level (p=0.0000>0.05). It is worthy to mention that the same trend was repeated for all

countries in Southern Africa. These results however, are as expected in the literature (Tabelini, 1986; Hanival & Maia, 2008; Duclos & Verdier-Chouchane, 2011; Feger, 2014 and Xolani & Amanja, 2015)

In Nigeria, (West Africa), we discovered that tax revenue recorded the highest average with a mean of 25.558, and was followed by recurrent expenditure (12.87267), capital expenditure (7.724), non-tax revenue (0.958), budget variance (0.6) and debt/borrowed fund (0.1373333). Tax revenue recorded the highest dispersion with a standard deviation of 10.98176, while the least was debt/borrowed fund (0.1944026). The value of dispersion of 10.98176 for tax revenue is an indication that the government of Nigeria generated most of its resources from tax revenue and is dispersed from the non-tax revenue.

The correlation matrix showed that the dependent variable (*GovBPerf*) is positively related to the explanatory variable (TaxRev and Bvar). Other explanatory variables like (NTaxRev, CapExp, RecExp, TaxRev and FDefF) were negatively related to *GovPerf*. The value of the Mean VIF of 12.03 is greater than the accepted value of VIF (10). This implies that there is the presence of multicollinearity problem in our model based on country differentials (Nigeria). On the basis of the VIF outcome, we conducted heteroskedasticity test. The Breusch-Pagan/Cook-Weisberg Heteroskedasticity test result for Nigeria showed a fitted f-value of 191.09 which is greater than F-tab of 2.0986. This means that the data for Nigeria were normally distributed.

However, based on the combined effect of the explanatory variables result, we notice that the F-cal of 191.09 which is greater than F-tab of 3.87 implies that budget performance was jointly influenced by the explanatory variables (TaxRev, NTaxRev, CapExp, RecExp and Bvar). The relationship is also statistically significant at 5% level (p=0.0000<0.05). These findings are as expected in the literature (Peter & Simeon, 2011; Sikiru & Umaru, 2011; Tella, 2012; Malgwi & Unegbu, 2012, and Kanayo & Okafor, 2013).

In Ghana (West Africa), we observed that debt/borrowed funds recorded the highest average with a mean of 80.102, and was followed by recurrent expenditure (78.54467), tax revenue (69.97133), capital expenditure (37.304), non-tax revenue (5.167333) and budget variance (0). Debt/borrowed funds recorded the highest dispersion with a standard deviation of 89.90314, while the least was budget variance (0). The value of dispersion of 89.90314 for debt/borrowed fund is an indication that the government of Ghana financed major part of the budgets during the period under investigation via debt/borrowed fund and is dispersed from the budget performance.

The correlation matrix revealed that the dependent variable (*GovBPerf*) is negatively related to all the explanatory variables (TaxRev, NTaxRev, CapExp, RecExp, FDefF and Bvar). None of the explanatory variables were positively related to *GovPerf*. The value of the Mean VIF of 65.20 is greater than the accepted value of VIF (10). This implies that there is the presence of multicollinearity problem in our model based on country differentials (Ghana). Again, we also conducted the heteroskedasticity test using the

Breusch-Pagan/Cook-Weisberg Heteroskedasticity test result for Ghana with fitted fvalue (33479.76) is greater than F-tab of 9.01. This means that based on the heteroskedasticity result, the variables the variables used were normally distributed. Overall, in the combined effect of the explanatory variables result, we noticed that the Fcal of 3,3479.76 which is far greater than F-tab of 3.48 implies that budget performance was jointly influenced by the explanatory variables (TaxRev, NTaxRev, CapExp, RecExp and Bvar). The relationship is also statistically significant at 5% level (p=0.0000<0.05).

In Cote D'Ivoire (West Africa), we found that recurrent expenditure recorded the highest average with a mean of 14.68267, and was followed by tax revenue with a mean of 13.77267, capital expenditure (3.164), non-tax revenue (2.35), budget variance (0.2666667) and debt/borrowed funds (0.1686667). Recurrent expenditure recorded the highest dispersion with a standard deviation of 3.706202, while the least was debt/borrowed fund (0.0546243). The value of dispersion of 3.706202 for recurrent expenditure is an indication that the government of Cote D'Ivoire devoted more of the budgetary allocation to recurrent expenditures and is dispersed from the capital expenditures.

The correlation matrix revealed that the dependent variable (*GovBPerf*) is positively related to the explanatory variables (NTaxRev, FDefF and Bvar). Other explanatory variables like (TaxRev, CapExp and RecExp) were negatively related to *GovPerf*. The value of the Mean VIF of 2.44 is lesser than the maximum acceptable value of VIF (10). This implies that there is the absence of multicollinearity problem in our model.

However, based on the combined effect of the explanatory variables result, we noticed that the F-cal of 5.48 which is greater than F-tab of 3.87 implies that budget performance was jointly influenced by the explanatory variables (TaxRev, NTaxRev, CapExp, RecExp and Bvar). The relationship is also statistically significant at 5% level (p=0.0000>0.05). It is worthy to mention that the selected countries in West Africa had similar behaviour in their trend. However, these results are in consonance with the findings of prior studies like Aregbeyen (2007), Feger (2014), Kwakye & Owoo (2014) and Mensa (2014).

The test of hypotheses revealed some insightful findings, first, we found that tax revenue have significant relationship with government budgets in Sub-Saharan Africa (see Table 4.62). Second, government budgets are not affected by non-tax revenue of countries in Sub-Saharan Africa (see Table 4.63). Third, that prior year capital expenditure have significant effect on the budgets of countries in Sub-Saharan Africa (see Table 4.64). Fourth, that there is significant relationship between recurrent expenditure and government budgets in Sub Sahara Africa (see Table 4.65). Fifth, that fiscal deficit financing have significant effect on budgeting in Sub Saharan Africa (see Table 4.66). Finally, we found that there is significant relationship between budgeting/budgeting patterns and fiscal administration among countries in Sub Sahara Africa (see Table 4.67). The findings of the study are generally in agreement with prior empirical studies (Perotti, 2004; Gollwitzer, 2010; Keho, 2010; Taiwo & Abayomi, 2011; Peter & Simeon, 2011; Odhiambo, Momanyi, Lucas & Aila, 2013; Edame & Ejue, 2013; Feger, 2014; Mensa, 2014; Onyemaechi, 2014; Tcchouassi & Ngwen, 2015; Veiga, Kurian & Ardakanian,

2015 and Xolani & Amanja, 2015) that government budget is affected by fiscal administration.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of Findings

From the analyses carried out in this study and the various tests of hypotheses, the following findings emerged:

- 1. Tax revenue has significant relationship with government budgets among countries in Sub Saharan Africa.
- Government budgets are not significantly affected by non-tax revenue of countries in Sub Saharan Africa.
- Prior year capital expenditure has significant effect on the budgets of countries in Sub Saharan Africa.
- 4. There is a significant relationship between recurrent expenditure and government budgets of countries in Sub Saharan Africa.
- 5. Fiscal deficit financing has significant effect on budgeting of countries in Sub Saharan Africa.
- 6. There is a significant relationship between budgeting/budgeting patterns and fiscal administration among countries in Sub Saharan Africa.

5.2 Conclusion

This study was able to establish the fact that economic activity of countries in sub-Saharan Africa has weakened with large variations among the countries due to countryspecific circumstances. Most countries of the region have recorded trends of significant levels of revenue decline and fiscal balances have deteriorated despite the various acclaimed adjustments in the expenditures profiles by governments in the region. Available data and results from this study reveal that most countries in Sub-Saharan Africa relied heavily on borrowed funds to finance the increasing amounts of budget deficits. This has however contributed to the increase in the debt profile of countries in the sub region.

With the increase in the level of debt profile of countries in sub-saharan Africa, it is expected that borrowing costs would have increased on a general note. In this study, efforts were made to obtain secondary data from 12 sampled countries for a period of 15 years spanning from 2000 - 2014. The data obtained were presented and analysed and the results obtained formed the basis of our tests of hypotheses. Interestingly, the results from the analyses and test of hypotheses in this study gave important insights on budgeting and fiscal administration of countries in Sub-Saharan Africa.

Findings from this study further indicated a significant relationship between budget performance and fiscal administration of countries in Sub-Sahara Africa. Overall, the findings of this study are in agreement with most of the findings of prior studies

5.3 Recommendations

In view of the findings and conclusions of this study, the following recommendations have been made:

1. Concerted efforts must be made by the governments of the region to reduce the cost of governance and duplication of offices and portfolios that have over the years increased government spending.

- 2. Efforts must also be made to discourage over reliance on external borrowing to reduce the costs associated with such borrowings/debt profile, by looking inwards towards revenue generation from within. To this end, efforts must also be made to block all forms of leakages from tax revenues that never get to the coffers of governments. Governments should also in this regards develop human capital and resource endowments.
- 3. Where the governments of countries in Sub-Saharan Africa must continue to rely on debt to finance budget deficits, efforts must thus be made to instill among political office holders and leaders in Sub Saharan Africa, fiscal discipline and high sense of responsibility when it comes to the handling of public funds.
- 4. Since tax revenue has significant relationship with government budgets across the region, governments in Sub Saharana African countries, should make efforts to improve the abysmal tax ratio and dismal growth rate which Feger (2004) estimated at 15% and 2 % respectively. There should also be in place, effective system of tax administration that is capable of optimizing the yield and at the same time promoting voluntary compliance and autonomy. This will not only increase the revenue base of countries in the region, but to a large extent, it will reduce over reliance on deficit financing by countries in the region.
- 5. Tax administration in the region should be autonomous such that highly trained personnel are recruited to adequately deal with sophistications associated with tax evasion and other sharp practices owing to the advent of modern information and communication technologies. With autonomy in tax administration, while the

appropriate and qualified personnel are hired, the redundant and non challant ones are fired. Also, autonomy in the system would help to reduce bureaucracies and political interference in the system which may have accounted for frequent changes in policies within the region over the years.

6. Budget benchmarks must be made more realistic through the application of scientific techniques. Resultant budgets should be implemented as legally mandated, adopting oversight functions by legislatures and civil societies so as to insulate national objectives from political horse-trading.

5.4 Contribution To Knowledge

This study examined the relationship between budgeting and fiscal administration by focusing on selected countries in Sub-Saharan Africa. This section highlights the contributions that this study made to knowledge as follows:

- 1. This study was able to do a comparative analysis of budgeting and fiscal administration of countries in Sub-Saharan Africa. The study was able to develop a model that x-rayed the link between budgeting and fiscal administration of countries in the region, thus generating facts that would be useful for policy making in the region.
- 2. Findings of this study contribute to the available data stream that would be useful to African Peer Review Mechanism especially on cross country evaluation and comparison in the area of budgeting and fiscal administration.

3. With the conceptual model developed (see page 128) to express the relationship between budgeting and the components of fiscal administration, this study has opened a wider scope of research to the academia at regional level particulary in the fields of budgeting and fiscal admisintration.

5.5 Suggestion for Further Studies

Based on the methodological approach, findings and timing of this study, the following suggestions have been made for further studies:

- 1. Researches should be conducted to find out why government budgets are not significantly affected by non-tax revenue of countries in Sub Saharan Africa.
- Studies should equally be conducted to find out possible solutions to the increasing debt profile and budget mismatch among countries in Sub-Saharan Africa.
- Studies could also be conducted to examine the effect of budget padding on budget performance and its implication on fiscal administration among countries in the sub – region.

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S/N	COUNTRIES	REGIONAL ZONES
1	KENYA	
2	ETHIOPIA	EAST AFRICA
3	TANZANIA	
4	ANGOLA	
5	CONGO	MID AFRICA
6	CAMEROON	
7	SOUTH AFRICA	
8	BOTSWANA	SOUTHERN AFRICA
9	NAMIBIA	
10	NIGERIA	
11	GHANA	WEST AFRICA
12	COTE D' IVOIRE	

APPENDIX I LIST OF COUNTRIES SAMPLED FOR THIS STUDY

FYEAR	Bperf (% of GDP)	Tax Rev (% of GDP)	NTaxRev (% of GDP)	Total Rev (% of GDP)	CapExp (% of GDP)	RecExp (% of GDP)	TotalExp (% of GDP)	FDefF (% of GDP)	Bvar
2014	-5.04	18.99	2.19	22.62	6.65	20.97	27.66	0.23	0
2013	-3.88	16.48	3.43	20.97	8.54	16.26	24.85	0.29	0
2012	-3.65	15.51	3.36	19.83	7.74	15.68	23.48	0.28	0
2011	-3.36	14.96	2.96	18.42	5.82	15.90	21.79	0.28	0
2010	-4.94	14.72	2.57	17.95	6.74	16.11	19.08	0.27	0
2009	-3.39	15.70	1.34	17.73	5.81	15.31	18.70	0.27	0
2008	-3.29	16.08	1.33	18.28	5.29	16.27	16.23	0.29	0
2007	-0.67	15.71	1.63	18.06	3.74	15.00	17.79	0.30	0
2006	-2.77	15.24	1.47	17.79	3.64	16.71	20.56	0.34	0
2005	0.03	18.50	1.97	21.52	3.22	18.21	21.49	0.42	1
2004	-0.89	18.03	1.96	21.26	3.00	19.03	22.14	0.40	0
2003	-3.40	17.42	1.20	19.94	3.07	20.11	23.34	0.45	0
2002	-2.16	17.51	1.48	19.65	2.54	19.09	21.80	0.47	0
2001	-1.62	17.41	1.44	21.21	2.06	20.38	22.83	0.46	0
2000	0.78	17.27	1.17	18.88	1.79	16.11	18.09	0.54	1
2014	14.90	12.55	2.35	14.90	10.12	7.36	17.48	3.70	1
2013	15.83	12.34	3.48	15.83	10.52	7.24	17.76	3.44	1
2012	15.48	11.47	4.00	15.48	9.76	6.88	16.65	2.88	1
2011	16.62	11.45	5.17	16.62	10.35	7.87	18.22	4.80	1
2010	17.47	11.42	6.05	17.47	10.37	8.44	18.82	4.61	1
2009	12.17	6.99	5.18	12.17	5.29	7.92	13.21	3.60	1
2008	16.15	9.68	6.47	16.15	9.81	9.27	19.08	6.96	1
2007	17.25	10.19	7.06	17.25	10.80	10.08	20.91	8.11	1
2006	17.82	10.84	6.98	17.82	10.77	11.69	22.50	7.54	1
2005	19.11	11.76	7.35	19.11	10.76	12.56	23.53	8.75	1
2004	20.88	12.71	8.17	20.88	9.64	13.96	23.92	7.70	1
2003	21.60	11.34	10.26	21.60	8.68	18.64	28.22	12.89	1
2002	19.47	12.03	7.45	19.47	9.61	16.01	26.79	10.99	1
2001	19.01	11.05	7.97	19.01	7.43	15.41	23.44	8.33	1
2000	17.01	10.28	6.73	17.01	5.22	20.83	26.04	11.65	1
2014	-3.89	13.35	0.49	15.78	6.30	13.37	19.67	0.14	0
2013	-3.92	12.75	0.38	15.46	5.47	13.91	19.38	0.02	0
2012	-4.12	12.41	0.34	15.66	6.41	13.38	19.78	0.02	0
2011	-4.23	10.03	0.54	13.66	5.21	12.68	17.89	0.02	0
2010	-5.12	10.10	0.53	13.84	5.96	13.00	18.96	0.02	0
2009	-3.34	10.72	0.66	14.71	5.65	12.41	18.06	0.02	0
2008	0.00	10.25	0.84	15.89	5.53	10.37	15.90	0.02	0
2007	-2.85	13.86	0.78	13.86	5.00	11.72	16.71	0.01	0
2006	-3.59	13.60	0.77	13.60	5.77	11.43	17.19	0.02	0
2005	-2.52	8.45	0.83	14.48	6.44	10.56	17.00	0.03	0
2004	-4.03	9.61	0.83	13.99	5.27	12.74	18.01	0.04	0
2003	-1.24	9.13	0.92	15.20	4.14	12.30	16.43	0.05	0
2002	-0.38	8.99	1.00	13.66	3.30	10.74	14.04	0.05	0
2001	-0.90	9.10	1.12	13.44	2.93	11.20	14.34	0.08	0
2000	-1.36	8.40	1.14	12.98	4.41	9.92	14.34	0.09	0

APPENDIX II DATA USED FOR THE STUDY

FYEAR	Bperf (% of GDP)	Tax Rev (% of GDP)	NTaxRev (% of GDP)	Total Rev (% of GDP)	CapExp (% of GDP)	RecExp (% of GDP)	TotalExp (% of GDP)	FDefF (% of GDP)	Bvar
2014	-2.20	32.38	1.08	33.46	10.68	24.98	35.66	0.23	0
2013	0.21	3.63	0.16	3.79	1.08	2.50	3.58	0.07	1
2012	8.02	40.44	1.64	42.08	10.32	23.73	34.06	0.07	1
2011	9.61	43.47	2.36	45.85	8.12	28.11	36.23	0.07	1
2010	5.50	40.39	2.60	43.01	9.57	27.94	37.51	0.10	1
2009	-9.90	34.26	1.37	35.66	12.81	32.76	45.56	0.12	0
2008	-5.35	46.22	2.19	48.43	22.13	31.66	53.78	0.10	0
2007	4.31	41.00	1.39	42.44	13.34	24.78	38.13	0.12	1
2006	9.42	37.76	2.27	0.01	10.36	20.25	30.60	0.18	1
2005	7.02	32.59	0.91	33.70	4.18	22.50	26.68	0.28	1
2004	-1.32	30.32	0.28	30.99	6.14	26.16	32.31	0.52	0
2003	-5.01	28.74	0.37	29.72	5.61	29.11	34.73	0.64	0
2002	-6.67	28.37	0.30	28.68	7.42	27.92	35.35	1.29	0
2001	-4.08	44.67	0.30	44.97	6.34	42.72	49.06	4.48	0
2000	-8.40	49.88	0.30	50.18	6.11	52.47	58.58	9.95	0
2014	-3.83	13.45	0.00	17.11	8.30	12.63	20.93	0.03	0
2013	-4.55	17.89	0.00	23.67	11.44	16.78	28.23	0.03	0
2012	1.69	14.51	0.00	20.08	8.73	13.04	21.77	0.02	1
2011	-1.15	12.38	0.00	17.97	5.71	13.41	19.12	0.02	0
2010	3.16	12.12	0.00	21.13	6.83	11.15	17.98	0.03	1
2009	-2.56	10.33	0.00	14.92	4.76	12.73	17.49	0.09	0
2008	-1.41	11.22	0.72	12.35	2.27	11.50	13.77	0.13	0
2007	-1.53	9.00	0.73	9.90	1.43	10.00	11.43	0.15	0
2006	-0.41	7.90	0.64	12.80	2.00	11.20	13.20	0.18	0
2005	-1.86	6.86	0.60	9.96	2.01	9.82	11.83	0.21	0
2004	-2.59	5.53	0.50	7.28	1.75	8.11	9.86	0.26	0
2003	-2.46	4.38	0.50	6.16	1.70	6.92	8.62	0.29	0
2002	-1.28	4.14	0.01	5.28	0.34	5.95	6.56	0.35	0
2001	-1.07	3.40	0.69	4.09	0.08	5.09	5.16	0.60	0
2000	-1.36	0.95	0.19	1.15	0.08	2.40	2.50	0.96	0
2014	-5.15	15.70	1.51	17.56	7.38	15.32	22.71	29.88	0
2013	-0.70	13.20	13.20	21.45	6.55	13.45	22.15	18.50	0
2012	1.44	156.87	15.69	22.15	5.86	12.73	20.72	16.78	1
2011	-2.78	12.23	12.23	18.52	5.04	13.73	21.31	14.85	0
2010	-2.80	11.62	11.62	17.18	3.58	13.24	19.98	12.50	0
2009	-0.97	11.32	11.32	17.45	4.90	13.51	18.41	11.14	0
2008	3.04	11.79	11.79	21.16	4.90	13.36	18.12	11.49	1
2007	3.81	11.66	11.66	20.11	4.45	11.71	16.31	12.05	1
2006	33.08	17.42	17.42	47.65	2.89	11.68	14.56	12.37	1
2005	3.81	15.45	15.45	18.22	2.35	12.06	14.41	70.33	1
2004	3.30	14.00	14.00	15.84	2.24	10.36	12.54	83.68	1
2003	1.79	14.82	14.82	17.29	2.14	13.31	15.49	81.38	1
2002	2.20	16.06	16.06	18.24	2.53	13.72	16.04	71.83	1
2001	1.29	15.99	15.99	18.16	3.30	13.28	16.87	99.82	1
2000	4.39	17.15	17.15	19.97	3.31	11.83	15.57	112.89	1

FYEAR	Bperf (% of GDP)	Tax Rev (% of GDP)	NTaxRev (% of GDP)	Total Rev (% of GDP)	CapExp (% of GDP)	RecExp (% of GDP)	TotalExp (% of GDP)	FDefF (% of GDP)	Bvar
2014	-3.52	22.54	4.08	26.62	2.69	27.33	30.14	0.00	0
2013	-3.80	23.41	1.82	25.23	2.01	26.97	29.03	3.50	0
2012	-3.59	23.19	2.47	25.66	1.91	27.29	29.25	4.21	0
2011	-3.96	22.92	2.13	25.05	1.84	26.46	29.01	3.74	0
2010	-5.77	21.98	2.19	24.18	2.09	26.68	29.99	3.80	0
2009	-0.99	24.93	2.33	27.26	1.98	25.83	28.25	3.13	0
2008	0.82	23.17	0.50	23.67	1.10	22.88	22.85	3.08	1
2007	0.52	22.36	0.45	22.81	1.09	22.32	22.29	3.57	1
2006	-0.31	21.88	0.47	22.35	1.12	22.56	22.66	3.23	0
2005	-1.17	20.84	0.38	21.22	1.00	22.49	23.61	2.96	0
2004	-3.32	19.83	0.45	20.28	1.01	22.59	23.59	3.05	0
2003	-2.38	20.67	0.33	21.01	1.01	22.37	23.38	2.96	0
2002	-1.97	20.05	0.35	20.40	1.70	20.61	22.37	2.79	0
2001	-2.68	20.20	0.55	20.01	1.24	22.04	23.63	3.91	0
2000	5.09	22.58	11.68	34.49	6.28	23.40	29.40	2.60	1
2013	0.21	29.66	2.83	32.58	6.58	25.50	32.37	2.56	1
2013	-0.35	28.83	4.84	34.15	8.83	25.78	34.50	2.99	0
2012	-6.72	25.77	3.03	29.10	10.60	25.26	35.82	3.12	0
2010	-12.05	29.52	3.00	33.41	14.97	29.62	45.46	3.37	0
2009	-7.61	34.33	5.06	40.24	15.60	32.52	47.85	3.61	0
2009	5.09	33.95	3.59	38.31	8.76	24.86	33.22	1.48	1
2007	11.41	37.57	2.56	40.80	6.04	22.95	29.39	1.87	1
2006	7.84	34.06	3.42	37.67	6.40	22.91	29.83	2.39	1
2005	1.13	32.01	2.69	35.38	7.70	25.97	34.25	2.78	1
2004	-0.19	33.65	4.73	38.53	10.12	30.77	38.72	2.56	0
2003	-3.74	32.97	5.31	38.51	11.30	31.15	42.25	3.29	0
2002	-2.80	30.75	6.01	36.93	10.75	28.87	39.72	3.30	0
2001	-8.04	37.67	6.15	44.02	9.78	29.26	35.98	6.26	0
2000	5.20	33.65	6.43	40.51	11.69	23.87	35.31	8.40	1
2014	4.30	30.47	1.76	32.58	2.07	26.20	28.28	3.55	1
2013	1.38	28.05	1.93	29.58	5.45	26.18	28.20	4.03	1
2012	-1.25	25.44	2.39	28.00	6.74	26.42	29.24	4.59	0
2011	-7.07	23.37	1.53	25.19	6.73	24.94	32.26	5.39	0
2010	-1.93	26.31	1.90	28.46	5.72	23.85	30.39	4.21	0
2009	1.75	28.22	2.80	31.13	5.12	22.75	29.38	3.33	1
2008	3.92	27.36	2.04	29.51	3.74	20.11	25.58	2.86	1
2007	3.76	25.73	2.76	28.57	3.29	20.12	247.27	3.67	1
2006	-0.17	22.14	2.05	24.26	2.67	21.37	24.43	4.16	0
2005	-2.91	22.67	1.92	24.74	3.51	23.36	27.66	4.00	0
2004	-5.81	20.53	2.28	22.89	3.27	24.48	28.69	4.83	0
2003	-2.45	25.01	3.01	28.11	3.34	25.47	30.56	4.34	0
2002	-3.73	23.05	2.14	25.35	3.25	24.48	29.08	3.25	0
2001	-1.38	24.73	2.41	27.14	3.15	24.97	28.52	2.19	0
2000	-2.76	24.32	2.23	26.55	3.49	25.38	29.32	2.94	0
FYEAR	Bperf	Tax Rev	NTaxRev	Total Rev		RecExp	TotalExp	FDefF	Bvar
2014	0.08	13.43	0.97	15.02	3.40	11.44	14.94	0.01	1

2013	2.21	15.88	0.95	17.27	3.63	11.29	15.06	0.01	1
2012	1.68	15.70	0.96	17.03	3.76	11.44	15.35	0.01	1
2011	1.11	16.67	1.04	18.14	4.26	12.59	17.03	0.01	1
2010	-5.99	11.43	0.98	12.72	5.31	13.23	18.70	0.01	0
2009	-10.24	15.83	1.89	18.79	11.10	17.67	29.02	0.02	0
2008	-3.83	24.54	1.88	27.41	12.08	18.91	31.24	0.02	0
2007	-3.33	19.62	1.36	22.64	8.39	17.37	25.97	0.02	0
2006	9.51	32.26	0.18	32.44	5.83	8.45	22.93	0.02	1
2005	9.41	37.77	0.37	38.15	5.94	9.48	28.73	0.14	1
2004	8.14	34.85	0.51	35.35	6.13	8.04	27.22	0.31	1
2003	0.00	31.35	0.62	31.97	8.21	10.15	31.97	0.38	1
2002	-3.33	27.84	0.96	28.80	8.63	12.81	32.13	0.43	0
2001	-5.34	44.88	0.90	45.79	17.74	16.20	51.12	0.60	0
2000	5.94	41.32	0.80	42.12	11.45	14.02	36.18	0.07	1
2014	-7.80	13.09	0.12	13.67	3.99	17.49	21.48	12.04	0
2013	-6.38	16.56	4.54	22.45	4.86	23.96	28.83	12.96	0
2012	-5.68	16.80	3.79	22.13	4.76	23.05	27.81	14.09	0
2011	-3.90	16.70	3.05	21.71	6.14	19.46	25.61	17.24	0
2010	-7.40	14.13	2.66	19.14	7.57	18.97	26.54	19.01	0
2009	-5.82	13.13	2.38	18.51	7.15	17.18	24.33	19.07	0
2008	-8.48	14.47	1.44	18.63	9.15	17.96	27.11	20.13	0
2007	-4.83	14.31	1.45	19.46	7.04	15.58	24.29	24.86	0
2006	-4.44	13.18	0.49	17.06	5.86	14.01	21.50	21.86	0
2005	-1.91	21.90	1.90	29.06	8.98	18.96	30.97	81.39	0
2004	-35.50	213.00	20.69	297.28	123.77	209.01	332.78	119.93	0
2003	-43.59	190.97	6.00	244.11	89.36	198.34	287.71	143.93	0
2002	-67.78	156.54	5.28	193.20	61.19	199.79	260.98	190.27	0
2001	-76.65	172.23	9.14	250.38	128.00	199.05	327.05	229.42	0
2000	-78.81	162.56	14.58	198.29	91.74	185.36	277.10	275.33	0
2014	-2.17	15.11	2.37	19.36	6.22	15.31	21.54	0.08	0
2013	-1.81	16.07	2.31	19.84	5.07	16.59	21.65	0.08	0
2012	-2.41	16.03	2.37	18.99	4.46	16.92	21.40	0.09	0
2011	-3.15	12.47	1.67	14.41	2.39	15.18	17.56	0.14	0
2010	-0.50	15.05	2.01	18.52	2.84	15.91	19.02	0.15	0
2009	1.93	15.00	2.29	20.66	2.92	15./1	18.73	0.15	1
2008	0.08	14.99	3.23	19.91	2.93	16.06	19.05	0.17	1
2007	-0.38	14.65	2.54	17.36	2.57	14.93	17.73	0.20	0
2005	-0.78	13.88	2.44	17.38	2.61	1.53	18.16	0.19	0
2003	-1.73	14.19	2.25	17.31	2.96	15.96	19.04	0.21	0
2004	-2.37	13.38	1.93	15.75	2.40	15.61	18.12	0.21	0
2002	-1.42	14.63	2.12	17.08	2.99	15.37	18.51	0.20	0
2001	0.85	14.24	2.05	16.78	1.75	14.06	15.93	0.23	1
2000	-1.18	14.12	2.09	16.65	2.73	14.98	17.83	0.25	0

APPENDIX III

REGRESSION OUTPUT FOR DESCRIPTIVE STATISTICS AND NORMALITY TEST ACROSS THE REGION

. *(23 variables, 180 observations pasted into data editor)

```
. xtset z fyear, yearly
    panel variable: z (strongly balanced)
    time variable: fyear, 2000 to 2014
        delta: 1 year
```

. summarize dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar

Variable	Obs	Mean	Std. Dev.	Min	Max
dbperf	180	-1.194778	12.55821	-78.81	33.08
dtaxrev	180	24.56806	29.9445	.95	213
dntaxrev	180	3.3765	4.146902	0	20.69
dcapexp	180	8.292222	16.28028	.08	128
drecexp	180	22.73144	30.68359	1.53	209.01
dfdeff	180	11.96594	36.16639	0	275.33
bvar	180	.35	.4783001	0	1

. estimates store EZINANDO.Descr.

last estimation results not found, nothing to store r(301);

. sktest dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar

					joint ———
Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj chi2(2)	Prob>chi2
dbperf	180	0.0000	0.0000	•	0.0000
dtaxrev	180	0.0000	0.0000		0.0000
dntaxrev	180	0.0000	0.0000	61.74	0.0000
dcapexp	180	0.0000	0.0000	•	0.0000
drecexp	180	0.0000	0.0000		0.0000
dfdeff	180	0.0000	0.0000		0.0000
bvar	180	0.0009			

Skewness/Kurtosis tests for Normality

. sktest dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar, noadjust

.....APPENDIX III Cont'd

					<u> </u>		joint
Variable	Obs	Pr(Skewness	s) Pr(K	urtosis)	chi2	(2)	Prob>chi2
dbperf	180	0.0000	0	.0000	161.61		0.0000
dtaxrev	180	0.0000	0	.0000	197.83		0.0000
dntaxrev	180	0.0000	0	.0000	84.17		0.0000
dcapexp	180	0.0000	0	.0000	241.79		0.0000
drecexp	180	0.0000	0	.0000	222.13		0.0000
dfdeff	180	0.0000	0	.0000	210.47		0.0000
bvar	180	0.0009		•			
Hadri LM test Ho: All panels Ha: Some panel	for dbper are stat	f tionary n unit roots		Number Number	of panels of periods	=	12 15
Time trend: Heteroskedasti LR variance:	Not city: Not. (nc	included robust tused)		Asympto	otics: T, N	-> sec	Infinity quentially
	Sta	atistic	p-value				
Z	15	5.7414	0.0000				

Skewness/Kurtosis tests for Normality

..... APPENDIX III Cont'd

						— јо	int
Variable	Obs	Pr(Skewness) Pr(K	urtosis)	chi2	(2)	Prob>chi2
dbperf	180	0.0000	0	.0000	161.61		0.0000
dtaxrev	180	0.0000	0	.0000	197.83		0.0000
dntaxrev	180	0.0000	0	.0000	84.17		0.0000
dcapexp	180	0.0000	0	.0000	241.79		0.0000
drecexp	180	0.0000	0	.0000	222.13		0.0000
dfdeff	180	0.0000	0	.0000	210.47		0.0000
bvar	180	0.0009					
Ho: All panels	are stat			Number of	f panels	=	12
Ho: All panels Ha: Some panel	are stat s contair	n unit roots		Number of Number of	f panels f periods	=	12 15
Time trend: Heteroskedasti LR variance:	Not city: Not (no	t included t robust ot used)		Asymptot	ics: T, N	-> In seque	finity ntially
	Sta	atistic	p-value				
Z	15	5.7414	0.0000				

Skewness/Kurtosis tests for Normality

APPENDIX IV CORRELATION RESULT FOR THE ENTIRE PANEL DATA

Key rho Number of obs Sig. level

	dbperf	dtaxrev	dntaxrev	dcapexp	drecexp	dfdeff	bvar
dbperf	1.0000 180						
dtaxrev	-0.1414 180 0.0582	1.0000 180					
dntaxrev	0.2350 180 0.0015	0.1105 180 0.1398	1.0000 180				
dcapexp	-0.0992 180 0.1854	0.3218 180 0.0000	0.2815 180 0.0001	1.0000 180			
drecexp	-0.3852 180 0.0000	0.7672 180 0.0000	0.1814 180 0.0148	0.2171 180 0.0034	1.0000 180		
dfdeff	-0.0009 180 0.9904	0.1821 180 0.0144	0.5794 180 0.0000	0.0977 180 0.1920	0.2826 180 0.0001	1.0000 180	
bvar	0.8260 180 0.0000	0.0452 180 0.5471	0.2953 180 0.0001	0.0881 180 0.2396	-0.2289 180 0.0020	0.1012 180 0.1763	1.0000

.....APPENDIX IV Cont'd

dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar 1.0000 dbperf -0.1414 1.0000 dtaxrev 0.2350 0.1105 1.0000 dntaxrev dcapexp -0.0992 0.3218 0.2815 1.0000 -0.3852 0.7672 0.1814 0.2171 1.0000 drecexp dfdeff -0.0009 0.1821 0.5794 0.0977 0.2826 1.0000 0.8260 0.0452 0.2953 0.0881 -0.2289 0.1012 bvar 1.0000 . mvtest normality dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar Test for multivariate normality Doornik-Hansen chi2(14) = 2089.842 Prob>chi2 = 0.0000 . estat vif last estimates not found r(301); . spearman dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar (obs=180) dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar dbperf 1.0000 -0.1414 dtaxrev 1.0000 0.2350 0.1105 1.0000 dntaxrev -0.0992 dcapexp 0.3218 0.2815 1.0000 -0.3852 drecexp 0.7672 0.1814 0.2171 1.0000 0.1821 dfdeff -0.0009 0.5794 0.0977 0.2826 1.0000 0.8260 0.0452 0.2953 0.0881 -0.2289 0.1012 bvar 1.0000 . correlate dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar (obs=180) dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar 1.0000 dbperf dtaxrev -0.6857 1.0000 -0.0294 0.3374 1.0000 dntaxrev -0.7277 0.8730 0.3442 1.0000 dcapexp -0.8098 0.9046 0.2863 0.9292 drecexp 1.0000 -0.7131 dfdeff 0.7069 0.5414 0.7784 0.7977 1.0000 0.5005 -0.0368 0.3082 -0.0959 -0.1662 -0.0082 1.0000 bvar

. spearman dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar (obs=180)

```
195
```

APPENDIX Va REGRESSION OUTPUT INCLUSIVE OF RESULT FOR MULTICOLLINEARITY TEST FOR ENTIRE PANEL DATA

Source	SS	df	MS	Number of obs = $F(-6, -173) = -2$	180
Model Residual	24725.7481 3504.09799	6 173	4120.95801 20.2549017	Prob > F = 0 R-squared = 0	.0000
Total	28229.8461	179	157.708637	Adj R-squared = 0 Root MSE = 4	.8716

. regress dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar

dbperf	Coef.	Std. Err.	t	P> t	[95% Conf.	Interval]
dtaxrev	059375	.0285045	-2.08	0.039	1156365	0031136
dntaxrev	.8466597	.1087533	7.79	0.000	.6320055	1.061314
dcapexp	.0409476	.0585065	0.70	0.485	0745308	.156426
drecexp	125091	.0408266	-3.06	0.003	2056734	0445086
dfdeff	194077	.0188105	-10.32	0.000	2312046	1569495
bvar	9.420706	.7906837	11.91	0.000	7.860077	10.98133
_cons	-1.065774	.644671	-1.65	0.100	-2.338207	.2066588

. estat vif

Variable	VIF	1/VIF
drecexp dcapexp dtaxrev dfdeff dntaxrev bvar	13.87 8.02 6.44 4.09 1.80 1.26	0.072107 0.124723 0.155315 0.244494 0.556345 0.791172
Mean VIF	5.91	

APPENDIX Vb ROBUST REGRESSION RESULT ACROSS ENTIRE PANEL DATA

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity Ho: Constant variance Variables: fitted values of dbperf

> chi2(1) = 0.07 Prob > chi2 = 0.7852

. rreg dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar

Huber iteration 1: maximum difference in weights = .73165597 Huber iteration 2: maximum difference in weights = .21216913 Huber iteration 3: maximum difference in weights = .12045175Huber iteration 4: maximum difference in weights = .09798893 Huber iteration 5: maximum difference in weights = .09850864 Huber iteration 6: maximum difference in weights = .06818512 Huber iteration 7: maximum difference in weights = .06202443Huber iteration 8: maximum difference in weights = .04124515 Biweight iteration 9: maximum difference in weights = .29560944 Biweight iteration 10: maximum difference in weights = .46755783 Biweight iteration 11: maximum difference in weights = .38231766 Biweight iteration 12: maximum difference in weights = .29337818 Biweight iteration 13: maximum difference in weights = .21770011 Biweight iteration 14: maximum difference in weights = .16478389 Biweight iteration 15: maximum difference in weights = .08351691 Biweight iteration 16: maximum difference in weights = .09054698 Biweight iteration 17: maximum difference in weights = .11377438 Biweight iteration 18: maximum difference in weights = .08583159 Biweight iteration 19: maximum difference in weights = .07889435 Biweight iteration 20: maximum difference in weights = .06631738 Biweight iteration 21: maximum difference in weights = .04951402 Biweight iteration 22: maximum difference in weights = .03073377 Biweight iteration 23: maximum difference in weights = .0213678 Biweight iteration 24: maximum difference in weights = .00871035

Robust regression

Number of obs = 179 F(6, 172) = 775.26 Prob > F = 0.0000

dbperf	Coef.	Std. Err.	t	P> t	[95% Conf.	Interval]
dtaxrev	.3801709	.024129	15.76	0.000	.3325439	.427798
dntaxrev	.2839589	.0482599	5.88	0.000	.1887009	.3792169
dcapexp	4304818	.0268131	-16.05	0.000	4834069	3775567
drecexp	3798311	.0241987	-15.70	0.000	4275959	3320664
dfdeff	0486915	.0083234	-5.85	0.000	0651206	0322624
bvar	3.8137	.3632261	10.50	0.000	3.096745	4.530655
_cons	-1.109178	.2861344	-3.88	0.000	-1.673965	5443912

APPENDIX VI DESCRIPTIVE STATISTICS, CORRELATION AND REGRESSION RESULT (KENYA ONLY)

. *(23 variables, 15 observations pasted into data editor)

. xtset z fyear, yearly
 panel variable: z (strongly balanced)
 time variable: fyear, 2000 to 2014
 delta: 1 year

. summarize dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar

Variable	Obs	Mean	Std. Dev.	Min	Max
dbperf	15	-2.55	1.744862	-5.04	.78
dtaxrev	15	1.966667	.7735878	14.72	3.43
dcapexp drecexp	15 15	4.643333 17.40933	2.14848 2.015201	1.79 15	8.54 20.97
dfdeff	15	.3526667	.095129	.23	.54
bvar	15	.1333333	.3518658	0	1

. correlate dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar
(obs=15)

	dbperf	dtaxrev	dntaxrev	dcapexp	drecexp	dfdeff	bvar
dbperf	1.0000						
dtaxrev	0.3337	1.0000					
dntaxrev	-0.4493	-0.2819	1.0000				
dcapexp	-0.7673	-0.4072	0.7920	1.0000			
drecexp	-0.0269	0.7980	-0.2660	-0.3803	1.0000		
dfdeff	0.7245	0.4676	-0.5477	-0.8514	0.3818	1.0000	
bvar	0.6876	0.3789	-0.2082	-0.4041	-0.0502	0.5434	1.0000
	-						

. regress dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar

Source	SS	df	MS	Number of obs = 15
				F(6, 8) = 48.55
Model	41.4842602	6	6.91404337	Prob > F = 0.0000
Residual	1.13934019	8	.142417524	R-squared = 0.9733
				Adj R-squared = 0.9532
Total	42.6236004	14	3.04454289	Root MSE = .37738

APPENDIX VI Cont'd

dbperf	Coef.	Std. Err.	t	P> t	[95% Conf.	Int
dtaxrev	1.005701	.1808706	5.56	0.001	.5886129	1
dntaxrev	1.048125	.2350708	4.46	0.002	.5060506	1.
dcapexp	-1.023921	.1353385	-7.57	0.000	-1.336012	7
drecexp	8439471	.1203256	-7.01	0.000	-1.121418	:
dfdeff	-1.222106	2.439577	-0.50	0.630	-6.84778	4.
bvar	1503788	.5004901	-0.30	0.771	-1.304511	1.
_cons	-1.443482	1.862914	-0.77	0.461	-5.73937	2.

. estat vif

Variable	VIF	1/VIF
dcapexp drecexp dtaxrev dfdeff dntaxrev bvar	8.31 5.78 5.77 5.29 3.25 3.05	0.120318 0.173015 0.173425 0.188878 0.307623 0.328012
Mean VIF	5.24	

. estat hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity Ho: Constant variance Variables: fitted values of dbperf

> chi2(1) = 0.13 Prob > chi2 = 0.7145

. rreg dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar

Huber	iteration	1:	<pre>maximum difference in weights = .636136</pre>
Huber	iteration	2:	<pre>maximum difference in weights = .05682201</pre>
Huber	iteration	3:	<pre>maximum difference in weights = .05170989</pre>
Huber	iteration	4:	<pre>maximum difference in weights = .09126376</pre>
Huber	iteration	5:	<pre>maximum difference in weights = .06963367</pre>
Huber	iteration	6:	<pre>maximum difference in weights = .04947504</pre>
Biweight	iteration	7:	<pre>maximum difference in weights = .27827737</pre>
Biweight	iteration	8:	<pre>maximum difference in weights = .27843512</pre>
Biweight	iteration	9:	<pre>maximum difference in weights = .06190674</pre>
Biweight	iteration	10:	<pre>maximum difference in weights = .03810336</pre>
Biweight	iteration	11:	<pre>maximum difference in weights = .0233748</pre>
Biweight	iteration	12:	<pre>maximum difference in weights = .02319546</pre>
Biweight	iteration	13:	<pre>maximum difference in weights = .02857585</pre>
Biweight	iteration	14:	maximum difference in weights = .05344143
Biweight	iteration	15:	<pre>maximum difference in weights = .0539336</pre>
Biweight	iteration	16:	<pre>maximum difference in weights = .05021401</pre>
Biweight	iteration	17:	<pre>maximum difference in weights = .03819119</pre>
Biweight	iteration	18:	maximum difference in weights = $.02760154$
Biweight	iteration	19:	<pre>maximum difference in weights = .01852861</pre>
Biweight	iteration	20:	maximum d 199 erence in weights = .01178449
Biweight	iteration	21:	<pre>maximum difference in weights = .00722006</pre>

.....APPENDIX VI Cont'd

Robust regression

Number	of	obs	=	15
F(6,		8)	=	74.93
Prob >	F		=	0.0000

dbperf	Coef.	Std. Err.	t	P> t	[95% Conf.	Interval]
dtaxrev	1.126098	.1457251	7.73	0.000	.7900558	1.462141
dntaxrev	1.011779	.1893934	5.34	0.001	.5750374	1.448522
dcapexp	9916254	.1090404	-9.09	0.000	-1.243073	7401778
drecexp	9459183	.0969447	-9.76	0.000	-1.169473	7223634
dfdeff	-1.349356	1.965534	-0.69	0.512	-5.881886	3.183175
bvar	2074374	.4032382	-0.51	0.621	-1.137306	.7224316
_cons	-1.752656	1.500925	-1.17	0.277	-5.213795	1.708484

APPENDIX VIIa DESCRIPTIVE STATISTICS AND CORRELATION RESULT (ETHIOPIA ONLY)

. *(23 variables, 15 observations pasted into data editor)

. xtset z fyear, yearly
 panel variable: z (strongly balanced)
 time variable: fyear, 2000 to 2014
 delta: 1 year

•

. summarize dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar

Variable	Obs	Mean	Std. Dev.	Min	Max
dbperf	15	17.38467	2.417628	12.17	21.6
dtaxrev	15	11.07333	1.424794	6.99	12.71
dntaxrev	15	6.311333	2.019246	2.35	10.26
dcapexp	15	9.275333	1.856125	5.22	10.8
drecexp	15	11.61067	4.469437	6.88	20.83
dfdeff	15	7.063333	3.181097	2.88	12.89
bvar	15	1	0	1	1

. correlate dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar (obs=15)

	dbperf	dtaxrev	dntaxrev	dcapexp	drecexp	dfdeff	bvar
dbperf	1.0000						
dtaxrev	0.5529	1.0000					
dntaxrev	0.8082	-0.0438	1.0000				
dcapexp	0.2456	0.6123	-0.1387	1.0000			
drecexp	0.6789	0.0745	0.7617	-0.4513	1.0000		
dfdeff	0.7426	0.0658	0.8442	-0.2274	0.9347	1.0000	
bvar				•	•		

APPENDIX VIIb COUNTRY SPECIFIC REGRESSION OUTPUT (ETHIOPIA ONLY)

. regress dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar note: bvar omitted because of collinearity

Source	SS	df	MS		Number of obs	= 15
Model Residual	81.8287135 .000259331	5 16 9 .0	5.3657427 000028815		F(5, 9) Prob > F R-squared	$= 0.0000 \\= 1.0000 \\= 1.0000$
Total	81.8289729	14 5.	84492663		Root MSE	= .00537
dbperf	Coef.	Std. Err	:. t	P> t	[95% Conf.	Interval]
dtaxrev dntaxrev dcapexp drecexp dfdeff bvar cons	.9984056 .9989835 .0021669 .0015899 0021264 0 .0005325	.0031168 .0015446 .0033278 .0027919 .0029851 (omitted) .0144437	3 320.33 646.76 9 0.65 9 0.57 0.71 7 0.04	0.000 0.000 0.531 0.583 0.494	.9913549 .9954893 005361 0047258 0088791 0321414	1.005456 1.002478 .0096947 .0079056 .0046264 .0332063
_ ^{cons}	.0005325	.014443/	0.04	0.9/1	0321414	.0332063
APPENDIX VIIc RESULT FOR MULTICOLLINEARITY TEST (ETTHIOPIA ONLY)

. estat vif

Variable	VIF	1/VIF
drecexp dfdeff dcapexp dtaxrev dntaxrev	75.65 43.81 18.54 9.58 4.73	0.013218 0.022825 0.053947 0.104368 0.211581
Mean VIF	30.46	

. estat hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity Ho: Constant variance Variables: fitted values of dbperf

> chi2(1) = 1.20 Prob > chi2 = 0.2733

APPENDIX VIId ROBUST REGRESSION RESULT (ETHIOPIA ONLY)

. rreg dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar note: bvar omitted because of collinearity

Huber	iteration	1:	maximum differe	nce in	weights	=	.23048581
Huber	iteration	2:	maximum differe	nce in	weights	=	.08146832
Huber	iteration	3:	maximum differen	nce in	weights	=	.04155168
Biweight	iteration	4:	maximum differe	nce in	weights	=	.14811733
Biweight	iteration	5:	maximum differe	nce in	weights	=	.03231848
Biweight	iteration	6:	maximum differen	nce in	weights	=	.01363848
Biweight	iteration	7:	maximum differe	nce in	weights	=	.01304025
Biweight	iteration	8:	maximum differe	nce in	weights	=	.01292531
Biweight	iteration	9:	maximum differe	nce in	weights	=	.01330362
Biweight	iteration	10:	maximum differe	ence in	n weights	5 =	.01423263
Biweight	iteration	11:	maximum differe	ence in	n weights	5 =	.01586419
Biweight	iteration	12:	maximum differe	ence in	n weights	5 =	.01849824
Biweight	iteration	13:	maximum differe	ence in	n weights	5 =	.02270935
Biweight	iteration	14:	maximum differe	ence in	n weights	5 =	.02964531
Biweight	iteration	15:	maximum differe	ence in	n weights	5 =	.04179219
Biweight	iteration	16:	maximum differe	ence in	n weights	5 =	.06515677
Biweight	iteration	17:	maximum differe	ence in	n weights	5 =	.1156941
Biweight	iteration	18:	maximum differe	ence in	n weights	5 =	.05289973
Biweight	iteration	19:	maximum differe	ence in	n weights	5 =	.05911216
Biweight	iteration	20:	maximum differe	ence in	n weights	5 =	.02235584
Biweight	iteration	21:	maximum differe	ence in	n weights	5 =	.00695239

Robust regression

Number	of	obs	=	14
F(5,		8)	=	4.8e+05
Prob >	F		=	0.0000

dbperf	Coef.	Std. Err.	t	P> t	[95% Conf.	Interval]
dtaxrev dntaxrev dcapexp drecexp dfdeff	.99972 1.000943 .0016276 0001721 0018934	.0041232 .0026378 .0040591 .0039655 .0035775	242.46 379.47 0.40 -0.04 -0.53	0.000 0.000 0.699 0.966 0.611	.9902119 .9948599 0077328 0093165 0101433	1.009228 1.007025 .010988 .0089722 .0063564
	0043695	(omitted) .016119	-0.27	0.793	0415401	.032801

APPENDIX VIIIa DESCRIPTIVE STATISTICS AND CORRELATION RESULT (TANZANIA ONLY)

. *(23 variables, 15 observations pasted into data editor)

. xtset z fyear, yearly

panel variable: z (strongly balanced) time variable: fyear, 2000 to 2014 delta: 1 year

. summarize dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar

Variable	Obs	Mean	Std. Dev.	Min	Max
dbperf dtaxrev dntaxrev dcapexp drecexp	15 15 15 15 15	-2.766 10.71667 .7446667 5.186 11.982	1.601739 1.946461 .2500533 1.070753 1.235789	-5.12 8.4 .34 2.93 9.92	0 13.86 1.14 6.44 13.91
dfdeff bvar	15 15	.042	.0358967 0	.01	.14

. correlate dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar (obs=15)

	dbperf	dtaxrev	dntaxrev	dcapexp	drecexp	dfdeff	bvar
dbperf	1.0000						
dtaxrev	-0.4822	1.0000					
dntaxrev	0.7837	-0.6185	1.0000				
dcapexp	-0.6693	0.4612	-0.7353	1.0000			
drecexp	-0.7747	0.5119	-0.8376	0.4121	1.0000		
dfdeff	0.2123	-0.1214	0.2766	-0.2376	-0.0787	1.0000	
bvar			•	•		•	

APPENDIX VIIIb COUNTRY SPECIFIC REGRESSION OUTPUT INCLUSIVE OF RESULT FOR HETEROSCEDASTICITY TEST (TANZANIA ONLY)

								,	
•	regress	dbperf	dtaxrev	dntaxrev	v dcapexp	drecexp	dfdeff	bvar	
nc	ote: bva	r omitte	ed becaus	se of col	linearit	У			

Source	SS	df	MS		Number of c	obs =	15
					F(5,	9) =	5.89
Model	27.5153408	5 5.	50306815		Prob > F	=	0.0109
Residual	8.40261917	9.9	33624352		R-squared	=	0.7661
					Adj R-squar	ed =	0.6361
Total	35.9179599	14 2.	56556857		Root MSE	=	.96624
dbperf	Coef.	Std. Err.	t	P> t	[95% Conf.	Inte	rval]
dtaxrev	0062791	.1693154	-0.04	0.971	3892972	.37	67389
dntaxrev	-2.403898	3.369888	-0.71	0.494	-10.02711	5.23	19317
dcapexp	8488457	.4301252	-1.97	0.080	-1.821856	.124	41651
drecexp	-1.091715	.4828981	-2.26	0.050	-2.184106	.000	06766
dfdeff	5.088799	7.919222	0.64	0.537	-12.82573	23.0	00332
bvar	0	(omitted)					
_cons	16.3607	9.846512	1.66	0.131	-5.913654	38.0	63506

. estat vif

Variable	VIF	1/VIF
dntaxrev drecexp dcapexp dtaxrev dfdeff	10.65 5.34 3.18 1.63 1.21	0.093918 0.187260 0.314395 0.613988 0.825222
Mean VIF	4.40	

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
Ho: Constant variance
Variables: fitted values of dbperf
chi2(1) = 0.33

Prob > chi2 = 0.5654

•

APPENDIX IXa

DESCRIPTIVE STATISTICS AND CORRELATION RESULT (ANGOLA ONLY)

. xtset z fyear, yearly

panel variable: z (strongly balanced) time variable: fyear, 2000 to 2014 delta: 1 year

. summarize dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar

Variable	Obs	Mean	Std. Dev.	Min	Max
dbperf	15	.0773334	6.726706	-9.9	9.61
dtaxrev	15	35.608	11.05704	3.63	49.88
dntaxrev	15	1.168	.879092	.16	2.6
dcapexp	15	8.947333	4.904628	1.08	22.13
drecexp	15	27.83933	10.8036	2.5	52.47
dfdeff	15	1.214667	2.666096	.07	9.95
bvar	15	.4666667	.5163978	0	1

. correlate dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar (obs=15)

	dbperf	dtaxrev	dntaxrev	dcapexp	drecexp	dfdeff	bvar
dbperf	1.0000						
dtaxrev	0.0506	1.0000					
dntaxrev	0.5671	0.4567	1.0000				
dcapexp	-0.0950	0.5395	0.6221	1.0000			
drecexp	-0.4840	0.7806	-0.0928	0.2035	1.0000		
dfdeff	-0.4461	0.4012	-0.4318	-0.2420	0.7609	1.0000	
bvar	0.8955	-0.1248	0.4963	-0.1597	-0.5770	-0.3950	1.0000

APPENDIX IXb

COUNTRY SPECIFIC REGRESSION OUTPUT INCLUSIVE OF RESULT FOR NORMALITY TEST (ANGOLA ONLY)

Source	SS	df	MS		Number o	of obs =	15
 					F(6,	8) =	3521.47
Model	633.240319	6	105.540053		Prob > H		0.0000
Residual	.239763359	8	.02997042		R-square	ed =	0.9996
 					Adj R-sc	quared =	0.9993
Total	633.480083	14	45.2485773		Root MSE	E =	.17312
dbperf	Coef.	Std. Err	:. t	₽> t	[95% Conf.	Interval	
dtaxrev	1.006166	.0181054	55.57	0.000	.9644148	1.047917	7
dntaxrev	.915518	.125505	7.29	0.000	.6261029	1.204933	3
dcapexp	-1.020684	.0211348	-48.29	0.000	-1.06942	971946	7
drecexp	9947825	.0234455	-42.43	0.000	-1.048848	940717	7
dfdeff	0649861	.0408994	-1.59	0.151	1593004	.0293281	L
bvar	1084069	.2657655	-0.41	0.694	7212633	.5044496	5
_cons	.136457	.3082812	0.44	0.670	5744409	.8473548	3

. regress dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar

. estat vif

Variable	VIF	1/VIF
drecexp dtaxrev bvar dntaxrev dfdeff dcapexp	29.97 18.72 8.80 5.69 5.55 5.02	0.033366 0.053416 0.113658 0.175863 0.180044 0.199231
Mean VIF	12.29	

...APPENDIX IXb Cont'd

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity Ho: Constant variance Variables: fitted values of dbperf 3.61 chi2(1) = Prob > chi2 = 0.0575. rreg dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar Huber iteration 1: maximum difference in weights = .41926887 Huber iteration 2: maximum difference in weights = .13145663 Huber iteration 3: maximum difference in weights = .04589288 Biweight iteration 4: maximum difference in weights = .14012282 Biweight iteration 5: maximum difference in weights = .07990721 Biweight iteration 6: maximum difference in weights = .12732253 Biweight iteration 7: maximum difference in weights = .14427508 Biweight iteration 8: maximum difference in weights = .1443226 Biweight iteration 9: maximum difference in weights = .04900551Biweight iteration 10: maximum difference in weights = .03216892 Biweight iteration 11: maximum difference in weights = .01481552 Biweight iteration 12: maximum difference in weights = .00645504

APPENDIX IXc COUNTRY SPECIFIC ROBUST REGRESSION OUTPUT (ANGOLA ONLY)

Robust regress	sion				Number of obs	= 14
					F(6, 7)	= 5639.79
					Prob > F	= 0.0000
dbperf	Coef.	Std. Err.	t	P> t	[95% Conf.	Interval]
dtaxrev	1.011864	.0137762	73.45	0.000	.9792883	1.044439
dntaxrev	.899178	.0976766	9.21	0.000	.6682095	1.130147
dcapexp	-1.015909	.0160989	-63.10	0.000	-1.053976	9778407
drecexp	-1.002649	.01745	-57.46	0.000	-1.043912	9613869
dfdeff	0821954	.0545451	-1.51	0.176	2111741	.0467833
bvar	0897006	.198481	-0.45	0.665	5590337	.3796324
_cons	.0819043	.2294945	0.36	0.732	4607638	.6245725

APPENDIX Xa DESCRIPTIVE STATISTICS AND CORRELATION RESULT (DR CONGO ONLY)

. *(23 variables, 15 observations pasted into data editor)

. xtset z fyear

panel variable: z (strongly balanced) time variable: fyear, 2000 to 2014 delta: 1 unit

. summarize dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar

Variable	Obs	Mean	Std. Dev.	Min	Max
dbperf	15	-1.414	1.916984	-4.55	3.16
dtaxrev dntaxrev	15	.3053333	4.750555	.95	.73
dcapexp	15	3.828667	3.578962	.08	11.44
drecexp	15	10.04867	3.756389	2.4	16.78
dfdeff	15	.2233333	.2584477	.02	.96
bvar	15	.1333333	.3518658	0	1

. correlate dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar (obs=15)

	dbperf	dtaxrev	dntaxrev	dcapexp	drecexp	dfdeff	bvar
dbperf	1.0000						
dtaxrev	-0.0167	1.0000					
dntaxrev	-0.0662	-0.4504	1.0000				
dcapexp	-0.0452	0.9207	-0.6591	1.0000			
drecexp	-0.1097	0.9569	-0.3469	0.8394	1.0000		
dfdeff	-0.0431	-0.8371	0.2558	-0.6817	-0.8934	1.0000	
bvar	0.8131	0.3741	-0.3872	0.4482	0.2212	-0.3116	1.0000

APPENDIX Xb COUNTRY SPECIFIC REGRESSION OUTPUT INCLUSIVE OF RESULT FOR NORMALITY TEST (DR CONGO ONLY)

Source	SS	df	MS	Nur	mber of c	obs =	15
				F (6,	8) =	17.51
Model	47.8079651	6 7.96	799418	Pro	ob > F	=	0.0003
Residual	3.63959662	8.454	949578	R-:	squared	=	0.9293
				Ad	j R-squar	red =	0.8762
Total	51.4475617	14 3.67	482584	Roo	ot MSE	=	.6745
dbperf	Coef.	Std. Err.	t	P> t	[95%	Conf.	Interval]
dtaxrev	.1085322	.2147878	0.51	0.627	3867	7693	.6038338
dntaxrev	-1.17604	.8980625	-1.31	0.227	-3.246	5976	.8948961
dcapexp	7013274	.1979417	-3.54	0.008	-1.157	7782	2448731
drecexp	.3561248	.2619	1.36	0.211	2478	3177	.9600674
dfdeff	2.432665	1.859793	1.31	0.227	-1.856	5026	6.721355
bvar	6.380429	.7330063	8.70	0.000	4.690)113	8.070744
_cons	-4.312354	1.936786	-2.23	0.057	-8.77	7859	.1538819

. regress dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar

. estat vif

Variable	VIF	1/VIF
dtaxrev drecexp dcapexp dfdeff dntaxrev bvar	32.04 29.78 15.44 7.11 2.54 2.05	0.031212 0.033576 0.064751 0.140657 0.393158 0.488501
Mean VIF	14.83	

APPENDIX Xc COUNTRY SPECIFIC NORMALITY TEST INCLUSIVE OF ROBUST REGRESSION OUTPUT (DR CONGO ONLY)

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity Ho: Constant variance Variables: fitted values of dbperf

> chi2(1) = 0.10 Prob > chi2 = 0.7492

. rreg dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar

Huber iteration 1: maximum difference in weights = .22788758
Huber iteration 2: maximum difference in weights = .06083421
Huber iteration 3: maximum difference in weights = .0589731
Huber iteration 4: maximum difference in weights = .04309104
Biweight iteration 5: maximum difference in weights = .12795212
Biweight iteration 6: maximum difference in weights = .0091078

Robust regression Number of obs = 15 F(6, 8) = 12.86 Prob > F = 0.0010

dbperf	Coef.	Std. Err.	t	P> t	[95% Conf.	Interval]
dtaxrev	.1096335	.2516469	0.44	0.675	4706653	.6899324
dntaxrev	-1.039389	1.052176	-0.99	0.352	-3.465713	1.386934
dcapexp	6709357	.2319099	-2.89	0.020	-1.205721	1361506
drecexp	.3201343	.3068439	1.04	0.327	3874491	1.027718
dfdeff	2.29913	2.178947	1.06	0.322	-2.725531	7.323791
bvar	6.374883	.8587954	7.42	0.000	4.394498	8.355269
_cons	-4.119276	2.269152	-1.82	0.107	-9.351951	1.113398

APPENDIX XIa DESCRIPTIVE STATISTICS AND CORRELATION RESULT (CAMEROON ONLY)

. *(23 variables, 15 observations pasted into data editor)

. xtset z fyear

panel variable: z (strongly balanced)
time variable: fyear, 2000 to 2014
delta: 1 unit

•

. summarize dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar

Variable	Obs	Mean	Std. Dev.	Min	Max
dbperf	15	3.05	8.776952	-5.15	33.08
dtaxrev	15	23.68533	36.90453	11.32	156.87
dntaxrev	15	13.32733	3.888131	1.51	17.42
dcapexp	15	4.094667	1.646888	2.14	7.38
drecexp	15	12.886	1.188173	10.36	15.32
dfdeff	15	43.966	37.69397	11.14	112.89
bvar	15	.6666667	.48795	0	1

. correlate dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar (obs=15)

	dbperf	dtaxrev	dntaxrev	dcapexp	drecexp	dfdeff	bvar
dbperf	1.0000						
dtaxrev	-0.0234	1.0000					
dntaxrev	0.4975	0.1879	1.0000				
dcapexp	-0.3869	0.2763	-0.6778	1.0000			
drecexp	-0.5003	-0.0435	-0.6064	0.5895	1.0000		
dfdeff	-0.0602	-0.1633	0.4180	-0.6085	-0.2777	1.0000	
bvar	0.4612	0.2156	0.6309	-0.6201	-0.5938	0.5164	1.0000

APPENDIX Xb

COUNTRY SPECIFIC REGRESSION OUTPUT INCLUSIVE OF RESULT FOR NORMALITY TEST (CAMEROON ONLY)

	Source	SS	df	MS	N	iumber of obs =	15
-					F	·(6, 8) =	1.52
	Model	574.850106	6 95.	.808351	P	rob > F =	0.2841
	Residual	503.638404	8 62.9	9548005	R	-squared =	0.5330
_					A	.dj R-squared =	0.1828
	Total	1078.48851	14 77.0)348936	R	oot MSE =	7.9344
	dbperf	Coef.	Std. Err.	. t	P> t	[95% Conf.	Interval]
	dtaxrev	0736513	.0776337	-0.95	0.371	252675	.1053725
	dntaxrev	.9278371	.9069982	1.02	0.336	-1.163704	3.019379
	dcapexp	.1279619	2.590846	0.05	0.962	-5.846541	6.102464
	drecexp	-1.074735	2.505605	-0.43	0.679	-6.852672	4.703201
	dfdeff	1302394	.0751636	-1.73	0.121	303567	.0430882
	bvar	8.740541	7.052753	1.24	0.250	-7.523136	25.00422
	_cons	5.653015	39.12245	0.14	0.889	-84.56352	95.86955
		1					

. regress dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar

. estat vif

Variable	VIF	1/VIF
dcapexp dntaxrev bvar drecexp dtaxrev dfdeff	4.05 2.77 2.63 1.97 1.83 1.79	0.246996 0.361581 0.379693 0.507360 0.547823 0.560198
Mean VIF	2.50	

. estat hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity Ho: Constant variance Variables: fitted values of dbperf

> chi2(1) = 8.19 Prob > chi2 = 0.0042

APPENDIX XIIa DESCRIPTIVE STATISTICS, CORRELATION AND COUNTRY SPECIFIC REGRESSION RESULT INCLUSIVE OF RESULT FOR NORMALITY TEST (SOUTH AFRICA ONLY)

. * (23 variables, 15 observations pasted into data editor)

```
. xtset z fyear, yearly
    panel variable: z (strongly balanced)
    time variable: fyear, 2000 to 2014
        delta: 1 year
```

Variable	Obs	Mean	Std. Dev.	Min	Max
dbperf dtaxrev dntaxrev dcapexp drecexp	15 15 15 15 15	-2.317333 21.90067 1.254 1.543333 24.05	1.817575 1.498959 1.160916 .5269951 2.3676	-5.77 19.83 .33 1 20.61	.82 24.93 4.08 2.69 27.33
dfdeff bvar	15	3.126667	.9614325 .3518658	0 0	4.21

. summarize dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar

. correlate dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar (obs=15)

	dbperf	dtaxrev	dntaxrev	dcapexp	drecexp	dfdeff	bvar
dbperf	1.0000						
dtaxrev	0.1053	1.0000					
dntaxrev	-0.5123	0.6193	1.0000				
dcapexp	-0.5706	0.5060	0.9198	1.0000			
drecexp	-0.5772	0.7113	0.9118	0.8004	1.0000		
dfdeff	-0.0244	0.0545	-0.4041	-0.3781	-0.0781	1.0000	
bvar	0.6673	0.2341	-0.2724	-0.3454	-0.2486	0.0838	1.0000

. regress dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar

Source	SS	df	MS	Number of obs =	15
				F(6, 8) =	30.51
Model	44.3134953	6	7.38558255	Prob > F = 0	.0000
Residual	1.93659751	8	.242074689	R-squared = 0	.9581
				Adj R-squared = 0	.9267
Total	46.2500928	14	3.30357806	Root MSE = .	49201

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dbperf	Coef.	Std. Err.	t	P> t	[95% Conf.	Interval]
dtaxrev	1.182245	.1597788	7.40	0.000	.8137943	1.550695
dntaxrev	.8163045	.6645492	1.23	0.254	7161486	2.348758
dcapexp	-1.809851	.7034558	-2.57	0.033	-3.432023	1876789
drecexp	-1.012091	.2349789	-4.31	0.003	-1.553954	470229
dfdeff	3319022	.2493348	-1.33	0.220	9068692	.2430648
bvar	.4479905	.5018126	0.89	0.398	7091913	1.605172
_cons	-1.120914	5.000033	-0.22	0.828	-12.65101	10.40918

. estat vif

Variable	VIF	1/VIF
dntaxrev drecexp dcapexp dfdeff dtaxrev bvar	34.42 17.90 7.95 3.32 3.32 1.80	0.029051 0.055866 0.125816 0.300897 0.301442 0.554606
Mean VIF	11.45	

. estat hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity Ho: Constant variance Variables: fitted values of dbperf

> chi2(1) = 0.03 Prob > chi2 = 0.8720

. rreg dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar

```
Huber iteration 1: maximum difference in weights = .50994793
Huber iteration 2: maximum difference in weights = .04932157
Biweight iteration 3: maximum difference in weights = .09111223
Biweight iteration 4: maximum difference in weights = .06963006
Biweight iteration 5: maximum difference in weights = .02229581
Biweight iteration 6: maximum difference in weights = .01317516
Biweight iteration 7: maximum difference in weights = .00789168
```

APPENDIX XIIb COUNTRY SPECIFIC ROBUST REGRESSION RESULT (SOUTH AFRICA ONLY)

Robust regression

Numb	er	of	obs	=	13
F (6,		6)	=	24.65
Prob	>	F		=	0.0006

dbperf	Coef.	Std. Err.	t	P> t	[95% Conf.	Interval]
dtaxrev	1.599967	.2933873	5.45	0.002	.8820742	2.31786
dntaxrev	.7976875	1.223511	0.65	0.539	-2.196137	3.791512
dcapexp	-1.763409	.8866989	-1.99	0.094	-3.933083	.4062653
drecexp	-1.26334	.3789415	-3.33	0.016	-2.190576	3361036
dfdeff	.1048067	.5709052	0.18	0.860	-1.292148	1.501761
bvar	4208329	.7350332	-0.57	0.588	-2.219394	1.377728
_cons	-5.577385	8.173076	-0.68	0.520	-25.57618	14.42141

APPENDIX XIIIa DESCRIPTIVE STATISTICS AND CORRELATION RESULT (BOTSWANA ONLY)

. *(23 variables, 15 observations pasted into data editor)

. xtset z fyear, yearly
 panel variable: z (strongly balanced)
 time variable: fyear, 2000 to 2014
 delta: 1 year

. summarize dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar

Variable	Obs	Mean	Std. Dev.	Min	Max
dbperf	15	3686667	6.572089	-12.05	11.41
dtaxrev	15	31.798	4.081399	22.58	37.67
dntaxrev	15	4.755333	2.340241	2.56	11.68
dcapexp	15	9.693333	2.958698	6.04	15.6
drecexp	15	26.846	3.221723	22.91	32.52
dfdeff	15	3.372	1.751824	1.48	8.4
bvar	15	.4666667	.5163978	0	1

. correlate dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar (obs=15)

	dbperf	dtaxrev	dntaxrev	dcapexp	drecexp	dfdeff	bvar
dbperf	1.0000						
dtaxrev	0.1538	1.0000					
dntaxrev	0.0621	-0.3953	1.0000				
dcapexp	-0.7575	0.0766	-0.0356	1.0000			
drecexp	-0.7665	0.2087	-0.0059	0.7447	1.0000		
dfdeff	-0.2209	0.2175	0.2973	0.3867	0.1040	1.0000	
bvar	0.8114	0.0303	-0.0052	-0.6734	-0.7926	-0.1203	1.0000

APPENDIX XIIIb COUNTRY SPECIFIC REGRESSION OUTPUT INCLUSIVE OF RESULT FOR NORMALITY TEST (BOTSWANA ONLY)

Source	SS	df	MS		Number of obs	=	15
					F(6, 8)	=	8.38
Model	521.673123	6 86	.9455206		Prob > F	=	0.0042
Residual	83.0198529	8 10	.3774816		R-squared	=	0.8627
					Adj R-squared	=	0.7597
Total	604.692976	14 43	.1923555		Root MSE	=	3.2214
dbperf	Coef.	Std. Err	. t	P> t	[95% Conf.	In	terval]
dtaxrev	.7645049	.2993235	2.55	0.034	.0742638	1	.454746
dntaxrev	.9545712	.4945752	1.93	0.090	1859212	2	.095064
dcapexp	09546	.5574394	-0.17	0.868	-1.380918	1	.189997
drecexp	-1.199803	.612396	-1.96	0.086	-2.611991		2123848
dfdeff	-1.183426	.7109324	-1.66	0.135	-2.822839		4559871
bvar	3.38071	2.996075	1.13	0.292	-3.528251	1	0.28967
_cons	6.330386	13.41254	0.47	0.650	-24.59898	3	7.25975

. regress dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar

. estat vif

Variable	VIF	1/VIF
drecexp dcapexp bvar dfdeff dtaxrev dntaxrev	5.25 3.67 3.23 2.09 2.01 1.81	0.190425 0.272501 0.309663 0.477888 0.496666 0.553322
Mean VIF	3.01	

. estat hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity Ho: Constant variance Variables: fitted values of dbperf

> chi2(1) = 1.01 Prob > chi2 = 0.3154

APPENDIX XIV

COUNTRY SPECIFIC DESCRIPTIVE STATISTICS, CORRELATION AND REGRESSION RESULT INCLUSIVE OF RESULT OF NORMALITY TEST (NAMIBIA ONLY)

. * (23 variables, 15 observations pasted into data editor)

. xtset z fyear, yearly
 panel variable: z (strongly balanced)
 time variable: fyear, 2000 to 2014
 delta: 1 year

. summarize dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar

Variable	Obs	Mean	Std. Dev.	Min	Max
dbperf	15	9566667	3.445448	-7.07	4.3
dtaxrev	15	25.16	2.643107	20.53	30.47
dntaxrev	15	2.21	.4098083	1.53	3.01
dcapexp	15	4.102667	1.46231	2.07	6.74
drecexp	15	24.00533	2.085613	20.11	26.42
dfdeff	15	3.822667	.8326246	2.19	5.39
bvar	15	.3333333	.48795	0	1

. correlate dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar (obs=15)

	dbperf	dtaxrev	dntaxrev	dcapexp	drecexp	dfdeff	bvar
dbperf	1.0000						
dtaxrev	0.7752	1.0000					
dntaxrev	0.1886	0.0174	1.0000				
dcapexp	-0.2794	0.0987	-0.1754	1.0000			
drecexp	-0.3964	0.0870	-0.1641	0.2533	1.0000		
dfdeff	-0.4918	-0.3329	-0.2343	0.4891	0.2157	1.0000	
bvar	0.8452	0.7770	0.0857	-0.0844	-0.3275	-0.2942	1.0000

. regress dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar

Source	SS	df	MS	Number of obs =	15
				F(6, 8) =	11.04
Model	148.283951	6	24.7139919	Prob > F = 0	.0017
Residual	17.9115868	8	2.23894835	R-squared = 0	.8922
				Adj R-squared = 0	.8114
Total	166.195538	14	11.8711099	Root MSE = 1	.4963

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	•					
dbperf	Coef.	Std. Err.	t	P> t	[95% Conf.	Interval]
dtaxrev	.8825636	.331079	2.67	0.029	.1190941	1.646033
dntaxrev	.53935	1.013558	0.53	0.609	-1.79792	2.876619
dcapexp	5429181	.3442453	-1.58	0.153	-1.336749	.2509128
drecexp	5335026	.2597346	-2.05	0.074	-1.132452	.0654464
dfdeff	0617102	.6490467	-0.10	0.927	-1.558415	1.434994
bvar	1.299217	1.748617	0.74	0.479	-2.733102	5.331536
_cons	-9.516784	7.823115	-1.22	0.258	-27.55692	8.523352

. estat vif

Variable	VIF	1/VIF
dtaxrev bvar drecexp dfdeff dcapexp dntaxrev	4.79 4.55 1.83 1.83 1.58 1.08	0.208845 0.219673 0.544991 0.547603 0.631105 0.926952
Mean VIF	2.61	

. estat hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity Ho: Constant variance Variables: fitted values of dbperf

> chi2(1) = 1.89 Prob > chi2 = 0.1696

APPENDIX XVa COUNTRY SPECIFIC DESCRIPTIVE STATISTICS, CORRELATION AND REGRESSION RESULT INCLUSIVE OF RESULT OF NORMALITY TEST (NIGERIA ONLY)

. *(23 variables, 15 observations pasted into data editor)

. xtset z fyear, yearly
 panel variable: z (strongly balanced)
 time variable: fyear, 2000 to 2014
 delta: 1 year

•

. summarize dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar

Variable	Obs	Mean	Std. Dev.	Min	Max
dbperf	15	.4013334	5.935128	-10.24	9.51
dtaxrev	15	25.558	10.98176	11.43	44.88
dntaxrev	15	.958	.4767479	.18	1.89
dcapexp	15	7.724	4.003432	3.4	17.74
drecexp	15	12.87267	3.388389	8.04	18.91
dfdeff	15	.1373333	.1944026	.01	.6
bvar	15	.6	.5070926	0	1

. correlate dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar (obs=15)

	dbperf	dtaxrev	dntaxrev	dcapexp	drecexp	dfdeff	bvar
dbperf	1.0000						
dtaxrev	0.4343	1.0000					
dntaxrev	-0.7998	-0.4863	1.0000				
dcapexp	-0.4240	0.5892	0.3357	1.0000			
drecexp	-0.7806	-0.1627	0.8830	0.6441	1.0000		
dfdeff	-0.0850	0.6599	-0.2805	0.5551	-0.0850	1.0000	
bvar	0.8180	0.1181	-0.6565	-0.5948	-0.7879	-0.2000	1.0000

. regress dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar

Source	SS	df	MS	Number of obs =	15
				F(6, 8) = 5	7.37
Model	481.959026	6	80.3265044	Prob > F = 0.	0000
Residual	11.2013466	8	1.40016833	R-squared = 0.	9773
				Adj R -squared = 0.	9603
Total	493.160373	14	35.2257409	Root MSE = 1.	1833
	1				

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APPENDIX XVa Col	nt'	d
------------------	-----	---

dbperf	Coef.	Std. Err.	t	P> t	[95% Conf.	Interval]
dtaxrev	.6644855	.0957323	6.94	0.000	.4437263	.8852446
dntaxrev	1.451035	2.214488	0.66	0.531	-3.655583	6.557653
dcapexp	-1.331681	.3536743	-3.77	0.006	-2.147256	516107
drecexp	0927667	.4358073	-0.21	0.837	-1.09774	.9122067
dfdeff	-10.64833	3.195147	-3.33	0.010	-18.01635	-3.280306
bvar	1.211938	1.289121	0.94	0.375	-1.760779	4.184655
_cons	-5.756409	4.262352	-1.35	0.214	-15.58541	4.072592

. estat vif

Variable	VIF	1/VIF
drecexp dcapexp dntaxrev dtaxrev bvar dfdeff	21.80 20.05 11.14 11.05 4.27 3.86	0.045865 0.049886 0.089728 0.090488 0.234040 0.259219
Mean VIF	12.03	

. estat hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity Ho: Constant variance Variables: fitted values of dbperf

> chi2(1) = 0.63 Prob > chi2 = 0.4278

APPENDIX XVb COUNTRY SPECIFIC ROBUST REGRESSION RESULT (NIGERIA ONLY)

Robust regression

Number of obs = 14 F(6, 7) = 191.09 Prob > F = 0.0000

• · · · · · · · · · · · · · · · · · · ·						
dbperf	Coef.	Std. Err.	t	P> t	[95% Conf.	Interval]
dtaxrev	.9517686	.0672445	14.15	0.000	.7927607	1.110777
dntaxrev	5.876716	1.625357	3.62	0.009	2.033358	9.720074
dcapexp	-2.171335	.2345263	-9.26	0.000	-2.725902	-1.616769
drecexp	3057325	.2660539	-1.15	0.288	93485	.323385
dfdeff	-14.87401	2.083834	-7.14	0.000	-19.80149	-9.946524
bvar	8726716	.8122976	-1.07	0.318	-2.79345	1.048107
_cons	-6.40546	2.47186	-2.59	0.036	-12.25048	56044

. rreg	dbperf	dtaxr	cev (dntaxrev	dcapexp dre	ecex	xp dfdefi	f b	var	
				APPE	NDIX XVIa					
COUNT	RY SPEC	TFIC D	ESCR	IPTIVE ST.	AȚIȘTICS, COF	RŖEI	LATION AN	ND]	REGRESSIC	ŅΝ
Hub	ÉSUETT	NCLUS	IVĖ ()FRESULT	ÖF NÖŘMALI	TYnT	EST (GHA	ΝĀ	$ONLY)^{2\perp 3}$	5
Hube	r itera	ation	2:	maximum	difference	in	weights	=	.2358447	7
Hube	r itera	ation	3:	maximum	difference	in	weights	=	.1150226	1
Hube	r itera	ation	4:	maximum	difference	in	weights	=	.0137474	4
Biweigh	t itera	ation	5:	maximum	difference	in	weights	=	.2511769	4
Biweigh	t itera	ation	6:	maximum	difference	in	weights	=	.1819505	9
Biweigh	t itera	ation	7:	maximum	difference	in	weights	=	.0392007	2
Biweigh	t itera	ation	8:	maximum	difference	in	weights	=	.0158658	5
Biweigh	t itera	ation	9:	maximum	difference	in	weights	=	.0044571	8

. *(23 variables, 15 observations pasted into data editor)

.....APPENDIX XVIa Cont'd

. xtset z fyear, yearly . regress dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar note: bvar.omitted because of collinearity4

	delta: 1	vear				
Source	SS	df	MS	Numk	per of obs =	15
•				F (5, 9) =	171.29
. summarize d	bperf dtaxre	v dnta5rev297	Zapexp ³ dred	cexp dfdeff	bvar =	0.0000
Residual	120.693691	9 13.4	4104101	- R-sc	quared =	0.9896
Variable	Obs	Mean		7. Andija	R-squared =	0.9838
Total	11606.3244	14 829.	.023169	Root	<u>MSE</u> =	3.662
dbperf dbperf dtaxrev	Coef.	-23.93133 Std. Err. 69.97133	28.79276 80.81667	5 P> t 13.09	[95% -1.91 [95% Conf. 213	Interval]
dntaxrev	15	5.167333	5.68588	3 $.12$	20.69	1 162076
dcapexp	- 0850503	· 137.304 37.88597	47.38251	L 0.000 3.99	- 8742258	7041252
drecexp	-2271102	78,54467	87.86916	5 0.0114.01	- 4366466	- 017502
dragovp	- 7094514	1212670		0.000	_1 005626	- 5012766
ur grgerf dfdaff	- 1/15627	• <u>180</u> - <u>1</u> 02 ⁹	89.90314	1 0.0092.04	- 2003541	- 0747732
ulugyar	14139g/	.0295201	-4.79 () 0.001 0	20033410	0747752
bvar		(omitted)	1 1 0		1 1 2 2 4 5 5	4 000010
. corr <u>e</u> Cate d	operi. Otaxie	ontia xirtexo do	capexp.drec	cexp. Adviett	bvar 63655	4.889819
. estat vif	dbperf o	ltaxrev dntax	xrev dcape	exp drecexp	dfdeff	bvar
Vardablef	1.0000F	1/VIF				
dtaxrev	-0.8666	<u> </u>				
dtaxrev	-0.55.51	0.0.006430	2000 2420 1 00	000		
drecexp		0.007199	7788 0 95	538 1 0000		
dcapexp	20.11	0.049733	6630 0.90	540 0 8905	1 0000	
dfdeff	7.36	0.135951	0000 0.00	0.0000	1.0000	
dntaxrev	4.11	0.243454	·	• •	•	·
Mean VIF	65.20					
·						
. estat hettes	t					
Breusch-Pagan	/ Cook-Weish	perg test fo	or heteros	kedasticity		
Ho: C	onstant var	Lance				
Varia	bles: fitted	d values of	dbperf			

chi2(1) = 0.24 Prob > chi2 = 0.6234

APPENDIX XVIb COUNTRY SPECIFIC ROBUST REGRESSION OUTPUT (GHANA ONLY)

. rreg dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar note: bvar omitted because of collinearity

Huber	iteration	1:	<pre>maximum difference in weights = .18030624</pre>
Huber	iteration	2:	<pre>maximum difference in weights = .1372295</pre>
Huber	iteration	3:	<pre>maximum difference in weights = .12858627</pre>
Huber	iteration	4:	<pre>maximum difference in weights = .14423579</pre>
Huber	iteration	5:	<pre>maximum difference in weights = .16053987</pre>
Huber	iteration	6:	<pre>maximum difference in weights = .14338756</pre>
Huber	iteration	7:	<pre>maximum difference in weights = .12015319</pre>
Huber	iteration	8:	<pre>maximum difference in weights = .09738971</pre>
Huber	iteration	9:	<pre>maximum difference in weights = .07658754</pre>
Huber	iteration	10:	<pre>maximum difference in weights = .06678699</pre>
Huber	iteration	11:	<pre>maximum difference in weights = .0541007</pre>
Huber	iteration	12:	<pre>maximum difference in weights = .03570729</pre>
Biweight	iteration	13:	<pre>maximum difference in weights = .11496927</pre>
Biweight	iteration	14:	<pre>maximum difference in weights = .57511217</pre>
Biweight	iteration	15:	<pre>maximum difference in weights = .06653527</pre>
Biweight	iteration	16:	<pre>maximum difference in weights = .02348199</pre>
Biweight	iteration	17:	<pre>maximum difference in weights = .00996429</pre>

Robust regression

Number of obs = 9 F(5, 3) =33479.76 Prob > F = 0.0000

dbperf	Coef.	Std. Err.	t	P> t	[95% Conf.	Interval]
dtaxrev	.8720177	.0052402	166.41	0.000	.8553411	.8886943
dntaxrev	1.735963	.0080392	215.94	0.000	1.710379	1.761548
dcapexp	5116999	.0038163	-134.08	0.000	5238451	4995548
drecexp	-1.348846	.0060526	-222.85	0.000	-1.368108	-1.329584
dfdeff	1107976	.0028459	-38.93	0.000	1198545	1017407
bvar	0	(omitted)				
_cons	7.541576	.1089964	69.19	0.000	7.194701	7.888451

APPENDIX XVII

COUNTRY SPECIFIC DESCRIPTIVE STATISTICS, CORRELATION AND REGRESSION RESULT INCLUSIVE OF RESULT OF NORMALITY TEST (COTE D'IVOIRE ONLY)

. *(23 variables, 15 observations pasted into data editor)

. xtset z fyear panel variable: z (strongly balanced) time variable: fyear, 2000 to 2014 delta: 1 unit

. summarize dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar

Variable	Obs	Mean	Std. Dev.	Min	Max
dbperf	15	9466667	1.420808	-3.15	1.93
dtaxrev	15	13.77267	3.532891	1.52	16.07
dntaxrev	15	2.35	.4864155	1.67	3.58
dcapexp	15	3.164	1.173583	1.75	6.22
drecexp	15	14.68267	3.706202	1.53	16.92
dfdeff	15	.1686667	.0546243	.08	.25
bvar	15	.2666667	.4577377	0	1

. correlate dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar (obs=15)

	dbperf	dtaxrev	dntaxrev	dcapexp	drecexp	dfdeff	bvar
dbperf	1.0000						
dtaxrev	-0.1315	1.0000					
dntaxrev	0.4625	-0.5825	1.0000				
dcapexp	-0.3846	0.2869	0.0670	1.0000			
drecexp	-0.0705	-0.0103	0.0167	0.2157	1.0000		
dfdeff	0.3112	-0.3102	0.0358	-0.8006	-0.2155	1.0000	
bvar	0.8223	-0.3834	0.5614	-0.3239	0.1355	0.2152	1.0000

. regress dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar

Source	SS	df	MS	Number of obs	=	15
				F(6, 8)	=	5.48
Model	22.7336223	6	3.78893706	Prob > F	=	0.0156
Residual	5.52811119	8	.691013899	R-squared	=	0.8044
				Adj R-squared	. =	0.6577
Total	28.2617335	14	2.01869525	Root MSE	=	.83127

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dbperf	Coef.	Std. Err.	t	P> t	[95% Conf.	Interval]
dtaxrev	.1607396	.0858737	1.87	0.098	0372854	.3587646
dntaxrev	.8082574	.7443051	1.09	0.309	9081133	2.524628
dcapexp	1918193	.3727256	-0.51	0.621	-1.051326	.6676874
drecexp	044584	.0645718	-0.69	0.509	1934869	.1043188
dfdeff	2.851573	7.041296	0.40	0.696	-13.38569	19.08883
bvar	2.362154	.701214	3.37	0.010	.7451511	3.979156
_cons	-4.909229	3.127153	-1.57	0.155	-12.12046	2.301999

. estat vif

Variable	VIF	1/VIF
dcapexp dfdeff dntaxrev bvar dtaxrev drecexp	3.88 3.00 2.66 2.09 1.86 1.16	0.257960 0.333643 0.376567 0.479098 0.536264 0.861816
Mean VIF	2.44	

. estat hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity Ho: Constant variance Variables: fitted values of dbperf

> chi2(1) = 0.51 Prob > chi2 = 0.4773

APPENDIX XVIII PANEL DATA REGRESSION RESULT FOR THE TESTS OF HYPOTHESES

. *(23 variables, 180 observations pasted into data editor)

```
. xtset z fyear, yearly
```

panel variable: z (strongly balanced) time variable: fyear, 2000 to 2014 delta: 1 year

. regress dbperf dtaxrev

Source	SS	df	MS	Number of obs =	180
				F(1, 178) =	157.96
Model	13272.9381	1	13272.9381	Prob > F =	0.0000
Residual	14956.9079	178	84.0275727	R-squared =	0.4702
			······	Adj R-squared =	0.4672
Total	28229.8461	179	157.708637	Root MSE =	9.1667

dbperf	Coef.	Std. Err.	t	P> t	[95% Conf.	Interval]
dtaxrev	2875676	.0228806	-12.57	0.000	3327197 4 124218	2424155
_00110	0.070199	.001/000	0.00	0.000	1.121210	

. regress dbperf dntaxrev

Source	SS	df	MS		Number of obs	= 180
					F(1, 178)	= 0.15
Model	24.4267543	1	24.4267543		Prob > F	= 0.6951
Residual	28205.4193	178	158.457412		R-squared	= 0.0009
					Adj R-squared	= -0.0047
Total	28229.8461	179	157.708637		Root MSE	= 12.588
	•					
dbperf	Coef.	Std.	Err. t	P> t	[95% Conf.	Interval]

-.8939975 1.211278

-.0890805 .2268851 -0.39 0.695 -.5368112

-0.74 0.461

.3586502

1.496315

-3.28431

. regress dbperf dcapexp

dntaxrev

cons

).41
)000
5296
5270
5372
) 5 5 6

dbperf	Coef.	Std. Err.	t	P> t	[95% Conf.	. Interval]
dcapexp	5613638	.0396538	-14.16	0.000	6396158	4831118
_cons	3.460176	.7228916	4.79		2.033635	4.886716

. regress dbperf drecexp

Source	SS	df	MS		Number of obs	=	180
					F(1, 178)	=	339.15
Model	18513.2072	1 1	18513.2072		Prob > F	=	0.0000
Residual	9716.63888	178 5	54.5878588		R-squared	=	0.6558
					Adj R-squared	=	0.6539
Total	28229.8461	179 1	157.708637		Root MSE	=	7.3884
dbperf	Coef.	Std. Er	rr. t	P> t	[95% Conf.	In	terval]
drecexp	3314425	.017997	76 -18.42	2 0.000	3669586		2959263
_cons	6.339388	.686031	11 9.24	0.000	4.985588	7	.693189

. regress dbperf dfdeff

Source	SS	df	MS		Number of obs	= 180
					F(1, 178)	= 184.14
Model	14354.3087	1 1435	54.3087		Prob > F	= 0.0000
Residual	13875.5374	178 77	.952457		R-squared	= 0.5085
					Adj R-squared	= 0.5057
Total	28229.8461	179 157	.708637		Root MSE	= 8.8291
dbperf	Coef.	Std. Err.	t	P> t	[95% Conf.	Interval]
dfdeff	247605	.0182467	-13.57	0.000	2836126	2115974
_cons	1.76805	.6933548	2.55	0.012	.399797	3.136303

Source	SS	df	MS		Number of obs	=	180
Model Residual	24725.7481 3504.09799	6 412 173 20.	20.95801		F(6, 1/3) Prob > F R-squared	=	203.45 0.0000 0.8759
Total	28229.8461	179 157	7.708637		Adj K-squared Root MSE	=	4.5005
dbperf	Coef.	Std. Err.	. t	P> t	[95% Conf.	In	terval]
dtaxrev dntaxrev dcapexp drecexp dfdeff bvar _cons	059375 .8466597 .0409476 125091 194077 9.420706 -1.065774	.0285045 .1087533 .0585065 .0408266 .0188105 .7906837 .644671	-2.08 7.79 0.70 -3.06 -10.32 11.91 -1.65	0.039 0.000 0.485 0.003 0.000 0.000 0.100	1156365 .6320055 0745308 2056734 2312046 7.860077 -2.338207	 1 1	0031136 .061314 .156426 0445086 1569495 0.98133 2066588

. regress dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar

. *(23 variables, 180 observations pasted into data editor)

```
. xtset z fyear, yearly
    panel variable: z (strongly balanced)
    time variable: fyear, 2000 to 2014
        delta: 1 year
```

•

. summarize dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar

Variable	Obs	Mean	Std. Dev.	Min	Max
dbperf	180	-1.194778	12.55821	-78.81	33.08
dtaxrev	180	24.56806	29.9445	.95	213
dntaxrev	180	3.3765	4.146902	0	20.69
dcapexp	180	8.292222	16.28028	.08	128
drecexp	180	22.73144	30.68359	1.53	209.01
dfdeff	180	11.96594	36.16639	0	275.33
bvar	180	.35	.4783001	0	1

. *(23 variables, 180 observations pasted into data editor)

. summarize dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar

Variable	Obs	Mean	Std. Dev.	Min	Max
dbperf	180	-1.194778	12.55821	-78.81	33.08
dtaxrev	180	24.56806	29.9445	.95	213
dntaxrev	180	3.3765	4.146902	0	20.69
dcapexp	180	8.292222	16.28028	.08	128
drecexp	180	22.73144	30.68359	1.53	209.01
dfdeff	180	11.96594	36.16639	0	275.33
bvar	180	.35	.4783001	0	1

. correlate dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar (obs=180)

	dbperf	dtaxrev	dntaxrev	dcapexp	drecexp	dfdeff	bvar
dbperf	1.0000						
dtaxrev	-0.6857	1.0000					
dntaxrev	-0.0294	0.3374	1.0000				
dcapexp	-0.7277	0.8730	0.3442	1.0000			
drecexp	-0.8098	0.9046	0.2863	0.9292	1.0000		
dfdeff	-0.7131	0.7069	0.5414	0.7784	0.7977	1.0000	
bvar	0.5005	-0.0368	0.3082	-0.0959	-0.1662	-0.0082	1.0000

. regress dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar

Source	SS	df	MS	Number of obs =	180
				F(6, 173) = 20	03.45
Model	24725.7481	6	4120.95801	Prob > F = 0	.0000
Residual	3504.09799	173	20.2549017	R-squared = 0	.8759
				Adj R-squared = 0	.8716
Total	28229.8461	179	157.708637	Root MSE = 4	.5005

dbperf	Coef.	Std. Err.	t	P> t	[95% Conf.	Interval]
dtaxrev	059375	.0285045	-2.08	0.039	1156365	0031136
dntaxrev	.8466597	.1087533	7.79	0.000	.6320055	1.061314
dcapexp	.0409476	.0585065	0.70	0.485	0745308	.156426
drecexp	125091	.0408266	-3.06	0.003	2056734	0445086
dfdeff	194077	.0188105	-10.32	0.000	2312046	1569495
bvar	9.420706	.7906837	11.91	0.000	7.860077	10.98133
_cons	-1.065774	.644671	-1.65	0.100	-2.338207	.2066588

. estat vif

Variable	VIF	1/VIF
drecexp dcapexp dtaxrev dfdeff dntaxrev bvar	13.87 8.02 6.44 4.09 1.80 1.26	0.072107 0.124723 0.155315 0.244494 0.556345 0.791172
Mean VIF	5.91	

. estat hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity Ho: Constant variance Variables: fitted values of dbperf

> chi2(1) = 0.07 Prob > chi2 = 0.7852

. rreg dbperf dtaxrev dntaxrev dcapexp drecexp dfdeff bvar

```
Huber iteration 1: maximum difference in weights = .73165597
  Huber iteration 2: maximum difference in weights = .21216913
  Huber iteration 3: maximum difference in weights = .12045175
  Huber iteration 4: maximum difference in weights = .09798893
  Huber iteration 5: maximum difference in weights = .09850864
  Huber iteration 6: maximum difference in weights = .06818512
  Huber iteration 7: maximum difference in weights = .06202443
   Huber iteration 8: maximum difference in weights = .04124515
Biweight iteration 9: maximum difference in weights = .29560944
Biweight iteration 10: maximum difference in weights = .46755783
Biweight iteration 11: maximum difference in weights = .38231766
Biweight iteration 12: maximum difference in weights = .29337818
Biweight iteration 13: maximum difference in weights = .21770011
Biweight iteration 14: maximum difference in weights = .16478389
Biweight iteration 15: maximum difference in weights = .08351691
Biweight iteration 16: maximum difference in weights = .09054698
Biweight iteration 17: maximum difference in weights = .11377438
Biweight iteration 18: maximum difference in weights = .08583159
Biweight iteration 19: maximum difference in weights = .07889435
Biweight iteration 20: maximum difference in weights = .06631738
Biweight iteration 21: maximum difference in weights = .04951402
Biweight iteration 22: maximum difference in weights = .03073377
Biweight iteration 23: maximum difference in weights = .0213678
Biweight iteration 24: maximum difference in weights = .00871035
```

```
Robust regression
```

Number of obs = 179 F(6, 172) = 775.26 Prob > F = 0.0000

dbperf	Coef.	Std. Err.	t	P> t	[95% Conf.	Interval]
dtaxrev	.3801709	.024129	15.76	0.000	.3325439	.427798
dntaxrev	.2839589	.0482599	5.88	0.000	.1887009	.3792169
dcapexp	4304818	.0268131	-16.05	0.000	4834069	3775567
drecexp	3798311	.0241987	-15.70	0.000	4275959	3320664
dfdeff	0486915	.0083234	-5.85	0.000	0651206	0322624
bvar	3.8137	.3632261	10.50	0.000	3.096745	4.530655
_cons	-1.109178	.2861344	-3.88	0.000	-1.673965	5443912