Debt Management as an Economic Growth Strategy in Sub-Saharan Africa: A Study of Selected Countries.

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Abbreviations

ADB – African Development Bank

ADF – African Development Fund

CAPM – Capital Asset Pricing Model

CBN – Central Bank of Nigeria

CD – Certificate of Deposit

CPIA – Country Performance Index Assessment

DeM – Debt Management

DeMPA – Debt Management Performance Appraisal

DMO – Debt Management Office

DRI – Debt Relief Initiative

DSA – Debt Sustainability Analysis

EHM – Economic Hit Man

EMH - Efficient Market Hypothesis

EU – European Union

FMF – Federal Ministry of Finance

GDI – Gross Domestic Income

GDP – Gross Domestic Product

HIPC – Highly Indebted Poor Countries

IDA – International Development Association

IFI – International Financial Institutions

IMF – International Monetary Fund

INTOSAI – International Organisation of Supreme Audit Institutions

LDC – Less Developed Countries

LIC – Low Income Countries

MDRI – Multi-lateral Debt Relief Initiative

MEFMI – Macroeconomic and Financial Management Institute

MIC – Mid Income Countries

MTDS – Medium Term Debt Management Strategies

NPV – Net Present Value

OECD – Organisation for Economic Cooperation and Development

PRGF – Poverty Reduction Growth Facility

PRSP – Poverty Reduction Strategy Papers

SSA – Sub-Saharan Africa

UN – United Nations

USAID – United States Agency for International Development

WAIFEM – West African Institute for Financial and Economic Management

WB – World Bank

Dedication

I would like to dedicate this study to my beloved parents; my late father Malam SalehYusuf Bichi of blessed memory (May his gentle soul rest in eternal peace), and my mother Hajiya Rabi Saleh.

Abstract

Government debt management, as a distinct policy, with a clear objective of managing risks and cost minimisation first started among the industrialised economies in the late 1980s. The need to improve government debt management arose with rising debt levels, caused by macro-economic imbalances especially in the mid-1970s and 1980s. In sub-Saharan Africa however, debt management as a strategy was undeveloped or lacking completely. A research in the area of debt management is significant to the economic growth and development of the sub – Saharan Africa. The significance of debt management is supported by empirical studies showing that effective public debt management could go a long way in protecting both low and middle income countries against the negative impact of the financial crisis.

This research focus specifically on the choice between short and long term, domestic and external debts and how the process affects the economy as measured by per capita income and debt ratio or level of indebtedness. The work also looked at the extent of implementation of debt management among the SSAs especially as contained in the World Bank and IMF debt management performance guidelines.

The research adopted the quantitative approach to answer questions raised in relation to the effect of government borrowing; the choice of debt maturity, and how sovereign debt and its management affect economic growth.

It was found that debt is related negatively to economic growth; and the phenomenon of debt overhang actually exists. Debt management however was found to be relevant; where it was observed that the entire process of debt management is vital to economic growth and the development of a country. In particular, countries in sub-Saharan Africa need to put in place an effective and sound debt management strategy that would aid in promoting the needed stability, reduce risks in borrowing and guide in the prudent management of borrowed resources. The work contribute to both theoretical and empirical aspects of debt and its management.

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Chapter 1

Background of the Study

1.1 Introduction

This chapter aims to prepare the background for the research work on how the strategy employed in the management of sovereign debt relates to economic growth in sub-Saharan Africa. The chapter focuses on the background to the study, statement of the research problem, research objectives, research questions and the rationale for the work. In particular the research work proposes to look at the phenomenon of sovereign debt; external and domestic, short and long term debt and how the strategy of debt management process affects economic growth among countries in sub-Saharan Africa. Specifically, the chapter will prepare the ground for research on how the strategy of debt management employed could result in an effective and efficient utilization of resources and its eventual impact on economic growth. The section on the background deals with the history of borrowing in post-independence sub-Saharan Africa; and the accompanying debt crisis from the mid-1980s to the late 1990s.

The segment on background to research introduces sovereign debt and related terms of debt overhang, debt relief and debt management. In effect an overview of government borrowing is given by drawing on specific experiences from the developing and the lesser developed countries. Subsequent sections outline the major research objectives, where the focus of the entire study is laid down with the aim of obtaining relevant results. The chapter outlines the research objectives as well as the research questions posed by the work. These questions are formulated as a backup to the research objectives. The envisaged contribution of the study is covered under the section on significance of the study to research topic of sovereign debt in sub-Saharan African countries. The research methodology adopted for the proposed work is explained with the two major sources of data clearly specified. The scope and limitation of the work detailing the expected areas to be covered over the length of the research and the periods involved are specified under this section. Finally the plan of work is discussed as the last segment of the chapter.

1.2 **Background to the Study**

The debt crises of the 1980s impacted severely on many sub-Saharan African countries that had long been overburdened by heavy debts. The situation was so severe that the total debt outstanding against 10 of the most heavily indebted countries in the region was over 1000% of their exports put together (Helleiner, 1989). Notably however, there were not many academic works on debt management (Missale, 1994). Although substantial research has been accomplished which centred on the relationship between external debt and economic growth, it was evident that the majority of the works tend to be directed at issues arising from external borrowing by some developing economies many of which are located in Latin America (Greene, 1989a). In comparison to the works on Latin America, little was accomplished on the subject of external debt and growth in Africa. Examples of such can be found in works by Krumm (1985) and by Lancaster (1989). Other works on external borrowing in Africa include by Feldstein, de Carmoy, Narusawa, and Krugman (1987) and Helleiner (1989). But even these studies on sub-Saharan Africa's debt tend to employ the use of low number of samples on Africa (Fosu, 1996). The trend observed after the 1980 debt crisis among the OECD indicated that academic literature on public debt had been substantial, with debates on issues linked to the field of debt management found to be lacking but on a constant build-up (Missale, 1994). In contrast however, among sub-Saharan Africa there tends to be a persistent dearth of scholarly works and the absence of discussion on the subject of debt management.

Not very long after the HIPC debt relief initiative which proposed to grant a completion point for sub-Saharan African countries debt forgiveness or debt cancellation, a debt sustainability analysis carried out jointly by the IMF and the World Bank showed that about 61 per cent of the SSAs were already showing signs of debt distress (IMF, 2009). This tends to show that the subject of debt and its management is crucial for the economic growth and development of sub-Saharan Africa. Despite this however, only a few studies referred to the subject of debt and economic growth in Africa. Examples of the few include Esther O. Adegbite (2008) who investigated the effect of excessive debt servicing on Nigeria; Diallo (2007) researched the impact of external debt on the development of Guinea, and a number of other works. Recently however, Onyekwelu and ACA (2014) studied external debt accumulation and the management strategies adopted by the African nations caught in the crisis. Debt management as a strategy encompasses much more than external debts and how they are accumulated. While works that specifically focus on external debt and the crisis that

ensued thereafter were important, research into the aspect of debt management is required to guide economic policy formulation and the decision makers in articulating far reaching decisions on how government should borrow and to what extent. Issues such as the right source of finance and the maturity and composition of the instruments providing such are equally important in the developing academic literature on debt and its management. However, though these aspects of debt management are crucial in managing government debts in the sub-Saharan Africa, they are found to be conspicuously absent in both public and academic discussions in the region.

Gooptu and Braga (2010), argued that until the global financial and economic crisis in 2008, sovereign debt management was actually being carried out even among developing countries under relatively favourable circumstances. However it was only with the advent of the global financial crisis in 2008 that the landscape of developing finance changed completely.

A lot of empirical evidence has been given to back the argument that efficient debt management has the propensity of protecting both low and medium income countries against threats posed by financial crises prevalent in the world economy (Weist, Togo, & Prasad, 2010). Earlier Tobin (1963) further confirmed the relevance of debt management by observing that all charges an economy has on government are prepared and contained in monetary control and debt management. The relevance of the debt management theories that particularly put emphasis on the use of debt instruments was questioned by some scholars e.g. Missale, Giavazzi, and Benigno (2002), Milesi-Ferretti (1995); and rejected by other researchers such as Ricci and Cordella (2010) who found the phenomenon of debt overhang not present in countries with bad policies. Government debt management is however not an old field in finance. In the EU, effective practice of debt management started in the 1980s. This happened especially when public debt to GDP ratio of several OECD countries rose substantially; which led to a strong derive at reforming debt management (Currie, Dethier, & Togo, 2003). Consequently debt management became increasingly viewed as a process that had distinct objectives in terms of cost minimisation within risk limits. For example in the UK, there was a drastic shift in debt management policy, especially where it became mainly directed at cost reduction and practices concerning the trade-off between cost and risk (Leong & Britain, 1999). As a result monetary policy was no longer treated under the domain of debt management. And as a result debt management had to be practiced in conjunction with other government agencies involved with its external finance (Klein, 1994a). It is believed that, "*Successful debt management requires close cooperation between different*

elements of government concerned with external finance in order to have key information necessary to make informed decisions on the access to and uses of external finance. Specifically it is important that the government unit with responsibility for making future debt service obligations should also play a major role in the decisions regarding foreign borrowing" (Klein, 1994b, p. vii)

According to Wheeler (2004) government debt management may be defined as that process of placing an effective strategy for managing government debt in a transparent manner, and with the objective to meet the government's financing needs; as well any other set goals, especially the management of any costs and risks involved. Such goals include evolving and preserving an efficient market for government securities. Mehran (1985) however, observed that the process of debt management basically involves five functions: Policy, regulatory, operational, accounting and statistical analysis. While the policy function covers coordination between agencies charged with the responsibility for the management of a country's debt; especially in the aspect of national debt policies and strategies formulation. But, debt management in sub-Saharan Africa could be faced with numerous challenges, such as the lack of up to date government statistics.

Any discussion on debt management in sub-Saharan Africa however, needs to consider the origin of the debt crisis in the region. The commodity boom of the 1970s lowered the cost of borrowing among the exporting countries (Humphreys & Underwood, 1989) but later fell out when the prices of primary commodity exports declined sharply and growth in industrial countries slumped. The sub-Saharan Africa (SSA) governments were slow to react and adjust. And to worsen the situation, the soaring of interest rates in response to oil shocks of the mid-1970s to early 1980s (Teunissen & Akkerman, 2004) made debt crisis inevitable. Later debt relief that is based on net present value (NPV) calculation and which failed to promote debt sustainability (Martin, 2004) and the IMF approach[1]; usually consisting of devaluation, removal of subsidies, and liberalisation and other measures that were based on the Polak model of the 1950s (Stein, 2005) further complicated the low income countries in Africa's debt situation

Traditionally however, an appropriate debt management strategy for low income countries was to ensure the maximisation of all the concessional debts against conditional ones (Weist et al., 2010). By so doing it is expected that debt servicing costs which raise risks of debt distress as well as debt unsustainability are minimised. This unconventional strategy however

[1] Student Paper, PG Cert. Res. Methods, 2013.

tends to raise the risk of exchange significantly. Alternatively the issue of the composition of debt could come as an optional strategy. This is where the low income countries chose between the two major sources of debt - foreign against domestic sourced debts; and in other instances choices can be made between short and long term debts. It was however discovered that this choice was simply a function of the international donor and creditor nations' willingness and ability to provide external financing, where the domestic financing remains to be used as a residual to make up for the short fall in funding. But when the mix of external and domestic debt financing is not a domestic policy decision, the extent of the effectiveness of independent policy making becomes constrained. However utilising strictly the external sources of debt may also result in the neglect of the domestic sources of funding which negates much needed local capital market development. The function of a good debt management strategy is to strike a balance between all these with the objective of minimising cost and risk, with the intent of making a maximum use of the sourced funds.

A study of debt management in sub-Saharan Africa requires a reference to the debt relief initiative of the late 1990s. The World Bank-International Monetary Fund's debt relief initiative commencing in 1996 played a significant role in shaping the subsequent debt management strategies employed and adopted by the countries in this region. This is because the SSAs continued to experience difficulties in meeting their financial obligations, as at when due, despite the debt relief. According to Boote and Thugge (1997) these difficulties before and after the relief were not unconnected to external shocks from foreign borrowings e.g. deterioration in the terms of trade; civil unrest; growing inequality and poverty; poor macroeconomic policies and implementation of structural adjustments. Other factors include the lopsided nature of the lending terms and policies of most external private lending bodies in the form of providing loans on commercial interest rates with non-matching short repayment periods, resulting in an overall lack of prudent debt-management policies among the indebted SSAs. Also the over optimism of the foreign creditors and the debtors alike, especially when it comes to the prospects of raising the level of capacity to build up debt-servicing through increased export earnings; and the lack of a careful management of the currency composition of debts sourced externally. With these impediments an effective debt management became imperative among the sub-Saharan countries.

The debt relief initiative of 1996 was seen to be unable to serve as a remedy towards the threat of impending debt distress facing many SSAs, thereby casting doubts on the whole objective of the debt relief programme to free funds for the development of infrastructure

among beneficiary nations. It was therefore argued, that provided the discount rate of the government preceding the debt relief and in the period after are found to remain the same; it follows that all policies regarded improper may prevail in spite of any debt reduction or forgiveness (Easterly, 2002). For this reason many view the initiative promoted was purely in the interest of the creditor nations and their institutions instead. The programme was thus seen to be aimed at salvaging and stabilizing the markets which the debt stricken nations patronise. Berthélemy and Vourc'h (1994), further observed that the gradual debt relief brokered by the Bretton Wood institutions was ostensibly in favour of the lending banks, protecting them from the negative effect of the debt crisis. It was argued that the debt relief granted was not in any way too much or adequate for the debtor nations, the actual debt crisis threat was the risk to the global economy at large. Barry and Tomitova (2006), went on to question the reality of the debt of which relief was said to be made. To them the whole idea of relief was inappropriate, for the whole process from the onset had been exaggerated. Barry and Tomitova (2006) argued that upon all the claims there were actually no debts to the poor in the first place. It is worth noting that after several years there has been no improvement in the economy of any debt relief beneficiary nation, which came about due to a prevalence of sound policies or improved external environment. The only improvement in economic terms recorded, was simply as a result of the quantum of the debt relief, which was temporary. Debt relief as a strategy clearly turned out to be a mere availability of more funds at the disposal of the highly indebted poor countries, and have had no effect on the longer term debt situation of sub-Saharan African nations. The debt relief initiatives and debt restructuring was however seen by many to have actually impacted well on the HIPCs. The process tends to assist the indebted countries back on to the route for debt efficiency and sustainability but failed to resolve the question as to what really caused the distress in the first place. This further makes the need for debt management strategy among the sub-Saharan African countries crucial, imperative and necessary for the purpose of promoting long term economic growth and stability.

1.3 Literature Review

Several of the works undertaken on the subject of debt and growth tend to dwell on the so called “debt overhang”; a phenomenon, believed to be responsible for the dwindling or impaired savings and investment that forms the aftermath of huge external debt (Esther O. Adegbite, 2008). Deshpande (1997) confirmed the existence of debt overhang, but (Cohen, 1995) failed to gain any substantial evidence to support such a phenomenon. However,

Cordella, Ruiz-Arranz, and Ricci (2005) completely ruled out the theory promoting any negative effect of debt on investments of a debtor nation. But Farzin (1988) working on the relationship of external debt and growth actually concluded that borrowing could be an instrument of economic growth. Not much of the literature was however focused on debt management in sub- Saharan Africa.

Over the years however, government borrowing led to economic crisis particularly during the 1990s, resulting in some nations being left with the only option of outright repudiation. The option for default as a strategy to manage sovereign debts was surprisingly drawing support from several scholars, who believed the entire process of lending had been faulting and in favour of the affluent creditor nations and institutions. For example Tideman and Lockwood (1993) argued that repudiation of sovereign debts would go a long way to increase economic efficiency and social justice. Montiel (2005) however, argued that although debt repudiation could be a way out for a country devastated by insolvency, the move could at the same time have serious implications. This is because creditors might seek legal enforcement that could ruin the credibility of the defaulting nation leading to the real danger of the dreaded "debt overhang." Jeremy and Kenneth (1989) also considered repudiation by a small country as a deliberate move to alienating itself from potential lenders. Omotola and Saliu (2009) suggested instead a process of debt relief or outright cancellations of debts as a more appropriate strategy by the debtor nations in sub-Saharan Africa. There are however those opposed to debt cancellation or debt relief as a strategy in solving the issue of debt crisis facing many countries. This view is shared by Vallee and Vallee (2005) who saw the whole idea of debt relief as handing the instrument of power at the disposal of rich creditor nations. More so Freytag and Pehnelt (2009) concluded that debt relief was purely hinged on political rather than on economic considerations. But sovereign debt crisis was never an exclusive problem of low income countries or those countries in sub-Saharan African nations. This is because recent happenings especially with regard to the issue of debt and its management is central to the European economic crisis with Greece and Italy among the major concerns (Madeley, 2011). Therefore, an effective debt management strategy implementation was the only remedy in sight, especially for the purpose of stalling a debt crisis that had the capacity of crippling both global financial and economic systems. In this regard, Daud and Podivinsky (2011), acknowledged the tendency of a negative impact of debt on economic growth, but also believed that poor countries' only option was to embark on a correction of misallocation of borrowed external funds and put in place a sound, effective and transparent debt

management policy. Hence the need for an effective, and efficient debt management strategy for developing countries, especially those in sub-Saharan Africa. By debt management we refer thus, to an established process of how government debt is managed, with the aim of lowering cost, reducing risks and promoting economic growth. Public debt management is defined as, *the process of establishing and executing a strategy for managing the government's debt in order to raise the required amount of funds at the lowest possible cost over the medium to long run, consistent with a prudent degree of risk* ("IMF-World Bank Publish Revised Guidelines for Public Debt Management [press release]," 2014, p. 5).

Debt management is an essential prerequisite for the development of sub-Saharan Africa. Without a functional debt management, there is bound to be misallocation and misappropriation of resources that could be used to promote the development of the economy with a view to attaining growth. One important factor is however very important to attain a functional debt management. The availability of an effective and vibrant domestic capital market is necessary in the development of an effective debt management strategy. A weak debt management capacity and the absence of efficient debt markets in sub-Saharan Africa leads to the existence of challenges that are policy, institutional and operational facing the sub-region. These challenges which include the emergence of brand new markets and conditions, a rapid global flow of finance, as well as the obscure financial boundaries which have come to substantially alter financial structure confronting developing economies, add up to necessitate the introduction of a number of debt management measures, an instance of which is the debt management performance assessment (DeMPA) tool, put together by the World Bank in collaboration with the IMF in 2008 (site, 2014). Debt management as a strategy therefore becomes a vital tool at the disposal of the debt over-burdened sub-Saharan African countries for use to utilise their borrowed resources for the purpose of the attainment of stable economic growth.

1.4 **The Significance of Debt Management**

The study of debt management is very significant in the process of the attainment of economic growth of a nation, more so those in the sub-Saharan Africa. The significance of debt management is evident as it entails use of borrowed funds that come accompanied by costs and risks that need to be minimised for optimal utilisation. Debt management is however significant for several other reasons. Debt management is relevant because it seeks to remove mismanagement, promoting the attainment of longer term growth, helping to improve the means of economic performance, introducing effort to free resources for developmental purposes and for the management of an economy out of crisis. It

helps to improve the investment climate and uplift overall confidence in the economy. Thus, debt management should be seen as that process whereby government chooses between alternative combinations of its outstanding financial obligations in respect of how they are affected by the aspect of risk and return, as well as the issue of cost and duration that is inherent in most financial transactions. Debt management is important because it provides policy makers with an effective and efficient means of raising funds to correct balance of payment situations at minimal exposure to risks and lowest possible costs. Debt management however involves different strategies which include the determination of the denomination and maturity of debt instruments and how they are selected in the process, the issue of debt securities indexation for the purpose of hedging inflationary effect; the strategy dealing with changes in the relative supply of government debt instruments and the methods adopted to evolve new ways of managing public assets. Government debt management also includes the issue of taxation and resource mobilisation at domestic levels, and how the process is related to government borrowing decisions.

An essential feature of this study is the issue of sovereign or government debt. Government borrowing is traditionally seen to be the least risky of credit because governments' tend to possess the powers of taxation and foreign exchange management which give them the ability, in principle, to cover their financial obligations. But this sometimes may not necessarily be the case. This is because there are times when the social cost of borrowing, taxation and foreign exchange becomes very enormous. This is because policymakers may turn out to become unable politically or administratively to mobilize the power to direct the requisite funds for debt servicing, or may be unwilling to do so, or circumstances may affect the population that any effort to raise additional revenue would be an act of political suicide. Therefore, the extent to which governments of poor countries will go to sustain rather than to default on their sovereign debt is an especially monumental question in the current international economic environment. Thus the need for the evolvement of a sound debt management strategy can hardly be overemphasised. The subject of sovereign debt or insolvency tends to shed more light on the features of sovereign lending, and hardly does one come across terms such as a 'bankrupt' government. This differentiates sovereign debts from corporate and private debts. This is because it is unusual for creditors to force an insolvent government to be wound up or to take possession of its remaining assets. Therefore, there is no internationally agreed jurisdiction or procedure for how to address a nation's inability to repay. As a matter of fact, jurisdictions differ in the legal specifics of how to handle a

sovereign's default. However private foreign creditors of a defaulting sovereign nation can go out of their way to find the most creditor friendly jurisdiction in which to fight for repayment. Thus, the amount repaid by the defaulting sovereign nation only becomes feasible when the defaulting nation is willing to repay despite any court judgement in favour of the creditor. Consequently and because some of the debt is owed to official creditors, debt has usually been restructured through informal negotiations and other informally agreed processes. Therefore, the treatment of sovereign debt crises is always regarded 'political' at its core, in the sense that it involves relations among states even if private entities are part of the deal. But the concern here is that this political process should no longer be ad hoc but be explicitly shaped so as to be effective, efficient and fair.

In the process of putting in place a debt management strategy, there is a need for a clear demarcation between the need for risk minimisation and cost reduction. Because of the extent of output and human losses that might follow, in debt management top priority should be accorded to measures to curtail debt default. In several instances mistakes by governments directing much focus on short run cost savings, involving issued chunks of foreign currency denominated, and other short term debts, tend to render government finances largely susceptible to risks of changing market situations. A sound debt management ought to be packaged in such a way that it enables officials handling debt management to scrutinize all the expected coats and risks inherent in government debt portfolio and effectively manage them. This can be achieved by means of carrying out stress test on debt instruments in respect of the level of exposure such a country is to prevalent financial turbulences. A debt management strategy developed upon a similar approach should be the kind to be approved and implemented by the authorities. All efforts at the development of a debt management strategy should be done taking into consideration all constraints imposed by other macroeconomic factors. These constraints might limit the composition of the debt portfolios of developing countries more than those in open, developed economies. These constraints range from capital controls, implementation of monetary policy through direct instruments and a weak fiscal position. When a government domestic debt market is underdeveloped the situation places constraints on a debt management strategy. Thus, developing a domestic government debt market describes the many facets in this area, especially with the complexity and interactions between these considerations, developing a debt management strategy is an iterative process (Herman, Ocampo, & Spiegel, 2010).

Debt management strategies can be expressed by setting ceilings in situations where targets on certain risks in debt instruments are yardstick used in approvals. For instance limits on debt maturity, the extent of fixed shares as against a floating rate of debt, how the share of domestic debt stands against external or foreign-currency borrowings, and the different currency composition of the external debts, are such risk characteristics. But when it comes to countries with poorly developed markets, and where there tend to be predominance of doubts in access, the best strategy would be having a general guidelines. Debt management should be what decision makers understand (Herman et al., 2010).

A good debt management should be able to describe the risks being managed e.g. currency, interest-rate, refinancing and credit risks. There are a number of examples that could be employed to demonstrate how these risks could affect the debt burden. For instance the historical context for the debt portfolio could be provided, including a description of changes in the portfolio's size i.e. in both absolute and relative to GDP and the composition of borrowing through time. Another equally important factor is the changes recorded in relevant market variables that needed to be incorporated, along with commentary on the key events in the evolution of the debt. A description of the environment for debt management in the future, including fiscal and debt projections, assumptions about exchange and interest rates, and constraints on portfolio choice, especially those relating to market development and the implementation of monetary policy is very important. In addition there is the need to describe the analysis undertaken to support the recommended debt management strategy, clarifying the assumptions used and the limitations of the analysis.

The explanation for a debt management strategy should be able to specify ranges for the key risk indicators of the portfolio and the financing program, but need to be as detailed as a benchmark portfolio. The strategy should also describe measures or projects that are planned to manage unquantifiable risks and that support debt market development. Ideally debt management strategy should be specified for the medium to long term, however it is important that it gets reviewed periodically for the purpose of assessing whether the assumptions still hold in the light of different circumstances and new development. A good debt strategy should ensure such a review to be undertaken annually as part of the budget process and if the existing strategy is viewed as appropriate, the rationale for its continuation should be clearly stated.

It has however been argued that the market based approach on the problem of insolvency of sovereign debtors tends to be excessively creditor friendly and of high cost for developing countries. It was observed that the solutions put into place pose undue lags, causing unnecessary prolongation of uncertainty and attendant economic trauma (Herman et al., 2010).

1.5 **Statement of the Problem**

Overall, it has been argued by many, especially those working on international financial policy that the world actually does not need to develop any new way or strategy to manage sovereign debt and any crises that may arise. While arguably it may be plausible, because the international system is not fool proof, which rather tends to operate less smoothly and consistently than our expectations; but it is a fact that the same process helped to solve the debt crises of the 1990s. It is true however that there are present fund speculators who tend to take the advantage of the debt reduction agreed by willing creditors and that it is not fair that they succeed in obtaining full repayment in court actions. It also happens to be a fact as well, that not all the official creditors abide by the terms of relief agreed by the major creditors, as a consequence the speculators taking advantage of all the concessions given by the leading brokers of the day.(IDA and IMF, 2008). These problems however are not enough to deter the formulation of a strategy that would lead to a debt-restructuring process. Thus a considerable debt relief has been agreed both by private and official creditors (Arnone & Presbitero, 2010). It was argued however that more extensive reliance on rescheduling and standstills would have been more effective than the big bailouts. Such measures might have helped to reduce capital outflows out of an affected country, and this in turn would have led to a strengthening of its exchange rate (Herman et al., 2010).

To some extent international policy toward the sovereign debt of the poorest countries has drastically changed in the past decade. An example was in the year 2005; after a prolonged global agitation by the debtor nations as well as widespread civil society anti-debt campaigns. This led the world's donor governments to offer the poorest countries the largest debt reduction in history, when it was agreed in 1999 to cancel almost all the debt-servicing obligations of the HIPCs to the International Monetary Fund (IMF), the World Bank, the regional development banks, as well as bilateral debts. Servicing of multilateral debt had hitherto been sacrosanct and debt service had gone a long way in worsening the debt conditions of many debtor nations. As a matter of fact, debt service is supposed to be negatively correlated to the economic growth of a nation. It is a direct drain on investible

funds which in turn fuel the case of debt overhang. Thus any meaningful debt management should consider the element of debt servicing as a relevant factor.

Herman et al. (2010) explained that some middle income countries, especially in South America and Latin America went into the process of bond restructuring via a market oriented debt swaps. The last of the strategy was when the bad external debt issues of these nations were resolved in 2005. For instance in Argentina defaulted bonds were swapped with new ones at heavy discounts. In the sub – Saharan Africa Nigeria succeeded to negotiate an unprecedented benefit of reasonable debt cancellation and her debts with other external creditors rescheduled. The following year which witnessed a relatively encouraging economic growth and more stable global commodity prices several other developing countries experiencing higher per head income embraced the opportunity to restructure their external debts. Several of these countries realised higher foreign earnings, increased external reserves, and in many instances were able to repay part of their debt before it fell due. With this development, sovereign debt difficulties became a subject of the past posing not much to the policymakers to think about. In spite of this development it was not very long after that it became evident that debt relief or debt reduction alone, although necessary, was never sufficient in the case of the management of the lower income sovereign debt situations. This becomes particularly true when viewed from our experiences of the global economic crisis of 2009. As far as the low income countries' debt situations are concerned our answer to this is not very far-fetched. For instance a few years after debt relief, precisely in March 2009, the IMF analysed the debt situation of seventy one low-income countries and classified twenty-eight as high risk under its baseline projection. In sub-Saharan Africa notably we had Ghana and Uganda among others. This according to the Fund had the dangerous prospects of potential declines in foreign direct investment and aid. More poor countries were further added to the category of 'high risk' of debt distress (IMF, 2009). The threat of any debt crises that could ensue as a result of further mismanagement of sovereign borrowings could lead to a worse scenario than what was witnessed during the 1980s and 1990s. But this threat could also be faced by countries that have not completely experienced debt difficulties in the past. The fact any country that allows itself to carelessly slip across the line into debt difficulties during an ensuing period marked by the temporary stability as a result of the debt relief, is bound to have a difficult and protracted path to recovery.

The HIPC initiative, which championed the idea of a fresh start as the major objective of the idea of debt relief when it was launched in 1996, there was hardly evidence that the initiative had sufficiently lowered the debt burden for the selected countries, at least until the multi-lateral debt relief initiative (MDRI) of 2005. Sovereign debt problems in developing countries were highlighted by these movements where they tend to pitch the poor countries against rich creditor nations, thereby motivating the poor people in those countries to pull them out of poverty to a better stable and more sustainable condition (Arnone & Presbitero, 2010). And for this reason the only panacea for the poor countries especially those in sub-Saharan Africa is to devise an effective debt management strategy that would ensure an efficient management of their sovereign debts for purposes of growth and development.

1.6 Research Aims and Objectives

The aim of this research work is to study the overall impact of sovereign debt on the economic growth of countries in sub–Saharan Africa. The research work focuses on the process where cost minimisation and reduction in risks involved in government borrowing could lead to an efficient utilisation and allocation of resources to attain economic growth among sub-Saharan African countries. The objective of debt management therefore is to ensure that the government's financing needs are handled efficiently and effectively and in economic logic and rational sense. And also to ensure that the stock of government debt and increases in debt flows as a result of budget and non – budgetary sources are managed in accordance with the cost and risk preferences of the government. In summary the study is geared towards the attainment of the following aims and objectives:

1. To establish whether sovereign debt management has impact on overall development in SSAs;
2. To critically investigate whether debt is related to economic growth;
3. To establish the relationship between the extent of debt and debt maturity; and
4. To critically examine the debt relief initiative and its role in debt and its management in sub-Saharan Africa.

1.7 **Research Questions**

Government officials responsible for debt management traditionally share similar functions with fiscal policy advisers. The only aspect of the two that differs is their objectives. Given

the objectives of the study as outlined above, the research questions for the study include but are not limited to the following:

1. What is the impact of borrowing on the economic growth of sub-Saharan African countries and does the phenomenon of debt overhang really exist?
2. Does debt management as a strategy impact on the economic growth of an economy; and how does the debt relief initiative impact on sub-Saharan Africa's sovereign debt management policy?
3. Is a country's level of indebtedness influenced by the composition and maturity of its debt?

1.8 **Significance of the Study**

The proposed study examines the impact of an effective debt management strategy on the economic growth of a country in sub-Saharan Africa. Past studies on debt in sub-Saharan Africa mainly focus on the relationship that exists between debt and economic growth. Thus a study in the field of debt management is bound to have policy implications and a potential effect on the economic situation in sub-Saharan Africa. This is because the study will be based on both critical evaluation of past experiences and future policy to accommodate a changing global environment, especially on issues pertaining debt and its management.

Until now, most studies carried out on debt tend to focus on the relationship between external debt and/or other factors of economic growth in Africa and other developing countries. Fosu (1996), showed previous studies which actually only examined the effect of external borrowing on a country's level of savings and investment, which was in an attempt to measure the impact of debt on economic growth among low income countries. Of the existing research works on the impact of external debt on the economic growth of poor countries most of them sampled fewer countries (Fosu, 1996), in comparison to similar works carried out in Latin America for example. Examples of such studies were research by Esther O. Adegbite (2008), who investigated the effect of substantial external borrowing with the accompanying servicing requirements on economic growth of the Nigeria. Another example of a study on debt was carried out by the UN (2000) showing an investigation of how debt servicing requirements tend to consume a reasonable chunk of resources meant for the provision of needed infrastructures for the development of the economy and raising the living standards of people. A work by Ifeoma (2011) carried out an analysis of Nigeria's foreign policy and government policies on the issue surrounding external debt relief and its consequences on the

nation and its development. However, none of these studies focus on debt management, debt management strategyor on the effect of debt management strategy on economic growth as proposed by the current research work.

There are numerous other works on the relationship between Africa's debt and economic growth, but with very limited research being conducted on the impact of the debt management strategy employed by a sub-Saharan African country and economic growth. However, research works by Deshpande (1997) and Blommestein and Horman (2007) conducted a cross-country study on Public Debt Management and Bond Markets in Africa. Both concluded that the development of a sound debt management system and promotion of a vibrant securities trading will go a long way in helping to minimize the high cost involved in the management of public debt and keeping the figures at a level that could be sustained. The study indicated that an effective and well drafted debt management, sound fiscal and monetary policies have the potential to combine to drastically minimize the risk premium element prevalent in the structure of long-term interest rates. Their works actually contribute to the literature on debt management and its relation to the development of a bond market. A developed bond market and lower cost in public debt management are a few aspects of strategic debt management

This research therefore proposes to look at the aspect of debt management strategy as a strategy for economic growth in sub-Saharan Africa and taking an in-depth analysis of experiences in Nigeria. Hence the work will not only add to the existing literature on the subject of debt and economic development in sub-Saharan Africa but contribute to knowledge and understanding of the subject of debt management strategy and its importance to the economic growth of low income sub-Saharan African countries. With a persistent trend of non-efficient exploitation and under-utilization of resources in sub – Saharan Africa any literature on debt and the strategy of its management will contribute immensely in the process of linking the activities of debt management to economic growth.

The study will have an impact on future policy making and also in areas of economic development, better management of the economy and macro-economic balances. It is hoped that the study would highlight the seriousness of both minimising the debt and service burden, better management of the economy, which will lead to freeing resources for future development in the SSAs. In a nutshell the study is significant in the sense that it will: (a) Make possible the identification of the concept and framework of Debt Management Strategy

as an economic growth strategy; (b) Generate greater awareness among public organizations on the importance of having a proper and practical Debt Management Strategy as a tool of economic growth; and (c) Provide useful knowledge on factors that might have impact and contribute to the successful adoption of Debt Management Strategy in debt management offices across sub-Saharan Africa.

1.9 **Scope of the Work**

This work intends to cover the effect of borrowing and its management strategy on economic growth in sub–Saharan Africa. The work shall carry out a comparative study of some selected countries covering a period of 30 years; between the years 1980 and 2013. Furthermore an in-depth analysis of debt management in Nigeria over the same period will be undertaken. While the work will look not at borrowing in isolation, the work is essentially concerned with sovereign domestic and external borrowings of the selected countries under study. The work is however limited to sub–Saharan African countries as a region and Nigeria, Ghana, Uganda and South Africa in particular.

1.10 **Research Methodology**

This work proposes to employ the use of the quantitative approach to research. Data was generated from a combination of primary and secondary data sources. The use of survey questionnaires was employed, however the bulk of the data used was generated from major secondary sources. The work made all efforts to obtain and compile comprehensive data on the sampled sub-Saharan African countries' debt. Accordingly, the study relied heavily upon the most comprehensive data base of various governments' financial statistics, the IMF's International Financial Statistics, gross government debt data, World Economic Outlook and the Public Sector debt statistics. Another equally relevant source of data for the work is the World Bank's World Development Indicators.

The choice of countries was limited to two HIPC eligible countries of sub-Saharan Africa; Ghana and Uganda, from the west and central Africa; and Nigeria and South Africa, two of the largest economies in the SSA sub-region, for greater representation and a wider coverage of the region. Information on debt was obtained primarily from individual IMF country reports e.g. the current issues of economic development reports and country desk databases. In situations where these turned out to be insufficient, specific country central bank reports or IMF country desk economists were sought to fill in the gaps; hence the use of the survey questionnaire. The debt management performance assessment (DeMPA) indicators were

adopted to form the basis for the survey questionnaire used to source the primary data for the work.

1.11 **Sample Size**

Based on HIPC eligibility and the probability of future debt crisis analysis shown in appendix I, there are currently a total of 24 sub-Saharan HIPC countries and Nigeria, which could be sampled. The choice of Nigeria, though a non HIPC economy, was hinged on the fact that it was among the countries considered and later in 2004 benefitted from debt cancellation. Ghana, also from the West African sub-region was selected for being a HIPC economy and a beneficiary of the relief initiative showing signs of distress, Uganda for the same reason from the central African sub-region, were sampled. Thus to balance the equation from the other end of Africa, South Africa was considered; being a non HIPC economy like Nigeria and with relatively developed institutions and economy. Several countries were excluded from the sample because they belonged to the francophone e.g. Niger and Mali, the challenge of the language barrier, the problem of data availability, proximity and research resources. Hence for the purpose of achieving a good comparison, Ghana, a HIPC economy and a country already showing symptoms of distress was chosen. Uganda was chosen for similar reasons in addition to its location in the central African sub-region to reflect diversity. South Africa like Nigeria was not a HIPC economy, but was particularly sampled because it had a developed domestic market on which it relied 100 per cent for its funding and did not benefit from the debt relief initiative. Nigeria a non HIPC economy was considered for benefitting from debt cancellation in 2006.

1.12 **Conclusion**

The foregoing discussion was able to prepare a background to the proposed work on debt management strategy as a tool for economic growth in the sub- Saharan Africa region. In the process of introducing the subject of debt and its management, the fact that the literature on debt management has been scant and particularly lacking in sub-Saharan Africa has been acknowledged. Most works we saw were in the area of the relationship between debt and economic growth, with few focused on countries in sub-Saharan Africa. Although several works had been undertaken in the field of debt and its impact on economic growth, much of the analyses either employed an insignificant number of African countries or were entirely lacking in empirical evidences. The work thus endeavoured to raise questions and outlined some objectives pertaining to the issue of debt and its management in sub-Saharan Africa,

with a view to promoting economic growth. It was concluded that the issue of debt in sub-Saharan Africa could best be tackled by exploring the alternative of putting in place a sound and effective debt management strategy. This would be possible especially with a focus on the choice of debt, minimizing its cost and making prudent assessments of the country's capacity to sustain the debt and servicing requirements attached to it. Despite the tendency of a negative impact of debt on economic growth, the proposed work strongly suggests that sub-Saharan African countries' foremost option was to embark on a correction of misallocation of borrowed funds and put in place a sound, effective and transparent debt management strategy and policy.

1.13 Thesis Format

This work is planned in different sections and chapters as follows:

Chapter One: This chapter covers part I of this work and deals with the initial focus of the proposed research work on debt management as a strategy for the economic growth of a nation. Under this chapter the overall view of the thesis, its background, research problem, research questions, objectives, significance and scope of the work are covered.

Chapter Two: This chapter is under the second segment of work and deals specifically with the review of related literature on Debt and Economic Growth. The review here is divided into various sections covering subjects that range from the Theory of Public Debt; risks and costs involved in government borrowing; issues in Debt and Financial Crises as well as the role of international financial institutions.

Chapter Three: Here the study deals with a review of issues related to Debt Management Strategy and Economic Growth. This chapter contains a general overview of Debt Management in sub – Saharan Africa. The sections under it include the history of Debt in sub – Saharan Africa; the involvement of Multilateral Debt and sub – Saharan Africa; issues in Debt Management in Africa; and Government Debt Management and capital market development in Africa. The literature review is concluded in this chapter. Chapter Four: This chapter specifies the methodology adopted for the work. The research philosophy guiding the work and justification for the use of mixed methods as well as the triangulation of data was extensively discussed. Most importantly model specification and formulation of hypotheses was carried out in this chapter.

Chapter Five: In this segment of the work, data collected from primary sources via questionnaires was presented. All the descriptive statistics and frequencies relating to debt management indicators that constituted the questionnaire were sorted, categorised and explained. Appropriated tabulations, charts and figures representations were also made available in this chapter.

Chapters Six and Seven: These two chapters form a continuation of data presentation started in chapter five. However, as part of the triangulation and the mixed method approach adopted in this work, chapter six explained and presented responses from interviewees and chapter seven presented data collected from secondary sources. In chapter six the profiles of interviewees were given followed by the transcripts, and in chapter seven, tabulations graphical representation of secondary data collected on the four sampled countries was analysed and presented.

Chapter Eight: This chapter covered the process of secondary data analysis using SPSS statistical software. The presentation covered multiple regression results which were modelled to answer three of the research questions raised in the process of the work. Tabulations were presented in support of the results and justification of the model employed. Two models were presented in the process.

Chapter Nine: This chapter marks the conclusive part of the work, where a discussion of findings, summary and conclusion was carried out, with appropriate recommendations and contributions duly presented.

Chapter 2

Debt Management

2.1 Introduction

This chapter aims to critically examine and review various studies in the academic literature on economic theories relating to sovereign debt, debt crisis and debt management. A particular objective here is to look at theoretical and empirical studies with regard to sovereign debt and economic growth, the nature of the phenomenon of the debt overhang and how it relates to government borrowing, debt management and economic growth; the choice between debt types and maturities, debt relief and how it affects debt management strategy and debt crisis in sub-Saharan Africa. In this chapter we focus on issues earlier raised under the research questions.

For effective government debt management to be achieved there is the requirement for putting in place an effective and efficient debt management strategy.. A good debt management strategy should be able to ensure effective and efficient sovereign debt management through putting in place a process which may be complimentary, but independent of the macroeconomic policy apparatus of any government.

With the availability of functional institutions and services, advanced economies find it quite possible to employ the use of markets and financial market instruments to promote and implement very important policies that impact positively on the economy. Capital markets, in more developed economies are vibrant, effective and more sensitive to policy changes, in comparison to many in the sub-Saharan Africa. For example, mere increases in interest rates, or a slight adjustment of government taxes, tend to result in a multiplier effect and at the end produce the desired results. Well-developed capital and functional markets have the ability of providing access to both domestic and external capital sources, as well as offering a wide range of instruments and derivatives dealt in by financial experts and governments for the purpose of stabilising the economy and to achieve meaningful growth. In sub-Saharan Africa however, a similar trend is lacking or in acute shortage. This due to the poor developed nature of institutions, capital markets and service sectors in sub-Saharan Africa. Hence the development of an effective debt management strategy in sub-Saharan Africa becomes very important, although there is the need for the process to be carried out in a manner that suits

the economic terrain prevalent in the sub-region and which can be accommodated by the extent of institutional development among the nations.

2.2 **Role of Sovereign Debt in an Economy**

The IMF (2001), defines debt as all those liabilities which eventually require the payment or series of payments of interest as well as the principal amount by the debtor or his/her appointed agent to the creditor at a specified date or dates in the future. By this definition government debt is regarded as all those liabilities as recorded in the Government Financial Statistics System with the exception of shares and other equities and financial derivatives. Sovereign debt is thus defined as, *Debt issued by a national government in the form of bonds in a reserve currency. Traditionally, sovereign debt had been considered low-risk, as governments were believed to have a variety of means to ensure they did not default on their obligations* ("sovereign debt" 2014, p. 468).

The last fifteen years have witnessed significant events in the field of sovereign debt, debt crises and sovereign debt defaults. One of the major happenings was the Asian financial crisis of 1997, which ultimately led to default by Russia. The IMF and the World Bank responded with a US$25 billion in bailout (Kolb, 2011). The same financial distress spread in the US with a direct effect on the hedge fund long term capital which was heavily invested in the Ruble. The events set a new stage for sovereign debt in the globalised financial world.

Instances of default by sovereign governments date back to over two thousand years. In those times sovereign debtors tended to possess an over-bearing power over the lenders, which rendered the latter less capable of obtaining prompt repayment. In the not too distant past however, sovereign borrowers have tended to become smaller, weaker and poorer nations. But on the other hand lenders have become financial institutions located in the most powerful countries. Not very long ago there were instances of these lenders employing the gunboat diplomacy to enforce their claims on defaulting debtor countries. For example, in the year 1898, following a considerable destruction of property as a result of revolution, Venezuela failed to honour its debt obligation. To enforce repayment Great Britain, Germany and Italy employed force to compel Venezuela to comply. Another instance of a forceful super-sanction against defaulting nations was Egypt under the leadership of Ismail Pasha from 1863 to 1879. When Egypt failed to repay its debt contrary to its undertaking, the Suez Canal was

sold to Great Britain in 1875. When that was not enough for settlement, the UK masterminded a change of leadership in Egypt in 1879 and effectively took control of Egypt's finances in 1882, directing Egypt's financial resources until the full facility was repaid (Kolb, 2011). In the current dispensation however, it would be against international laws for one nation to enforce repayments through the use of 'gunshot diplomacy' or seizure of another sovereign nation's finances.

Also, the Dictionary of Economics ("sovereign debt," 2009) sees sovereign debt as the debt of a government of an independent nation. In the case of the debt of an individual or corporate body, legal procedures could be employed to enforce repayment of any interest and or redemption payments that fall due, or in severe cases to compel the handover of the debtor's assets to the creditors. Unlike the case of an individual or corporation's debt, such legal sanctions cannot be possible especially against a sovereign state or government, unless such a government submits voluntarily to legal procedures. This makes sovereign debts risky where repudiation, interest reduction and compulsory rescheduling become very probable. Sovereign debtors however, avoid taking the option of repudiation for fear of loss of reputation; because a defaulting nation could find it difficult and expensive to access funding in a future period. But if the creditor does not have the power to enforce repayment by the sovereign borrower, then the essence of lending tends to be questioned (Kolb, 2011). Two basic facts however need to be considered: (i) sovereign borrowers tend to escape super-sanctions; and (ii) in spite of risk of default, sovereign lending remains robust. According to Fafchamps (1996) however, an alternative for sovereign borrowing is to resort to renegotiation where emphasis is given to conditionality, especially with international financial institutions' (IFI's) investment. Under this arrangement debt rescheduling and reduction are made conditional on the adoption and implementation of a policy package that basically emphasise structural adjustment. But conditionality is mainly imposed to help resolve a debt crisis and remove the debt overhang (Sundaram, 1989). However, if anticipated by creditors, conditionality could lead to over borrowing and in the end causing the same conditions for its continuation.

Most debt crises are defined in terms of the ability to repay. Sovereign debts are generally characterised by frequent failure of commitment. A country could default on its debt for running out of sufficient amount of foreign exchange. Thus sovereign debt stands in a category of its own (Eaton & Gersovitz, 1981); because courts may not be able to compel a

sovereign nation to honour its financial obligations. There are however in existence different enforcement mechanisms which prevent a breach of debt contract by a sovereign nation and make the commitment to pay credible. A default by a sovereign nation could damage its reputation and prevent access to more credit in the future. Kolb (2011) observed that a rationale for reputational factor as a deterrent against default among sovereign nations, was that sovereign governments want to maintain a reputation as creditworthy in order to be assured of future access to international funding. According to Eaton and Gersovitz (1981), Kletzer (1984) and Jeffrey Sachs (1984) denial of access to future loans may not always work, as the procedure may require the support of all the different sources of credit involved, which may prove difficult to obtain. They argued that denial of access to future loans could encourage repayment when the initial credit had been meant for smoothening consumption; but the same process may fail to enforce repayment if the purpose of the facility was for growth financing. Bulow (1989) and Rosenthal (1991) considered the idea of denial as ineffective if sovereign nations had alternative means of insuring themselves against the refusal. But another means of squeezing repayment although very variant to those mentioned earlier is the threat of reduced external aids flows. And a large portion of the external debt of most of sub-Saharan Africa had been sourced through bilateral and multilateral donors. According to Hanlon (1998) in 1980 there was a net transfer of US$28 billion from the developed to the developing counties (including countries in sub- Saharan Africa). This trend reversed by 1987 where the indebted countries transferred a record US$12.4 billion to the creditors and the nations they represent. Debt service payments alone surpassed new loans by about US$34 billion, an amount partly compensated with US$13.5 billion in aid and grants, which inadvertently were used for further debt repayments. In aggregate, despite the amounts in debt repayment, the poor countries' debt increased from US$603 billion in 1980 to US$1600 billion in 1992; and by 1997 the figure had jumped to $ 2200 billion.

The discussions of sovereign debt circles as promoted by Minford and Kindleberger (1979), argued that lenders do not want debts to be repaid because they actually did not have any use for the capital for three reasons: (i) for debts to remain serviced; (ii) service ceases with debt write off and (ii) employing debt as an instrument of leverage on the debtors This has however been made possible through the role played by the IMF and the World Bank: All foreign aid and debt relief are made conditional on countries where the Fund and the Bank had projects. And the process involves structural adjustment to reduce consumption for the

purpose of freeing funds for debt repayments and also a chain of conditions to open up the indebted countries economies and lower the prices of their exports (Hanlon, 1998)

Profiling debt repayments especially during crisis was a reform recently considered by the IMF. Debt 'profiling' could involve allowing greater flexibility in how the Fund deals with countries in crisis as a result of sovereign debts. Profiling proposed the extension of debt maturities and the postponement of payments until such a time when greater certainty in the country's prospects had been observed (Fernández & Martin, 2014). Debt profiling could however make short term debt similar to long term, which invariably could lead to higher costs of funding.

2.3 **Debt and Economic Growth: the Case of Debt Overhang**

When investment in a group of large debtor countries tumbled in the 1980s, many analysts blamed the poor performance on debt crisis. This was based on the theory that if there were to be a discount on the secondary debt market, the lenders might not expect to be paid in full; where repayments would be hinged on the debtor's resources (Cohen, 1995), with debt operating like a tax on a country's resources implying debt's adverse effect on domestic investments popularly called the debt over hang. The phenomenon is referred to as the debt overhang which tends to give creditors the incentive to lend at an expected loss ostensibly to secure their existing claims (Jeffrey Sachs, 1984); JD Sachs (1989). But the position in the real world however is one of both repayment and new borrowings; where if countries' future repayments were not in doubt they would have no difficulty borrowing (Krugman, 1988). But Krugman (1988), further saw debt overhang as referring to a situation of an existing 'inherited' debt that was substantially large enough that creditors would not confidently expect to obtain repayments on their lending. Reinhart, Rogoff, and Savastano (2003), however differed especially while considering the case of emerging economies when they saw the entire phenomenon as a consequence of what they referred to as the debt intolerance. Debt intolerance was associated with the pervasive nature of persistent debt default among many sovereign debtors. These debt-intolerant countries tend to have weak fiscal structures as well as weak financial systems. But whether government decisions to borrow or reduce the amount of debt could have a positive impact on economic growth tends to depend on the existence of the so-called debt overhang. Hence according to Pattillo, Poirson, and Ricci (2011a) there existed some evidence for empirical turning points or thresholds beyond which borrowing tends to impact negatively on economic growth. This result confirms the findings

of Fosu (1996) working on a sample of sub-Saharan African countries where he found that debt negatively influenced GDP growth through a process of reduction in the marginal productivity of capital. The findings indicated that on the average, associated with a higher debt country is a fall in GDP growth of about 1 percentage point annually, which approximately constitutes a third of the sample mean growth of GDP. The impact however, tends to be positive at low levels of investment, i.e. and after a GDI/GDP threshold of up to 16 per cent it reverts to negative. The same negative conclusion was drawn by Cohen (1991); and many others. Sosin and Lin (2001) using cross-sectional estimates of the coefficient of foreign debt based on the total sample found that it had a negative sign, however without any statistical significance. According to them all available data from African countries indicate that foreign debt and growth rate per capita GDP were negatively related especially at high levels of significance.

More studies however continued to show that higher levels of borrowing tend to negatively hamper economic growth. But a number of researchers went further to explain that the debt overhang phenomenon was more than just a drop in the investment level. For instance an implication of the debt overhang could lead to reduced government incentives to carry out difficult reforms in the areas of trade liberalisation or fiscal adjustments (Pattillo et al., 2011a); because any activity that requires an expenditure in the expectation of an increased future output would be discouraged for fear of taxes by the creditors. But looking at the relationship between debt and growth in the light of specific features such as the quality of its policies and institutions, Ricci and Cordella (2010) discovered that the marginal effect of borrowing especially for non HIPC countries tends to be negative when the par value of debt was up to 20 per cent of the country's GDP. Or where the net present value of such debt reaches up to 10 per cent of GDP. It was however found that those countries with sound policies were having relatively higher debt overhang thresholds over and above those countries with bad policies whom were found with lower thresholds. But good policies especially among the developing countries were usually as a result of outcomes of debt and debt renegotiations with the international financial institutions in the form of structural adjustments and conditionality. This is because at the centre of conditionality are the aspects of structural adjustment and trade liberalisation. According to Fafchamps (1996) however, conditionality helps the repayment of sovereign debt by providing a partial solution to a commitment problem. In certain situations conditionality promotes good policies that lead to the elimination of debt overhang. This is especially where conditionality comes with

concessionary lending of sufficient magnitude. But where it is anticipated by lenders, conditionality could get the IFIs and the debtor nation into a trap where the debt overhang is bound to persist; with conditionality continuing indefinitely.

The issue of debt over hang however, tends to dwell on the threat of default to the creditors and a risk of strangulation of domestic investments as a result of high debt servicing, on the part of the debtor. Government policy with regard to the effective management of its debt is necessary if an optimal utilisation of the borrowed resources is to be made. Thus, a debt management strategy should relate positively with growth. The process of debt management involves different strategies, for example how the denomination and maturity of debt instruments are selected, including debt securities indexation features; how to cope with changes in the relative supply of debt marketable instruments and how to evolve fresh methods of managing public assets (Missale, 1994). Sovereign debt management operations may be regarded as an effort to establish and execute a strategy with the main objective of carrying out the management of government debt, for the purpose of achieving the following goals: (i) to be in a good position of mobilising the specified amount of funds required for a particular period; (ii) the ability to attain the government's specified cost and risk targets and (iii) to fulfil the government's important objective of developing a vibrant, effective and efficient market for its securities (Williams, 2009). Ricci and Cordella (2010) however, argued that countries with sound policies tend to record high instances of the debt overhang problem, thereby questioning the relevance of debt management policy.

2.4 **Justification for Sovereign Debt Management**

Missale (1999), defined sovereign debt management as that government's choice pertaining to the composition of its outstanding financial obligations in the form of their risk-return features. Debt management involves a variety of policies which cover aspects of choice of the right denomination and the maturity profile of government securities to be issued; their indexation process; how the supply of existing securities changes and innovative ideas in the form of public assets. The management of sovereign debt has been regarded to be of economic importance especially in the macro economic affairs of a nation. As a matter of fact, the function of government debt management has never been more desirable than in the post 2008 economic crisis world that ravaged the world financial system and economy at large. In the heat of the crisis around the world, nation states implemented a wide range of strategies with the assistance of leading financial institutions to put their economies back on

track and to curtail the negative impact of the crisis – if the economy is not already deep in crisis. If debt distress was the major source of the economic decline facing sub-Saharan Africa, effective debt management by all the affected nations, as a measure to remedy the situation among the less developed economies would be appropriate. The effort would go a long way in securing the countries against the crisis and promoting the desired economic growth (Saleh, 2013). Weist et al. (2010), argued that there exists empirical evidence to support the fact that an effective debt management strategy could help middle and lower income countries stave off the negative effect of the economic crisis. However, debt management tends to become relevant when government borrowing has impacted on economic growth.

Beard (1965) presented a theoretical argument that promoted a position that debt management could be an effective stabilization factor. The argument was popularly referred to as a "First Approximation," or the "Availability Doctrine." In other instances the theory is called the "Roosa Effect," or the "Keynes Effect." Under the theory, it was argued that the demand function for money[2] is given as a condition where the demand for money (L) is said to decrease with an increase in the rate of interest (i); and increases with increases in national income (Y) or the level of government debt held by the public. The functional relationship thus shows that debt management operations can assist in restricting aggregate demand by prolonging the maturity of outstanding government securities through increasing debt. As a result a rise in D leads to a decline in the level of liquidity in the hands of individuals, where the desire to reverse the situation leads to an increase in the demand for money. Therefore given a constant money stock, an increase in money demand translates into a rise in the interest rate which invariably reduces aggregate demand. This implies that debt management operations serve as a reinforcement of monetary restraints. The demand function was however, found to be inadmissible because the variables i and D, as defined were mutually exclusive.

The "Availability Doctrine" employed in defence of debt management operations, tends to assert that a rise in long term and a fall in short term interest will affect the value of the lender negatively. This will lead to a reduction in liquidity and will in turn force lenders to shift to more liquid assets. Thus an increase in government debt tends to reinforce the policy of

[2] (L = L (iYD), where i stands for interest, Y represents the national income and D stands for the maturity of marketable government debt held by the public.

monetary restraint due to a reduction in aggregate demand, resulting in a drop in the availability of credit. According to Lawrence (1965) however, the objective of the availability of credit can equally be achieved through an effective monetary policy via open market operations. Hence it would be much more effective to achieve the desired objective through monetary policy rather than a combination of monetary policy and debt management. As a "Keynes Effect", debt management plays the role of a stabilisation tool. By means of keeping interest rates low in the short run, especially during periods of monetary restraints debt management operations are arguably a means of reducing the extent of change from demand for money to corporation's held marketable short term securities. Since corporations are not known to attach much significance to higher yields especially in the long term. Therefore an increase in velocity punctuated by changes in cash balances demand tends to have its magnitude reduced by an appropriate and effective debt management operation. But it should be recognised that one other behavioural relationship needs to take place if debt management is to make any impact in reducing destabilising shifts in retaining cash. However investors that are ordinarily interested in long term instruments due to higher rates, or reduced cash holdings by long term investors are bound to be of smaller magnitude compared to the desired cash holdings as a result of lower interest rates (Lawrence, 1965)

Considering how an increase in the level of public debt in relation to inflationary trends and the impact the process has on public debt, monetary policy becomes relevant. Nastansky and Strohe (2015) argued that public debt and consumer prices are connected in a two-way relationship: The impact of debt on money supply and the aggregate demand and the role of the monetary authorities. Thus debt financed government spending tends to stimulate macroeconomic demand in the short term, with prospects of inflationary trends in the medium to long run. This in turn would be triggered by direct purchases of public bonds by the government, or alternatively through private demand of public bonds triggered by a simultaneous expansionary monetary policy to stabilise increasing interest rates. This argument failed to strengthen the need for debt management. This is because it is believed that without debt management operations, monetary policy could have achieved the same result by simply reducing money supply by a larger margin. A question was thus raised as to whether debt management as a strategy is capable of accomplishing anything in difference to what traditional monetary policy had been used to accomplish. Lawrence (1965) observed that due to an error in the money demand function, there tends to be an incomplete analysis of the effect of the changing structure of interest rates on the behaviour of long term investors,

as well as on the desired liquidity of economic units. Likewise the assumption that relates to the behaviour of the lenders failed to be supported by any available empirical evidence. Debt management neutrality theory further opposed the relevance of debt and its management as a strategy for the attainment of a nation's economic growth.

2.5 **Debt Management Neutrality Theory and the Case for Debt Management**

It has been argued that, under the macroeconomic models of infinite horizon, coupled with complete markets, government debt is viewed as irrelevant and as a result believed to have no impact whatsoever on economic activity (Leong & Britain, 1999). This position was explained to be as a result of the practice among households that for any given level of expenditure which triggers higher borrowing, there always would be accompanying higher future taxes in the end. This argument developed into a theorem popularly referred to as the Ricardian Equivalence theorem. The theorem also known as debt management neutrality by implication as has relegated the need for government debt management. Debt management would thus have no impact on the economy whatsoever and is therefore not necessary. Buchanan (1976), however posed the query whether public debt issue was equivalent to mere taxation. He noted that the whole thrust of Barro's argument backing the Ricardian Theorem was only to the extent that taxes and government debt basically give proportionately the same effect. Buchanan (1976) hence argued that Robert J. Barro (1974) based his analysis assuming a fictitious overlapping of species of people with fixed life spans, which naturally makes taxpayers to try to take advantage of future responsibilities that government debt represents. And if and only if the so-called capitalisation happens, then government issued bonds may not give any additional value to the aggregate economic growth. Hence it was concluded that the swap of debt in place of tax finance may not trigger any impact on total expenditure.

But debt management could only be neutral and irrelevant provided a number of assumptions, already viewed to be unrealistic, hold. The assumptions stipulate that households seem to recognise that any variation in cost accruing as a result of government borrowing results in tax liabilities in later years, and it follows that households automatically adjust their consumption and savings behaviour in order to absorb the shift in government budgetary constraint. Secondly, taxes are assumed to be non-distortionary so much so that their imposition does not change economic behaviour. Thirdly, tax payers and bond holders are assumed to be the same which renders the relevance of concerns over distribution null.

Finally, there is the assumption that the choice of investment portfolios at the disposal of the private investors ought to contain the "same risk-return trade-offs" as given by government securities so much so that debts incurred by government may not necessarily create fresh investment avenues that were hitherto non-existent (Missale, 1999). The fact that these assumptions were rejected as utterly unrealistic as in the forgoing discussion, more works have emphasised the relevance of government debt management. Tobin (1963), observed that government debt can be regarded to consist of two kinds of impact. The direct effect of the budget occurs when expenditure is in excess of receipts. And this happens when the debt is being acquired. It follows that when expenditure is higher than receipt then the higher becomes the aggregate demand. This translates to a surplus or a deficit at the end. The second effect of debt is the fiscal effect which mainly depends on the rate of borrowing than the size of the debt. To measure the effect here we need to measure the budget to see whether it is in a deficit or a surplus. Thus the debt incurred will serve as the opening balance for the new year.

Debt management is however argued to matter greatly and is relevant for several reasons. Outlining the importance of the newly developed field, Missale (1994) argued that; (i) if taxes were distortionary to incentives, the process of debt management can be used to support the distribution of tax rates which eventually reduces distortions. In addition, if time inconsistency was the issue, debt can also be managed to beef up the credibility of promoting new policies. (ii) Provided private security markets remain incomplete, it follows that the set of public securities along with the implied distribution of taxes tend to determine the equilibrium allocation of risks. In this situation debt management can conveniently improve intergovernmental risk sharing. Furthermore debt management can readily provide human insurance to safeguard against situations of missing markets for human capital; (iii) Debt management tends to affect the opportunities facing investors in situations where financial market imperfections and other externalities arise. Thus with the markets for private securities, inefficiency can be minimised with the promotion of a robust market for government issued securities; and (iv) because the public tend to fail to take account of the existing tax risks, government debt management strategy is a ready tool to be employed to alter the pattern of risk distribution or even to change the perception that risky and cheaper borrowing can later be issued and the perceived insurance provided.

The Ricardian Equivalence Theory which opposes the relevance of debt management. can only be justifiable among the developed economies for instance the OECD, the USA and others where the domestic market is well developed, vibrant and sensitive to the central government's policies. The Ricardian Equivalence Theory tends to be a valid approximation for the developed economies (Khalid, 1996). The theory may however lack validity and relevance for a majority of the countries in the lesser developed world especially those in sub-Saharan Africa. If the equivalence theory holds in lesser developed economies, it may have to follow that the IMF's proposed programmes that are mostly on demand management and are tailored to control fiscal deficit policies do not affect aggregate demand (Khalid, 1996).

According to Smetters (1999) there was currently no agreement in the academic literature about the empirical relevance of the theory of debt neutrality. Even those sympathetic to the theory tend to acknowledge its theoretical shortcomings. For example the argument that government spending is on consumption type goods does not stand either. This is because if consumption type goods are regarded as substitutes for private consumption then private consumption is bound to fall heavily following tax increases. However when government spending is based on investment-type goods which in turn give rise to further production of goods and services which are regarded as substitutes for future private consumption, then any future private consumption will be less affected by government tax resultant from its debt; depending however on the degree of substitutability between production and consumption. Barro (1976) further contends that private debt are not actually substituted due to budget-constraint requirements, but rather because private debt will be crowded out provided public debt issues result in an increase in the supply of earning assets and consequently to a rise in interest rates. One-to-one increase in the demand for bonds happens where the future tax obligations brought about by government borrowing are completely capitalised. However working on debt management in the process of fiscal stabilisation, Missale et al. (2002) casted doubts on the relevance of debt management theories which emphasise the strategic use of debt instruments. More academic efforts however began to question whether the criticism of the Equivalence Theory was valid particularly in a general equilibrium. See for example, Aiyagari (1989) and Evans (1991) where it was indicated that long run capital could become neutral to borrowing if some family lines in the economy had current bequests.

2.6 **Strategy in Sovereign Debt Management**

Blommestein (2009) explains the strategy of debt management to a process by which a laid out plan to realise a number of government's set out objectives on debt and its liabilities. Thus, public debt management strategy stands for the setting up of objectives and policies for the management of government liabilities as well as providing frameworks for making portfolio arrangements and decisions in respect of certain parameters for cost and risk. Sovereign debt management also encompasses the important choices inherent in government debt management which concern the characteristics of debt instruments (Saleh, 2013). The process extends to include (currency) composition of the desired debt; the desired maturity structure and liquidity of government debt; appropriate duration of interest rate sensibilities; and the proportion of the domestic currency denominated debts, nominal interest or indexed to inflation debt to be issued. Another important aspect of the strategy of debt management is issue of cost and risk approach and the evaluation of the strategies in respect of the different projections of the forecasted costs and risks under different strategies for managing government finance. Wheeler and Jensen (2004) and Togo (2007), argued that the objective of debt management is different from those of government fiscal and monetary policies but tend to overlap in the policy instruments and are not irrelevant. Missale (1999), however argued that the government objective of minimising the expected cost of debt and possible risks are not operationally useful and may turn out irrelevant. He even contended that the debt management objective of risk and cost reductions are not actually easy to accomplish especially in the absence of an appropriate determinant of the degree of risk aversion. This is the case despite the fact that the whole objective of real debt management is actually reflected in the cost-risk trade-offs. Melecky (2007), observed that debt management strategy can formally be considered in two forms: To serve as a set of guidelines to debt managers as to the costs and risks involved that could invariably refer to the structure of government debt; and the other serving as a benchmark where all the risk attributes are clearly spelt out and weighed, portraying in the process the optimal level of debt desirable at a point in time.

Economic theory is not very specific about the appropriate response to many queries raised under the strategy of government debt management (Scott, 2009). However questions that are frequently regarded as unrelated are now seen to be relevant. The question of the appropriate amount of debt to be raised by a government at a given point in time and to what extent such an amount should be changed over time is one question; and the other question has to do with the aspect of composition of the debt government should issue, i.e. the type debt and how it

can be varied over time. According to Williams (2009), both the size and composition of government debt are relevant issues in the determination of debt management strategy. Issues relating to the size of debt implies a prioritisation of a country's track record in debt sustainability. Debt sustainability which is not the focus of this work, is a term that is used to refer to the ability of a nation to maintain the servicing of its debt liabilities with no unrealistic tempering to its income balances and level of expenditure (Saleh, 2013). Under debt sustainability much emphasis is directed at the possibilities of underlying vulnerabilities associated with defaults and delayed servicing of debt. Debt sustainability analysis is mostly employed in policy and policy making decisions as well as the primary balance. It is used in situations where stress tests on results and alternative scenarios exposes the underlying weaknesses in government debt, and promotes realism in meaningful projections.

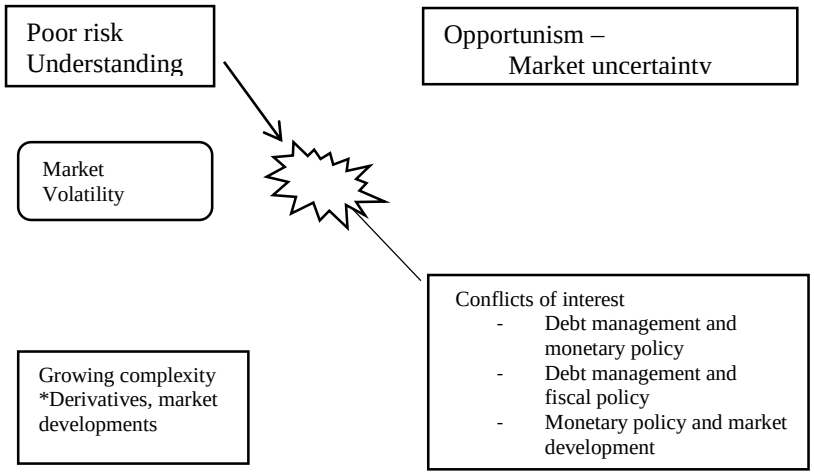
Debt management strategy on the other hand, is however more concerned with the composition of government debt portfolios rather than the overall amount borrowed. For a debt management strategy to be viewed as ideal it is expected to be more inclined towards the realisation of a status of improved resistance to economic shocks; with a full acknowledgement of vulnerabilities arising from the composition of the debt portfolios. According to Tobin (1963) debt management operations could go a long way to supplement monetary policy of a nation to implement beneficial long term interest rate effects, as well as other investments and the credit market.

Debt management strategies can be employed as an instrument for use in solving the problems associated with changing optimal taxation confronting various governments (Giovannini, 1997). There are different models of debt management strategies, which are based on the assumptions that given known capital markets, governments proceed to solve optimization problems on an objective function involving a set of constraints. Examples of debt management models that define the different strategies, include inflation-or foreign-currency-indexed-debt. This strategy can be employed by a government for the purpose of signalling its type. Under this arrangement a government which issues real bonds is for a government that has no intention to inflate the economy (Giovannini, 1997). It follows that when markets perceive the signal, governments would be able to source funds at lower costs.

Debt management becomes a very relevant field as a result of certain causal factors and their subsequent effects. The size and growth of a country's indebtedness as measured by Debt to GDP ratios is a measure that generally suggests a fiscal problem facing a nation; which can

be both in the short or in the long run. Secondly when government portfolios are poorly structured e.g. where the maturity, currency or the interest element composition are mismatched with too much concentration on short or foreign debt, this could lead to a financial and economic vulnerability and to some extent damage to a nation's creditworthiness. Furthermore where a government incurred large and unfunded contingent liabilities; and certain exposures to economic shocks (i.e. lack of liquidity) there is bound to be a repercussion in the form of damage to private sector development and even inter-generational inequality in the system. Figure 1.0 represents the debt crisis of the 1990s.

Figure 2.1



Source: (Williams, 2009)

The key debt indicators of a country may vary depending on such a country's debt portfolio and its capacity to manage the inherent risks. Equally there is the need for the analytical basis of the determination of a country's risk indicators to be disclosed, especially in the process of formulating an effective debt management strategy. In this direction the World Bank guide to Debt Management Performance Assessment Tools (2009) outlined specific indicators to be considered in an assessment of the determination of risks associated with government borrowing, as follows: (i) the total debt service that should be assessed under different scenarios, especially in relation to sensitivity to interest rate and exchange rates; (ii) the maturity profile of different debt scenarios; and (iii) strategic benchmarks, which includes the proportion of foreign currency to domestic debt; the currency composition of foreign currency debt; the minimum average maturity of the debt; the maximum amount of debt that is allowed to fall due during one and two budget years; maximum share of short-term debt to

long term debt; maximum share of floating rate to fixed rate debt; and the minimum average time to interest rate re-fixing (Bank, 2009).

However, where a country has limited access to market-based debt instruments and therefore relies heavily on external official concessional finance, most of the outlined risk-based parameters may turn out to be not so relevant. This will be most probable in sub-Saharan Africa where the countries had weak rates of capital market development. In such instances the most relevant parameters to containing the risks to the debt portfolio might be assumed to be meeting the concessions requirements, the composition of currency, and the amount of debt that needed to be refinanced over a particular period and monitoring of the ability of the country to sustain existing debts. As a result, debt management performance assessment (DeMPA) was developed to assist developing countries to identify the priority areas that need improvement in the area of debt management (Bank, 2009). The DeMPA evaluates the strength and weaknesses in public debt management through a comprehensive set of 15 performance indicators that cover six core areas of public debt management functions: governance and strategy development; coordination with macroeconomic policies; borrowing and related financing activities; cash flow forecasting and cash balance management; operational risk management and debt record and reporting (see Appendix A).

2.6.1 Debt Management Strategy: Indexed Debt

Government Debt should be structured with the intent of hedging against macro-economic shocks. Macroeconomic shocks are known to affect government budgets; and in particular against aggregate output. Therefore any optimal structure of government liabilities must generally include securities that are regarded as risky but which are state contingent in real terms (Bonn, 1990). Therefore nominal and long term debt tends to portray some desirable features as hedges and thereby may be considered as instruments in effecting sound government debt management.

Because nominal and long term debts possess some properties of sound hedging against potential risks they motivate the practice of issuing non-indexed debt of different maturities. It has been argued that risky nominal and long term debt may be used as a government instrument to improve the welfare of its citizen. This is made possible by the government taking a short position in the securities market. In addition the government does have the option of issuing foreign currency denominated bonds and bills in the capital market. Furthermore the government issue of treasury bonds and bills of various maturities may be

considered as a risk-free venture especially when regarded in terms of default risk. The real value of the instruments tend to change substantially. Alfaro and Kanczuk (2006), agreed that fiscal policy tends to revolves around the choices bordering on expenditure, taxes and debt. Accordingly choices related to debt obligations invariably include maturity structure of debt and the decision on whether to issue nominal or indexed debts. The alternatives may even be extended to the decision of whether debt repayments should be made contingent on other external variables such as a country's output. Calvo (1988), argued that public debts should be indexed. This reasoning is premised on the rationale that when a government issues nominal debt it is forced to monetize it by the self-fulfilling investors (the private sector). The fear of debt monetization by debt holders or the private sector pushes them to demand a higher nominal rate of interest. This will continue to the extent that government is not in a position to pay premium interest rates which could potentially trigger an increase in future tax burdens. Thus the option of monetization becomes inevitable.

The choices between indexed and nominal debt may however become irrelevant especially if governments are faced with uncertainties in relation to their expenditures as well as tax receipts (Alfaro & Kanczuk, 2006); and also where taxes are found to be irrelevant or ineffective in altering consumers' or firms' attitude in the market. This is argued to be unrealistic but where it occurs governments can resort to the choice of financing its spending by increasing taxes on current tax payers or outright long term bond issues that will be repaid by way of raising tax rates. Taxation as a fiscal measure has however been relatively ineffective as a policy. Generated revenue has always been a negligible proportion of the total revenue especially amongst the raw material producing nations of the region. While the institutional framework on the ground to ensure the collection of the right taxes is inefficient, the problem of corruption is hindering much of the gains to be tapped from the revenue source. Ghura (1998), observed that the average total tax revenue-GDP ratio for sub-Saharan African countries was about 17 per cent between 1985 and 1996. Of this number only 9 countries in sub-Saharan Africa had a ratio of below 10 per cent and 10 countries with a ratio of above 20 per cent. But the choice between taxes and debt becomes relevant only in situations where the reality of the distortionary nature of the effect of taxes on consumers and firms are truly acknowledged and allowed. Debt indexation stands for the elimination of the pressure that leads government to monetize and as a result neutralises the expectations that induces government to monetize. While nominal debts offers the government the incentive to

default through the process of inflation; indexed debt on the other hand reduces the government opportunity to inflate for the purpose of reducing the real cost of nominal debts.

In the past monetary economists such as Jevons (1885), Marshall (1887), Keynes (1927) and many others were in favour of government use of indexed bonds in place of nominal bonds. Generally nominal debts are preferred over indexed debts because there is the presumed stability of the price level in addition to the frictions that are associated with the index debts. Nominal debts are therefore regarded as a more standard form of government liability.

Indexed debts are however preferred over nominal debts for several reasons. Firstly indexed debts (bonds) are known to provide the economy with a safe real asset that it would not have had; assets which actually are needed for optimal sharing of risks in an economy. Furthermore, indexed debts enjoy better preference over nominal debt because monetary policy tends to operate better with the use of the indexed debts (Tobin). Indexed debts tend to be regarded as a replacement for physical capital over any other liability held by the government. Because any sound and effective monetary policy should have the objective of controlling the market prices of the available installed capital. The variability in the quantity of indexed debt thus offers the opportunity for the achievement of such accurate controls much more than where the use of nominal debt is involved. Bach and Musgrave (1941), observed that Government issue of debts that indexed to inflation had the benefits of the following: (i) encouraging savings in the economy and also bring down the pressure of inflation; and (ii) indexed debts tends to give incentives to portfolio holders to reduce their money holdings in preference to longer term securities in the form of bonds. This would ensure that government deficits could be financed at a relatively lower rate in comparison to where nominal debts are issued. But because the government is the cause of the inflationary trend in the economy it is invariably and systematically cheating investors in nominal bonds especially the small savers among them. However with indexed bonds this problem would not have happened because inflation is already being taken care of.

Most criticism of government use of indexed debt has to do with the neutrality theorem arguments; where Robert J Barro (1974) argued that deficits financed with debts portend no different effect from that obtained from taxation

2.6.2 Debt Management Strategy: Debt Maturity

The recent theories of debt management cover a relevant concept of debt maturity under the elasticity of debt value to unexpected inflation. Barro (1979), modelled the optimal maturity of risky market instruments in the process of government borrowing. This is where the optimal policy in government debt requires such a structure of government debt that translates the value of debt into state contingency. Thus the government tries to hedge against such macro-economic shocks that may impair its proposed budget. Buera and Nicolini (2004), outlined how the state-contingent debt structure is derived via a model with risk averse tax-payers. According to Alfaro and Kanczuk (2006), the maturity of debt matters only where there are uncertainties involved in government outlays, real interest rates and receipts or output. Under such situations achieving a level of optimal taxation or composition of market instrument maturities will require what is called the smoothening of taxes over certain situations. This is a process where the government will be forced to issue claims that are contingent on the appropriate risks. This in turn will eventually determine the optimal structure of debt or the choice between nominal and indexed debt on one hand and the choice between short and long term debt to be issued by the government. In essence we mean to suggest that government should make effort to stabilise taxes across many other states of nature, because taxes tend to be a function of debt policy. This condition clearly supports and defines the features of the optimal debt structure. The debt structure can therefore be used directly to test for optimality in the choice of debt.

The choice from two or more different debt maturities tend to serve as a debt management strategy for government. This is where the longer the maturity of government debt the greater the gain a government makes from deflation (Giovannini, 1997). However, depending on the choice, long maturity debt can be very costly to a government especially if such a government is contemplating reducing the size of its borrowing through inflationary measures. Furthermore, debt management strategy can become a means of funding risk. Here it is argued that the lower the maturity of government debt, the more frequent the sale of government securities in the primary market tend to become. However, when the cost of debt becomes sensitive to the market rate of interest there is the tendency for the existence of multiple equilibria that may be characterised by oscillating interest rates; a development that could lead to crisis.

2.7 **Problems in the Development of Debt Management Strategy**

According to Williams (2009), there was an inherent crisis in the earlier years (1990s) concerning the development of an appropriate debt management strategy. Debt management was expected to deal with the issue of exchange rate and interest rate volatility; financial markets liberalisation created opportunities and the challenges arising from there. At the time the crises' vulnerabilities led to poor structuring of debts and contingent liabilities and the realisation of the asymmetric nature of risks. Finally there was no systematic approach to risk where the strategic objectives of portfolios were poorly defined and there was total lack of understanding or data on debt balance sheets. There was an apparent confusion of the relevant institutional arrangements to handle debt management and strategy implementation. There was a crisis of authority between the central banks debt management offices, between debt management and monetary policy. There was a poor understanding within the governments about the activities in the financial markets – both market structure and market behaviour and there was a general lack of skills and required expertise.

Debt management in sub-Saharan Africa may however turn out to be very difficult to implement. This is because the requirements necessary for an effective debt management system may prove extremely tough especially where the prevalence of a poorly developed, or a total absence of a functional capital market is the case. It had been argued that there were few African countries that could successfully finance a deficit that would amount to an equivalent of 1 per cent of such a country's GDP through the sale of government securities in the domestic capital market (Roe & Griggs, 1990). Thus, the process of developing an effective domestic capital market may prove difficult due to the presence of both macroeconomic and political instability. In addition, due to the incident of controlled interest rates investors may become discouraged, fearing unrealistic returns. But a major deficiency in the ability for sub-Saharan African countries to develop an effective debt management strategy is the lack of an effective and stable capital market. A major objective of any government's debt management policy is the ability for such a government to develop a viable and stable capital market. Thus, the promotion of an effective and efficient capital market is directly dependent on the consistency of the frequency of a continued supply of government marketable securities which, in turn make possible the accessibility to a variety of capital instruments. The factors which tend to stifle the availability of securities in African markets are given below:

"(a) A predominance in many African countries of very small corporate sectors; (b) A heavy dominance within the corporate sector of public enterprises used to borrowing directly from government; (c) Within private corporate sectors, predominance of family owned businesses unhappy, possibly, about the greater disclosure and security associated with public issues rather than in family borrowing and lending; (d) The high costs of issuing and trading in securities arising from thin markets and unsophisticated techniques; (e) Fiscal disincentives for the issue of securities relative, for example, to borrowing from the banking system; and (f) The absence of any positive incentives for companies going public." (Roe & Griggs, 1990, p. 30).

Sub-Saharan Africa however, tends to remain at the early stage in the process of defining a comprehensive medium term debt management strategy (MTDS). This, as with other many low income countries occurs as a result of the absence a functioning domestic public debt market that might assist in reducing financial vulnerabilities. This shortcoming is however more prevalent among countries that benefitted from the multi-lateral institutions' programmes and initiatives such as the HIPC and the MDRI debt relief (W. B. a. IMF, 2007). In the process of debt management the minister of finance shoulders the responsibility for all government borrowings and the function of running of the aspect of debt management rests with the specified debt management office. Usually the process of delegation of authority gives rise to principal-agent problems; such that in the presence of asymmetric information the case of moral hazard may occur because it becomes difficult for the principal to monitor the activities of the agent. Generally it is however imperative that for the purpose of establishing effective agency arrangements to effectively handle the issue of public debt management a number of important considerations have to be taken into account (Currie et al., 2003). For the purpose of designing a suitable governance structure the following five points are necessary: (i) Debt management offices should be identified as independent and autonomous with clear responsibilities; (ii) Debt management offices should be specified clearly; (iii) Debt management offices should be afforded with incentives that will trigger the desirable level of effort and skills to be applied and revealed; (iv) There should be in place provisions for effective monitoring and risk control to cover the agent's activities; and (v) The principal agency should be able to conduct monitoring functions over the activities of the agent.

To achieve an effective debt management there is the need for all government officials in charge of debt management, fiscal policy, monetary policy and cash management; fiscal policy advisors and central bankers to be brought together in harmony and to be coordinated for the purpose of understanding the objectives of debt management and fiscal and monetary policies. This is more the case especially with the existence of interdependencies between different policy instruments. Debt management arrangement has it that government's fiscal advisors are usually responsible for carrying out debt sustainability analysis, information on the financial risks arising from the debt portfolio, while debt servicing projections is the duty of debt managers. This remains a key input particularly among countries posting high debt figures. A link tends to exist between a sound and effective debt management strategy, especially which includes a range of financial market scenarios and useful insights into the impact of changes in debt servicing costs on fiscal sustainability. Such results and its analysis can prove useful as a basis for policy coordination by governments to ensure that the policy mix is consistent and sustainable. It is the responsibility of the debt managers to ensure that appropriate communication channels are put in place to inform the government in a timely way about any emerging debt sustainability problems. In situations where the level of financial development allows, countries should separate debt management and monetary policy objectives and accountability. This way effective cash management contributes to an efficient debt management as well as assist in the implementation of fiscal and monetary policies. The government official responsible for debt management should work towards ensuring availability of sufficient cash, which is adequate enough to meet government's financial obligations as they fall due. Efforts to meet this basic requirement when cash management practices are inadequate can result in large idle balances and over-borrowing, with associated negative consequences.

2.8 **Functions of Debt Management**

A basic functional objective of government debt management is the ability to finance government deficits through the process of the issuing of government debt or bonds as well as the management aspects of government monetary financing. By so doing it is expected that the set objectives of maintaining a good access to market, ability to drastically minimise the cost of borrowing, ensuring a prudent and manageable level of risk and ensuring the development of an effective and efficient government securities market could be achieved. The function of ideal debt management therefore becomes that of securing market access; ability to develop a good government securities market, the establishment of a system that

will aid in the management of outstanding stock of public debt and general cash management (Blommestein, 2009). The World Bank (1990) defined in broader terms the function of an effective government debt management. The Bank views effective debt management as a process that primarily revolves around seven major functional areas: The issues of policy, regulatory, resourcing, recording, analytical controlling and operating functions. The first three functions of policy, regulation and resourcing can easily be attributable to the executive aspect of debt management, and the last four have to do with active operational aspects of debt management. The IMF (2000), defined sound debt management as a process involving a careful coordination of different but important economic policy issues that are meant to influence the methods of sourcing external loans, how they are utilized and the assessment of the capacity of the borrowing nation to meet the servicing needs attached to the facility.

In more developed economies the issue of implementing an effective debt management with the outputs as indicated is quite achievable. The prevalence of functional financial market institutions will make both the executive and operational functions of debt management possible. In sub-Saharan Africa however only the executive aspect can be achievable to a larger extent. Elizabeth (2003) observed that in developing as well as transition economies where domestic debt markets are not quite developed, debt management and monetary authorities as represented by the central banks may be forced to operate in the same portion of the market which is invariably one of short term maturity by nature. Eventually the involvement of the central bank indicates a contractionary monetary policy which in turn affects the ability of the debt management office to achieve its function of attaining roll overs at reasonable cost. This problem may leave the Debt Management Office with no option but to borrow from external sources. Another factor is that the availability of a deep and active market may prove difficult and unfeasible in countries by characterised by frequent levels of macroeconomic and possibly political instability as is prevalent in sub-Saharan Africa (Roe & Griggs, 1990). The financial systems at any given period tend to help by offering some security against certain uncertainties but are unlikely to work when the situation involves more serious issues such as the inflationary trend that is very prevalent among the SSAs.

2.9 **Issues in sub-Saharan African Debt**

During the debt crisis of the 1980s the debt management strategy adopted by the leading creditor nations was to encourage the commercial banks to reschedule repayments and by extension of more credits but not exceeding the equivalent of interest repayment by the

debtor countries in both Latin America and Africa. Jeffrey Sachs and Williamson (1986) noted that the debt burden is usually measured as a discounted flow of resources which the borrowing nations must remit to the lending countries. With much restrictions on debt relief Jeffrey Sachs and Williamson (1986), proposed a new debt strategy, viewing debt relief as necessary because it was regarded as a safety valve for countries that were collapsing under the debt burden. *It makes little sense to argue that relief is unwise because 'on average' the debtor countries may be recovering* (Jeffrey Sachs & Williamson, 1986).

A debt management strategy was therefore promoted based on the following criteria: that debt relief was to play a role in a new comprehensive strategy of debt management; that debt relief can and must be applied discriminately among nations, focusing on those nations considered most in need; that it was believed that selective debt relief would not pose any threat to the international financial system; that concessional financial arrangements should be made to increase net transfers to the debtor country where debt relief is considered not desirable; that the world financial markets should be made to absorb the risks of the debtor countries by way of encouraging multi-year rescheduling agreements, explicit interest capitalisation and making contingency clauses to link capital flows to terms trade and finally the introduction of case by case international monitoring of debtor nations' progress after the process of financial restructuring.

Thus, several countries in sub-Saharan Africa qualified for the HIPC debt relief initiative commencing from the early new millennium. But then it was argued that even after the debt relief governments' discount rates remained at least in the two periods before and after the debt relief, resulting in return to all the unwanted policies even after debt relief (Easterly, 2002). With this development many saw debt relief as a strategy purposely for the benefit of the creditor nations and institutions in order to salvage and stabilise their markets that has been frequented by the debtor countries. Berthélemy and Vourc'h (1994), argued that the step-by-step strategy of debt relief as put together by the multilateral financial institutions and other private creditor bodies was actually packaged to systematically relieve the lending banks involved from the burden of the harsh debt crisis. The debt relief granted was not in any way too much as a benefit to the debt ridden countries, debt relief was rather meant to prevent the creditors from being exposed to the looming financial crisis and the danger of bank failure. Barry and Tomitova (2006), raised a serious ethical question on the debt, on which relief is claimed to have been granted. According to the researchers, incorrect and fictitious suggestions most of the time being made in reference to the level of poor countries'

indebtedness create most of the time a wrong impression such that reneging on such stands is equivalent to what they think in error to be ‘debt relief’ or alternatively by stopping to make the whole claims the lending bodies or institutions have in a way ‘reduced their claims’ on a ‘debtor.’ To these two researchers it follows naturally in such times of claims and counter claims to actually believe that there were no debts in the beginning of it at all.

It is noteworthy however that there was actually no improvement in the economy of any debt relief beneficiary nation as a result of any sound policies or improved external environment. The slight change was simply as a result of the quantum of the debt relief and temporary debt relief obviously turned out to be a mere increase in free funds at the disposal of the benefitting nations which had no effect on the longer term debt situation of the poor nations. The IMF (2009), reported that the issue of unsustainable debt was yet to be completely resolved. According to the debt sustainability analysis (DSA) that was conducted in most of the year 2008, showed that about 61 per cent of sub – Saharan African countries fell under nations categorised under the low and moderate risk of debt distress.

2.10 **Debt Relief as a Strategy in Debt Crisis**

In countries such as Argentina the dictatorship borrowed heavily from the international capital market, mainly at variable interest rate bank loans from the US and the European banks who were lending recklessly in search of higher yields, for the purpose of financing government and current account deficits. This led to private sector external debts increasing rapidly and at the time record high interest rates in the early 1980s caused a global recession which culminated in debt crisis in countries, including those in sub-Saharan Africa. The debt crisis which started from the latter part of the 1970s, was at a time when international private lending to developing country governments expanded and largely took the form of a new type of medium-term loan that was brokered by syndicates of internationally active commercial banks. The facilities were however not the classic form of general-purpose medium to long-term credits to nations, which were usually in the form of bond issues that got floated domestically or in the international financial markets. Bond issues in the international financial markets had been comparatively slow to recover from the two world wars and the Great Depression, although by the 1990s, foreign and international bond issues once again became major instruments for foreign lending to developing country governments.

The syndicated loan market did not disappear in the 1990s, but turned its attention mainly to major corporate financings, especially within the United States, but also in Europe and emerging economies in Asia and elsewhere. Perhaps one factor for the lower level of interest in additional syndicated bank lending to many of the developing country governments had to do with the unhappy experience with this type of lending in much of the 1980s, a situation where many sovereign borrowers could not service their syndicated loans according to the terms initially contracted. Eventually the final restructuring of the distressed bank debt in the early 1990s, saw the conversion of the same syndicated loans into bonds. A particular loss in this whole new arrangement was the fact that the international mechanism that evolved to renegotiate sovereign debt to international banks was flawed and failed to lend itself to being adapted to restructuring the bonds of debt crisis countries. This turned out to be the sole reason that proposals for a new sovereign debt-restructuring mechanism were seriously considered in the early years of the present decade. According to Herman et al. (2010), the Baker plan began with the acknowledgement that the debt-servicing difficulties of the major crisis countries, were of a more 'structural' character than had been accepted in the first stage, when temporary austerity and debt relief were the policy focus. Consequently, the Baker Plan called for a triad of requirements in order to restore the capacity of the highly indebted countries to service their outstanding debt and return to creditworthiness. Even though the institutional basics of the strategy followed during the first stage were preserved in the Baker Plan, innovations were needed to deal with consequences of the structural character and not merely the short-term nature, of the prescribed reforms and the desire to recover adequate and sustained economic growth rates (Herman et al., 2010).

The Brady Plan introduced in the year 1999 was however a purely concerted effort at a debt relief package where commercial banks were given the option of choosing from a new menu and debt reduction of new money and debt-stock reduction options that were implemented within a framework of policy conditionality (Claessens, Detragiache, Kanbur, & Wickham, 1997). In practice however very few of the commercial banks were ready and willing to extend fresh facilities and the Brady Plan was meant to be a debt reducing programme. The Brady Plan however was a plan that was mainly concerned with middle-income countries, who were mainly indebted to commercial creditors; which invariably had little or no relevance to the flight of the HIPCs. The Brady Plan was however seen to play a central role for macroeconomic stabilization in economic reforms through undertaken debt reductions (Arslanalp & Henry, 2006).

However, unlike in the "Brady" countries, debt relief as promoted in 1996 failed to work out especially among sub-Saharan countries. These countries were not actually facing problems of debt overhang. Debt overhang which refers to a condition where a country owes more money to its creditors than it would normally be able to pay (Krugman, 1988), and where a country tends to invest an amount far below what it would have invested if it had not had the debt (Jeffrey Sachs & Williamson, 1986). Furthermore in the process of debt relief there was no provision for the protection of the HIPCs from external shocks (Martin, 2004) where the multilateral institutions made little or no provision for development finance. In many instances donor nations are more concerned with the repayment of loans due to western companies (Dijkstra, 2004). These inconsistencies led to a situation where most HIPCs have slipped back into distress or were showing signs of distress (IMF, 2009) because the initiative did not provide for debt sustainability (Martin, 2004). Kuteesa and Nabbumba (2004) observed that in Uganda, a HIPC, debt to exports ratio was recorded to be 50 per cent higher than it had been before the debt relief. Uganda had however received extensive assistance from DRI and MEFMI long before the HIPC (CPB, 2008). With the failure of the debt relief initiative it is thus left for countries faced with the threat of a debt crisis to develop a suitable strategy for managing their debts.

The failure of debt relief as a debt management strategy among low income countries especially under the HIPC initiative was because countries lack functional economic institutions that provide the necessary foundation for profitable investments and the attainment of economic growth (Arslanalp & Henry, 2006) rather than as a result of the debt overhang phenomenon. For the poorest countries several important policy initiatives were launched since the year 1997. For instance in late 1999, the IMF's concessional lending facility was replaced by the Poverty Reduction and Growth Facility (PRGF). The PRGF had its objectives broadened to include an explicit focus on poverty reduction, where Poverty Reduction Strategy Papers (PRSPs) were to be prepared by the authorities of low-income countries in open consultation with Civil Society and were intended to provide the overall framework for the international community's support to low-income countries (Ross & Harmsen, 2001). The debt initiative for the Heavily Indebted Poor Countries (HIPC) Initiative, adopted in 1996, got enhanced in the fall of 1999 to accelerate, broaden and deepen debt relief for poor countries. Debt relief was directed at financing poverty alleviation where total assistance under the programme originally amounted to $3.5 billion in net present value (NPV) terms. Furthermore, the enhanced HIPC initiative that came on by the year 2000, had

a total assistance amounting to $20.3 billion in NPV terms all committed to about 22 countries.

2.11 **Operational Debt Management**

In practice an effective and efficient debt management strategy involves different financial and economic applications that could result in the attainment of economic growth over time. For instance the process of debt management may concern itself with the maturity of debt, the risk and the costs involved. Debt management can go further to consider the type; domestic or external, long or short term and whether nominal or indexed. To many people sovereign debts can be viewed solely as an extension of taxation by governments and vice versa.

Sovereign debt management however represents any official action by the apex monetary authorities and the treasuries that are designed to alter the volume and composition of a national government's debt obligations in the possession of the public (Rolph, 1957). But claims on the central government in the possession of individual and corporate bodies are however of different types (Tobin, 1963): (a) Demand obligations that are transferrable; (b) Marketable short term securities; (c) Long term marketable securities; (d) Securities that are non-marketable; and (e) Other government obligations.

From the categorisation above it is evident that the first group represents securities and other deposit obligations currently issued by the central banks through the debt management offices. The next two groupings are securities with a maturity range of three months and up to forty years. Savings bonds fall under category d. The main focus of debt management was to reduce long run costs of a government held debt (Boothe & Reid, 1992). But Tobin in 1963 assigned two major roles for debt management. Primarily debt management was together with monetary policy, achieve economic stabilisation. The secondary function of debt management was then, to minimise the interest cost of public debt. The principle of debt management was however regarded as rendering utility choices to a national government. This resembles an old economic idea that promotes efficiency. It therefore follows that at different combinations of debt, the government may derive different utilities but at different costs of debt. Thus, the composition and size of government debt becomes optimal when its marginal utility equals its marginal cost. The utility of debt results from the government's revealed preference for a particular monetary stability and when an outstanding debt tends to affect the expenditure pattern for current output (Rolph, 1957).

2.12 **Domestic versus External Debt**

In the current era of a globalised world system, the traditional distinction that existed between external and domestic debt scarcely stands anymore. The dichotomy between the two different debt issues would have been possible if governments issuing debt find it possible to track down the ultimate holders of their bonded debts. This however is not practical. Debt issues made in the international market are classified as external debt (Levy Yeyati, Borenstein, & Panizza, 2005); while those debts issued in local or domestic markets are referred to as domestic debts. The composition of debt however does matter a lot in the process of evolving an effective debt management strategy. It is however very important for any debt management strategy to take into cognisance the fact that the composition of debt is not the real source of vulnerabilities. According to Panizza (2008), a good source of vulnerabilities to an economy are rather due to currency and maturity mismatches especially among countries with an open capital account and having a large stock of foreign or short-term domestic debt.

To be able to participate in a complex and uncertain globalised financial market even lesser developed economies need to develop and sustain a strong and viable domestic capital market. Just before the late 1990s domestic fixed-income securities markets were undeveloped in several emerging economies and almost all of the poor nations of sub-Saharan Africa. This condition resulted in excessive reliance on external sourcing of finance, which invariably further exposes these countries to more external vulnerabilities, making their participation in the global financial system risky, threatened by shocks and difficult. This is because an influx in foreign exchange can lead to increases in liquidity which in turn poses the danger of macroeconomic instability in the form of inflation.

Domestic debts are characteristically good to offer an equally suitable source of finance especially to take care of government deficits that are not wholly foreign financed. Domestic debts can also be employed as instruments of implementing government monetary policy. According to Christensen (2004), domestic debts are sources of financing open to governments trying to deal with economic issues related to deficits which are not totally financed using foreign funds and also for use in the implementation of a certain monetary policy. Domestic debts can be issued for the purpose of closing budget deficit gaps by governments faced with the problem of large recurrent deficits. Domestic borrowing can also come very handy in trying to achieve specified monetary policy targets. This mechanism is

the case where a country enjoys substantial balance of payment surpluses that could have been as a result of large aid inflows or revenue from crude sales. Blommestein and Horman (2007), however observed that debts denominated in local currency often tend to be costlier than those issued in foreign-currency although local-currency debts are believed to reduce exchange rate risks. When this happens central banks remedy the situation by issuing instruments of domestic debt. But Alberto Alesina et al (2009), argued that governments have two major ways of reducing the value of their debt riskiness. One way is by incorporating in the prevailing nominal interest rates a raise in inflation far above the public expectation and the second approach is for a government to embark on an outright default or more appropriately, repudiation. This is done by government use of taxes on government debt holdings and cancellations stemming from debt obligation laws. Any impending risk of default is compensated by the government pushing up costs in government finances in an effort to calm investors.

Blommestein and Santiso (2007), however developed some modalities to avoid external vulnerabilities brought about as a result of borrowings originating from foreign markets: (i) Governments should endeavour to reduce both the global level of their external debt as well as change the composition of debt and maturities to short term debts; (ii) Governments should make reallocations with a view to issuing more local currency debt as well as alter the risk profile of all issues. Hence by decreasing foreign currency denominated debt, it follows that the maturity of issues is made shorter; (iii) Initiation and promotion of policies that are aimed at the correction of imbalances in government current accounts. Surpluses in current accounts lead to a decrease in external debt and directly a rise in foreign reserves. Therefore in some instances governments may have the choice of drawing on their foreign reserves for the purpose of reducing a country's level of external debt; and (iv) Governments can reduce risks in the process of foreign borrowings by issuing locally denominated bonds in the international securities markets.

Domestic debt financing becomes more attractive for the fact that the supply of foreign exchange is mostly determined by the aid agencies budget which is hinged on the agency's assessment of the performance of the recipient country's economy. More often than not international finance is associated with project financing which invariably cannot finance government's recurrent expenditure or even a capital one that is not actually spearheaded by external donors.

2.13 **Utility of Government Borrowing**

In economics utility is understood to be the amount of satisfaction an individual derives from the consumption of a particular commodity. National debt has utility when government tends to have a preference for a particular pattern of monetary stability and where the amount of debt outstanding translates into changes in total expenditure in current output. An outstanding debt will have utility when it is effective in preventing high levels of private expenditure (Rolph, 1957). The marginal utility of an outstanding debt is normally positive but with the probability of being negative in certain conditions. The utility of debt becomes negative when there is a need for its reduction in order to increase private expenditure in line with a stabilisation policy of a government. When a current period tax reduction is financed by a government debt issue (Kormendi, 1983), the action tends to shift the timing of tax collection from the current period the next. It follows that where there is a lack of clear perception of the government debt and its implication in the form of future taxes by the private sector, there is bound to be what is referred to as a situation of "net wealth effect" which raises the private sector consumption which in turn impairs capital accumulation and growth. Thus, ignoring government spending translates into decreased private sector consumption relative to a reduction in disposable income. A decline in disposable income affects the utility derivable from the whole essence of government debt. But according to Levy Yeyati et al. (2005), when governments switch from external debt to domestic borrowing, this leads the economy to be exposed to a different type of vulnerability entirely. A shift from external sources of financing to domestic is tantamount to a currency mismatch for a maturity mismatch. Excessive use of domestic borrowing may result in excessive pressure on institutional investors with banks left to absorb too much government debt which will ultimately have negative effects on financial stability and investment known as debt overhang. The debt overhang theory postulates that the indebtedness of a nation turns out to be a sort of taxation on future output which in turn reduces incentives for savings and investment. Hofman and Reisen (1990), explained that the debt overhang phenomenon is believed to be the reason behind poor growth of investments among debt ridden nations.

External borrowings were however found to equally have a negative relationship with economic growth at some level of exports and GDP. Pattillo, Poirson, and Ricci (2011b), argued that debt tends to have a nonlinear effect on economic growth of a borrowing country. They however were unable to estimate this relationship. This shortcoming notwithstanding, the researchers noted further that on average the effect of borrowing on per head growth

tends to turn negative for debt levels exceeding 160 to 170 and 35 to 40 percentages points of exports and GDP respectively. Furthermore the work noted that the marginal impact of debt turns negative even at low levels of a nation's indebtedness. This was however found very difficult to estimate. There was however sufficient evidence to assert that excessive debt tends to generate inefficiencies. This notwithstanding a country may however embark on debt for purposes other than the need to offset fiscal deficits. A government could justify its borrowing if the objective is hinged on assisting sound investments and provision of infrastructures (Cohen, 1990).

2.14 **The Cost of Sovereign Debt**

Sovereign debt should comprise of; (a) all those claims against the government which are held by the private sector of the local economy, or by foreigners that can be interest bearing or not; and (b) any other claims on that are owned by the government charged against the local private sector and external creditors (Modigliani, 1961).There are however a number of complications when it comes to the specification of the concept of national or sovereign debt. Besides the general administrative expenses incurred in the process of debt issuance and reissuance, coupons honouring and record keeping; the real cost of government debt is the interest commitment. Hence to form an effective and efficient sovereign debt management strategy, the interest aspect of debt as a principle must be kept at the lowest possible level for any given utility combination of debt. The interest charges are key elements of debt management and are treated as fixed charges that should not normally be subject to the control of the legislature or any other decision making process. This strategy is in turn built upon the government's stated debt objectives (Melecky, 2007). Thus, the document which guides debt management is the strategy of debt management itself. It is argued that government should try to minimise the cost of its outstanding debt to satisfy the social objectives of its debt management.

The view is however premised on the basis of two arguments (Rolph, 1957): (a) At some level of private expenditure, some are seen from a social and superior point of view than others; and (b) that the expenses to be incurred by government with regard to debt outstanding should be minimised drastically for the purpose of achieving any targeted stabilisation policy. Contrary to the suggestion that outstanding debt is measured as a utility to the government, government borrowing is regarded as a stimulating factor (inflationary). The notion follows that debt reduction is taken to serve only as a deflationary mechanism for

the government. But any change in government debt should be able to depend upon the size of a government's budget surplus or deficit. According to Modigliani (1961), with a government's purchase of goods and services, any increase in national borrowing may turn out to favour those currently enjoying the increase (in debt). Secondly, such an increase in government debt will invariably shift burdens to the future generations by means of a decline in the aggregate stock of private capital; which will also in turn inflict reductions in the flow of goods and services provided the net marginal productivity of capital remains positive. This condition would hold regardless of whether the decline in private demand prevents the attainment of full employment.

However where national debt gets reduced the burden or cost of debt tends to fall squarely on the present generation shifting gross gains on to the future citizens. Therefore if the interest paid on borrowings can be approximated to equal the marginal productivity of private capital, the gross burden shifted forward on to the future generation mentioned earlier can readily be quantified by the interest charged on government borrowing (Modigliani, 1961). The cost of debt on the future generation can however be partly or completely offset provided any increase in government borrowing is accompanied by an expenditure that contributes to the generation of real income of the future generation. Burbidge (1983) observed however that if the benefits of government expenditure are neglected then private sector consumption will get deflated in same proportion to permanent disposable income up to the point where government expenditures are regarded as a replacement for private consumption goods. National debt is vital in government as it is modelled as a means of distributing tax distortions overtime (Alesina & Tabellini, 1990); where the policy is made with intent to even influence the choice of successor to the current government.

2.15 **Types of Debt Instrument**

There are different types and classes of debt instrument which vary in value, maturity and yield. Debt instruments are however classified into three main categories: (i) Marketable securities denominated in domestic currency; (ii) non-marketable debt denominated in domestic currency; and (iii) debt denominated in foreign currency. Missale (1994), argued that the decision of whether a government should finance its deficits by utilising domestic or foreign currency denominated debt instruments is regarded as crucial in debt management processes. However it is only usually in countries where there is a significant amount of foreign currency denominated debt that the difference between the two types is actually

emphasised. According to Fair and Malkiel (1971), debt instruments of comparable risk levels and maturity and possibly with the same provisions may not have identical market yields. Marketable securities that are denominated in domestic currency are usually used more in the process of government finance. The use of marketable securities for financing purposes is however practiced and more prevalent in countries with developed securities markets as is obtainable among the OECD countries. In sub-Saharan Africa the development of the securities markets has been slow. In very few of the sub - Saharan African countries does the use of domestic instrument by governments as a debt management strategy exist. This is usually because with the exceptions of countries such as Nigeria, South Africa and Zimbabwe (Yartey & Adjasi, 2007) with listed companies of about 207, 403 and 79 respectively, African markets are small with few listings and low capitalisation. This problem made sub-Saharan countries rely heavily on external sources of financing. Marketable securities are distinguishable through the following classifications: (i) short term marketable securities; (ii) medium term securities or notes; and (iii) Long term securities or bonds.

Short term securities are securities that are issued with maturities of up to 90 days. These classes of marketable securities are generally considered substitutes for money. Short term marketable securities to a larger extent are regarded as riskless (Chang, Hamberg, & Hirata, 1983) and tend to pay reasonable interest. Short term money market instruments are literally known to be riskless. With these near money instruments it is a practice that repurchase agreements exist between banks and non-bank investors. Money market instruments pose no interest risk because the borrower must repurchase the securities involved at their issue prices plus interest. And even where maturity dates are fixed, beyond a day, investors needing immediate cash have the advantage of forming a reversal. A common example of a short term marketable security is the Treasury bill. Other money market securities include Certificates of Deposit (CDs), bankers' acceptances; where all possess positive or at least a limited, interest risk when sold before maturity. Securities with medium and long maturities are classified based on the following types; (a) Fixed interest rate bearing securities; (b) price level indexed securities and real bonds; (c) variable rate securities or financially indexed bonds.

Missale (1999), noted that long term debt may also bear maturity options. Option pricing formulae however are derived under certain assumptions that may not be the focus of this work. Bollerslev and Ole Mikkelsen (1999), observed that the pricing of options assumed the price of the underlying asset tends to follow a persistent true random walk together with a

constant variable. The most relevant among the types of options are; (i) callable securities; (ii) put able securities; and (iii) convertible securities. Callable bonds are those long term debt instruments that offer the borrower the choice or option of redeeming the value of the security earlier than maturity usually at par value. The use of marketable securities is to a larger extent widespread especially in industrial economies when compared to what obtains in their African counterparts. Records have it that some governments tend to rely more on external sources of funds to finance their deficits (Yartey & Adjasi, 2007) because domestic savings are not high enough and the banking and financial systems were undeveloped.

2.16 **The Effect of Debt on the Domestic Economy**

In the process of borrowing, government debt strategy is bound to result in different utilities. Thus different instruments may have different utilities per unit of such a country's currency. To prove this scenario we need to assume that debt instruments are far from being substitutes. Once debt instruments are seen as a close substitutes (Rolph, 1957), then there is the likelihood that investors would be holding the same kind of instrument and when found holding different types then they may end up choosing all or none of the varieties of debt instrument. Because debt forms are not similar it can be asserted that the utility of various debt instruments is positively correlated to their maturities. This implies therefore a shift in a combination of outstanding public debts of a certain size which reduces its average maturity and increases private expenditures and the opposite happens when its average maturity is increased. This hypothesis however is based on a number of assumptions. Firstly, there is the condition that the shorter the life expectancy of public debts the more it is necessary for them to possess the features of near "moneyness" and secondly, the marginal utility of any asset should be positive. It has been argued however that an asset other than cash i.e. demand deposit and currency, is expected to have a maximum level of moneyness when it possesses similar features with cash except in its expendability. Unlike in sub-Saharan Africa, where the financial system is still undeveloped with the absence of functional capital markets, many demand forms of government debt such as US savings bonds, which possesses this feature of moneyness.

This observation may not however be misconstrued to mean that the market for government securities is out rightly imperfect, the US Treasury market for instance may be regarded as perfectly competitive and the same could be said for a 10-year bond, without however insinuating that bills and bonds are similar debt instruments. *Whatever one's definition of*

liquidity, to say that a government bond, a speculative share, a house, are money in different degrees, can at best generate unnecessary confusion. It is true that money and securities are close substitutes, but this connection is to be found elsewhere than in the degree of moneyness. (Modigliani, 1944, p. 85)

It is equally important to understand whether at all there is a particular optimal level in government debt instruments. While more works are developed to support optimal levels in government debt management (Tobin, 1963); it was however argued that there was no satisfactory theory of the type of debt instruments the government should issue (Fischer, 1983). There are however new developments in the area of the interaction between government and the private sector especially in debt issuance. Debt management issues which range from the choices of maturity structure of debt or taking a decision on whether to index a bond can be employed as a strategy or a means of influencing the options open to governments. The alternative debt management strategies a government gets to implement are in fulfilment of its economic policy. Government may decide on the maturity structure of its debt in order to commit successive administrations in such a way that the current optimal policy is maintained (Lucas & Stokey, 1983); (Persson & Svensson, 1984), But to answer the question as to how best we can go about managing public debt we must try to focus onto two other important objectives of debt management (Missale, 1994). These two objectives are: (i) The establishment of a thick market for government securities; and (ii) the provision of human capital insurance, i.e. to place regulations that will ease borrowing constraints that may arise when a human capital market is missed.

From the process mentioned above it may turn out worthwhile to address the simple query whether the risk-return feature of debt should be designed in such a manner that it could support either low or high taxes in situations where public spending tends to be uncharacteristically high or incomes become unexpectedly low. Debt management may seem to be the main instrument that can tackle these two objectives. However the objective of establishing a thick market that deals in government securities may have the disadvantage of reducing the possibilities of debt instrument diversification. This position tends to agree with the strategies that are referred to as risk-return. While on the other hand the efficient tax approach provides that, *indexing debt returns, positively to productivity shocks and negatively to public spending shocks, is the optimal strategy.* (Missale, 1994, p. 11). But

generally the most important factor is the process of determining how debt returns are distributed. And this can best be obtained through an efficient choice of debt instruments.

2.17 **Conclusion**

The chapter is relevant in the study of debt management strategies because it offers a more recent analysis and review of different strategies in public debt management. It has been established how the amount of government borrowing, its composition, maturity and source differs and determines the debt strategy to be employed at a given time. Debt management strategy is believed to be more functional and implementable in a more vibrant market and developed financial system, where debt management strategy becomes a tool for government fiscal policy implementation and the determination of successive administrations. Unlike in the more advanced financial systems in Europe or the USA, the HIPC in sub-Saharan Africa characteristically lacks both an effective financial system and a well-developed capital market. There is a real need for a determination of an appropriate debt management strategy for sub-Saharan Africa. A suitable debt management strategy could assist in the promotion of good governance and prospects of economic growth among the countries in the sub-region.

Chapter 3

Sovereign Debt in sub-Saharan Africa

3.1 Introduction

In this chapter focus shall be directed at sovereign debt in sub-Saharan Africa (SSA), with special attention on a number of selected countries in the region. As seen earlier, debt management among SSA countries may not be comparable to what is observed in more developed economies in Europe and the Americas. Part of the reason for this disparity is the absence of an effective and efficient capital market and as we shall see, the process of debt management itself is insufficient, as is government macroeconomic policy and debt management strategy.

There is a wide acceptance that the cause of sub-Saharan Africa's debt crisis is the result of what is commonly referred to as the debt overhang. The problem of debt overhang is believed to be the reason why many SSAs were classified as insolvent (Elbadawi, Ndulu, & Ndung'u, 1997). Hence sub-Saharan Africa became our focus due to the fact that several of the world's poorest countries are situated in Africa. Statistically, out of the 32 developing countries that eventually became categorised as highly indebted poor countries (HIPC), 26 (representing over 81%) were in sub- Saharan Africa.

Among the countries in sub-Saharan Africa, public debt is still treated as a source of financing budgetary deficits. Unlike developed economies there is a wide difference between SSA countries with regards to the size of government securities markets (Christensen, 2004). Nigeria and South Africa for example, have always utilised their domestic markets, whilst another group have not utilised them, or have only just recently developed a government securities market (e.g. Angola, Mozambique and the Democratic republic of Congo). A third group contains countries that have either relatively small domestic debt markets or have recently experienced a reasonable increase in their domestic debt burdens (e.g. Ghana and the Gambia).

In this chapter issues relating to sovereign debt and aspects of its management are scrutinised and how this relates to the type and maturity of debt in four countries; Ghana, Nigeria, South Africa and Uganda. The choice of Ghana and Uganda is based strictly on their HIPC status.

Nigeria, though a non HIPC, was chosen because it benefited from debt cancellation (along with other HIPCs). South Africa completes the sample as a developing economy with a sound domestic financial market.

3.2 **Debt in sub-Saharan Africa**

The colonisation of Africa contributed greatly to a reinforcement of the unequal exchange that had been established during the mercantile era. Furthermore, the colonial masters deliberately structured the colonies to become predominant producers of primary products rather than manufactured goods. Thus, it is hardly a surprise that in the ultimate analysis, these countries failed to participate in the global market on a competitive basis (Ajulu, 2001). Ultimately, sub-Saharan Africa resorted to borrowing due to the fall in commodity prices in the late 1970s. However, according to Hoogvelt (1990), most of the outstanding stock of sub-Saharan debt was originally contracted at low and fixed interest rates in the mid-1970s. These debts were however rescheduled in the early 1980s at a time when floating rates prevailed. In addition, throughout the 1980s, the US dollar had added to the debt service burden of sub- Saharan Africa. With the advent of the debt crisis in 1982, the IMF and the World Bank had been commissioned and appointed to the frontier of the transnational economy to collect payments from and supervise credits to the third world. There were basically two groups of seriously indebted countries; the first group comprised of 15 so called 'Baker' countries consisting of middle income countries and Nigeria, whilst the other group comprised of 20 less developed countries, which were mostly in sub-Saharan Africa.

> *Over the last 20 years, the IMF/WB intervention in sub-Saharan Africa has led to economic stagnation, widespread poverty and the disintegration of Africa's social fabric on an unmitigated scale. African economies have remained small, fragile, and characterised by extreme poverty. According to the UN's socio-economic indicators, sub-Saharan Africa today is worse than it was at the time of political independence in the early 1960s. Thirty three of forty one heavily indebted poor countries are in Africa. The debt burden of this group alone stood at $245 billion in 1996. The combined GDP of the whole of sub-Saharan Africa – excluding South Africa – remains a paltry US$300 billion. Real GDP fell by 42.5% between 1980 – 1990* (Ajulu, 2001, p. 29).

The size and structure of sub-Saharan African debt tends to follow a similar pattern to those recorded among other notable developing countries. The peculiar external source of SSA's debt was however a result of a number of factors. These are both endogenous and exogenous factors, with the latter being more influential on the size, as well as the structure of

borrowings over the last three decades. The endogenous factors were routine and included issues such as the misallocation of funds and excessive military spending (Riddell, 1992) whilst the exogenous factors mainly include the declining terms of trade, as well as the prevalent droughts in the sub region. The fact that most of sub-Saharan countries' economy is heavily reliant on commodity exports is also a factor in the process of their indebtedness. According to Krumm (1985) transitory commodity price booms coupled with ease of access to private financial and trade credits offered by western credit institutions and an upsurge in expenditure among exporting SSAs, contributed substantially to the size and structure of sub-Saharan debt. Although the trend has changed dramatically since the late 1990s these factors remain what shapes the borrowing policy tendencies of governments in sub-Saharan Africa.

For instance, the real stimulus of the expansion of sub-Saharan African countries' external debt was due to the 1970s commodity export (oil) boom, and a bust in the prices in the international market. These sudden fluctuations affected most sub-Saharan economies. These increases in commodity prices led various exporting countries to increase their government expenditure that were mostly financed by renewed access to credits, but later became saddled with excessive external debts due to a sudden fall in commodity prices, which included crude oil. Cote d'ivoire, Ghana and Nigeria who were coffee, cocoa, and oil producing nations, experienced an increase in prices between 1973 to 1975; 1973 to 1977; and 1974 to 1975 respectively. Countries affected by the sudden drop of their export prices responded by a sharp increase in expenditures. External debt as a means of finance jumped in most countries. In Nigeria for example, recourse to external debt was not very substantial until in 1978.

The external factors that influenced the structure of SSAs debts includes expanded access to external sources of lending, resulting from the rapid evolution of the international banking system, especially after the post 1973 oil shocks where the banks played the vital role of recycling the substantial oil producing nations' surpluses. Thus, the Euromarkets suddenly became another source of financing for many sub-Saharan African countries' governments, who had hitherto never borrowed from them in the past (Krumm, 1985). Furthermore most of the commercial banks' lending in the mid/late 1970s was linked to certain projects where the distinction between banks, suppliers and other credits were not clearly made. Export credit institutions also played a role in the huge size and external source of debt in SSA. This was where export credit was directly extended through official bilateral agencies who were officially guaranteed by export credit agencies and the credits stood to be converted to

official credit in the event of credits falling into arrears or rescheduling. Public sector expenditure increased as a result of expanded access to fresh avenues of raising funds as well as improvements in commodity prices for sub-Saharan oil importers. Much of the contracted debt went into financing large public investment projects that spanned a range of economic efficiency.

Another equally important factor that affected the size of SSA borrowings involves shocks as a result of the global economic recessions of the early 1980s. This contributed to a decline in export earnings among the commodity exporting countries in SSA. This development not only led to a fall in terms of trade, but also to pressure on the current account by these factors led to the expansion of the external debt in SSA. In a departure from this view, Greene (1989b) views the problem of external debt among SSAs as largely a result of government actions, in particular the accumulation of external debt for the purpose of development projects. Furthermore these projects were sometimes erroneously initiated with donor funding and with heavy foreign financing in the form of loans. However, many of the development projects were either designed specifically to improve on domestic industry and infrastructure rather than to boost export production, or perhaps as a result of the activities of the Economic Hit Men (EHM). Perkins (2004, pp. xiv - xv) noted his role as an economic hit man:

> *We build a global empire. We are an elite group of men and women who utilise international financial organisations to foment conditions that make other nations subservient to the corporatocracy running our biggest corporations, our government and our banks. Like our counterparts in the Mafia, EHM provide favours. These take the form of loans to develop infrastructure, electric generating plants, highways, ports airports, or industrial parks. A condition of such loans is that engineering and construction companies from our own country must build all of these projects. In essence most of the money never leaves the United States; it is simply transferred from banking officials in Washington to engineering offices in New York, Houston or San Francisco.*

Essentially, EHM are highly paid professionals who cheat countries around the globe out of trillions of dollars. They funnel money from the World Bank, the US Agency for International Development (USAID) and other foreign ‘aid’ organisations into the coffers of huge corporations and the pockets of a few wealthy families who control the planet’s natural

resources. All this happens through false economic projections for the countries to accept billions of dollars in loans they certainly could not afford

In sub-Saharan Africa, a new institutional approach in the area of public debt management was readily adopted. Nigeria established a separate debt management office in 2000, with the objective of carrying out an effective management of Nigeria's debt for development and economic growth (DMO, 2015). Beside Nigeria however, the majority of countries in sub-Saharan Africa (e.g. Ghana, Cameroon and Uganda), continue to have their apex banks and ministries of finance as the case may be to handle issues concerning debt and its management (Bangura, Kitabire, & Powell, 2000). But the term debt management tends to be loosely applied especially among the few sub-Saharan African countries where independent debt management offices happen to exist. For instance, the issue of cost of borrowing or the risks inherent in the process of government debt tend not to be prioritised. Bureaucratic red-tape-ism, which hinges on corruption and mismanagement, remained entrenched and eventually with dysfunctional institutions, management is dictated by the executive. The bulk of debt in sub-Saharan Africa is externally sourced. By the end of the 1990s sub-Saharan Africa found itself engulfed in a debt crisis that culminated into a clamour for debt relief. Because sub-Saharan Africa lacked a developed capital market there was increased reliance on external debt sources, mainly from multi-national financial institutions such as the IMF, the World Bank and ADB; and from lending bodies such as the Paris and London clubs.

3.3 **Interest Element on External Debt**

The interest element on external debt of sub-Saharan African countries has been a major factor in the current size of their debt portfolio. While there have been arguments against the exorbitant interest charged on some of the facilities granted to Africa, interest continues to increase at an accelerated rate over the years. For instance international real interest rates jumped from low and sometimes negative rates in the 1970s to over 8% at the beginning of the 1980s. It has been argued by Schmitt (2000) that in reality the LDCs will only be rid of their external debt burden after they have been charged interest twice. The World Bank statistics elaborated on over 16 consecutive years for 133 countries affected. The work portrayed the double interest payment within the imperfect system of the international settlement witnessed currently.

All interest was shown to be first settled by the residents, who bear the principal of the external debt and additionally by their country's international reserves. This process had led

to the excessive size of external debt among most sub-Saharan African countries. International real rates of interest charged on loans which were very low and at some points negative in the 1970s suddenly recorded an exponential rise in the beginning of the 1980s to a figure as high as 81%. This development changed the status of sub-Saharan Africa's external debt status and had a serious negative effect on their economies and ability to pay. As a result, interest serviced by SSAs stood at a high 31% of total exports of goods and services in 1978 (Krumm, 1985) and by 1983, interest paid by the indebted nations of sub-Saharan Africa had reached 91% of total exports.

3.4 **Debt Management in sub-Saharan Africa**

Countries in sub-Saharan Africa have been found to rely more on external debt in comparison to their developed counterparts. Relatively, SSA countries tend to find it difficult to issue larger amounts of longer-term, local currency debt than their richer counterparts. This, the lesser developed economies cannot appropriately accomplish, even in their own domestic markets (Alfaro & Kanczuk, 2009). It has been argued that excessive debt that is dominated in foreign currencies and short term liabilities may have the repercussion of unnecessarily exposing the borrowing economy to vulnerabilities in the form of, for instance, changes in market sentiments, sudden stops and rollover risks. Two measures are promoted to tackle this situation: The strategies of extending debt maturity and debt indexing.

Public debts should be indexed in situations where a nominal debt is faced with no option but to monetize as a result of pressure from the self-fulfilling expectations of a private sector. Debts are indexed against perceived inflationary trends. According to Giavazzi and Pagano (1989), when bond holders begin to fear that governments may resort to monetisation, there is a tendency for them to demand higher interest rates. This process may persist until such a time as when the government would rather respond by the anticipated monetisation than go for the alternative offered by monetisation. The option of debt indexation saves the government from inevitable monetisation, as well as the public driver for the demand for monetisation. Indexing debt in lesser developed countries in sub-Saharan Africa may however be difficult, if not impossible. Because the stock markets in SSAs are not effective enough for major adjustments and decisions such as indexation, this important aspect of debt management can actually affect their ability to adopt certain strategies, especially those concerned with debt indexation, inflation and taxation. Yartey and Adjasi (2007), noted that critics of the stock market in SSAs argued that the markets were not performing quite so

efficiently and as a result the African states might not have found it feasible to promote stock markets, especially considering the huge sums involved.

As a result of the progressive development of financial markets (both domestic and external) the more advanced economies of many African countries recorded an increase in the overall internationalisation of their markets, the development and introduction of various financial products (which in turn allowed for riskier and larger financial investments) saw the evolution and rising role of new actors in the financial markets (particularly institutional investors), and a new drive towards the establishment of stock markets. Furthermore, the manner in which the advanced economies utilise the level of development of their financial trade and exchange services to their advantage in the world trade organisation (WTO) actually encouraged the development of capital markets in Africa.

This development influenced the establishment of stock markets in Africa and the process of liberalisation of capital assets has likewise been linked to this. It is expected that a developed and vibrant stock market in Africa will go a long way to boost domestic savings and in turn trigger a rise in the quantity and quality of investments. Implied by this is the issue of debt overhang, which is said to be excessive and to have accumulated sovereign borrowing, which impedes on domestic investments (Elbadawi et al., 1997) in an economy. More importantly however, stock markets are believed to serve as an important factor, enhancing the smooth operation of the domestic financial system in general and the capital market in particular (Kenny & Moss, 1998). Stock market development has the potential of promoting growth in domestic economic revival, especially since it encourages increased investments.

It has been argued that stock market prices fail to reflect the actual underlying fundamentals, especially where speculations result in fluctuations in the market (Binswanger, 1999). Prices are said to be determined through the process of discounting expected future cash flows and in accordance to the stock market approach, the process is expected to reflect all the available information regarding the fundamentals. This translates into creating a stock market that develops its own speculative growth dynamics, which in itself could be guided by irrational behaviour. But Bhide (1993) noted that stock market liquidity has the tendency to negatively influence corporate governance, since a very liquid stock market could push investors into ambitious irrational speculations.

3.5 **Domestic Debt and its Availability in Sub-Saharan Africa**

Recent works have indicated that domestic debts are turning into more interesting areas of investigation in comparison to external or international borrowing (Guscina & Jeanne, 2006). Thus, when attempting to determine the optimal size of debt government securities, which comprise mainly of domestic debt, instruments of short and long-term maturities are normally considered. However, in more developed economies and the emerging markets, even debts that are issued abroad are of medium maturity and denominated in foreign currency. Debt should be structured in order to protect against macroeconomic shocks that affect the government budget and the negative effect on aggregate output. The choice of an optimal structure of government liabilities is achieved with a view to contain the risks inherent in government borrowing; therefore it involves risky domestic debt instruments

The phenomenon of debt overhang is often associated with the strangulation of domestic savings and invariably, investments due to accumulated charges, repayments and penalties on external loans. It is therefore argued that domestic borrowing by governments is what really causes the deterioration of their ability to save and invest. There is a need for a well-articulated strategy to handle debt in SSAs. Macro-economic policies in sub-Saharan Africa must be capable of specifying the appropriate amount of domestic debt to be contracted by a country in its effort to correct its balance of payments situation. The domestic debt method of finance was never a new phenomenon in Africa, it has simply been very insignificant when compared to the way in which external sources are utilised. Christensen (2004) noted that the average ratio of domestic debt has recorded an increase from 11% to 15% of GDP between the 1980s and the 1990s.

Table 3.1 shows how sub-Saharan African nations utilised domestic debt as a mechanism for financing government deficits and the promotion or implementation of economic policy. It is clear from the table that most countries in sub-Saharan Africa made little or no use of domestic sources of finance. For example, countries such as Angola, Botswana, the Democratic Republic of Congo, Mozambique, Sao Tome and Principe had no domestic debt between the 1980s to 2000. These countries either had no access to their local financial resources, or their capital markets were undeveloped, or were otherwise completely non-existent. Of those that patronised the domestic debt markets, the amount representing the domestic debt share of total debt was most insignificant. For the three periods under review; 1980 to 1989; 1990 to 1994; and 1995 to 2000 these included Burundi, Ethiopia, Ghana,

Lesotho, Madagascar, Malawi, Namibia, Nigeria, Rwanda, Seychelles, Sierra Leon, Rwanda, Swaziland, Tanzania, Zambia and Zimbabwe, with a domestic debt to total debt ratios of below a third of total debts or 33%, except Zimbabwe, which recorded an almost balanced distribution between domestic and external markets (Christensen, 2004). South Africa was the only African nation with a wholly domestic source of financing, recording zero external borrowing and 100% domestic debt. In the first period, Uganda recorded zero domestic borrowing; 100% external finance. In the second period, 1990 – 1994 it had an insignificant ratio of domestic debt to total debt at a low 1%. By the third period its domestic financing had reached 14%.

Based on the trend above it can be deduced that at low levels of domestic finance there is a higher likelihood of debt related distress, or the country being downgraded to the level of HIPC. The row in Table 3.1 showing average borrowing for the 27 SSAs depicts this when taken in relation to the next rows of HIPC, Decision Point, Eligible and Non HIPC. When average domestic debt was at 11, 21 and 15, corresponding HIPC and Non HIPC of 9, 6 and 8; and 14, 18 and 23 percentages were recorded respectively for the three periods. In contrast, an average ratio of external debt of 87, 87 and 103; a corresponding high ratio of HIPCs of 56, 124 and 156 was recorded. Unlike under the domestic debt case, here the non HIPC number fell short of those countries heavily reliant on multilateral aid and debt forgiveness at 39, 40 and 35 for the three periods under review respectively.

Table 3.0.1: Domestic and External Debts (1990-2000).

S/No	Country	Type of DD 1/	1980-89	1990–94	1995-00	1980-89	1990-94	1995–00	1980-89	1990–94	1995-00	1980-89	1990-94	1995-00
			Domestic	Debt		External	Debt			Total Debt		Domestic	Total Debt	(%)
1	Angola		0	0	0	158	113	81	158	113	81	0	0	0
2	Botswana		0	0	0	5	4	10	5	4	10	0	0	0
3	Burundi	TB,TC	3	2	6	40	96	138	44	98	144	8	2	4
4	Cape Verde	TB	0	11	34	42	42	40	42	53	74	0	20	46
5	Congo Dem. Rep of the		0	0	0	50	126	254	50	126	254	0	0	0
6	Ethiopia	TB, B	16	19	10	31	115	109	47	134	120	34	14	9
7	Gambia	TB, DN, S	3	13	23	80	84	104	83	96	127	3	13	18
8	Ghana	TB	12	8	24	19	55	83	32	64	106	38	13	22
9	Guinea	TB				0	0	91					…	…
10	Kenya	TB,B,S	21	23	22	61	77	52	81	100	74	25	23	29
11	Lesotho	TB,B	8	8	5	40	49	58	48	58	62	17	15	8
12	Madagascar	TB	3	3	3	71	120	110	74	123	113	4	2	2
13	Malawi	TB,S	13	8	9	65	100	126	78	109	135	16	7	7
14	Mauritius	TB,S	27	29	33	39	21	15	66	50	48	41	57	69
15	Mozambique		0	0	0	75	207	121	75	207	122	0	0	0
16	Namibia	TB	0	8	19	0	4	2	0	12	21	…	69	89
17	Nigeria	TB,B,TC,S	28	29	16	49	93	80	77	122	97	37	24	17
18	Rwanda	TB,B	8	9	5	17	55	70	25	65	75	31	14	7
19	Sao Tome and Principe		0	0	0	155	422	643	155	422	643	0	0	0
20	Seychelles	TB,B,S	14	45	68	29	24	20	43	69	88	33	65	77
21	Sierra Leone	TB,B,S	13	5	7	34	94	143	47	99	150	28	5	5
22	South Africa	TB,B	30	37	45	0	0	0	30	37	45	100	100	100
23	Swaziland	TB,B,S	4	1	1	20	21	16	24	22	17	16	5	7
24	Tanzania	TB,S	26	6	12	71	131	100	96	137	112	27	5	11
25	Uganda	TB,S	2	1	2	0	73	57	2	74	59	100	1	4
26	Zambia	TB,B	25	9	6	134	178	196	159	186	202	16	5	3
27	Zimbabwe	TB,B.S	35	29	37	27	34	48	62	63	86	56	45	44
	Average		11	12	15	49	87	103	62	102	118	25	19	22
	HIPC		9	6	8	56	124	156	69	138	169	22	6	6
	Dec point reached (2)		10	7	8	58	126	150	73	143	164	25	7	7
	Eligible (3)		2	1	3	45	111	196	47	112	199	4	1	2
	Non-HIPC (4)		14	18	23	39	40	35	53	59	59	30	35	40

Source: (Christensen, 2004)

From the outset, it is evident that domestic debt and its consideration is vital to any government debt management strategy, especially when the objective is to reduce the complications that come with external debt. Domestic debt is known to mitigate the problems associated with patronising foreign sources of finance. Stability in currency exchange and general prices is ensured when borrowing is denominated in local currency. Kahn (2005) argued that a country having a prior experience in issuing domestic government bonds in the domestic stock market would likely have an edge on being successful when it decides to issue sovereign bonds in the international market. Furthermore, Fry (1997), argued that market based domestic debt tends to have the advantage of the least cost method of financing budget deficits when compared to the external debt alternative.

On the other hand, Hauner (2006), found that commercial banks that regularly allocate and make credit to governments tend to result in higher profitability, but end up being less efficient in service delivery in comparison to other banks in the industry. Consequently the absence of efficiency will relegate competition and may eventually extinguish the zeal of banks to mobilise deposits that could transform investment funds into private sector funds. Furthermore, reducing the size of domestic debt in relation to the gross domestic product and deposits may have the tendency of exerting a negative impact on financial market development and the process of detachment from the shackles of foreign aid dependency long impeding African nations' development.

Government domestic debt instruments, when traded in the domestic stock market tend to provide savers with an attractive alternative to capital flights, due to the fact that there is a local avenue for investors which is cheaper, stable and less intricate (del Valle & Ugolini, 2001). With this method, all saved funds stand to be ploughed back in the form of investments, thereby avoiding the effect of debt overhang. In addition, Carey, Gulde, Christensen, and Pattillo (2006) argue that government securities are vital for the conduct of indirect monetary policy operations. According to them, a well-developed domestic debt market would make it easy for the Central Banks in such a way that they would not need to depend on external links and instruments that could prove distortive. Yields on government securities are known to serve as a benchmark for future longer term private debt issued by commercial banks, and in the

process promoting the development of corporate bond markets this will go a long way to boost competition between banks in the sector (Fabella & Madhur, 2003).

3.6 Maturity and Composition of Domestic Debt

Another very important determinant of good sovereign debt management is the issue of the composition of debt instruments, since as we have seen in the previous section, domestic sourcing of financing could help sovereign governments as a debt management strategy. Domestic debt is noted to prevent many sub-Saharan African nations from the debt crisis experienced by the HIPCs. Domestic debt playing the role of an alternative source of finance to the external source tends to minimise the exposure of a country to the inherent vulnerabilities in the form of risks of reversal of capital flows and external shocks (Presbitero & Arnone, 2006). It is further argued that by exploiting the domestic market, locally developed securities can serve as ready substitutes to external financing and thereby help to stall the unnecessary build-up of foreign currency denominated debt, which comes packaged with exchange rate and devaluation related risks. Domestic debt on the other hand is relatively devoid of inflationary effects associated with external financing used in government monetary policy to tackle deficits. When managed well, domestic debt is known to minimise a government's exposure to risks associated with interest and foreign currencies. A developed government securities market will go a long way to support the implementation and the transmission of an efficient monetary policy, which will eventually become essential in the process of achieving meaningful economic growth.

The maturity structure of government debt can however affect both the cost and risk advantages enjoyed through the use of domestic debt instruments. Christensen (2004) argues that governments in sub-Saharan Africa must attempt to issue only those debt instruments which possess the appropriate maturity length. The maturities of government securities should be chosen to reflect the maturity structure of short-term current and long-term capital expenditures. Here we shall examine the existing record on the structure by type of instrument and term to maturity of some selected sub-Saharan African countries for the period 2001 to 2012. We tried not to give an estimate of figures, though data on domestic debt especially was very difficult to generate. This informed our choice of Ghana, Nigeria, Uganda and South Africa. As with Missale (1994) our analysis is designed to provide information on the risk-return

characteristics of public debts. The presentation of this information is accomplished through a process of examining the components that determine the risk-return characteristics of public debt. These features are: currency denomination, terms to maturity, indexation features, options provisions and marketability. Because we are trying to understand government debt, how it works and how it affects real government policy decisions, then it is of utmost importance to study the relationship that exists between the extent of debt and its maturity.

3.7 **Composition of Debt by Country**

In this section specific country experiences are examined. As seen in the preceding sections of this study, most sub-Saharan African countries rely on external sources of financing in order to correct their budget deficits. Thus, debt in a number of selected countries with relatively developed and functional domestic markets would be investigated, namely; Nigeria, South Africa, Uganda, and Ghana.

In the following section the analysis is intended to provide information on the risk-return characteristics involved in government debt. Information is presented through a process of examining those debt components that determine the risk return features of government debt. These features include currency denomination and term to maturity. Notably in the African security markets indexation, features and option provisions are rare or completely absent. However, where these features exist it is the aim of the study to enumerate on the securities' maturity and marketability and in trying to understand government debt and how it affects real government policy decisions it is viewed with utmost importance to study the relationship that exists between the extent of debt and its maturity.

3.8 **Nigeria**

Although Nigeria has never been classified as a HIPC, it is a country that has benefited from debt cancellation, which amounted to the equivalent of $18 billion (Okonjo-Iweala, Soludo, & Muhtar, 2003). Nigeria's debt record however started with a paltry debt stock of $1 billion in 1971 and by the end of 2005 Nigeria had incurred foreign debt close to $40 billion with over $30 billion of that amount owed to the Paris Club (Aina, 2006). Because Nigeria was not classified as a HIPC it was at first difficult to convince the international lending bodies to consider cancellation for Nigeria, even though the combined debt liability of the 18 HIPCs favoured for debt

relief would not have exceeded that of Nigeria. Without debt cancellation Nigeria would be paying $2.3 billion annually on debt servicing alone; with the total reaching $32 billion between 1985 and 2001. This debt figure was actually the result of the accumulation of outstanding interest payments and penalties for delayed interest payments over the years. Thus, Nigeria pushed for a debt cancellation and was able to secure a deal in 2006. Nigeria made a down payment of $12 billion in order to get $18 billion outright written off. The deal was a remarkable reduction in the country's debt liabilities. However, for a country with an annual budget of between $3-4 billion, to make such an immediate down payment was a monumental long term financial and economic commitment and sacrifice, especially considering a fraction of the amount was direly needed for health and infrastructure projects in the nation. J. D. Sachs, Botchwey, Cuchra, and Sievers (1999) note the debt burden during relief or cancellation tends to fall heavily on a country's budget, on line ministries such as the ministry of health and grants went to finance extra budgetary activities as established by the donors.

3.9 Composition of Public Debt by Type in Nigeria

Since its debt relief, Nigeria as a country has tried to manage its debt with the establishment of a debt management office in 2000. The DMO was charged with the responsibility of co-ordinating the management of Nigeria's debt. As of 31st December, 2013, Nigeria's total public debt stood at $64,509.95 million. Of this amount $55,688.05, representing 86.32% was domestic debt and the sum of $8,821.90 million or 13.68% was from external sources

Table 3.2: Composition of Debt by Type – Nigeria

Type	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Short DD	5223.77	6064.13	6380.9	6560.56	6626.6	5472.44	4922.26	3595.65	5403	8561.38	11026.9	13628.6
Long DD	3864.52	3572.23	3902.9	3,754.24	5202.17	8332.75	13653.9	14082.9	16467.12	21952.95	24856	28340.56
Ext. Debt	28347	30991.87	32917	35944.7	20477.97	3544.49	3654.21	3720.36	3947.3	4578.77	5666.58	6527.07
Debt Ratio	1.18	1.28	157	1.9		11.8	12.5	11.6	15.4	17.8	6.9	19.7

Source: DMO Annual Reports and author's computation

Table 3.2 shows Nigeria's public debt by type of instruments recorded in millions of US dollars. The proportion of short term debt, which mostly consists of treasury bills, is shown to be steadily rising at an increasing rate between 2001 and 2005, then it is dropping off briefly in 2006 and 2007. This perhaps might not be unconnected to the secured debt cancellation which freed the government's funds for important projects

that the treasury bills would have been used to cover. The instrument of treasury bills picked up momentum and continued to rise up until the end of 2012 at $13,629 million representing 32.47% of total domestic debt.

Long term domestic debt was 67.53% as of the end of December, 2012. However, looking closely at the trend of long term domestic debt over the years from 2001, it is clear that until the year 2006, the choice had always been unfavourably compared to its short term counterpart. The trend indicates that from the debt cancellation, governments tend to patronise the long term debt alternative more. The patronage of long term domestic debt suddenly picked up, more than doubling the amounts of the short term domestic debt sources with recorded figures of $13,654 million, $14,083 million, $16467.1 million, $21,953 million, $24,856 million and $28,341 million; in the financial years 2008, 2009, 2010, 2011 and 2012 respectively. There were substantial increases in 2006 and 2007 with $5202 and $8332.75 respectively.

Prior to these periods, the Federal government was keener on short term debt, which was preferred over long term debt. Thus, before the debt cancellation in 2006 more short term domestic debt was recorded compared to long term debt. After 2006; after cancellation there was more long term debt. Is there a correlation between short term domestic debt and debt distress, or is there a relationship that exists between longer term and growth in real investments? The picture we see tends to go against the popular debt overhang hypothesis. Debt overhang actually happens in domestic debt rather than external debt (Abbas & Christensen, 2007). This is because longer term domestic debts tie down funds and tend to strangulate local investments.

Figure 3.1: Debt Composition by Type – Nigeria

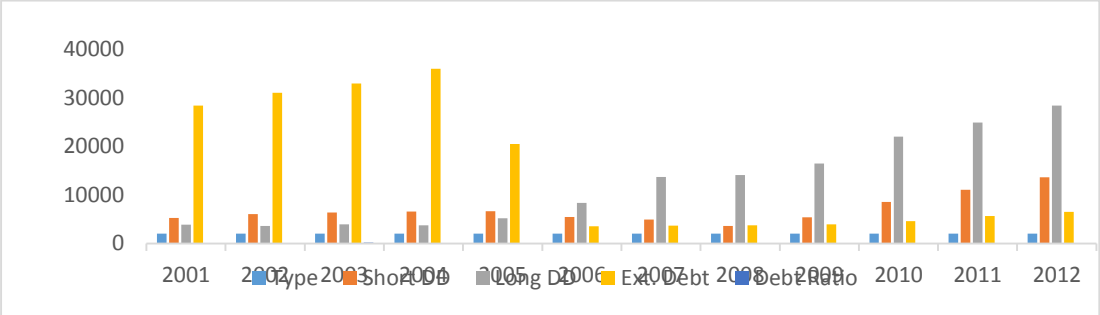


Figure 3.1 represents the data presented in table 3.2; in a bar chart form. The figure shows short and long term domestic debts, external debt and debt ratios recorded in Nigeria over the years between 2001 and 2012.

Table 3.3: Composition of Domestic Debt by Instrument – Nigeria

Type	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
FGN Bonds	0	0	72.56	72.56	250.83	643.94	1186.2	1445.6	1974.9	2901.6	3541.2	4080.1
NTBs	584.54	733.76	825.1	871.57	854.83	695	574.92	471.93	797.48	1277.1	1727.9	2122.9
Treas. Bonds	430.61	430.61	430.6	424.94	419.27	413.6	407.93	402.26	392.07	372.9	353.73	334.56
Dev Stock	1.83	1.63	1.47	1.25	0.98	0.72	0.65	0.52	0.52	0.22	0	0
Prom Notes	0	0	0	0	0	0	0	0	63.03	0	0	0
Total	1017	1166	1330	1370.3	1525.91	1753.3	2169.6	2320.3	3228.1	4551.8	5622.8	6537.5

Source: DMO Annual Reports

Table 3.3 shows the composition of Nigeria's public debt as of December, 2012. The composition of Nigeria's public debt however consists of two major types of debts. All debts reported were sourced internally from the local, domestic market. The structure of debt here does not specify any domestic debt that is denominated in a foreign currency. The composition strictly specifies the maturity of government public debt over the period under review. The debt figures recorded in the table can be categorised into short term and long term debts. The short term debts mainly comprise of treasury bills and promissory notes. The long term debt on the other includes the federal government of Nigeria bonds, treasury bonds and the development stock.

A closer scrutiny of the domestic debt trend reveals that up until 2006 when the federal government's bond almost equalled the value of treasury bills issued with a first time high figure of $643.94 million against $695.0 million recorded under the treasury bills. From 2007 to 2012, the growth in domestic long term debt was astronomical, where amounts averaged at double the figure recorded under the short term security of treasury bills. FGN bonds were reintroduced in 2003 through 2004, 2005 and reached a substantial proportion of the total public debt in 2006, with 72.56, 72.56, 250.83, and 643.94 million dollars respectively. Incidentally, 2006 was the year Nigeria secured the cancellation of its external debt, thus the sudden shift in the source of public debt from short term to long term might be to ensure the liquidity to the government in the absence of external sources. Longer term debts tend to ensure liquidity to government. Long term domestic debts are however seen to tie down funds and choke much need domestic investment.

The trend in domestic debts does not however show any indexed debt or any foreign currency denominated domestic debt. The fact that no debt instrument is issued with an adjustment for inflation makes all the debt instruments to be of the nominal debt category. Nominal debt holders are however said to be on the receiving end as the

government creates inflation without making adequate provisions to compensate the small savers who, invariably, are the investors in government debt instruments.

Figure 3.2: Domestic Debt Instruments – Nigeria

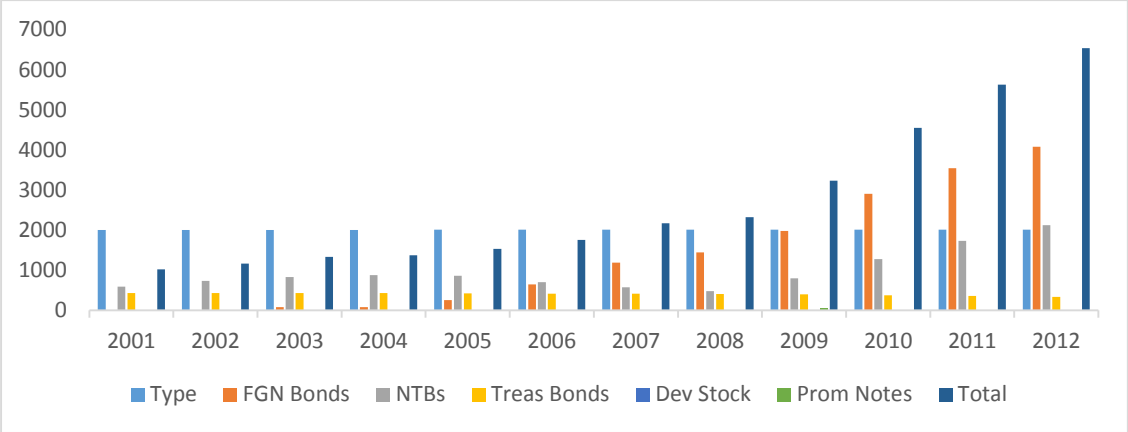


Figure 3.2 represents the data in table 3.3. The domestic debt instruments issued by the government of Nigeria are shown in the form of bar charts. We have the federal government bonds, Nigerian Treasury Bills, treasury bonds, development stocks and the promissory notes. From the trend federal government bonds took the largest proportion of the total domestic debt in Nigeria.

Table 3.4: Composition of Public Debt - S/Africa

TYPE	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Foreign currency den debt	24.9	24	25	27.4	27.9	28.1	35.3	45.1	44.1	42.1	45.2	50.9	53.2
Bearer bonds	5.5	6	7.8	9.7	9.7	9.1	10.5	15.2	13.9	15.4	16.5	20.9	22.9
Converted long term	0.2	0.1											
Other	0	0											
Public sector	4.2	3	5	4.9	4.9	4.8	5.2	29.9	30.2	26.7	28.7	30	30
Monetary sector	8.3	8.9	6.3	5.9	7	7.9	10.3	5.6	5.3	5.7	6.5	7.6	8.3
Non-monetary private sector	6.7	6	5.9	6.9	6.3	6.5	9.8	12.7	12.8	10.6	10.3	9.9	11
Rand-denominated debt	12.1	7	9	11.9	17.1	20.5	23.6	11.6	12.1	10.4	11.9	12.5	11
Bonds	8.3	4.3	4.5	4.2	5.8	6.3	7.5	7.9	8	11.6	24.6	30.3	33.2
Other	3.8	2.7	4.5	7.7	11.3	14.2	16.1	22.3	20.8	24.9	34.6	30.3	32.1
Total Foreign debt	37	31	34	39.3	45	48.6	59.4	75.3	72.9	78.6	104.4	112	118.5
Debt/GDP		41.2		20	23.2	19.7	22.7	26.4	26.6	27.6	28.7	27.3	29.2
Debt/Export Earnings							70.3	77.8	70.1	96.9	100.3	90.8	98.1

Source: South Africa Reserve Bank Annual Economic Report

South Africa is the leading economy in Africa. South Africa is generally considered to be relatively a more viable economy in Africa, boasting of a more market driven economy, functional institutions and a more stable polity. South Africa belongs to the emerging market economic block that comprises Brazil, Russia, India, China and South Africa, popularly referred to as BRICS. Of all the sub-Saharan African

countries analysed by Christensen (2004) in a survey of domestic debt markets in sub-Saharan Africa, only South Africa was presented as having a 100% domestic sourcing of its debts needs. As of 2004, South Africa had a zero record of externally sourced finance.

Table 3.4 shows the structure of the composition of South African debt. South Africa's debt over the years under study comprised of foreign currency denominated domestic debts and Rand denominated domestic debts. Domestic debts issued in foreign markets are categorised as a domestic source of financing. Furthermore, both foreign currency denominated and local currency denominated debts are further sub-divided into bearer bonds and others. The bearer bonds are clearly debts that are long term while the others represent sources of domestic finance such as treasury bills and short term loans. From the table we see that of the total foreign and Rand denominated debts, long term debts account for a larger proportion of the government's source of financing. Bearer bonds alone constituted about $5.5 billion, representing 22.09% of the total foreign denominated debt in 2000. In the same year inflation-linked debt instruments were introduced. The use of bearer bonds continued to rise steadily over the years with $6.0 billion, $7.8 billion, $9.7 billion, $9/7 billion, $9.1 billion, $10.5 billion, $15.2 billion, representing 25%, 31.2.%, 35.40%, 34.77%, 32.38% and 29.74% respectively. The use of bearer bonds flattened between 2003 and 2004, with a recorded relative decline in 2005 to 2006. However, it picked up in 2007 with $15.2 billion or 33.70%, up by 3.96% compared with the previous period. With the exception of 2008, when bearer bonds were used as a long term source of finance, to $13.9 representing 31.52% of the total foreign currency denominated debt, the long term debt instrument continued to record a persistent rise in the years 2010, 2011 and 2012 with $16.5, $20.9 and $22.9, representing 36.5%, 41.06% and 43.05% respectively. This is also the situation with regard to the Rand denominated debts figures shown on the table. While bonds clearly constituted a significant proportion of the Rand denominated debts, other debts comprised of inflation-linked, fixed income debts and treasury bills.

The South African Reserve Annual Report noted that domestic instruments used to finance deficits comprised of mainly fixed-income and inflation-linked bonds and treasury bills (S. A. R. Bank, 2012). The use of the treasury bills as a domestic debt instrument was emphasised further by the report. For instance in the fiscal year

2011/12 the South African Reserve Bank co-ordinated the government's generation of R19 billion from the country's treasury bills and short term loans from the corporation of public deposits. In addition the sum of R133 billion was generated from the government domestic bond market, with R45 billion or 33.83% as inflation-linked bonds; and R88 billion or 66.17% representing fixed-income bonds. Overall, domestic debt is seen to account for over 90% of total public debt for the fiscal year, with external finance accounting for the insignificant 10%. While excessive use of external debts for financing purposes is regarded as risky (Levy Yeyati et al., 2005), too much domestic debt on the other hand is argued to be very costly and has the tendency to result in excessive pressure on institutional investors. In the case of South Africa, one major issue is most obvious; it had a relatively well developed domestic capital market. Inflation-linked debt was introduced over a decade ago with the first in 2000.

South Africa's debt to GDP ratio stood at an average of 26.6% over the period under review. The highest ratio was recorded in 2001, at 41.2%, which then dropped to 20.0%, 23.2% and 19.7% in 2003, 2004, and 2005 respectively. From 2006 the debt ratio rises to an increasing rate reaching 29.2% in 2012; lower than 160 to 170% of GDP. These ratios are however regarded normal and within the safe region (Pattillo et al., 2011b). The country's debt to exports ratio was on the high side, having recorded ratios of 70.3%, 77.8%, 70.1%, 96.9%, 100.3%, 90.8%, and 98.10% for 2006, 2007, 2008, 2009, 2010, 2011 and 2012 respectively. These ratios are regarded to be excessive, far above 35 to 40% (Pattillo et al., 2011b)

Figure 3.3: Composition of Public Debt - S/Africa

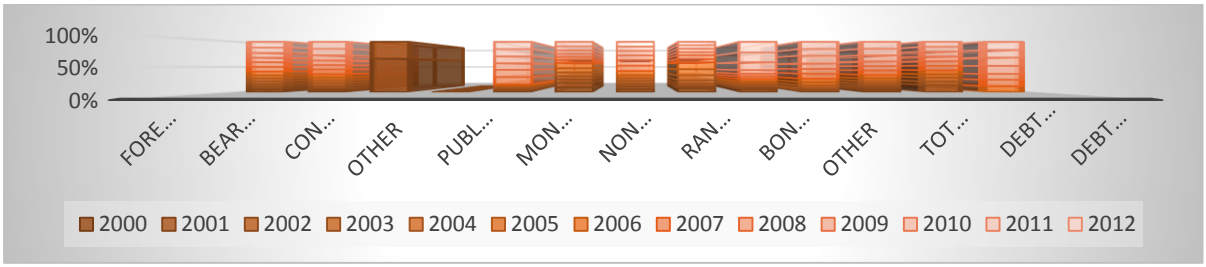


Figure 3.3 depicts the data presented earlier in table 3.4 showing the composition of public debt in South Africa between the year 2000 and 2012. In a bar chart form, the figure clearly shows that foreign currency denominated debts constituted a larger portion of the country's debt in comparison to the Rand denominated debt. The figure also shows a moderate debt to GDP ratio and a very high debt to export earnings ratio.

Table 3.5: Composition of Public Debts – Uganda

TYPE	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
T-bills	589	928.5	1202.6	1248	1176	1092	1089	1,528	1,518	1386	1657	1712	2583
T. Certs	414.6	460.6	482	390.4	184.2	-47.09	-521.1	-731.3	0	0	0	0	0
Bonds	0	0	0	151.23	291.36	631.4	773.2	1257	4880	1406	1960	2648	3411
Govt. Stock	1051	1151.6	1151.4	1246.1	1198.5	2724	3793	3835	1854.4	1407	0	0	0
Disc. Notes	0	0	0	2728.2	3361.7	0	0	200	200	200	0	70	30
Ext. Debt	3380	3395.3	3825.2	4215.5	4404.9	0	0	0	0	0	0	0	0
Debt Ratio	58.13	61.54	63.81	61.83	47.93	44.83	12.46	13.16	0	0	0	0	0

Source: Bank of Ugandan; Researchers computations

Uganda is among the sub-Saharan African HIPCs. It suffered from problems with both domestic and external debt sources of finance. This sub-Saharan African nation, we reported earlier as having attained domestic debt ratios of 8%, 9%, and 5%, between 1980 and 1989; 1990 and 1994 and 1995 and 2000, respectively. These ratios compared unfavourably with the external debt to GDP ratios of 17%, 55%, and 70% for the same periods respectively. It is argued that excessive reliance on external debt by a government tends to expose such a country to external vulnerabilities (Panizza, 2008), and might even be a factor in pushing low income countries into debt crisis (Christensen, 2004).

Table 3.5 shows the trend in Uganda's borrowing over the recent decade, starting from the year 2000. The data made available shows the debt ratio to have never crossed a high of 63.81% in 2002. It is clear that this period was before debt relief and therefore with outstanding figures of $3380.0 million, $3395.3 million, $3825.2 million, $4215.5 million and $4404.9 million for 2000, 2001, 2002, 2003 and 2004 respectively. From 2005, Uganda completely relied on its domestic debt market for financing.

Based on the information in table 3.5 it becomes obvious that Uganda, as a HIPC, patronised its domestic market relatively well for a sub-Saharan African country. Between 2000 and 2012 the performance of the short term security market for treasury bills, treasury certificates, long term instruments of government bonds and government stocks and discount notes were highly patronised by the government as a source of financing. Interestingly however, the government of Uganda tended to employ the use of longer term debt instruments in relation to the shorter term instruments of treasury bills. This was more evident in the period immediately after debt relief. For instance, the government development stock was recorded as $1198.5

million, $ 2723.88 million, $3792.7 million, $3834.7 million, $1854.41 million and $1407 million, for 2004, 2005, 2006, 2007, 2008 and 2009 respectively. Government bonds issued for the same period were $291.36, $631.43, $773.17, $1256.7, $4880, $1406 and $1960 respectively. The sum of the two long term instruments exceeds the short term market instruments of treasury bills. Long term debt instruments are known to ensure liquidity, but they are however criticized for reducing domestic investments.

Figure 3.4: Composition of Public Debts – Uganda

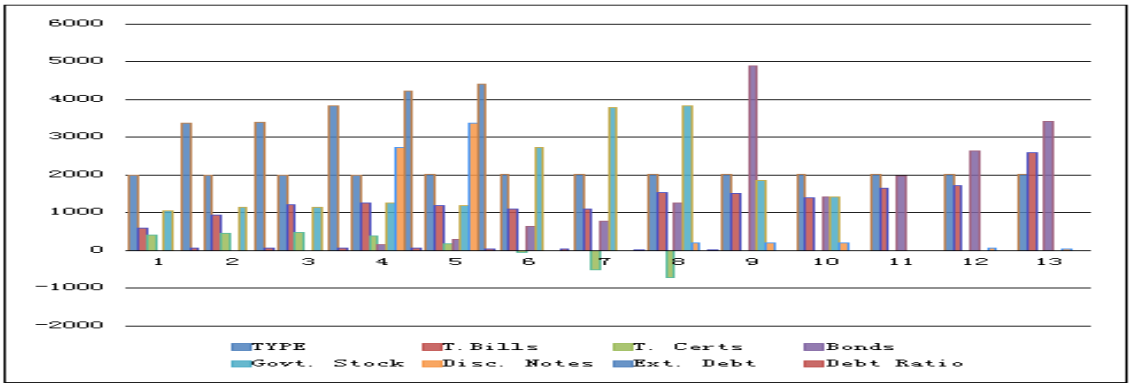


Figure 3.4 is a graphical representation of the data presented in table 3.5, showing the different types of debt instruments that made up public debt in Uganda. From the figure we see that external debts remained an important source of finance reaching a peak in period 5 (2004), whilst suddenly falling to zero in period 6 (2006). Treasury bills however became one of the leading sources of finance for the government in Uganda. Treasury certificates ceased to be a source of funding for the government from 2005. The bond as a source of government finance became a leading source of long term finance.

Table 3.6: Selected Debt Indicators - Ghana

Type	Column1	Column2	Column3	2004	2005	2006
Debt Stock				6367.9	6759.8	2773.4
Debt st/Exp				1.9	1.7	0.6
Ext Debt Serv/ Exp				5.7	5.6	3.1
Debt Stk/ Dom Rev				3	2.6	0.9
Ext Debt Ser/Dom Rev				9.3	8.4	5.3
Ext Debt Serv/ GDP				2.2	2	1.3
Debt Stk/GDP				72.2	63.4	18.7

Source: Bank of Ghana Annual Report

Table 3.6 shows some debt indicators for Ghana, another HIPC located in sub-Saharan Africa. The Debt/GDP indicator reached the highest point of 72.2% in 2004. The ratio continued to decrease in subsequent years to 63.4% and 18.7% for 2005 and 2006 respectively. Ghana is however among the HIPCs that were reported to be showing signs of debt distress some years after debt relief.

Figure 3.5: Selected Debt Indicators – Ghana

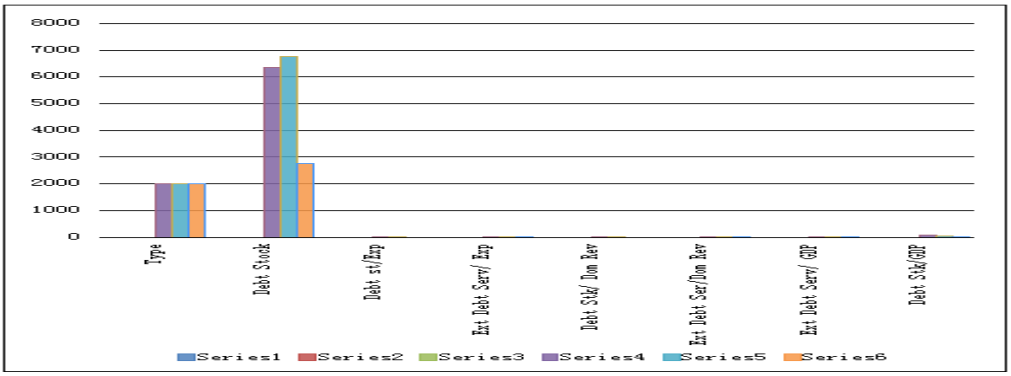


Figure 3.5 represents a graphical presentation of the relevant debt indicators for Ghana. A significant change recorded an indicated debt ratio falling from over 72.2% at the end of 2004 to a low 18.7% by the end of 2006. A similar decline was recorded under the external debt service to revenue ratio, from 9.3% in 2004 to 5.3% in 2006.

3.10 **Conclusion**

In the course of discussion debt management situation in sub-Saharan Africa has been examined. The trend in debt management demonstrates how the absence of well-developed and effective institutional frameworks tends to affect the effectiveness of debt management as a tool for the implementation of government policies in the economy. For instance, the review has exposed deficiencies in the development of debt instruments of different maturities in sub–Saharan African markets. Out of the four countries reviewed, only South Africa had a record of dealing in foreign currency denominated domestic debt, and was able to separate the use of inflation-linked debt from fixed-income debt. The few countries that have relatively developed domestic debt markets such as Nigeria, Uganda and Ghana, the instruments involved are mostly the short term treasury bills, treasury certificates, promissory notes, long term government bonds and development stocks. It is clear that these countries' various stock markets are yet to fully develop to ensure an effective and meaningful debt management strategy for growth. Another obvious factor is that due to the

inefficiencies associated with domestic stock market development; these sub-Saharan African countries still afford the external source of finance a priority over the domestic source. This trend may have the repercussion of plunging SSAs into another round of debt distress.

In the course of the upcoming chapters it shall be observed how the data on debt instruments can be applied to determine how the choice of source, size, composition and maturity of debt instruments among SSAs could lead to a suitable choice of debt management strategy.

Chapter 4

Methodology

4.1 Introduction

The purpose of this chapter is to specify the methodology for the research undertaken in this project and also discuss and justify the sources and the methods of data collection. However, most importantly this chapter is where the philosophy that guides this research is explained: the ontology or the *perception* of the writer is defended and the epistemology or *kind* of knowledge the writer envisaged to be released to the public is also discussed.

This research adopts a positivist ideology and accordingly the work is guided by and adheres to the objectivist approach in dealing with the problem in question. Objectivism in research refers to a situation where the researcher is found to be a detached entity from the phenomena under investigation and by following such a process the empirical method is produced. Consequently the empirical process leads to a positivist method of research, where the researcher is encouraged to get inclined only to record results as they are, with room only for interpretation regarding how and possibly why, a phenomena or social reality has occurred. The positivist research approach is characterised by epistemologies that strive to give an explanation to what is happening in the social world around us, by way of identifying certain rules and regulations that govern the causal relationships between apparent consistent elements or variables (Falconer & Mackay, 1999)[3].

Epistemology, according to Crotty (1998) represents a theory of knowledge that is embedded in a theoretical perspective as well as a theory in the specified methodology of the research. Epistemology entails the manner in which people understand what they believe in and how they are able to explain the process through which they get to know what they believe they know. For example the subject of debt and debt management is a branch of study under finance. Although not an observable social reality per se, the phenomenon of government debt can best be viewed under the positivist stance, because it may eventually possess a law-like end research product, which could lead to generalizations similar to those obtained in the natural

[3] Student Paper, Saleh A.S. (2013)

sciences. Furthermore, debt data that is used in this particular research, is almost wholly of a historical and numerical nature and could easily afford to be transformed into a causal relationship as proposed in the current work, i.e. the effect of debt management on economic growth. Economic growth in turn is measurable by a number of different indicators, which include variables such as the gross domestic product, which may be employed in generalizations and further analysis. This assertion is in agreement with Hammersley (1993), who views positivism as a philosophical attitude to human knowledge which does not actually prejudge questions as to the manner by which researchers arrive at knowledge, or the psychological non-historical foundations of knowledge. Instead, positivism tends to seek to apply positivist principles, specifically through the adoption of the methods of the natural sciences.[4]

Ryan, Scapens, and Theobald (2002) basically sees the research process to be all about the discovery, interpretation and communication of new knowledge. Research can therefore be seen as a process of constructing precise economic theories that are only validated by well-designed tests, which employ the use of large and unbiased samples. Like other disciplines in the social sciences, the discipline of finance is methodologically diverse. Thus, in order to make sense of any process of research, especially in the field of finance, there is a need to attempt to try to answer questions such as: what are the different assumptions about the nature of financial reality that actually inform research? And, what role does theory play in the process of financial knowledge acquisition? And how does the research in the field of finance progress (Ryan et al., 2002).[5]

The choice between two binary options, true or false, right or wrong are viewed to be issues that generally characterise knowledge. The most important factor however for our purposes tends to be the manner by which knowledge is perceived. The major problem of epistemology is therefore found in the process of deciding the means by which knowledge can be acquired. At any point in time therefore, an individual may tend to be confined as a subject in what appears as a 'subject – object' relationship.

[4]Student Paper, Saleh A.S. (2013)
[5] Student Paper, Saleh A.S. (2013)

As a branch of finance, the subject of debt is appropriately placed under the positivist and the objectivist field of knowledge and it follows therefore that debt is even more appropriately placed perspective-wise, under the functionalists' paradigm. The paradigm is hinged upon the assumption that the society possesses a concrete, real existence and a systematic feature that is focused at the production of an ordered and regulated state of affairs, whose objective is to promote a social theory striving to understand the role of humans in society (Morgan & Smircich, 1980). According to Ardalan (2011) in situations where there exists an independence between the observer and the observed, the listed assumptions result in the existence of an objective and value free social science that can produce true explanatory and predictive information about reality.[6]

Furthermore Ardalan (2000), argued that the functionalist paradigm has been applied to mainstream academic finance, especially in the area of theory and research. While there are debates and known anomalies in the finance literature (Frankfurter & McGoun, 2002), that suggest some evidences which counter the empirical validity of, for instance the Efficient Market Hypothesis (EMH) and the Capital Asset Pricing Model (CAPM). It is thus believed that the functionalist paradigm has become quite dominant in academic sociology and mainstream academic finance. Consequently the world of finance under the functionalist paradigm is treated as a place of concrete reality, with the individual taking a detached, passive role and his/her behaviour being determined by the economic environment (Ardalan, 2011).

It is therefore of utmost relevance to emphasise that the choice of topics and their pairing with a certain paradigm can only be based upon various given considerations, as well as the researcher's logic in design. Thus, Morgan (1980) observed that categorization into different paradigms appeared quite convincing and relevant, but with the exercise tending to be constructed upon a network of unrealistic assumptions, which most of the time are taken too much for granted. By extension, it may not necessarily be that all features must adhere to the approach. According to Nickles (2003), changes in paradigm get likened to religious conversions or political revolutions, where social scientists such as Kuhn struggled to justify the claims which suggest scientists working under competing paradigms tend to become isolated in a

[6] Student Paper, Saleh A. S (2013)

different world. Nickles (2003) however concluded that there was no point in the belief that paradigm changes convey such a scientific field any closer to the truth, in respect of a complete determinate world entirely out there to be discovered.

4.2 The Quantitative Method

In every research endeavour questions such as, "How to go about conducting the research?", "What to research?" and "Why research should be conducted?" are frequently found at the centre of the entire process. These questions are very important and they tend to directly replicate and shade more light on what was discussed especially what pertains to the philosophy of research as it relates to the methodology, epistemology and ontology of research. With the epistemology of this research already identified to be of the positivist perspective, which specifically represents what to investigate, it then follows naturally, that the end product of the work will turn out to be of the pure, strictly unbiased and objective contribution. This will represent the need to set out to investigate in the first place. The investigation essentially represents the process of attaining the objectives that were outlined and the research questions that have specified in the beginning, which in all represent the methodology of the research.

The data on debt, and the debt indicators employed in analysis, are numerical in nature and all in a time series format. For this reason the research adopted the quantitative method as the most appropriate approach to accomplish the work. Bryman (2006) argued that the assumptions underlying the quantitative research approach should be based on the objective approach to the world. In addition the objective approach should be one that adheres to the positivist model of controlling variables, as well as to carry out tests of the pre-specified hypotheses. Morgan and Smircich (1980) however, observed that while there was a level of certainty regarding the fact that a balanced approach to research in an organization is desirable, there tend to be certain hurdles arising out of the process of deciding upon a method of which the debate on the benefit or otherwise of the quantitative or qualitative; subjective or positivist, is yet to be explained. Hence, the process of measuring debt management strategy is a most cumbersome task which involves the human element particularly as result of the fact that it is unique and quite unpredictable. It is presumed that there are hardly two separate individual behaviours that end up to be similar. The epistemology

of the non-positivist approach, on the other hand takes various forms and it tends to oppose the comfort of discovering the underlying regularities (Falconer & Mackay, 1999) especially in the world of social affairs.

A substantial review of the literature on debt, debt management and strategy indicates that most of the academic research works undertaken have been accomplished through the use of the quantitative method where the objectivist and the positivist ideology remained the guiding principles. Instances of relevant and related works carried out by prominent researchers included but are not limited to Rolph (1957), prominent research on the principles of debt management; Tobin (1963) in an essay on the principles of debt management; Giavazzi and Pagano (1989) research on confidence crisis and public debt management; Cohen (1990) on debt relief and the implications of the secondary market discounts and debt overhang; Missale (1994); (1999); (2000); famous research on public debt maturity and currency crises, Levine, Mandilaras, and Wang (2008) on optimal reserve management and sovereign debt and several other relevant works on debt and debt management all adopted the quantitative, positivist approach to research. However, while all of these works were focused on debt management in more developed economies, very few made reference to sub-Saharan Africa (Fosu, 1996).

The problem of insufficient and missing data on Africa's debt (Panizza, 2008), the use of data from primary sources obtained by means of the questionnaire survey method was considered a viable option for the work. It is imperative to note however that the choice for any research method whether qualitative or quantitative cannot be adopted as an abstract. The reason being that such a choice and its sufficiency must present us with certain assumptions concerning the nature of knowledge and the methods through which such knowledge can be accessed (Morgan & Smircich, 1980). For instance, Kuhn (2012) observed that traditionalist theory building in organizational study have succeeded in producing valuable but somehow incomplete views regarding organizational knowledge, particularly due to the fact that knowledge is based on a single paradigm or approach to understanding it. G. a. M. Burrell, G. (1979) argues that in the present it has been recognized that the use of any single research paradigm tends to promote a narrow view of the multi-faceted organizational society we experience today. Furthermore, Gable (1994) observes that the case for combining quantitative and qualitative research methods is quite strong. Nonetheless, the

positivist approach tends to however be based on an epistemology whose features seeks to answer the social world by adopting some regularities and causal relationships between elements (G. Burrell, 1979), which also tends to accept the processes relevant for the study, which can be reduced to dependent and independent variables (Rosen, 1991) and which may be captured through the questionnaire or experiment. All this therefore justified the choice of the quantitative method for the study.

4.3 Sources and Uses of Data

This work strictly adopts the quantitative approach to research. Data was however collected from both primary and secondary sources. Due to the nature of the subject under investigation the data was expected to be mainly secondary and cross-country in nature. The choice of data was based purely on availability and suitability as material in the process of answering the stated research questions. Data collection was mostly from secondary sources, except in situations where certain confirmations were needed, as well as to make up for the case of missing data, which was very common among the countries in sub-Saharan Africa. A comprehensive data base on debt is accessible from several sources, which includes government financial statistics, the IMF's International Financial Statistics, World Economic Outlook and the World Bank's World Development Indicators. Other relevant sources are the ADB and the individual countries' central bank annual reports and publications.

While these sources are relevant in the process of data generation there is however the problem of missing data, especially where data regarding SSAs is sought. For instance a section of this work relies much on the availability of data on domestic debt in most of the sub-Saharan African countries. Data on sub-Saharan African countries debt is generally difficult to come by. This is especially the case when the data is concerned with the aspect of domestic debts. External debt data is relatively easier to collect because a substantial proportion of the SSAs' debt originated from Bretton Woods related institutions. According to Panizza (2008), detailed information regarding the level and composition of for instance, domestic debt in the most sub-Saharan countries was difficult to obtain. Up-to-date data is necessary in, for example, debt sustainability analysis which mainly focuses on total debt and the study of the impact of debt structures. However, this kind of data is not even available for policy making and research analysis. Hence, the writer's own computation was required in several

stages of the work to augment the process. There are however more problems of definition encountered in the process of generating data on debt.

4.3.1 Rationale for the Quantitative Approach

When choosing an appropriate research methodology it is imperative for the researcher to understand two concepts in order to assess the qualitative method. The model that is used in the evaluation of a quantitative research design may turn out to be a model that is irrelevant in qualitative research. In addition, not all qualitative research can be evaluated using the same strategies adopted for quantitative research (Krefting, 1991). Quantitative research tends to recognise, document and value research through the process assessing the reliability and validity of projects (Payton, 1988). This kind of procedure is not emphasised in the qualitative method of research.

The survey method in research is often related to the qualitative method, particularly when it involves the opinion of respondents during interviews and responses to the questionnaires. The interview as a method of research tends to be adopted where an in-depth knowledge of a phenomenon is sought and where a process of building a theory is pursued. However, interviews are often viewed as being influenced by the respondent's bias or point of view. Schmid (1981) described the qualitative approach in research as an approach that promotes the study of the natural world through the eye of the person being studied. It is believed that under the qualitative method, the behaviour of the respondent tends to be influenced by the physical, socio-cultural and even the psychological environment in which the subject resides. There is also a tendency for the respondent's behaviour to extend beyond what is expected and observed by the researcher. This paves the way for subjectivity and biased perceptions, which may end up being critical to qualitative research as a whole.

The fundamental difference between qualitative and quantitative research approaches is clearly outlined by the twin notions of reliability and validity. These two features play a very significant role in natural or quantitative research approaches. In qualitative research however, these two aspects of research tend to lose their relevance. By reflecting on two principles, Kirk and Miller (1986) defined the qualitative research method as a specific condition in the social sciences which fundamentally relies on observing the research subjects in their different domains, as

well as interacting with them through their own medium at their chosen times. This makes qualitative research pluralistic, thereby possessing a variety of approaches, which include phenomenology, semiotics, ethnography, life history and historical research.

Therefore, the qualitative method may not be evaluated against a criterion that is appropriate for the quantitative approach, because in most instances the qualitative method tends to portray shortcomings in for instance, the area of reliability and validity. A researcher with a tendency for the qualitative approach may however contend that due to differences in the nature and purposes that exist between the qualitative and the quantitative method, there may not even be a basis of comparison between the two. It is therefore erroneous to apply similar criteria in the comparison of these two approaches. On the other hand, Agar (1986) observed that terms such as reliability and validity are found to be more compatible with the quantitative, rather than qualitative approach. According to Payton (1988), the notion of external validity is more concerned with the ability to carry out generalisations from the sample of a population, which is largely a key criterion of the quantitative method in comparison to the qualitative research approach.

4.4 Population and Sample of Research

A population is a set of existing units of people, objects or events, whereas a sample represents a subset unit of a population (Bowerman, O'Connell, & Orris, 2003). The population of the proposed survey was drawn from among the sub–Saharan African countries:

Of the 28 SSA countries, the researcher selected four (4) countries; Ghana, Nigeria, Uganda and South Africa. Nigeria and South Africa, though they reside in sub-Saharan Africa were not categorised as HIPC. However, their relative economic strength warranted their selection in order to produce a relatively balanced and credible analysis. For instance, Nigeria's experience as beneficiary of debt cancellation was regarded relevant for the work, while the inclusion of South Africa was regarded important as a non-HIPC with a relatively growing economy and a vibrant and developed domestic market. Ghana and Uganda were selected purely based on their status as HIPCs, whom attained the decision point and were granted debt relief, but just as they started showing signs of debt distress. Other reasons for

the selection of these countries range from proximity, lower cost of access and language. All Francophone countries were deliberately eliminated as non-eligible.

4.5 Determination of Sample Size

The process of determining the sample size from the population drawn from these four countries was arrived at by applying the Krejcie and Morgan (1970) process of sample size determination. They note that a sample can easily be determined once the number of observations (N) is known. The sample size computation would simply be read from a ready statistical table constructed from the following formula:

$$S = X2NP\ (1 - P) \div d2(N - 1) + X2P\ (1 - P)$$

where:

S = required sample size.

*X*2 = the table value of chi-square for 1 degree of freedom at the desired confidence level

(3.841).

N = the population size.

P = the population proportion (assumed to be .50 since this would provide the maximum sample size).

d = the degree of accuracy expressed as a proportion (.05)

To determine the total number of observations, we needed to consider the calibre of our respondents. The topic of debt management is both a technical and professional branch of the subject of economics. In financial economics for instance, aspects of debt and its management are classified under international finance. For this reason the target respondents were mainly mid-level and senior management staff of Central Banks, Ministries of Finance and Debt Management Offices in the selected countries, while a number of respondents were sampled from the West African Institute for Financial and Economic Management (WAIFEM). While all the countries under study had at least a Central Bank in place, the management staff in all countries were found to average twenty staff per country. Of this number, about 5% or 25 were found to be directly involved with the core aspect of borrowing.

In Nigeria for instance, several of the management staff met during the pilot exercise had no idea regarding the debt process. More than half of the questionnaires were distributed in Nigeria. This is because apart from the fact that it was the only country

visited, it happened to be the one with the largest population, doubling the population of the three other sampled countries combined. Furthermore in Nigeria, more than one agency involved with debt management was visited: the Debt Management Office, the Central Bank and the Federal Ministry of Finance. For the other countries there was the Bank of Ghana, Bank of Uganda and the Reserve Bank of South Africa. These were contacted online, with follow up through telephone calls.

Thus, at an average of 20 staff per organisation, the population of the study was determined at 120. This resulted in twenty of the total respondents each in Uganda, Ghana and South Africa. Nigeria had 60 distributed among three organisations and WAIFEM. Sample size determinations of a population of 120 require a sample of 92. Approximately 100 questionnaires were distributed. Questionnaire distribution and collection was relatively feasible in Nigeria, whereas the cost of travelling to remaining sampled countries made it impossible to visit all four countries physically. Thus, all contact with respondents in the other three countries was made electronically via email and telephone calls. The result from Ghana, Uganda and South Africa was very insignificant whereas collection from Nigeria was most remarkable.

4.6 The Survey Process

The survey research method offers a unique inferential strategy to known populations within measurable levels of sampling error. This power stems from the cumulative result of the numerous individual decisions of the respondents in the survey. Where full participation proved impossible to obtain, the ability of the method to generalise tends to be threatened (Groves, Cialdini, & Couper, 1992). Fowler (2009) provides the reasons for adopting the survey method, which are as follows: the need to create statistical data that is quantitative or numerical, collected by means of asking people questions where their answers constitute the data to be analysed. The data obtained from the process is quantitative and thus turns the survey method into a process of tapping into the subjective feelings of the respondents. The data collected via questionnaires are however mainly primary in nature and it is first-hand information collected for the purpose of carrying out a specific study by a researcher on variables of interest to him or her (Sekaran, 2003).

According to Rea and Parker (2012), survey research involves the act of soliciting self-reported verbal information from people about themselves. It was precisely this

impression of the survey research design that was the rationale behind it being ranked lower on the ladder of methodologies employed to accomplish this work. Firstly, the entire work is centred on the phenomenon of debt and its management and secondly it is not about the respondents' feelings or attitudes towards it. But because the ultimate goal of sample survey research is to give the research the power to generalize from a study of a small portion of a population to its larger body, survey research becomes necessary to complement pre-existing data or secondary data. Rea and Parker (2012) argue that survey research is only one among many different methods of data collection. Survey research may be embarked upon where other alternative research techniques are considered inadequate or inappropriate.

Survey questionnaires should be able to enquire about existing sources of information as a first step in the research process to take advantage of information that has already been collected and which may shed light on the study. Common sources of secondary information include libraries, government agencies and others. There are however, numerous sources of secondary data regarding debt, which come in different forms and for different period intervals. The secondary data obtained for this work was specifically obtained from the World Bank debt data base, the IMF, HIPC and Central Banks of Nigeria, Ghana, Uganda and South Africa.

Survey questionnaires administered in this work included some basic details about the respondents. Less emphasis was placed on the person of the respondents however. This part of the questionnaire was to enable the researcher to have a better understanding of the larger population that was being represented in the sample, but most importantly it was used to determine the competency and responsibility of the respondents in their response to such a sensitive subject as debt. The survey employed the use of well-structured sample surveys that generate a standardized set of data that can be quantified, and subsequently be subjected to computerisation and statistical analysis.

By the first week of January 2013, field work started in earnest. Out of the four sampled countries Nigeria was physically visited. While the remaining three countries could not be visited due to costs involved, the option of online survey method was employed. Survey Monkey, a popular online research site, was utilised by the researcher and several questionnaires were dispatched to respondents. Online survey is characteristically slow in response, however with a regular telephone follow up and

letters of reminder a good number have so far been returned. A total of 100 questionnaires were distributed in all the sampled countries with 70 distributed in Nigeria. A total of 77 responses were recorded.

4.6.1 Primary Data Collection

This work adopts the survey method in the process of collecting primary supplementary data. Given the scant nature of data and the difficulties encountered in generating data on low income sub-Saharan Africa, primary data is collected to support secondary data collected from the sources mentioned earlier. This is done with the intent of filling potential gaps in the data as a whole.

The process of administering questionnaires and data collection in Nigeria became an uphill task. There was a general security problem due to insurgency attacks, which became rampant since January 2012. Movements were curtailed and in many instances, access to targeted offices were hindered. In addition, the researcher's field experience in Nigeria confirmed the poor attitude to work displayed by most of the workers. There was a total lack of awareness of the relevance of research and as a result it was difficult to recruit more respondents to participate. Whenever a respondent was found, the objectivity of their responses was always difficult to ascertain. There was lack of information even among respondents who on paper were qualified to participate in the survey. There were many instances of management staff who were not knowledgeable, and competent enough, in respect of the process of government borrowing. The Central Bank of Nigeria, Debt Management Office, the Ministry of Finance and West African Institute of Financial and Economic Management were visited.

4.7 Limitations of the Research

The major limitation of this work was that fewer similar works have been accomplished on the subject matter of debt management in sub-Saharan Africa. As explained earlier, out of the works accomplished on sovereign debt, most of the authors have concentrated on the relationship between government borrowing and economic growth, and/or how the process impacts upon investment and growth and even these works were mostly found to cover Latin American countries. Where African countries were involved, very few samples were used. Thus, the proposed work on the impact of debt management on the economic growth of sub-Saharan

African countries was faced by an acute dearth of literature on the subject of debt management. Hence, references were frequently made to situations and instances outside the sub-region. Also, the very fact that the subject of debt management was relatively new, even among the developed economies, generating up to date data, especially on the low income economies of sub-Saharan Africa, proved to be equally difficult.

The multi-lateral financial institutions of the IMF and the World Bank, which inadvertently became a major source of data for this work, were also found to be lacking in several aspects of the African debt data. For instance, data on domestic debt was difficult or completely unavailable (or not updated) from the data bank of these institutions. Except for data on external debt, which was not sufficient for the proposed work. Even the figures representing external debt, for some sub-Saharan African countries, some were found to be incomplete, showing discrepancies and lots of missing data over the years. Thus the work employed the used of mixed sources of data in order to accomplish some of the research questions raised in the introductory chapter.

4.8 The Questionnaire

The questionnaire was designed to capture both the administrative and technical aspects of debt management. The questionnaires are visualised as tree-like directed graphs, which are designed to model the situation of a broad class of discrete recognition and identification problems in the broader sense of those perceptions (Parkhomenko, 2010). The questionnaire used in the work adopted the World Bank designed debt management performance assessment tool format. The debt management performance assessment (DeMPA) tool has been designed for the purpose of undertaking an assessment of the strength and weaknesses in government debt management practices (Bank, 2009). The DeMPA is primarily concerned with how government debt management is conducted and covers all the aspects of central government debt management functions. The tool also covers other related aspects of central government debt such as issuance of loan guarantees, on-lending, cash flow forecasting and cash balance management.

The questionnaire captured all the performance indicators which aim to measure debt management performance, as well as measure elements recognised as being necessary

in order to achieve a sound debt management practice. Each of the indicators reflects measures for the assessment of a sound practice (See Appendix A). By adopting this performance assessment tool as a guide in constructing the questionnaire, it is expected that a set of performance indicators, which would cover the full range of government debt management activities, critical activities inclusive as well as ensuring that the assessment and the number of chosen indicators can be adequately managed.

4.8.1 Questionnaire Design

The questionnaire consists of six sections. A section expounding the issue of governance and debt management strategy development; coordination with macroeconomic policies; a section dealing with borrowing and related financing activities; cash flow forecasting and cash balance management; operational risk management and debt records and reporting. These sections cover different indicators that directly affect the status of a government's debt management process at a point in time. Appendix A shows a specimen of the questionnaire, which is directly adopted from the debt management performance assessment guidelines of the World Bank. The issues included in the questionnaire were reflective of a country's debt performance indicators as contained in the debt management performance assessment as put together by the World Bank and the IMF. The questionnaire responses were in turn aggregated and analysed quantitatively.

The variables being adopted directly from the debt management performance indicators follow the same pattern and carry similar weight. These variables in turn represented the issues responded to by various respondents. The performance assessment indicators consisted of one or more dimension that were to be assessed separately. When a country is being assessed, any of the dimensions that failed to be assessed was designated not rated (N/R). At a country level, assessment of a minimum score of C is required for each dimension, which is the necessary condition for the attainment of an effective performance under the particular dimension being measured (Bank, 2009). Performance scores under DeMPA are rated A, B, C, and D. A stands for outstanding, B for sound, C for fair, and D for poor. Countries' debt management performances were scored accordingly. To complete the scale column E was added to reflect country performances prior to DeMPA.Under the variable of debt management strategy focus was directed at two dimensions; the quality of content and

the decision making process. The essence of this variable is to ensure that every government prepare and publish a debt management strategy that is based on long term debt objectives as well as being set in the context of a government's fiscal policy and budget framework. The debt management strategy in this regard may vary from country to country, depending on the stage of development of debt management reform, the source of borrowing, as well as the transactions employed to manage central government debt. These issues are dealt with under the variable of debt management strategy.

Evaluation of debt management operations is another dimension under the indicator of governance and strategy development. This dimension tries to ensure that the principal debt management entity is accountable for its activities by way of evaluating outcomes against stated debt objectives, as well as ensuring compliance with the central government's debt management strategy. This aspect of debt management tends to encourage transparency in debt operations and good governance through the promotion of accountability among the principal actors in debt management and entities.

Another indicator is the audit and the frequency of audit assessors. The rationale for the auditing indicator is to ensure that government debt management activities, policies and operations are subjected to scrutiny by such a country's national audit bodies. Here, all the auditing standards must be consistent with international audit standards, such as those set up by the international Organisation of Supreme Audit Institutions (INTOSAI). It should be noted that the objective here is to identify whether regular internal audits and periodic external audits or as it obtains in many countries, where the office of the auditor general have been provided and thus issues such as what was the nature of the audits undertaken, who had undertaken it and the findings of such audits should be addressed. A further dimension under the governance variable is the frequency of the audit discussed earlier.

Under the performance indicators are more variables each with a number of dimensions or indicators to be responded to. The questionnaire specimen attached as an appendix to this work lists all the variables and indicators covered. The remaining variables include co-ordination with macroeconomic policies, borrowing and related financing activities, cash flow forecasting and cash balance management, operational risk management and debt records and reporting. Descriptive statistics of responses

were taken to determine the impact of debt management strategic tool application and how the respondents' response was related to the debt situation in sub-Saharan Africa.

4.9 Secondary Data

In order to determine the relationship between debt management and economic growth; debt management and the probability of a country becoming debt distressed; debt and growth; the correlation between choice of debt instruments, maturity and extent of indebtedness the use of regression analysis was employed. The regression method was considered appropriate in measuring relationships between debt management and debt distress, as in Weist et al. (2010); Kraay and Nehru (2006) and Reinhart et al. (2003). Missale (1994); (1999) also employed the use of regression analysis to determine the relationship between debt maturity and the extent of indebtedness. (Secondary data is attached as Appendix D)

4.9.1 Model Specification

The model has been formulated in accordance with research questions outlined earlier in chapter one. In this respect, a number of relationships have been designed to tackle each of the research questions. The research question referring to debt management strategy and economic growth necessitated the setting up of a causal relationship between the indicator of debt management against that of economic growth; then another relationship for debt and economic growth; extent of indebtedness (debt ratio) to debt maturity and debt ratio to market capitalization to provide us with the impact of capital market development on borrowing. Another relationship was constructed to reflect the choice between maturities of debt instrument. In all relationships however, regression models would be employed to determine relationships.

According to Ryan et al. (2002) in financial disciplines just like in the natural sciences, model development becomes central to the development of any research. This is why the research questions and objectives seek to address the issue of whether or not there exists any relationship between debt management and economic growth. In order to assess this, there was a need to readily create a functional relationship between economic growth on hand to be referred as the dependent or explained variable and debt management (DeM) as the independent or alternatively the explanatory variable. This research question is formulated based on the premise that prior to the 1990s, the function of debt management (DeM) had not been detached

from the field of monetary policy (Leong & Britain, 1999). As a consequence, two decades after the advent of the function of debt management (DeM), the area stirs interest among scholars with a desire to establish whether the separation was worthwhile or has it actually assisted in the attainment of economic growth? In an effort to answer these questions successfully, there is however the need for making an inference, or an application of the result to sub-Saharan Africa depending on the data employed.[7]

Ryan et al. (2002) observed that for a model to succeed in the core of research it has to fulfil certain characteristics outlined as follows:

(i) Every model ought to generate certain theoretical implications based on which a number of observational conclusions can be reached;

(ii) All assumptions contained within a model should have logical internal consistency and to be as simple as the logical premise of the model can accommodate;

(iii) A model is expected to be commensurate theoretically with any known empirical fact within its domain;

(iv) The theoretical scope of the model should have been defined by the model itself and any of its predictive and explanatory implications; and

(v) The summation of other related models in the same domain should be able to convey a similar message of a particular research program.[8]

Given the above, the work is divided into three stages. The first stage is designed to test the relationship that exists between debt and economic growth; through the process confirming the existence of the debt overhang factor or otherwise. The second stage is to consider some variables in testing debt management in relation to economic growth. This is because, if borrowing is positively related to economic growth, it therefore follows that an effective debt management strategy should also be found to positively correlate with economic growth. In the third stage, is the need to examine the appropriate debt management strategy a country in sub-Saharan Africa should adopt. This is done by considering the relationships between debt ratio and maturity, domestic/external debts to growth and size and term of debts.

[7] Student Paper, Saleh A.S. (2013)
[8] Student Paper, Saleh A.S. (2013)

Finally, two models will be employed to answer the research questions. The first model will be used to determine the relationship between debt and economic growth. To accomplish this and to test for the overall effect of borrowing on economic growth, the work of Elbadawi et al. (1997) is adopted as shown below.

4.9.2 Model 1: Debt and Economic Growth

$$\mathbf{GDPCAP} = \mathcal{F}(\mathbf{EDTGDP}, \mathbf{EDTGDPL^2}, \mathbf{DSX}, \mathbf{DEFGDP}, \mathbf{DEFGDPL}, \mathbf{PUINV}, \mathbf{INF}, \mathbf{CVTOT}, \mathbf{RPOP}, \mathbf{LRGDP}, \mathbf{RERMTS}, \mathbf{LSCHOO}L, REVOLS$$

where:

GDPCAP represents per capita GDP growth as the dependent variable;

EDTGDP represents the ratio of current stock of debt to GDP and is expected to be positive in order to confirm the first channel;

EDTGDPL^2 represents debt overhang and past debt accumulation. The value is therefore squared in order to capture the highly indebted countries' level of indebtedness in relation to growth. Here, the coefficient is expected to be negative because it is believed that a high accumulation of debt stock tends to reduce the flow of finance meant for investment purposes as a result of repayments and debt service obligations. This will hinder the growth of domestic income.

DSX represents debt service as a ratio of export earnings. Here, the coefficient is expected to be negative in order to confirm as well as reinforce the liquidity channel.

DEFGDPL represents the ratio of fiscal deficits to GDP for the current period and the previous. The coefficients here are expected to be negative as well.

PUINV represents the extent of public investments as a ratio of GDP. The coefficient here is expected to be positive such that it confirms the positive relationship that exists between investment rates and income.

INFL represents the rate of inflation. The rate of inflation is expected to stimulate growth at low and sustainable levels. INFL however impacts negatively on growth at high and crisis levels. Here a dummy variable of INFL is 1 where inflation reaches 40 per cent and above for two or more consecutive years and 0 when it is otherwise.

RERMTS represents the real exchange rate misalignment in the model. This is computed from the purchasing power parity relations and misalignment, which is defined as the percentage deviation from the mean. Because this variable has the tendency of creating distortion in economies it is therefore expected to be negatively correlated to growth.

CVTOT represents the terms of trade variability in the model.

REVOLS represents internal shocks. Both coefficients are expected to portray a negative impact on growth.

RPOP represents the impact of population pressure on domestic resources. The coefficient is indeterminate and ambiguous.

LSCHOOL represents human capital development. This variable is expected to impact positively on growth.

LRGDP is included to capture convergence effects and is supposed to take care of initial income.

The third relationship to be established is the behaviour of the structure of government debt in relation to the extent of indebtedness as well as the effect of the extent of stock market development on government indebtedness. Here debt ratio (DTGDP) as the dependent variable is related to government long term debt, short term borrowing and level of market capitalisation over the period under study.

The model was however modified to exclude variables where the extent of relevance was considered insignificant or where data was inadequate. Among the variables discarded were CVTOT terms of trade variability in the model, REVOLS which represents internal shocks, LSCHOOL reflecting human capital development and LRGDP, a variable capturing the convergence effect in the model specified. The data sourced from the identified data bank came out scanty with a substantial portion missing. The research work therefore proceeded, with measuring the model excluding these variables for a more reliable result.

4.9.3 Model 2: Debt Ratio on Debt Composition and Maturity

A good measure of debt management as discussed above are the indicators contained in the World Bank-IMF debt management performance assessment (DeMPA) tools, which are adopted as a potential source to quantify the variable of debt management,

especially for those periods where the country's performance institution assessment index (CPIA) was not readily available. Accordingly our model assumes a functional relationship between a country's debt ratio and the key explanatory variables of debt management (DeM), here represented by the country performance institution index (CPIAdt). Note however, a priori theory does not give the exact structure of the function. Thus, in this study, different specifications of the model will be estimated. Based on the review of the available literature, models are specified for economic growth and debt management. The aim of the model is to verify the impact of sovereign debt management on the overall level of indebtedness.

(vi) Specifically, level of indebtedness (dtgdp) is taken to be a function of sovereign debt management (DeM).

(vii) The general framework of the functional form is expressed as:

(viii) $\mathbf{Y} = f(\mathbf{DEM})$

(ix) $\boldsymbol{DEM = GOVED + CORMAC + BORFINA + CASHFLM + OPRX + DTRR + GOVDEC + AUTH}$

(Each one of these debt management indicators are scored in the various sections of the administered questionnaire. See appendix A)[9]

(x) $\boldsymbol{DTGDP = f(GOVED + CORMAC + BORFINA + CASHFLM + OPRX + DTRR + GOVDEC + AUTH) + MCAPGDP + STDT + LTDT + \mu t} \ldots (\mathbf{1})$

Where, DTGDP is the ratio of debt to gross domestic product representing the extent of indebtedness; GOVED represents government and strategy development, CORMAC is co-ordination with macro policies, BORFINA represents borrowing and related financing activities, CASHFLM is cash flow forecasting and cash balance management, OPRX is operational risk management and DTRR represents debt records and reporting.[10]

The models are given as follows;

(xi) $\boldsymbol{DTGDPX_t = \beta_1 + \beta_2 DeM_t + \beta_3 MCAPGDP_t + \beta_4 STDT_t + \beta_5 LTDT_t + \beta_6 + log\, \beta_6\, DTFGV_t + \mu_t} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (\mathbf{2})$

(xii) But $\boldsymbol{DEM = CPIA}$

The specification of the model is:

[9] Student Paper, Saleh A. S. (2013)
[10] Student Paper, A.S. (2013)

(xiii) $\Delta GDPX_t = \beta_1 + \beta_2\Delta(CPIA)_t + \beta_3\Delta(MCAPGDP)_t + \beta_4\Delta(STDT)_t + \beta_5\Delta(LTDT)_t + log\,\Delta\beta_6\ (DTFGV)_t + \mu_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3)$

(xiv) Accordingly, the a priori expectations are:

(xv) $\beta_1 > 0$, $\beta_2 < 0$, $\beta_3 < 0$, $\beta_4 > 0$, $\beta_5 < 0$

(xvi) β_ts = coefficients

(xvii) β_1 = cons tan t (intercept)

(xviii) μ_t = error term

β_1 is to take care of the constant variable, β_2, is the coefficient of debt management which is expected to be less than zero because it is negatively related to the extent of government indebtedness or debt ratio, β_3 is the coefficient capital market development which is expected to be positively related to debt ratio, β_4 which is the coefficient of short term debt is expected to be positively related to debt ratio, β_5 is the coefficient of long term debt and is expected to be negatively correlated with debt ratio; and β_6 is the coefficient of debt forgiveness or relief and is expected to be negatively correlated with a country's extent of indebtedness.

where:

DTGDP = Debt to GDP ratio.

M2GDP = Broad money to GDP ratio as a measure of development of the stock market. The ratio is expected to be positively correlated to the extent of the government debt ratio. Broad money ratio is also a measure of the condition of the capital market.

LTDT = Long term government debt would result in a more stable policy and ultimately may lower the rate of government borrowing and hence will be negatively correlated with the debt ratio.

STDT = Short term government debt is supposed to be positively correlated with the debt ratio. Short term debt is known to be aggravating a decline in investments and as a result, debt overhang. It is therefore negatively related to the debt ratio.

CPIAdt = this is directly related to the debt ratio and should be positive. The CPIAdt, represents the country performance institution assessment index of debt management. This variable is an extension of the variable defining debt management (DEM) explained earlier in this chapter. CPIAdt is therefore a combination of the two. It involves a unity between the scores obtained from the country wide debt management

performance assessment (DeMPA) process and the scores obtained from the country performance institution assessment in debt management.

$\mathbf{\varepsilon}$ = Error term

The above equation represents the second model. The model looks at the explanatory power of the ratio of broad money to gross domestic product (M2GDP), ratio of market capitalisation to gross domestic product (MCAPGDP), long term debt (LTDT), short term debt (STDT) and CPIAdt. The ratios of broad money and market capitalisation to gross domestic product were variables that were used to measure the extent of the development of a country's capital market, a development that plays a pivotal role in a nation's effective debt management process, as well as efficient sourcing of funding in the domestic markets. The variables of long term debt (LTDT) and that of short term debt (STDT) were included precisely to help determine the choice in composition of debt, open to the policy makers as represented by debt managers.

Here the study focuses on the relationship that exists between long term borrowings as against a short term one. The model was however unable to reflect on choice between domestic and external debts as a source of funding. This was as a result of the dearth of data on domestic debt among the sampled countries. Where the data was available it was just for a fraction of the specified period covered by the work. The data, though relatively inadequate, is presented and discussed extensively in subsequent chapters.

4.9.4 Hypotheses Testing

This research strives to test a number of hypotheses for the purpose of justifying the raised research questions. The hypotheses to be tested are as follows:

Null hypothesis (H_0): There is a positive relationship between government debt and economic growth.

Alternative hypothesis (H_1): There is a negative relationship between government debt and economic growth.

Null hypothesis (H_0): Debt management does have a significant influence on the economic growth of a country.

Alternative hypothesis (H_1): Debt management has no significant influence on the economic growth of a country.

Null hypothesis (H_0): There is a relationship that exists between the extent of debt and the maturity of debt.

Alternative hypothesis (H_1): There is no relationship that exists between the extent of debt and the debt maturity.

Null hypothesis (H_0): Debt relief does have a significant influence on a country's level of indebtedness.

Alternative hypothesis (H_1): Debt relief has no significant influence on a country's level of indebtedness.

4.10 Conclusion

In this chapter, the research approach adopted in order to answer all the raised questions was specified, with all the objectives of the work identified. Furthermore the types and sources of data used in the work have been extensively discussed. The sample and population sizes employed for the purpose of the proposed research on sovereign government borrowing and how it related to economic growth were also presented and discussed. The chapter also covered the most appropriate of the research philosophy to be employed and the form of knowledge expected. It has been argued throughout the presentation that the work was strictly of the quantitative method. The literature emanating from the process of government borrowing was however expected to be biased to objectivism having given birth to a range of positivist ideas and conclusions. The chapter has been able to model two major equations through which a number of the postulated questions and hypotheses were addressed.

Chapter 5

Primary Data Presentation

5.1 Introduction

In this chapter all data collected from the primary source is presented. As explained earlier in chapter four, primary data like the other sources, was equally essential for the study. The use of primary data in this study became necessary because overall debt data on countries in sub-Saharan Africa was not complete for most of the sampled countries e.g. World Bank debt indicators, IMF financial statistics, joint debt data, central government debt statistics and public sector debt statistics. Domestic debt data or statistics and data on debt maturities were frequently reported missing or incomplete. However, in the process of carrying out an assessment and analysis of sovereign debt data an access to first-hand, detailed and prompt information on debt and the structure of debt is most imperative. Detailed information on the level and composition of domestic public debt tends to be unavailable for policy making and analysis. Panizza (2008) for instance, noted how the situation was made even worse in sub-Saharan Africa where even the standard debt sustainability analysis on public debt resorted to the use of a definition of external debt that did not actually reflect what it was measuring. This lead to serious doubts regarding whether or not the extent of poor country external debt was actually decreasing. Thus, up to date data was necessary in the computation of debt sustainability and general debt management.

Because most of the statistics were not forth coming, there was justification for making up for the missing data by sourcing through a survey questionnaire. This chapter therefore presents the makeup data, especially that which covers data lacking for a complete understanding of sub-Saharan debt. However, due to the nature of the data on debt, the survey covered only the mid-level and senior management staff of central banks, debt management offices and ministries of finance of the sampled countries. Thus, the number of respondents was expected to be lower than in for instance, a general survey. Management staff populations in most organisations do not usually form up to one third of the organisation. In this chapter a hundred duly completed questionnaires are presented.

5.2 **Profile of Respondents**

A higher proportion of the completed questionnaires returned were from Nigeria, which can chiefly be attributed to the fact that the country was visited in person by the researcher. Due to cost of travel around the other selected countries the questionnaires were distributed online. There was a very poor response from the three other sampled countries; Ghana, Uganda and South Africa. No response was recorded against Ghana, 2 from Uganda and none from South Africa. The remaining 98 responses were from Nigeria. The problem of poor response from other sampled countries was however not necessarily a serious issue, since the essence of the primary data was to complement the already collected secondary data.

The respondents were largely senior and mid-level management staff of central banks, debt offices, and ministries of finance in the sampled countries. This feature of the target audience largely contributed to the overall number of responses. Senior and management staffs in most government departments are relatively fewer than their lower ranking counterparts and thus justify the total of 100 valid responses.

All respondents were male, married and had achieved a minimum of a bachelor's degree. The quality of the respondents' profile indicates a reasonable level of subject awareness profession-wise, professional competence, experience and reliability. The following represents a breakdown of the responses received from the questionnaires distributed to respondents spread across the sampled countries. The total number of questionnaires distributed was meant to complement the number of structured interviews. The purpose of these sources of data was to supplement the secondary data from financial institutions and agencies.

Table 5.1: Profile of Respondents

Country	Institution	No of questionnaires Administered	% of Response
Ghana	Bank of Ghana	30	0
Nigeria	DMO	35	34
Nigeria	CBN	35	32
Nigeria	FMF	25	20
Nigeria	WAIFEM	25	12
Uganda	Bank of Ghana	20	2
South Africa	Reserve Bank of South Africa	20	0
Total		190	100

Table 5.1 shows a profile of the respondents who were involved in the questionnaire survey process. A total of 190 questionnaires were administered with a total of 100 responses recorded, representing 52.63%. Debt management related organisations engaged during the exercise included the central banks of the four sampled countries as well as the debt management office, Federal Ministry of Finance and the West African Institute for Financial and Economic Management (WAIFEM). More than 90% of all responses were received from Nigeria, having being visited by the researcher in person. Two responses were recorded from the Bank of Uganda. There was no response recorded from the Bank of Ghana and the South African Reserve Bank. All respondents were of mid-level to senior management cadre and possessed a qualification higher than a bachelor's degree. All respondents were male, married and above thirty years of age.

Figure 5.1: Profile of Respondents

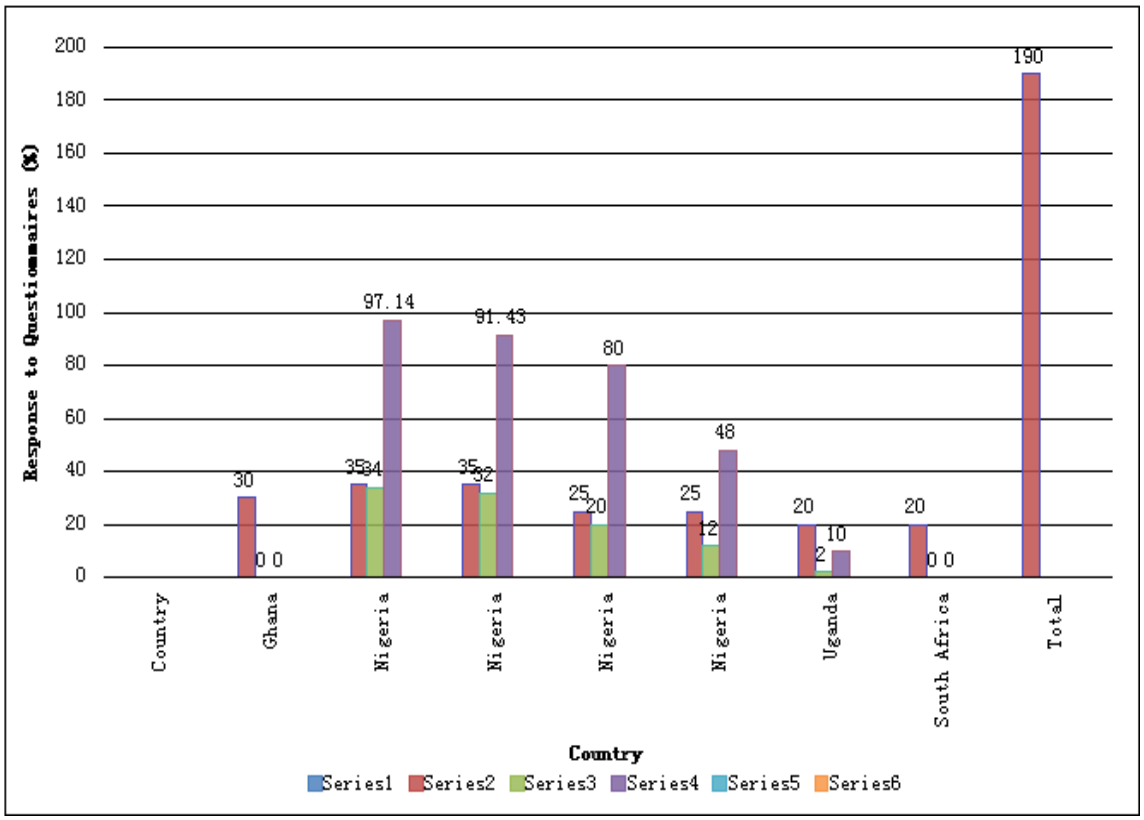


Figure 5.1 summarises the number of questionnaires distributed to the government departments spread around the sampled countries as shown in the preceding respondents' profile table.

5.2.1 Response to Questionnaire

Proponents of the survey research method strongly believe that representative sampling is essential for generalization from sample to the general population to be feasible. It has been argued that for a sample to be representative, the surveys response rate must be relatively high. For many, a research sample can only be a solid representative of a population where a probability sampling method is employed and the response rate is as high as 100%. According to Krosnick (1999) however, it is not be necessarily the case that representativeness increases monotonically with the rate of response. Accordingly, recent researches have shown that surveys recording low levels of response tend to prove more accurate than surveys with higher rates of response.

For instance, comparing accuracy between the self-administered mail surveys to that recorded in the process of telephone surveys during the forecasts of a state-wide election for a 15–year period, Visser, Krosnick, Marquette, and Curtin (1996) concluded that although the mail surveys recorded a response rate in the range of 20% and the telephone surveys returned up to 60% the mail surveys ended up predicting the election results much more accurately than the telephone surveys had. Thus, it is evident that the more researchers strive hard to boost the rate of response, the less representative the sample tends to become.

Questionnaire surveys such as the ones we are presenting are a part of a process that generates standardized data, which are usually and to a larger extent amenable to quantification and further statistical analysis. Thus, it should be reasonably expected that the process will render a response rate that is up to 50% where the subject of research concerns the general public, although for specialised populations it should be higher (Rea & Parker, 2012). Generally, a response rate of up to 50% can be considered adequate for purposes of analysis and reporting research findings. This is dependent on the researcher's satisfaction with the representativeness of the respondents. Brehm (1993) observes that even in the best academic surveys there tends to be significant bias based on demographic and attitudinal composition of the

samples obtained. Brehm (1993) further notes that in two leading academic nation-wide public opinion surveys, certain demographic groups have been routinely represented in misleading numbers.

5.3 **Debt Management Indicators**

The Governance and Strategy Development (See Appendix I) is the first section which contains five different indicators; legal framework, managerial structure, borrowing and debt-related transactions and loan guarantees. Other indicators under this section are debt management strategy, quality of content and decision-making process, evaluation of debt management operations, audit frequency and audit appropriate response.

5.4 **Government and Strategy Development**

The essence of governance and strategy development is to ensure that certain indicators such as the legal framework, managerial structure with respect to borrowing and debt-related transactions and loan guarantees, issues of debt management strategy with respect to quality of content, debt management issues regarding the decision making process are in place and implemented effectively. Other equally important indicators include the evaluation of debt management operations, audit frequency and audit appropriate response. These indicators are assembled to form the variable of government and strategy development presented in this section. Respondents were requested to rate the extent of compliance to the indicators.

Table 5.2: Government and Strategy Development

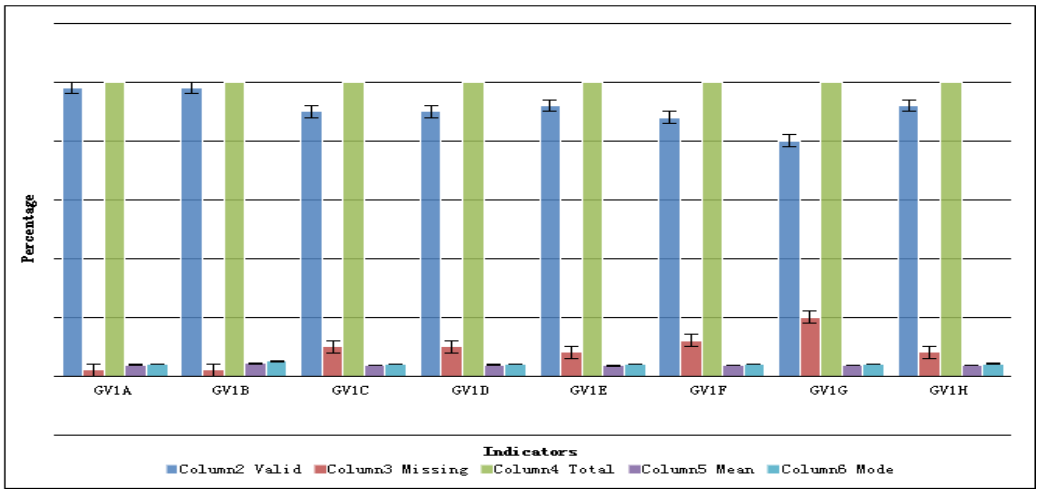
Indicator	Valid	Missing value	Total	Mean	Mode
GV1A	98	2	100	3.78	4
GV1B	98	2	100	4.23	5
GV1C	90	10	100	3.63	4
GV1D	90	10	100	3.83	4
GV1E	92	8	100	3.54	4
GV1F	88	12	100	3.68	4
GV1G	80	20	100	3.69	4
GV1H	92	8	100	3.59	4.1

Table 5.2 displays the descriptive statistics of the important variable of government and strategy development, which is coded GV1 for easier identification and analysis. GV is short for government and the figure 1 shows that it is the first variable as per

the questionnaire. All dimensions under the same variable are differentiated alphabetically. For example, there are the indicators of Legal Framework the Managerial Structure, Borrowing and Debt Related Transaction abbreviated to GV1A and GV1B respectively. The codes GV1C, GV1D, GV1E, GV1F, GV1G and GV1H were assigned to managerial structure, loan guarantees, and debt management strategy, quality of content, decision making process, and evaluation of debt management operation, audit, frequency and audit appropriate response respectively.

The descriptive statistics in table 5.2 go on to show the valid and missing value, mean and mode of the distribution. Of the 100 questionnaires the least valid response was 80, while the highest missing value was recorded under the indicator of audit frequency with 20. The mean score ranged between a low 3.54, recorded under the indicator of debt management strategy, decision making process, (GV1E) and a high 4.23 under the indicator of Managerial Structure: Borrowing and Debt Related Transaction (GV1B). The mode score for all the indicators was 4, with the exception of a mode response of 5 recorded for GV1B. Figure 5.2 gives a graphical representation of the distribution.

Figure 5.2: Government and Strategy



5.5 **Legal Framework**

The indicator for the legal framework is meant to clearly set out the authority to borrow from both domestic and external sources, as well as perform debt-related transactions ranging from currency to interest swaps and other matters such as the issuance of loan guarantees. The legal framework ensures the legality of borrowing where most of the time this delegation is found in the primary legislation, usually in a separate law on public debt or similar law in the budget system law along with the

annual budget act or in a fiscal responsibility act. However, the first level of delegation of the borrowing power is derived from the parliament or congress as the case may be and down to the executive arm of government. In some instances the delegation of the borrowing power tends to be restricted by a statement of the purpose by which the government can borrow e.g. to finance deficit or to refinance a maturing facility. This restriction can also emerge in the form of a limit on the annual net borrowing or the outstanding debt (Bank, 2009). The legal framework is a crucial aspect of the process of government borrowing. On several occasions, debts have tended to be repudiated on the premise of the issue of legality. For instance Tideman and Lockwood (1993) noted that in the past many countries have repudiated their debts. Under normal circumstances however, repudiation of sovereign debts should have no justification. They concluded that a country might legitimately repudiate its debt on four premises: that the said facility had actually been contracted fraudulently, lacking a valid approval by the citizens, the lender had been negligent and the nation is bankrupt. Table 5.3 presents statistics collated on the indicator of legal framework as compiled from respondent rankings on a scale of 1 to 5.

Table 5.3: Legal Framework

Scale		Frequency	Percent	Valid%	Cumulative%
Valid	1	4	4	4.1	4.1
	2	12	12	12.2	16.3
	3	15	15	15.3	31.6
	4	37	37	37.8	69.4
	5	30	30	30.6	100
Total		98	98	100	
Missing	9	2	2		
Total		100	100		

Table 5.3 covers the rankings attributed to the indicator of legality of contracting a government debt facility or the legal framework. Here, almost all rankings were carried out with two missing values. A total of 98 valid entries were made, while 2 representing 2% of the entire legal framework scores were recorded as missing values. Legal framework was ranked at 1, 4 times, 2, 12 times, 3, 15 times, 4, 37 times and 5, 30 times, representing 4, 12.2, 15.3, 37.8 and 30.6% respectively. These statistics indicate that the legal framework arrangements for government debt had been remarkably high with 79.6% of all valid entries ranking the indicator between 3; good, to 5; excellent in compliance.

Figure 5.3: Legal Framework

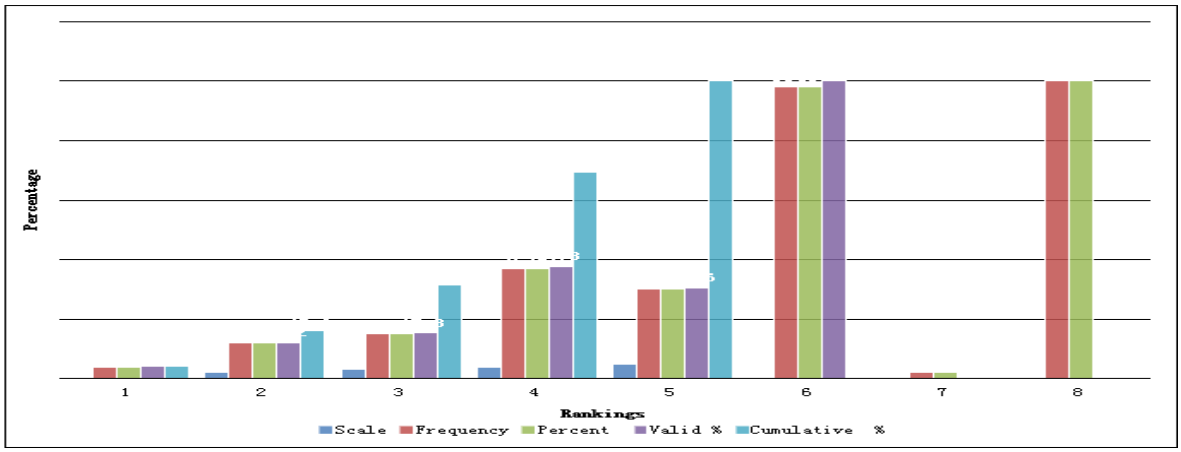


Figure 5.3 presents a graphical presentation of the scale rankings made on the indicator of legal framework.

5.6 **Managerial Structure: Borrowing and Debt Related Transactions**

Here Borrowing and Debt-Related Transactions is considered, as well as the issue of loan guarantees. The indicator is relevant in the process of the assessment of a sound debt management strategy at any particular point of time. It is meant to ensure that the managerial structure for debt management is clearly shared between the political level (the legislative arm or the executive) that actually sets out the overall long-term central government objectives, approves the established strategy as well as the agencies responsibilities for carrying out the laid down function of implementing the debt management strategy (Bank, 2009). This measure has the advantage of rightly placing the overall decision concerning the volume of indebtedness and the acceptable risks inherent in the debt portfolio as they affect the budget, taxes, government spending programs and other such indicators on political decision makers, while allowing technical experts to handle the issue of determination of the optimum risk-risk adjustable outcome as contained in the parameters.

Table 5.4: Managerial Structure, Borrowing and Debt Related Transactions

Scale		Frequency	Percent	Valid%	Cumulative%
Valid	2	2	2	2.3	2.3
	3	17	17	19.3	21.6
	4	28	28	31.8	53.4
	5	41	41	46.6	100
Total		88	88	100	
Missing	9	12	12		
Total		100	100		

Table 5.4 presents the rankings given to aspects of managerial structure with respect to borrowing and debt-related transactions – GV1B. The respondents were asked to rank the extent of which they believed the managerial structure in their countries was balanced between the political level and the entities charged with the responsibility for the implementation of the government debt management strategy. 41 of all the valid entries ranked at 46.6% ranked the indicator perfect at 5%, 28% or 31.8% of the entries ranked it 4 or very good, 17 respondent entries or 19.3% ranked the adherence to the indicator 3 or good. The least ranking was 2; or fair, in 2 valid entries representing 2.3%. Missing values accounted for a total of 12 or 12% Overall, the survey response to the indicator was valid at 88% and the majority opinion indicated an effective separation between the government and the debt policies implementation agency.

Figure 5.4: Managerial Structure, Borrowing and Debt Related Transactions

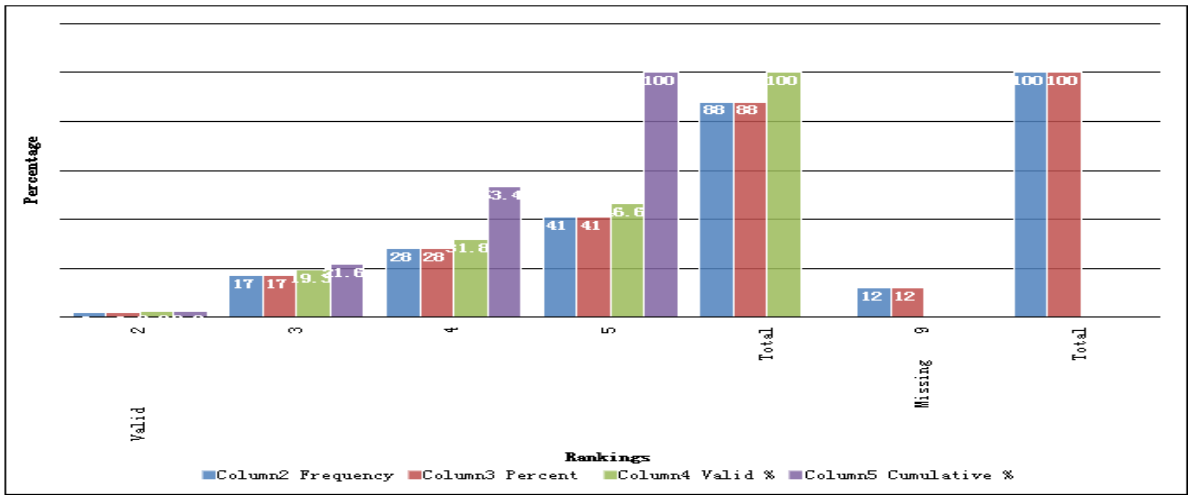


Figure 5.4 shows the ranking of the indicator in a bar chart form representing the data presented in table 5.4.

5.7 **Managerial Structure: Loan Guarantees**

The other aspect of managerial structure is the issue of loan guarantees, which are typically made to support a certain beneficiary, project or a specific sector of the economy. Since it is a political decision there was no need to separate the political decision of approval for a government source of funding and the issuance of loan guarantees. But having left the responsibility of the issuance of a loan guarantee to the technical and professional body in charge of government debt management, it is then left for the technical team to ensure the assessment and the pricing of the credit risk as well as to monitor this risk during the term of the guarantee and to co-ordinate the borrowings of the guarantee beneficiaries with the central government borrowing (and properly record them). However, a cross country experience indicates that a successful agency arrangement in debt management depends in part on the degree to which the principal-agent problems which arise from issues related to delegation of authority are resolved (Currie et al., 2003). Table 5.5 presents an assessment of compliance with the provision loan guarantee as contained in questionnaire responses received from a hundred respondents.

Table 5.5: Managerial Structure: Loan Guarantees

Scale		Frequency	Percent	Valid%	Cumulative%
Valid	2	12	12	13.3	13.3
	3	19	19	21.1	34.4
	4	49	49	54.4	88.9
	5	10	10	11.1	100
Total		90	90	100	
Missing	9	10	10		
Total		100	100		

Table 5.5 presents the ratings with respect to the indicator of loan guarantees. Of a total 100 returned and duly completed questionnaires 90 entries representing 90% were recorded as valid and 10 or 10% were recorded as missing values. Of the 90 valid entries 10 or 11.1% rated the indicator 5 or excellent, with 49, representing 54.4% of the entries rated the indicator 4 or very good, 19 representing 21.1% rated compliance with the requirement of loan guarantees 3 or good and 12 representing 13.3% of all valid responses ranked the debt management indicator 2, or fair. A total of 10 entries were recorded as missing values. The level of response was quite remarkable at 90% valid entries.

Figure 5.5: Managerial Structure: Loan guarantees

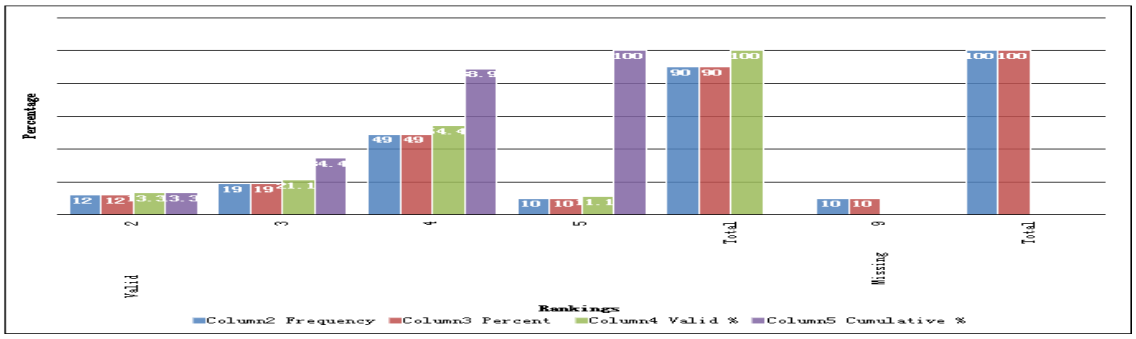


Figure 5.5 sheds more light onto the content of table 12 presented earlier. The statistical data on compliance to loan guarantees is shown graphically as a bar chart.

5.8 **Debt Management Strategy: Quality of Content**

The indicator of the quality of content emphasises that the content of a debt management strategy should ensure that the analytical basis, upon which the risk indicators are disclosed, promotes transparency in its formulation. Bearing in mind that the content of strategy in debt management may vary from one country to another, table 13 presents the assessment of compliance to this debt indicator,

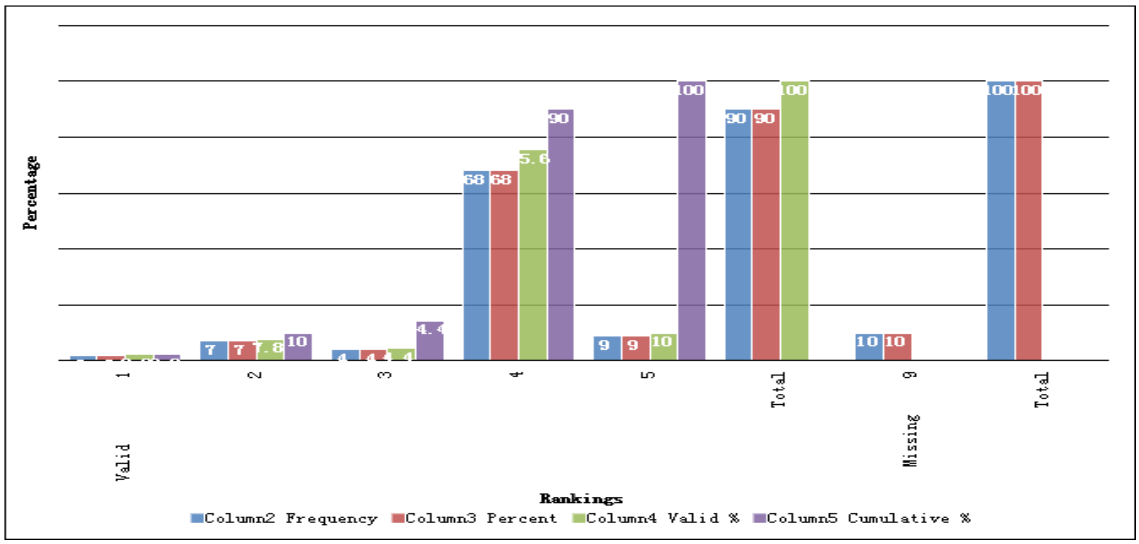
primarily in Nigeria. Responding to a questionnaire, the respondents ranked the level of compliance on a scale of 1 to 5.

Table 5.6: Debt Management Strategy: Quality of Content

Scale		Frequency	Percent	Valid%	Cumulative Percent
Valid	1	2	2	2.2	2.2
	2	7	7	7.8	10
	3	4	4	4.4	14.4
	4	68	68	75.6	90
	5	9	9	10	100
Total		90	90	100	
Missing	9	10	10		
Total		100	100		

Table 5.6 represents the statistics of all the responses recorded, based on the level of quality of content of the debt data. Of 100 questionnaires 90% of the entries were found to be valid and 10% were recorded as missing values. Of the 90 valid entries, the highest rating of 5 was found in 9 entries, representing 10%, 68 representing 75.6% rated quality of content of debt strategy at a high 4, or very good, the rating of 3 or good, was made in four responses or 4.4%, 7 and 2 responses representing 7.8 and 2.2 percentages respectively rated the indicator 2; far, and 1; poor. By this, the indicator of quality of content is can be judged as being effective.

Figure 5.6: Debt Management Strategy: Quality and Content



The bar chart in Figure 5.6 sheds more light on the statistics earlier presented in table 5.6.

5.9 **Audit: Frequency**

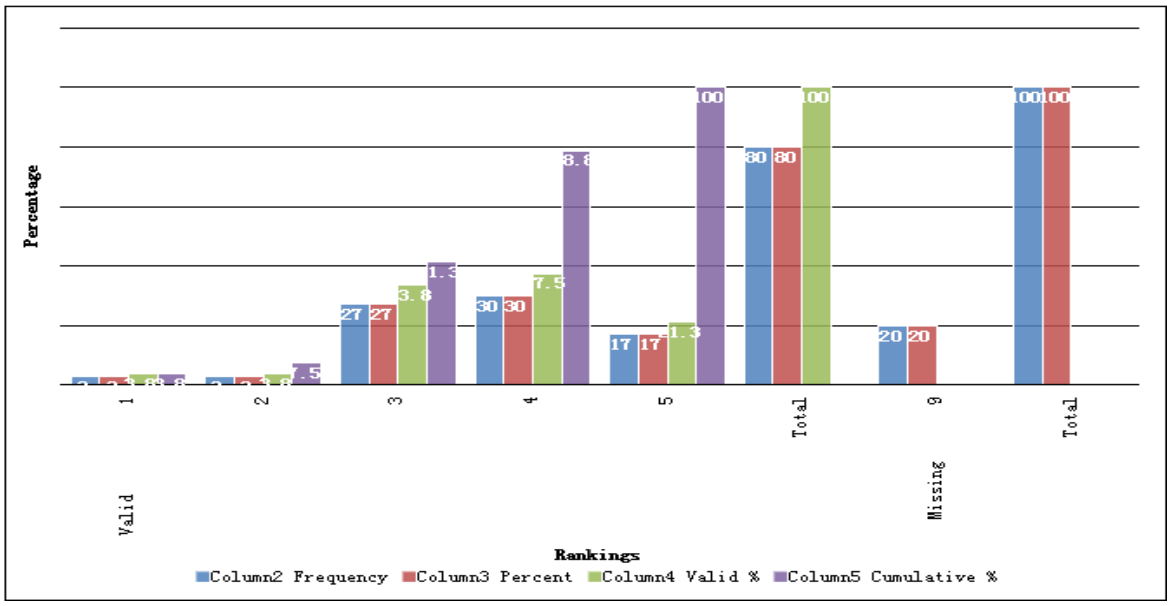
This indicator is relevant in assessing a country's performance in the aspect of debt management. The frequency of audit in government debt management activities is to ensure that all operations are subjected to scrutinise the national audit bodies, where the standards of the audits should be of international standards. Table 5.9 presents statistical data on the indicator of audit frequency, mainly collected from questionnaire responses by a hundred respondents.

Table 5.9: Audit Frequency

Scale		Frequency	Percent	Valid%	Cumulative%
Valid	1	3	3	3.8	3.8
	2	3	3	3.8	7.5
	3	27	27	33.8	41.3
	4	30	30	37.5	78.8
	5	17	17	21.3	100
Total		80	80	100	
Missing	9	20	20		
Total		100	100		

Table 5.9 presents the response to the indicator of audit frequency as an element of governance and strategy development. There are a total of 100 questionnaire responses recorded of which a total of 80 or 80% were valid. Twenty or 20% of all entries were recorded as missing values. Of the 80 valid responses, 17 or 21.3% rated the indicator at a high 5 or excellent, 30 or 37.5% rated compliance with audit frequency 4, or very good, 27 representing 33.8% rated the indicator 3 or good, and 3 entries each representing 3.8 and 3.8% of all valid entries, rated the indicator 2 and 1 respectively. Implied by these statistics, these respondents were essentially reporting that the aspect of regular auditing to ensure scrutiny and compliance was very good. This is considered remarkable and as with the preceding indicators, indicates a strict compliance to the debt management standards. Figure 5.9 shows the distribution of respondents' ranking of the audit response. The figure represents the data as a bar chart.

Figure 5.7: Audit Frequency



5.10 Debt Management Strategy: Decision Making Process

Strategy in debt refers to the decision of the government's preferred risk tolerance and how it is periodically updated. The indicator of debt management strategy as it relates to the decision making process ensures that there is in place a sound process for strategies for long term policies. Accordingly, the central banks and finance ministries should monitor to ensure that the strategy in place would not conflict with monetary policy implementation and utilise the strategy to be approved by the council of ministers or the cabinet.

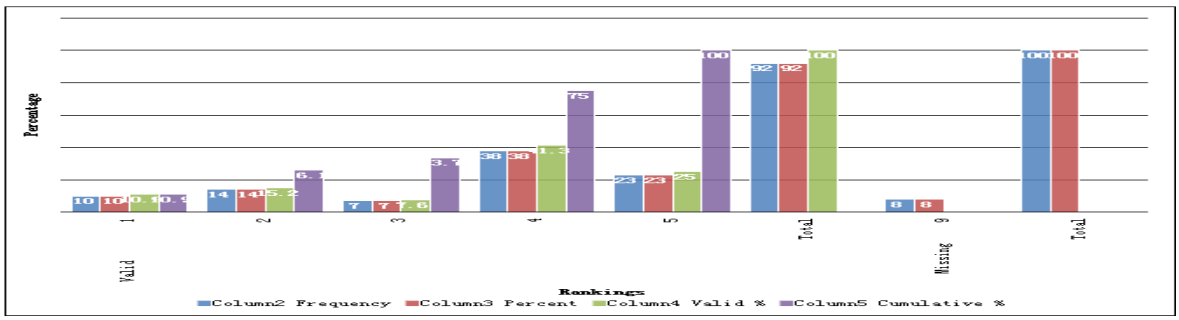
Table 5.7: Debt Management Strategy: Decision Making Process

Scale		Frequency	%	Valid%	Cumulative%
Valid	1	10	10	10.9	10.9
	2	14	14	15.2	26.1
	3	7	7	7.6	33.7
	4	38	38	41.3	75
	5	23	23	25	100
Total		92	92	100	
Missing	9	8	8		
Total		100	100		

Table 5.7 presents the respondent ranking of the indicator of the decision making process. Of the 100 questionnaires returned only 8 representing 8% were recorded as missing values. A total of 92 responses or 92% were recorded as valid. The highest ranking of 5 was made by 23 respondents representing 25% of all responses. The highest frequency of 38 was recorded against 4 representing 41.3% of all responses.

Rankings of 3, 2, and 1 were made in 7, 14, and 10 responses, representing 7.6, 15.2, and 10.9%s respectively. The statistics show a high level of compliance with the indicator, with approximately 73.9% of the respondents rating it between 3 and 5. Figure 5.7 graphically represents the data in table 5.7.

Figure 5.7: Decision Making Process



5.11 Evaluation of Debt Management Operation

The essence of the debt indicator of the evaluation of debt management operation is to ensure that all debt management entities are made accountable by a clear evaluation of outcomes against the government's set objectives, as well as to ensure compliance with the government's debt management strategy and to promote transparency and good governance. Table 5.8 summarises the responses recorded as per the indicator of evaluation of the debt management operation.

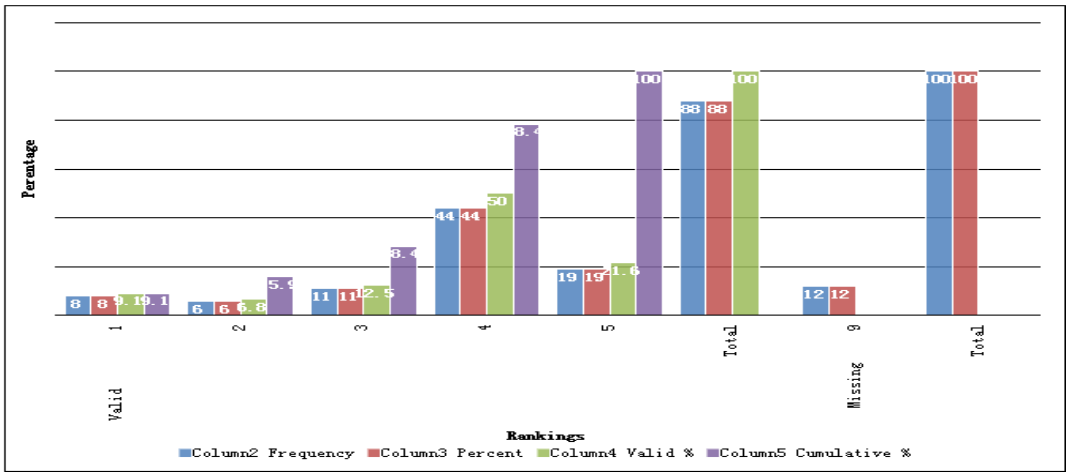
Table 5.8: Evaluation of Debt Management Operation

Scale		Frequency	Percent	Valid%	Cumulative%
Valid	1	8	8	9.1	9.1
	2	6	6	6.8	15.9
	3	11	11	12.5	28.4
	4	44	44	50	78.4
	5	19	19	21.6	100
Total		88	88	100	
Missing	9	12	12		
Total		100	100		

The indicator on the evaluation of debt management operation frequencies are presented in table 5.8. Out of a total of 100 questionnaires, 88 respondents or 88% of the all entries were found to be valid and 12 or 12% were recorded as missing. Of the valid entries, a total of 19 representing 21.6% rated the variable 5 or excellent. 44 representing 50%, or the majority of all valid responses, rated the indicator at a high 4

or very good and 11 representing 12.5% rated the same indicator 3 or a good 6, and 8 responses representing 6.8% and 9.1% each, rated the indicator 2 and 1 respectively. Figure 5.8 presents the same data in a bar chart graph form.

Figure 5.8: Evaluation of Debt Management Operation



5.12 **Audit: Appropriate Response**

This debt management performance indicator is meant to identify whether or not regular internal audits by the debt office, as well as periodic external auditing by the office of the auditor general, are carried out to ensure transparency, compliance and accountability. The indicator thus requires that the office of the auditor generally responds to audit reports as soon as possible to address outcomes or audit findings. In addition, the indicator emphasises meetings with representatives of the auditor's general office. Table 5.10 presents statistics on respondents' ratings of the extent of compliance to the indicator of audit appropriate response.

Table 5.10: Audit: Appropriate Response

Scale		Frequency	Per cent	Valid%	Cumulative%
Valid	2	29	29	31.5	31.5
	3	12	12	13	44.6
	4	18	18	19.6	64.1
	5	33	33	35.9	100
Total		92	92	100	
Missing	9	8	8		
Total		100	100		

Table 5.10 presents 100 responses on the indicator of audit appropriate response. Of this number 92 responses were found to be valid, while 8 or 8% were recorded as missing values. Of the valid entries 33 representing 35.9% rated the indicator 5 or

excellent, 18 or 19% indicator on a scale of 1 or poor. By implication, all the provisions for prompt response were observed frequently in all the debt management aspects of the sampled countries. The overall result indicates a good and balanced outcome.

Figure 5.8: Appropriate Response

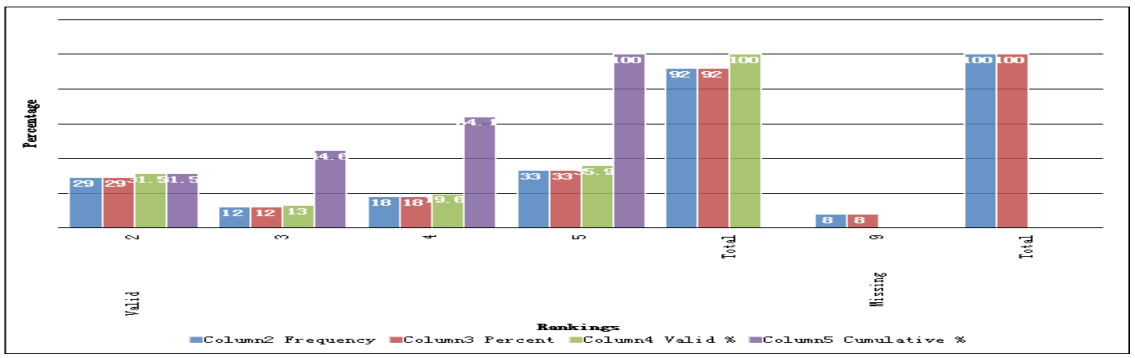


Figure 5.10 supports the data presented in table 5.10. Accordingly, the statistics are represented in a bar chart form. The indicator of audit response was seen to be rated excellent by the majority of the respondents, thereby confirming the extent to which the countries under investigation adhere to the World Bank's guidelines on debt management.

5.15 Coordination with Macroeconomic Policies

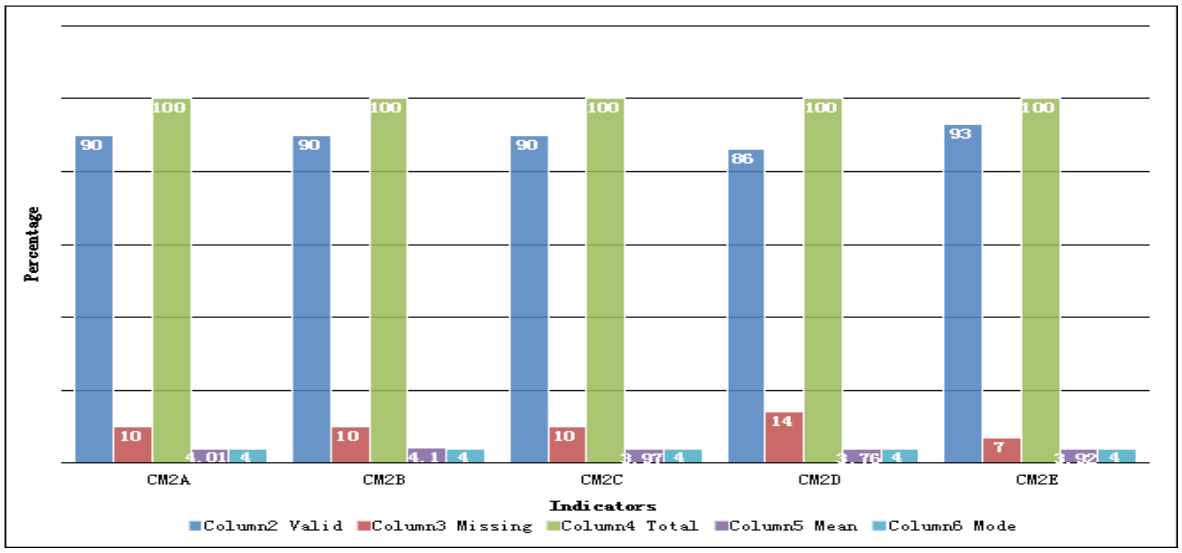
The next variable to be presented is that of co-ordination of government debt policies with its other macroeconomic policies. As we have seen earlier, government debt often translates into increases in taxation for the private individuals or households. Although the Ricardian equivalence theory promoted the idea that government debt had no impact at all, the government's choices of debt instruments tends to have a reasonable impact on the private sector and by extension the economy. Hence, it is imperative to ensure that government debt management strategy is in agreement with a country's macroeconomic policies. Below are the descriptive statistics on the responses of a cross-section of intermediate and top management debt management and economic policy decision makers in the sampled countries.

Table 5.11: Co-ordination with Macroeconomic Policies

Indicator	Valid	Missing	Total	Mean	Mode
CM2A	90	10	100	4.01	4.0
CM2B	90	10	100	4.10	4.0
CM2C	90	10	100	3.97	4.0
CM2D	86	14	100	3.76	4.0
CM2E	93	7	100	3.92	4.0

Table 5.11 shows the descriptive statistics of the five dimensions under co-ordination with macroeconomic policies, such as inflation, GDP and unemployment. These are the aspects of fiscal policy, which relate to the provision and quality of debt service forecasts and the availability and quality of information on key macro-economic and debt sustainability analysis. Furthermore, we observe three other monetary policy dimensions relating to the clarity of separation between debt management and monetary policy operations, regularity of information sharing between agencies handling government debt and limited access to the central bank financing. These indicators are, Fiscal Policy: Provision and Quality of Debt-Service Forecasts (CM2A), Fiscal Policy: Availability and Quality Information on Key Macro Variables and DSA (CM2B), Monetary Policy: Clarity of Separation between Debt Management and Monetary Policy Operations (CM2C), Monetary Policy: Regularity of Information Sharing (CM2D) and Monetary Policy: Limited Access to Central Bank Financing (CM2E); all reflecting the variable of coordination with Macroeconomic policies. The valid and missing entries for the five variables are 90 - 10, 90 - 10, 90 - 10, 86 - 14 and 93 – 7 respectively. The mode for the distribution across all the indicators is 4. The mean for CM2A is 4.01, CM2B, is 4.10, CM2C, is 3.97, CM2D, is 3.76 and for CM2E records a mean of 3.92. Figure 5.11 gives a pictorial representation of the data in table 5.11.

Figure 5.11: Co-ordination with Macroeconomic Policies



5.16 **Fiscal Policy: Provision and Quality of Debt-Service Forecasts**

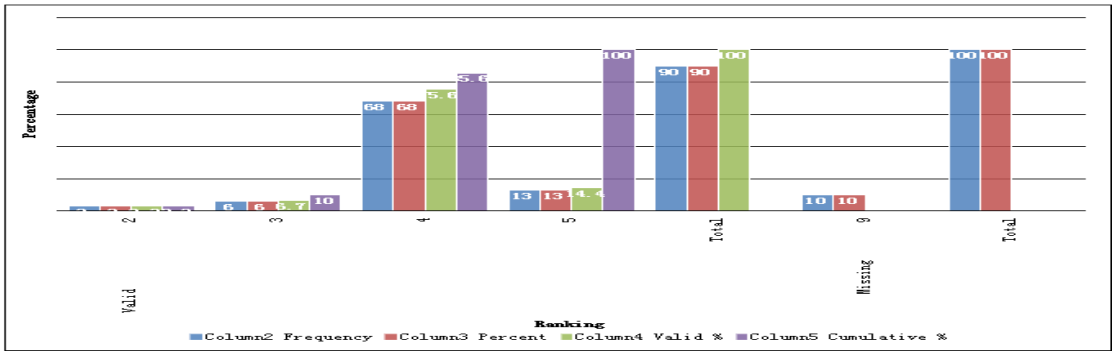
Table 5.12 presents the statistics on the indicator of ensuring the provision of quality of debt-service forecasts coded CM2A. This covers the ability to have access to information on future debt transactions as well as government cash flows.

Table 5.12: Fiscal Policy

Scale		Frequency	Percent	Valid%	Cumulative%
Valid	2	3	3	3.3	3.3
	3	6	6	6.7	10
	4	68	68	75.6	85.6
	5	13	13	14.4	100
Total		90	90	100	
Missing	9	10	10		
Total		100	100		

The responses indicate that a total of the 100 questionnaire responses received, 90 entries or 90% were found to be valid while missing data account for 10%. Of the total valid entries 13 or 14.4% rated the indicator 5 or excellent, 68 representing 75.6% rated the indicator 4 or very good, 6 responses or 6.7% of the valid scores and 3 or 3.3% of the valid scores rated the indicator 3 and 2 respectively. The rating indicates that there was a high level of compliance with the indicator. Figure 5.12 gives a graphical representation of the data discussed in table 5.12.

Figure 5.12: Fiscal Policy



5.17 Fiscal Policy: Availability and Quality Information on Key Macro Variables and DSA

The indicator of fiscal policy; availability and quality information on key macro variables and debt sustainability analysis exists to identify the extent of the level of co-ordination and the quality and frequency of information sharing among the different authorities. The indicator attempts to ensure that during the assessment meetings with officials from the budget and macroeconomic unit in the ministry of finance and the debt office or agency. Table 5.13 presents data collected from respondents' assessment of compliance with the indicator on a scale of 1 to 5.

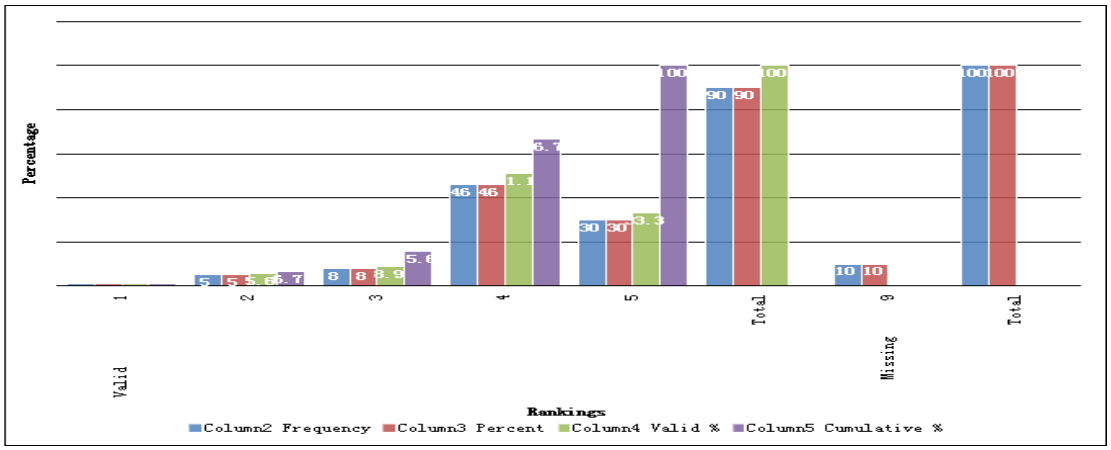
Table 5.13: Availability of Quality Information on Key Variables

Scale		Frequency	Percent	Valid%	Cumulative%
Valid	1	1	1	1.1	1.1
	2	5	5	5.6	6.7
	3	8	8	8.9	15.6
	4	46	46	51.1	66.7
	5	30	30	33.3	100
Total		90	90	100	
Missing	9	10	10		
Total		100	100		

Table 5.13 presents the variable of fiscal policy, which relates to availability and quality of information on key macro variables and DSA (debt sustainability analysis). All the respondents should be conversant with what debt and other relevant information is shared between the principal debt management agency and the central bank and the frequency of these exchanges. From the statistics we see that of a total 100 questionnaires returned 90 were recorded to be valid, while 10 or 10% were recorded as missing data. Of the 90 valid scores 30 representing 33.3% duly rated the indicator 5 or excellent, 46 or 51.1 rated the indicator 4 or very good, 8 representing

8.9% rated CM2B 3 or good, 5 representing 5.6% ranked the indicator 2 or fair and a single respondent representing 1.1% of all valid entries rated CM2B a low 1 or poor. Figure 5.13 represents the data under discussion as a bar chart.

Figure 5.13: Availability of Quality Information



5.18 Monetary Policy: Clarity of Separation between Debt Management and Monetary Policy Operation

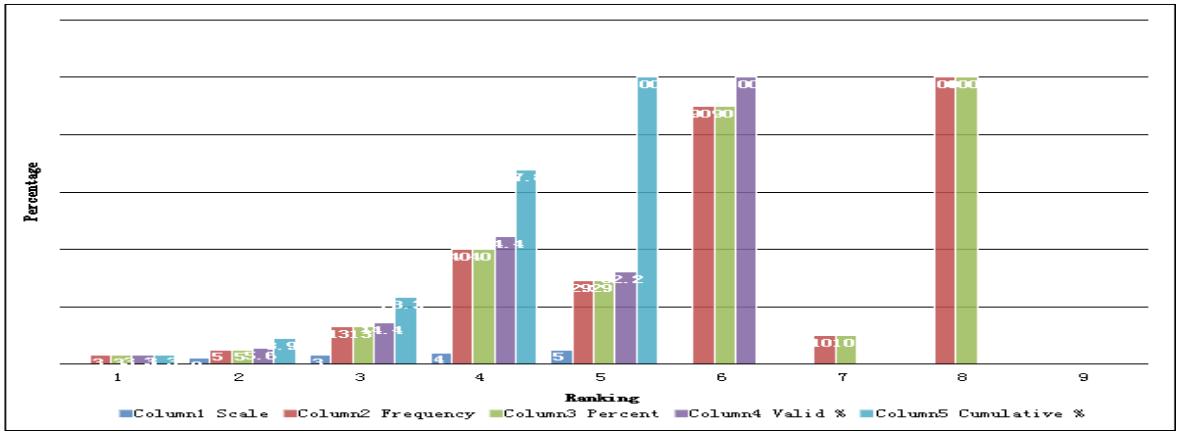
This indicator attempts to ensure that there is a clear separation between monetary policy operations and all debt management transactions, as well as to encourage the maintenance of information sharing on current and future debt transactions with the government's cash flows. One component of effective co-ordination between macroeconomic policies is the effective separation between the agencies handling debt management from those involved with other aspects of macroeconomic policies. For instance, respondents here should be aware of who is responsible for the preparation of cash flow forecasts, the frequency of such forecasts as well as the period covered by them. This way, the level of efficiency would be promoted through specialisation, transparency and accountability. The respondents' assessment of the extent of compliance with the provision of this indicator is presented in table 5.14 of this work.

Table 5.14: Clarity of Separation between Debt Management and Monetary Policy

Scale		Frequency	Per cent	Valid%	Cumulative%
Valid	1	3	3	3.3	3.3
	2	5	5	5.6	8.9
	3	13	13	14.4	23.3
	4	40	40	44.4	67.8
	5	29	29	32.2	100
Total		90	90	100	
Missing	9	10	10		
Total		100	100		

Table 5.14 shows the statistics on the aspect of monetary policy, which relate to clarity of separation between debt management and monetary policy. From the table, as with all others before, we see that there were 100 questionnaires recorded. Of this number a total of 90 were found to be appropriately scored and valid, while 10, representing 10% were recorded as missing data. The highest ranking of 5 or excellent level of compliance was by 29 entries representing 32.2% of all valid entries; 40 entries or 44.4% rated the indicator 4 or very good and 13 entries representing 14.4% ranked the same indicator 3 or good. Between the three groups, 91% of all the rankings awarded did not go below 3 or good. Implied by these statistics, compliance with this aspect of debt management was high among the countries covered by the survey. The rankings of 2, fair and 1, poor were made by two groups of 5 and 3 respondents representing 8.9 and 3.3% respectively. Figure 5.14 provides a graphical representation of the data distribution in the table

Figure 5.14: Clarity of Separation between Debt Management and Monetary Policy



5.19 **Monetary Policy: Regularity of Information Sharing**

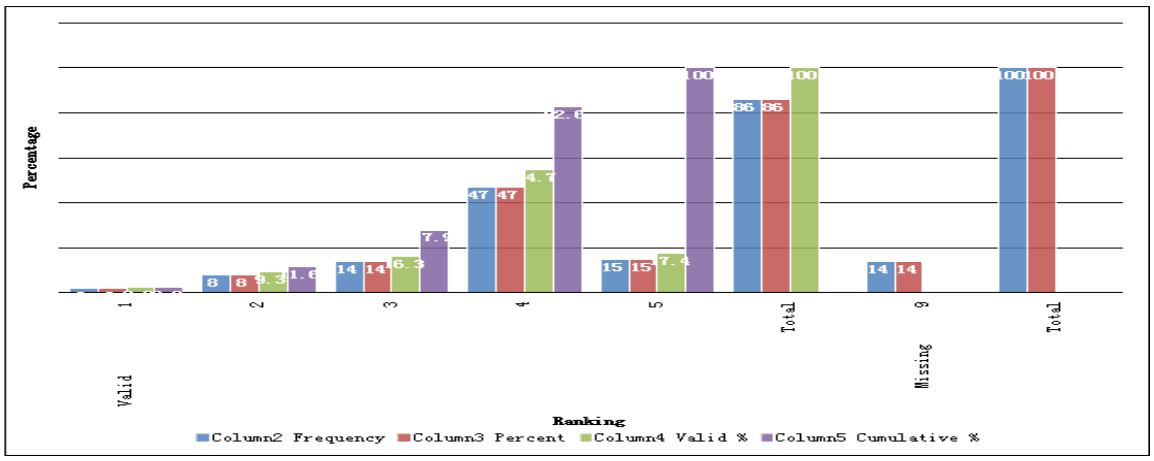
This aspect of debt management is very important in maintaining a regular track of the activities of all the agencies dealing with debt management vis-à-vis the other macroeconomic policies, with the aim of minimising cost and risk. The indicator was assessed via a questionnaire with the collated responses presented in table 5.15 of this work.

Table 5.15: Monetary Policy: Regularity of Information Sharing

Scale		Frequency	Percent	Valid%	Cumulative%
Valid	1	2	2	2.3	2.3
	2	8	8	9.3	11.6
	3	14	14	16.3	27.9
	4	47	47	54.7	82.6
	5	15	15	17.4	100
Total		86	86	100	
Missing	9	14	14		
Total		100	100		

Table 5.15 presents monetary policy, which relates to the issue of regularity of information sharing. Out of a total of 100 responses recorded, 86 were duly completed and classified valid and 10 representing 10% were recorded as missing values. In accordance with this, a total of 15 respondents, representing 17.4% rated the indicator 5 or excellent, 47 or 54.7% of all valid scores rated the indicator 4 or very good, 14 respondents or 16.3% rated the indicator 3 or good, 8 or 9.3% rated the indicator 2 or fair, and 2 respondents or 2.3 ranked the indicator lowest at 1 or poor. These statistics indicate a high level of compliance to this indicator of debt management, which promotes the regularity of information sharing. Figure 5.15 is a graphical representation of the statistics presented in table 5.15.

Figure 5.15: Regularity of Information Sharing



5.20 **Monetary Policy: Limited Access to Central Bank Financing**

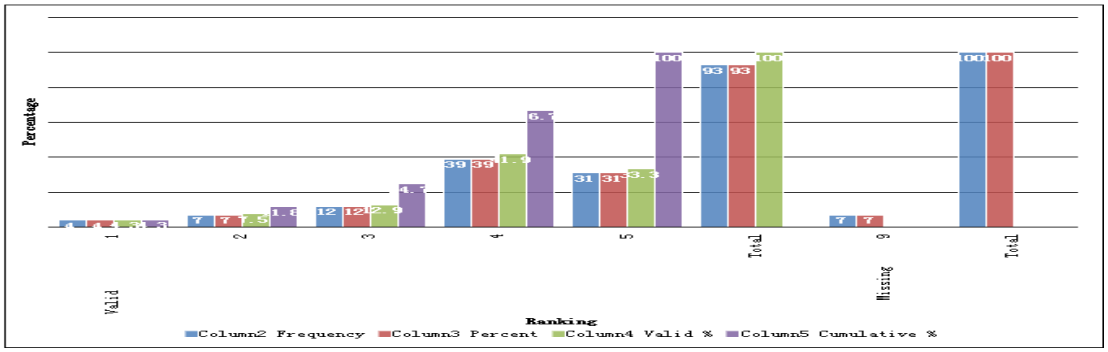
The monetary policy indicator which relates to limited access to Central Bank financing, requires that there should be an awareness of whether the government has an overdraft, or otherwise and means facility with the Central Bank. The respondents attempting this aspect of the questionnaire, as with other indicators, were intended to be knowledgeable about whether the government actually used the facility and the frequency of the usage as well as the amounts and for what length of time. Table 5.16 presents all collected data in respect of the assessment of the extent of compliance with the indicator of limited access to central bank financing.

Table 5.16: Limited Access to Central Bank Financing

Scale		Frequency	Percent	Valid%	Cumulative%
Valid	1	4	4	4.3	4.3
	2	7	7	7.5	11.8
	3	12	12	12.9	24.7
	4	39	39	41.9	66.7
	5	31	31	33.3	100
Total		93	93	100	
Missing	9	7	7		
Total		100	100		

Table 5.16 presents the statistics on the last of dimensions under co-ordination with monetary policy. The table shows that there were a total of 100 returned questionnaires. Of this number 93 or 93% of all the entries were found to be valid, while the remaining 7% were recorded as missing values. Of the valid responses recorded 31, representing 33.3% rated the indicator at a high 5 or excellent, 39 or 41.9% ranked it 4 or very good, and 12 or 12.9% ranked the indicator 3 or good, 7 and 4 responses, representing 7.5 and 4.3 percentages rated the indicator 2, fair, and 1, poor, respectively. These statistics are graphically represented in figure 5.16.

Figure 5.16: Access to Central Bank Financing



The statistics of the responses in table 5.16 indicate a remarkable compliance to the indicator of Limited Access to Central Bank Financing, with only 7 and 4 respondents representing 11.8 and 4.3% respectively, awarding the least ratings of 2, fair and 1, poor. It reveals that 83.9% of all respondents rated the indicator at least average.

5.21 Government Borrowing and Related Financing Activities

This segment focuses on the variable of borrowing and other related financing activities. This variable is an essential aspect of government debt management, introduced to ensure that all government borrowing activities denominated in the local currency in the domestic markets are transparent, as well as predictable enough to enable the provision of a mechanism to finance government expenditure in a cost-effective manner and at the same time minimise risks (Bank, 2009). Domestic debt is one of many forms of deficit financing available to the government. However, domestic borrowing from the banking system or from the private sector requires a more developed banking and financial system (Beaugrand, Loko, & Mlachila, 2002). Thus, issues of domestic borrowing and related activities are considered necessary in the process of assessing a government debt management strategy. Domestic debt is relevant as a source of financing in the developing world, since it tends to reduce inflationary pressures and minimises the risk inherent in external debt. External debt may sometimes be preferred because it may reduce the possibilities of crowding-out effects on private investments as well as reduce risks of inflationary pressures.

Under this variable we consider several dimensions upon which the respondents were expected to assess with a rating on a scale of 1 to 5. These indicators are government domestic borrowing in relations to market-based mechanisms and preparation of a borrowing plan, domestic borrowing and the availability and quality of documented procedures and external borrowing with respect to provision of a borrowing plan and assessment of costs and terms, external borrowing in relations to the availability of documented procedure and external borrowing; involvement of legal advisers. Additional indicators under this variable include loan guarantees, as it concerns availability and quality of documented policies and procedures on-lending, extent of availability and quality of documented policies and procedures and derivatives and how much they are covered by quality of documented policies and procedures.

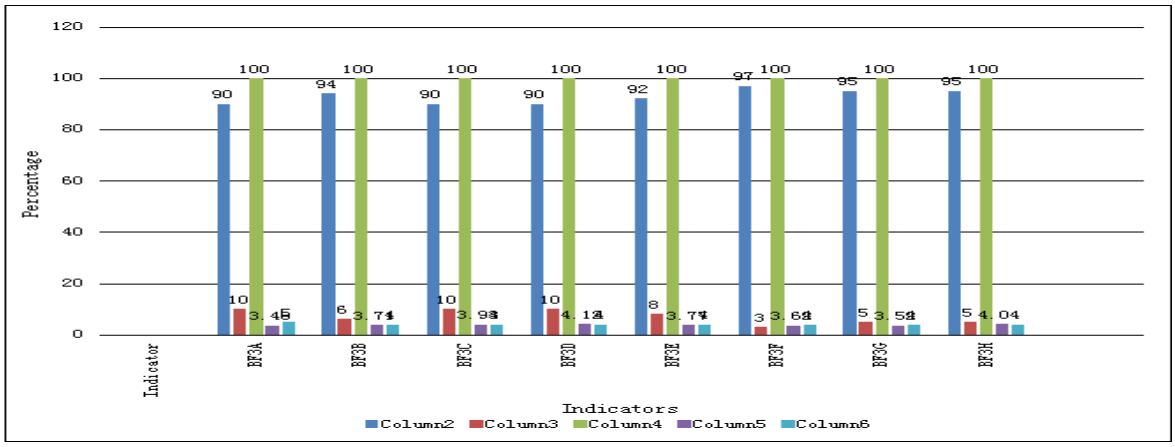
For more organised data, recording, analysis and easier identification the indicators were coded accordingly: Domestic Borrowing; Market-Based Mechanism and Preparation of a Borrowing Plan (BF3A), Domestic Borrowing: Availability and Quality of Documented Procedures (BF3B), External Borrowing: Borrowing Plan and Assessment of Costs and Terms (BF3C), External Borrowing: Availability of Documented Procedures (BF3D), External Borrowing: Involvement of Legal Advisers (BF3E), Loan Guarantees: Availability and Quality of Documented Policies and Procedures (BF3F), On-lending: Availability and Quality of Documented Policies and Procedures (BF3G), and Derivatives: Availability and Quality of Documented Policies and Procedures (BF3H). Table 5.17 show statistics from the questionnaire responses collected on the variable of borrowing and related financing activities of the government debt department and associated agencies.

Table 5.17: Government Borrowing and Related Financing Activities

Indicator	Valid	Missing	Total	Mean	Mode
BF3A	90	10	100	3.48	5
BF3B	94	6	100	3.71	4
BF3C	90	10	100	3.93	4
BF3D	90	10	100	4.12	4
BF3E	92	8	100	3.77	4
BF3F	97	3	100	3.62	4
BF3G	95	5	100	3.52	4
BF3H	95	5	100	4.04	4

Table 5.17 summarises the statistics of the responses received from 100 respondents, assessing the different indicators making up the variable of borrowing and related financing activities. Of the 100 respondents the highest valid entries were recorded under the indicator of loan guarantees: availability and quality of documented policies and procedures (BF3F), with 97% completion and 3% missing data recorded. The least responses were recorded under indicators BF3A, BF3C, and BF3D, with 90% completion and 10% missing data records respectively. The highest frequency was recorded under the indicator of Borrowing Market Based Mechanism and Preparation of a Borrowing Plan (BF3A), with an aggregate mode of 5. The mode for the other indicators was 4. The mean of the distribution ranged between a minimum of 3.48 recorded under BF3A and a maximum of 4.12 recorded under BF3D. Figure 5.17 represents the data in a chart form.

Figure 5.17: Borrowing and Related Financial Activities



5.22 Domestic Borrowing: Market-Based Mechanism and Preparation of a Borrowing Plan

Table 5.18 presents the statistics of the data obtained on the indicator BF3A. The statistics relate to the response of respondents on the extent of the government's compliance with the requirement that borrowing activities in local currency in the domestic market remain transparent and predictable enough to provide the government with a mechanism to finance its expenditure at lower costs and minimised risks.

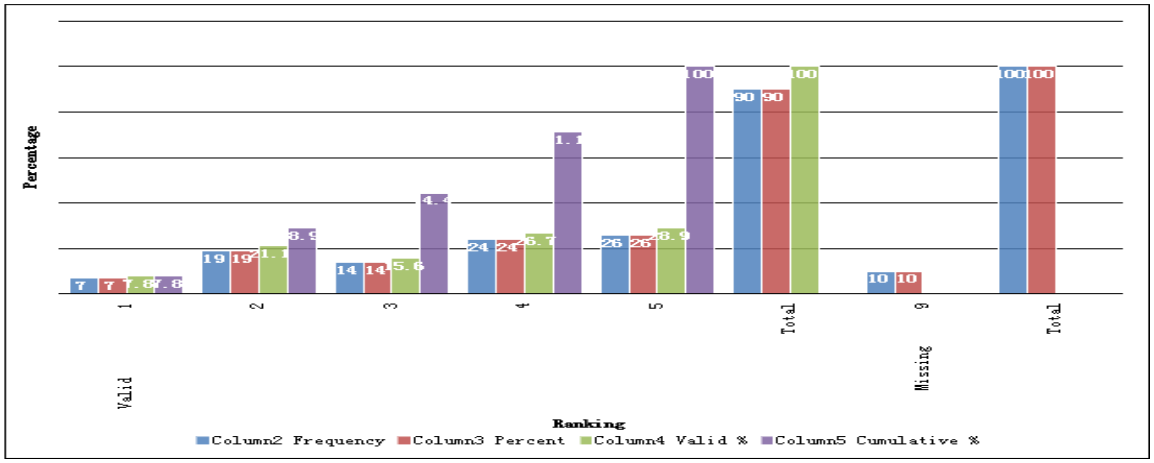
Table 5.18: Market-Based Mechanism and Preparation of a Borrowing Plan

Scale		Frequency	Percent	Valid%	Cumulative%
Valid	1	7	7	7.8	7.8
	2	19	19	21.1	28.9
	3	14	14	15.6	44.4
	4	24	24	26.7	71.1
	5	26	26	28.9	100
Total		90	90	100	
Missing	9	10	10		
Total		100	100		

Table 5.18 presents the indicator of domestic borrowing, the aspect of market-based mechanisms and preparation of a borrowing plan. The respondents attempting this must have had knowledge and information of the level of compliance among government debt related agencies in the sampled countries. We can observe from the statistics in the table under reference that out of a total of 100 likely responses a total of 90% valid entries were recorded. 10% were recorded as missing values. Of the

90% valid entries, 7 representing 7.8% ranked the indicator 1, poor, 19 representing 21.1% ranked the indicator 2, or fair, and 14 or 15.6% ranked the indicator 3, or average. A high ranking of 4 and 5 was made by 24 and 26 of the respondents, representing 26.7% and 28.9% respectively. With about 63.3% of all scores ranked at least average indicates a high compliance with the indicator among the sampled countries. Figure 5.18 sheds more light on the statistics in table 5.18.

Figure 5.18: Graphical Presentation of Market-Based Mechanism



5.23 Domestic Borrowing: Availability and Quality of Documented Procedures

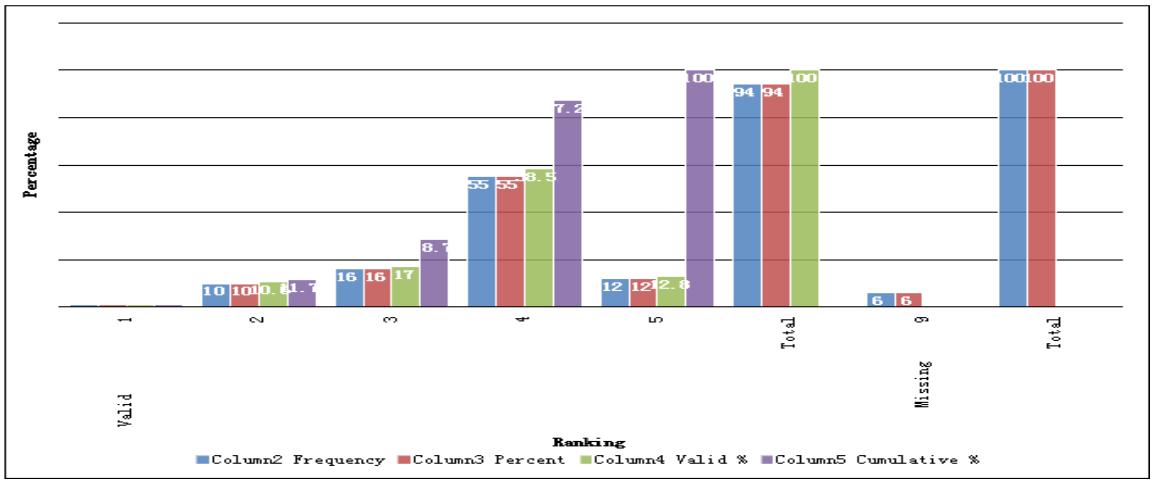
According to the Bank (2009) international practice indicated that it was beneficial for the government when it made available in advance to market participants and investors with details of borrowing plans and other related activities as well as acting consistently in the process of the issuance of new treasury bills and other similar activities e.g. T-bills buy backs. Table 5.19 presents the respondents views on compliance with the requirement of availability and quality of documented procedure.

Table 5.19: Availability and Quality of Documented Procedures

Scale		Frequency	Percent	Valid%	Cumulative%
Valid	1	1	1	1.1	1.1
	2	10	10	10.6	11.7
	3	16	16	17	28.7
	4	55	55	58.5	87.2
	5	12	12	12.8	100
Total		94	94	100	
Missing	9	6	6		
Total		100	100		

Table 5.19 shows that of the 100 questionnaires returned a total 94 representing 94%, were found to be duly completed and ranked on a scale of 1 to 5, while 6 or 6% was recorded as missing values. Of the 90% valid responses, a total of 12 or 12.8% rated the indicator 5 or excellent, 55 or 58.5% ranked the indicator 4 or very good, 16 or 17% ranked the indicator 3 or good, 10 representing 10.6% ranked the indicator 2 or fair; and only 1 representing 1% ranked the indicator 1 or poor. Implied by this, approximately 87.2% of the total rated the indicator at least 3 or average. This indicates a remarkable level of compliance by the debt offices of the sampled countries in the aspect of the availability and quality of documented procedures in handling government domestic debts. Figure 5.19 provides a bar chart representation of the statistics in table 5.19.

Figure 5.19: Quality of Documented Procedures



5.24 External Borrowing: Borrowing Plan and Assessment of Costs and Terms

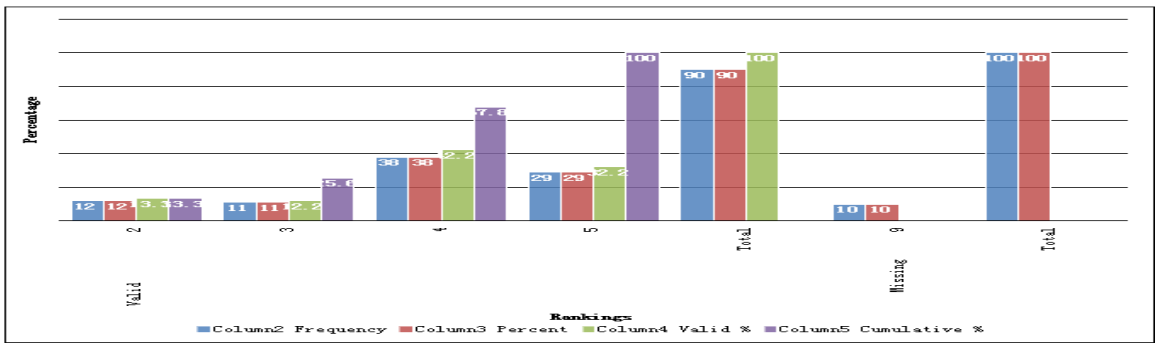
Because any government debt management strategy that relies excessively on external and foreign currency sources of funding could be exposed to high risk, it is required that the most beneficial and cost effective terms and conditions are being achieved through a regular evaluation of all, in cost of each form of external loan and any complimentary attached to such a facility. Accordingly, table 5.20 show respondents' opinion on the extent of compliance by government debt agencies to this important requirement as covered under the indicator.

Table 5.20: Borrowing Plan and Assessment of Costs and Terms

Scale		Frequency	Percent	Valid%	Cumulative%
Valid	2	12	12	13.3	13.3
	3	11	11	12.2	25.6
	4	38	38	42.2	67.8
	5	29	29	32.2	100
	Total	90	90	100	
Missing	9	10	10		
Total		100	100		

Table 5.20 shows a total of 90% valid responses, with 10% values recorded as missing. Of the valid 90% scores, 12 representing 13.3% ranked the indicator on scale 2, or fair, and 11 respondents representing 12.2% rated the indicator 3, or average. The ratings of 4 and 5 were made by 38 and 29 respondents, representing 42.2% and 32.2% respectively. Overall 86.7% of the total responses rated the indicator at least 3 or fair. No single rating of 1 or poor was recorded, which portrayed the level of compliance with the indicator among the sampled countries as good. Figure 5.20 depicts the collected data in a bar chart diagram.

Figure 5.20: Borrowing Plan and Assessment of Costs and Terms



5.25 External Borrowing: Availability of Documented Procedures

The quality and availability of documented procedures is important in the case of government external debt record. This aspect of borrowing exists to ensure that all borrowing activities from foreign sources are well documented and possess sound legal documentation. The key requirement here is to ensure the capture of any loan contracted into the debt recording or management system. Ideally such a recording

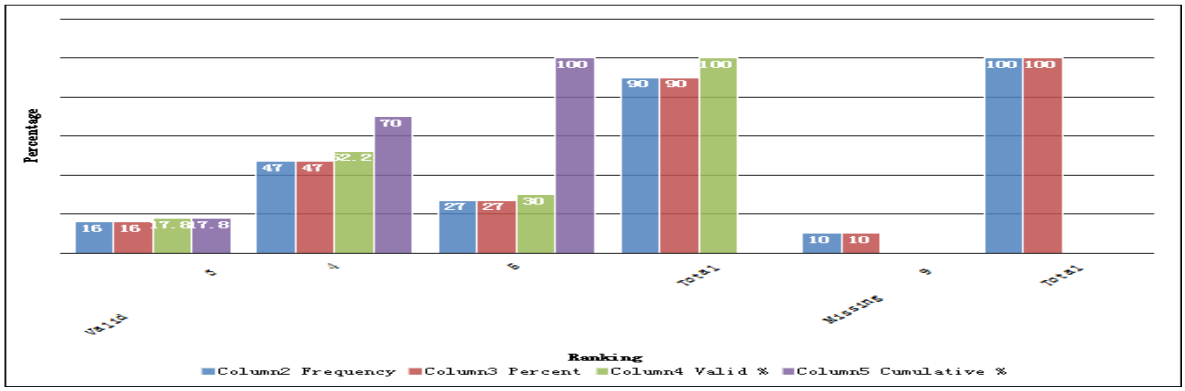
should be done at the time of loan contracting or signing. With this in mind, the respondents rated the extent of compliance with the indicator in their various domains.

Table 5.21: Availability of Documented Procedures

Scale		Frequency	%	Valid%	Cumulative%
Valid	3	16	16	17.8	17.8
	4	47	47	52.2	70
	5	27	27	30	100
	Total	90	90	100	
Missing	9	10	10		
Total		100	100		

Table 5.21 present the statistics on total of 100 responses recorded. Of this number, precisely 90% were found duly completed and valid with 10% recorded as missing values. Of the 90 valid entries, a total of 27 responses representing 30%, rated the indicator 5 or excellent, 47 or 52.2% rated the indicator 4 or very good and 16 representing 17.8% of all valid scores was ranked on scale 3 or average. There were no 1 and 2 ratings on the indicator of availability of documented procedures of government external borrowing. This was considered remarkable in respect to the level of compliance with the debt management indicator especially among the surveyed nations. Figure 5.21 is a graphical representation of the statistics in table 5.21.

Figure 5.21: Availability of Documented Procedures



5.26 **External Borrowing: Involvement of Legal Advisers**

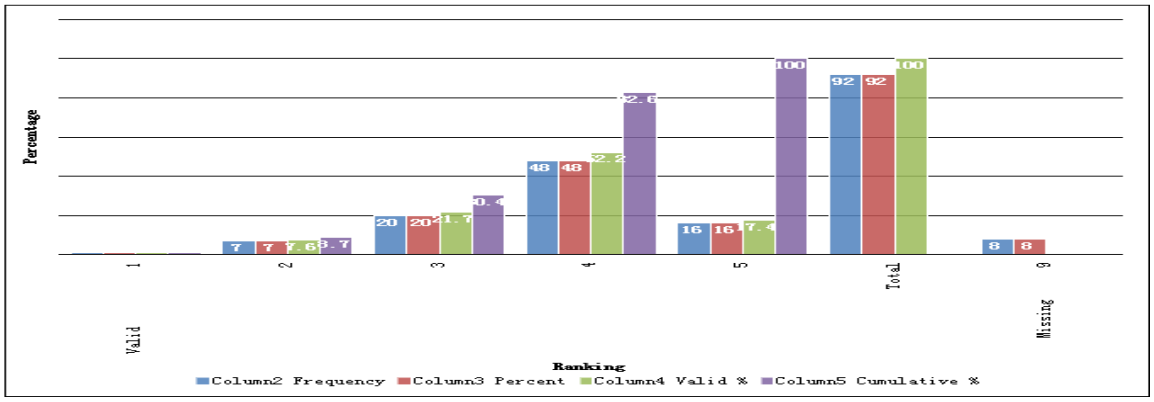
An effective and sound debt management strategy should be founded on a strong and clear legal framework (Bangura et al., 2000). Table 5.22 presents the responses received on the indicator of involvement of legal advisers in the process of government external borrowing. This aspect of borrowing is most relevant, especially in the process of foreign borrowing, where the laws tend to drastically differ between countries depending on the legal, financial and political system. This indicator ensures that sound legal features are included in any loan agreement. With this in mind, the respondents rated the extent of compliance with the indicator in their various domains. Respondents' ratings of compliance to the requirement that debt management strategy ensures that there exists a sound legal feature included in any loan agreement contracted by or on behalf of the government is presented below.

Table 5.22: Involvement of Legal Advisers

	Scale	Frequency	Percent	Valid%	Cumulative%
Valid	1	1	1	1.1	1.1
	2	7	7	7.6	8.7
	3	20	20	21.7	30.4
	4	48	48	52.2	82.6
	5	16	16	17.4	100
Total		92	92	100	
Missing	9	8	8		

There were a total of 100 duly completed and returned questionnaires. Of this number a total of 92 or 92% was found to be valid, with 8 entries or 8% recorded as missing values. Of the 92 valid scores recorded, a total of 16 representing 17.4% ranked this important indicator of debt management 5 or excellent, 48 or 52.2% ranked the indicator 4 or very good, 20, representing 21.7% ranked the indicator 3 or average, 7, or 7.6% ranked the indicator 2 or fair and a single score representing 1.1% ranked the indicator 1 or poor. The rankings thus show a high level of compliance with the indicator ensuring legal features included in loan agreements by debt systems of the countries under review. Figure 5.22 represents the statistics in table graphically.

Figure 5.22: Involvement of Legal Advisers



5.27 Loan Guarantees: Availability and Quality of Documented Policies and Procedures

This indicator covers the aspect of how a debt strategy ensures compliance with the provision that strong control and clear operational guidelines are in place to approve and issue loan guarantees and central government on-lending and whether the procedure is used properly. Table 5.23 presents the respondent assessment on how in their opinion loan guarantees and government on-lending are controlled and monitored.

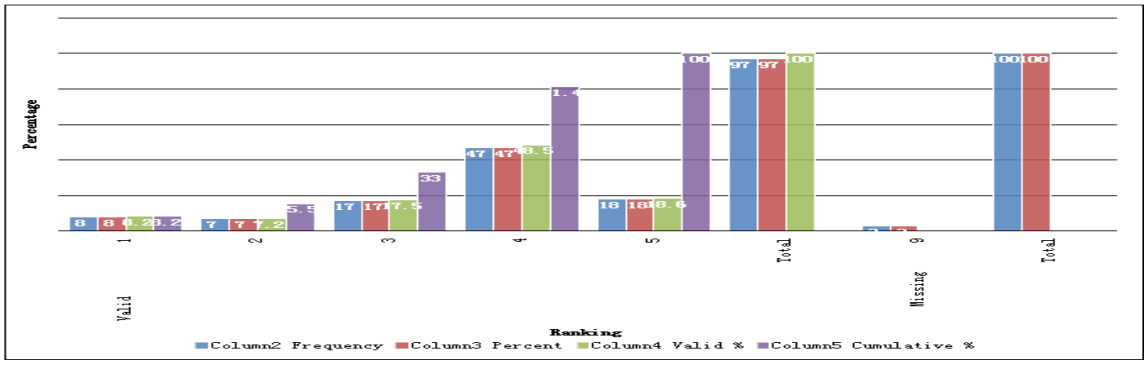
Table 5.23: Availability and Quality of Documented Policies and Procedures

Scale		Frequency	%	Valid %	Cumulative%
Valid	1	8	8	8.2	8.2
	2	7	7	7.2	15.5
	3	17	17	17.5	33
	4	47	47	48.5	81.4
	5	18	18	18.6	100
Total		97	97	100	
Missing	9	3	3		
Total		100	100		

Table 5.23 presents 100 duly completed responses with 97% completed and valid entries and 3% of the values recorded as missing. Of the total 97% valid scores, 18, representing 18.6% ranked the indicator 5 or excellent, 47 or 48.5% ranked the indicator 4 or very good, and 17, representing 17.5% ranked the indicator 3 or average. 7 and 8 entries, representing 7.2 and 8.2 percentages indicated ratings of 2, fair, and 1, poor. As with the preceding ratings, this ranking portrays a high level of

compliance with the important indicator. Figure 5.23 represent the statistics in a graphical form.

Figure 5.23: Availability and Quality of Documented Policies and Procedures



5.28 On-lending: Availability and Quality of Documented Policies and Procedures

Table 5.24 presents statistics on the survey results recorded on availability and quality of documented policies and procedures. This indicator ensures that government debt management strategy makes provision to cover credit risk and administration charges and the process seeks to mitigate the risk by charging a guarantee fee or adding an on-lending fee or risk premium to the cost of borrowing. The indicator also emphasises the assessment of whether documented policies and procedures are in place for the purpose of loan guarantees and government on-lending. As with the case of all preceding indicators, respondents ranked the indicator on a scale of 1 representing poor and 5 showing excellent implementation.

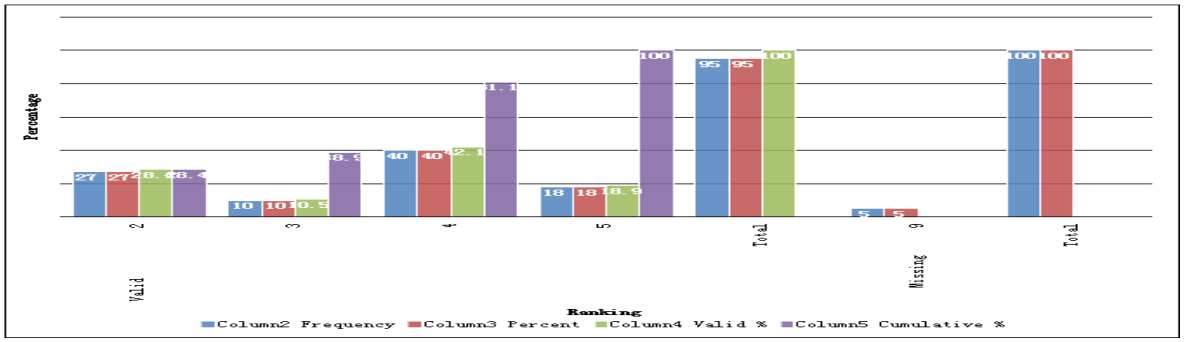
Table 5.24: On-lending; Availability and Quality of Documented Policies

Scale		Frequency	Percent	Valid%	Cumulative%
Valid	2	27	27	28.4	28.4
	3	10	10	10.5	38.9
	4	40	40	42.1	81.1
	5	18	18	18.9	100
	Total	95	95	100	
Missing	9	5	5		
Total		100	100		

Table 5.24 portrays 100 responses of which 95% were valid and 5% recorded as missing. Of the 95 valid entries 18 representing 18.9%, 40 or 42.1%, 10 or 10.5%, and 27, representing 28.4%, ranked the indicator 5 or excellent, 4 very good, 3, or average, and 2 representing fair, respectively. Overall, the indicator ranking recorded a least ranking of 2 which indicates a high level of compliance in its observance

among the debt management agencies in the sampled countries. Figure 5.24 presents the data as a bar chart.

Figure 5.24: On-lending



5.29 Derivatives: Availability and Quality of Documented Policies and Procedures

Table 5.25 presents the last of the indicators under the variable of borrowing and related financing activities. The statistics cover the survey conducted and responses recorded as per the indicator of availability and quality of documented policies and procedures on financial derivatives. The indicator of derivatives exists to ensure the presence of a risk management framework and documented policies and procedures for the use of derivatives that are supported by a clear decision-making process and delegated authorities to transact and other record and documentation processes. Respondents, as with the preceding sections, ranked the indicator on a scale of 1 to 5, with 5 being the highest ranking or excellent and 1 being the lowest or poorest.

Table 5.25: Derivatives

Scale		Frequency	%	Valid%	Cumulative%
Valid	2	3	3	3.2	3.2
	3	8	8	8.4	11.6
	4	66	66	69.5	81.1
	5	18	18	18.9	100
	Total	95	95	100	
Missing	9	5	5		
Total		100	100		

Table 5.25 presents a total of 100 responses consisting of 95% valid entries and 5% entries recorded as missing values. Of the number making all valid entries 18 representing 18.9% rated the indicator 5 or excellent, 66, or 69.5% scored the indicator 4 or very good, 8 or 8.4% rated the indicator 3 or average, and 3 entries ranked the indicator 2 or fair. The lowest ranking of 1 was zero or absent from all

rankings. We conclude here, as with the preceding recorded responses, that the statistics indicate a very high level of compliance with the provision of the indicator under review by the debt management related agencies among the sampled countries.

5.30 Cash Flow Forecasting and Cash Balance Management, Operational Risk Management and Debt Records and Reporting

The next group of variables that are included in the list of variables as provided by the debt management performance assessment tool of the World Bank are the Cash Flow Forecasting and Cash Balance Management, Operational Risk Management and Debt Records and Reporting. Cash flow forecasting and cash balance management exist to ensure that all cost-effective cash management policies and measures are put in place in order to make it possible for the authorities to meet with a high level of certainty their financial obligations as and when they fall due. This assurance is only attainable with the availability of accurate and timely forecasts of the central government's expenditure and revenue cash flows, in addition to the aggregate level of cash balances in the central government's bank accounts. There are two indicators under the cash flow forecasting and cash balance management which are effective cash flow forecasting and effective cash balance management; coded CF4A and CF4B respectively.

Operation Risk Management ensures that there is a provision for strong controls and that well-documented procedures exist for the settlement of transactions, maintenance of financial records and that there is access to the government debt management system. Under this variable there is expected to be a provision for the assessment of the efficiency and control over loan administration and payment activities. The indicators here are debt administration, debt security, segregation of duties, staff capacity and human resources and operational risk management, business continuity and disaster recovery plans. For the purpose of analysis these indicators are coded OR5A, OR5B, OR5C, OR5D, OR5E, OR5F and OR5G.

Debt Records and Report ensures the maintenance of loan documentation in a secure location that will protect the documents from incidents such as theft, fire or flood or other incidents that may damage or destroy any of these records. Furthermore, there should be a clear separation between the debt managers with the authority to negotiate and transact on behalf of the central government. Indicators under this variable are

debt records; completeness and timeliness; debt records – registry system; central government debt data - statutory and mandatory reporting requirements; public sector debt data – statutory and mandatory reporting requirements and debt statistical bulleting – quality and timeliness. These indicators are coded DR6A, DR6B, DR6C, DR6D and DR6E respectively; and are listed with their descriptive statistics in table 5.26.

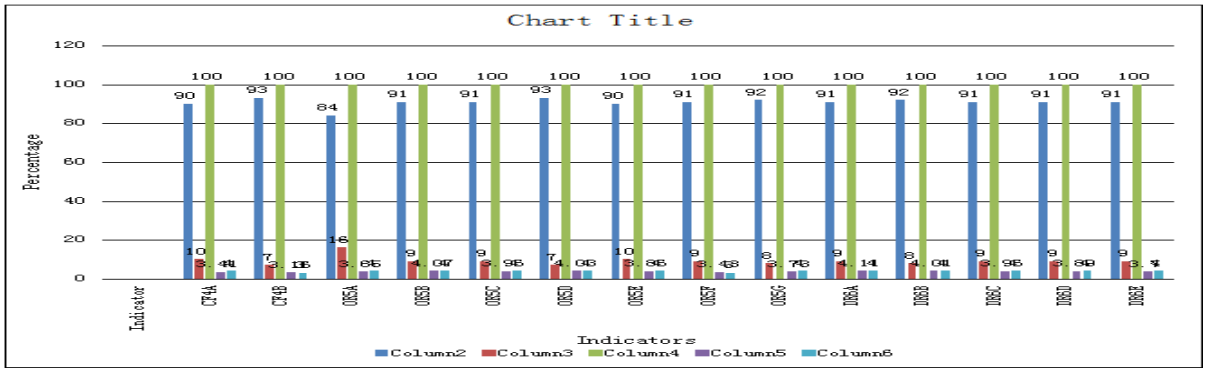
The statistics obtained from the survey are presented in the upcoming tabulations and graphical, chart representations. The following section deals with all the three variables introduced earlier, each having a number of indicators accordingly assessed by the collected responses.

Table 5.26: Descriptive Statistics

Indicator	Valid	Missing	Total	Mean	Mode
CF4A	90	10	100	3.41	4
CF4B	93	7	100	3.16	3
OR5A	84	16	100	3.65	4
OR5B	91	9	100	4.07	4
OR5C	91	9	100	3.96	4
OR5D	93	7	100	4.03	4
OR5E	90	10	100	3.86	4
OR5F	91	9	100	3.43	3
OR5G	92	8	100	3.73	4
DR6A	91	9	100	4.11	4
DR6B	92	8	100	4.01	4
DR6C	91	9	100	3.96	4
DR6D	91	9	100	3.89	4
DR6E	91	9	100	3.7	4

Table 5.26 provides us with descriptive statistics covering the three variables and all the debt management indicators under them. From the statistics above we see that there was a total of 100 responses received, a least of 84 valid entries and highest number of 16 missing values recorded: both recorded under the indicator of debt administration (OR5A). The average mode of distribution was a high 4 and the mean value ranged between a minimum of 3.16 and a maximum of 4.11 recorded under CF4B and DR6A respectively. These statistics are represented in a bar chart in figure 5.26.

Figure 5.26: Descriptive Statistics



5.31 **Effective Cash Flow Forecasting**

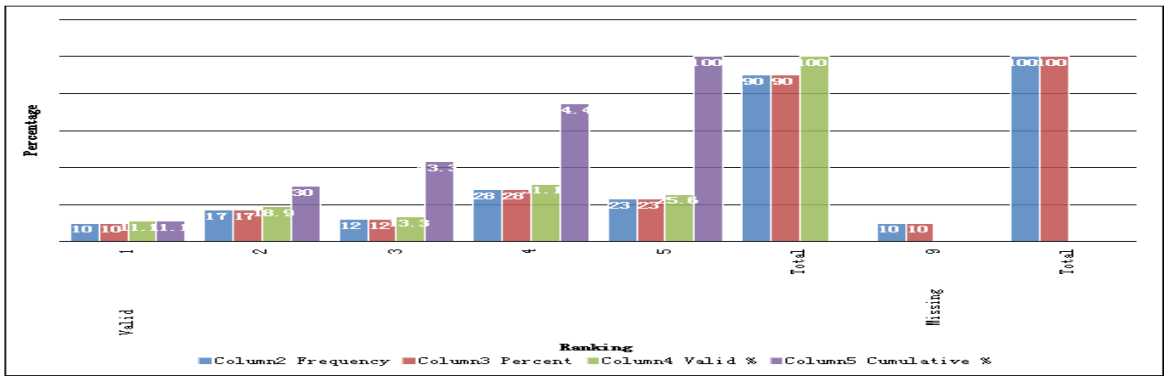
The indicator of Effective Cash Flow Forecasting was to assess the effectiveness and accuracy of the government debt management agencies' forecasting of debt servicing, as well as the expected cash flow and cash balances available to the government in its bank accounts. Table 5.27 presents the respondents' assessment of the level of compliance to the debt indicator.

Table 5.27: Effective Cash Flow Forecasting

Scale		Frequency	%	Valid%	Cumulative%
Valid	1	10	10	11.1	11.1
	2	17	17	18.9	30
	3	12	12	13.3	43.3
	4	28	28	31.1	74.4
	5	23	23	25.6	100
Total		90	90	100	
Missing	9	10	10		
Total		100	100		

Table 5.27 shows all duly completed statistics on the indicator of effective cash flow forecasting. Of a total 100 recorded responses, 90% were valid and 10% were regarded as missing values. Of the valid entries, 23, representing 25.6% ranked the indicator 5 or excellent, 28, representing 31.1%, ranked the indicator 4 or very good, 12 entries, representing 13.3% rated the indicator 3 or average, 17 or 18.9% ranked the indicator 2 or fair, and 10 or 11.1% ranked the indicator a low 1, or poor. Overall, precisely 50.9% of all entries ranked the indicator at least average; 3. This indicates a high level of compliance with the debt management requirement effective cash flow forecasting. Figure 5.27 represent the information.

Figure 5.27: Effective Cash Flow Forecasting



5.32 Effective Cash Balance Management

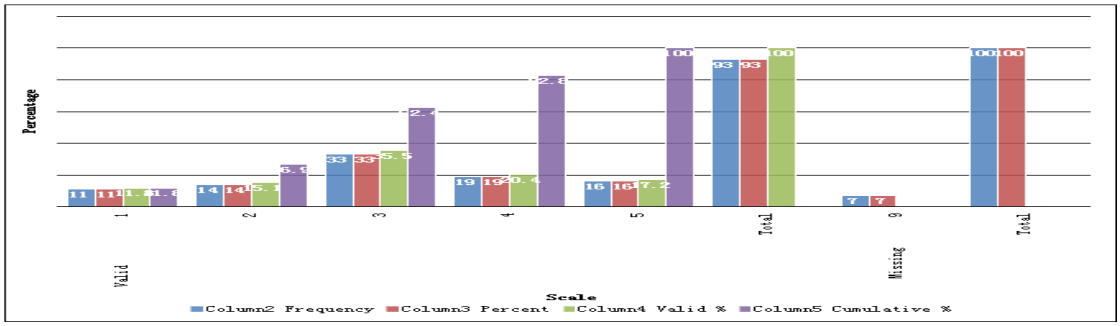
The indicator of Effective Cash Balance Management requires that all management of government aggregate level of cash balances in its bank accounts is integrated with other debt management activities, such as the process of government T-bills buy back, repurchase or its reversal. Table 5.28 relates the assessment of government debt management agencies' compliance to the provision.

Table 5.28: Effective Cash Balance Management

Scale		Frequency	%	Valid%	Cumulative%
Valid	1	11	11	11.8	11.8
	2	14	14	15.1	26.9
	3	33	33	35.5	62.4
	4	19	19	20.4	82.8
	5	16	16	17.2	100
Total		93	93	100	
Missing	9	7	7		
Total		100	100		

Table 5.28 presents a total of 100 responses, with 93% valid entries and 7% recorded missing values. Of the 93% valid entries 16 or 17.2%, rated compliance to the indicator CF4B at 5, excellent, 19, representing 20.4% rated the Effective Cash Balance Management as very good at 4, 33 or 35.5% rated the same indicator 3 or average, 14 or15.1% rated the indicator 2 or fair, and 11 representing 11.8% rated the indicator 1, or poor. In aggregate, about 61.3% of all rated the indicator at least 3 or average. This was a remarkable assessment of compliance with the requirement of the Effective Cash Balance Management by the debt management agencies in the sampled countries. Figure 5.28 summarises the information in table 5.28.

Figure 5.28: Effective Cash Balance Management



5.33 Debt Administration: Availability and Quality Documented Procedures for Debt Service

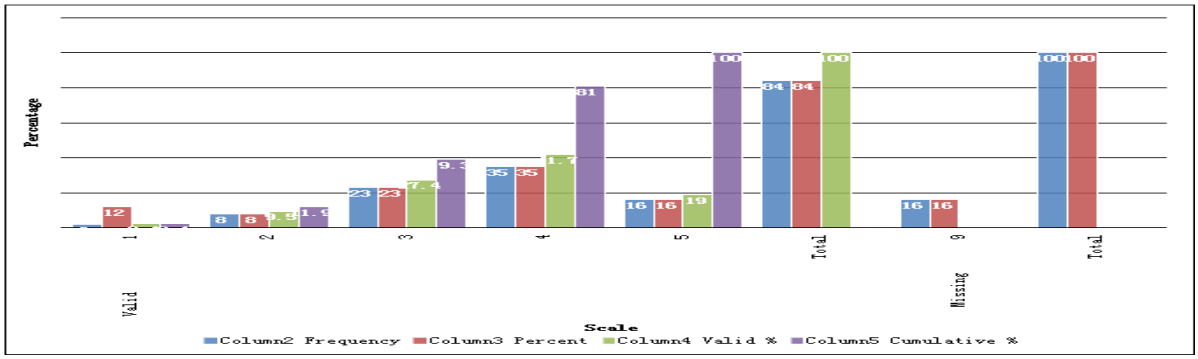
The indicator of debt administration; availability and quality documented procedures for debt service is next in our data. This indicator requires that there should be in place a well-documented procedure for the settlement of transactions, maintenance of financial records as well as a secured access to government debt management system. Table 5.29 present respondent rankings of the indicators as per the level of compliance in the sampled countries.

Table 5.29: Debt Administration

Scale		Frequency	%	Valid%	Cumulative%
Valid	1	2	12	2.4	2.4
	2	8	8	9.5	11.9
	3	23	23	27.4	39.3
	4	35	35	41.7	81
	5	16	16	19	100
Total		84	84	100	
Missing	9	16	16		
Total		100	100		

Table 5.29 shows the responses received from 100 respondents. Of the total 100 duly completed questionnaires returned, 84% of all entries were recorded as valid. A total of 16 entries representing 16% were recorded as having missing values. Of the 84 valid entries recorded, 16, representing 19% rated the indicator of debt administration 5 or excellent, 35 or 41.7% rated the indicator 4 or very good, 23 entries representing 27.4% rated the indicator 3 or average, 8 entries representing 9.5% rated the process of debt administration 2 or fair and 2 or 2.4% rated the indicator 1 or poor. With 88.1% of all the responses assessing the indicator of debt administration at least average, this indicates a high level of compliance with the requirement by the debt offices, especially those of Nigeria and Uganda. These statistics are graphically represented in figure 5.29.

Figure 5.29: Debt Administration



5.34 Debt Admin: Availability and Quality Documented Procedures for Data Recording and Storage

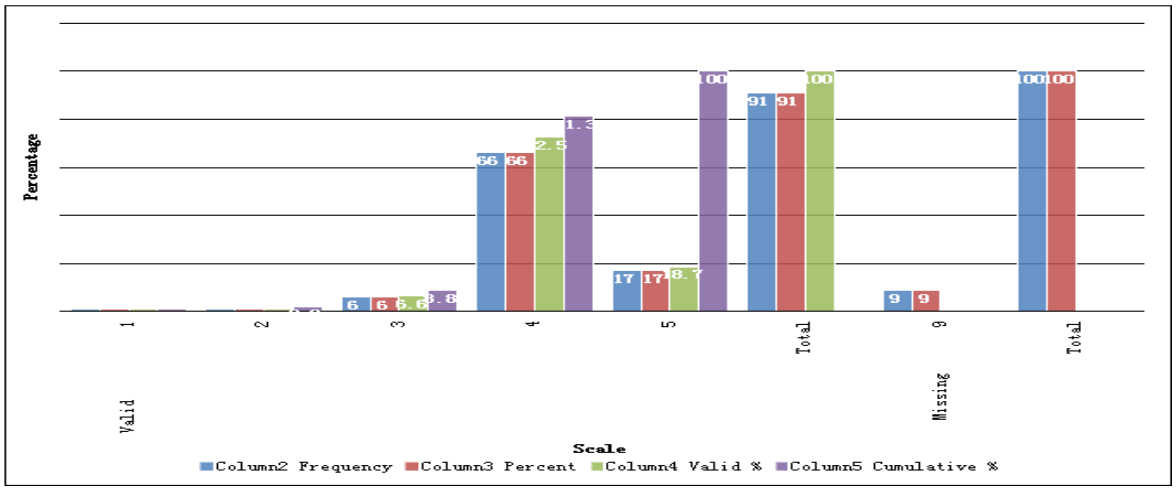
The indicator of debt administration: availability and quality of documented procedures for data recording and storage like the previous emphasises on debt administration, but where it ensures that debt data in the debt recording or management system must be secure. The statistical data collected from respondent assessment of the indicator is shown in table 5.30.

Table 5.30: Debt Administration

Scale		Frequency	%	Valid%	Cumulative%
Valid	1	1	1	1.1	1.1
	2	1	1	1.1	2.2
	3	6	6	6.6	8.8
	4	66	66	72.5	81.3
	5	17	17	18.7	100
Total		91	91	100	
Missing	9	9	9		
Total		100	100		

Table 5.30 displays the statistics of 100 responses recorded as per the indicator of debt administration availability and quality documented procedures for data recording and storage or OR5B. From the table we see a total of 91 valid entries representing 91%, and a total of 9 entries or 9% of all entries. Of the 91 valid entries 17, representing 18.7% ranked the indicator 5 or excellent, 66 or 72.5% ranked the indicator 4 or very good and 6, representing 6.6% rated the indicator 3 or average. Two single entries each representing 1.1 and 1.1 rated the indicator 2 or fair and 1 or poor respectively. Precisely 96.7% of all valid entries rated the indicator at least average. These statistics are represented in figure 5.30 as a bar chart.

Figure 5.30: Debt Administration



5.35 Data Security: Availability and Quality of Documented Procedures for Data Recording and System and Access Control

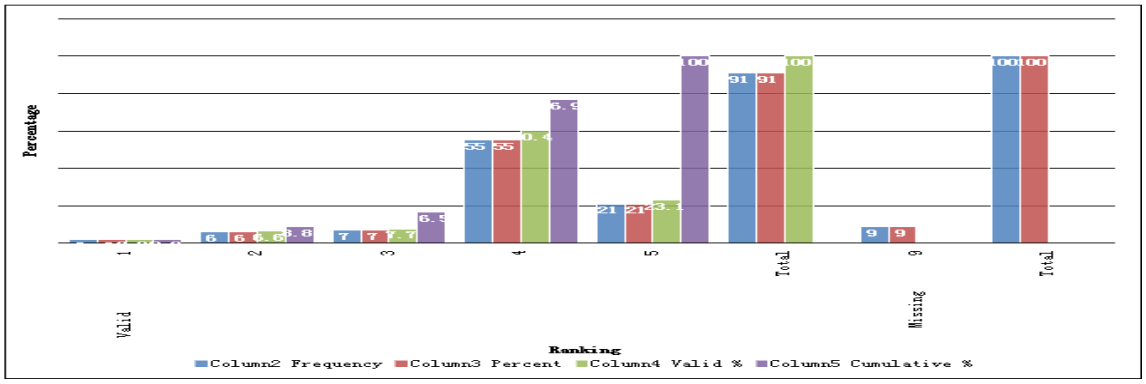
The indicator of Data Security; Availability and Quality of Documented Procedures for Data Recording and System and Access Control is next in our presentation. Table 5.31 provides us with statistics of all responses collected from respondents assessing the extent of compliance to the requirements of data security.

Table 5.31: Data Security

Scale		Frequency	%	Valid%	Cumulative%
Valid	1	2	2	2.21	2.2
	2	6	6	6.6	8.8
	3	7	7	7.7	16.5
	4	55	55	60.4	76.9
	5	21	21	23.1	100
Total		91	91	100	
Missing	9	9	9		
Total		100	100		

Table 5.31 presents the statistics of 100 duly completed and returned questionnaires distributed to assess the level of development of debt management strategies and its performance among the sampled countries. Of the total 100 entries collected, a total of 91 representing 91% were recorded as valid and 9 entries or 9% are recorded as missing values. Of the valid entries a total of 21 representing 23.1% ranked the indicator 5 or excellent, 55 representing 60.4% ranked the indicator 4 or very good, 7 or 7.7% ranked the indicator 3 or average, 6 or 6.6% of all valid entries ranked the indicator 2 or fair implementation, and 2 representing 2.2% rated compliance to the debt data security provisions 1 or poor. Overall 89% of all valid rankings rated compliance with the provision for debt data security at least 3 or average. And that was considered remarkable, where the majority of respondents or 60.4% rated it very good. These statistics are represented as a bar chart in figure 5.31.

Figure 5.31: Data Security



5.36 Data Security: Frequency of Back-Ups and Security of Storage

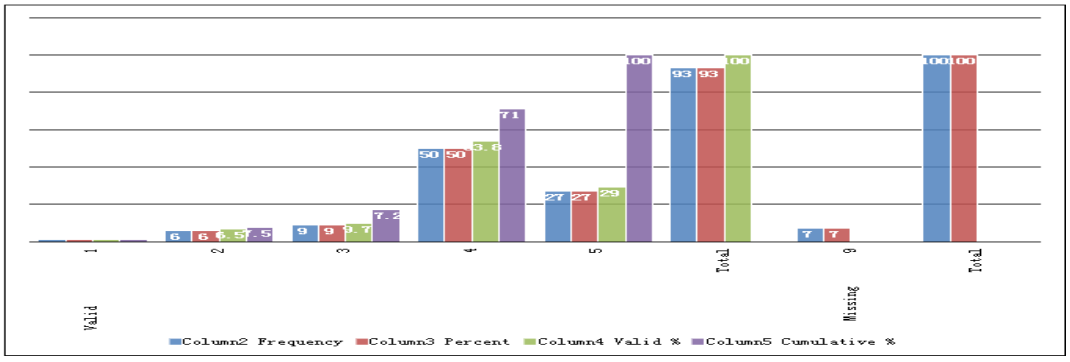
The next indicator is concerned with data security: frequency of back-ups and security of storage, where debt data is required to be secured and accessible only to authorised staff, with proper back-ups to prevent against loss of vital information on the correct status, amount and level of government debt at any particular period of time. Table 5.32 presents respondent assessment of compliance with the indicator provision ranking from 1, poor to 5, excellent.

Table 5.32: Frequency of Back-Ups and Security of Storage

Scale		Frequency	%	Valid%	Cumulative%
Valid	1	1	1	1.1	1.1
	2	6	6	6.5	7.5
	3	9	9	9.7	17.2
	4	50	50	53.8	71
	5	27	27	29	100
Total		93	93	100	
Missing	9	7	7		
Total		100	100		

Table 5.32 shows the statistics of 100 duly completed returned questionnaires, consisting of 93% valid and 7% entries recorded as missing values. Of the 93% valid ratings, 27, representing 29% ranked the indicator of data security; frequency of back-ups and security of storage 5 or excellent, 50 or 53.8% ranked the compliance with the indicator at 4 or very good, 9 or 9.7% ranked the indicator 3, 6 or 6.5% of all valid entries rated the indicator 2 or fair, and I or 1.1% of the entries ranked the implementation of the indicator at 1 or poor. Overall, 91.4% of all valid entries rated the indicator at least 3, good or average in overall compliance with the provision of the frequency of back-ups and data storage. These statistics are further represented in a column chart form in figure 5.32.

Figure 5.32: Frequency of Back-Ups and Security of Storage



5.37 **Segregation of Duties**

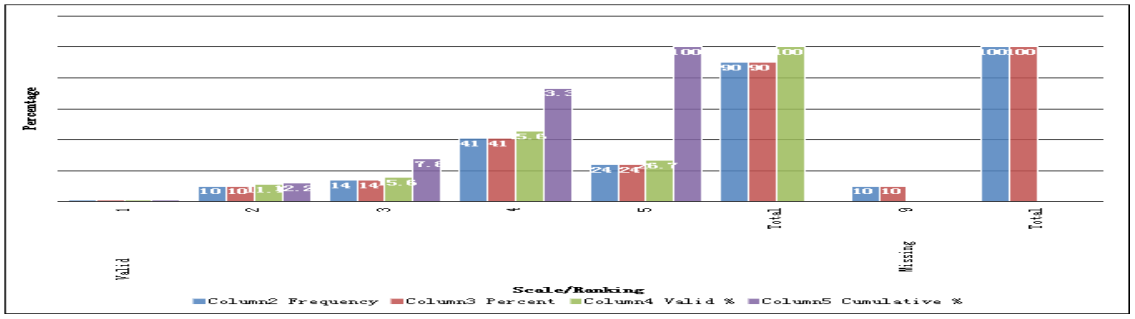
The segregation of duties indicator is next in our data presentation. Segregation of duties provision in debt management exists to ensure that there is a clear demarcation between the debt managers and the authority especially with regard to negotiating debt and transacting on behalf of the central government. Segregation of debt duties helps in encouraging prudence and prevention of fraud. Table 5.33 presents the statistics on the indicator as obtained from respondents' assessment.

Table 5.33: Segregation of Duties

Scale		Frequency	%	Valid%	Cumulative%
Valid	1	1	1	1.1	1.1
	2	10	10	11.1	12.2
	3	14	14	15.6	27.8
	4	41	41	45.6	73.3
	5	24	24	26.7	100
Total		90	90	100	
Missing	9	10	10		
Total		100	100		

Table 5.33 presents 100 duly completed and returned questionnaires. Of this number 90% were recorded as valid entries and 10, representing 10% were recorded as having missing values. Of the 90 valid entries, 24 representing 26.7% rated compliance with the indicator of segregation of duties at 5 or excellent, 41 representing 45.6% of all entries ranked compliance at 4 or very good, 14 or 15.6% ranked the indicator 3 or good, 10 or 11.1% ranked the indicator 2 or fair and 1 or 1.1% rated the indicator 1 or poor. Overall, compliance with segregation of duties provision was rated at least "good" by 86.7% of all responses, which was considered remarkable. These statistics are graphically represented in figure 5.33.

Figure 5.33: Segregation of Duties



5.38 Staff Capacity and Human Resources Management

The next indicator represents staff capacity and human resources management, which ensures that all staff involved in the process of government debt management are assessed and found to have been subjected to the code of conduct and conflict-of-interest guidelines as regards the management of their own personal financial affairs.

Table 5.34: Staff Capacity and Human Resources Management

Scale		Frequency	%	Valid%	Cumulative%
Valid	1	2	2	2.2	2.2
	2	19	19	20.9	23.1
	3	26	26	28.6	51.6
	4	26	26	28.6	80.2
	5	18	18	19.9	100
Total		91	91	100	
Missing	9	9	9		
Total		100	100		

Table 5.34 shows the statistics on 100 questionnaire entries returned where respondents assessed the level of compliance with the provision of the debt management staff capacity indicator in the sampled countries. Of the hundred returned responses 91 entries or 91% were recorded as valid and 9 or 9% were recorded as missing values. Of the 91% valid entries 18 or 19.9% rate the indicator 5 or excellent, 26 representing 28.6% of all valid entries ranked the indicator 4 or very good, 26 or 28.6% rated the indicator 3 or good, 19 or 20.9% ranked the indicator 2 or fair and 2 or 2.2% rated compliance with the indicator 1 or poor. 74.7% of all valid entries rated compliance with the indicator of staff capacity at least good or 3. These statistics are further presented in figure 5.34 as a column chart.

Figure 5.34: Staff Capacity and Human Resources Management

5.39 Operational Risk Management, Business Continuity and Disaster Recovery Plans

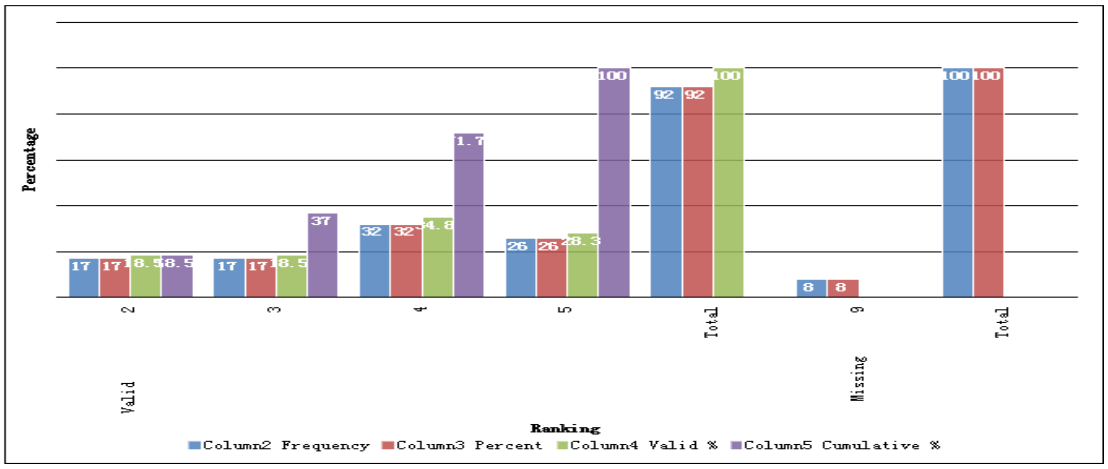
The next indicator of debt management presented in the course of this work is the indicator of Operational Risk Management, Business Continuity and Disaster Recovery Plans. This indicator covers the process that allows an organisation to prepare for future incidents that may have a negative effect on the core objective and its long-term mission. It also covers disaster recovery, which promotes the ability to regain access to data, hardware and software necessary to resume operation especially after a human or natural disaster. Statistics on respondents' assessment of the indicator are presented in Table 5.35.

Table 5.35: Operational Risk Management

Scale		Frequency	%	Valid%	Cumulative%
Valid	2	17	17	18.5	18.5
	3	17	17	18.5	37
	4	32	32	34.8	71.7
	5	26	26	28.3	100
	Total	92	92	100	
Missing	9	8	8		
Total		100	100		

Table 5.35 summarises the 100 returned questionnaires. Of the 100 responses 92, representing 92% were recorded as valid entries and 8 or 8% were recorded as missing values. Out of the 92% valid entries collated, a total of 26 or 28.3% rated the compliance with the indicator OR5G as excellent or 5, 32, representing 34.8% ranked compliance at 4 or very good, 17, representing 18.5%, rated the indicator 3 or good, and 17 representing 18.5% rating the indicator at 2 or fair. There was no rating of 1 or poor on the scale. The level of compliance with this indicator is good, but relatively lower than preceding ones. Figure 5.35 presents the scenario presented in table 5.35 in a column graph.

Figure 5.35: Operational Risk Management



5.40 **Debt Records: Completeness and Timeliness**

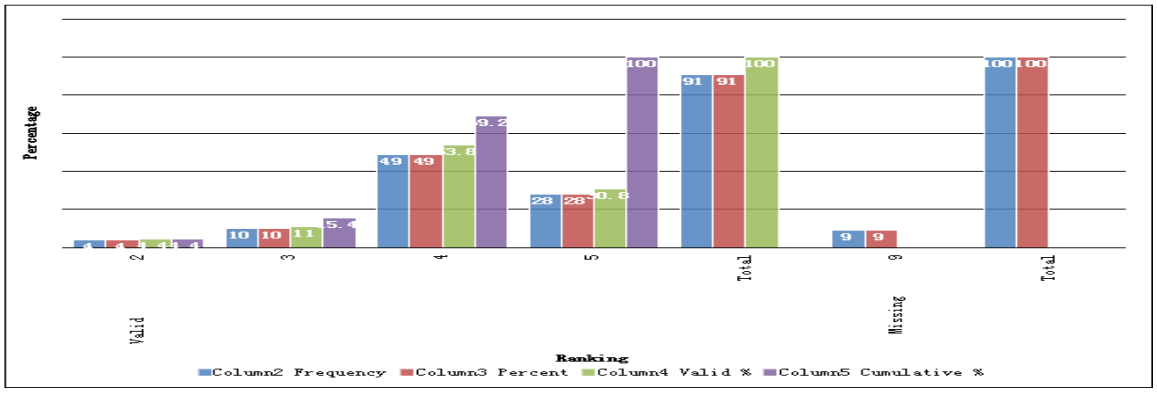
Debt management process requires that debt data be complete and timely. Thus, the indicator of Debt Records: Completeness and Timeliness ensures the promptness and comprehensiveness of data kept on government debt for easier reference and effective decision making. Table 5.36 presents data on questionnaire assessment of the level of compliance to this indicator by debt agencies in the sampled countries.

Table 5.36: Completeness and Timeliness debt records

Scale		Frequency	%	Valid%	Cumulative%
Valid	2	4	4	4.4	4.4
	3	10	10	11	15.4
	4	49	49	53.8	69.2
	5	28	28	30.8	100
	Total	91	91	100	
Missing	9	9	9		
Total		100	100		

Table 5.36 presents statistics of 100 duly completed and returned questionnaires. Out of the total of 100 duly completed questionnaires 91 or 91% were found to be valid entries and 9 or 9% were recorded as missing values and therefore invalid. Of the 91% valid entries 28 or 30.8% ranked compliance with the indicator at 5 or excellent, 49 representing 53.8% rated the indicator 4 or very good, 10 representing 11% rated compliance with this indicator 3 or good and 4 or 4.4% rated the indicator 2 or fair. With 95.6% of all entries rating overall compliance with the indicator at least good was found very remarkable. Figure 5.36 sheds more light on the statistics presented in table 5.36.

Figure 0.36: Completeness and Timeliness of debt records



5.41 Debt Records: Registry System

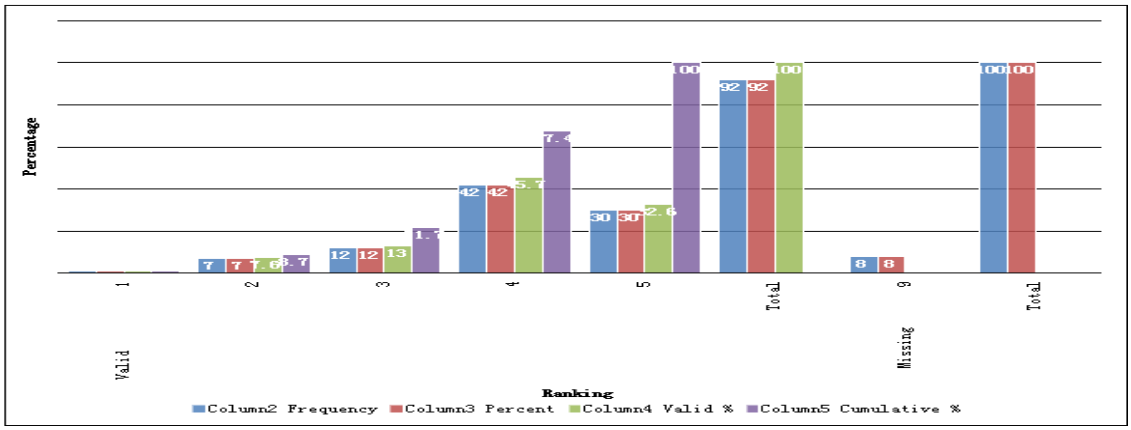
Government debt management procedure requires that there should be tight controls and security around the system and the debt database. The indicator of Debt Records: Registry System ensures compliance with this provision. Thus, in table 5.37 an assessment of the level of compliance with indicator is presented in the form of returned completed questionnaire ratings on scale of low 1 and high, 5.

Table 5.37: Debt Records

Scale		Frequency	%	Valid%	Cumulative%
Valid	1	1	1	1.1	1.1
	2	7	7	7.6	8.7
	3	12	12	13	21.7
	4	42	42	45.7	67.4
	5	30	30	32.6	100
Total		92	92	100	
Missing	9	8	8		
Total		100	100		

Table 5.37 presents an assessment of the indicator of debt records; registry system, 100 duly completed and returned questionnaires. Of the 100 duly completed and returned questionnaires, 92 or 92% entries were found to be valid and 8 or 8% were recorded as missing values. Out of the 92 valid entries 30, representing 32.6% rated the indicator 5 or excellent, 42 or 45.7% rated the indicator 4 or very good, 12 or 13% rated the indicator 3 or good, 7 or 7.6% ranked the compliance with the indicator 2 or fair, and a single entry representing 1.1% rated the indicator 1 or poor. A total of 90.2% of all the valid entries at the end rated the indicator at least good in compliance. This is represented graphically in figure 5.38.

Figure 5.38: Debt records



5.42 Central Government Debt Data: Statutory and Mandatory Reporting Requirements

The indicator of Central Government Debt Data: Statutory and Mandatory Reporting Requirements in this work is meant to assess and ensure compliance with the effectiveness of the registry in maintaining accurate and timely records of all investors in government securities that were issued in the domestic market. The indicator also mandates regular and timely reporting for statistical purposes. To assess the extent of compliance with this debt management indicator respondent opinions are presented in table 5.38.

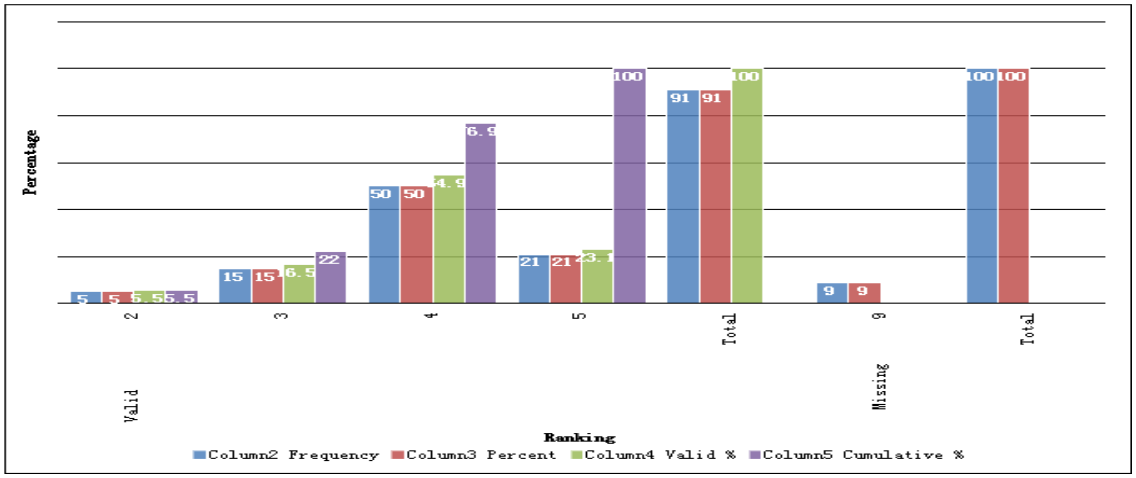
Table 5.38: Central Government Debt Data

Scale		Frequency	%	Valid%	Cumulative%
Valid	2	5	5	5.5	5.5
	3	15	15	16.5	22
	4	50	50	54.9	76.9
	5	21	21	23.1	100
	Total	91	91	100	
Missing	9	9	9		
Total		100	100		

Table 5.38 presents the total of duly completed and returned questionnaires. Of the number, a total of 91 or 91% was recorded as valid and 9 or 9% was recoded as missing values. Of the valid entries 21 or 23.1% ranked the indicator 5 or excellent, 50 or 54.9% ranked the indicator 4 or very good, 15 or 16.5% ranked compliance with the indicator of statutory and mandatory reporting as good at 3, and 5 representing 5.5% rated the indicator least at 2 or fair. The extent of compliance was clear with

94.5% of all entries rating the indicator at least good and 50% rating it very good. These statistics are presented in figure 5.38 in a column chart.

Figure 5.38: Central Government Debt Data



5.43 Public Sector Debt Data: Statutory and Mandatory Reporting Requirements

The indicator of Public Sector Debt Data: Statutory and Mandatory Reporting Requirements like the Central Government Debt Data: Statutory and Mandatory Reporting Requirements tries to ensure that information on the extent of domestic debt subscribed by foreign investors is made available for statistical reporting purposes. In addition, the registry should ensure regular reconciliation and auditing by the appropriate units or agencies. Table 5.39 presents the collected data from respondent responses in assessment of compliance to the indicator.

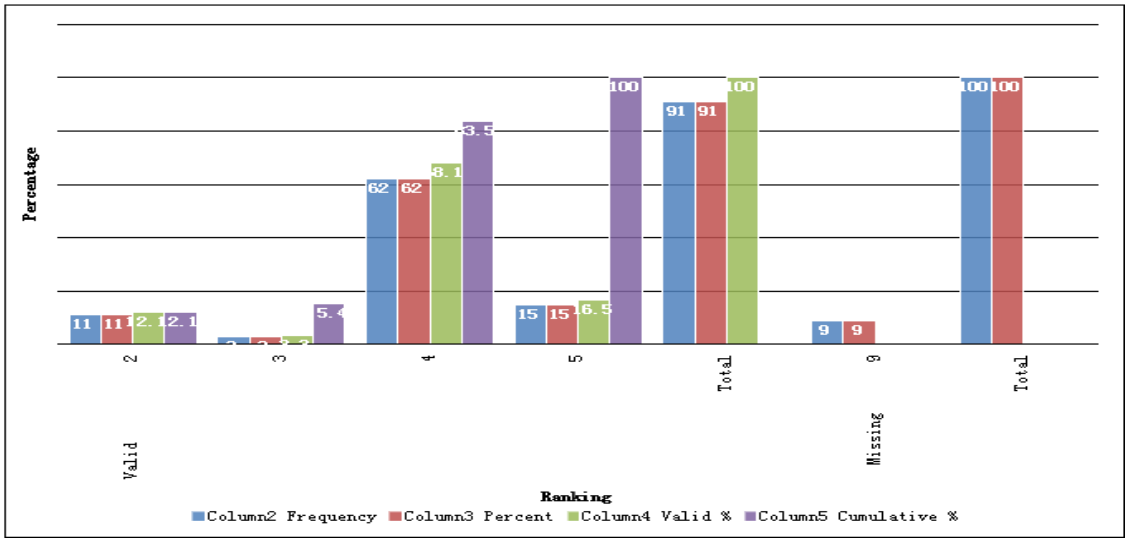
Table 5.39: Public Sector Debt Data

Scale		Frequency	%	Valid%	Cumulative%
Valid	2	11	11	12.1	12.1
	3	3	3	3.3	15.4
	4	62	62	68.1	83.5
	5	15	15	16.5	100
	Total	91	91	100	
Missing	9	9	9		
Total		100	100		

Table 5.39 presents 100 returned responses on the debt management indicator of Public Sector Debt Data: Statutory and Mandatory Reporting Requirements. Of the 100 responses, 91 or 91% were recorded as valid, and 9 or 9% was recorded as missing values. Of the 91% valid entries 15 or 16.5% rated the compliance with the

public sector debt indicator as excellent or 5, 62 or 68.1% rated the indicator 4 or very good, 3 or 3.3% of the entries ranked the compliance with the indicator 3 or good, and 11 or 12.1% of all valid entries were recorded rating compliance with the provision of the indicator 2 or fair. Figure 5.39 depicts the scenario in a column chart form.

Figure 5.39: Public Sector Debt Data



5.44 **Debt Statistical Bulletin: Quality and Timeliness**

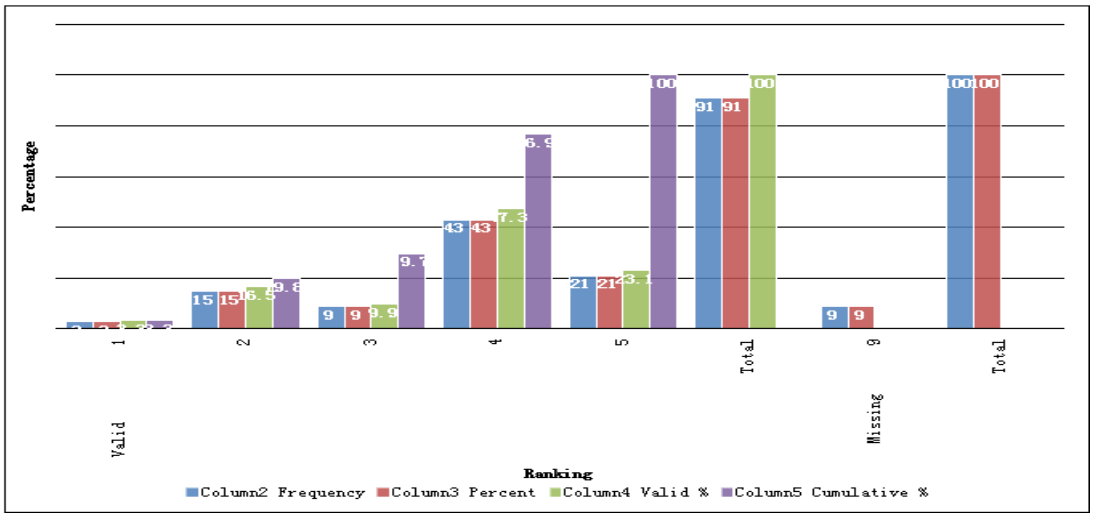
The indicator of Debt Statistical Bulletin: Quality and Timeliness is the last of the indicators to be presented, which formed our variables guiding this work. The indicator as the title implies, ensures the presence or availability of a timely and periodical debt statistical bulletin that would present a quality information of the government debt data and statistics for investors as well as decision making and records. Table 5.40 portrays an assessment of the level of compliance with the requirement of this indicator, in the form of responses obtained from duly completed and returned questionnaires.

Table 5.40: Debt Statistical Bulletin

Scale		Frequency	%	Valid%	Cumulative%
Valid	1	3	3	3.3	3.3
	2	15	15	16.5	19.8
	3	9	9	9.9	29.7
	4	43	43	47.3	76.9
	5	21	21	23.1	100
Total		91	91	100	
Missing	9	9	9		
Total		100	100		

Table 5.40 shows 100 returned completed questionnaires of which 91 or 91% entries were found to be valid and 9% was recorded as missing values. Of the 91% valid entries, 21 representing 23.1% of the entries rated compliance with the statistical bulletin indicator 5 or excellent, 43 or 47.3% ranked the indicator 4 or very good, 9 or 9.9% ranked the level of compliance with the provision 3 or good, 15 or 16.5% rated the compliance with the indicator 2 or fair, and finally 3 or 3.3% ranked the indicator 1 or poor in overall compliance. The overall ranking, as with all other debt management indicators, was found to be sound, with almost 77% of the entire valid entries rating the level of compliance with the indicator as at least good. Figure 5.40 shows the data in table 5.40 in a column chart form.

Figure 5.40: Debt Statistical Bulletin



5.45 Conclusion

In this chapter it was observed how the use of the survey questionnaire resulted in a moderate collection of primary data, which can be considered adequate in supporting the proposed work on debt management. The primary data was intended to support and complement the more comprehensive data gathered from the secondary sources. Hence the reason for the moderate number of respondents recorded in the chapter. The data presented was however found to give a good insight into the developments in the process of debt management as it occurred around the sub-Saharan African countries. The general impression made from the responses over the various indicators, themes and the respondent opinion shows that there was a high level of compliance among the countries. This, as seen from the respondent ratings which tend to average at 4 or very good for most of the indicators as made available under debt

management performance assessment tool of the World Bank and the International Monetary Fund. The forthcoming analysis in the subsequent chapters will shed more light on the data presented in this chapter.

Chapter 6

Secondary Data Presentation

6.1 Introduction

This chapter continues with the process of data presentation started in chapter five. In this chapter however, the data being presented is of secondary form. As explained in the methodology chapter (4), use of secondary data would complement the use of primary data in completing the triangulation of the data research approach. Secondary data, however, forms the vast segment of all the data used in this work for obvious reasons. Research in the subject area was found to be excessively and heavily dominated by an extensive use of secondary data. In addition, the sources of data for the same subject leaned heavily towards national and international multi-lateral and bilateral institutions that strictly employed the use, as well as render storage, analysis, interpretation and dissemination of the secondary data. Thus in this work, secondary data is considered the major source of data, with primary data complementing where the former fails to be significant, or cover important details.

In the process of dealing with the subject of government debt and its management we expect to work with processed and unprocessed statistical data, which might need to be further transformed into shapes and forms to further assess and analyse the trends for the purpose of putting forward a general statement or inferences. The process might be as simple as trying to understand some trends, especially gross domestic product per capita and how it relates to government debt or its composition. Other issues of interest that we can obtain from the secondary data may be in the form of government market instruments, different sources of government debt and its currency features and the risk implications associated with them. Issues of interest on debt, debt servicing and penalty on default are just a segment of the nature of data this work proposes to utilise and manipulate for further statistical analysis and possible inferences.

The statistical data to be presented in this chapter largely relates to economic policy and growth, external debt, the financial sector and the public sector. Due to this, several indicators were considered, collated and organised for the purposes of carrying out further statistical analysis and a possible determination of causality between variables. The data represented different variables used in explaining and assessing the developments in government debt and its management. The gross domestic product (GDP), the GDP percentage annual growth, GDP per capita, external debt stock, total, market capitalisation of listed companies, market capitalisation of listed companies as a percentage of GDP, Cash Surplus/Deficit as a percentage of GDP, CPIA (Country Policy and Institutional Assessment) economic management cluster average, total debt service as a percentage of exports of goods and services, gross savings as a percentage of GDP, money and quasi money (M2) as a percentage of GDP and the gross government debt to GDP ratio. These data as described were sourced from the World Bank data bank indicators and the IMF economic outlook.

6.2 **Time Series Macro-Economic Data**

Macroeconomic statistical data that deals with the aspect of international finance such as GDP, growth and debt, sometimes arrives in a time series form for the purpose of stabling trends, easier comparison and determining change, which can be used in analysis, interpretation of country performance and used in carrying out meaningful inferences. Our data was sourced with the intent of covering four sub-Saharan countries for a period of 30 years (or so) beginning from 1980 to 2012. All efforts were made to ensure that comprehensive and relevant data on the stipulated indicators were obtained, however the dearth of data in the sub-Saharan African region is phenomenal and in several instances years of missing data were reported.

Furthermore, due to non-availability of data in some instances, variables were narrowly defined to accommodate for or to represent a missing subject whose presence is invaluable to the work. For instance, central government debt data was missing for almost all the countries under focus. The central government debt consists of the entire stock of direct government fixed term contractual financial obligations to others, which is outstanding as of a particular period of time. The central government debt includes both domestic and foreign liabilities ranging from currency and money deposits, securities other than shares and loans. The scant nature of the data on central

government debt (which actually is largely missing for all the countries under study), even at the World Bank, resulted in a decision to put the total external debt stock in its place.

The use of the total external debt stock was however, not without some major shortcomings. Total external debt is debt that is owed to non-residents, that is repayable in currency, goods or service. Total external debt is the summation of all public debts, publicly guaranteed debts, as well as the private nonguaranteed long term. Total external debts also include the use of IMF credit and short term debts. By this it is seen clearly that total external debt excludes the domestic debts of a country and includes private non-guaranteed debts. But we also knew that except for South Africa, until recently most of sub-Saharan Africa sampled in this work rely heavily on external sources of financing, with some of these countries recording insignificant ratios to zero domestic financing due to undeveloped capital market (Christensen, 2004). For this reason, it was considered safer to use total external debt data in place of central government total for our analysis. As for private non-guaranteed debt, it was made clear that it was a debt that was typically not very high among most low income countries (LICs) (Bangura et al., 2000). Hence, the work proceeded to use total external debt data as a representation of total government debt.

6.3 **External Debt: Nigeria**

As discussed earlier, a large proportion of the debt owed by countries in sub-Saharan Africa suffering from debt crises and distress has been sourced externally. The debt crises led many of the countries in the region to be declared insolvent and thus the phenomenon of debt overhang was ensured. In order to ascertain the debt overhang as it impacts on economic growth, certain trends in key variables were considered using data obtained from the World Bank economic indicators on the four countries sampled. Starting with Nigeria, table 7.1 presents a range of indicators depicting a country's extent of indebtedness. As explained earlier in chapter 4 of this work, we have in the below table values corresponding to external debt to GDP ratio, external debt to export ratio, interest on debt to export ratio and total debt service to export ratio. The ratios were used in a model to determine the extent of the impact of indebtedness on the economic growth of a nation. The end result was expected to shed

light on the existence of the debt overhang phenomenon, thereby answering research question one and the research objective raised in the beginning of the work.

Table 6.1: Trend in external debt ratios (Nigeria)

Year	EDT/GDP	EDT/X	INT/X	TDS/X	M2/GDP
1980	0.13922052	0.60529	3.273383	4.145606	0.2241355
1981	0.18739629	0.99717	5.932145	9.196041	0.2495052
1982	0.2333281	1.2532	9.693899	16.22599	0.3247923
1983	0.49580304	2.08613	12.9758	23.61052	0.5369072
1984	0.62395794	1.76025	15.69831	32.94432	0.7453366
1985	0.64609665	1.45911	12.74341	32.78037	0.8018639
1986	1.07211238	2.22719	14.97084	38.03891	1.1391647
1987	1.20469194	0.96264	8.268439	14.13063	1.1993175
1988	1.27294244	0.87616	20.85862	30.36505	1.6502893
1989	1.24310962	0.29979	17.61396	24.69282	1.7898806
1990	1.08719452	0.33603	14.60178	22.59629	1.8712322
1991	1.22393836	0.24432	15.597	22.05631	2.8864172
1992	0.99036864	0.13928	14.39115	18.57413	4.405509
1993	1.94664739	0.12702	8.193786	13.39577	12.570724
1994	1.82967783	0.14396	11.39059	18.94678	14.759426
1995	1.19432835	0.04747	7.352167	14.73073	11.166285
1996	0.8978734	0.03481	6.430877	13.13697	10.584602
1997	0.79468675	0.02344	3.545592	8.712038	11.996182
1998	0.94716691	0.03625	5.483716	13.07433	16.423811
1999	0.81871692	0.02618	3.313841	7.605597	19.507082
2000	0.68084781	0.01294	3.603309	8.756349	22.336042
2001	0.68040537	0.01346	4.076827	12.72069	29.665226
2002	0.50608621	0.01167	1.788886	8.061251	26.317377
2003	0.50456337	0.00981	1.499194	5.925512	26.10286
2004	0.41765825	0.01042	1.427133	4.470264	24.260454
2005	0.18241633	0.00439	8.65052	15.41075	23.277774
2006	0.0279545	0.0005	0.439079	10.98065	24.497702
2007	0.02320691	0.00055	0.135599	1.442617	35.191522
2008	0.01991647	0.00042	0.098868	0.475172	43.175645
2009	0.04040444	0.00088	0.152918	0.728828	60.713462
2010	0.03168146	0.00054	0.082361	0.384375	49.303541
2011	0.03666837	0.00045	0.098374	0.370739	52.110672
2012	0.0383726	0.00044	0.146117	0.305572	57.244951

Source: World Bank Debt Indicators

Table 6.1 portrays time series data on the extent of indebtedness for Nigeria spanning 32 years, from 1980 to 2012. The trend shown is in ratios and was used to assess the effect that borrowing-on had on economic growth. The indicators however, show an explicit trend - for instance, the case of the debt ratio in the first column. From the

1980s onwards, when the debt crisis was on an accelerated build up among the SSAs and for mono cultural and excessively raw material export dependent economies such as Nigeria, the rise in debt started gradually in 1980 with 13.92%, rising between 1986, 1987 and peaking in 1989; with 107.22, 120.47%, and 127.29% respectively.

In 1989, the debt ratio dropped slightly to 124.31% and continues to drop gradually until the year 1993, when the ratio climbed to its highest level at 194.66% of the GDP. This was a ratio that was almost twice the county's overall value of goods and service in that period. This was a period of acute political crisis and instability in the country. This might have led to the deteriorating macro-economic policy and performance. However, in 1994 and 1995 the debt ratio started to record a consistent decline with 188.97% and 119.43% respectively. Debt ratio for Nigeria continued its decline due to some drastic radical direct government fiscal policy in the subsequent years. Eventually, a relative stability was recorded, following a new democratic government in 1999. This development coincided with the new millennium agitation for debt relief and debt cancellation. Thus by the year 2006 the country's external debt figure stood at a low ratio of 2.79. By the fiscal year 2012 the debt ratio was relatively higher than the previous period at 3.837%.

Column 2 shows the trend of external debt to export of goods and services over the years spanning 1980 to 2012. The ratio of the external debt to exports indicates that external debt constitutes a large proportion of the country's total exports. Beginning from a high 60.55% in 1980, the ratio continued to rise reaching a high 222.72% in the year 1986. 1986 was a period that marked the beginning of the country's structural adjustment programme, introduced under the IMF/World Bank guidelines. Accordingly, the government's access to foreign finance was expected to expand further than, as well as the fall in the real exchange rate as result of the currency devaluation conditionality.

Afterwards, the ratio continues to drop, reaching a low 0.05% of total exports in 2006, a year after a substantial debt cancellation of $18 billion. Subsequently, the ratio picked up gradually through 2007, 2008, 2009, 2010, 2011 and 2012, with 0.055%, 0.042%, 0.088%, 0.054%, 0.045% and 0.044%, respectively. This trend shows that the ratios were safe and not so significant to be detrimental to the nation's incomes, but rise as a result of gradual increase in renewed external government borrowings.

Figure 6.1: Trends in external debt (Nigeria)

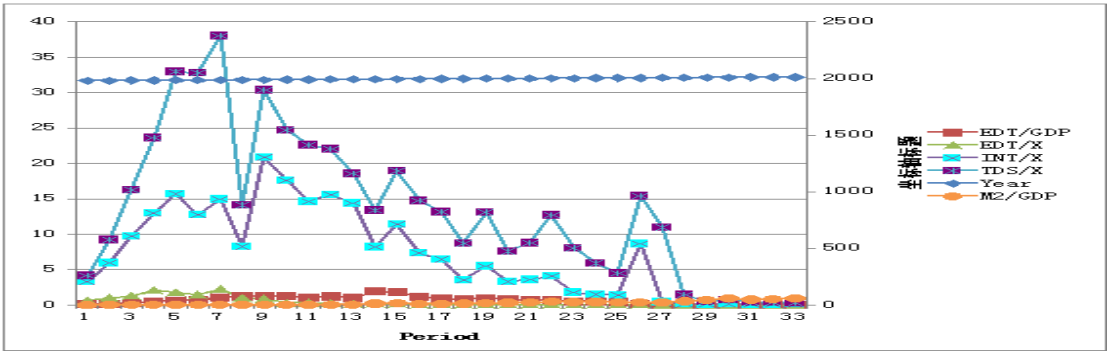


Figure 6.1 portrays total debt service and interest on debt as ratios of total exports of goods and services as the leading fluctuating indicators over the years. The horizontal axis represents the various periods from 1980 to 2012 and the vertical y axis represents a scale for the corresponding debt service ratios on the right side, completing the square. Debt service figures are shown as being classed 500, 1000, 1500, 2000 and 2500 respectively. This trend shows a persistent increase in debt service and interest on debt to total export and services ratios over the periods, where it reached a peak in period eight corresponding to 1986, whilst dropping drastically afterwards. This trending continued to oscillate, fluctuating up and down within the average points of 1000 on a maximum scale of 2500, except for period 15 recording almost 1250. Point 29 on the horizontal axis, representing the period corresponding to 2006, marked the minimal point for the same reasons explained for external debt for the same period.

The trend in interest paid on debt as a ratio of exports of goods and services tended to follow the same pattern with the total debt service, but at a relatively slower and lower momentum. For instance, while total interest paid on debt service attained peaked at about 1.250, which corresponds to a peak of 2000 attained under the total debt service. This is shown at 20 and 30 on a horizontal axis scale respectively.

6.4 **External debt: Ghana**

Ghana was introduced earlier, along with three other sub-Saharan African countries, to make up the four sampled nations of this study. Its selection, as explained earlier in chapter 4 (methodology) was informed by its features as an SSA, debt distressed HIPC, which befitted from the World Bank IMF Debt Relief Initiative. Studying the Ghanaian Debt trend with respect to exports of goods and services would complement

other indices in the construction of a useful trend in government borrowing among the SSAs. Other important measures in government borrowing include total debt service on external debt to GDP ratio as well as total interest paid on external debts as a ratio of GDP (Appendix 1). Below, we present the total external debt incurred by Ghana, exports of goods and services and GDP, for the period spanning 32 years, from 1980 to 2012. The last column gives data on M2, which represents broad money, as explained earlier and was used for analysing capital market development. The ratio of broad money to GDP and the ratio of market capitalisation to GDP were the two measures of capital market development employed in this work.

Table 6.2: External debt: Ghana

Year	EDT	EXPT	GDP	M2
1980	1.4E+09	3.76E+08	4.45E+09	795055
1981	1.54E+09	2.01E+08	4.22E+09	1203057
1982	1.48E+09	1.35E+08	4.04E+09	1483923
1983	1.67E+09	2.25E+08	4.06E+09	2080548
1984	1.96E+09	3.55E+08	4.41E+09	3196220
1985	2.24E+09	4.8E+08	4.5E+09	4671800
1986	2.75E+09	9.49E+08	5.73E+09	6911240
1987	3.28E+09	9.98E+08	5.07E+09	10597000
1988	3.06E+09	9.45E+08	5.2E+09	15501000
1989	3.29E+09	8.79E+08	5.25E+09	23975000
1990	3.73E+09	9.94E+08	5.89E+09	27164000
1991	4.16E+09	1.12E+09	6.6E+09	37779100
1992	4.24E+09	1.11E+09	6.42E+09	57531460
1993	4.58E+09	1.21E+09	5.97E+09	76804870
1994	5.1E+09	1.38E+09	5.45E+09	1.17E+08
1995	5.49E+09	1.58E+09	6.46E+09	1.68E+08
1996	5.79E+09	2.23E+09	6.93E+09	2.34E+08
1997	5.71E+09	2.23E+09	6.89E+09	3.36E+08
1998	6.31E+09	2.53E+09	7.48E+09	3.95E+08
1999	6.51E+09	2.48E+09	7.72E+09	4.96E+08
2000	6.26E+09	2.43E+09	4.98E+09	7.65E+08
2001	6.56E+09	2.4E+09	5.31E+09	1.2E+09
2002	7.21E+09	2.63E+09	6.17E+09	1.67E+09
2003	7.89E+09	3.1E+09	7.63E+09	2.05E+09
2004	7.44E+09	3.49E+09	8.88E+09	2.61E+09
2005	7.18E+09	3.91E+09	1.07E+10	3.12E+09
2006	3.69E+09	5.14E+09	2.04E+10	4.35E+09
2007	5.11E+09	6.07E+09	2.48E+10	5.95E+09
2008	5.69E+09	7.14E+09	2.85E+10	8.29E+09
2009	7.19E+09	7.61E+09	2.6E+10	1.03E+10
2010	9.32E+09	9.48E+09	3.22E+10	1.36E+10
2011	1.13E+10	1.75E+10	3.96E+10	1.83E+10
2012	1.24E+10	1.87E+10	4.07E+10	2.29E+10

Source: World Bank Debt Indicators

Table 6.2 presents some useful debt data to be used in analysing the relevance of government debt in macroeconomic policies among the low income sub-Saharan African countries. Having earlier studied the trend of debt data from Nigeria, studying the trend in two or more countries will go a long way in constructing a picture and making a pattern, even before a statistical analysis is carried out as specified in the methodology segment of this work.

An examination of the external debt figures obtained on Ghana tends to show a trend not very different to that observed earlier in the Nigerian situation. The column on external debt indicates that, except for the year 1982 (when borrowing slowed down), a persistent increase in external sourcing of finance up until the year 2006, when the figure dropped to a low $3.690 billion from a figure of $7.182 billion in 2005, representing a decrease of $3.492 billion or 48.62%. In 2006, a period of the debt relief initiative, especially for HIPCs, which includes sub-Saharan African countries such as Ghana, the figure for external debt dropped significant. The borrowing however, continued to increase all through to 2012 with a high figure of $12.435 billion.

Column two of the same table 6.2 shows the total exports of Ghana from 1980 to 2012. The pattern recorded is a trend of increases in exports due to several reasons. However, in relation to external debt, the figure led to an interesting occurrence. For instance, between the year 1981 and 1982, external debt recorded a decline from $1.5388 to $1.4842 billion, which corresponds to a decrease in exports from $2.0081 billion to $1.3473 billion for the same period. Both external debt and exports of goods and services increased to $1.6659 billion and $2.2541 billion at the end of 1983 respectively. The trend continued with a direct positive relationship between external debt and exports of goods and services by Ghana. The question as to whether increases in external financing leads to higher domestic production of goods and services and impliedly growth would be determined through statistical regression analysis. The data presented was used to compute a postulated relationship between external borrowing and economic growth.

Figure 6.2: Trends in external debt (Ghana)

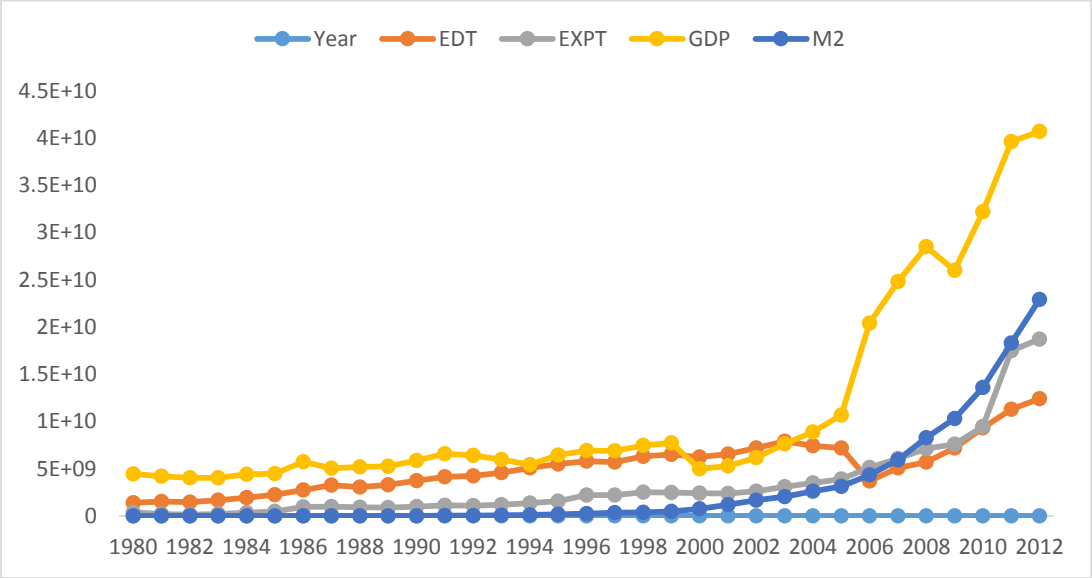


Figure 6.2 gives the trends as obtained from the data on external debt, the total exports of goods and services for Ghana between 1980 and 2012. Along the horizontal axis we have the periods from 1 to 33 representing the years above. On the two vertical (X) axis we have the classed values of equal intervals for the variables under consideration. The red curve represents external debt, the green represents exports of goods and services, pink represents the GDP and the navy blue coloured horizontal curve depicts the period in years.

This trend is clearly moving in a positively sloping direction, except for 26 to 27 in the case of external debts and 28 to 29 in the case of GDP. Otherwise, the trend is on a rising movement all through for all the indicators. Our statistical analysis was bound to shed further light on the relationships between the variable and probably with tangible explanations. The variable M2 represents broad money for the same period but was however, to be used to answer questions raised under a separate hypothesis.

6.5 **External Debt: Uganda**

Next in the process of the secondary data presentation is the following external debt data on Uganda. As is the case with the previous two sub-Saharan African countries studied, here external debt data, total exports of goods and services and gross

domestic product for a 32 year period between the years 1980 to year 2012 are presented. The data was used in statistical computations and analysis with respect to the outlined objectives, and the research questions raised in the introductory chapter (1). The data considered includes the debt ratio i.e. external debt to gross domestic product, total external debt to export of goods, total debt service to gross domestic product ratio and interest paid to gross domestic product ratio, which can be seen in the attached appendix 1. Below we present the trend of debt data for the purpose of establishing the structure in comparison to those presented earlier.

Table 6.3: Trend in Uganda external debt, in relation to export, gdp

Year	EDT	EXPT	GDP
1980	6.91E+08	2.42E+08	1.24E+09
1981	7.07E+08	2.15E+08	1.34E+09
1982	8.74E+08	1.83E+08	2.18E+09
1983	1.01E+09	1.94E+08	2.24E+09
1984	1.07E+09	4.59E+08	3.62E+09
1985	1.24E+09	4.84E+08	3.52E+09
1986	1.42E+09	5.03E+08	3.92E+09
1987	1.94E+09	5.17E+08	6.27E+09
1988	1.94E+09	4.93E+08	6.51E+09
1989	2.2E+09	4.2E+08	5.28E+09
1990	2.61E+09	3.12E+08	4.3E+09
1991	2.8E+09	2.48E+08	3.32E+09
1992	2.95E+09	2.5E+08	2.86E+09
1993	3.05E+09	2.27E+08	3.22E+09
1994	3.4E+09	3.49E+08	3.99E+09
1995	3.61E+09	6.79E+08	5.76E+09
1996	3.71E+09	7.23E+08	6.04E+09
1997	3.91E+09	8.38E+08	6.27E+09
1998	3.94E+09	6.35E+08	6.58E+09
1999	3.54E+09	7.35E+08	6E+09
2000	3.54E+09	6.6E+08	6.19E+09
2001	3.77E+09	6.73E+08	5.84E+09
2002	4.01E+09	6.93E+08	6.18E+09
2003	4.57E+09	7.22E+08	6.34E+09
2004	4.77E+09	1.01E+09	7.94E+09
2005	4.44E+09	1.28E+09	9.01E+09
2006	1.28E+09	1.52E+09	9.98E+09
2007	1.63E+09	1.99E+09	1.19E+10
2008	2.27E+09	3.51E+09	1.44E+10
2009	2.74E+09	3.75E+09	1.58E+10
2010	2.97E+09	4.09E+09	1.72E+10
2011	3.26E+09	3.98E+09	1.68E+10
2012	3.77E+09		1.99E+10

Source: World Bank Debt Indicators

Table 6.3 shows the trend of external debt recorded by Uganda over the years under consideration. As with the trend established under the Ghanaian external debt record, the trend recorded for Uganda began with a moderate sum of $609 million at the end of 1980 to a high amount of $1.009 billion in just 3 years at the end of 1983. This increase continued with the same momentum, figures growing at an accelerated rate until the year 2006, when the figure dropped to $1.276 billion from $4.437 billion at the end of 2005, representing a decrease of $3.161 billion or 71.24%.

This scenario is essentially a replay of what was witnessed under Ghana and Nigeria. The year 2006 was a period of debt relief implementation and most HIPCs including completion point Uganda had their outstanding external debts drastically reduced or entirely forgiven. In this case 71.24% had reduced, only to rise again to $1.628 billion at the end of 2007 representing an increase of $0.353 billion or 27.66%. This trend continued to increase further to $2.267 billion at the end of 2008 representing a rise by $0.638 or 39.14%. The years 2009, 2010, 2011, and 2012; recorded declining rates of increases in the external figures with $0.469 billion, $0.236 billion and $0.289 billion, to $2.736 billion, $2.972 billion and $3.261 billion representing 20.69%, 8.63% and 9.72% respectively.

The next column shown on the table shows the export of goods and services for the same period discussed in this section. The pattern of exports shows an overall increase from 1980 to 2012. There were instances of fluctuating values, which makes it difficult to establish a precise relationship with two other variables in the table. However, beginning with the first 4 years from 1980 there was witnessed a steady decline in total exports from $242 million to $215 million and to $182 in 1980, 1981 and 1982 respectively.

In the year 1983, exports of goods and services increased to $194.9 million giving an inconsistent trend and relationship when the trend in total external debt is considered. The total external debt on the other hand records a continuous rise for the same period. This makes a conclusive precise determination of a particular relationship potentially not be feasible, hence the need for a more reliable statistical and empirical experiment and test and analysis.

The third column shows values for gross domestic product for the period under review. Except for some periods, overall GDP recorded on average, an increase from 1980 to 2012.

Figure 6.3: Trend in external debts (Uganda)

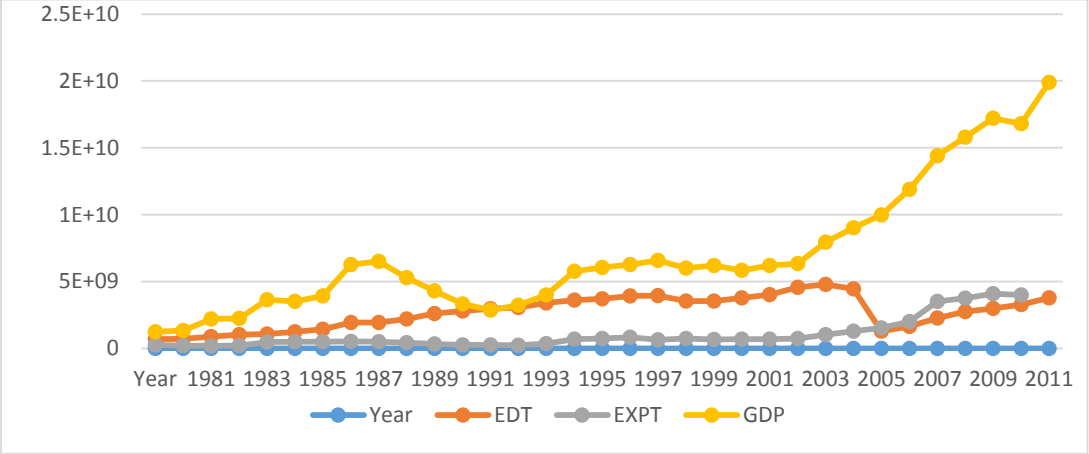


Figure 6.3 depicts a sketch of the movement between the three economic indicators under review: total external debt, exports of goods and services, gross domestic product and how each of these relate to one another. The horizontal, i.e. the Y axis, gives the periods spanning from 1980 (or period one) to 2012 (or period 32). The blue curve lies infinitely on the horizontal axis. Exports of goods and services started flat and by period 5 and 6, recorded a slight increase on up to period 7, where it flattened through 8 and finally started to fall from 10, reaching its lowest in period 13. The total exports curve picked up from period 15, continued to move with same momentum, reaching a high point in period 18. The exports continued to fluctuate but nominally, on an increasing rate until period 25 when the value of exports suddenly recorded an upward jerk - and that trend continued on until the year 2011 (or period 31) when there is a slight fall.

In the year 2012, a higher value of exports was recorded. The trend observed is not particularly peculiar, except for period 25, which actually coincided with the debt relief era. Thus, it was considered interesting, if reduction in government external financing could impact positively on exports of goods and services. Only further statistical analysis could establish, justify and elaborate upon this postulation.

The red curve depicts our total external debt over the same period under review. This curve tend to tell the same story as depicted in the graph, except for some few

fluctuations until the year 2006, total external debt recorded a persistent rise. The pink curve depicts the GDP indicator, which is perpetually upward sloping, but with several fluctuations. This trend followed the trend conveyed by the figures in table 31. GDP recorded an increase between 1980 and 1988, from $1.245 billion to $6.509 billion, representing a rise of $5.264 or 22.81%. However, between 1989 and 1991, the trend was reversed, where a persistent decline was recorded all through the period, ultimately dropping to a low figure of $2.857 billion from $3.322 billion in 1991. This represents a decline of $0.465 billion or 13.95%. From this point, except for the year 1999 posting a lower figure of $5.999 billion compared to $6.585 billion the previous year (1998). From then on the country's GDP continues to grow reaching its highest value at $19.881 billion in 2012.

The trend above was clearly as indicated by the chart, and might not be depicting a particular pattern in relation to movement in the country's total external debt profile. Any particular pattern at this level was strictly coincidental and such a result might not be appropriate for analysis or sufficient for forecast and generalisation.

6.6 **Trend in external debt (South Africa)**

South Africa is among the sub-Saharan African countries selected as a sample for the current study. As with Nigeria, South Africa was not a HIPC and was never considered for the debt relief initiative. However as an SSA, its selection was informed by a need to construct a broad analysis that would enable effective comparison that was all inclusive of the varied economies in the region.

In chapter three it was observed that South Africa was using 100% domestic sources of financing. This must explain the absence of a record of total debt data in table 32 between 1980 all through to 1993. Zero was however used for completeness of data. From 1994 up until 2012, external debt data was recorded, but it was also acknowledged that there was no clear definition between domestic debts issued abroad from those subscribed by foreign investors in the domestic market.

Table 6.4: Trend in external debt, exports, and gdp (South Africa)

Year	EDT	EXPT	GDP
1980	0	2.85E+10	8.05E+10
1981	0	2.46E+10	8.68E+10
1982	0	2.12E+10	8.01E+10
1983	0	2.13E+10	8.6E+10
1984	0	2.17E+10	8.52E+10
1985	0	2.11E+10	6.71E+10
1986	0	2.43E+10	7.95E+10
1987	0	3.15E+10	1.04E+11
1988	0	3.34E+10	1.15E+11
1989	0	3.33E+10	1.25E+11
1990	0	2.71E+10	1.12E+11
1991	0	2.61E+10	1.2E+11
1992	0	2.79E+10	1.31E+11
1993	0	2.93E+10	1.3E+11
1994	2.17E+10	3E+10	1.36E+11
1995	2.54E+10	3.44E+10	1.51E+11
1996	2.61E+10	3.55E+10	1.44E+11
1997	3.01E+10	3.66E+10	1.49E+11
1998	2.48E+10	3.45E+10	1.34E+11
1999	2.42E+10	3.37E+10	1.33E+11
2000	2.51E+10	3.7E+10	1.33E+11
2001	2.43E+10	3.57E+10	1.18E+11
2002	3.1E+10	3.66E+10	1.11E+11
2003	3.66E+10	4.69E+10	1.68E+11
2004	4.16E+10	5.79E+10	2.19E+11
2005	4.8E+10	6.76E+10	2.47E+11
2006	5.6E+10	7.83E+10	2.61E+11
2007	6.94E+10	9.01E+10	2.86E+11
2008	6.81E+10	9.8E+10	2.73E+11
2009	7.73E+10	7.76E+10	2.84E+11
2010	1.02E+11	9.94E+10	3.63E+11
2011	1.15E+11	1.18E+11	4.02E+11
2012	1.38E+11	1.09E+11	3.84E+11

Source: World Bank Debt Indicators

Table 6.4 present the indicators for total external debts, exports of goods and services and the gross domestic product for the period under study (1980 – 2012). Debt recorded a persistent increase over the period under review. Total exports of goods and services and gross domestic product figures indicates a generally fluctuating trend, but one which eventually ended in an increase over the years. As with the other sub-Saharan African countries reviewed in this work, the economic indicators data on South Africa as presented in the table could not be used to establish any meaningful

relationship between, say, external debt and exports of goods and services, or the overall GDP. Thus, we present the data with the intent of employing the use of statistical tools to establish the relationships as raised by the hypothesis formulated in chapter 4.

For instance, where total external debt remained at zero for over a decade total exports of goods and services kept recording different inconsistent figures, thus is a result of some other factor other than government borrowing. In 1980, the total debt figure was nil as against a total exports figure of $28.496 billion only. By the year 1981 the export of goods and services had decreased to $24.611 billion, representing a decline of $3.885 billion or 13.63%. By the year 1982 the export of goods and services had further dropped to a relatively low figure of $21.186 billion. However, by the years 1983 and 1984, the exports of goods figures were recorded at $21.269 and $21.696 billion respectively. The movement thus caused an increase of $0.083 billion, and $0.427 billion or 0.39% and 2% over the two periods respectively.

This trend dropped again in 1985, then rose in 1986 and 1987 with $24.305 billion, $31.481 billion and $33.355 billion respectively. Throughout all these years there were no government borrowing abroad and thus no relationship could be established, at least not at this stage. This inconsistent trend continued until 1994 when total exports of goods and services reached $30.010 billion only.

However, this period witnessed the introduction of an external debt figure of $21.671 billion. This change raised more questions: could there be a correlation between external debt and change in exports of goods and services? At this stage the ready answer will be very improbable, because in the following years 1995, 1996, 1997, total debt figure tended to increase to $25.358, $26.050, and $30, 072 billion respectively. These fluctuations were further confirmed by a sudden drop in the debt figure to $24.779 billion at the end of 1998. No meaningful relationship could be constructed from these trends. The figure below will shed more light on the scenario described in this section.

Examining the last column, which shows the total gross domestic product, the story did not change particularly in its relation to the total external debt figures - our main focus in this research. On average, GDP growth over the years under review had been maintained, however, in between periods, several fluctuations with substantial drops

were also witnessed. For instance, the gross domestic product figure for South Africa in 1980 stood at a total of $80.544 billion, while total external debt was naught. Between 1981 and 1982 the GDP figure fluctuated, first rising to $86.830 billion and then falling, quite substantially, to $80.086 billion for the two periods respectively. Gross domestic product continued the inconsistent trend in 1983, 1984, 1985 and 1986, with $86.013, $85.171, $67.066 and $79.502 billion respectively. All this was during a period of zero external financing by South Africa.

This showed no immediate correlation between the two phenomena. However, in 1994, a total external debt figure was recorded to the tune of $21.7 billion, at a time when GDP had skyrocketed to $135.778 billion. The unspecified relationship continued between debt and gross domestic product up to the end of the periods under review, finally with $115 against 402.803 billion; and $138 against $384.313 billion in 2011 and 2012 respectively. This confirmed that at a glance, the data in the table above (32) may not construct any relationship between the two indicators, especially as their association continued to reveal much inconsistency. Hence, further statistical analysis as suggested earlier, was in the right direction. The probability that other factors other than debt were responsible for GDP growth and exports of goods and services might not be very unlikely by the end of our work.

Figure 6.4: Trend in External Debts – South Africa

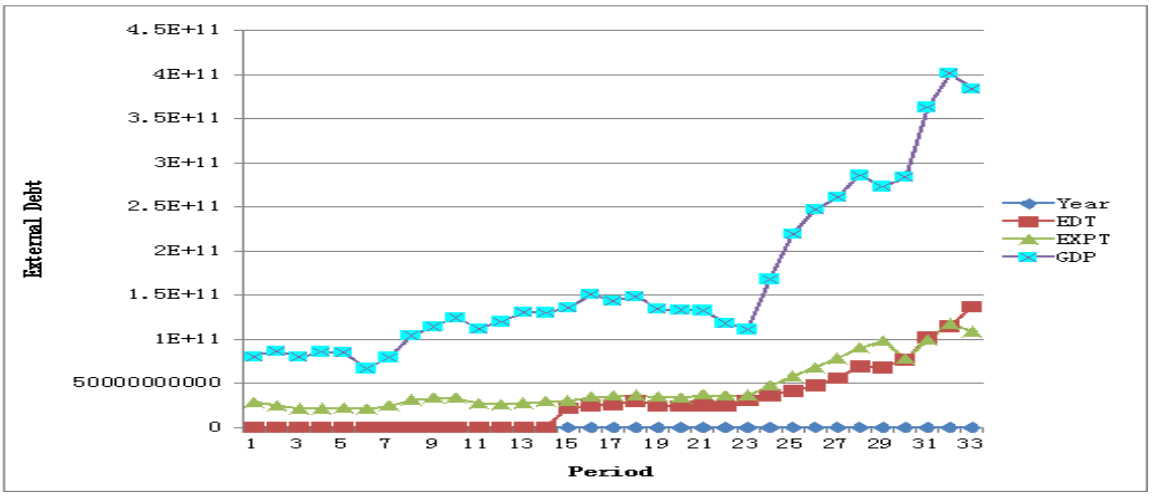


Figure 6.4 replicates the movement of the three economic indicators on South Africa for the same period under review. The periods are shown on the horizontal axis in the figure above, while the vertical axis depicts the range of values in US dollars for the same time period. The red curve which lies flat until period 14 represents external

debt of South Africa, while the green curve shows the growth of exports of goods and services and the gross domestic product is shown by the pink curve.

As discussed under table 6.3, the most notable (and noticeable) relationship that existed between debt and total exports is present from the early periods until the 14th period (or 1994). The later periods of the review, especially from 2008 to 2012, were quite interesting and relevant. For instance, if the 1980s were considered relevant in the effect of borrowing on exports of goods and services or the gross domestic product, the later years would have proved intriguing due to the presence of huge government external debt.

In the next section a more inclusive debt indicator - government gross debt to GDP ratio will be considered. This was a further step in gauging the relationship that might have existed between government gross debt ratios, i.e. extent of indebtedness, to the indicator of GDP growth ratio. The data was however, not as comprehensive as the total external debt data presented earlier. Here, the data obtained on the same sampled countries covered a fewer number of years. However, comparing government gross borrowing to debt ratio to GDP growth enabled us to observe a different relationship that which might have existed between government borrowing and economic growth. Thus, in the next section we will endeavour to establish a kind of a causal relationship between borrowing and economic growth.

6.7 **Government Gross Debt to GDP Ratio**

In an attempt to assess the impact of government borrowing on economic growth, an attempt was made earlier in this work to link government indebtedness to economic growth. For instance, it was argued that there exists an optimal level of government debt, where it is assumed that at certain levels of government debt ratio, the impact might revert to become negatively related to growth. If there is a level above that which government tends to substantially affect economic growth, then it follows that reducing government debt to a certain scheduling should become a priority for debt mangers and management offices.

As further argued earlier in the write up, there was actually no preferred level for government debt. It was postulated that debt level might have been triggered by lower economic growth instead of the other way round. In order to look at this phenomenon

there was a need to compare a country's annual growth to gross government debt as a ratio of GDP. The data below gives the annual GDP growth and gross government debt to GDP ratios for 12 years commencing 2000.

Table 6.5: Pattern of Debt: Nigeria

Year	GDP growth (annual %)	Gsgvdtgd
2000	5.318093381	84.221
2001	4.411065196	87.971
2002	3.784648183	68.783
2003	10.35418456	63.862
2004	33.73577503	52.657
2005	3.444666813	28.605
2006	8.210964859	11.808
2007	6.828398348	12.789
2008	6.270263697	11.582
2009	6.934416004	15.174
2010	7.839739477	15.463
2011	4.653336827	17.16
2012	6.74519613	18.39

Source: Government Debt Statistics

Table 6.5 shows the record of GDP annual growth and the gross government debt as a ratio of GDP. This trend tends to show that at lower economic growth rate relative higher debt ratio was recorded. But it is also evident that there is a lack of consistency in the pattern. For instance in the 2000, growth rate was recorded at 5.32%, which corresponds to a debt ratio of 84.22% and when growth rate was 4.41%, the debt ratio was 87.97% respectively. From these two periods it would be safe to assert that at lower debt ratio, higher growth rates were recorded. This was, however, not a reliable assertion since in the year 2003 debt ratio was lower at 68.78%, while a corresponding growth rate was still lower at 3.78% when compared to 2001 and 2000 respectively. This makes the relationship between the two phenomena suddenly directly lacking in an established pattern with regards to any of the periods reported earlier. In 2003 however, a high growth ratio of 10.35% corresponds with a debt ratio of 63%, and in 2004 a growth of 33.74% corresponds to a debt ratio of 52.65%, conforming to the assertion that a higher debt ratio might have the tendency to impact negatively on the growth of a country.

The data presented here helps to portray the observable trend and possible relationship between debt and economic growth. Thus, in an effort to establish the relationship and before the proposed statistical analysis, a review of the trends and patterns of data would shed light on a probable outcome, which could assist us in a better understanding of the government debt phenomenon.

Figure 6.5: Graph showing Pattern of Debt – Nigeria

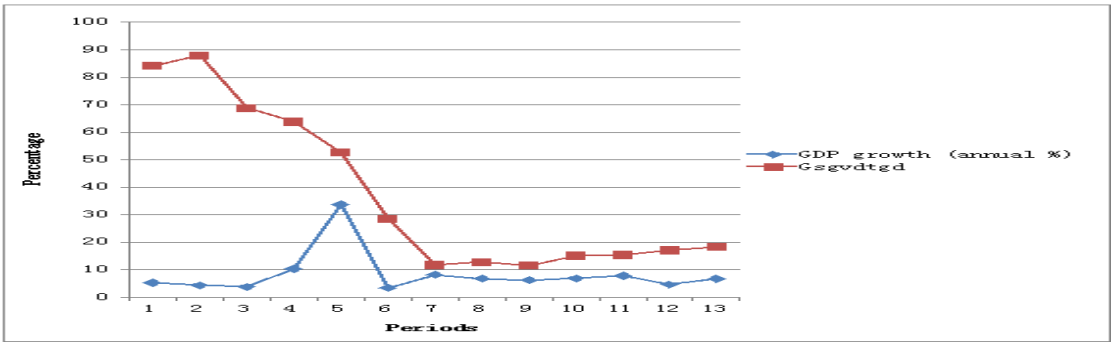


Figure 6.5 portrays a pictorial representation of the gross government debt as a ratio of gross domestic product and the actual GDP growth rate in percentages as presented in table 6.5. The curves in the figure, with red being gross government debt and blue depicting GDP growth rate. From the beginning the trend tends to show an opposing relationship between the two indicators. Afterwards, the pattern is maintained, but with reversed movement directions up to period 5 or year 2004. Between period 7 and 8, which corresponds to 2006 to 2007, the relationship inverted i.e. GDP growth rate drop corresponded to a rise in gross government debt, from 8.21% to 6.82% against a rise from 11.81% to 12.79% respectively.

The next two periods between 2007 and 2008 and from 2008 to 2009, show a fluctuating trend with a decrease in growth rate from 6.83% to 6.27% and from 6.27% to 6.93% respectively. This was accompanied by a similar movement in gross government debt to GDP ratios, recording first a decrease from 12.79% to 11.58% and then a rise from 11.5%to 15.17% for the same periods respectively. The remaining three periods until the year 2012 revealed an inconsistent movement between the two variables with GDP growth rates fluctuating up, then down and later rising again to 6.75%, from 6.93% to 7.84%, then dropping to 4.65% and finally rising to 6.74% for the periods respectively.

6.8 **Gross Government Debt to GDP Ratio to GDP Growth: Ghana**

To further establish whether there is a peculiar trend or relationship that might have existed between government borrowing and economic growth, we next consider GDP growth against gross government debt as a ratio of GDP to observe the pattern over a period. Here we look at the period from 2001 to 2012, obtainable from the World Economic outlook of the IMF.

Table 6.6: Pattern of Debt: Ghana

Year	GDP growth (annual %)	Gsgvdtgd
2001	4	98.199
2002	4.5	84.588
2003	5.2	81.796
2004	5.6	54.04
2005	5.900003848	43.77
2006	6.4	21.923
2007	6.45973558	23.259
2008	8.430504083	30.099
2009	3.991256102	32.688
2010	8.007036608	43.031
2011	15.00707161	39.8099
2012	7.914626014	49.091

Source: World Bank Debt Indicators and World Economic Outlook

Table 6.6 displays a trend of all the GDP annual growth ratios against the government gross debt to GDP ratios for the period 2001 to 2012. Except for the years 2009 and 2012, GDP growth had been positive for the whole the period since 2001. The GDP growth ratio started at 4% in 2001 and continued to record a persistent increase reaching a high ratio of 8.4% in 2008. This represented an increase of 4.43 percentage points or 110.75% change over the years from 2001. However after this period, in 2009 the GDP growth rate tumbled significantly to a low 3.99% representing a drop of 4.44% points or 52.67%. The movement of the GDP growth ratio continued its movement with increases in 2010 and 2011 recording 8.01% and 15.01% respectively. In 2012 however the GDP dropped to 7.91%.

In comparison, the third column on the table portrays the gross debt to GDP ratios over the same period under review. The debt ratio continued to decline with an increase in GDP growth rate until the year 2007 when the decline of the debt ratio slowed down with a slight increase to 23.25% from 21.92% in 2006. The remaining period from 2008 to 2012 reveals an inconsistent pattern of movement in both GDP

growth ratios and gross debt to GDP ratios. At higher growth ratios relatively, lower debt ratios were recorded and vice versa. For instance, in 2011 a GDP growth rate of 15.01% was recorded against a gross debt to GDP ratio of 39.81%. However, GDP growth rates dropped to 7.91% the following year in 2012, yet gross debt to GDP ratio rose to a high 49.09% for the same period. Thus, the trend tends to be only predictable at low levels of GDP growth, but inconsistent at higher levels of GDP growth rate.

This provides us with the ground to tentatively assert that at lower levels of GDP growth rate government borrowing tends to affect economic growth negatively. Or, growth tends to be more sensitive to growing government debt. At higher GDP growth rate there tends to be either reduced or no effect of borrowing on economic growth.

Figure 6.6: Graph Showing Trend in Debt and Economic Growth – Ghana

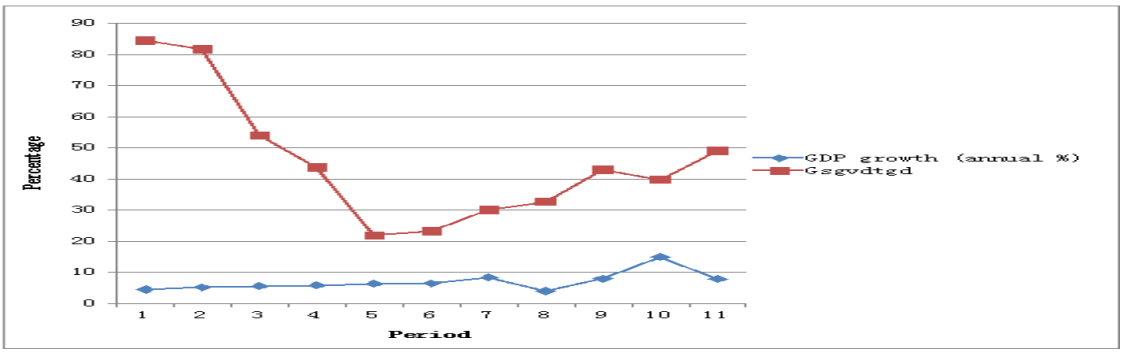


Figure 6.6 further depicts the relationship between GDP growth's curve and gross debt to GDP ratio. The blue curve shows the GDP growth and the red curve shows the gross government debt to GDP ratios. The trend is most obvious from period 1 to period 5. GDP growth climbs gradually and the gross government debt ratio declines at an accelerated rate. Between periods 5 and 6 we also observe a movement that is in a similar direction. After period 7 the pattern is seen as inconsistent and erratic. This is merely to buttress the observation made earlier, that at lower levels of GDP growth; government borrowing tends to have a significant effect on growth but tends to become irrelevant at higher growth rates.

6.9 **Gross Government Debt to GDP Ratio to GDP Growth: Uganda**

This section continues with the same data presentation as the previous section on gross government debt to GDP ratio and the annual GDP growth for Uganda,

covering a period of 1997 to 2012. Here, the same traits was observed as noted under Nigeria and Ghana; all in an effort to study how the phenomenon of government borrowing could affect the economic growth of a country. Under Uganda, the data sourced from the IMF's Economic Outlook is more comprehensive. At least in this case, we are able to obtain three years data, which is over and above what we had obtained in the case of Ghana and Nigeria.

Table 6.7: Debt Pattern: Uganda

	GDP growth (annual %)	Gsgvdtgd
1997	5.100001864	53.541
1998	4.905265483	52.545
1999	8.053948377	57.759
2000	3.141907338	61.73
2001	5.183661126	63.454
2002	8.732685764	69.109
2003	6.473258671	68.242
2004	6.807233344	62.398
2005	6.332565117	52.821
2006	10.78474439	35.493
2007	8.412425966	21.941
2008	8.708751901	21.428
2009	7.251045316	21.431
2010	5.861476763	26.841
2011	6.620384148	29.3
2012	3.410515784	31.067

Source: World Bank Debt Indicators and IMF World Economic Outlook

Table 6.7 reveals the trend of GDP growth ratio and gross government debt to GDP ratio over the years under review. The figures displayed in the second column representing GDP growth rate over the 15 years under review indicates that there was no particular observable pattern in the trend. GDP growth started from a moderate ratio of 5.10%, when then then fell to 4.91% in 1997 and 1998 respectively. By the year 1999, GDP growth ratio had jumped to 8.05%, representing a rise by 3.14%or 63.95% over the previous period. By the year 2000, the GDP growth ratio dips significantly to 3.14% representing a drop of 4.91% or 60.99%.

In the following years: 2001, 2002, 2003 and 2004, the growth ratios recorded were 5.18, 8.73, 6.47 and 6.81 respectively. These ratios as with the recorded earlier, randomly fluctuated, showing no specific pattern in the trend. This trend continued, where it reached a peak in 2006 with 10.78% from 6.33% at the end of 2005. This

represents an increase of 4.45 percentage points or 70.30% respectively. The ratios continue their inconsistent movement in the following years: 2007, 2008, 2009, 2010, 2011 and 2012, with 8.41, 8.71, 7.25, 5.86, 6.62 and 3.41 respectively.

So far, a study of the trend above helps to paint a particular picture of GDP growth ratios movement over time. It has been made clear that the rise and fall of GDP ratios had no relationship with figures shown in the next column of gross government debt to GDP ratios for the same period. For instance, when the lowest GDP growth rate was recorded in the year 2000 at 3.14%, the corresponding gross government debt ratio was recorded at a high 61.73%. On the other hand, the highest GDP growth ratio was recorded at 10.78% in the year 2006, against a corresponding debt ratio of 35.49%.

These two periods may tempt us with the assumption that the lower the GDP growth recorded, the more the tendency for higher government debt (and vice versa). In the same vein, we could further postulate that at higher levels of GDP growth rates, lower levels of borrowing were embarked upon by government. This relationship was however, found not to be significant and feasible when we further study the entire trend. In particular, the year 2002 recorded a GDP growth ratio of 8.73 against a debt ratio of 69.11, 2003 recorded a growth ratio of 6.47%, against a debt ratio of 68.24% and in 2004 the GDP growth rate was 6.80, while a debt ratio of 62.40%. There was no precise conformity with the negative causal relationship between government debt and economic growth postulated above. In addition, there was no clear cut direction of the relationship - if there existed such a relationship, it was difficult to establish whether GDP growth rate impacted on government rate of indebtedness, or the other way around.

Figure 6.7: Trend in Debt and Growth – Uganda

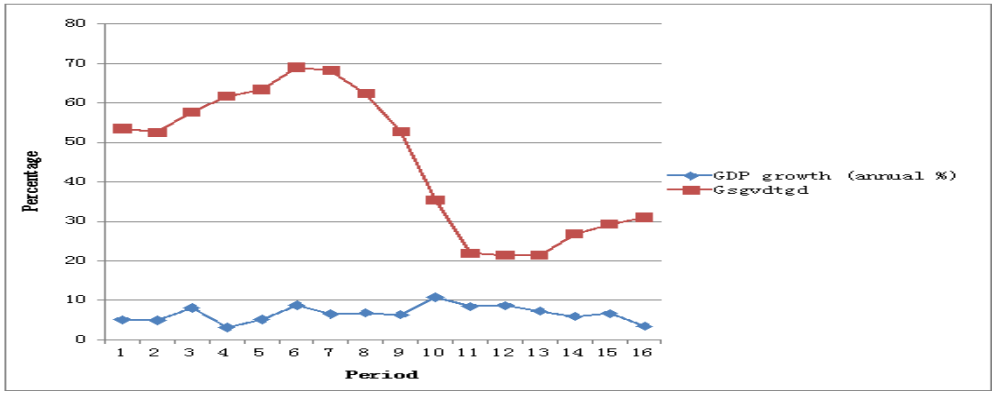


Figure 6.7 depicts the trend considered earlier in this section. The relationship between GDP growth rate and debt ratio indicates no particular pattern over the period under review. For Uganda, the trend was not so different from the other two sub-Saharan African countries reviewed earlier in this work.

However, it is clear from the figure that during the earlier years there tended to exist an inverse relationship between GDP growth rate and debt ratio. Except for few fluctuations between period 3 and 4, the trend for the earlier periods up to period 6 or year 2002 was negative. While the debt ratio tended to flatten between periods 6 and 7, GDP growth rate on the other hand dipped to flatten in the next period. Debt ratio however, continued on an accelerated decline until period 11, which corresponded to the year 2007. And beyond that point to the next 2 periods (2008 and 2009), the debt ratio flattened to pick up from period 13, then rose until period 16 or 2009 to 2012.

Generally, the trend that has become evident is that during most of the periods the relationship that existed between debt and growth was negative and reversed though in several instances the relationship became indeterminate. In some instances, the two curves either move in same direction or either of the curves flattens, with the other rising or sloping downwards.

6.10 **Gross Government Debt to GDP Ratio to GDP Growth: South Africa**

South Africa was an interesting country among the sampled sub-Saharan Africa economies. Unlike in the case of other sub-Saharan African countries, South Africa had little history of external debt and was among the few countries that had a developed domestic capital market. South Africa was not a HIPC and thus had not befitted from a substantial debt relief or debt cancellation during the IMF-World Bank Debt Relief Initiative. In this section, we review the gross government debt data for South Africa against the record of GDP growth rate over the years.

Table 6.8: Debt Pattern: South Africa

Year	GDP growth (annual %)	Gsgvdtgd
2000	4.154588522	43.317
2001	2.73542315	43.488
2002	3.667837611	36.949
2003	2.949074425	36.909
2004	4.554543404	35.884
2005	5.277116992	33.201
2006	5.603717693	30.968
2007	5.547756915	28.331
2008	3.622103	27.232
2009	-1.52634694	31.579
2010	3.086635659	35.313
2011	3.457231392	38.82
2012	2.548464215	42.091

Source: World Bank Debt Indicators and IMF Economic Outlook

Table 6.8 displays a trend of the two economic indicators of GDP growth and government gross debt to GDP ratio. Column 2 which presents the GDP growth ratios shows an array of erratic rates over the years. Between year 2000 and 2001, GDP growth rates fell from 4.15 to 2.73% respectively. This corresponds with debt ratios shown in the next column of a high 43.32 and 43.49%, for the same periods respectively.

Here it is safe to assert that at lower GDP growth rates higher debt ratios are posted. Impliedly, high government debt is negatively related to growth - invariably high government borrowing tends to hinder growth. However, by studying the trend in the table it would not be hard to understand that such a relationship happened for just a moment among several others over the years under review. For instance year 2002 told an entirely different story, although, not precisely unrelated to the first scenario. GDP growth rate jumped to 3.67% representing an increase of 0.93 percentage points or 33.94%. Debt ratios for the corresponding period declined from 43.49 to 36.95%, representing a fall of 6.54 percentage points or 15.04%. The same relationship turned out to be maintained, but it was relatively insignificant.

Further along the trend, the year 2003 saw to the decline of both GDP growth rate and debt ratios to 2.95 and 36.91% respectively. This movement disrupted the established relationship where both indicators travelled in the same direction. However, the following three periods witnessed a reversion to the initial relationship where in 2004,

2005 and 2006, the indicators of GDP growth rate and debt ratio related negatively with 4.55, 35.88, 5.28, 33.20, and 5.60, 30.97 respectively. The next two periods however, change the trend again with a relatively significant decrease in the values of the two indicators. In 2007 and 2008, the indicators of GDP growth and debt ratio recorded a decline to 5.55, 28.33, and 3.62, 27.23% from 5.60, 30.97% at the end of 2006 respectively.

An interesting development however, occurred in 2009 with a significant decrease in GDP growth ratio to – 1.53% from 3.62% at the end of 2008, representing a decline of 5.15 percentage points or 57.73%. This corresponds with an increase of the debt ratio for the same period from 27.23 at the end of 2008 to 31.58% at the end of 2009, representing a rise of 4.35 percentage points or 15.97%. The negative relationship between the two variables was once again stressed. The next two periods, 2010 and 2011 further distorted the trend, where the two indicators recorded increases to 3.09, 35.31 and 3.46, 38.82, respectively. The two indicators moved in the same direction with GDP growth and debt ratios increasing over the periods respectively.

By the year 2012 however, the negative relationship between GDP growth rate and government gross debt to GDP ratio (or extent of indebtedness) resumes. The year 2012 witnessed a GDP growth ratio that declined to 2.54 from 3.09% by the end of 2011, representing a decline of 0.55 percentage points or 17.80%. On the contrary, the corresponding period saw an increase in the recorded debt ratio from 38.82% at the end of 2011 to 42.09% at the end of 2012. This represents an increase in debt ratios by 3.27 percentage points or 8.42%.

Figure 6.8: Trend in debt and growth – South Africa

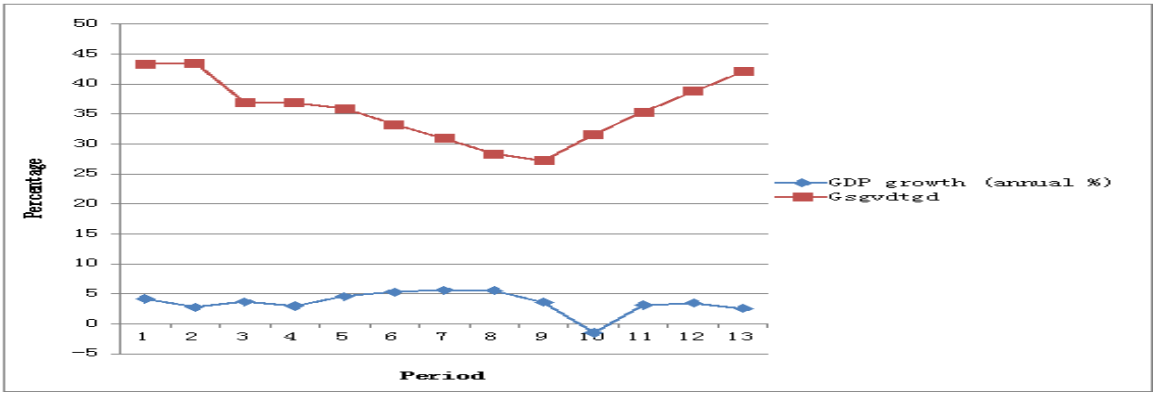


Figure 6.8 presents a pictorial representation of the relationship that exists between GDP growth and gross government debt to GDP ratio. From the figure, we can see that debt ratio is depicted by the red curve and GDP growth is shown along the blue curve. The horizontal X axis shows the periods ranging from 1 to 13 (2000 to 2012) and the vertical or Y axis portrays the different ratios to 50. As discussed earlier in the section, in many instances (and for most levels of the curves) the relationship that exist between GDP growth and debt ratio tended to be negative. However, in several instances we also witness a flattening or reversal scenario, yet most occurrences depict a negative relation -at higher GDP growth ratios, debt ratios tended to be low and vice versa.

6.11 **Conclusion**

The relationship that exists between these two important variables however, might not be precisely determined by mere comparison between an array of figures and ratios. In any case the comparison was hardly consistent, especially when similar patterns were considered using similar variables under the same circumstances but for the other three sampled sub-Saharan African countries. While the work tried to establish a certain relationship that exists between government debt and economic growth, first with external debt data and later with gross government debt data, several explanations emerged. For example, at lower levels of debt, GDP growths tends to be high and the relationship tends to become indeterminate at higher levels of GDP growth ratios, as seen in the process of reviewing the sampled country data.

Chapter 7

Data Analysis

7.1 Introduction

This chapter proceeds with the analysis of the harmonised data, a portion of which was presented in the previous chapter. Here an attempt is made to answer the research questions raised in the introductory part of this work. These research questions gave rise to a number of hypotheses as presented in the methodology chapter, four. Particularly, in this stage of the work the attempt to employ the statistical method – the regression analysis – is to establish whether the phenomenon of debt is related to economic growth. This is in a clear endeavour to test, validate or refute what had been learnt in the process of review of literature in related subject area.

For example, Cohen (1995) referred to debt as a phenomenon that operated like marginal tax on a country's resources, which invariably explained its adverse impact on domestic production. Furthermore the Brady arrangement, which actually led to some level of reduction in external debt burden among a number of debt crisis ridden countries, failed to stop the discounting of debt even after the deals (Claessens et al., 1997).

Specifically, effort will be made to examine the aspect of debt management strategy and how it impacts upon economic growth, as well as to try to answer questions pertaining to the relationship that exists between a country's extent of indebtedness and the composition of its borrowing. The work will go further on to determine the extent of the development of a country's capital market and how it is related to GDP growth. Does the utility of various debt instruments positively correlate to their maturities? Questions pertaining to the effect of borrowing per head growth and how it tends to turn negative at higher debt levels would be verified. That is whether an excessive use of domestic borrowing could result in excessive pressure on institutional investors, with banks left to absorb too much government debt and ultimately have a negative effect on financial stability and investment referred to as debt overhang, would equally be addressed. The issue of government's switch from

external to domestic borrowing, leading an economy to be exposed to a different types of vulnerability and whether these vulnerabilities to an economy are caused by currency and maturity mismatches among countries with an open capital account and having a large stock of foreign or short term domestic debts shall also be in focus.

Debt management strategy here was taken to be measured by CPIA, where data became incomplete DeMPA performance scores and HIPC/MDRI assessment were employed. DeMPA performance scores were placed on a scale of A, B, C and D. A stands for Outstanding, B is sound, C is fair and D is poor. Thus, countries' debt management was assessed based on the scores against the debt performance indicators (Appendix A).

Under DeMPA however, the rating is A to D from right from its inception in 2008. There is no provision for a performance below D i.e. E and F. For this reason the following assumptions were made: All assessments after 2008 must be scored A to D. This is for the simple reason that these performances are post HIPC initiative and MDRI; two World Bank and IMF initiatives that were equally based on a particular ranking. The HIPC/MDRI decision point and the period prior to debt relief have been grouped E and F respectively. There were five classes with an unequal class sizes (Saleh, 2013).

The gross domestic product (GDP), the GDP percentage annual growth, GDP per capita, external debt stock, total market capitalisation of listed companies, market capitalisation of listed companies as a percentage of GDP, Cash Surplus/Deficit as a percentage of GDP, CPIA (Country Policy and Institutional Assessment) economic management cluster average, total debt service as a percentage of exports of goods and services, gross savings as a percentage of GDP, money and quasi money (M2) as a percentage of GDP and the gross government debt to GDP ratio were the variables employed in our regression analysis. As explained earlier, the data on them was sourced from the World Bank debt indicators and the IMF economic outlook.

7.2 **Regression Analysis**

The model is specified in the multiple regression form. In the cases of the dependent and independent variables, there is more than one variable. For instance, it was stated

that the dependent or explained variable in the first model, is the debt ratio (edtgdp) against a range of independent variables.

The variables were earlier specified in the work. Model I considers the relationship that exists between debt and economic growth. Hence the dependent variable, was the gross domestic per capita (gdpcap) against a range of independent variables; the ratio of current stock of debt to gross domestic product (edtcap), $edtgdpl^2$, standing for debt overhang and past debt accumulation, debt service as a ratio of export earnings (dsx), the ratio of fiscal deficits to gross domestic product (defgdpl), the rate of inflation (infl), the real exchange rate misalignment (rermts), the ratio of broad money to gross domestic product (m^2gdp) and the impact of population pressure on domestic resources (rpop).

7.3 **Regression Output**

Multiple regressions analysis was carried out in order to investigate the relationship that exists between government borrowing and economic growth. The secondary data was mainly obtained from the World Bank's Economic Indicators. Preliminary analyses were conducted to ensure that there was no violation of the assumptions of normality, linearity and homoscedasticity. Furthermore, the correlation between the predictor variables included in the study was examined.

Table 7.1: Descriptive Statistics

	Mean	Std Deviation	N
Gdpcp	1352.9316	1720.106	132
Edtgdp	2.63E+21	7.93E+21	118
Edtgdpl²	6.26E+65	4.04E+66	118
Dbtsvx	17.9477	16.59261	118
Infl	0.6512	0.47846	129
Rermts	221.3425	402.86672	132

Table 7.1 shows the descriptive statistics of the defined variables. From the table the mean distribution of per capita gross domestic product over the period under review standing at 1352.9316, a standard deviation of 1720.106; all in a sample size of 132 are presented. GDP per capita is arrived at dividing mid-year population. In comparison, the mean per capita of $1352.93 was by far below that of the developed economies, posting above $10,000 average. The standard deviation of 1720.11

however, indicates the frequency and tendency of change from the mean score. The figure relates to the deviation from the centre of the distribution.

The descriptive statistics go on to present the debt ratio as represented by external debt to gross domestic product for the number of observations over the period under report. Thus, debt ratio recorded a mean of 2.63E+21 a standard deviation of 7.93E+21 in a sample size of 118. Debt service to interest ratio also stood at a mean of 17.9477 and a standard deviation of 16.59261, in a sample size of 118 respectively. The mean inflation rate stood at a low 0.6512 and a standard deviation of 0.47846, in a total number of observations of 129. The variable of real exchange rate recorded an average of 221.34 and a standard deviation of 402.86, in a sample of 132. The discrepancies in the sample size were observed to be as a result of a number of missing data in the template, which was clearly acknowledged in the process of the analysis.

7.4 **Correlations**

The various correlations between the variables are shown in Appendix B to this work. Precisely, tabulation was employed to determine the potential presence of multi-collinearity between the independent variables, especially. The Pearson's correlation result in the table presents a most insignificant correlation between the explanatory variables. Except however, correlation between the dependent variable and the independent variable, the debt ratio gdpcp on edtgdp. Here expectedly, the correlation between the two variables was a high 0.862, which is seen to be very significant. Furthermore, from the table there is a clear emphasis on a no or low multi-collinearity between the independent variables with a significant 1 – tailed test result, where no clear incident of multi-collinearity is evident. The sample sizes remain the same for all the variables respectively.

7.5 **Coefficients[a]**

The test coefficients of this analysis are attached to this work as Appendix B. In this section the study continue to check and cross check the extent of multi-collinearity between the independent variables of edtgdp, dbtsvx, infl and rermts. Under the coefficients[a] table, focus on tolerance value and the Variance Inflation Factor (VIF) was made. Where the tolerance value is less than 0.10, then it may be concluded that

there is a possibility of multicollinearity, however where the VIF is seen to be above 10, then further conclusion that there is likelihood of multicollinearity between the independent variables could be drawn. And thus, a contemplation to remove one of the independent variables is possible. Accordingly, and looking at the tolerance values of 0.219, 0.244, 0.846, 0.751, and 0.969, for the independent variables edtgdp, edtgdpl^2, dbtsvx, infl and rermts respectively. None of the values recorded under the tolerance column fell below 0.10. As a result, the absence of multi-collinearity between the independent variables is duly established. A further requirement for multicollinearity is the variance inflation factor, where the values of 4.56, 4.10, 1.182, 1.331 and 1.032 have been recorded for the explanatory variables of edtgdp, edtgdpl^2, dbtsvx, infl and rermts respectively. None of these values was found to be in excess of the maximum of 10. Thus, the sufficient condition for the absence of multi-collinearity is established. Impliedly, the checks have confirmed the model to be free of the problem of multicollinearity and as a result none of the independent variables needed to be removed.

7.6 **Outliers, Normality and Linearity**

Next in our evaluation the outliers, normality and linearity were considered (Appendix C). Here, a check of the normal probability plot as depicted in the Normal P – P Plot of Regression Standardized Residual was carried out. Here all points on the plot were checked to ensure that they lie in a reasonably straight diagonal line from the bottom left to the top right. In a similar manner, the Normal P-P Plot figure portray an upward sloping, left corner positively progressing points to right top corner. Although heavily slumping in the middle, all points reasonably depict a diagonal pasture. This trend confirmed the normal probability distribution of the model's data.

Further to ascertain the normality and linearity of the distribution data the study went on to study the scatter plot, which is attached to this work as Appendix C. Here there is need to ensure that the residuals are distributed within a rectangle, with the scores concentrated in the centre, that is, along point 0. Accordingly, the figure attached as Appendix C shows a distribution of points concentrated in the rectangular centre, relatively along the 0 point area. The standardized residuals were seen to be within the bracket 3.3 and -3.3, thus confirming the normality and linearity assumptions of the

data in the distribution. Standardized residuals exceeding 3.3 or short of – 3.3 implies outliers (Tabachnick & Fidell, 2012).

7.7 Model Evaluation

In the process of model evaluation the Model Summary[b] table shown in table 7.2 of this work is considered. Here, R square was examined in order to understand the explanatory power of the independent variables over the dependent variable. The R^2 recorded as 0.862 implying that approximately 86% of variance in the dependent variable or the gross domestic per capita product (gdpcp) was actually explained by all the independent variables (rermts, edtgdpl^2, dbtsvx, infl, edtgdp), which are included in the model. And furthermore, 86.2% is of high significance.

Table 7.2: Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.928a	0.862	0.855	654.0876

a. Predictors: (Constant), Rermts, Edtgdpl^2, Dbtsvx, Infl, Edtgdp

b. Dependent Variable: Gdpcp

ANOVA

Table 7.2 is referred to as ANOVA, shows how the significance (or not) of the entire model is determined. Here, the degrees of freedom (df), the frequency (F) column and the significance column showing the P – value were examined. The equation F (5, 109) = 135.88, p < 0.0005, should hold for the model to be significant. Impliedly, for the model to be significant, it has to be significant at 99.999% level.

Table 7.3: ANOVAa

Model		Sum of Squares	Df	Mean Squares	F	Sig.
1.	Regression	290665648.8	5	58133129.76	135.879	.000[b]
	Residual	46633533.64	109	427830.584		
	Total	337299182.4	114			

a. Dependent Variable: Gdpcp

b.Predictors: (Constant), Rermts, Edtgdpl^2, Dbtsvx, Infl, Edtgdp

Table 7.3 shows a significance of 0.000b signifying a near perfectly suitable model with 100% significance.

7.8 Evaluating the Independent Variables

Referring to coefficients[a], an evaluation of each of the independent variables was carried out. From the table 7.3 it can be observed that under the standardized coefficient that the best of all the predictors was the debt ratio variable (edtgdp) with 1.394, followed by the variable of debt service to export ratio (dbtsvx) with a significant negative correlation of -0.117. The next best predictors are the variables of inflation (infl) and real exchange rate with Beta values of 0.082 and -052 respectively.

Table 7.1 showing the descriptive statistics, indicates that an increase in the debt ratio (edtgdp) by 1 standard deviation 7.93, the gdpcp would likely to increase by 1.39 standard deviation units. Likewise, an increase of debt service to export ratio by a single standard deviation or 16.59, the gross domestic product per capita (gdpcp) would likely decrease by -0.117. The same effect occurs where the variable of inflation got increased by a unit standard deviation or 0.48 would lead to a likely decrease in the gdpcp by 0.82. Similarly, an increase in real exchange rate (rermts) by a unit standard deviation (402.87), the gdpcp would likely to decrease by -0.052 only.

7.9 Evaluation of the Model

In order to carry a proper evaluation of the model, there is a need to consider the Model Summary[b] table 7.2. This process requires checking the R Square in the Model Summary box. The predictors were debt ratio (dbtgdp), debt service to export ratio (dbtsvx), inflation (Infl), and the real exchange rate (rermts). The dependant variable remains the gross domestic product per capita (gdpcp).

Checking the Model Summary box it can be observed that all independent variables debt ratio (dbtgdp), debt service to export ratio (dbtsvx). Inflation (Infl) and the real exchange rate (rermts) included in the model explained approximately 86.2% of variance (0.862 x 100%) in dependent variable (gross domestic product per capita). This implies that as much as 86.2 percent of variance in the dependant variable is explained by the independent variables of debt ratio (dbtgdp), debt service to export ratio (dbtsvx). Inflation (Infl) and the real exchange rate (rermts).

ANOVA

To further evaluate the model there is the need to refer to ANOVA[a] in table 7.3. The ANOVA table shows the extent of the overall significance of the model. Here, the

interest was in the figures under the columns: degrees of freedom (df), the F column and most importantly the significance column. The table thus gives F (5, 114) = 135.879, P < 0.005. The level of significance was actually recorded to be 0.000^{b}. This indicates clearly that the model is sound and quite relevant to measure the proposed relationships. The p-value is usually be used to refer to the probability of being wrong when the formulated null hypothesis happened to be rejected (Brooks, 2008), the smaller the p-value the less the null hypothesis is plausible.

7.10 **Model 1: The Impact of Borrowing on Economic Growth**

The purpose of the first model was to attempt to answer questions raised through the postulated hypothesis presented in chapter 4. Here, an effort is made to determine the extent to which borrowing especially among sub-Saharan countries, was related to economic growth. In the process the study endeavoured to ascertain whether or not the phenomenon of debt overhang actually exists. Similarly, the study proceeded to determine the extent to which debt service, real exchange rate, population and inflation all work in conjunction to impact on economic growth. Per capita gross domestic product (gdpcp) is employed as the dependent variable and the debt to gross domestic product (edtgdp), the squared value of edtgdp ($edtgdpl^{2}$) to capture the debt over hang phenomenon and debt service to export ratio (dbtsvx) to measure the effect of debt servicing on the country's export as represented by economic growth. The dummy variable of inflation (infl) was included to show the extent to which prices affect growth, real exchange rate (rermts), and the extent to which population (rpop) combine to impact on growth.

The next task is to evaluate the extent to which the model complied with the assigned expectations. Thus based on the multiple regression results, there is the need to determine the individual variables' responses to the various postulations. For instance, it was asserted that the variable of debt ratio should be positively related to the independent variable, gdpcp. Therefore, by observing the coefficients^{a,}, table particularly under the standardized coefficient Beta column, it can be seen that the debt ratio variable recorded a Beta value of 1.055, thereby confirming the model that debt ratio should be positively correlated to the measure of growth, gross domestic product per capita. Impliedly higher debt ratio leads to higher per head gross domestic production.

An aggregation of higher individual gross domestic production would undoubtedly translate into higher exports, revenue, income and economic growth. The debt ratio squared, edtgdpl^2, representing the element of debt overhang, went on to assume the predicted feature of negative relation to growth. At a Beta value of -0.418, the debt of overhang phenomenon was upheld. By implication, with higher borrowing there was always the tendency of lower per capita gross domestic product, lower revenue, drop in income per capita, less savings, a drop in domestic investments and eventually what is referred to as debt over hang - a stagnation in domestic investment prospects due to persistent and increasing debt service on borrowed funds.

The debt service to export ratio variable (dbtsvx) was predicted to be negative in relation to the gross domestic per head. This is because the higher the amount of funds employed for debt servicing purposes the less the amount of per head production or gross domestic product per capita. The check for the recorded Beta values in the standardized coefficients column of the coefficients[a] table attached to this work as appendix B, shows the variable dbtsvx recording -0.114, thereby confirming the variable's response to economic growth especially in the process of borrowing. Inflation was also figured to be negatively correlated to growth, especially at crises levels.

However, insignificant price rises might not necessarily induce a negative impact on production and overall economic growth. The variable of inflation (infl) recorded a low and very insignificant value of -0.009. This result confirms the effect of inflation on growth. The variable of real exchange rate (rermts) was next in our model. Here it is argued that currency devaluation tends to make goods and services cheaper and by implication, generates higher sales, but only during structural adjustments. However where the real exchange rate deteriorates, it is reasoned that the drop tends to have a negative implication on growth, i.e. in relation to gross domestic capital per capita (grdcp) in our model. In the process of sovereign debt any decline in the real exchange rate of currency could compound the negative consequences of borrowing on the economy and ultimately growth. The real exchange rate variable, rermts, recorded a value of -0.105 confirming the expectation of the model.

According to model the variable of population (rpop) was indeterminate. The coefficient is indeterminate and ambiguous and represents the impact of population

pressure on domestic resources. The expectation was that the variable could relate either way with gross domestic product (gdpcp), especially in issues of debt. In the current situation the value recorded for the coefficient stood at 0.295, standardized Beta coefficient. In this case the variable of population (rpop) remained positively related to growth.

7.11 **Model 2: Debt Ratio, Debt Composition and Debt Maturity**

The second model in this work studies the relationship that may exist between extent of indebtedness and the choice of debt, the effectiveness of debt management strategy and whether the level of capital market development could impact on the level of indebtedness (debt ratio). Here, the dependent variable, debt ratio (edtgdp), against a range of predictors; the variable of debt management (cpiadt), ratio of broad money to gross domestic product (m2gdp), measuring capital market effectiveness, variable representing long term debt (ltdt), and another for short term debt (stdt) are considered. A choice between domestic and external debt would have enriched our findings, but due to the lack of data on domestic debt in most of the sub-Saharan Africa, particularly the sampled countries with the exception of South Africa. However, the data on domestic debt for South Africa was available for a little over a decade, which was short of the trend covering three decades (1980 – 2012).

Table 7.2 Descriptive Statistics

Column1	Column2	Column3	Column4
	Mean	Std Dev	N
Edtgdp	2.63E+21	7.93E+21	118
M2GDP	54.3936	126.51414	132
Lngtdbt	1.42E+10	1.82E+10	118
Stmdbt	81.573091	1.07E+10	118
Cpiadbt	3.5265	1.06884	132

Table 7.5 presents the descriptive statistics relating to the second model. Here, the means and standard deviation of the variables that made up the relationship that exists between debt ratio (edtgdp), as the dependent variable and the ratios of broad money to aggregate domestic production (M2gdp), long term debt to total debt (Lngtdbt), short term debt to total debt (stmdbt) and the country performance institutional assessment to total debt (Cpiadbt), as the independent variables were considered. The statistics as depicted in the table show that the dependent variable, the debt ratio

averaged approximately 2.6 for the sampled countries over the years under study. The value of the debt ratio is also shown to have a standard deviation of approximately 7.93 percentages point. The independent variables, M2gdp, lngtdbt, stmdbt, cpiadbt, recorded mean values of 54.39, 1.42, 81.57, 3.52 and standard deviation values of 126.51, 1.82, 1.07 and 1.07 respectively. Therefore, if we could increase broad money to GDP ratio by a single standard deviation (126.51), long term to total debt ratio by 1.82%, short term debt to total debt ratio by 1.07%; and the measure of debt management of country performance institutional assessment by only 1.07, then debt ratio would be likely to increase by -0.018 (m2gdp), 1.375 (lngtdbt), -0.705 (stmdbt) and 0.093 (cpiadbt) respectively.

7.12 **Checking Assumptions: Multicollinearity**

The coefficient table (Appendix v) gives Tolerance and Variance Inflation Factor (VIF). Where the tolerance value is less than 0.10 then it is assumed that there is the possibility of multicollinearity between the independent variables. A VIF value exceeding 10 also points to possible multicollinearity among the independent variables. In situations where all these values mentioned above are exceeded, the need to reconsider the maintenance of one of the independent variables in the process becomes necessary.

Checking the Coefficients[a] tables attached as Appendix B, the results indicate that a tolerance value of 0.879 for the measure of efficient capital market or ratio of broad money to gross domestic product (m2gdp) was recorded, and 0.313 was recorded under the ratio of long term debt to total debt (lngtmdbt), 0.348 recorded for short debt to total debt ratio (stmdbt) and 0.782 was recorded against the variable of country performance institutional performance assessment, representing debt management (cpiadbt). Thus, none of the tolerance values recorded for all the variables were found to be below 0.10, and this implies a non-presence of multicollinearity between our the explanatory.

The VIF values of 1.137, 3.198, 2.878 and 1.278 were recorded against the independent variables of capital market efficiency or the ratio of broad money to gross domestic product (m2gdp), ratio of long term debt to total debt (lngtdbt), ratio of short term debt to total debt (stmdbt) and the country performance institution assessment policy on debt management (cpiadbt), respectively. None of the values

recorded above were found to be in excess of the maximum 10. This further implies that our independent variables are free from the problem of multicollinearity.

7.13 Checking Assumptions: Outliers, Normality and Linearity and the Scatterplot

In the process of interpreting the SPSS results there is the need to verify the data by checking the Normal Probability Plot (P–P) of the regression standardised residual and the scatterplot shown in the figure below (Appendix C). In the box it is expected that the normal p-p plot have all points lie in a reasonably straight diagonal line from the bottom left of the square box to the top right angle. In this case, the same pattern is depicted to confirm to linearity assumption and normality.

In the scatterplot, the interest is to see the regression standardized residual on the y axis and the regression standardised predicted value on the x axis to be rectangularly distributed, with most of the scores concentrated in the centre (spread along the point 0). Accordingly, the distribution in the scatter plot shown indicate that it is rectangularly distributed in the centre but slightly to the top left to the y axis. The distribution actually resembles a near normal distribution having being spread within the space (range) of -1 to +2. Standardized residuals exceeding 3.3 or short of – 3.3 implies outliers (Tabachnick & Fidell, 2012).

7.14 Correlations

Appendix B (iii) depicts the various correlations between the dependent variable and the range of independent variables. The Pearson correlation shows the significance (or otherwise) of the relationship between the explained and explanatory variables in the model. It can be seen from the table that m2gdp is negatively, but insignificantly, correlated to debt ratio and lngtdbt is positively and significantly correlated to debt ratio. Both short term debt to total debt ratio and country performance institutional assessment of debt policy were positively but insignificantly correlated to level of a country's indebtedness, recording correlation ratios of 0.385 and 0.474 respectively.

Table 7.6: Model Summary

Model	R	R Square	Adjusted	Std. Error of	R Square	Change	Statistics		sig.
			R Square	the Estimate	Change	F Change	df1	df2	F Change
1	0.976a	0.952	0.95	1.80E+21	0.952	559.199	4	113	0,000

a. Predictors: (constant), cpiadbt, stmdbt, m2gdp, lngtdbt

b. Dependent variable: edtgdp

Table 7.6 gives the model summary. Checking the R square in the Model Summary box it is seen that all the independent variables (cpiadbt, stmdbt, m2gdp, lngtdbt) included in the model combined explained approximately 95.2% of variance in the dependent variable (edtgdp). This implies that the four predictors combined were able to explain up to 95.2% of the changes recorded in the dependent variable and as a result make the relationship that exists between them most significant.

Table 7.7: ANOVA [a]

Model	Sum of Sqrs	df	Mean Squares	F	Sig.
1.Regression	7.00E+45	4	1.80E+45	559.2	.000b
Residual	3.50E+44	113	3.10E+42		
Total	7.40E+45	117			

a. Dependent variable: edtgdp

b. Predictors: (constant), cpiadbt, stmdbt, m2gdp, lngtdbt

Table 7.7, the ANOVA[a] help in a review of the model and determine its overall significance. The model, which proposes to measure the relationship that might have existed between the level of a country's borrowing here represented by debt ratio and the choice of its debt between short term debt and long-term debt, as well as the extent of its capital market development and the effectiveness of its debt management strategy, as represented by ratios of long term to total debt, short term to total debt, ratio of broad money to gross domestic product and the country performance institutional assessment in debt policy score respectively. Thus, to check the significance of this model we consider, $F(4, 113) = 559.2$, $P < 0.0005$. Observing our table under column 6 we check the level of model significance to ascertain whether it complied with the requirement $P < 0.0005$. Our model indicates an overall

significance by recording significance equal to a 100% or P < 0.000. Therefore the model, choice of variables and relationships as a whole was relevant and significant.

7.15 Evaluating Each of the Independent Variables

To evaluate each of the independent variables there was the need to refer to the coefficient[a] tables attached as Appendix B (v). This time, the standardized coefficient (Beta values) and the significance were checked. The best predictor of debt ratio or level of indebtedness as represented by edtgdp, long term debt (β = 1.375) followed by a country's process of debt management as represent by cpiadbt (β = 0.093), then ratio of broad money to gross domestic product, m2gdp (β = -0.018), and lastly and the least of the predictors, the ratio of short term debt to total as represented by stmdbt (-0.705). The Standardized Beta values also show the number of standard deviations that scores in the dependent variable (DV) would have changed with a single standard deviation unit change in the predictor independent variable (IV). For instance, it is observed that from the descriptive statistics table that if we would increase broad money to GDP ratio by a single standard deviation (126.51), long term to total debt ratio by 1.82%; short term debt to total debt ratio by 1.07% and the measure of debt management of country performance institutional assessment by only 1.07, then debt ratio would likely increase by -0.018 (m2gdp), 1.375 (lngtdbt), -0.705 (stmdbt) and 0.093 (cpiadbt) respectively.

7.16 Results from Multiple Regression

Table 7.8: Multiple Regression Result

	R2	β	B	SE	CI 95%	(B)
Model	0.952***					
M2gdp		-0.018**	-1.10E+18	1.40E+18	0,000	0,000
Lngtdbt		1.375****	6.00E+11	1.60E+10	0,000	0,000
Stmdbt		-0.705*	-5.20E+11	2.60E+10	-20.085	-4.176
Cpiadbt		0.093***	6.90E+20	1.70E+20	1.189	586.75

Statistical significance: *p < 0.001; **p > 0.005; ***p < 0.001; ****p < 0.001

Table 7.8 summarises the results of multiple regression process for model II. Multiple regressions were performed to investigate the ability of an effective capital market, choice of the debt structure and maturity, the government's debt management strategy to predict levels of government indebtedness. All preliminary analyses were

conducted to ensure there are no violation of the assumptions of normality, linearity and homoscedasticity. Furthermore, the correlations between the predictor variables included in the study were equally examined.

Correlations were however found to be high between the variable of ratio short term debt to total debt (stmdbt) and that of debt management strategy (cpiadbt) with a recorded $r = 0.070$ and a $p > 0.05$ (see Table 54). This made the problem of multi-collinearity a real possibility in the model. The variable measuring the impact of the capital market (m2dgp) was recorded to be positively correlated with the dependent variable, with however a p – value > 0.050. This situation further caused problems for our model. All other predictors were statistically correlated with the debt ratio or level of government's indebtedness, but as a result of the issue of multi-collinearity which arose with respect to the two variables identified above as well as m2gdp, we review our model data and consider the stepwise regression analysis. By this, all insignificant variables or predictors would be eliminated leaving those most relevant for our analysis.

Since there was no a priori hypotheses made that would determine the order of entry of the predictor variables, a direct method was employed for the multiple linear regression analysis. The four independent variables put together were able to explain 95.2% variance in the level of indebtedness of the countries sampled in the model, $F(4,302) = 559.199$, $P < 0.0005$). However, only three of the four predictors turned out to be statistically significant, with ratio of long term debt to total debt (lngtdbt) recording a higher Beta value ($\beta = 1.375$, $p < 0.001$), more than the debt management index (cpiadbt) recording a positive but insignificant Beta value ($\beta = 0.093$, $p < 0.001$) and the ratio of short term debt to total debt (stmdbt) recording a negative but significant relationship with a Beta value ($\beta = -0.705$, $P < 0.001$). The fourth variable, ratio of broad money to gross domestic product (m2gdp), measuring the impact of capital market development on the level of indebtedness was found to be statistically insignificant and irrelevant in the model with a negative Beta value ($\beta = -0.018$, $p > 0.05$).

7.17 **Stepwise Regression Analysis: Model II**

Given the problem of multi-collinearity and for easier management of the variables, the use of stepwise regression analysis was introduced. Furthermore, three additional variables; the variable of debt forgiveness or reduction ($dbtfgvl^2$), another variable measuring the impact of capital market on the extent of indebtedness, ratio of market capitalisation to gdp (mcapgdp) and the absolute inflation values for the period under review were added. Debt forgiveness data was squared to reverse the negative and logged to make it linear.

Table 7.9: Model Summary

Model	R	R Square	Adjusted R Square	Std Error of the Est	Durbin Watson
1	0.739a	0.546	0.537	5.18E+20	
2	0.795b	0.633	0.617	4.71E+20	
3	0.820c	0.672	0.652	4.49E+20	0.617

a. Predictors (constant), stmdbt
b. Predictors (constant), stmdbt, cpiadbt
c. Predictors (constant), stmdbt, cpiadbt, $lgdbtfgv^2$
d. Dependent variable: Edtgdp

Table 7.9 presents the model summary in accordance with the stepwise regression, three different values for three separate predictors. Both R square (and more importantly adjusted R square) recorded significant values for the three retained variables. All variables were found to be significant and positively related to the dependent variable or debt ratio. Short term debt, being one of the predictors, predicted 54.6% of variations in the dependent variable, debt management index was recorded as the second best predictor of variability in the dependent variable explaining about 63.3%; and the best predictor or debt relief was recorded to explain 67.2% of changes in the debt ratio or the dependent variable. Adjusted R square for the three independent variables was recorded at 0.537, 0.617 and 0.652 respectively. There was evidently not a great deal of a difference between R square and the adjusted R square, implying that none of the variables was found to be redundant in the process of explaining changes in the dependent variable.

Table 7.10: ANOVA

Model	Sum of sqrs	df	Mean squares	F	Sig
Regression	1.58E+43	1	1.58E+43	58.897	0,000[b]
Residual	1.31E+43	49	2.68E+41		
Total	2.89E+43	50			
Regression	1.83E+43	2	9.15E+42	41.325	0,000[c]
Residual	1.06E+43	48	2.21E+41		
Total	2.89E+43	50			
Regression	1.95E+43	3	6.49E+42	32.169	0,000[d]
Residual	9.48E+42	47	2.02E+41		
Total	2.89E+43	50			

a. Dependent variable: Edtgdp

b. Predictors (constant), stmdbt

c. Predictors (constant) stmdbt, cpiadbt

d. Predictors (constant), stmdbt, cpiadbt, lgdbtfgv^2

Table 7.10 presents the ANOVA statistics. Under ANOVA we focus our attention to the F column as well as the significance. Here we consider a null hypothesis; stating the model had no significant explanatory power. And to oppose this we consider the level of significance. Thus the first predictor reported, stmdbt, recorded an F value of 58. 90%, at a significance of P – value < 0.001. This led us to reject the null hypothesis and thus accept the alternative hypothesis, that the model possesses a certain degree of explanatory power. The same outcome applied to the two other explanatory variables, cpiadbt and lgdbtfgv^2, which recorded F values of 41.33 and 32.17, and P – values less than 0.001 respectively. Accordingly, both models were considered to possess adequate explanatory power and therefore rejecting the null hypotheses; the model has no explanatory power.

7.18 **Coefficients**

Appendix B (v) – B (vi), summarises and presents the model's coefficients: both the standardized and the unstandardized. The coefficients table tends to be most interesting because it reveals the relationships between the independent variables and the coefficients. To analyse the coefficients we proceed by formulating the hypothesis: H_o: Coefficients of the independent variable is zero. By implication, the

null hypothesis suggests that the independent variable does not help in the prediction of the dependent variable.

In order to test this, the t – statistics and the significance under the P – value to determine whether we reject the null hypotheses or not was checked. Thus, checking the various t values for all the independent variables, it was observed that with the exception of one variable M2gdp, the ratio of broad money to gross domestic problem, which measures capital market efficiency, all the other three independent variables were found relevant and statistically significant. Thus, we reject the null hypothesis and conclude that the independent variables did indeed help to predict the dependent variable. In the course of the step-wise regression analysis M2gdp was removed as a predictor of the dependent variable.

Further on the coefficient table the interpretation of the unstandardized coefficients was checked. Here, it was assumed that one unit increase in the independent variable would lead to an increase or decrease by certain units in the dependent variable holding other variables constant. Thus, an increase in long term debt by $6 billion worth of additional borrowing could result in a percentage increase in the country's debt ratio, holding all remaining variables constant. In the same manner, a decrease in short term debt by $5.2 billion worth of government borrowing could translate into a one percentage drop in debt ratio for the same period holding all other independent variables constant.

The standardized coefficients compare units in the dependent variable to a standard deviation in the independent variable. For instance, long and short term debt ratios tend to have significant positive and negative correlation with a country's debt ratio.

7.19 Conclusion

This chapter succeeded in explaining the phenomenon of debt and its management in contrast to the opinions of professionals expressed on the same subject matter in the preceding chapters 5 and 6. Here, using the quantitative method in particular the statistical analysis, we have been able to establish some level of relationship that could exist between government borrowing and elements of economic growth. We saw how for instance, debt could be positively related to economic growth of the sub-

Saharan African economies at low levels of borrowing, but changed to negative at higher levels of indebtedness. This is a vital finding for the debt managers in managing government debt.

In addition, debt maturity was covered by the analysis and the conclusions drawn tended to improve our understanding of the relationship that existed between the maturities of debt against a country's level of indebtedness. We saw that longer term debt tended to be more of a stabilising factor in comparison to short term debts. Our analysis also indicated that the element of debt management could still be important in managing government borrowing to economic prosperity. This fact goes a long way in justifying the separation of debt management function from the traditional government monetary policy. Other issues covered under the quantitative analysis are presented later in the general summary of findings to this work. By and large, debt and its management was relevant and played a pivotal role in the growth of sub-Saharan African economies.

Chapter 8

Summary of Findings, Conclusion and Recommendations

8.1 Introduction

This chapter presents the findings of the research work on the effect of debt management strategy on the economies of low income countries, with particular focus on sub-Saharan Africa. Here, the focus is directed at the trend from the set out objectives of determining whether debt management strategy embarked upon by a nation has any positive impact on the economic growth of such a nation. It has been established in the course of the discussions that debt management was relevant provided the forces of demand and supply obtain. It was also an important objective of this work to determine the extent to which a country's level of capital market development could extend in shaping its borrowing trend and ratios. The work also sought to determine the important factor of the structure of government debt - where the research endeavoured to relate the choice in the composition and maturity of debt to level of indebtedness. For instance, trends in the short and long term debts domestic and external debts were studied, in an effort to establish a pattern among the sampled countries. Although there was an acute absence of some relevant debt data that would prove crucial for the work, a lot of effort was made to answer all the research questions raised in the process of the study.

An important aspect of sub-Saharan borrowing was the role of the multilateral financial institutions in the debt profile. Thus, the impact of the debt relief in the process of debt management was afforded equal importance. The overall findings of the endeavour shall be summarised and concluded in this chapter. We present in the process, the research questions and accompanying hypotheses, formulated and postulated for the purpose of resolving the intricate subject of borrowing, among the countries of sub-Saharan Africa. The work has however, drawn several examples, references and comparisons from within and without the sub-Saharan region where necessary and appropriate.

Eventually, the work undertaken here turned out fruitful and enriched our understanding through accomplishing the set out objectives. For instance, the work has been able to support the aspect of debt management by relating it significantly to the level of indebtedness. The work has also been able to establish and confirm the phenomenon of debt overhang, as well as the irrelevant role the debt relief initiative had played in the process of economic growth and its failure to shape the ideal debt management strategy to be adopted by the borrowing sub - Saharan African countries.

8.2 **Findings**

Findings in the process of this research came in different forms. As explained in the chapter on methodology, the data obtained came from different sources and were therefore of different forms. It has been made clear that the work would comprise of mainly the quantitative approach, hence a great deal of effort was employed to conform to the quantitative analysis. As a result serious attempts was made to answer all research questions raised on issues in debt management that may erstwhile not have been adequately covered by the quantitative approach. Precisely, attempts were made to answer all research questions that led to the formulation of hypotheses using the quantitative method as employed by previous researchers on similar subjects. However, where data was not available in the secondary form and data was unobtainable or was inadequate, the primary sourcing was utilised and eventually full analysis was conducted purely using the quantitative method. Thus, in the process of the presentation of our findings, only the quantitative results and answers would be made available and be expected.

8.3 **Research Questions**

8.3.1 What is the impact of borrowing on the economic growth of sub-Saharan African countries?

The above research question was developed and included in the work as a result of a number of similar works attempting to answer the same questions. For instance Fosu (1996) looked at the relationship between debt and economic growth, Barungi and Atingi (2000) looked at growth and foreign debt, the Ugandan experience, Esther O. Adegbite (2008), studied the impact of Nigeria's external debt on economic development and several others that included Krumm (1985), Lancaster (1989),

Feldstein et al. (1987) and Helleiner (1989) but who employed fewer samples from sub-Saharan Africa (Fosu, 1996).

To answer the research question posed above, the work constructed a model which in turn postulated some hypotheses as presented in chapter four. The model, which proposed to relate gross domestic product per capita (gdpcp) as the dependent variable, related to a number of explanatory variables that included ratio of total debt to gross domestic product (edtgdp), the squared value of the debt to gross domestic product ($edtgdp^2$), to capture the debt overhang phenomenon and the variable of real exchange rate (rermts) which measures the real exchange rate misalignment in the model. This variable, as explained earlier, is computed from the purchasing power parity relations and misalignment, which is defined as the percentage deviation from the mean. The fact that the variable has the tendency of creating distortion in a nation's economy, it is expected to be negatively correlated to growth.

Other variables in the model were the ratio of debt service as a ratio of export earnings. It was stated that the coefficient was expected to be negative in order to confirm, as well as reinforce, the liquidity channel, ratio of broad money to gross domestic product (m2gdp), measuring the level of capital market development. The variable was expected to be positive as higher level of broad money translates to bigger capital market activity and better alternative sources of funding to the government. Rpop is a variable that represents the impact of population pressure on domestic resources and the coefficient was supposed to be indeterminate and ambiguous. Lastly, inflation (Infl) was included in the model to represent the rate of inflation. The rate of inflation is expected to stimulate growth at low and sustainable levels. Infl however impacts negatively on growth at high and crisis levels. Related to this model were three hypotheses:

8.3.1.1 H_0: There is a positive relationship between government debt and economic growth

With the above hypothesis, we attempt to answer the research question given at the top of the section. For the same reason, we refer to the analysis carried out in chapter eight of this work. In chapter eight, an analysis of model one was carried out with all the tests and hypotheses. Thus, the outcomes of the various tests carried out shall be used here to validate or invalidate the above hypotheses and in the process answering our research question.

The results from the regression analysis indicate that all the variables coefficients tended to follow the trend of their expected values respectively. The value of R^2 for all the variable indicated that they all explained a high proportion of changes in the dependent variable. For instance, the variables were able to explain 90.2% in changes in the dependent variable. Adjusted R^2 stood at 89.50%. Furthermore, the regression results revealed all the coefficients of the explanatory variables to have behaved according to expectations outlined earlier in the model. For instance, it was postulated that debt ratio (edtgdp) would assume a positive relationship with the dependent variable (gdpcp). A natural measure of the indebted country external liabilities is their debt to gdp ratio. Checking the results, we found the Beta value recorded was a high 1.015 for the edtgdp. This value was positive indicating that per capita gross domestic product (gdpcp) would rise by as high as 101.5% with a single unit change in the debt ratio (edtgdp) for the particular period. This clearly showed that borrowing by the countries in sub-Saharan Africa could be beneficial in attaining economic growth given the prospects of a higher per capita gdp. And this led us to accept the null hypotheses, that there is a positive relationship between debt and economic growth. Our critical t – value was -5.978 and significant at $p < 0{,}001$.

It was however argued that repayments on government borrowing were bound to be scaled down to the debtor's resources (Cohen, 1995). Accordingly, repayments tend to assume a sort of marginal tax on the country's resources and consequently have an adverse effect on domestic investment. But as was argued, the natural place to look for the evidence of capital accumulation was not investment (Easterly, 2002). Investment was a poor indicator of asset accumulation and was found to be a particularly non-productive measure in Africa, a region that had a high number of HIPCs (Devarajan, Easterly, & Pack, 2001). Thus, the rationale for the use of per capita output or gdp as an indirect way of measuring productive asset accumulation.

In order to capture the phenomenon of debt overhang, we proceeded to check on the $edtgdp^2$. This variable was expected to turn negative, especially in relation to growth. Checking the coefficients we see that the variable ($edtgdp^2$) recorded a Beta value of –0.398 as expected, thereby confirming the phenomenon of debt overhang at certain (higher) levels of borrowing. This is evident because by implication the dependent (gdpcp) would record a decline by -0.398 with a 1 standard deviation (unit) change in the variable $edtgdp^2$.

To further expound the effect of government borrowing on the economic growth of a country, the model went on to look at how the ratio of debt service to total exports (dbtsvx) is related to the per capita gross domestic product (gdpcp), or the dependent variable. Debt service as a ratio of exports of goods and service was expected to relate negatively with growth. When we check the regression coefficient of the variable we see that the standardized value of Beta was recorded as -0.059. This signifies a negative relationship with the growth variable (gdpcp), and by implication, gdpcp would be decreased by 5.9% in response to one standard deviation change in the explanatory variable, dbtsvx. This result further confirms the negative impact of borrowing on the economic growth of the borrowing country.

The variables of effective capital market development (m2gdp), population (Rpop), real exchange rates (Rermts) and inflation (Infl) were all found to record standardized Beta values of 0.154, 0.376, -0.102 and -0.072 respectively, all in agreement with the postulated theory. Of particular interest was the only addition to the original model, the level of a country's capital market development variable which recorded a positive Beta value of 0.154. This implies that the level of capital market development which offered alternative sources of funding to the government tend to impact positively with economic growth. Therefore, gdpcp would grow by an equivalence of 15.4% for every 1 standard deviation change in capital market growth.

8.3.2 Does Debt Management as a Strategy Impact on the Economic Growth of an Economy?

In an attempt to answer the research question stated above we introduced the second model which related debt ratio (edtgdp) to a number of variables; the debt management index (cpiadbt), ratio of short term debt to total debt (stmdbt), ratio of long term debt to total debt (lngtdbt), the ratio of market capitalisation to gross domestic product (mcapgdp), measuring the impact of the capital market development in a country and $dbtfgvl^2$ measuring the impact of debt relief or forgiveness. We saw that both short and long term debts tended to attract market risks that could lead to higher interest rates, which in turn could push the debt service ratio higher. Short term debts in addition tended to incur higher administrative costs as a result of frequent roll overs (Christensen, 2004). The two variables were, however, expected to relate positively with the debt ratio

As explained in chapter three, short term debt was supposed to relate positively with a country's level of indebtedness or debt ratio. And the same expectation applied to long term debt. That is, the higher the borrowing the higher the debt to gross domestic product ratio. The same positive relationship was expected of the variable measuring the level of development of the capital market and debt forgiveness or relief. The debt relief initiative had as its major objective the reduction of the external debts of severely indebted countries (Freytag & Pehnelt, 2009). Thus, it was expected that any debt relief should relate negatively to a country's debt ratio.

8.3.3 Debt Management Related to Indebtedness

The four variables in the model discussed in the preceding section were to be answered by way of accepting or rejecting a number of formulated hypotheses. These hypotheses, were already presented in chapter four. For the purpose of resolving the questions contained in these tentative scientific statements the hypotheses are represented in the order they appeared in the model. The following is a presentation of the hypotheses contained in model 2.

8.3.3.1 H_0: Debt management does have a significant influence on the economic growth of a country.

To accept or reject the above hypothesis we proceed to our regression result we refer back to our regression results. Debt management index was represented by the country performance institutional assessment index on debt (cpiadbt) in the model as an explanatory variable. Our model whose variables combined to explain 69.9% change in the dependent variable or the ratio of debt to gross domestic product. In the model the index of debt management (cpiadbt) recorded a standardized Beta value of 0.158, indicating a positive correlation with the debt ratio. The independent variable was expected to rise by 15.8% with every 1 standard deviation change in the independent variable, in this case cpiadbt. This implied that our null hypothesis need not be rejected and thus debt management tend to influence higher ratio. But this assertion is conditional on the level of the debt ratio, because we saw also that at higher debt ratios economic growth became negative. This result could also be interpreted as the debt index or debt management would only be effective at lower debt levels but becomes irrelevant at higher levels of debt.

8.3.4 Debt Maturity and the Level of Indebtedness

Here, we continue to look at how the choice of type of debt and its maturity would affect a country's debt situation. For this purpose we refer to our long formulated hypothesis and check our regression analysis results to take a decision. According our hypotheses is stated as follows:

H_0: There is a relationship that exists between the extent of debt and the maturity of debt

Short and long term debts tend to constitute the major, in some instances, only choice in government borrowing. And as a result, the two types of debt determines the maturity of debt especially in most African countries whose capital markets were not adequately developed. Thus, to test the hypothesis whether a relationship exists between the extent of debt and the maturity of debt we included the two variables as independent variables regressed against the debt ratios.

Thus, checking our model coefficient table we saw that the variables recorded standardized Beta values of 1.865 for the short term debt and -1.026 for long term debt respectively. By implication, debt ratio would be altered by up 186.5% with a single standard deviation movement in the short term figure. Similarly debt ratio would decline by 102.6 with 1 standard deviation change in the value of long term debt. These values indicate that short term is positively correlated to a country's debt ratio, thereby implying the higher governments incur short term debts the higher or worse their debt conditions becomes. Long term debts were, however, found to be negatively correlated to a country's debt ratio. By implication the longer the debt the lesser the risks of debt crisis perhaps as a result of reduced frequency of debt servicing, lower interest rates and handling costs (Christensen, 2004). With this result we now refer to our hypotheses and promptly assert that there definitely exists a relationship between a country's extent of indebtedness and its choice of debt instrument and their maturity. Thus, the composition of a country's debt tends to play a role in its debt management strategy.

8.3.5 Debt Relief or Forgiveness Related to Indebtedness

The debt relief initiative, especially to the low income highly indebted countries in sub-Saharan Africa, played an important role in any debt management analysis in the

sub-region. As was discussed earlier debt relief was meant to substantially reduce the debt burden of the debt crisis ridden low income countries in Africa, but not long after the initiative several beneficiaries of the programme were caught up in the same circle of debt and debt crisis. Thus, to unravel what the relationship between debt relief and a country's extent of indebtedness we formulate the following hypothesis:

8.3.5.1 H_0: Debt relief does have a significant influence on a country's level of indebtedness.

In order to accept and validate the above hypothesis, or reject it entirely for an alternative one, we refer back to our regression result in the same model 2. The variable of debt relief recorded a standardized Beta value of -0.185, which signifies a negative correlation with the debt ratio or level of indebtedness. Impliedly, the result showed that debt forgiveness tended to have a negative relationship with a country's extent of indebtedness; the higher the debt relief granted the lower the debt ratio attainable. Furthermore, the Beta coefficient recorded indicated that for any one standard deviation change in the value of debt relief a beneficiary country's debt ratio would drop by 18.5 percentage points. Debt relief actually freed funds for the HIPCs and would be a good basis for a sound debt management in the affected countries. The failure of the debt relief initiative must be related to other factors e.g. poor debt management strategy.

8.4 **Summary and Conclusion**

In summary, we observed that the entire process of debt management is vital to economic growth and development of a country. In particular, countries in sub-Saharan Africa need to put in place an effective and sound debt management strategy that would aid in promoting the needed stability reduce risks and guide in the prudent management of borrowed resources. But debt management as we have seen, also became necessary, especially after the debt relief initiatives starting from the Brady plan to the recent relief for the HIPCs initiative. Debt management was however, seen to work in co-ordination with a chain of agencies rather than in isolation from other agencies. Although debt management units should be independent and autonomous in its discharge of duties in debt policy formulation down to the function of keeping and monitoring debt data.

Debt management particularly in sub-Saharan Africa was hardly separable from the activities and policy initiatives of the IMF and the World Bank. The idea of debt relief and forgiveness had been conditioned on the HIPCs accomplishment of certain stages such as decision and completion points. Thus, the process of debt relief tends to mark the commencement of the process of debt management. The World Bank's debt management performance assessment introduced in 2006 provided to the SSAs a comprehensive guide in setting up a debt management. All analysis based on the responses gathered from the data collected via questionnaires developed based on the provisions of debt management performance assessment performance guidelines discovered that almost all the guidelines had been complied with by all the debt and related agencies in the sampled countries. By the end, we were able to discover that the debt management strategies embarked upon by the countries under review involved all the aspects of effective debt management as provided by the Bank's guidelines but yet all of the countries were accumulating more external debts with two already showing signs of debt distress. The reason for this problem as we saw in our qualitative analysis was that the element of corruption was still a major obstacle among the sampled countries, except South Africa. Two factors emerged as the cause - First was the element of corruption in the form of bureaucratic bottlenecks and lack of up to date debt data. Closely related to this was the interference by the executive arm of government in government approval in violation of the provision that all approvals had to be effected through the legislative process.

Equally important in this work was our quantitative analysis, where we were able to establish some reasonable assertions that at some levels there tended to be a positive relationship between borrowing and economic growth. However, at certain higher levels the relationships turned to negative. Confirming the latter, it was observed that countries face dramatic decline in their growth potentials particularly where their debt-to-GDP ratios were up to 90%. This work was however, unable to draw a line beyond when debt became a threat to economic growth, but the work was able to confirm that borrowing long was more beneficial and free from the economic instability and risk of debt service, higher cost and interest affecting short term borrowing. The analysis carried out quantitatively was able to defend the introduction of a debt management strategy as it was found to be correlated positively with a country's extent of indebtedness, which led to the conclusion that a country's choice

of debt and its maturity tend to affect its level of indebtedness. Further during the analysis carried out earlier in chapter seven we were able to establish that at lower levels of debt, GDP growths tend to be high and the relationship tends to become indeterminate at higher levels of GDP growth ratios.

8.5 **Conclusion**

In conclusion, we have observed that debt management is a vital ingredient in the process of economic growth and development. Debt management however, is not concentrated in a single strategy but rather it a combination of numerous approaches and policies involved in the process of taking a decision on government borrowing. All statistical data and its analysis tended to reveal government borrowing as a normal process to a larger extent necessary for the attainment of the needed growth and economic development. However, in the candid opinion of a large number of our respondents borrowing as a strategy might not actually be the answer to sub-Saharan Africa's economic predicament. In particular, debt management within a context of a domestic capital market that was scarcely developed would lack the apparatus to be used as a strategy to promote and implement government vital economic policies.

For others debt management in Africa was fraught with corruption, especially in the manner funds were spent. This especially led to increased poverty amongst the highly indebted poor countries in the form of widening the gap between the leadership who misappropriated the funds in the first place usually with full but negligent of the knowledge of their intent right from the start. And where funds were sourced through bilateral or agreements with the multilateral financial bodies, borrowing tended to become a tool of neo-colonialism and exploitation of the abundant resources in the sub-Saharan Africa, through the process of conditionality and structural adjustment programmes that could only lead to further impoverishment of Africa and its people. We saw how a respondent argued that the sub-Saharan African debt crisis was artificially created by the major financial bodies by way of introducing policies and projects that these countries never needed in the first place. And where the funds were acquired they were mostly frittered away by corrupt leadership, payment to the agencies' employees during project execution and implementation. Many respondents as we saw earlier were of the opinion that with transparent and upright leadership in sub-Saharan Africa, the story might be reversed, thereby placing the region that was

rich in both human and natural resources strategically as a net lender rather than in its current status as a bad debtor and frequent borrower funds.

8.6 **Recommendations**

The overall discussion and analysis in the course of this work tends to point to government debt as a phenomenon that is entrenched in the economies of most nations not least those in sub-Saharan Africa. While figures tend to indicate its relevance (or lack of) sovereign debt management had become a major tool in economic policy and its formulation. The advent of globalisation – what many saw as a process of neo-colonialism – made it even more difficult for the poor less developed nations to attain the much needed economic independence that had been advocated by leading pan African leaders and freedom fighters of the last century. Thus, looking at the elements of debt management and its strategy as promoted by the major international financial institutions for the HIPCs in particular and the greater percentage of the member countries to implement, the study recommends the following for consideration in any process of debt management by a sub-Saharan African country.

1. Debt management strategy should only be promoted by a country if and only if, it is independently drafted by an autonomous debt management agency with minimal interference but collaboration with related external agencies and should be tailored towards addressing the poverty and economic development of such a nation;
2. Every debt management strategy to be promoted must work towards the development of a vibrant and effective domestic capital market that would provide alternative funding for the government and with the objective of utilizing the choices with a view to reducing risks inherent in external debts, indexed debt introduction and a drive towards the use of the domestic market in both fiscal and monetary policy formulation and implementation;
3. The approval of sovereign government debt should be made through the process of the parliament or legislature as the case may be, and all debt policy must be prepared and promoted by a designated debt management office that has in its employment qualified debt managers and other supporting staff who

are regularly trained in all the necessary aspects of debt management nationally and internationally;

4. When contracting external debt the federal or central government should as a matter of policy borrow for self and on behalf of other sub-regional or state governments for the purpose of transparency and accountability;
5. Terms and conditions of any external funding must be discussed and analyzed by the government through it professional debt managers with particular focus on the duration or maturity of the debt ,principal and interest payments, how and the sources that they are charged in order to avoid a reoccurrence of double interest charges to many low income countries by some international financial bodies;
6. Debt data and records should be managed and kept up to date for government easy reference in debt, fiscal and monetary policy promotion and implementation;
7. A country's debt management must not put excessive priority interest on access to debt relief from the international financial bodies offering the initiatives as a strategy, instead access to concessional lending should encouraged for cheaper funds and more stable and reduced risk financing; and
8. Debt management strategy should ensure an optimal balance between short and long term government borrowing for the purpose of achieving governments economic and financial policy objectives.

8.7 **Contributions**

This work has succeeded in researching and contributing to a relatively new field of study when the extent of literature on debt and debt management in sub-Saharan Africa is considered. Most importantly, the work has contributed to the existing theory on debt management particularly by venturing into the study, for the first time in relation to the issue of debt management in the sub-Saharan Africa. This is obvious with the sampling of four sub-Saharan African countries, strict sourcing, analysis and interpretation of data on those nations throughout the research. Furthermore, the research has contributed immensely to empirical academic research, having carried out tests on clearly formulated questions and postulated hypothesis, with clear results given at the end. The study has therefore paved way for further research and analysis.

Professionally the work will prove to be highly valuable, especially with a detailed review of the World Bank/IMF's Debt Management Performance Assessment tool.

The work has shown the possibility of the existence of a relationship between effectively managed sovereign debt and the attainment of economic growth. The work has supported the existence of a causal relationship between sovereign debt and economic growth. Furthermore the study has in the process, been able to review the method in debt management performance and the extent of compliance to the guidelines. The work has both academic and professional relevance considering the sources of data, its analysis and the caliber of the participants. On the academic side the study has critically reviewed the phenomenon of debt overhang with supporting statistical analysis at the end. Other relevant issues includes the aspect of debt maturity and how it affects a country's extent of indebtedness

9. References

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10. Appendices

10.1 Appendix A: Questionnaire

Instruction: Please rank on a scale of 1 to 5 each of the performance indicators under the sections below. 1 is the lowest *score; while 5 is the highest score.*

1.Government and Strategy Development	**1**	**2**	**3**	**4**	**5**
Legal Framework					
Managerial Structure: Borrowing and Debt Related Transaction					
Managerial Structure: Loan Guarantees					
Debt Management Strategy: Quality of Content					
Debt Management Strategy: Decision Making Process					
Evaluation of Debt Management Operation					
Audit: Frequency					
Audit: Appropriate Response					
2.Coordination with Macroeconomic Policies	**1**	**2**	**3**	**4**	**5**
Fiscal Policy: Provision and Quality of Debt-Service Forecasts					
Fiscal Policy: Availability and Quality Information on Key Macro Variables and DSA					
Monetary Policy: Clarity of Separation between DeM and Monetary Policy Operations					
Monetary Policy: Regularity of Information Sharing					
Monetary Policy: Limited Access to Central Bank Financing					
3.Borrowing and Related Financing Activities	**1**	**2**	**3**	**4**	**5**
Domestic Borrowing: Market-Based Mechanism and Preparation of a Borrowing Plan					
Domestic Borrowing: Availability and Quality of Documented Procedures					
External Borrowing: Borrowing Plan and Assessment of Costs and Terms					
External Borrowing: Availability of Documented Procedures					
External Borrowing: Involvement of Legal Advisers					
Loan Guarantees: Availability and Quality of Documented Policies and Procedures					
On-lending: Availability and Quality of Documented Policies and Procedures					
Derivatives: Availability and Quality of Documented Policies and Procedures					
4. Cash Flow Forecasting and Cash Balance Management	**1**	**2**	**3**	**4**	**5**
Effective Cash Flow Forecasting					
Effective Cash Balance Management					
5. Operational Risk Management	**1**	**2**	**3**	**4**	**5**
Debt Administration: Availability & Quality Documented Procedures for Debt Service					
Debt Admin: Availability & Quality Documented Procedures for Data Recording and Storage					
Data Security: Availability and Quality of Documented Procedures for Data Recording and System and Access Control					
Data Security: Frequency of Back-Ups and Security of Storage					
Segregation of Duties					
Staff Capacity and Human Resources Management					
Operational Risk Management, Business Continuity, and Disaster Recovery Plans					
6.Debt Records and Reporting	**1**	**2**	**3**	**4**	**5**
Debt Records: Completeness and Timeliness					
Debt Records: Registry System					
Central Government Debt Data: Statutory and Mandatory Reporting Requirements					
Public Sector Debt Data: Statutory and Mandatory Reporting Requirements					
Debt Statistical Bulletin: Quality and Timeliness					

Signature of Participant……Date……

10.2 Appendix B (i): Correlation – Model I

		Gdpcp	Edtgdp	Edtgdpl^2	Dbtsvx	Infl	Rermts
Pearson Correlation	Gdpcp	1,000	0.862	0.578	-0.325	-0.344	-0.169
	Edtgdp	0.862	1,000	0.86	-0.213	-0.359	-0.103
	Edtgdpl^2	0.578	0.86	1,000	-0.106	-0.2	-0.05
	Dbtsvx	-0.325	-0.213	-0.106	1,000	0.367	0.129
	Infl	-0.344	-0.359	-0.2	0.367	1,000	0.138
	Rermts	-0.169	-0.103	-0.05	0.129	0.138	1,000
Sig. (1 - tailed)	Gdpcp	-	0,000	0,000	0,000	0,000	0.027
	Edtgdp	0,000	-	0,000	0,010	0,000	0.133
	Edtgdpl^2	0,000	0,000	-	0.127	0.016	0.295
	Dbtsvx	0,000	0,010	0.127	-	0,000	0.082
	Infl	0,000	0,000	0.016	0,000	-	0.059
	Rermts	0.027	0.133	0.295	0.082	0.059	-
N	Gdpcp	132	118	118	118	129	132
	Edtgdp	118	118	118	118	115	118
	Edtgdpl^2	118	118	118	118	115	118
	Dbtsvx	118	118	118	118	115	118
	Infl	129	115	115	115	129	129
	Rermts	132	118	118	118	129	132

10.3 Appendix B (ii) Coefficients – Model I

Model	**Unstandardized**	**Coefficients**	**Standardized Coefficients**			**95.0% Confidence**	**Interval for B**
	B	Std Error	Beta	t	Sig.	Lower Bound	Upper Bound
1. (Constant)	799.398	133.703		5.979	0,000	534.402	1064.393
Edtgdp	3.02E-19	0,000	1.394	18.325	0,000	0,000	0,000
Edtgdpl^2	-2.64E-64	0,000	-0.619	-8.586	0,000	0,000	0,000
Dbtsvx	-12.131	4.013	-0.117	-3.023	0.003	-20.085	-4.176
Infl	293.97	147.723	0.082	1.99	0.049	1.189	586.752
Rermts	-0.223	0.154	-0.052	-1.443	0.152	-0.529	0.083

10.4 Appendix B (iii) Regression Results – Model I

	R^2	β	B	SE	CI 95%	(B)
Model	0.916***					
Dtgdp		1.394	3.02E-19	0,000	0,000	0,000
Dtgdpl^2		-0.619	-2.64E-64	0,000	0,000	0,000
Dbtsvx		-0.117	-12.131	4.013	-20.085	-4.1
Infl		-0.082	293.97	147.723	1.189	
Rermts		0.082	-0.223	0.154	-0.529	

10.5 Appendix B (iv) Correlations – Model II

		Edtgdp	M2gdp	Lngtdbt	Stmdbt	Cpiadbt
Pearson Correlation	Edtgdp	1,000	-0.132	0.856	0.385	474
	M2gdp	-0.132	1,000	-0.237	-0.281	0.153
	Lngtdbt	0.856	-0.237	1,000	0.784	0.315
	Stmdbt	0.385	-0.281	0.784	1,000	0,070
	Cpiadbt	0.474	0.153	0.315	0,070	1,000
Sig.(1 - tailed)	Edtgdp	-	0.077	0,000	0,000	0,000
	M2gdp	0.077	-	0,005	0.001	0,040
	Lngtdbt	0,000	0.005	-	0,000	0,000
	Stmdbt	0,000	0.001	0,000	-	0.226
	Cpiadbt	0,000	0.04	0,000	0.226	-
N	Edtgdp	118	118	118	118	118
	M2gdp	118	132	118	118	132
	Lngtdbt	118	118	118	118	118
	Stmdbt	118	118	118	118	118
	Cpiadbt	118	132	118	118	132

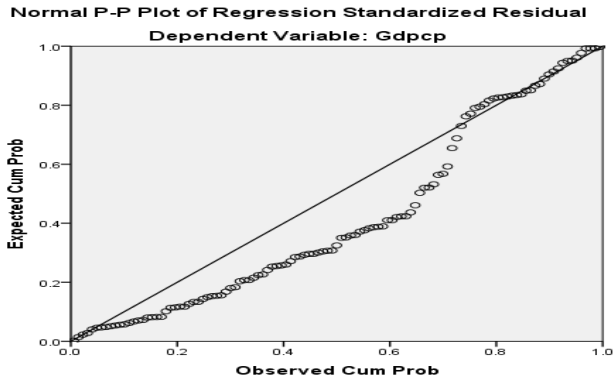
10.6 Appendix B (v) Coefficients – Model II

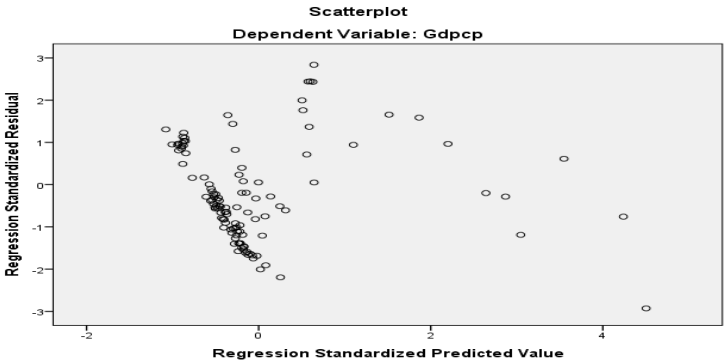
Model	**Unstandardized**	**Coefficients**	**Standardized Coefficients**			**95.0% Confidence**	**Interval for B**
	B	Std Error	Beta	t	Sig.	Lower Bound	Upper Bound
1. (Constant)	-4.00E+21	6.00E+20		-6.646	0,000	534.402	1064.393
M2gdp	-1.10E+18	1.40E+18	-0.018	-0.795	0.428	0,000	0,000
Lngtdbt	6.00E+11	1.60E+10	1.375	37.273	0,000	0,000	0,000
Stmdbt	-5.20E+11	2.60E+10	-0.705	-20.146	0,000	-20.085	-4.176
Cpiadbt	6.90E+20	1.70E+20	0.093	3.985	0,000	1.189	586.752

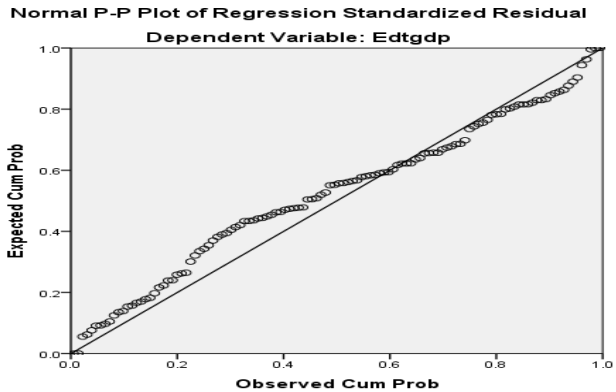
10.7 Appendix B (vi) Coefficients – Model II

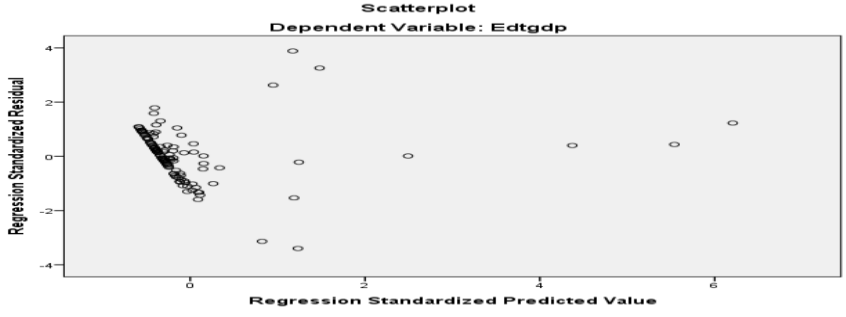
Model		**Correlations**		**Collinearity Statistics**	**Collinearity**
	Zero-order	Partial	Part	Tolerance	VIF
1(Constant)					
M2gdp	-0.132	0.075	-0.016	0.879	1.137
Lngtdbt	0.856	0.962	0.769	0.879	3.198
Stmdbt	0.385	-0.884	-0.416	0.348	2.878
Cpiadbt	0.474	0.351	0.082	0.782	1.278

10.8 Appendix C (i) – (iv)









10.9 Appendix D Data

Coun	Yea	edt	expt	gdp	m2	mca	gdpcp	nwdb	edt/gc	edt/i	int/	tds/x	m2/gd	mcap/g	lntmdb	stmdb	grsv	dbtfg	cpia	infl
Nigeria	1980	9E+09	1E+10	6E+10	1.4E+10	0	871.146	4E+09	0.13922	0.605	3.273	4.14561	0.2241	0	8.938E+09	5.4E+09		0	2.5	12.4197
Nigeria	1981	1E+10	1E+10	6E+10	1.5E+10	0	806.508	7E+09	0.1874	0.997	5.932	9.19604	0.2495	0	1.145E+10	7E+09	26.6192	0	2.5	18.459
Nigeria	1982	1E+10	1E+10	5E+10	1.7E+10	0	661.232	6E+09	0.23333	1.253	9.694	16.226	0.3248	0	1.199E+10	9.5E+09	24.739	0	2.5	4.82934
Nigeria	1983	2E+10	8E+09	4E+10	1.9E+10	0	444.649	6E+09	0.4958	2.086	12.98	23.6105	0.5369	0	1.758E+10	1.3E+10	20.8878	0	2.5	13.7675
Nigeria	1984	2E+10	1E+10	3E+10	2.1E+10	0	348.526	4E+09	0.62396	1.76	15.7	32.9443	0.7453	0	1.778E+10	1.2E+10	16.3084	0	2.5	13.2674
Nigeria	1985	2E+10	1E+10	3E+10	2.3E+10	0	344.141	3E+09	0.6461	1.459	12.74	32.7804	0.8019	0	1.866E+10	1.4E+10	15.785	0	2.5	5.54234
Nigeria	1986	2E+10	1E+10	2E+10	2.4E+10	0	240.617	3E+09	1.07211	2.227	14.97	38.0389	1.1392	0	2.222E+10	1.9E+10	11.0825	0	2.5	11.63
Nigeria	1987	3E+10	3E+10	2E+10	2.9E+10	0	272.508	3E+09	1.20469	0.963	8.268	14.1306	1.1993	0	2.902E+10	2.7E+10	14.8619	0	2.5	67.3982
Nigeria	1988	3E+10	3E+10	2E+10	3.8E+10	4.1251	256.376	4E+09	1.27294	0.876	20.86	30.3651	1.6503	1.77E-10	2.962E+10	2.8E+10	18.0012	0	2.5	22.9217
Nigeria	1989	3E+10	1E+11	2E+10	4.3E+10	4.1682	260.048	4E+09	1.24311	0.3	17.61	24.6928	1.7899	1.72E-10	3.012E+10	3E+10	31.231	-3E+08	2.5	45.0405
Nigeria	1990	3E+10	1E+11	3E+10	5.8E+10	4.4543	321.668	5E+09	1.08719	0.336	14.6	22.5963	1.8712	1.45E-10	3.344E+10	3.2E+10	22.9733	-3E+08	2.5	9.29085
Nigeria	1991	3E+10	1E+11	3E+10	7.9E+10	6.8631	279.276	6E+09	1.22394	0.244	15.6	22.0563	2.8864	2.51E-10	3.353E+10	3.3E+10	26.0692	-1E+08	2.5	17.6048
Nigeria	1992	3E+10	2E+11	3E+10	1.3E+11	4.1637	291.284	6E+09	0.99037	0.139	14.39	18.5741	4.4055	1.42E-10	2.902E+10	2.7E+10	19.2928	-2E+09	2.5	68.0632
Nigeria	1993	3E+10	2E+11	2E+10	2E+11	6.5235	153.076	5E+09	1.94665	0.127	8.194	13.3958	12.571	4.13E-10	3.074E+10	2.7E+10	13.447	-3E+07	2.5	26.1324
Nigeria	1994	3E+10	2E+11	2E+10	2.7E+11	14.984	171.025	5E+09	1.82968	0.144	11.39	18.9468	14.759	8.28E-10	3.309E+10	2.8E+10	7.24983	-1E+07	2.5	31.0091
Nigeria	1995	3E+10	7E+11	3E+10	3.2E+11	7.1216	263.288	4E+09	1.19433	0.047	7.352	14.7307	11.166	2.49E-10	3.409E+10	2.8E+10	13.858	-9E+07	2.5	113.076
Nigeria	1996	3E+10	9E+11	3E+10	3.7E+11	10.175	314.735	3E+09	0.89787	0.035	6.431	13.137	10.585	2.91E-10	3.141E+10	2.6E+10	10.4142	-7E+08	2.5	32.7271
Nigeria	1997	3E+10	1E+12	4E+10	4.3E+11	10.178	314.288	1E+09	0.79469	0.023	3.546	8.71204	11.996	2.84E-10	2.847E+10	2.3E+10	14.1688	-7E+08	2.5	1.01313
Nigeria	1998	3E+10	8E+11	3E+10	5.3E+11	9.0206	273.854	7E+08	0.94717	0.036	5.484	13.0743	16.424	2.82E-10	3.031E+10	2.4E+10	-2.09776	0	2.5	-5.66569
Nigeria	1999	3E+10	1E+12	4E+10	7E+11	8.1949	299.343	5E+08	0.81872	0.026	3.314	7.6056	19.507	2.28E-10	2.937E+10	2.3E+10		0	2.5	17.0501
Nigeria	2000	3E+10	2E+12	5E+10	1E+12	9.134	377.5	4E+08	0.68085	0.013	3.603	8.75635	22.336	1.97E-10	3.158E+10	3E+10	29.3644	0	3	35.2295
Nigeria	2001	3E+10	2E+12	4E+10	1.3E+12	12.243	350.288	7E+08	0.68041	0.013	4.077	12.7207	29.665	2.77E-10	3.003E+10	3E+10	10.4951	0	3	-0.32262
Nigeria	2002	3E+10	3E+12	6E+10	1.6E+12	9.709	457.474	1E+09	0.50609	0.012	1.789	8.06125	26.317	1.64E-10	2.992E+10	2.8E+10	7.64442	-2E+08	3	39.8967
Nigeria	2003	3E+10	3E+12	7E+10	1.8E+12	14.032	510.417	2E+09	0.50456	0.01	1.499	5.92551	26.103	2.07E-10	3.414E+10	3.2E+10	4.50269	0	3	11.1409
Nigeria	2004	4E+10	4E+12	9E+10	2.1E+12	16.466	645.926	2E+09	0.41766	0.01	1.427	4.47026	24.26	1.87E-10	3.669E+10	3.3E+10	10.7559	0	3	-0.15775
Nigeria	2005	2E+10	5E+12	1E+11	2.6E+12	17.244	804.152	2E+09	0.18242	0.004	8.651	15.4107	23.278	1.54E-10	2.048E+10	2E+10	20.1036	-7E+09	3.5	22.0244
Nigeria	2006	4E+09	8E+12	1E+11	3.6E+12	22.567	1014.76	2E+09	0.02795	5E-04	0.439	10.9806	24.498	1.55E-10	4.065E+09	4.1E+09	38.3175	-1E+10	4	17.3378
Nigeria	2007	4E+09	7E+12	2E+11	5.9E+12	51.875	1130.88	2E+09	0.02321	5E-04	0.136	1.44262	35.192	3.12E-10	3.863E+09	3.9E+09	16.2707	0	4.5	4.77074
Nigeria	2008	4E+09	1E+13	2E+11	9E+12	23.936	1376.02	3E+09	0.01992	4E-04	0.099	0.47517	43.176	1.15E-10	4.144E+09	4.1E+09	26.9537	0	4.5	10.8353

rermts	lngpcp	lnedt/g	lnedt/x	lnint/x	lntds/x	lm2/gdp	lnmcp/	lnstdb	lnltmdt	edtgdp	edtgdpl	(edtgdpl)	dbtfgv	mcapg	dbtfgv	lgdbtf
343.4112	6.769809	-1.9717	-0.50205	1.18582	1.42205	-1.4955		22.4069	22.9136	5.7E+20	0	0				
381.0315	6.692714	-1.67453	-0.00283	1.78039	2.21877	-1.38828		22.6718	23.16086	7E+20	6.25E+30	3.90E+61				
390.1508	6.494105	-1.45531	0.2257	2.2715	2.78661	-1.12457		22.9701	23.20754	6.2E+20	7.05E+30	4.98E+61				
462.1614	6.097285	-0.70158	0.73531	2.56309	3.16169	-0.62193		23.2504	23.58986	6.2E+20	7.47E+30	5.58E+61				
638.5437	5.853714	-0.47167	0.56545	2.75355	3.49482	-0.29392		23.2114	23.60153	5.1E+20	8.91E+30	7.94E+61				
572.5456	5.841052	-0.43681	0.37783	2.54501	3.48983	-0.22082		23.3378	23.6494	5.4E+20	9.58E+30	9.18E+61				
312.5993	5.483208	0.069631	0.80074	2.7061	3.63861	0.130295		23.6429	23.82407	4.6E+20	8.59E+30	7.38E+61				
99.63166	5.607667	0.186224	-0.03808	2.11245	2.64834	0.181753		24.0359	24.09142	7E+20	1.55E+31	2.41E+62				
100.1475	5.546644	0.241331	-0.13221	3.03777	3.41329	0.500951	-22.4534	24.0582	24.11185	6.9E+20	2.00E+31	4.00E+62				
89.17241	5.560865	0.217616	-1.20466	2.86869	3.20651	0.582149	-22.4834	24.113	24.12852	7.3E+20	2.16E+31	4.68E+62	-2.8E+08		7.8E+16	16.8898
82.69902	5.773521	0.083601	-1.09056	2.68114	3.11779	0.626597	-22.6555	24.187	24.23299	1E+21	3.10E+31	9.60E+62	-2.9E+08	4.45426	8.2E+16	16.9135
70.11558	5.6322	0.202074	-1.40927	2.74708	3.0936	1.060016	-22.1074	24.2097	24.23562	9.2E+20	3.07E+31	9.43E+62	-1.3E+08	6.8631	1.6E+16	16.2103
58.15215	5.674299	-0.00968	-1.97125	2.66661	2.92177	1.482856	-22.6745	24.012	24.09121	8.5E+20	2.85E+31	8.13E+62	-2.2E+09	4.16369	4.8E+18	18.6837
63.7247	5.030936	0.666109	-2.06337	2.10338	2.59494	2.531371	-21.6072	24.0095	24.14869	4.9E+20	1.41E+31	1.98E+62	-3E+07	6.52353	9E+14	14.9542
118.3327	5.141811	0.60414	-1.9382	2.43279	2.94163	2.691882	-20.9115	24.0649	24.22257	6E+20	1.84E+31	3.38E+62	-1.3E+07	14.9836	1.8E+14	14.251
100.315	5.573249	0.177584	-3.04774	1.995	2.68994	2.412899	-22.1117	24.0712	24.2524	9.7E+20	3.22E+31	1.04E+63	-9.5E+07	7.1216	9E+15	15.9545
123.516	5.751733	-0.10773	-3.35775	1.86111	2.57543	2.3594	-21.9583	23.9713	24.17054	1.1E+21	3.75E+31	1.40E+63	-7.4E+08	10.1749	5.5E+17	17.7409
143.3279	5.750309	-0.22981	-3.7531	1.26571	2.16471	2.484588	-21.9816	23.8561	24.07203	1E+21	3.20E+31	1.03E+63	-7E+08	10.178	4.9E+17	17.6896
159.4272	5.612596	-0.05428	-3.31731	1.70178	2.57065	2.798732	-21.9896	23.8908	24.13487	9.7E+20	2.76E+31	7.63E+62	0	9.02057	0	0
80.29567	5.701589	-0.20002	-3.64282	1.19811	2.02888	2.970778	-22.1997	23.8521	24.10317	1.1E+21	3.19E+31	1.02E+63	0	8.19491	0	0
81.36651	5.933571	-0.38442	-4.34729	1.28185	2.16978	3.106202	-22.3483	24.1397	24.17585	1.5E+21	4.30E+31	1.85E+63	0	9.13401	0	0
90.46575	5.858755	-0.38507	-4.30808	1.40532	2.54323	3.389976	-22.0056	24.1116	24.12552	1.3E+21	4.19E+31	1.75E+63	0	12.2428	0	0
90.27409	6.125719	-0.68105	-4.45074	0.58159	2.08707	3.270229	-22.5297	24.0712	24.12173	1.8E+21	5.31E+31	2.82E+63	-1.6E+08	9.70895	2.5E+16	16.3971
85.31571	6.235228	-0.68406	-4.62399	0.40493	1.77927	3.262045	-22.2963	24.1742	24.25364	2.3E+21	6.91E+31	4.77E+63	0	14.0323	0	0
87.58323	6.470684	-0.87309	-4.56397	0.35567	1.49745	3.188848	-22.3976	24.2135	24.32575	3.2E+21	1.10E+32	1.21E+64	0	16.4658	0	0
100	6.689789	-1.70146	-5.42854	2.15762	2.73507	3.147499	-22.5965	23.7424	23.74252	2.3E+21	8.43E+31	7.11E+63	-7.3E+09	17.2436	5.3E+19	19.7247
106.9551	6.922404	-3.57718	-7.5929	-0.82308	2.39613	3.198579	-22.5865	22.1258	22.12578	5.9E+20	1.21E+31	1.47E+62	-1.1E+10	22.5671	1.2E+20	20.0738
104.8084	7.030751	-3.76331	-7.51124	-1.99805	0.36646	3.560805	-21.8891	22.0747	22.07466	6.4E+20	2.61E+30	6.83E+60	0	51.8752	0	0
116.3893	7.226948	-3.91621	-7.77229	-2.31397	-0.7441	3.765277	-22.8857	22.1449	22.14491	8.6E+20	3.33E+30	1.11E+61	0	23.9362	0	0

Cou	Yea	edt	exp	gdp	m2	mc	gdpc	nwd	edt/g	edt	int	tds/	m2/g	mcap	lntmdl	stmd	grsv	dbtf	cpi	infl
Nigeria	2009	7E+09	8E+12	2E+11	1E+13	19.663	1090.75	3E+09	0.0404	9E-04	0.153	0.72883	60.713	1.16E-10	6.848E+09	6.8E+09	14.6387	0	4.5	-4.32057
Nigeria	2010	7E+09	1E+13	2E+11	1.1E+13	22.17	1437.05	4E+09	0.03168	5E-04	0.082	0.38437	49.304	9.66E-11	7.271E+09	7.3E+09	22.1945	0	4.5	26.7508
Nigeria	2011	9E+09	2E+13	2E+11	1.3E+13	15.984	1496.3	3E+09	0.03667	5E-04	0.098	0.37074	52.111	6.51E-11	9.009E+09	9E+09	26.3354	0	4	3.20255
Nigeria	2012	1E+10	2E+13	3E+11	1.5E+13	21.474	1555.36	3E+09	0.03837	4E-04	0.146	0.30557	57.245	8.18E-11	1.008E+10	1E+10	41.0027	0	4	1.67362
Ghana	1980	1E+09	4E+08	4E+09	795055		411.5	4.3E+08	0.31534	3.725	4.381	13.1109	0.0002		1.27E+09	1.3E+08	6.3241			50.07
Ghana	1981	2E+09	2E+08	4E+09	1203057		379.78	4.5E+08	0.36444	7.663	8.205	14.2508	0.0003		1.25E+09	2.9E+08	5.7034			116.5
Ghana	1982	1E+09	1E+08	4E+09	1483923		351.302	4E+08	0.36775	11.02	8.979	15.5568	0.0004		1.28E+09	2.1E+08	5.5549			22.296
Ghana	1983	2E+09	2E+08	4E+09	2080548		341.07	3.6E+08	0.4106	7.39	13.06	30.4112	0.0005		1.57E+09	9.3E+07	4.2569			122.87
Ghana	1984	2E+09	4E+08	4E+09	3196220		358.378	4.3E+08	0.44408	5.521	11.05	21.7196	0.0007		1.72E+09	2.4E+08	6.746			39.665
Ghana	1985	2E+09	5E+08	5E+09	4671800		354.202	8E+08	0.49803	4.674	12.9	23.5586	0.001		2.05E+09	1.9E+08	8.0343			10.305
Ghana	1986	3E+09	9E+08	6E+09	6911240		437.068	8.6E+08	0.47954	2.893	13.8	28.3173	0.0012		2.56E+09	1.9E+08	6.9334			24.565
Ghana	1987	3E+09	1E+09	5E+09	1.1E+07		376.443	1.1E+09	0.6472	3.292	12.89	45.789	0.0021		3.16E+09	1.2E+08	7.5709			39.815
Ghana	1988	3E+09	9E+08	5E+09	1.6E+07		375.209	1.1E+09	0.58802	3.234	13.07	56.6408	0.003		2.98E+09	7.8E+07	9.964			31.359
Ghana	1989	3E+09	9E+08	5E+09	2.4E+07		368.985	1.2E+09	0.6273	3.747	12.79	50.5301	0.0046		3.09E+09	2E+08	11.405	-202000		25.224
Ghana	1990	4E+09	1E+09	6E+09	2.7E+07		402.577	1.6E+09	0.63411	3.757	11.01	38.373	0.0046		3.41E+09	3.2E+08	10.533	-5E+07		37.259
Ghana	1991	4E+09	1E+09	7E+09	3.8E+07	1.151	438.949	1.5E+09	0.62947	3.711	9.97	27.5189	0.0057	1.74E-10	3.76E+09	3.9E+08	11.863	-465000		18.031
Ghana	1992	4E+09	1E+09	6E+09	5.8E+07	1.3092	414.698	1.6E+09	0.6606	3.835	10.01	27.316	0.009	2.04E-10	3.83E+09	4.1E+08	6.9326	-1E+07		10.056
Ghana	1993	5E+09	1E+09	6E+09	7.7E+07	1.9769	375.231	1.6E+09	0.7665	3.784	9.408	24.5438	0.0129	3.31E-10	4.11E+09	4.7E+08	12.836	-1E+08		24.96
Ghana	1994	5E+09	1E+09	5E+09	1.2E+08	34.335	333.33	1.7E+09	0.93661	3.708	7.965	24.628	0.0215	6.3E-09	4.53E+09	5.8E+08	19.077	-7E+06		24.87
Ghana	1995	5E+09	2E+09	6E+09	1.7E+08	25.509	385.682	1.9E+09	0.85002	3.47	5.928	24.2163	0.026	3.95E-09	4.88E+09	6.2E+08	17.626	-4E+07		59.462
Ghana	1996	6E+09	2E+09	7E+09	2.3E+08	21.52	403.805	1.7E+09	0.83481	2.6	7.636	25.377	0.0337	3.1E-09	5.14E+09	6.5E+08	18.095	0		46.561
Ghana	1997	6E+09	2E+09	7E+09	3.4E+08	16.513	392.262	1.4E+09	0.82889	2.558	8.265	30.0038	0.0488	2.4E-09	5.04E+09	6.7E+08	10.411	0		27.885
Ghana	1998	6E+09	3E+09	7E+09	4E+08	18.498	416.392	1.1E+09	0.84347	2.49	5.949	18.697	0.0528	2.47E-09	5.6E+09	7.1E+08	18.032	-1E+08		14.624
Ghana	1999	7E+09	2E+09	8E+09	5E+08	11.866	419.821	1.4E+09	0.84299	2.628	6.193	17.2068	0.0642	1.54E-09	5.8E+09	7.1E+08	9.3632	-2E+07		12.409
Ghana	2000	6E+09	2E+09	5E+09	7.6E+08	10.083	264.693	1.4E+09	1.25648	2.575	5.601	15.9606	0.1535	2.02E-09	5.69E+09	5.7E+08	15.266	-2E+08		25.193
Ghana	2001	7E+09	2E+09	5E+09	1.2E+09	9.9263	275.476	1.4E+09	1.23521	2.731	3.829	11.6914	0.2252	1.87E-09	6.01E+09	5.5E+08	21.093	-5E+07		32.905
Ghana	2002	7E+09	3E+09	6E+09	1.7E+09	12.007	311.64	1.2E+09	1.16999	2.745	3.597	7.97488	0.2703	1.95E-09	6.62E+09	5.9E+08	18.754	-1E+08		14.816
Ghana	2003	8E+09	3E+09	8E+09	2.1E+09	18.678	375.965	1.4E+09	1.03421	2.542	2.857	14.2951	0.2691	2.45E-09	7.16E+09	7.3E+08	21.156	-6E+07		26.675
Ghana	2004	7E+09	3E+09	9E+09	2.6E+09	29.766	426.264	1.5E+09	0.83795	2.132	3.002	8.23483	0.2943	3.35E-09	6.7E+09	7.4E+08	22.872	-1E+08		12.625
Ghana	2005	7E+09	4E+09	1E+10	3.1E+09	15.473	501.864	1.4E+09	0.6692	1.836	2.875	8.46973	0.291	1.44E-09	6.57E+09	6.2E+08	19.227	-5E+07	4	15.118

rermt	lngpc	lnedt/	lnedt	lnint/x	lntds	lm2/g	lnmc	lnstdt	lnltmd	edtg	edtgd	(edtgd	dbtfg	mcap	dbtfg	lgdbt
108.9742	6.994617	-3.20882	-7.03343	-1.87785	-0.3163	4.106165	-22.8773	22.6472	22.64719	1.2E+21	4.81E+30	2.31E+61	0	19.6629	0	0
117.9193	7.270347	-3.45202	-7.52448	-2.49664	-0.9561	3.897996	-23.0604	22.7072	22.70718	1.7E+21	1.14E+31	1.31E+62	0	22.1705	0	0
119.7652	7.310753	-3.30584	-7.70335	-2.31898	-0.9923	3.95337	-23.4557	22.9215	22.92146	2.2E+21	1.61E+31	2.59E+62	0	15.984	0	0
135.5803	7.349463	-3.26041	-7.72538	-1.92335	-1.1856	4.047339	-23.2271	23.0335	23.03348	2.6E+21	2.38E+31	5.68E+62		21.4737		
750.582	6.019809	-1.15411	1.31496	1.4772	2.57344	-8.62893		18.6894	20.963	6.2E+18	0	0				
1669.4	5.939592	-1.00938	2.03641	2.10472	2.65682	-8.1633		19.4723	20.94851	6.5E+18	9.59E+27	9.19E+55				
2092.39	5.861646	-1.00036	2.39935	2.19487	2.7445	-7.90832		19.1523	20.9673	6E+18	9.64E+27	9.3E+55				
3579.15	5.832086	-0.89013	2.00018	2.56969	3.41481	-7.57564		18.3461	21.17632	6.8E+18	9.98E+27	9.96E+55				
546.007	5.881588	-0.81175	1.70849	2.40246	3.07822	-7.23018		19.3072	21.26369	8.6E+18	1.32E+28	1.75E+56				
397.597	5.869866	-0.6971	1.5421	2.55756	3.15949	-6.87125		19.0644	21.44254	1E+19	1.94E+28	3.76E+56				
251.523	6.080088	-0.73493	1.06228	2.62437	3.34347	-6.7199		19.0555	21.66247	1.6E+19	2.78E+28	7.7E+56				
188.298	5.930767	-0.4351	1.19136	2.55678	3.82404	-6.17148		18.6077	21.87507	1.7E+19	5.17E+28	2.67E+57				
169.769	5.927484	-0.53099	1.17367	2.5707	4.03673	-5.81509		18.1749	21.8146	1.6E+19	5.09E+28	2.6E+57				
158.573	5.910756	-0.46633	1.32088	2.54854	3.92257	-5.38931		19.1369	21.85136	1.7E+19	5.23E+28	2.74E+57	-4.4E+07		1.9E+15	15.2843
157.508	5.997886	-0.45554	1.32362	2.39896	3.64735	-5.37898		19.5837	21.95127	2.2E+19	6.46E+28	4.17E+57	-1E+08		1E+16	16.0204
160.787	6.084383	-0.46288	1.31123	2.29959	3.31487	-5.16354	-22.4702	19.789	22.04864	2.7E+19	9.14E+28	8.36E+57	-1E+08	1.15097	1.1E+16	16.029
141.842	6.02755	-0.4146	1.34415	2.30334	3.30747	-4.71423	-22.3126	19.8364	22.06522	2.7E+19	1.16E+29	1.35E+58	0	1.30921	0	0
123.93	5.927543	-0.26592	1.3309	2.24154	3.20046	-4.35305	-21.8283	19.9637	22.13603	2.7E+19	1.24E+29	1.55E+58	0	1.97691	0	0
100.385	5.809133	-0.06549	1.31051	2.07511	3.20388	-3.83899	-18.8821	20.1701	22.23311	2.8E+19	1.39E+29	1.94E+58	-7050000	34.3348	5E+13	13.6964
115.961	5.955014	-0.1625	1.24415	1.77975	3.18703	-3.65147	-19.3505	20.2448	22.30741	3.6E+19	1.53E+29	2.33E+58	0	25.509	0	0
125.995	6.000931	-0.18056	0.95538	2.03286	3.23384	-3.39072	-19.5906	20.2873	22.36053	4E+19	2.06E+29	4.23E+58	-6550000	21.5203	4.3E+13	13.6325
133.304	5.971929	-0.18766	0.93903	2.112	3.40132	-3.01946	-19.8494	20.3218	22.34125	3.9E+19	2.29E+29	5.25E+58	0	16.5133	0	0
142.262	6.031626	-0.17024	0.91236	1.7832	2.92836	-2.94052	-19.8181	20.3812	22.44614	4.7E+19	2.48E+29	6.17E+58	-1.2E+07	18.4975	1.5E+14	14.1784
140.502	6.039828	-0.1708	0.96619	1.8234	2.84531	-2.7451	-20.2932	20.3748	22.48122	5E+19	3.07E+29	9.44E+58	0	11.8659	0	0
91.9415	5.57857	0.228314	0.94571	1.72303	2.77012	-1.87417	-20.0184	20.1647	22.46177	3.1E+19	3.14E+29	9.88E+58	0	10.0828	0	
92.9607	5.618501	0.211241	1.00458	1.34272	2.45886	-1.49057	-20.0986	20.1265	22.51742	3.5E+19	2.05E+29	4.19E+58	0	9.9263	0	0
92.5582	5.741847	0.156997	1.00993	1.28012	2.0763	-1.3083	-20.0568	20.1949	22.61409	4.4E+19	2.52E+29	6.34E+58	-1.2E+08	12.0074	1.3E+16	
92.7915	5.929496	0.033641	0.9331	1.04971	2.65992	-1.31269	-19.8284	20.411	22.69207	6E+19	3.51E+29	1.23E+59	-7.5E+07	18.6779	5.7E+15	15.7542
91.4924	6.055058	-0.1768	0.75706	1.09917	2.10837	-1.22303	-19.5139	20.4216	22.62576	6.6E+19	4.48E+29	2.01E+59	-1.1E+09	29.7655	1.2E+18	18.0935
100	6.21833	-0.40167	0.60758	1.05615	2.1365	-1.23441	-20.3574	20.2385	22.60517	7.7E+19	4.75E+29	2.25E+59	-8.9E+07	15.4733	8E+15	15.9007

rermt	lngpc	lnedt/	lnedt/	lnint/x	lntds	lm2/g	lnmc	lnstdl	lnltmd	edtg	edtgd	(edtgd	dbtfg	mcap	dbtfg	lgdbt
105.266	6.835126	-1.7103	-0.33168	0.68946	1.7172	-1.54548	-20.9768	20.8783	21.64859	7.5E+19	2.84E+29	8.09E+58	-4.6E+09	15.8395	2.2E+19	19.3344
104.557	7.002233	-1.57728	-0.17179	0.51991	1.35683	-1.42497	-21.6692	20.972	22.06639	1.3E+20	3.85E+29	1.48E+59	-2000	9.6141	4000000	6.60206
99.5242	7.11837	-1.61227	-0.22715	0.82567	1.4347	-1.23614	-21.5977	21.0201	22.19204	1.6E+20	7.2E+29	5.19E+59	-1.5E+07	11.8984	2.3E+14	14.3695
91.5699	6.999909	-1.28456	-0.05667	0.59406	1.27889	-0.92147	-21.7133	21.01	22.4911	1.9E+20	1.17E+30	1.36E+60	0	9.6523	0	0
97.6491	7.189972	-1.23941	-0.01784	0.82888	1.35568	-0.85836	-21.7987	21.5402	22.67667	3E+20	1.74E+30	3.03E+60	0	10.9761	0	0
92.7665	7.374021	-1.25346	-0.43516	-0.13117	0.85006	-0.7725	-22.3436	21.7512	22.86347	4.5E+20	3.39E+30	1.15E+61	0	7.82751	0	0
86.7989	7.38082	-1.18592	-0.40616	0.36046	1.44275	-0.5768	-22.2885	21.6697	23.01167	5.1E+20	5.56E+30	3.09E+61		8.51013		
1417.46	4.596874	-0.58915	1.04849	1.31144	1.44275	-1.91324		17.9555	20.25758	8.6E+17	0	0				
1060.37	4.638803	-0.63712	1.19065	1.87799	2.85369	-1.3647		17.2429	20.33227	9.5E+17	6.53E+26	4.26E+53				
353.249	5.096337	-0.91239	1.56679	2.10022	3.21649	-1.74346		17.4909	20.54287	1.9E+18	1.35E+27	1.81E+54				
284.621	5.094206	-0.79762	1.6489	2.2658	2.9017	-1.43521		17.1322	20.70457	2.3E+18	1.98E+27	3.91E+54				
193.028	5.541079	-1.21365	0.85051	2.45927	3.1528	-1.16841		17.4836	20.75773	3.9E+18	3.92E+27	1.54E+55				
251.087	5.480906	-1.04442	0.94054	2.59255	3.41238	-0.31985		17.5201	20.90386	4.4E+18	4.68E+27	2.19E+55				
264.747	5.554648	-1.01422	1.04072	2.47685	3.72994	0.581125		17.9454	21.03129	5.6E+18	6.91E+27	4.78E+55				
336.949	5.987493	-1.17528	1.32003	2.56185	3.70663	1.042099		17.9272	21.35164	1.2E+19	1.73E+28	2.98E+56				
306.981	5.988514	-1.2101	1.37053	2.79001	3.86975	1.782406		18.217	21.34341	1.3E+19	2.45E+28	5.98E+56				
259.06	5.742362	-0.87655	1.6549	2.80883	4.32658	2.514511		18.5132	21.45874	1.2E+19	2.25E+28	5.06E+56	-202000		4.1E+10	10.6107
158.154	5.503203	-0.50189	2.12356	3.0053	4.21408	3.189641		18.8016	21.62321	1.1E+19	2.46E+28	6.07E+56	-5.1E+07		2.6E+15	15.408
116.148	5.209234	-0.16969	2.42533	3.12733	4.39893	3.865287		18.9697	21.6903	9.3E+18	2.43E+28	5.89E+56	-465000		2.2E+11	11.3349
107.83	5.024446	0.03233	2.46718	2.88894	4.31481	4.525601		18.8834	21.75021	8.4E+18	2.36E+28	5.59E+56	-1.3E+07		1.7E+14	14.228
114.786	5.110431	-0.05345	2.59692	2.45669	4.08861	4.858485		18.465	21.8045	9.8E+18	2.9E+28	8.42E+56	-1.4E+08		1.9E+16	16.2774
143.372	5.291873	-0.16084	2.27636	1.94847	3.82901	4.950151		18.6715	21.90777	1.4E+19	4.14E+28	1.71E+57	-6922000		4.8E+13	13.6805
140.194	5.625867	-0.46684	1.67091	1.72172	3.31416	4.714381		18.445	21.97783	2.1E+19	7.06E+28	4.98E+57	-4E+07		1.6E+15	15.2007
140.47	5.643168	-0.48803	1.63548	1.66535	2.98755	4.842291		18.5687	22.00265	2.2E+19	8.09E+28	6.55E+57	0		0	0
147.39	5.648548	-0.47269	1.54025	1.70198	2.90154	4.98324		18.6287	22.05423	2.4E+19	9.09E+28	8.26E+57	0		0	0
130.903	5.666619	-0.5131	1.82624	1.48065	3.00425	5.140644		18.7767	22.05804	2.6E+19	1.01E+29	1.03E+58	-1.1E+08		1.2E+16	16.0931
119.088	5.541943	-0.52798	1.57154	1.60596	3.03478	5.361037		18.6962	21.94887	2.1E+19	8.37E+28	7E+57	-2.2E+07		5E+14	14.7003
112.704	5.541741	-0.5607	1.67877	1.35994	2.91907	5.495816		18.6789	21.94871	2.2E+19	7.75E+28	6E+57	-2.1E+08		4.2E+16	16.628
109.963	5.450181	-0.43821	1.72304	0.93721	2.35746	5.647847	-22.9961	18.833	22.00897	2.2E+19	7.78E+28	6.05E+57	-5.1E+07	0.60169	2.6E+15	15.4074
105.243	5.472922	-0.43117	1.7569	1.27259	1.95445	5.81093	-22.7762	18.881	22.07291	2.5E+19	9.35E+28	8.74E+57	-1.5E+08	0.79306	2.2E+16	16.3345

Cou	Yea	edt	exp	gdp	m2	mc	gdpc	nwd	edt/g	edt	int	tds/	m2/g	mcap	lntmdl	stmd	grsv	dbtf	cpi	infl
Uganda	2003	5E+09	7E+08	6E+09	2.4E+12	0.742	236.11	1E+09	0.72044	6.327	3.24	9.8045	383.98	1.17E-10	4.42E+09	1.5E+08	17.553	-6E+07		7.8067
Uganda	2004	5E+09	1E+09	8E+09	2.6E+12	1.209	285.96	1E+09	0.60065	4.731	3.22	8.8532	333.32	1.52E-10	4.63E+09	1.4E+08	21.154	-1E+08		15.588
Uganda	2005	4E+09	1E+09	9E+09	3.1E+12	1.143	313.8	1E+09	0.49221	3.471	2.31	10.794	344.08	1.27E-10	4.36E+09	7.9E+07	20.279	-5E+07	4.5	-1.7412
Uganda	2006	1E+09	2E+09	1E+10	3.6E+12	1.163	335.8	9E+08	0.12791	0.837	1.68	5.5899	363.45	1.17E-10	1.13E+09	1.5E+08	8.1275	-4E+09	4.5	2.4056
Uganda	2007	2E+09	2E+09	1E+10	4.4E+12		387.78	1E+09	0.13667	0.817	0.69	2.6992	371.16	0	1.6E+09	2.6E+07	6.8296	-2E+07	4.5	7.3212
Uganda	2008	2E+09	4E+09	1E+10	5.8E+12	21.32	454.4	1E+09	0.15697	0.646	0.7	2.3626	400.66	1.48E-09	1.81E+09	4.6E+08	13.332	-7E+06	4.5	6.3643
Uganda	2009	3E+09	4E+09	2E+10	6.8E+12	23.7	480.87	2E+09	0.17316	0.729	0.67	2.133	430.14	1.5E-09	2.5E+09	2.4E+08	4.552	0	4.5	14.567
Uganda	2010	3E+09	4E+09	2E+10	9.4E+12	10.4	505.99	2E+09	0.17284	0.727	0.68	1.8419	545.82	6.05E-10	2.95E+09	2.6E+07	12.92	-2E+06	4.5	9.5499
Uganda	2011	3E+09	4E+09	2E+10	1E+13	45.93	478.62	3E+09	0.19383	0.82	0.62	1.4781	616.28	2.73E-09	3.23E+09	2.6E+07	15.408	0	4.5	5.0141
Uganda	2012	4E+09		2E+10	1.2E+13	36.69	547.01	2E+09	0.18957		0.6	1.4195	609.77	1.85E-09	3.74E+09	2.6E+07		0	4.5	23.178
South Af	1980		3E+10	8E+10	3.4E+10		2920.78						0.418				33.9435		5	24.9146
South Af	1981		2E+10	9E+10	3.9E+10		3073.12						0.4544				27.1713		5	9.92726
South Af	1982		2E+10	8E+10	4.5E+10		2764.29						0.5592				20.5432		5	13.9364
South Af	1983		2E+10	9E+10	5.1E+10		2893.73						0.5927				24.2968		5	16.5688
South Af	1984		2E+10	9E+10	6.1E+10		2792.01						0.7171				22.5385		5	11.5197
South Af	1985		2E+10	7E+10	7E+10		2142.15						1.0438				24.6792		5	16.8006
South Af	1986		2E+10	8E+10	7.6E+10		2475.04						0.958				23.336		5	17.0617
South Af	1987		3E+10	1E+11	9.1E+10		3158.59						0.8751				21.8067		5	14.4975
South Af	1988		3E+10	1E+11	1.2E+11	109.92	3398.64						1.0087	9.59E-10			22.7167		5	15.1832
South Af	1989		3E+10	1E+11	1.4E+11	104.88	3621.52						1.1161	8.4E-10			22.4922		5	17.2588
South Af	1990		3E+10	1E+11	1.6E+11	123.2	3182.21						1.3921	1.1E-09			19.1115		5	15.5215
South Af	1991		3E+10	1E+11	1.8E+11	139.74	3345.81						1.5189	1.16E-09			18.5736		5	15.727
South Af	1992		3E+10	1E+11	1.9E+11	79.686	3557.11						1.4392	6.11E-10			16.2505		5	14.5712
South Af	1993		3E+10	1E+11	2E+11	131.9	3479.92						1.5313	1.01E-09			16.4418		5	13.0876
South Af	1994	2E+10	3E+10	1E+11	2.4E+11	166.45	3546.67	0	0.15961	0.722	2.93	9.36759	1.7401	1.23E-09	1.39E+10	7.74E+09	16.882		5	9.59401
South Af	1995	3E+10	3E+10	2E+11	2.7E+11	185.64	3862.81	2.6E+07	0.16781	0.737	3.72	9.54104	1.8142	1.23E-09	1.57E+10	9.67E+09	16.524	0	5	10.2503
South Af	1996	3E+10	4E+10	1E+11	3.1E+11	168.07	3593.28	2.3E+08	0.18124	0.733	4.01	11.5838	2.1797	1.17E-09	1.52E+10	1.08E+10	16.1387	0	5	8.08966
South Af	1997	3E+10	4E+10	1E+11	3.7E+11	155.95	3636.17	1.8E+09	0.20208	0.822	3.79	17.2332	2.4803	1.05E-09	1.91E+10	1.09E+10	15.1454	0	5	8.10648
South Af	1998	2E+10	3E+10	1E+11	4.2E+11	126.77	3205.17	1E+09	0.18451	0.719	4.25	12.1717	3.1236	9.44E-10	1.33E+10	1.14E+10	15.235	0	5	7.71041
South Af	1999	2E+10	3E+10	1E+11	4.7E+11	197.08	3102.81	6.7E+08	0.18196	0.718	4.11	12.1143	3.4933	1.48E-09	1.34E+10	1.08E+10	15.8703	0	5	7.07323

Cou	Yea	edt	exp	gdp	m2	mc	gdpc	nwd	edt/g	edt	int	tds/	m2/g	mcap	lntmdl	stmd	grsv	dbtf	cpi	infl
Ghana	2006	4E+09	5E+09	2E+10	4.4E+09	15.84	929.946	1.9E+09	0.18081	0.718	1.993	5.56889	0.2132	7.76E-10	2.52E+09	1.2E+09	16.49	-4E+09	4	10.915
Ghana	2007	5E+09	6E+09	2E+10	6E+09	9.6141	1099.08	2.4E+09	0.20654	0.842	1.682	3.88386	0.2405	3.88E-10	3.83E+09	1.3E+09	11.49	-2E+07	4	10.733
Ghana	2008	6E+09	7E+09	3E+10	8.3E+09	11.898	1234.44	4.1E+09	0.19943	0.797	2.283	4.19839	0.2905	4.17E-10	4.34E+09	1.3E+09	9.3419	-7E+06	4	16.522
Ghana	2009	7E+09	8E+09	3E+10	1E+10	9.6523	1096.53	4.3E+09	0.27677	0.945	1.811	3.59265	0.3979	3.72E-10	5.86E+09	1.3E+09	15.296	0	4	19.251
Ghana	2010	9E+09	9E+09	3E+10	1.4E+10	10.976	1326.07	5.9E+09	0.28956	0.982	2.291	3.8794	0.4239	3.41E-10	7.05E+09	2.3E+09	14.837	-2E+06	4	10.708
Ghana	2011	1E+10	2E+10	4E+10	1.8E+10	7.8275	1594.03	1.2E+10	0.28551	0.647	0.877	2.33979	0.4619	1.98E-10	8.5E+09	2.8E+09	27.439	0	4	8.7268
Ghana	2012	1E+10	2E+10	4E+10	2.3E+10	8.5101	1604.91	1.1E+10	0.30546	0.666	1.434	4.23234	0.5617	2.09E-10	9.86E+09	2.6E+09	21.501	0	4	9.1608
Uganda	1980	7E+08	2E+08	1E+09	1.8E+08		99.174	2E+08	0.5548	2.853	3.71	17.352	0.1476		6.28E+08	6.3E+07	1.8962			
Uganda	1981	7E+08	2E+08	1E+09	3.4E+08		103.42	2E+08	0.52881	3.289	6.54	24.94	0.2555		6.76E+08	3.1E+07	9.8706			
Uganda	1982	9E+08	2E+08	2E+09	3.8E+08		163.42	3E+08	0.40156	4.791	8.17	18.205	0.1749		8.35E+08	3.9E+07	3.6739			
Uganda	1983	1E+09	2E+08	2E+09	5.3E+08		163.07	4E+08	0.4504	5.201	9.64	23.401	0.2381		9.81E+08	2.8E+07	5.0052			45.944
Uganda	1984	1E+09	5E+08	4E+09	1.1E+09		254.95	5E+08	0.29711	2.341	11.7	30.337	0.3109		1.04E+09	3.9E+07	7.5692			25.277
Uganda	1985	1E+09	5E+08	4E+09	2.6E+09		240.06	5E+08	0.35189	2.561	13.4	41.676	0.7263		1.2E+09	4.1E+07	6.5644			120.34
Uganda	1986	1E+09	5E+08	4E+09	7E+09		258.44	4E+08	0.36269	2.831	11.9	40.716	1.788		1.36E+09	6.2E+07	6.5668			137.28
Uganda	1987	2E+09	5E+08	6E+09	1.8E+10		398.41	5E+08	0.30873	3.744	13	47.93	2.8352		1.87E+09	6.1E+07	3.4183			180.99
Uganda	1988	2E+09	5E+08	7E+09	3.9E+10		398.82	6E+08	0.29817	3.937	16.3	75.685	5.9441		1.86E+09	8.2E+07	4.6651			189.98
Uganda	1989	2E+09	4E+08	5E+09	6.5E+10		311.8	7E+08	0.41622	5.233	16.6	67.632	12.361		2.09E+09	1.1E+08	5.652	-202000		115.45
Uganda	1990	3E+09	3E+08	4E+09	1E+11		245.48	8E+08	0.60539	8.361	20.2	81.364	24.28		2.46E+09	1.5E+08	5.5941	-5E+07		44.38
Uganda	1991	3E+09	2E+08	3E+09	1.6E+11		182.95	1E+09	0.84392	11.31	22.8	74.8	47.717		2.63E+09	1.7E+08	8.8503	-465000		26.019
Uganda	1992	3E+09	3E+08	3E+09	2.6E+11		152.09	1E+09	1.03286	11.79	18	59.657	92.351		2.79E+09	1.6E+08	13.76	-1E+07		45.068
Uganda	1993	3E+09	2E+08	3E+09	4.1E+11		165.74	1E+09	0.94796	13.42	11.7	46.017	128.83		2.95E+09	1E+08	10.965	-1E+08		30.137
Uganda	1994	3E+09	3E+08	4E+09	5.6E+11		198.72	1E+09	0.85143	9.741	7.02	27.499	141.2		3.27E+09	1.3E+08	15.483	-7E+06		6.8485
Uganda	1995	4E+09	7E+08	6E+09	6.4E+11		277.51	1E+09	0.62698	5.317	5.59	19.837	111.54		3.51E+09	1E+08	13.472	-4E+07		9.3764
Uganda	1996	4E+09	7E+08	6E+09	7.7E+11		282.36	8E+08	0.61383	5.132	5.29	18.202	126.76		3.59E+09	1.2E+08	19.788	0		4.5725
Uganda	1997	4E+09	8E+08	6E+09	9.1E+11		283.88	7E+08	0.62332	4.666	5.48	20.171	145.95		3.78E+09	1.2E+08	20.902	0		3.0953
Uganda	1998	4E+09	6E+08	7E+09	1.1E+12		289.06	7E+08	0.59863	6.211	4.4	20.796	170.83		3.8E+09	1.4E+08	18.516	-1E+08		8.7857
Uganda	1999	4E+09	7E+08	6E+09	1.3E+12		255.17	8E+08	0.5898	4.814	4.98	18.524	212.95		3.41E+09	1.3E+08	16.704	-2E+07		-0.1131
Uganda	2000	4E+09	7E+08	6E+09	1.5E+12		255.12	7E+08	0.57081	5.359	3.9	10.564	243.67		3.41E+09	1.3E+08	14.356	-2E+08		11.117
Uganda	2001	4E+09	7E+08	6E+09	1.7E+12	0.602	232.8	9E+08	0.64519	5.602	2.55	7.06	283.68	1.03E-10	3.62E+09	1.5E+08	15.525	-5E+07		4.5345
Uganda	2002	4E+09	7E+08	6E+09	2.1E+12	0.793	238.16	1E+09	0.64975	5.794	3.57	9.7992	333.93	1.28E-10	3.86E+09	1.6E+08	16.479	-1E+08		-3.1696

rermt	lngpc	lnedt/	lnedt/	lnint/x	lntds	lm2/g	lnmc	lnstdk	lnltmd	edtg	edtgd	(edtgd	dbtfg	mcap	dbtfg	lgdb
92.2275	5.464278	-0.32789	1.84483	1.1754	2.2823	5.950603	-22.8684	18.8154	22.20869	2.9E+19	1.16E+29	1.35E+58	-5.8E+07	0.74171	3.4E+15	15.5285
95.4658	5.655866	-0.50975	1.55406	1.17078	2.28285	5.809102	-22.6054	18.7238	22.25667	3.8E+19	1.73E+29	2.99E+58	-1.2E+08	1.20901	1.3E+16	16.1216
100	5.748753	-0.70885	1.24451	0.83621	2.18078	5.840865	-22.7886	18.1901	22.19512	4E+19	1.91E+29	3.64E+58	-5E+07	1.14269	2.5E+15	15.4057
99.9558	5.816528	-2.0564	-0.17747	0.51849	2.37897	5.89565	-22.8729	18.8134	20.84383	1.3E+19	5.65E+28	3.19E+57	-3.6E+09	1.16265	1.3E+19	19.1011
103.015	5.96044	-1.99019	-0.20192	-0.36839	1.72096	5.916643		17.091	21.19459	1.9E+19	2.48E+28	6.13E+56	-2E+07		3.9E+14	14.5858
106.313	6.118987	-1.85172	-0.43621	-0.35427	0.99295	5.993118	-20.3337	19.9429	21.31572	3.3E+19	5.33E+28	2.84E+57	-6680000	21.3198	4.5E+13	13.6496
105.421	6.1756	-1.75356	-0.3158	-0.39384	0.85974	6.064107	-20.3182	19.276	21.64006	4.3E+19	9.8E+28	9.61E+57	0	23.6967	0	0
111.373	6.226512	-1.75538	-0.31837	-0.39091	0.75752	6.302288	-21.2266	17.0821	21.80377	5.1E+19	1.4E+29	1.96E+58	-2186000	10.3963	4.8E+12	12.6793
106.307	6.170898	-1.6408	-0.199	-0.47242	0.61081	6.423695	-19.7188	17.0821	21.89711	5.5E+19	1.63E+29	2.66E+58	0	45.9344	0	0
124.615	6.30446	-1.663		-0.51761	0.39077	6.413085	-20.1106	17.0821	22.04307	7.5E+19	2.44E+29	5.97E+58		36.6882		
155.7674	7.979607					-0.87236										
163.8723	8.030449					-0.78876										
155.2799	7.924539					-0.5812									..	
170.9105	7.9703					-0.52308										
150.77	7.934516					-0.33255										
114.4914	7.669566					0.042891										
105.6874	7.814014					-0.04292										
119.2797	8.057881					-0.1334										
112.6573	8.131131					0.008625	4.69973									
113.1131	8.19465					0.10982	4.65279									
116.2947	8.065332					0.330803	4.8138								123.199	
121.0421	8.115464					0.418012	4.93977								139.738	
125.0521	8.176704					0.364117	4.37809								79.6855	
122.7355	8.154766					0.426125	4.88201								131.896	
117.4839	8.173764	-1.83505	-0.32558	1.07445	2.23726	0.553946	5.11468	22.7695	23.35745	2.9E+21	0	0		166.448		
114.1948	8.25915	-1.78493	-0.30532	1.31246	2.2556	0.595629	5.22381	22.9926	23.47597	3.8E+21	8.3E+31	6.9E+63		185.64		
105.1249	8.18682	-1.70793	-0.31075	1.38907	2.4496	0.779179	5.12438	23.1058	23.44574	3.7E+21	9.49E+31	9.01E+63		168.07		
110.8832	8.198687	-1.59911	-0.19651	1.3323	2.84684	0.908361	5.04951	23.1146	23.67524	4.5E+21	1.17E+32	1.36E+64		155.946		
101.8141	8.07252	-1.69006	-0.32955	1.44606	2.49912	1.138996	4.84241	23.1607	23.31363	3.3E+21	1E+32	1E+64		126.774		
96.28173	8.040065	-1.70395	-0.33096	1.41373	2.49439	1.250834	5.28361	23.1042	23.31997	3.2E+21	8E+31	6.4E+63		197.08		

Cou	Yea	edt	exp	gdp	m2	mc	gdpc	nwd	edt/g	edt	int	tds/	m2/g	mcap	lntmdl	stmd	grsv	dbtfg	cpi	infl
South Af	2000	3E+10	4E+10	1E+11	5E+11	154.24	3019.95	4.7E+07	0.18926	0.679	3.21	9.86837	3.7539	1.16E-09	1.56E+10	9.55E+09	15.7815	0	5	8.80954
South Af	2001	2E+10	4E+10	1E+11	6E+11	117.95	2638.16	1.4E+08	0.20533	0.682	3.1	11.3602	5.0602	9.96E-10	1.6E+10	8.36E+09	15.5612	0	5	7.66693
South Af	2002	3E+10	4E+10	1E+11	7.1E+11	166.18	2439.99	1.6E+08	0.27889	0.847	2.98	12.6571	6.383	1.5E-09	2.29E+10	8.05E+09	16.6911	0	5	10.7495
South Af	2003	4E+10	5E+10	2E+11	8E+11	159.16	3647.7	8.6E+07	0.21747	0.78	2.14	6.07663	4.7784	9.46E-10	2.84E+10	8.22E+09	15.6578	0	5	5.55023
South Af	2004	4E+10	6E+10	2E+11	9.1E+11	207.92	4695.04	6.2E+08	0.18976	0.718	1.97	4.90704	4.1515	9.49E-10	3.04E+10	1.12E+10	15.0359	0	5	6.37189
South Af	2005	5E+10	7E+10	2E+11	1.1E+12	228.86	5234.31	2.1E+08	0.19447	0.71	2.56	6.88722	4.4436	9.26E-10	3.38E+10	1.43E+10	14.495	0	5	5.44467
South Af	2006	6E+10	8E+10	3E+11	1.3E+12	273.95	5468.3	7038000	0.21455	0.715	2.73	8.58344	5.1576	1.05E-09	3.54E+10	2.06E+10	14.3681	0	5	6.52761
South Af	2007	7E+10	9E+10	3E+11	1.7E+12	291.28	5930.13	7038000	0.24239	0.77	2.62	4.99886	5.8298	1.02E-09	4.53E+10	2.4E+10	14.2735	0	5	8.07895
South Af	2008	7E+10	1E+11	3E+11	1.9E+12	179.86	5597.97	3935000	0.24915	0.694	2.25	5.75663	7.0081	6.58E-10	4.26E+10	2.55E+10	15.5118	0	5	8.00644
South Af	2009	8E+10	8E+10	3E+11	1.9E+12	248.19	5758	5.6E+09	0.27211	0.996	2.8	5.37964	6.8592	8.74E-10	5.6E+10	2.13E+10	15.4872	0	5	8.29677
South Af	2010	1E+11	1E+11	4E+11	2.1E+12	174.91	7266.08	5.6E+09	0.28176	1.03	3.48	5.98326	5.7344	4.82E-10	8.06E+10	2.17E+10	16.4135	0	5	7.2032
South Af	2011	1E+11	1E+11	4E+11	2.3E+12	130.16	7942.83	5.2E+09	0.28667	0.979	3.25	5.27053	5.613	3.24E-10	9.46E+10	2.05E+10	16.1059	0	5	6.04195
South Af	2012	1E+11	1E+11	4E+11	2.4E+12	159.33	7507.67	3.8E+09	0.35778	1.266	3.56	7.86785	6.1726	4.15E-10	1.1E+11	2.79E+10	13.1566	0	5	5.4582

rermt	lngpc	lnedt/	lnedt/	lnint/x	lntds	lm2/g	lnmc	lnstdt	lnltmd	edtg	edtgd	(edtgd	dbtfg	mcap	dbtfg	lgdbt
93.24928	8.012994	-1.66465	-0.38706	1.16587	2.28933	1.322801	5.03852	22.9801	23.47022	3.3E+21	8.1E+31	6.56E+63		154.241		
82.28946	7.877836	-1.58315	-0.38342	1.13033	2.43011	1.621396	4.77029	22.8461	23.4941	2.9E+21	7.25E+31	5.25E+63		117.953		
70.47466	7.79975	-1.27694	-0.16595	1.09319	2.53822	1.85363	5.11304	22.8094	23.85576	3.4E+21	8.37E+31	7.01E+63		166.175		
91.32098	8.201853	-1.52571	-0.24845	0.75992	1.80445	1.564116	5.06994	22.8295	24.06843	6.2E+21	1.91E+32	3.64E+64		159.164		
99.64417	8.454262	-1.66202	-0.33106	0.67836	1.59067	1.423459	5.33715	23.1387	24.13702	9.1E+21	3.33E+32	1.11E+65		207.919		
100	8.562991	-1.63749	-0.34215	0.93992	1.92967	1.491475	5.43312	23.3819	24.24276	1.2E+22	4.93E+32	2.43E+65		228.862		
96.12756	8.606723	-1.53922	-0.33544	1.00532	2.14984	1.640469	5.61294	23.7469	24.2909	1.5E+22	7.02E+32	4.93E+65		273.949		
90.37516	8.687801	-1.41722	-0.26129	0.96503	1.60921	1.76298	5.67427	23.9032	24.53702	2E+22	1.11E+33	1.24E+66		291.275		
80.42449	8.630159	-1.38972	-0.36475	0.81106	1.75035	1.947064	5.1922	23.9605	24.47488	1.9E+22	1.29E+33	1.66E+66		179.863		
87.66187	8.658346	-1.30156	-0.00365	1.03081	1.68262	1.925589	5.51419	23.7813	24.74841	2.2E+22	1.49E+33	2.23E+66		248.189		
101.2358	8.890972	-1.26669	0.02924	1.24822	1.78897	1.746489	5.16428	23.802	25.11299	3.7E+22	2.87E+33	8.25E+66		174.911		
99.13001	8.980025	-1.24943	-0.02127	1.1794	1.66213	1.725077	4.86874	23.7453	25.27345	4.6E+22	4.74E+33	2.24E+67		130.157		
93.72427	8.923681	-1.02783	0.23601	1.26933	2.06279	1.820118	5.07095	24.0507	25.4204	5.3E+22	6.09E+33	3.7E+67		159.326		