A LONGITUDINAL ECONOMETRIC ANALYSIS OF THE EFFECT OF DEBT BURDEN ON INVESTMENT AND GROWTH IN SUB-SAHARAN AFRICA

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SEPTEMBER, 2016

DECLARATION

I declare that this is an original thesis carried out by me in the Department of Economics, Delta State University, Abraka.

Nsonwu, Modestus Chidi

Date: ----------

Student

CERTIFICATION

We certify that this thesis on A Longitudinal Econometric Analysis of the Effect of Debt Burden on Investment and Growth in sub-Saharan Africa was carried out by Nsonwu, Modestus Chidi of the Department of Economics in partial fulfillment of the requirements for the award of Doctor of Philosophy Degree (Ph.D) in Economics of Delta State University, Abraka.

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DEDICATION

This thesis is dedicated to God Almighty and my late parents Mazi Lawrence Nsonwu and Mrs. Celine Nsonwu

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Abstract

This thesis on Longitudinal Econometric Analysis of the effect of Debt Burden on Investment and Growth was carried out on fifteen indebted countries in sub-Saharan Africa over a time period of sixteen years (1998 – 2013). Longitudinal data approach was used since the research involved both time series and cross sectional data. Secondary data obtained from World Bank Development Indicators, World Bank, International Debt Statistics, Central Banks of the Countries and Debt Management Bureaus in the selected countries were used in the research. STATA package version 11 was used in the data analysis and the results show that total debt has a significant and negative effect on the economic growth of sub-Saharan African countries, debt service has a significant and negative effect on economic growth of sub-Saharan African countries, Total debt has a significant and negative effect on investment of sub-Saharan African countries and debt service has a significant and negative effect on Investment in sub-Saharan African countries. A unit increase in debt service resulted in approximately 19.839 unit decrease in GDP and 3.296 unit decrease in investment in the SSA countries. Also a unit increase in total debt resulted in 7.909 unit decrease in GDP and 0.590 unit decrease in investment in the SSA countries. The implication of these results are that the debt burden from the findings distorted human capital and infrastructural development and economic advancement in the sub-Saharan African countries due to debt overhang on investment and crowding out effect on economic growth. The main recommendation from the findings of this study is that SSA countries should not continue to procure public debts as such debts actually depress growth and investment. Loans should be applied on investment in infrastructures that promotes productivity and human capital development. The study also recommends that economies of sub Saharan African countries should apply loans only on beneficial capital investments capable of liquidating itself rather than spend it on recurrent expenditure. Only external loans with favourable terms and conditions should be sort for by the countries to avoid excessive debt burden on the economies.

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CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

The act of borrowing creates debt and such debt could be internal or external. It is external when it is borrowed from outside the country and internal when it is borrowed from within the country. Debt can further be classified as private or public. It is private debt when it is owed by individuals and private sector businesses to their lenders within and outside the country. Public debts are debts owed by the government of a nation borrowed within or outside the territorial boundary of the nation.

The need for public debt is necessitated because of the role of capital in the development process of any economy as capital accumulation improves productivity, which improves economic growth. There is abundant evidence in the existing body of literature to indicate that external debt enhances the growth and development of a nation.

Countries generally borrow for two major reasons. The first is to increased investment and human capital development and the second to lessen budget constraint by financing fiscal deficits and balance of payment deficits (Soludo 2003). It has been noted that countries, especially the developing countries borrow to increase capital formation and investment that have been hampered by low level of domestic savings (Obadan and Uga, 2007). Ultimately the reasons why countries borrow narrow down to two major reasons which are to bridge the "savings-investment" gap and the "foreign exchange gap". Chenery (1966) added that countries borrow to supplement the lack of savings and investment in that country. The dual-gap theory explains the use of external debt to bridge the savings-investment gap in a nation. For development to take place it requires a level of investment which is a function of domestic savings and the level of domestic savings is not adequate enough to guarantee development (Oloyede, 2002).

Countries borrow from overseas (external debt) as well to bridge the foreign exchange (imports-exports) gap. For many developing countries like Nigeria the persistent balance of payments deficits have not allowed for capital inflow which will bring about growth and development. Since the income from exports required to

execute this investment is insufficient, foreign debt may be the last resort to gaining access to the resources required to attain rapid economic growth.

Foreign borrowing is a major source of public supply and financing capital formation in any economy (Adepoju *et al*, 2007). It is a means by which countries fill the deficits and execute economic projects that increase the living standard of the people and promote sustainable growth and development. Hameed, Ashraf and Chaudary (2008) opined that foreign borrowing should enhance economic growth especially when internal financing is inadequate. External debt also increases the overall factor productivity through increment in output that enhances Gross Domestic product (GDP) of a nation. Foreign debt increases the capital formation of a nation which is used in infrastructural development, human capital and provision of basic amenities that facilitates the well being of the citizen. The need for foreign borrowing cannot be overemphasized as it is a keen stimulant of growth and hence improves standards of living and poverty alleviation.

The continuous need for countries to borrow to finance fiscal deficits led to the accumulation of external debt (Osinubi and Olaleru, 2006). It is broadly accepted in the international development community that too much external debt in most developing nations is a great barrier to their economic growth and stability (Audu, 2004; Blavy, 2006). Developing countries in sub-Saharan Africa (SSA) have often accumulated big sum of foreign debts that resulted in trade debt arrears at high interest rates. Gohar and Butt (2012) stated that excessive debt service payments create tremendous problems for nations particularly the developing nations which serviced debts for more than the amount it was contracted and this weighs down the growth process in such nations. The inability of the SSA's to meet their debt service payments obligations has resulted in debt overhang or debt service burden that has militated against her growth and development (Audu, 2004).

The debt burden has, for many years, remained a recurring and dissonant note in the discussion of the crisis and contradictions of Africa's development. This is, however, not entirely surprising given its magnitude and the consequences for Africa. The collective debt burden of the continent represents a massive underutilization of

Africa's huge resource base, both human and material, and the failure of policy measures targeted at the management of those resources. Expectations were high in the decade of the 1960s, when most African countries gained political independence. Africa's emerging leaders assumed that with the abundance resources under their control, they were bound to record steady progress in the area of sustainable democratic governance and development.

The 1980's debt crisis came as a key macroeconomic setback for many developing nations. Following this, different studies were carried out to find out the cause, consequence and as a possible solution to the way out from the crisis. According to Krumma (1985) the debt crisis traced back to the economic and political situations of many poor countries in 1970's. During that period, many developing countries got an extended access to foreign loans and spend more on public expenditure. Beside this many of the countries were not prepared for the second oil shock which happened in the late 1970's. During the early 1980's (1980 - 1983) the world economic recession following the oil shock and a reaction from lender countries resulting in high interest rate, a decline in official lending and a delayed adjustment programme made the situation very difficult for many developing countries. The outcome was that the economic growth of many sub-Saharan African countries declines adversely.

Empirical evidence in 1980's from World Bank Report indicated an average annual rate of growth of real gross domestic product (GDP) in sub-Saharan Africa (SSA) countries was 1.7%, The annual per capita income declined at an average rate of 2.2% and terms of trade knock down by 9.1%. In line with the above, the population growth rate in the region amounted to 0.9 % annual average growth rate of real GDP per capita. Due to this, the decade of 1980's is taged as "lost decade" for Africa in terms of opportunities for development.

The World Bank Report in 2004 generalized the possible factors for the poor economic performance in SSA to domestic factors and external factors. As per the report: high population growth rate(which leads to a reduction in per capita welfare) ,insignificant human capital development, poor infrastructure; which in

turn affects development in the private sector and inappropriate government policies beside with ethnic conflicts and political instability. In the other side, the successive oil price shock (1973 -1974 and 1978-1979), an alarming decrease in terms of trade and a recession in the industrialized countries which increased the interest rate categorized as external factors by the report.(World Bank Report, 2004).

According to Cordella and Ruiz-Arranz (2005), the original cause for the debt crisis was the excessive borrowing by government to service their accumulated debt. This happened due to the inverse correlation between the real interest rate in the international market and the total real Gross Domestic Product GDP growth rate in the heavily indebted poor African countries (HIPCs). During most of the years in the decade of 1970's, the real long –term rate of interest in the developed world fell well short of the real growth rate of GDP by HIPCs. This opened a viable decision for the country to service their accumulated debt by making new borrowing, instead of generating resources to service the debt. This has resulted to large fiscal deficits experienced by many countries in SSA.

Krumma, (1985) was of the opinion that, if the existing foreign loan improves the productive capacity of the borrowing country. It is needless to take additional foreign loan to service the original debt. According to Blavy,(2006): if marginal productivity of each available external debt is greater than or equal with the principal and the interest payment , external debt will have a positive impact on the economy of the borrowing country. This will accordingly require the external debt to be invested in productive sectors and infrastructures that will enhance the productivity of other sectors. On this scenario external debt servicing doesn't affect economic growth adversely. But, if the indebted country is unable to meet its debt service obligations, it will likely lose its' credit worthiness; and this might affect the economic performance of the borrowing country by reducing the availability of foreign credit.(Freytag and Pehnelt, 2009).

In general this study will try to analyse the effect of debt burden on investment and economic growth on selected fifteen indebted sub Saharan African countries.

1.2 Statement of the Problem

Governments in many countries particularly the SSA have run persistent annual fiscal deficits. Fiscal deficit occurs when expected revenues are insufficient to fund government spending, meaning that the state must borrow money either internally or externally.

Many countries in SSA run large and often semi-permanent fiscal deficits which have increased their foreign indebtedness. In Nigeria for example which has run fiscal budget deficits for several years now has incurred huge foreign debt. Nigeria's foreign debt balance was US$28.35 million in 2001 which was about 59.4% of GDP from US$8.5 million in 1980 which was about 14.6% of GDP (WDI 2013). The debt increased in 2003 when US$2.3 billion was used to service the external debt. In the year 2005 the Paris Club group of creditor nations forgave 60% (US$18 billion) of US$30.85 billion debt accrued by Nigeria. Despite the debt relief of US$18 billion received by Nigeria from the Paris club in 2005 the situation remains the same (Boboye and Ojo, 2012). This experience is same for many other SSA countries as the impact of World Bank HIPC initiatives in 2012 is yet to reflect in the economies of the beneficiary countries.

A number of reasons can be put forward, some of them short-term and others linked to deeper fiscal issues, for this state of affairs. According to Boboye et al, (2012), some of the reasons that have led to persistent fiscal deficits in Africa particularly the SSA include:

i. High levels of tax avoidance and tax evasion

ii. High levels of income and wealth inequality

iii. Demographic pressures or rapid growth in population

iv. Government inefficiency and corruption

v. High levels of government subsidies and poverty alleviation programmes

vi. High spending on financing wars, tackling insurgency and terrorism, fighting outbreak of diseases such as Cholera, Ebola and others – most African countries over some decades now are beseeched with civil wars, insurgency, militancy and terrorism.

A major part of their budget is used to finance the fight against these trends and diseases.

External debt burden is one of the major problems faced by the developing countries in sub-Saharan Africa. Gohar, Bhutto and Butt, (2012) mentioned that the repayment or "debt service" creates problems for many countries especially for developing countries because a debt to be serviced is greater than the real sum it was contracted for. Therefore, large payments for debt service create constraints on a country's growth scenario. Either, it drains out scarce resources or limit resource inflows required for the development of these countries.

Benedict and Nguyen, (2003) suggested that foreign borrowing has a positive impact on investment and growth of a country up to a threshold level but debt service has the potential to affect economic growth since resources are used in the repayment of the debt rather on the investments. Furthermore, Fosu (2009) noticed that debt service moves spending away from the social, health and educational sectors. This has shown that the aim of borrowing is for development but debt service has created a great hindrance in the economic growth of a country due to high interest payments on the external debt using foreign exchange earnings to repay that debt.

According to World Development Indicators (WDI-2011) developing nations suffered greater debt burden more than the developed countries. For instance over the period of 1990-2010 countries like the United State of America (USA), United Kingdom (UK), and Japan paid nothing in terms of debt service obligations.

In general Debt burden presents the following features in an economy:

i. In some cases the size of the debt might be huge in relation with the economy size of the borrower and this leads to a possible capital flight and moreover it discourages private investment.
ii. Servicing a debt by export earnings may affect economic growth by depleting available income for social service activities.
iii. Inefficient debt management also has a direct macro economic effect on the borrowing countries.

In particular, debt burden may affect investment and economic growth in two

ways:-

a. Through the debt overhang effect:- a situation when an accumulated debt, discourages and overhang investment, particularly private investment; as investors expect an increase in tax by government to repay the accumulated debt.
b. Through debt crowding out effect, this happens when earnings from export is used to repay the accumulated debt. This affects investment adversely.

It is no exaggeration that this is the major challenge faced by most countries in SSA including Nigeria. The inability of these SSA countries to effectively meet its debt servicing requirements has exposed the nations to a high debt service burden. The resultant effect of this debt service burden creates additional problems for their economies particularly the increasing fiscal deficit which is driven by higher levels of debt servicing. This poses a severe threat to the nations as huge sum of their hard earned revenue is being eaten up. The question then becomes why has external borrowing not accelerated the pace of growth in the economy of SSA countries?

Various empirical studies have been conducted to investigate the impact of debt burden on economic growth in SSA countries and have arrived at different results using the same scope of study (see Benedict & Nguyen, 2003; Fosu, 2009; Hunt, 2007; Ayadi, 2008). These results were hampered by limited scopes and methodologies adopted by the researchers.

This study focuses on determining the long run relationship between debt burden on investment and economic growth by expanding the scope of study beyond what has been done in times past. This will be in the area of number of countries to be used in the cross sectional data, increased period of time and improved methodology in data analysis.

This study covered a period of sixteen years from 1998 to 2013. Fifteen countries in sub-Saharan Africa were selected for the study. They include;

i. Angola
ii. Burundi
iii. Cameroon

iv. DR Congo

v. Ethiopia

vi. Ghana

vii. Kenya

viii. Malawi

ix. Mali

x. Mozambique

xi. Nigeria

xii. Rwanda

xiii. Tanzania

xiv. Uganda

xv. Zimbabwe

The countries listed above were chosen based on the availability of consistent data series over the study period.

1.3 Research Questions

The following research questions will be examined in this study;

i. Is there any relationship between total debt and economic growth of sub-Saharan African countries?

ii. Is there any significant relationship between debt service and economic growth of sub-Saharan African countries?

iii. Is there any significant relationship between total debt and investment in sub-Saharan African countries?

iv. Is there any significant relationship between debt service and investment in sub-Saharan African countries?

1.4 Objectives of the Study

The main objective which this study aimed at is to undertake an empirical investigation into the effect of debt burden on investment and economic growth of selected fifteen indebted sub-Saharan African countries. The Specific objectives are to determine:

I, The profile of public debt in the selected sub-Saharan African countries over the period of sixteen years.

ii. If total debt has any effect on the economic growth of sub-Saharan African countries.

iii. If debt service has any effect on economic growth of sub-Saharan African countries.

iv. If total debt has any effect on investment of sub-Saharan African countries.

v. If debt service has any effect on investment of sub-Saharan African countries.

vi. Based on the findings make recommendations for appropriate debt management framework for the SSA countries.

1.5 Hypotheses of the Study

The following hypotheses were tested in this study.

i. H_0: Total debt has no effect on economic growth of sub-Saharan African countries.

ii. H_0: Debt service has no effect on economic growth of sub-Saharan African countries.

iii. H_0: Total debt has no effect on investment of sub-Saharan African countries.

iv. H_0: Debt service has no effect on investment of sub-Saharan African countries.

1.6 Justification of the Study

Sub-Saharan Africa is made up of developing countries faced with the challenges of infrastructural bottlenecks and capital inadequacy and therefore often ends up borrowing repeatedly from foreign countries and international financial institutions. This has resulted to huge total debt and high debt service obligations. This study is relevant as it provided, based on its findings far-reaching suggestions on how the debt burden in sub-Saharan Africa countries can be reduced. The international community is becoming relatively closer in terms of financial resources that can be used in the developmental process of any nation. This study will therefore make recommendations for appropriate debt management framework for the SSA countries.

1.7 Significance of the Study

This study is significant as it provided alternative measures to tackling the challenges of debt burden in fifteen sub-Saharan African countries including Nigeria. The study provides an empirical framework to guide loan procurement and debt service in these countries. This work also provides the basis for further research and documentation on Africa's external debt crisis. Thus the study is beneficial to researchers as well as local and international lending agencies as proper utilization of debt will go a long way in improving the level of investment and hence economic growth in the selected sub-Saharan African countries.

1.8 Scope of the Study

The study covered a period 1998 and 2013. Fifteen indebted sub-Saharan African countries were selected for the study. Therefore, the period of study and countries were chosen on the basis of available consistent data series for the macroeconomic variables used. Data from World Bank Development Indicators (WDI), World Bank International Debt Statistics, Central Banks of the selected countries and Debt Management Bureaus of these countries were used for the study.

1.9 Acronyms and Abbreviations

Debt Service (DS): Debt service is the sum of principal repayments and interest paid in currency, goods, or services on long-term and short-term debts to the IMF and other creditors.

Debt Service Coverage Ratio (**DSCR**). This measures the ratio of earnings available for debt servicing to interest and principal payments.

External Debt (EXD): External debt is debt owed to foreigners repayable in currency, goods, or services. It is the sum of public, publicly guaranteed and private nonguaranteed long-term debt, use of IMF credit, and short-term debt from other creditors.

Gross Domestic Product (GDP): This is the value of total final goods and services produced within a country in a given year. The GDP used in this study is measured at purchasing power parity (PPP).

Highly Indebted Poor Countries (HIPC): The heavily indebted poor countries are a group of 38 developing countries with high levels of poverty and debt overhang which are eligible for special assistance from the International Monetary Fund (IMF) and the World Bank.

Internal Debt/Domestic Debt/Public Debt (IND): This is the cumulative total of all government borrowings less repayments within the country denominated in a country's home currency.

Investment/Gross fixed capital formation (INV): Formerly gross domestic fixed investment includes: Land improvements (fences, ditches, drains, and so on); plant, machinery, and equipment purchases; and roads, railways, and the like, including schools, offices, hospitals, private residential dwellings, and commercial and industrial buildings.

Net Present Value (NPV): The net present value is defined as the difference between the present values of incoming cash flows and cash outlays over a period of time.

Official Exchange Rate (OER): Official exchange rate between two currencies is the rate at which one currency will be exchanged for another. It is the value of a country's currency in terms of another currency.

Purchasing Power Parity (PPP): Purchasing power parity is the estimate of what the exchange rate between two currencies would have to be in order for the exchange to be at par with the purchasing power of the two countries' currencies.

Sub Saharan Africa (SSA): Sub-Saharan Africa is the area of the continent of Africa that lies south of the Sahara desert excluding Sudan.

CHAPTER TWO

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

This second chapter discussed the review of related literatures and the theoretical framework of the study. Issues here are discussed under the following sub headings:

i. Conceptual Framework

ii. The Origin of Debt Crises in LDCs

iii. Theories of Debt

iv. Macroeconomic Consequences of the Debt Burden on Investment and Growth

v. Africa's Debt Crisis and its Sustainability

vi. Debt Crisis and the HIPC Initiative

vii. Review of Empirical Studies on the Effects of the Debt Burden in SSA

viii. Synthesis of the Literature Review and Relevance to the Study

ix. Theoretical Framework

2.1 Conceptual Framework

A sum owed to a person or organization for money borrowed is called debt. Debt can be a loan note, bond, mortgage that has repayment terms which include interest payment. Debt can be classified into public debt and private debt.

Private debt is owed by individuals and private businesses to their lenders. It includes personal loans between friends and family, credit card, bank loans, and corporate bonds issued by private companies. In Nigeria for example, public debt is owed by federal, state or local government bodies or by public organisations. Public debt includes government bonds, sovereign debt, whereby one country borrows money from another and from international financial institutions including IMF and World Bank.

When money is borrowed debt is created and these debts could be internal or external. This study will focus on both public external and internal debt burden. External or foreign debt refers to the part of a nation's debt that is borrowed from creditors outside the nation and internal debt or domestic debt refers to debt owed to creditors inside the nation. Freytag *et al* (2009) defines external debt as that portion of a country's debt that is borrowed from foreign sources such as foreign corporations,

government or financial institutions. According to (Ogbeifun, 2007), external debt arises due to the gap between local savings and investment. The larger the gap the more debt is acquired for the country to remain afloat. Furthermore Obadan and Uga (2007) stated that countries of the less developed nations borrow to increase capital formation which has been hampered by low level of local savings. Ultimately countries borrow for two major reasons of bridging the "savings-investment" gap and the "foreign exchange gap". Chenery (1966) noted that countries borrow to supplement the shortage of savings in that country. The dual-gap analysis reinstated the need for external borrowing as means to bridge the savings-investment gap in a nation. For a nation to develop it requires certain level of investment which is a function of domestic savings that may not be enough for such development to take place (Oloyede, 2002).

Many countries in SSA have frequently had semi-permanent fiscal deficits as result of structural fiscal issues such as;

i. Increasing levels of tax evasion and avoidance.

ii. Inequality in income and wealth distribution**.**

iii. Sharp increase in population.

iv. Inefficiency in public sector and corruption.

v. Payment of subsidies and poverty alleviation programmes.

vi. High government expenditure on financing wars, tackling insurgency and terrorism, fighting outbreak of diseases such as Cholera, Ebola and others – most African countries over some decades now are beseeched with civil wars, insurgency, militancy and terrorism. A major part of their budget is used to finance the fight against these trends and diseases.

External debt also is the debt borrowed by the government of a nation from other nations or from international financial institutions repayable in foreign currency, goods and services and reverse of this for domestic debt.

Emerging countries in Asia have proved domestic savings as the spine of sustainable development process. This fact has attracted the attention of academics and development partners as attested by the extensive body of empirical studies on the impact of domestic savings on real output. Another fact is that economies of developing countries particularly in Africa are characterized by (i) low domestic savings in volume

and as a share GDP and (ii) the absence of both tangible and adequate policies to improve domestic savings.

With a poor financial system; African countries are faced with the challenges of mobilizing capital domestically to meet their huge investment needs. It is critical that these countries explore ways to tap into their domestic markets since they don't have free access to global capital markets. This approach is viable as it has the advantage making these countries less dependent on international capital markets.

It also reduces the uncertainty associated with the collection of funds to finance the development of infrastructure systems or support other macroeconomic policy priorities. Indeed, the two fold goal of generating sustained economic growth and making a dent in the level of poverty is unattainable for African countries unless substantial direct investments in the creation, expansion and maintenance of infrastructure are made. Put differently, domestic direct investment through domestic capital markets should be the centerpiece of the much-needed infrastructural transformation in African countries.

According to the World Bank's African Development Indicators, gross domestic savings as a proportion of GDP across African countries is comparatively low. It roughly stood at 20, 17 and 21 percent in the 1980s, 1990s and 2000s, respectively. Comparatively, these figures were 28, 32 and32 per cent respectively for Asian countries over the same periods.

It is noteworthy that the major share of domestic savings by African households is in the form of non-financial assets. The existing challenges encountered in mobilizing of resources are compounded drastically by reduction in the pool of resources available through the domestic financial capital market. A likely consequence of such situation is a rampant savings-investment gap.

Debt crisis occurs when a country has accumulated a huge amount of debt such that it can no longer effectively manage the debt which leads to distortions in the domestic political economy (Adejuwon *et al.,* 2011). Mimiko (1997) defined debt crisis as a situation when a nation is severely indebted to external bodies and is unable to repay the principal of the debt.

Debt crisis may affect investment and economic growth in two ways:-

a. Through the debt overhang effect:- a state when an accrued debt, dampens

and overhang investment, especially private investment; as private investors anticipate an increase in tax by government to repay the accumulated debt.

b. Through debt crowding out effect; a situation when earnings from export are used to repay the accumulated debt. This equally affects investment.

2.2 Origin of Debt Crisis in LDCs

The origin of debt crisis in Less Developed Countries including sub Saharan African can be attributed to major events that affected the world economies but leave great consequences on the economy of SSA.

The quadrupling of crude-oil price following the Egypt –Israel war of October 1973 led to disorder in the international market. To neutralize the effect, producers in the industrialized world increased market price both in the local and international market. This created inflationary pressure around the industrialized world and left many of the developing countries with severe balance of payment issues. This was because the economies of these LDC's were not well developed to withstand the price shocks due to the increase in the cost of crude oil and imported foreign goods.

The shortfall in the current account balances in LDCs increased from 8.7 billion US$ in 1973 to US$ 42.9 billion in 1974 and US$ 51.3 billion in 1975. As a result many of them resorted to borrowing from banks in the international capital market (ICM). This also created an opening for most banks to channel the funds generated from dollar-based oil exporting countries to fiscal deficit oil-importing countries and by 1978 foreign indebtedness had risen significantly from US$130 billion in 1973 to US$336 billion (WDI 1982).

The decision taken by the Organization of Petroleum Exporting Countries (OPEC) to increase the value of crude oil from US$ 13 per barrel to US$ 32 per barrel brought about the second oil price stun. The response from the industrial world for the second oil price shock was similar to that of the first period. At the end of 1979 the United States of America adopted a tight monetary policy and was followed by other developed nations namely UK, Germany, France, Italy and Japan. This further worsened the condition of LDC that continued on their massive borrowing from the developed world at a higher interest rate. For instance the London Inter-Bank Offered Rate (LIBOR) rose from 9.5 percent in mid-1978 to 16.6 percent in 1981. The

corresponding increase in external debt outstanding rose from US$336 billion in 1978 to US$662 billion in 1982 (WDI, 1988).

The increase in interest rate along with other factors contributed to the severe world recession of 90's. This posed additional problems for LDCs as it led to a fall in the price and volume of their exports which reduced their export earnings. Furthermore the recession made the developed economies to reduce the amount of imported goods which also reduced LDCs export earnings. Due to a USA's high interest Rate, bankers were willing to loan money to the US than the LDCs.

The rapid appreciation of the US Dollar also worsen the situation worse for LDCs as their debt service payments increased as a result of this. The debt crisis situation is highly linked with the inability of most developing countries to meet their debt service payment obligations.

External indebtedness represents one of the main problems faced by Sub Saharan African countries in recent times. A more vital issue is the impacts and the sustainability of this huge indebtedness, which is not only a burden to the present generation, but also a glaring tool to inhibit the prospects of the future generations. Indeed, several literature abound as to the effects of this huge and growing indebtedness which includes capital flight, disincentive to private investment, erosion of hard earned foreign exchange from exports, etc (Ajayi, 2012).The mounting concern now is on the welfare implications of the indebtedness as they impact on the poor, and especially the most vulnerable, namely women and children in particular. There are broadly held views that debt related challenges such as growing debt repayments are partly responsible for Africa's low growth rate, increasing unemployment and poverty. Regrettable, most Less Developed Countries (LDCs) are now categorized by their indebtedness (e.g. Highly Indebted Poor Countries HIPC, etc)

. Also critical is the persistent nature of the LDCs external indebtedness that has made it very difficult to understand. Ironically, Africa that is endowed with rich resources is helplessly inhibited by these debt challenges irrespective of several strategies prescribed by several agencies. This dilemma underscores the need for deeper understanding of the issues in debt accumulation by the LDCs and the consequent impact on poverty which explains the mysteries of debt-poverty nexus.

In the view of Ajayi (2012), the problem of external debt is becoming more severe for several reasons. First, there is the massive increase of debt comparative to the size of the economy, which will not only result to capital flight but also discourage private investment. Apart, from this, the huge debt servicing payments that tend to take away a large portion of the annual domestic savings. Consequent to the debt burden, the executions and the likely benefits of diverse adjustment programmes in LDCs have been exposed added to the crippling effect of debt management system on the output.

2.3 Theories of Debt

Various theories of debts are reviewed under this topic. They include;

i. Debt Overhang Theory

ii. Debtcum – Growth Model

iii. The Threshold School of thought (Debt-Laffer CurveThesis)

iv. Profligacy Theory

v. External Debt within the context of the Solow Growth Model

2.3.1 Debt Overhang Theory

Debt overhang is the situation in an institution (business, nation, or household) that accumulated debt so much that it finds it difficult to borrow additional money, even when that new borrowing is in fact a high-quality investment that would more than pay for itself. This problem emerges, for example, if a company has a new investment project with positive net present value (NPV), but will not utilize the opportunity due to high level of accumulated debt, the equity holders will not be willing to invest in such a venture because nearly all the profit will be taken by the debt holders who will not be willing to finance the new project. This situation renders the NPV of the new project negative.

The risk of having too much debt is that earnings from future new invested is being appropriated to existing lenders. This problem was first discussed by Myers (1977).

The concept of debt overhang has been applied to sovereign governments, predominantly in developing countries (Krugman, 1988). It narrated a condition where the debt of a country exceeds its future capacity to repay it.

The relationship between a country's foreign debt and growth has mostly based on the negative effects of "debt overhang." Krugman (1988) explains debt overhang as

a condition where the projected settlement on external debt is lower than the contracted value of debt. If the external debt of a country exceeds its capacity to repay, the expected debt service eats deep into the debtor country's output. Thus, larger part of the country's domestic earnings is effectively "taxed away" by existing foreign creditors and domestic and foreign investors and thus economic growth is discouraged.

The concepts of debt overhang theory centered on the negative effects of external debt on investment in physical capital. A high level of external debt can hamper government's ability to execute structural and fiscal reforms, since larger part of earnings from both domestic and foreign are used to repay foreign creditors. This condition has severe adverse effects on low-income countries, where accelerated structural reforms are required for sustainable rapid economic growth.

Debt overhang also dampens investment and growth by escalating uncertainty. As the amount of external debt increases, there is increasing uncertainty as regards the measures government will resort to in order to pay its debt obligations, with negative effects on investment. In particular, as external debt accumulates, expectations are that government will increase tax in order to service its debt obligations service obligations Freytag and Pehnelt (2009).

Excessive debt can also lead to capital flight if the private investors fears imminent devaluation and/or increases in taxes to service the debt (Abrego and Ross, 2001). The theoretical literature suggests that external debt has a positive effect on investment and growth up to a given level; away from this level, however, its effect is adverse. As indicated in Cohen (1997), the relationship linking the face value of external debt and investment can be represented as a kind of "Laffer curve": as accumulated debt increases beyond a threshold level, the expected repayment starts to fall due to the adverse effects explained above.

The implication is that a rise in the nominal debt gives rise to an increase in repayment up to the "threshold" level; along the "wrong" side of the debt Laffer curve. Given the positive effects of capital accumulation on economic activity, a similar type of Laffer curve linking foreign debt and growth could also be expected.

2.3.2 Debtcum – Growth Model

The first thought in the debtcum – growth theory is the substituting school of thought. It explains foreign debt as an alternative to domestic savings and investment and so domestic savings and investment are crowded out as the effect (Krugman, 1988). The idea is that the returns from investing in a nation are being constrained to a high tax by creditors and this discourages domestic and foreign investors. This is the familiar debt overhang theory. Foreign debt is also used for current expenditure instead of investment. However, studies by Sachs and Keen (1990) and Cohen (1997) present endogenous growth models where capital accumulation is the driving force for growth.

2.3.3 Threshold School of Thought (Debt - Laffer Curve Thesis)

The burden of external debt is the concern of threshold school of thought which stresses the non-linear relationship between debt and growth (Calvo, 1998). It connects debt and growth to the challenges of capital flight where at high debt levels growth falls. The theory postulates that a fall in growth is due to the higher distortionary tax burden on capital needed to service the debt. It leads to lower rate of return on capital, lower investment and, hence, lower growth. It upholds that low debt regimes have greater growth rate and lower strand of thought in the debt – growth nexus sees foreign debt as capital inflow with positive impact on domestic savings and investment and thus on growth which leads to poverty alleviation through precise target on domestic savings and investment (Calvo, 1998). Such external capital inflows aid to finance a chronic deficit of domestic savings over investment, the gap in the current account. There should be no problem with the theory as the funds are channeled into production investment that permits the country to grow and produce future export earnings to repay the loan.

2.3.4 Profligacy Theory

The profligacy thesis attempts to correct the weakness of growth – cum debt theory by focusing on the institutional arrangement under which a loan was contracted. The profligacy thesis, a section of the system stability theory, identifies that the debt crisis is a product of weak institutions and policies that have wasted resources through corruption and damaged standard of living and development. These policies caused distortion in comparative prices and encouraged capital flights – as observed in

considerable foreign cash of private citizens of debtor countries in foreign banks. (Nyoni, 1997) In summary, many factors are identified as responsible for the dissonance between debt and growth in low income countries. These include (1) unfavourable terms of trade (ii) waste of resources as a result of deficient policies, poor governance, and weak institutions in public sector dominated economies (iii) inadequate debt management reflected in unrestrained borrowing at unfavorable terms. (iv) non-concessional lending and in financing policies motivated in part by the desire of lenders to promote their own exports (Sichula, 2012) (v) political factors such as social strive or tension with devastating economic consequences Nyoni, 1997).

External debt is the amount at anytime, or disbursed funds and outstanding contractual liabilities of residents of a country to repay principal to nonresidents (IMF external debt statistics guide for compilers and users, 2003). Although, the text formulated from experiences of the debt distress of some middle-income countries (MICs), in Latin America in the 1980's the theoretical framework developed is still applicable to the low-income countries (LICs) particularly, of those located in sub-Saharan Africa in some peculiar way. This is because these countries have mostly witnessed the debt overhang' problem and gross economic malfunctioning of economic policies as well as underdevelopment. In the neoclassical debt paradigm, there exist a direct relationship between debt and growth; this is based on the assumption of ideal movement of capital in terms of international exchange and deployment of resources from one country to another. Hence, the general presumption is that debt burden exerts a "weighing own" effect on the rate of development and growth; through several channels related to the debt stock and consequent debt servicing.

According to Easterly and Schmidt Hebbel (1991), the flow of impact of debt on the performance of the economy typically crowding out public investments and consequently a larger debt service discourages public investments. It drains up government budget resources and decreases money available for profitable investments. Although, the traditional neoclassical models may have explained the cause effect" relationship between debt and economic growth, it has been criticized for its flawed and unrealistic assumptions of perfect mobility of capital which in the real world has been known not to be perfect due to trade sanctions embargoes, restrictions and political instability. Presbitero (2004) investigated the relationship existing between foreign

indebtedness and economic performance in poor countries. Presbitero (2004) after carefully considering the theoretical argument supporting the neoclassical models in his work “the debt-growth nexus: an empirical analysis” opines that the negative effects of foregn debt are due To Whom It May Concern: the crowding out of public investment, because of the effect of debt services payment expression of a single dynamic that relies on net transfer from southern poor countries to feed the expansion of northern or western countries, thereby perpetuating the development of some countries at the expense of poverty.

Caliari (2013), submits that no proposal of solution developed in the area of international trade can be effective in supporting the development of southern countries without sufficiently contemplating the foreign debt problem suffered by them. Perhaps, the more interesting aspect of Caliari’s theoretical work is the sufficient explanation of some of the ways in which imbalances nurture each other. Such areas include commodity prices and devaluated currencies of the Low Income Countries (LICs), low value added products exported from the Low Income Countries, low level of technological and intermediate goods, investment and unfavourable trade related conditionalities attached to debt relief and loans. Exploring earlier on Caliari’s (2013) and Presbitero (2004) line of argument, Akperan Adams (2011) further submits that the growth of sub-Saharan African (SSA) countries is strongly circumcised by the debt overhang existing in the region. According to Akperan Adam (2011), the debt squeeze is responsible for the mass poverty in Sub-Saharan African countries. Given, the decline in capital flows and exports, low and slow out- put and large scale poverty being experienced,

Akperan (2011) recommends that the prospecting of solving the debt, growth and poverty crisis will depend on output growth, increasing domestic savings, export growth and higher direct foreign investment. Other solutions recommended are the lowering of interest rates, deeper debt relief, coordinated effort by debtors and creditors and corporation of the international community to consider debt forgiveness or cancellation by the creditors countries of the north in a direct response to the agitation carried out by curl society groups and national government of the heavily indebted poor countries {HIPCS} and low income countries (LICs). Sachs (1990) and Fosu (1996) sees external debt burden as the main reason for slowing economic growth of the

heavily indebted countries. Because of huge debt overhang, private investments are hampered and debt service payments of some countries are so much that the chances to the paths of growth are dim, not even when the countries apply stringent economic measures.

It is argued that a debt overhang has negative impact on growth in the very long run. External debt has had a severe impact on African countries, exacerbating the problems arising from sharp declaration in primary commodity prices, (Green and Khan 1990). The debt burden is an impediment to economic recovery. This constraining influence of external debt burden became more pronounced as the African economies failed to grow substantially to minimize the burden to a sustainable level. Debt is heavily tied to the public domain; the responsibility for debt service also falls heavily on the public sector. The heavy debt services payments have inevitably put great pressure on budgets, leading to rising fiscal deficits in the heavily indebted countries (Iyoha 1999). The implications of these are many, one of which is that increased tax to service the debt and reduce the deficit, has the effect of inhibiting investment on the debt overhang effect.

High debt services affect public investment in education and social services as a result of stiff demand of high debt service payments on the budget. This diversion of resources from public investment to debt service payments is related to the "Crowding out" hypothesis. The overhang effect of heavy debt burden has been most deliberating in many debtor African countries; this has highly affected many high yielding investments in human capital accumulations, investments in technology and physical infrastructure, e.t.c. in such debtor's countries therefore remain unexploited (John and Sammy 2001). Iyoha (1999) in his econometric analysis of the effect of external debt on economic growth in SSA countries found empirical support for the negative effect of debt overhang. The analysis showed that Sub- Saharan Africa's foreign debt stock and debt service payments act to inhibit investment and reduce the rate of economic growth. Indeed, gross domestic investment decline in Africa in the 1980's and 1990's. Not only has debt overhang hampered incomes, investment and living standards, it has also critically constrained the scope of macro-economic policy making and has destructive impact on economic and financial institution. (Green and Kahn 1990).

It has been argued that huge debt service payments by indebted Less Developed Countries impede their growth (World Bank, 1989). The resulting debt

overhang discourages investment and affects future output negatively because of the revenue generated by production and exports is used To Whom It May Concern: repay current debt obligation. The high cost of debt servicing is one of the reasons of under investment in Latin American and the Caribbean, resulting in a paltry 1.3 percent growth per annum in real per capita terms for the region over the last decade (Leipziger, 2001). A country suffering from external debt burden do less investment and as a result abandon projects with a positive net present value (Kappagoda and Alexander, 2004). Investment occurs because the stocks of debt act as an implicit tax on new investment; a country's government raises the resources required for debt service by increasing business taxes. A rise in public debt increases the private sectors expected future tax burden. Because of higher taxes, the benefit of new investment is diverted from the private sector to the existing debt holders; this also reduces the private sector's incentive to invest. In conclusion, a country having huge debt overhang will not be unable to pay its debt obligation, obtain new loan and to invest as much as it should. Metwally and Tamaschke (1994), conclusions were that, due to the reduction in economic growth via investment, namely debt overhang, they argued that debt overhang is a significant factor influencing slowdown in investment. Debt overhang theory is on the basis that if debt surpasses the country's capacity to pay, the debt service will be greater than the country's output level. Thus some returns from domestic investment are grossly taxed away by existing external creditors and domestic and new foreign investors are discouraged and economic growth is hindered.

Geiger (1990) explained that some of the ways high debts affect economic development are that large debt services obligations divert export earnings and capital from internal investment to principal and interest payments. The inability of developing country to service the debt promptly affects its credit and if the problem persist the nation will eventually have difficulty borrowing for new projects… the serious impact of declining foreign investment and rising debt service payment, definitely posses a problem for the developing nations. The debt overhang reduces the country efficiencies; so much as it makes it more complex for the country to adjust to major shocks and international financial fluctuations.

Hoeffler, and Ankle (2012) say that the scope of debt overhang is much under in that the effects of debt which do not only affect investments in physical capital but

any activity that involves in carrying cost up, such activity includes investments in human capital and in technology acquisition whose effects on growth may be even stronger overtime. High debt overhang discourages private investments depending on how the nation will generate income required to finance external debt services and whether private and public investments are complementally, for example government resorts to inflation tax or to a capital levy; private investment is likely to be discouraged. The HIPC initiative launched jointly by the World Bank and the international monetary fund in 1996 has identified the effects high external debt has on economic performance. The presence of high debts has different effects on countries, not only related to their macro-economic performance, but also to the political and institutional aspects.

Huge debts could hinder the efficacy of structural reforms fashioned to boost growth and poverty reduction (Were, 2001). The flow of debt on economic performances are due to the so-called crowding out of public investment, which states that a larger debt service discourages public and private investment, since it drains up resources from the government budget and decreases the amount of fund available for productive investment. High external debt also shrinks total spending in poverty alleviation programs and in health and education services (Easterly and Schmidt-Habbel, 1991). Poor outcome with Regards, to both growth and investment has been widespread among highly indebted countries since 1982, aggravating the burden of foreign obligations relative to domestic resources and worsening the debt situation. In fact, this disappointing economic performance undoubtedly reflects the policy unbalances that gave rise to the debt problem in the first place (World Economic Outlook, April 1986).There is also a widespread view that the debt burden has itself exacerbated the economic situation in highly indebted countries. This view is based on the observation that the significant reduction in the current account deficit of these countries since 1982 was achieved through a large drop in domestic investment, which presumably had adverse effects on their growth performance. Proponents of this view, which is sometimes labeled the “debt overhang” hypothesis, argue that when foreign debt becomes excessive, actual payment to creditors become linked to the economic growth of the indebted country. Therefore, possible increases in debt repayments suppress the returns to productive investment and depress capital formation. Debt

overhang occurs when countries are not able to pay their debt in full and so actual payments are determined by some negotiating process between the debtor country and its creditors (Ndikumana, 2004).

2.3.5 External Debt within the Context of the Solow Growth Model

The Solow-growth model was published in 1956 as a seminar paper on economic growth and development under the title, "A contribution to the theory of economic growth". Like most economic growth theories, Solow growth model is built upon some assumptions:

- Countries will produce and consume only a single homogenous good.
- Technology is exogenous in the short run.

The Solow growth model is developed based on a Cobb - Douglas production function given by the form:

$Y = F(K, L) = K^{\alpha} L^{1-\alpha}$ …….2.1

Where

Y = output

K = Capital input

L = Labor input

α and $1-\alpha$ are output elasticity's of capital and labor respectively and α is a number between 0 and 1.

The other important equation from the Solow growth model is the capital accumulation equation expressed in the form:

$\acute{K} = sY - dK$…….2.2

Where:

$\acute{K}$ = change in capital stock

sY = gross investment

dK = depreciation during the production process

With mathematical manipulation Solow derives the capital accumulation equation in terms of per worker i.e. $\acute{k} = sy - (n+d)k$. This implies that the change in capital per worker is a function of investment per worker, depreciation per worker and population growth. Of these three variables only investment per worker is positively related with change in capital per worker.

The Solow growth model is formulated on a closed economy that uses labour and capital as its input in production. Under this scenario the effect of external debt on growth can be seen via its effect on the domestic saving and investment in a closed model. The general impact of foreign debt on the Solow growth model can be examined by considering the individual effects of the debt overhang and debt crowding theories on the Solow growth model. According to the debt overhang hypothesis, the government in an attempt to amortize the accrued debt will raise tax on the private business (as a medium of transferring resources to the public sector). This will discourage private sector investment and also decrease government spending on infrastructure as earnings are diverted to debt service payments instead of being put into good use. This will lead to a reduction of total (private and public) investment in the economy and a shift downward of both the investment and production function curves in Solow growth model. Likewise in the case of crowding out, in a move to pay their accumulated debts use their earnings from export and in some cases transfer resources including foreign aid and foreign exchange resources to service their forthcoming debt. Those countries which transfer earnings from export which could have been used in investing in the economy to avoid huge debt payments will discourage public investment. This in turn will decrease economic growth and will shift both the investment and production function curves in Solow growth model downward (Presbitero, 2013).

2.4 Macroeconomic consequences of Debt Burden

Topics discussed here include;

i. Consequences of Debt Burden on Economic Growth

ii. Consequences of Debt Burden on Investment

iii. Debt burden and Debt Service Capacity

2.4.1 Consequences of Debt Burden on Economic Growth

The basic characteristics of an internal debt are much dissimilar from that of the foreign debt. In external debt, at the time of repayment there is a real movement of resources. In case of domestic debt, however, since it is borrowed from individuals and institutions within the country repayment will mean only a re-distribution of resources without causing any change in the total resources of the economy. Hence there is no

burden caused by domestic debts because all payments set off each other in the aggregate economy as a whole. Whatever is taxed from one sector of the economy servicing the debts is distributed among the bond-holders by way of repayment of loans and interest; and most often, the bond-holder and the tax-payer might be the same person. As the resources of the tax-payers (the debtors) are reduced, so will the revenue of creditors/ bond-holders will increase, but the aggregate position of the economy will, nevertheless, remain the same.

According to Fosu (2010), internal debt may involve a direct actual burden on the economy according to the nature of the series of transfer of incomes from tax payers to the public creditors. To the extent the tax-payers and the bond-holders are the same, the distribution of wealth will remain unchanged; thus there will not be any net actual burden on the economy. The distribution of income will change when the bond-holders and the tax-payers are of diverse income-groups, therefore the payments might increase, the net actual burden of the economy increases. That is to say, there will be a direct real burden of domestic debts, if the percentage of taxes paid by the rich is smaller than the percentage of public securities held by the rich. This usually happens in practice. The bulk of government securities are held majorly by the rich and even a progressive taxation generally will be not be able to counter-balance the revenue earned by them from such securities. Hence, the resultant increase in inequalities yields a net direct real burden of an internal debt on the economy. Moreover, the resources used in the service of domestic debt are, by and large, funds from the fresh to the older generations and from the active to the inactive enterprises.

Quresh and Ali (2010) stated that most governments in SSA impose taxes on enterprises and earnings from productive efforts for the benefit of the idle, inactive, stale, easy class of bond-holders. When high taxation is imposed to meet interest charges on debt, government might limit expenditure in social amenities which may also adversely affect the community's ability to work and save, causing a reduction the overall economic well being to an extent.

In the case of external debts, the indirect actual burden for borrower is more apparent as any burden of taxation is limiting tax payer's ability to work and save which is irredeemable because there is outflow of funds to service the debt and resources are reduced in the economy. It has, hence, been argued that the indirect actual

burden of public debt can be reduced by minimising the cost of servicing it, through reduction in the rate of interest. Furthermore, the adverse effect of high taxes would be avoided if new money is issued for its service. Moreover, a right public expenditure i.e., a productive government loan, that is generated during recession or to carry out public works programmes of building socio-economic overheads, will result in a rise in the ability to work, save and invest, thereby, extenuating any direct actual burden caused by taxation needed for debt service. And public debts which are self-liquidating have, of course, the least indirect real burden on the economy.

2.4.2 Consequences of Debt Burden on Investment

There have been various definitions in research that underline the external debt, investment and economic growth relationship but the general one is the debt overhang. Majority have called it the debt overhang paradox. The theory was first argued in 1977 by Myers. This concept was based on a company's decision of borrowing using the net present value of the new project proposal of the firm.

Later writers like Krugman (1998) and Sachs (1984, 1986) see it as a country's debt condition and its capacity to pay the debt service obligation and how it will benefit from debt relief from its creditors. A country experiences debt overhang when the existing stock of debt exceeds its capacity service and repay the debt which is determined by the country's output level.

Krugman (1988) and Sachs (1989) stated that debt overhang occurs when the country's debt service burden is so severe that a large proportion of the current output is paid to foreign lenders and consequently creates disincentive to invest as investors (particularly foreign) will be discouraged as their profits will likely be taxed away as a measure by government to service its accumulated debts. Debt service is considered an implicit tax that discourages investment and depresses economic growth thereby making it almost impossible for highly indebted countries to escape poverty (Clements et al. 2003 et al. Ogunlana 2005). The hypothesis suggests that if there is the possibility in the future that external debt will be more than the nation's capacity to repay; the expected debt-service costs would discourage further internal and external investment (Pattillio, 2002). It has been observed that debt overhang occurs at the climax of the debt Laffer curve. High debt service burden depresses investment and economic growth

as resources that might have funded public investments are used to service debt. This led to initiative of debt relief to the Heavily Indebted Poor Countries.

It was noted that growth declined during the 1980s when debt accumulated and accelerated in the 1990s when debt reduction occurred. Several models have been developed and tested on highly indebted countries to show that external debt accumulation affects economic growth through decrease in investment. Other models tested using panel data for 29 HIPCs from 1984 to 2000 indicated some variables that affect the accumulation of external debt. These variables may vary from exchange rate, interest payments and control variables like governance indictors (Seetana and Durbarry, 2007). A key model mostly used to express this relationship is the neoclassical growth model that tends to show which variables show the most significant link (Adegbite and Ayadi, 2008).

2.4.3 Debt Burden and Debt Service Capacity

External debt burden is the manifestation of the complexity emanating from debt service. This might be as a result of inability to create sufficient resources to meet commitments in debt servicing. The debt burden is a ratio of total foreign debt and the gross national income meant to financing past consumption (Ogunlana, 2005). Therefore, when excessively large portion of current resources is used to service foreign debt the burden increases. The reverse is the case when foreign debts are serviced without conciliating the requirements of domestic economic development.

A nation's capacity to meet up with its debt obligations is measured by Debt Service Coverage Ratio (DSCR). Debt service coverage ratio is the ratio of export earnings of a nation and principal payments and interest on a country's external debts. A DSCR greater than one means the nation has sufficient export earnings to pay its present debt requirements. A DSCR lower than one means the nation lack capacity to service and repay its foreign debt obligations.

Muhanji and Ojah (2011) observed two key issues on debt capacity. The first addresses what the best debt level should be in order not to run into debt service difficulty. The second have to do with how the debt situation can be sustained with the policies.

The borrowing country's external solvency state was discussed in the "debt dynamic" model. Hence the consideration of the worth of exports that gives a better

position of earnings in foreign currency which is used to service debt (World Bank, 1988, Hernandez, 1988). However, because of the postulation of a time-variant growth path for exports and the rate of interest, the use of the debt dynamics model also has limitations in assessing the sustainability of a borrower's debt. In spite of the shortcomings of the growth-cum-debt and the debt dynamic models, they are useful in determining external debt capacity.

2.5 Africa's Debt Crisis and its Sustainability

In this segment we discuss the debt crisis and its sustainability in the fifteen selected sub Saharan African countries used for this study.

2.5.1 Debt Crisis in the Selected SSA Countries

Fifteen sub Saharan African countries were selected from the regions of Africa for the study. Below is the review of historical effect of debt crisis on the economy of the countries.

Debt Crisis on Nigeria Economy

The total external debt stocks, (current US$) in Nigeria was $13,791,940,000 as of 2013. This indicator has fluctuated in value for the past 43 years, between $36,689,360,000 in 2004 and $836,678,000 in 1970. Total Debt service on foreign debt (TDS, current US$) in Nigeria was $486,424,000 as of 2013. This indicator fluctuated in value for the past 43 years, between $8,807,116,000 in 2005 and $94,469,000 in 1971 (World Bank, International Debt Statistics, 2014).

According to World Development Indicators (WDI-2014), Nigeria's economy is striving to leverage the country's vast wealth in fossil fuels in order to displace the poverty that affects about 33% of its population. The coexistence of this enormous wealth in natural resources and extreme poverty in Nigeria is referred by economists as the "resource curse", although "resource curse" which has led to maladministration of resource by the citizens of the nation.

In 2005, Nigeria had an understanding with the Paris Club of lenders to cancel all of its bilateral foreign debt. The lenders agreed to forgive the majority of country's debt while Nigeria will pay off the remaining part using the oil revenues. Nigeria's economy is extremely inept outside the oil sector. More so, human capital is

underdeveloped. The debt forgiveness did not in any way impact positively to the living standard of the citizen.

From 2003 to 2007, Nigeria tried to implement an economic reform program called the National Economic Empowerment Development Strategy (NEEDS). The purpose of the NEEDS was to raise the country's standard of living through a variety of reforms, including macroeconomic stability, deregulation, liberalization, privatization, transparency, and accountability.

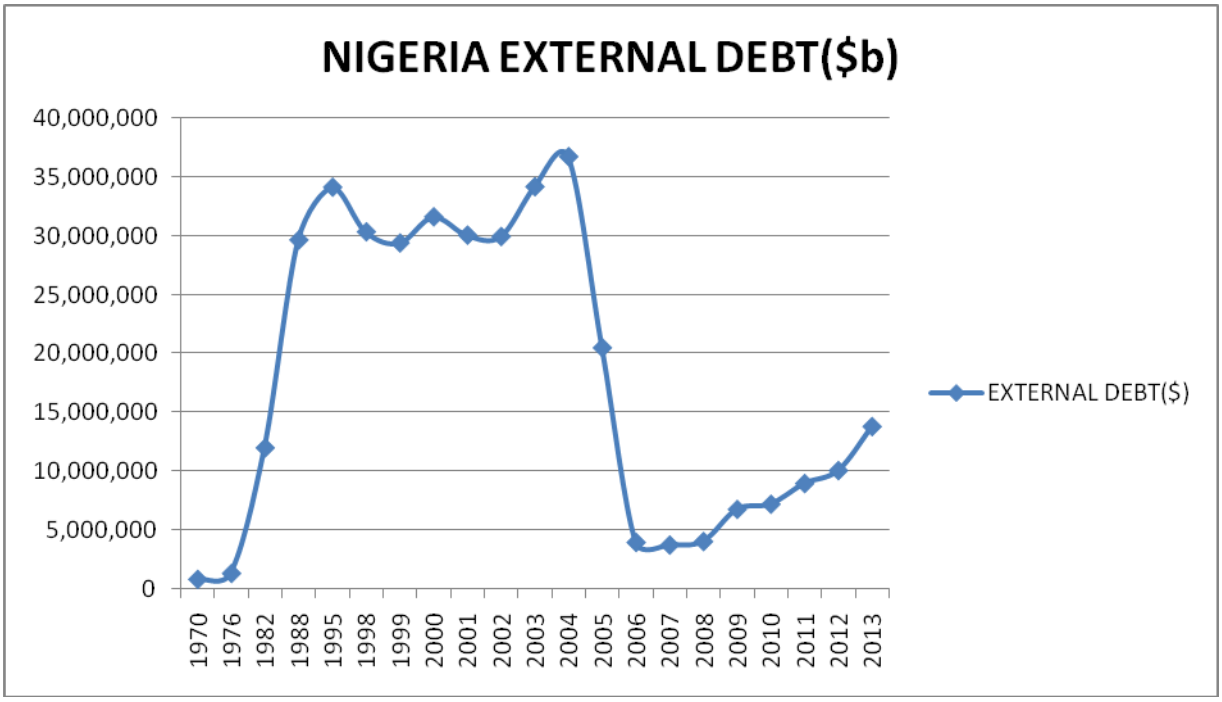

Fig 2.1: Nigeria External Debt in USD
Source: World Bank, International Debt Statistics.

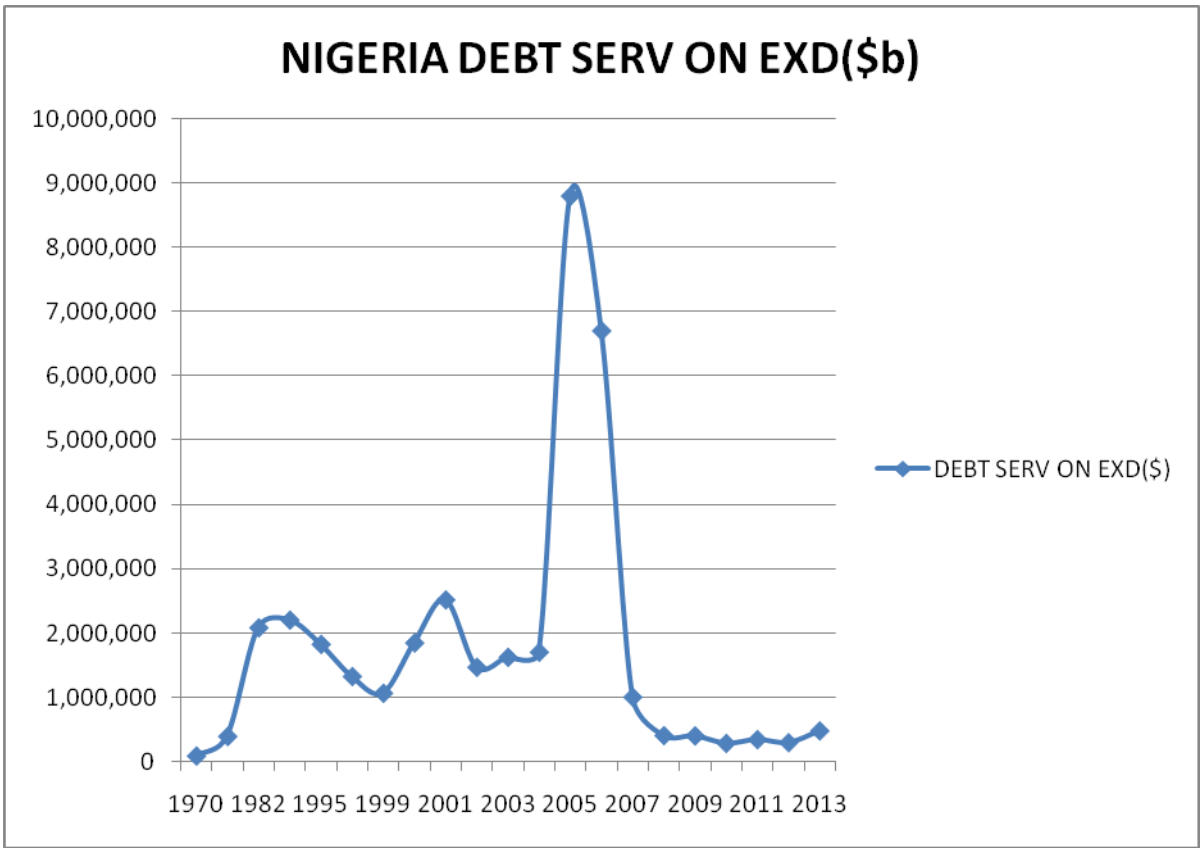

Fig 2.2: Nigeria Debt Service in USD
Source: World Bank, International Debt Statistics.

Debt Crisis on Ghana Economy

External debt stocks, total (DOD, current US$) in Ghana was $15,831,510,000 as of 2013. This indicator has fluctuated in value over 43 years, between $15,831,510,000 in 2013 and $546,219,000 in 1971. Debt service on external debt, total (TDS, current US$) in Ghana was $931,201,000 as of 2013. The value for 43 years has fluctuated between $931,201,000 in 2013 and $32,348,000 in 1973 (World Bank, International Debt Statistics, 2014).

According to World Development Indicators (WDI-2014), the economy of Ghana has potentials in the manufacturing and exportation of digital technology goods, automotive and ship construction and exportation, and the exportation of diverse and rich resources such as hydrocarbons and industrial minerals. These have given Ghana one of the highest GDPs per capita in Africa. In order to pay its debt service obligations, Ghana embarked on stringent tax drive. The tax administration that commenced in 1998 had a single rate but since entered into a multiple rate which has adversely affected investment.

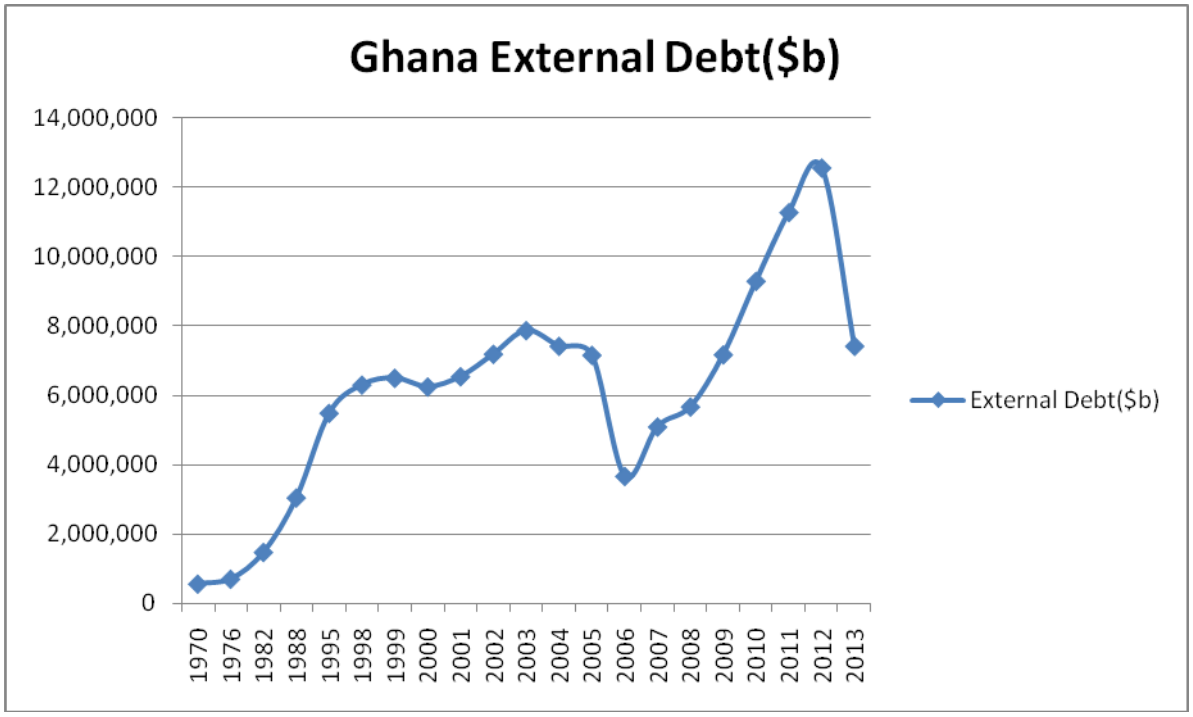

Fig 2.3: Ghana External Debt in USD
Source: World Bank, International Debt Statistics.

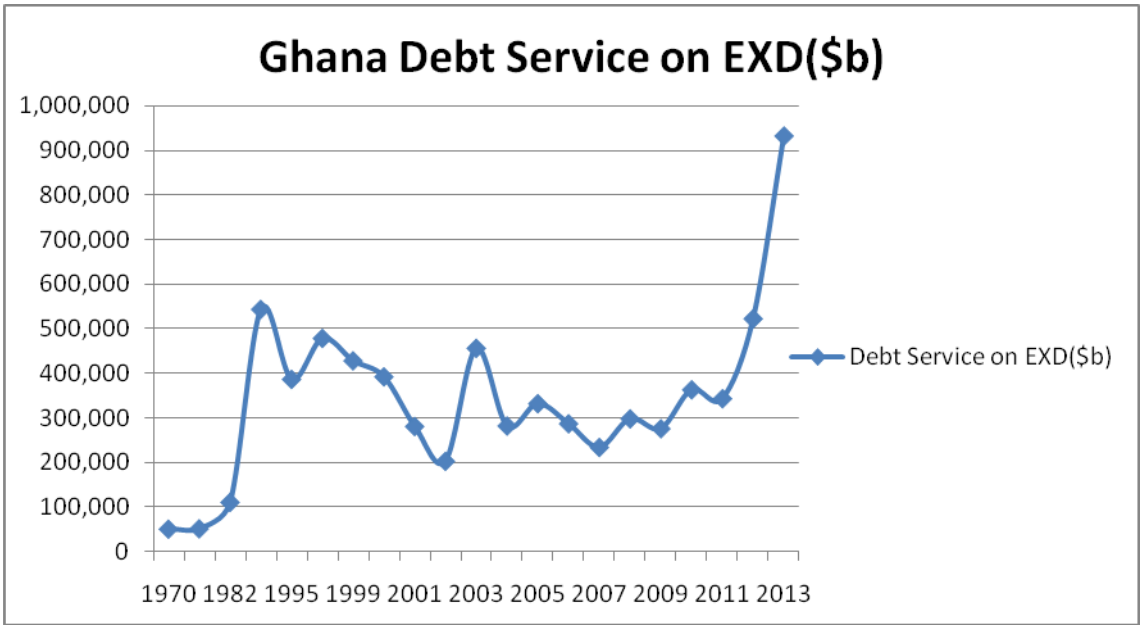

Fig 2.4: Ghana Debt Service in USD
Source: World Bank, International Debt Statistics.

Debt Crisis on Kenya Economy

External debt stocks, total (DOD, current US$) in Kenya was $13,471,480,000 as of 2013. This indicator has fluctuated in value for the past 43 years, between $13,471,480,000 in 2013 and $477,531,000 in 1970. Debt service on external debt, total (TDS, current US$) in Kenya was $619,788,000 as of 2013. This indicator has fluctuated in value for the past 43 years, between $904,429,000 in 1995 and $48,347,000 in 1972 (World Bank, International Debt Statistics, 2014).

According to World Development Indicators (WDI-2014), Kenya became Eastern and central Africa's financial hub in, Communication and Transportation services. As of March 2014 despite its huge external debt, the prospect of growth in Kenya were promising with above 5% GDP growth expected, particularly from expansions in telecommunications, transport, construction and a recovery in agriculture. There is a high level of computer literacy, especially among the youth.

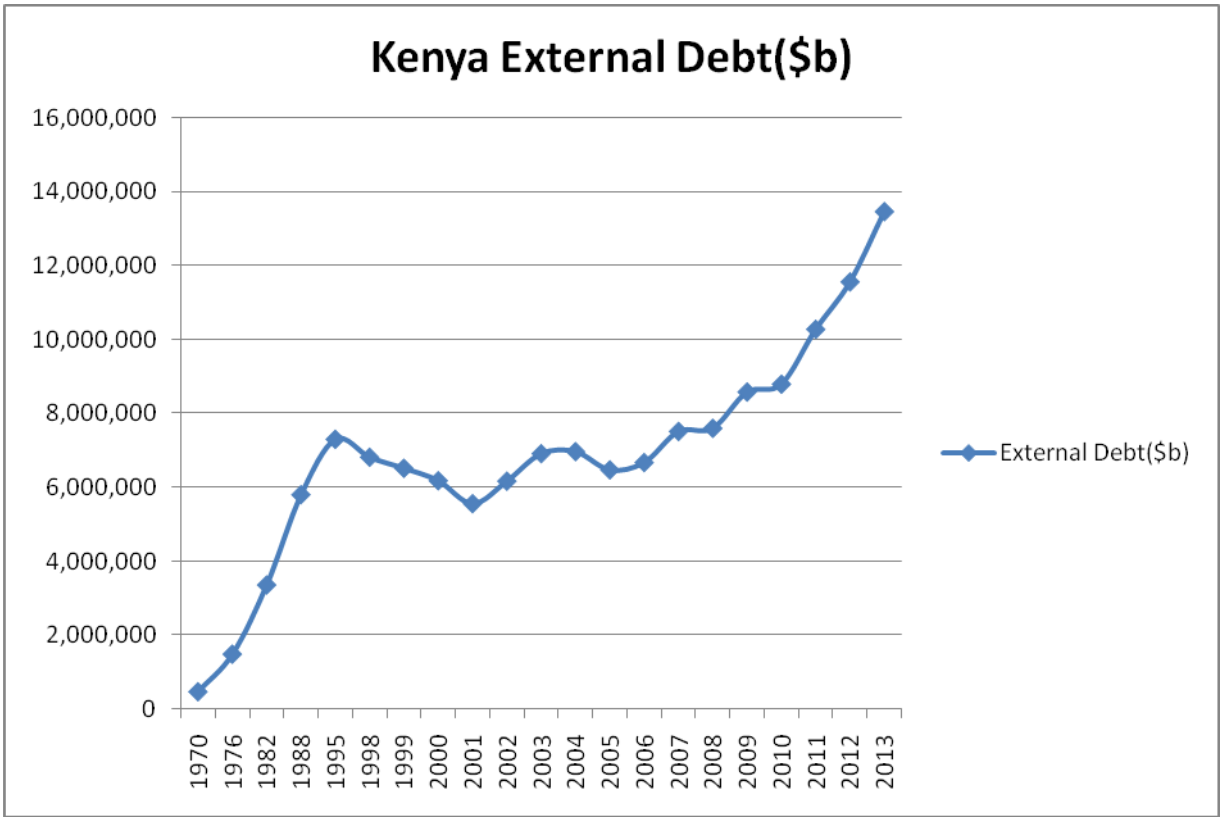

Fig 2.5: Kenya External Debt in USD

Source: World Bank, International Debt Statistics.

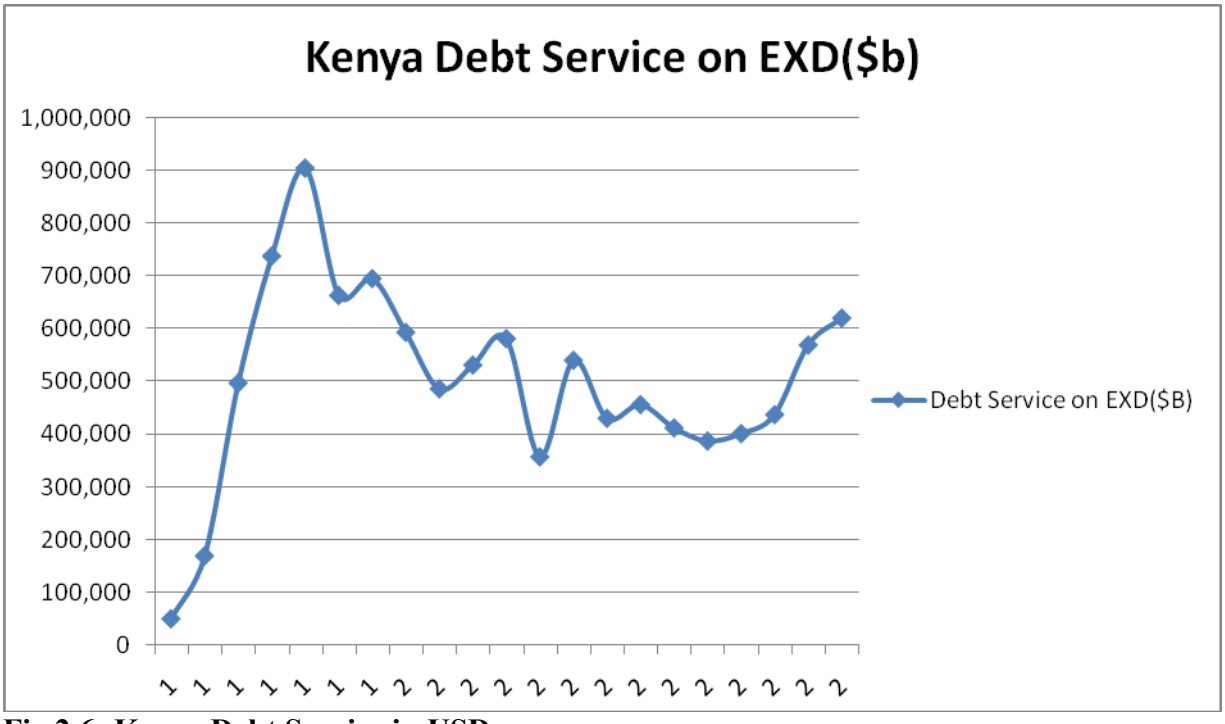

Fig 2.6: Kenya Debt Service in USD

Source: World Bank, International Debt Statistics.

Debt Crisis on Ethiopia Economy

External debt stocks, total (DOD, current US$) in Ethiopia was $12,556,580,000 as of 2013. This indicator has fluctuated in value for the past 43 years, between $12,556,580,000 in 2013 and $169,292,000 in 1970.Debt service on external debt, total (TDS, current US$) in Ethiopia was $664,230,000 as of 2013. This indicator fluctuated in value for the past 43 years, between $664,230,000 in 2013 and $20,202,000 in 1971 (World Bank, International Debt Statistics, 2014).

According to World Development Indicators (WDI-2014), the economy of Ethiopia is largely dependent on agriculture, which accounts for 46.6% of the gross domestic product (GDP) and 85% of total employment.

Ethiopia has one of the fastest-growing economies in the world and is Africa's second most populous country. Many sectors of the economy has been privatized although, certain sectors such as telecommunications, financial and insurance services, air and land transportation services, and retail, are the most active sectors which are under state control for the foreseeable future.

Despite recent improvements made in these sectors, Ethiopia remains one of the poorest nations in the world despite the various debt reliefs granted the country by the creditors.

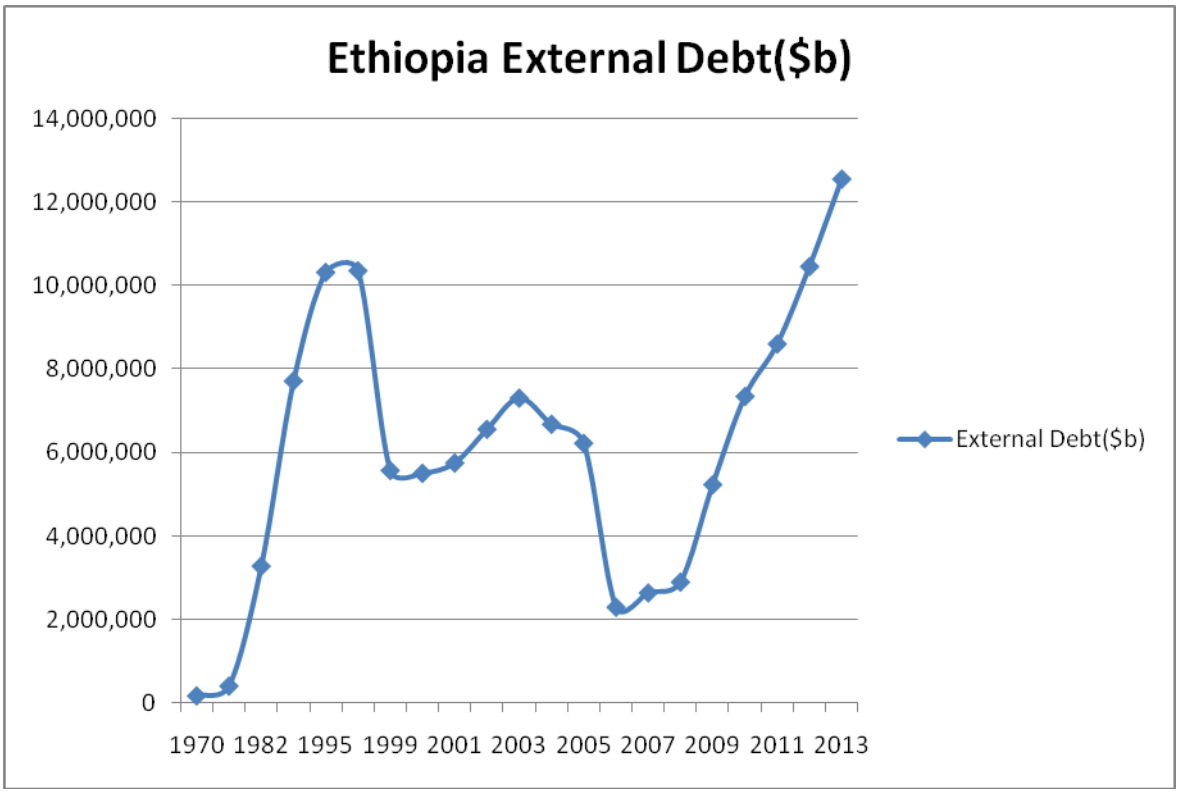

Fig 2.7: Ethiopia External Debt in USD
Source: World Bank, International Debt Statistics

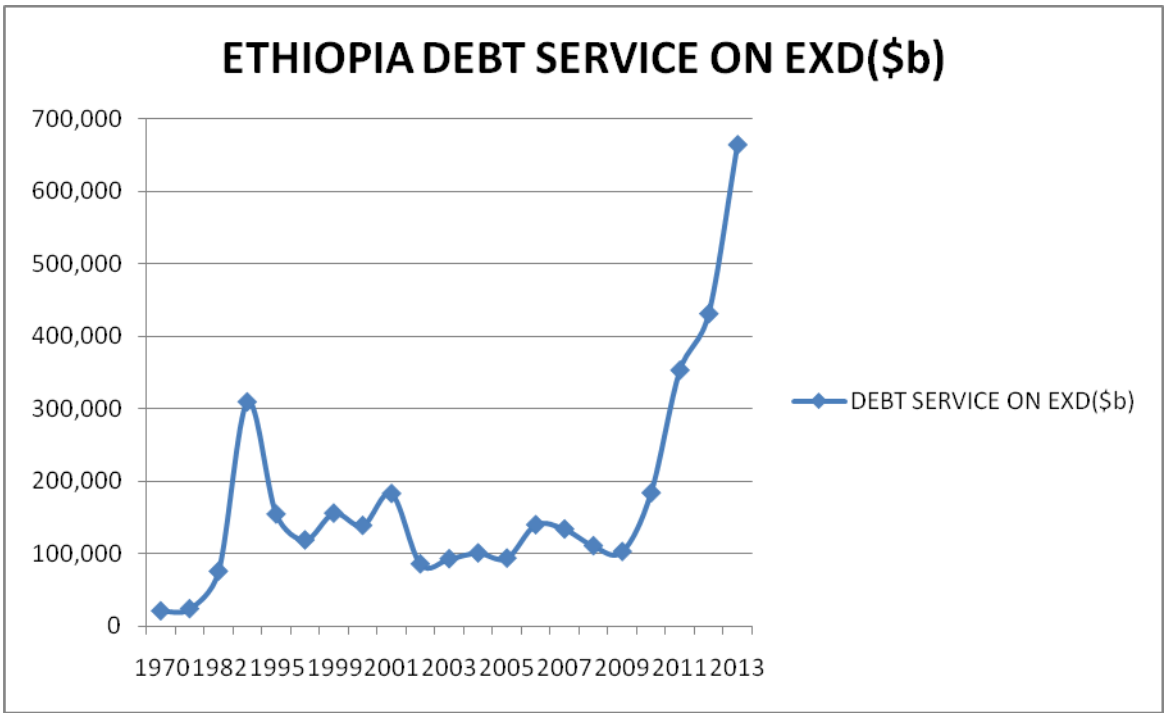

Fig 2.8: Ethiopia Debt Service in USD
Source: World Bank, International Debt Statistics

Debt Crisis on Mali Economy

External debt stocks, total (DOD, current US$) in Mali was $3,422,795,000 as of 2013. This indicator has fluctuated in value for the past 43 years, between $3,422,795,000 in 2013 and $830,266,000 in 1981. Debt service on external debt, total (TDS, current US$) in Mali was $96,888,000 as of 2013. This indicator fluctuated in value for the past 43 years, between $20,792,000 in 1981 and $96,888,000 in 2013 (World Bank, International Debt Statistics, 2014).

According to World Development Indicators (WDI-2014), the economy of Mali is based to a large extent upon agriculture, with a mostly rural population engaged in subsistence agriculture.

Mali is among the ten poorest nations of the world, is one of the 37 Heavily Indebted Poor Countries, and is a major recipient of foreign aid from many sources, including multilateral organizations (most significantly the World Bank, African Development Bank, and Arab Funds), and bilateral programs funded by the European Union, France, United States, Canada, Netherlands, and Germany. Before 1991, the former Soviet Union, China and the Warsaw Pact countries had been a major source of economic and military aid.

The per capita gross domestic product (GDP) of Mali was $820 in 1999. Mali's great potential wealth lies in mining and the production of agricultural commodities, livestock, and fish. The most productive agricultural area lies along the banks of the Niger River, the Inner Niger Delta and the southwestern region around Sikasso.

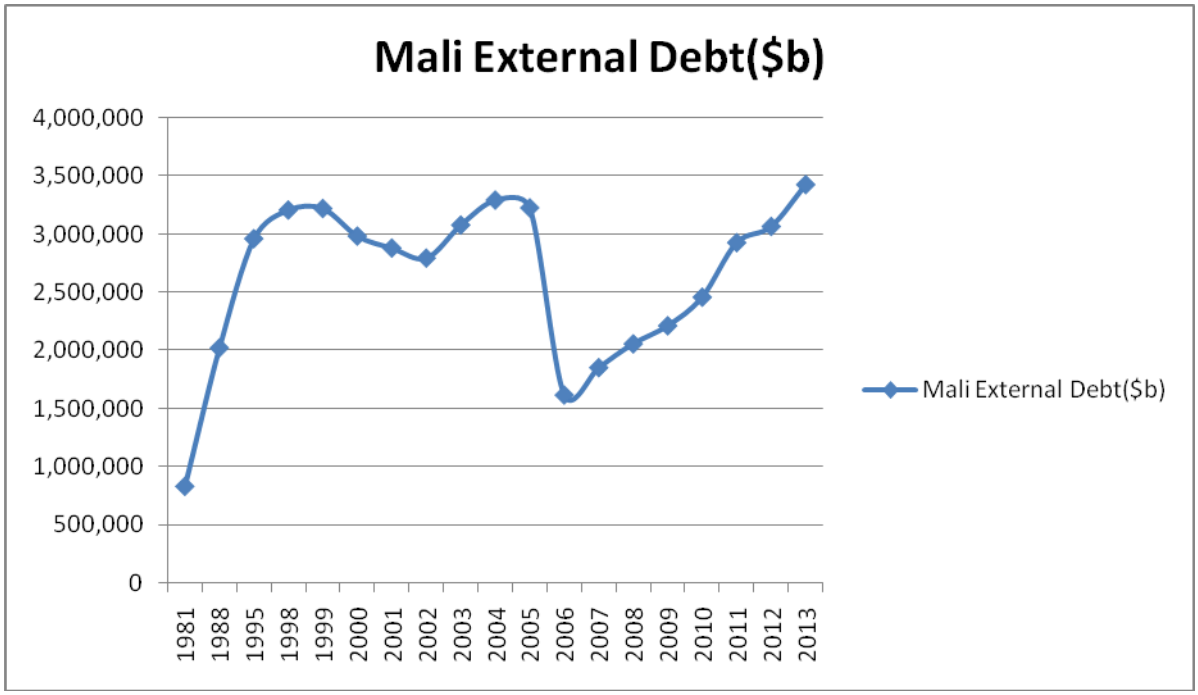

Fig 2.9 : Mali External Debt in USD
Source: World Bank, International Debt Statistics.

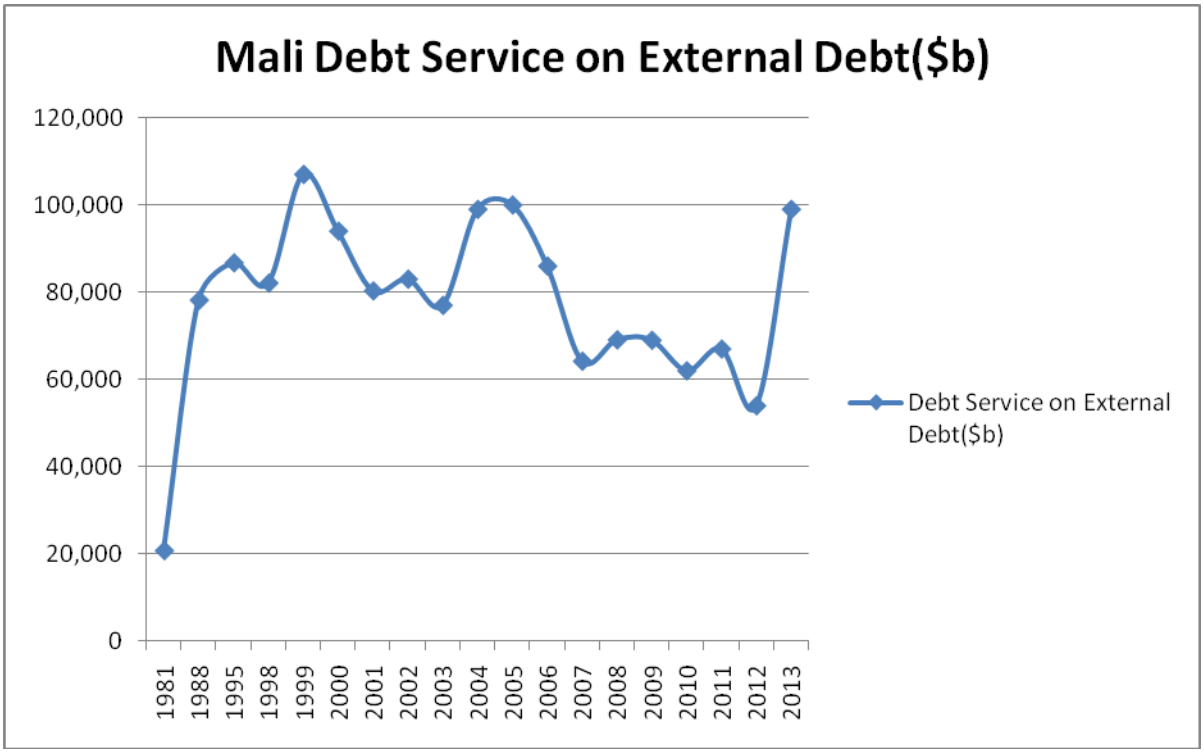

Fig 2.10: Mali Debt Service in USD
Source: World Bank, International Debt Statistics.

Debt Crisis on Cameroon Economy

External debt stocks, total (DOD, current US$) in Cameroon was $4,922,311,000 as of 2013. This indicator has fluctuated in value for the past 43 years,

between $4,922,311,000 in 2013 and $2,646,361,000 in 1981. Debt service on external debt, total (TDS, current US$) in Cameroon was $96,888,000 as of 2013. This indicator has fluctuated in value for the past 35 years, between $303,577,000 in 1981 and $215,944,000 in 2013 (World Bank, International Debt Statistics, 2014).

According to World Development Indicators (WDI-2014), for a quarter of a century following independence, Cameroon was one of the most prosperous countries in Africa. The drop in commodity prices for its principal exports —petroleum, cocoa, coffee, and cotton in the mid-1980s, combined with an overvalued currency and economic mismanagement, led to a decade-long recession. Real per capita GDP fell by more than 60% from 1986 to 1994. The current account and fiscal deficits widened and foreign debt grew. Yet because of its oil reserves and favorable agricultural conditions, Cameroon still has one of the best-endowed primary commodity economies in sub-Saharan Africa.

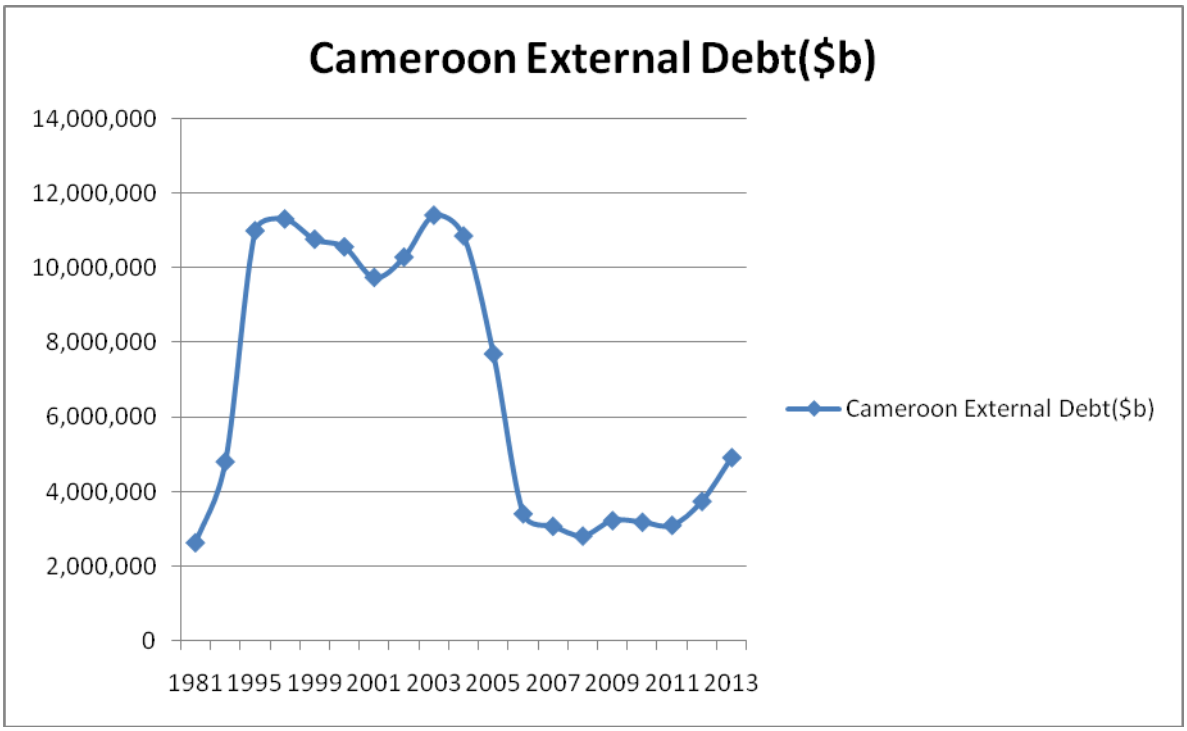

Fig 2.11: Cameroon External Debt in USD
Source: World Bank, International Debt Statistics

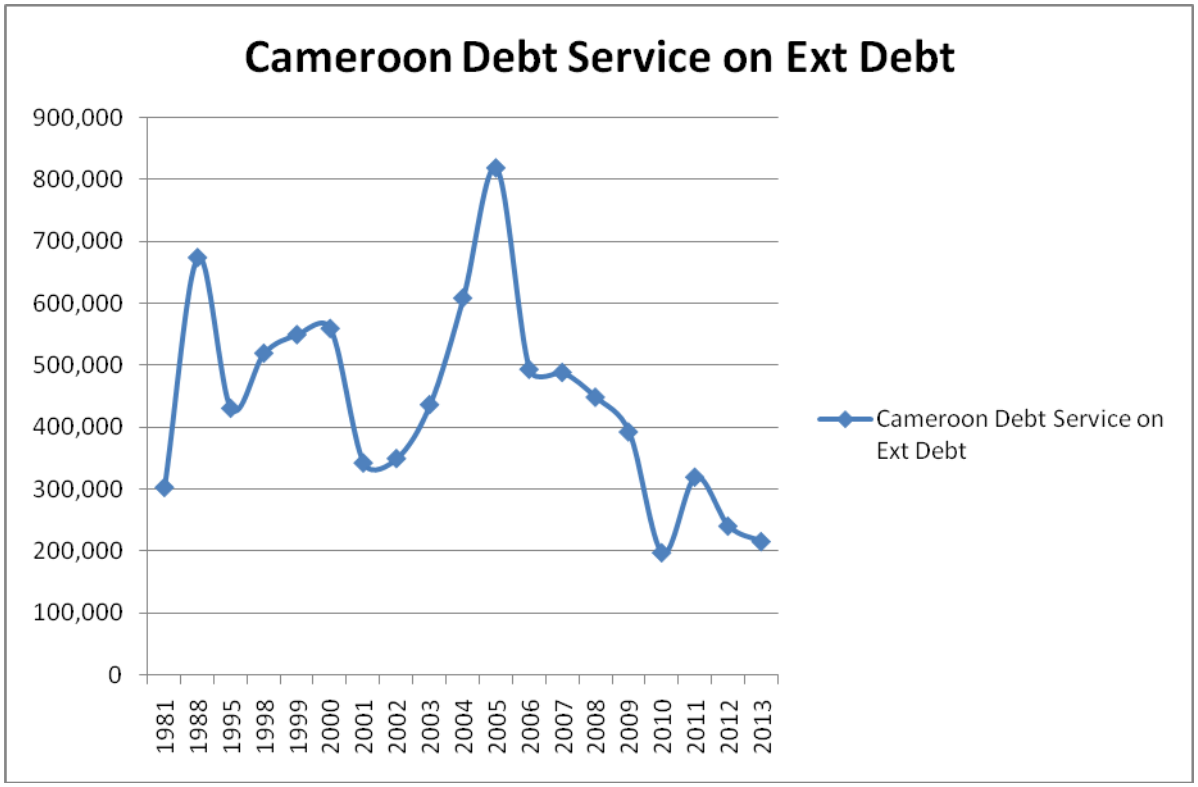

Fig 2.12: Cameroon Debt Service in USD
Source: World Bank, International Debt Statistics

Debt Crisis on Uganda Economy

External debt stocks, total (DOD, current US$) in Uganda was $4,361,282,000 as of 2013. This indicator has fluctuated in value for the past 35 years, between $4,361,282,000 in 2013 and $707,175,000 in 1981. Debt service on external debt, total (TDS, current US$) in Uganda was $82,000,000 as of 2013. This indicator fluctuated in value for the past 35 years, between $68,312,000 in 1981 and $82,000,000 in 2013 (World Bank, International Debt Statistics, 2014).

According to World Development Indicators (WDI-2014), Uganda is endowed with significant natural resources, including ample fertile land, regular rainfall, and mineral deposits. It is thought that Uganda could feed all of Africa if it were commercially farmed.

Chronic political instability and maladministration since independence has led to continuous economic decline that has placed Uganda among the world's poorest and least-developed countries. The debt relief under HIPC initiative to the country was not able to pull the economy of the country out of wood.

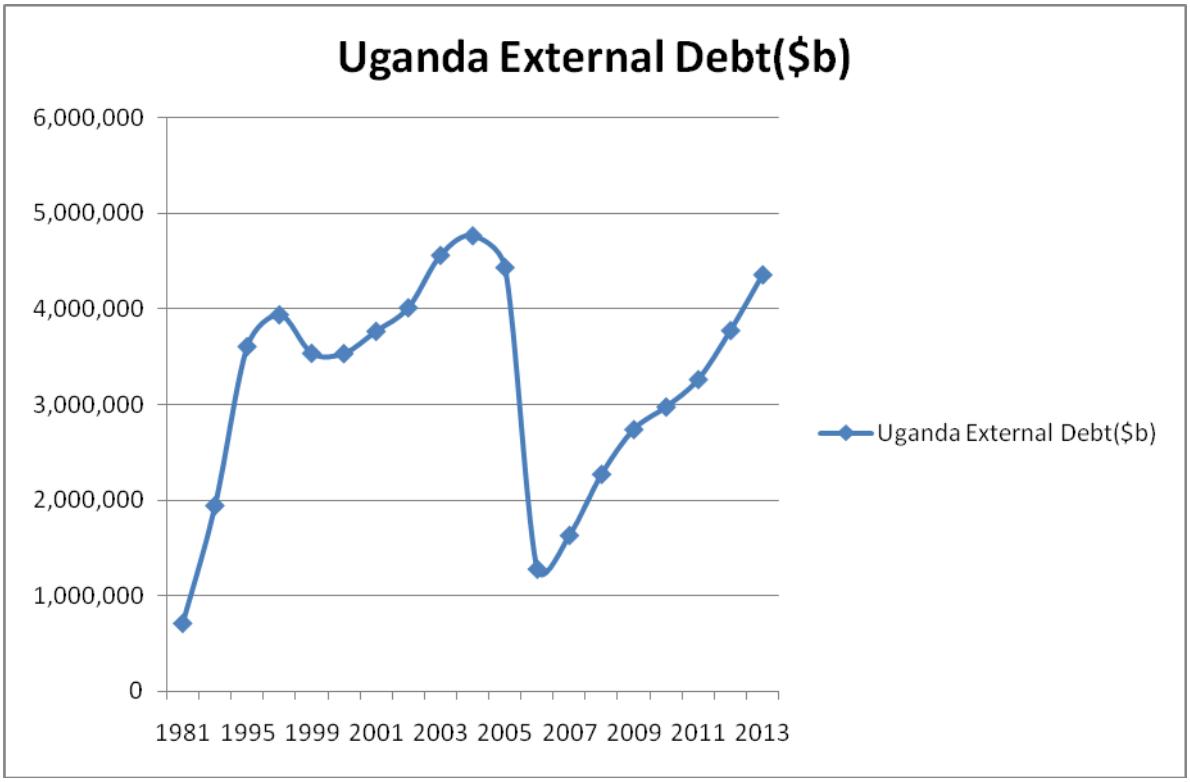

Fig 2.13: Uganda External Debt in USD
Source: World Bank, International Debt Statistics

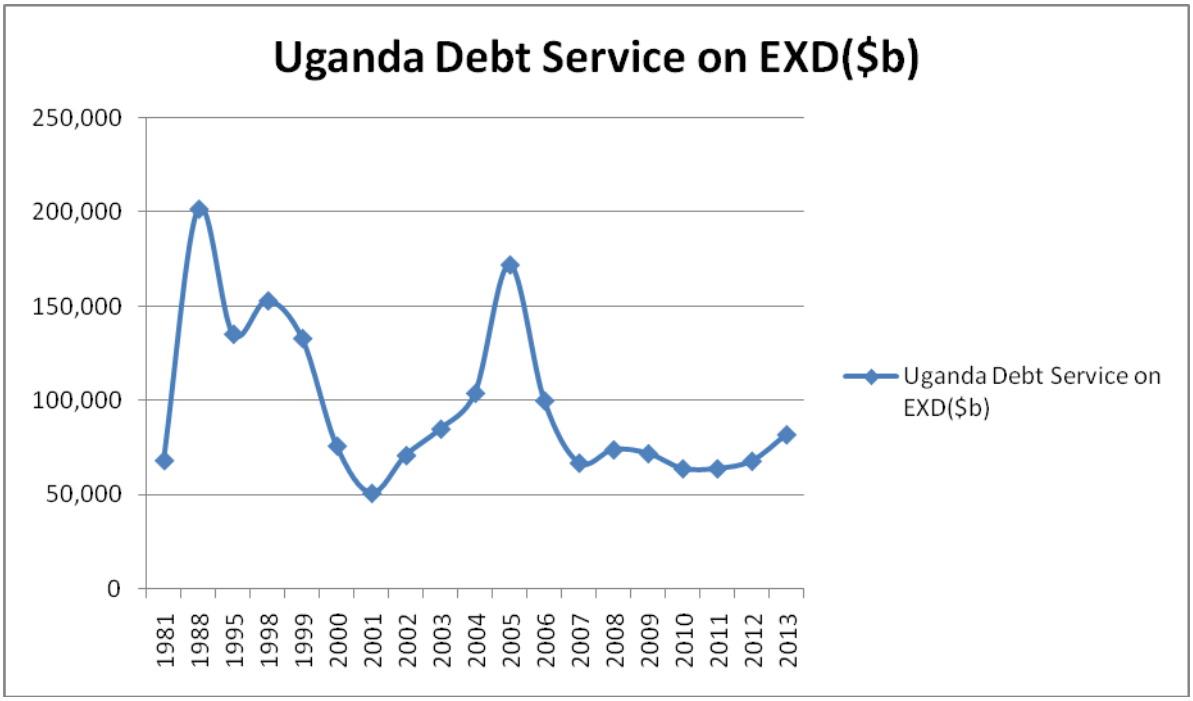

Fig 2.14: Uganda Debt Service in USD
Source: World Bank, International Debt Statistics

Debt Crisis on Congo Dem. Rep

External debt stocks, total (DOD, current US$) in Congo DR was $6,180,000,000 as of 2013. The value of the external debt stock in the past 35 years has fluctuated between$4,361,282,000 in 2013 and $5,051,805,000 in 1981. Debt service on external debt, total (TDS, current US$) in Congo DR was $401,000,000 as of 2013. The value of the debt service in the past 35 years has fluctuated between $401,391,000 in 1981 and $401,000,000 in 2013.

The Democratic Republic of Congo is tremendously endowed with natural resources, but political instability, decayed infrastructure, endemic corruption and centuries of both commercial and colonial extraction and exploitation have limited holistic development. Besides the capital, Kinshasa, the other major cities, Lubumbashi and Mbuji-Mayi, are both mining communities. DR Congo's largest export is raw minerals, with China accepting over 50% of DRC's exports in 2012. As of 2013, according to the Human Development Index (HDI), DR Congo has a low level of human development, ranking 176 out of 187 countries.

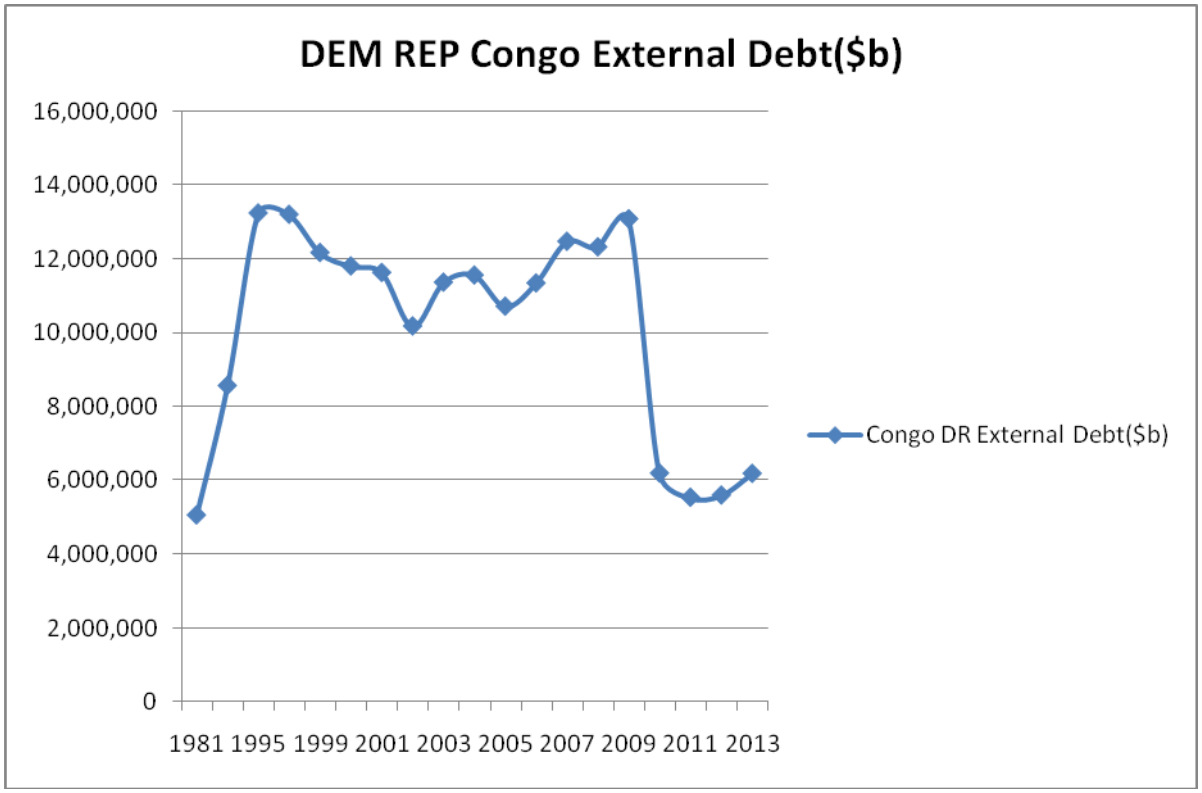

Fig 2.15: DR Congo External Debt in USD
Source: World Bank International Debt Statistics

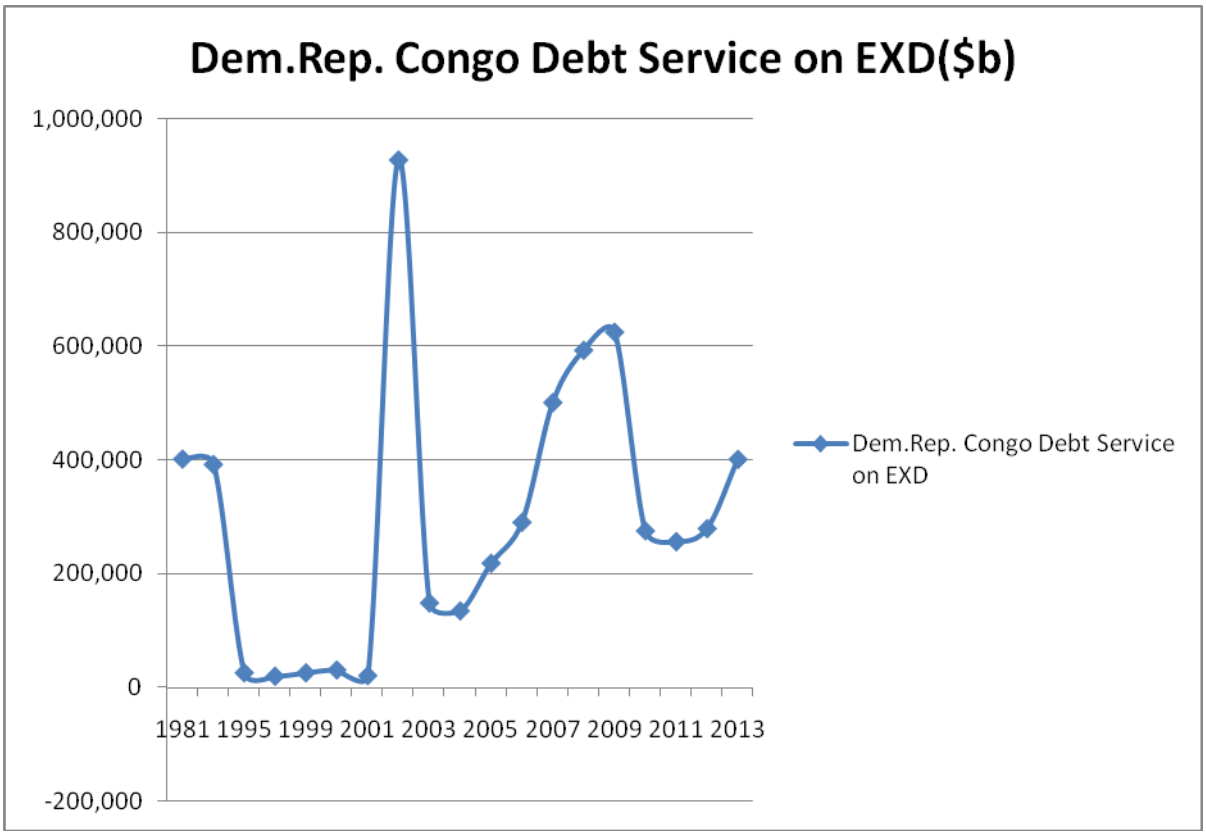

Fig 2.16: DR Congo Debt Service in USD
Source: World Bank International Debt Statistics

Debt Crisis on Malawi Economy

External debt stocks, total (DOD, current US$) in Malawi was $1,558,000,000 as of 2013. The value of the external debt stock in the past 35 years has fluctuated between $1,558,000,000 in 2013 and $821,554,000 in 1981. Debt service on external debt, total (TDS, current US$) in Malawi was $44,000,000 as of 2013. The value of the debt service indicator in the past 35 years has fluctuated between $114,447,000 in 1981 and $44,000,000 in 2013.

Malawi economy is mostly agricultural, with about 90% of the population living in rural areas. The landlocked country in south central Africa ranks among the world's least developed countries. Agriculture accounts for 29% of GDP and 85% of export revenues. The economy depends on substantial inflows of economic assistance from the IMF, the World Bank, and individual donor nations. The government faces strong challenges: to spur exports, to improve educational and health facilities, to face up to

environmental problems of deforestation and erosion, and to deal with the rapidly growing problem of HIV/AIDS in Africa.

Malawi was ranked the 118th safest investment destination in the world in the March 2011 Euro money Country Risk rankings.

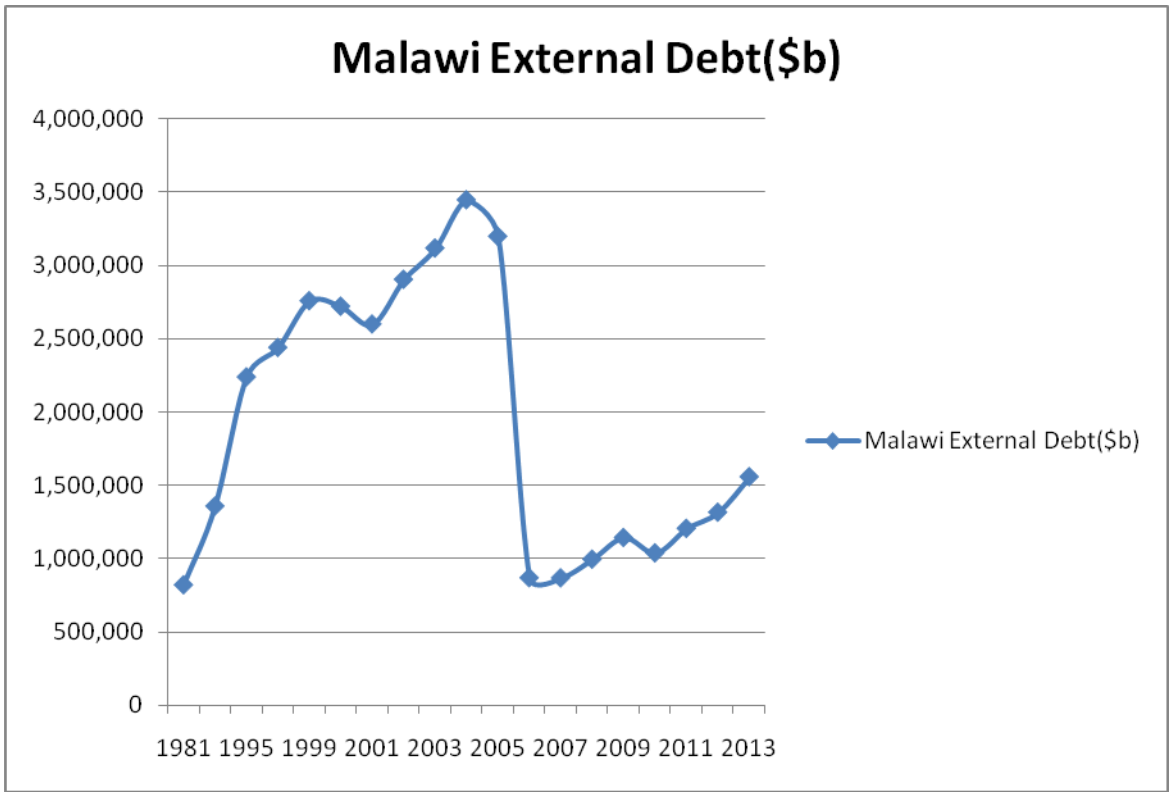

Fig 2.17: Malawi External Debt in USD
Source: World Bank International Debt Statistics

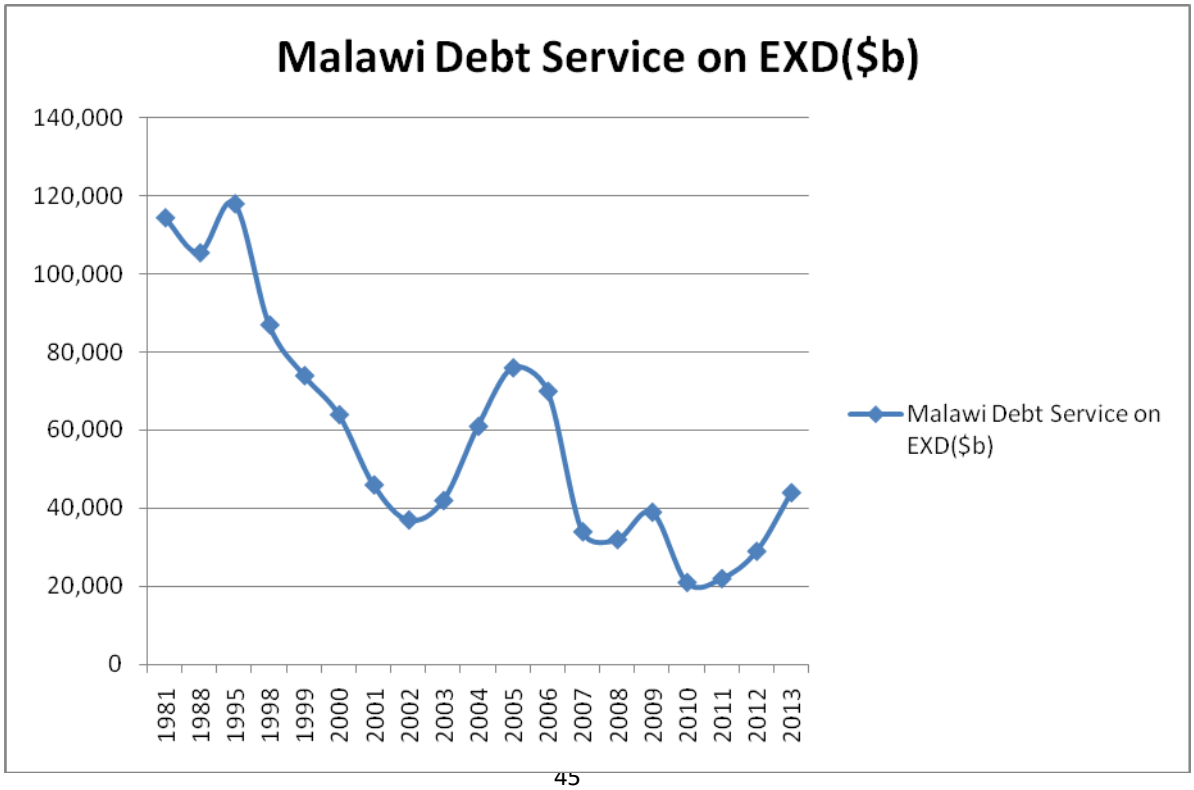

Fig 2.18: Malawi Debt Service in USD
Source: World Bank International Debt Statistics

Debt Crisis on Burundi Economy

External debt stocks, total (DOD, current US$) in Burundi was $683,000,000 as of 2013. The value of the external debt stock in the past 35 years has fluctuated between $1,558,000,000 in 2013 and $178,613,000 in 1981. Debt service on external debt, total (TDS, current US$) in Burundi was $33,000,000 as of 2013. The value of the debt service on external debt stock in the past 35 years has fluctuated between $7,905,000 in 1981 and $33,000,000 in 2013 (World Bank, International Debt Statistics, 2014).

According to World Development Indicators (WDI-2014), Burundi is a landlocked, resource-poor country with an underdeveloped manufacturing sector. The economy is majorly agricultural; agriculture accounts for just over 30% of GDP and employs more than 90% of the population. Burundi's chief exports are coffee and tea though small, account for 90% of her foreign earnings. Burundi's export earnings and its ability to repay its external debt depend mostly on weather conditions and international coffee and tea prices. Burundi relies heavily on foreign aids and bilateral and multilateral donors which account for 42% of its national income, the second highest rate in Sub-Saharan Africa.

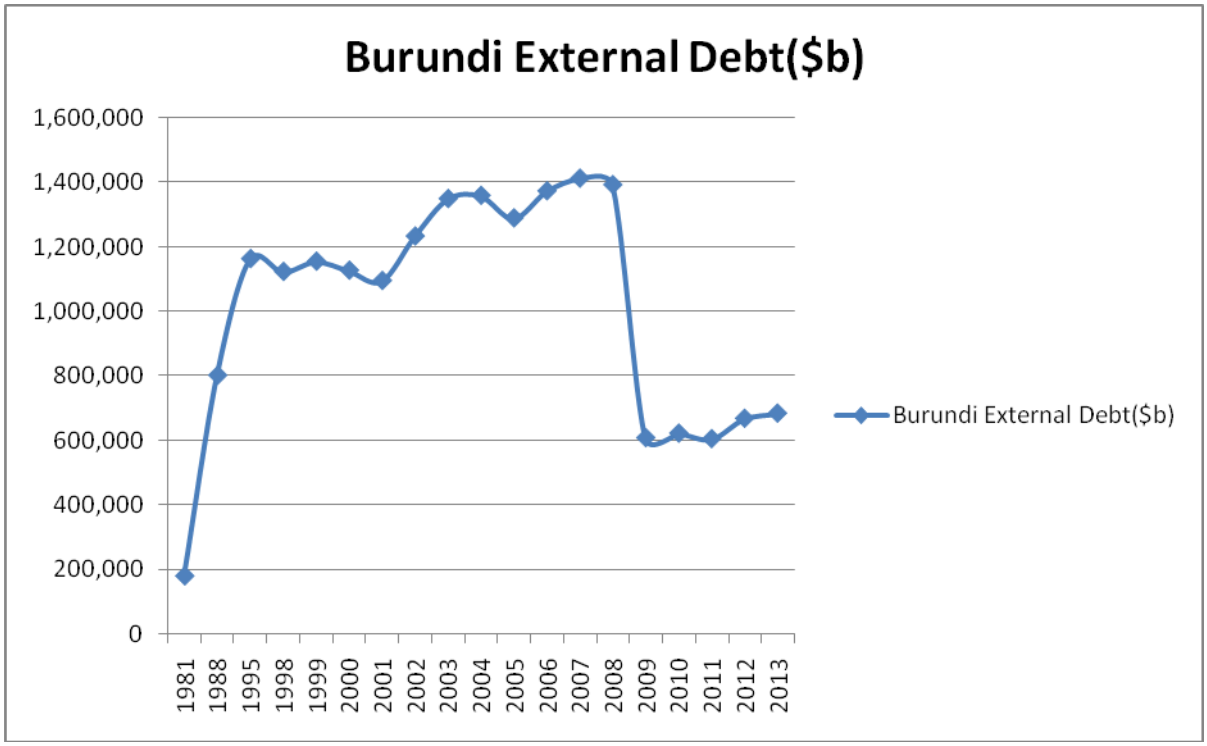

Fig 2.19: Burundi External Debt in USD
Source: World Bank, International Debt Statistics.

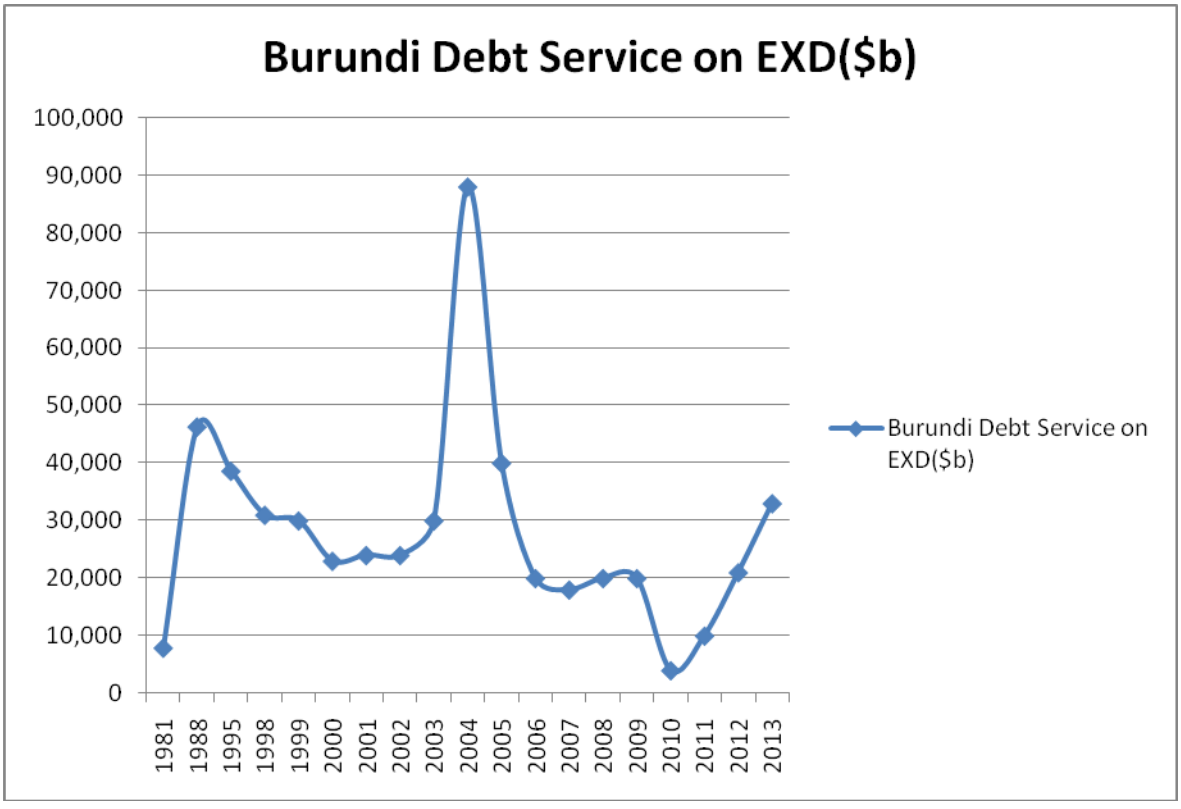

Fig 2.20: Burundi Debt Service in USD
Source: World Bank, International Debt Statistics

Debt Crisis on Angola Economy

Foreign debt stocks, total (DOD, current US$) in Angola was $24,004,000 as of 2013. The value of the external debt stock in the past 35 years has fluctuated between $24,004,000,000 in 2013 and $10,784,000 in 1998. Debt service on external debt, total (TDS, current US$) in Angola was $4,872,000 as of 2013. This indicator for debt service on external debt has fluctuated in the past 35 years between $1,532,000 in 1998 and $4,872,000 in 2013 (World Bank, International Debt Statistics, 2014).

According to World Development Indicators (WDI-2014), Angola's high growth rate in recent years was driven by soaring international prices for its oil.

Oil sector and its supporting activities account for 85% of GDP. Export of Diamond accounts for 5% while agriculture supply the major livelihood the people.

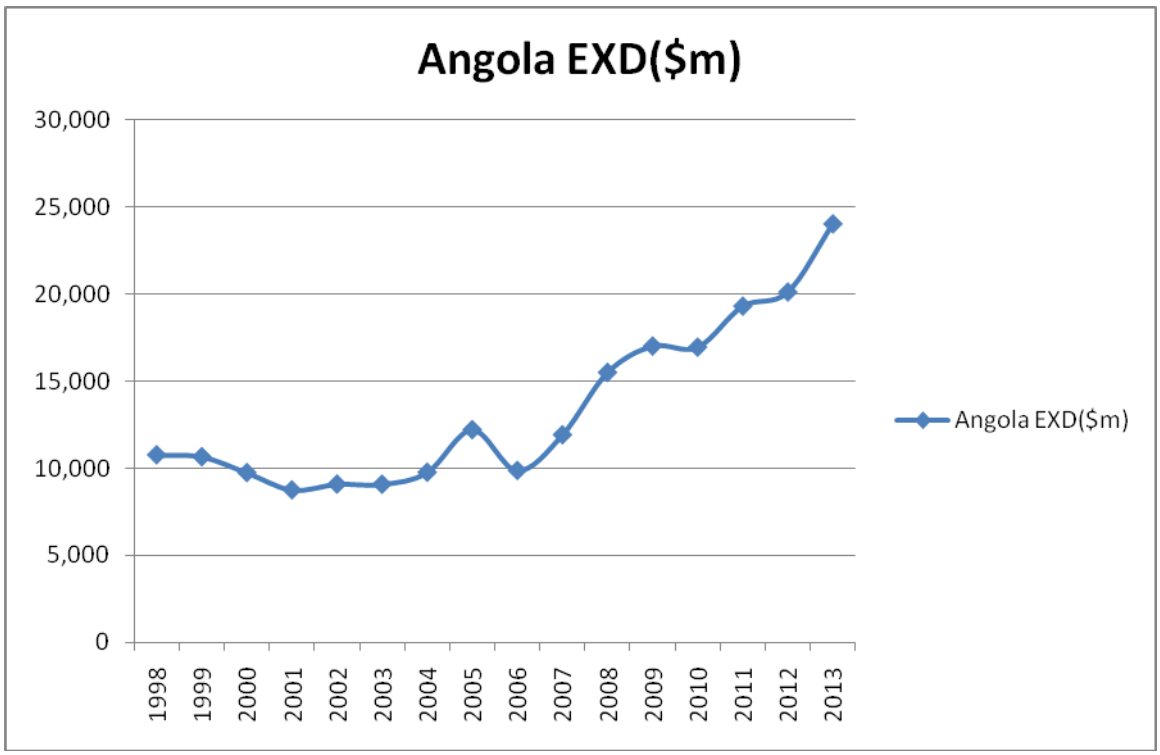

Fig 2.21: Angola External Debt in USD
Source: World Bank, International Debt Statistics

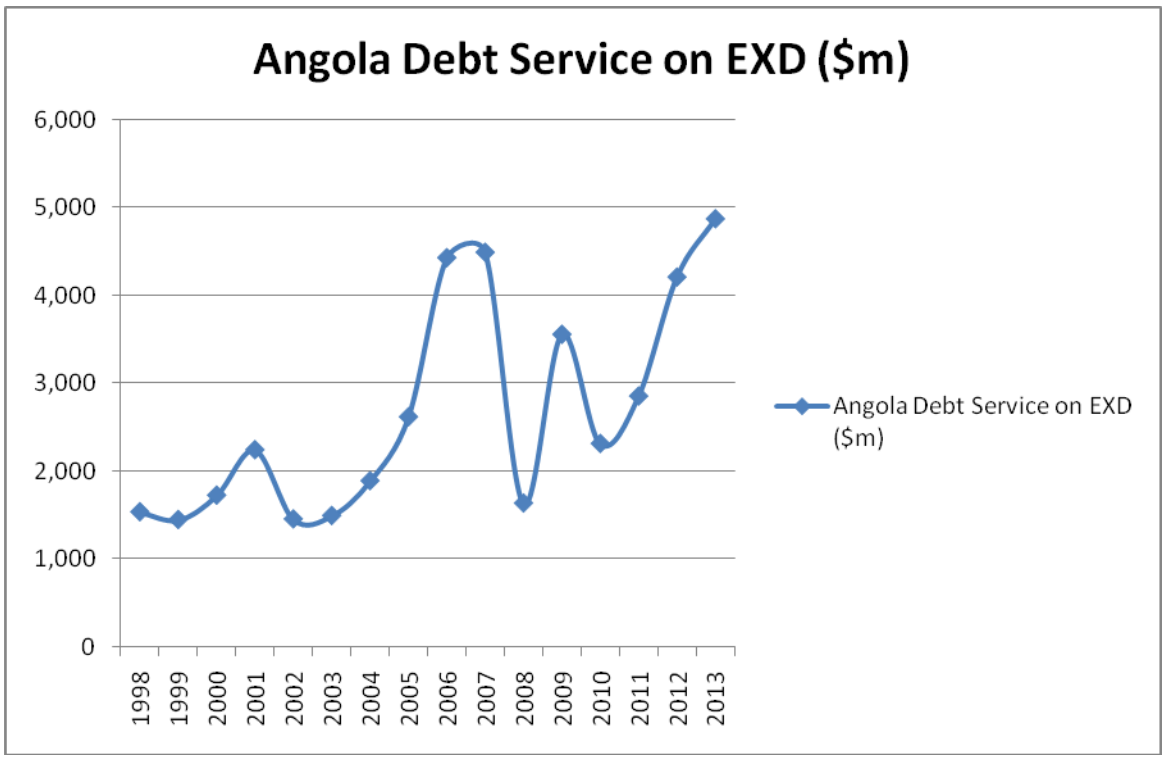

Fig 2.22: Angola Debt Service in USD
Source: World Bank, International Debt Statistics

Debt Crisis on Rwanda Economy

External debt stocks, total (DOD, current US$) in Rwanda was $1,691,000,000 as of 2013. The value of the external debt stock in the past 35 years has fluctuated between $1,691,000,000 in 2013 and $1,228,000,000 in 1998. Debt service on external debt, total (TDS, current US$) in Rwanda was $43,000,000 as of 2013. This indicator for debt service on external debt has fluctuated in the past 35 years between $21,000,000 in 1998 and $43,000,000 in 2013 (World Bank, International Debt Statistics, 2014).

According to World Development Indicators (WDI-2014), Rwanda is a poor rural country with 90% of the populace engaged in (mainly subsistence) agriculture and some mineral and agro-processing. The 1994 genocide decimated Rwanda's delicate economic base, severely impoverished the population and temporarily stalled the country's ability to attract private and external investment.

Rwanda continues to receive substantial aid money and obtained IMF-World Bank Heavily Indebted Poor Country (HIPC) initiative debt relief in 2005-2006.

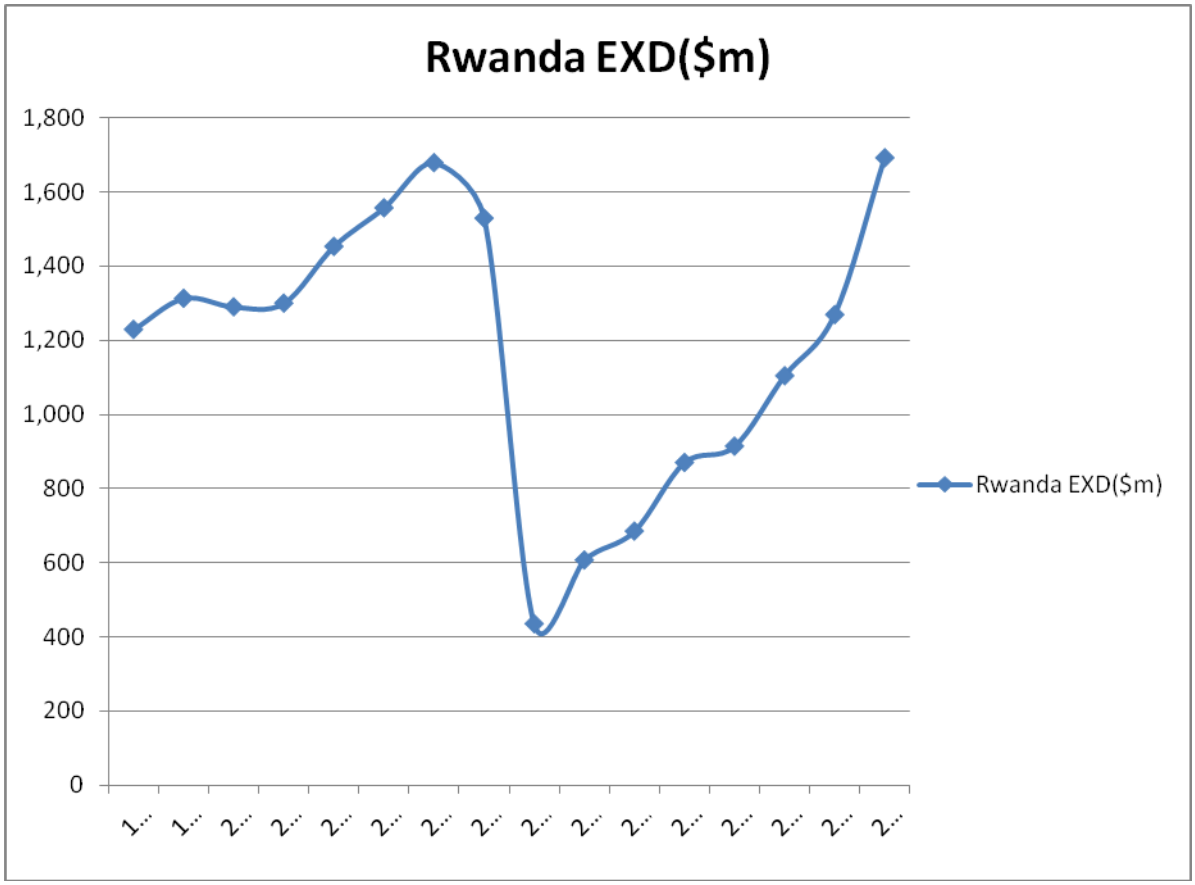

Fig 2.23: Rwanda External Debt in USD
Source: World Bank, International Debt Statistics

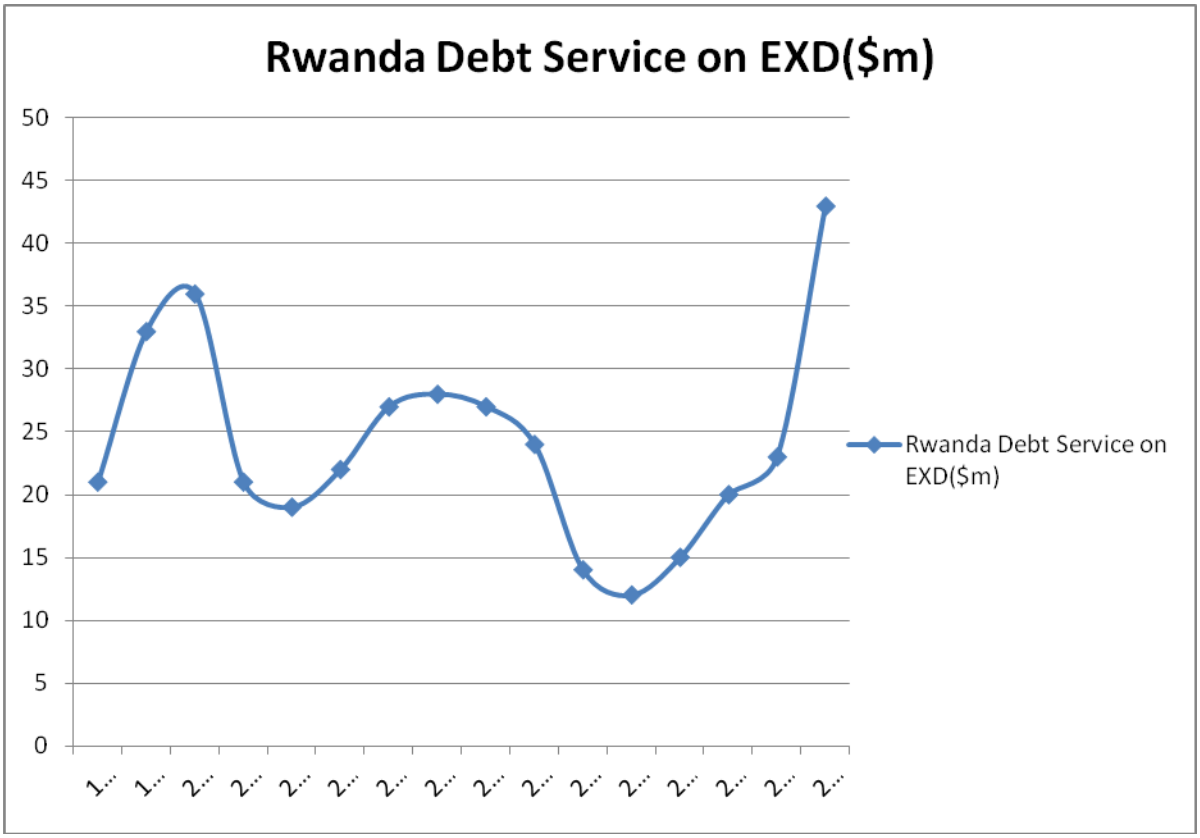

Fig 2.24: Rwanda Debt Service in USD
Source: World Bank, International Debt Statistics

Debt Crisis on Tanzania Economy

External debt stocks, total (DOD, current US$) in Tanzania was $13,024,000,000 as of 2013. This indicator for external debt has fluctuated in the past 35 years between $13,024,000,000 in 2013 and $7,501,000,000 in 1981. Debt service on external debt, total (TDS, current US$) in Tanzania was $161,000,000 as of 2013. This indicator for debt service on external debt has fluctuated in the past 35 years between $233,447,000 in 1981 and $161,000,000 in 2013 (World Bank, International Debt Statistics, 2014).

According to World Development Indicators (WDI-2014), Tanzania is one of the poorest economies in world in terms of per capita income; however, the economy received a boost in growth rate through gold production and tourism. The Continued donor assistance and solid macroeconomic policies yielded a positive growth rate, notwithstanding the world recession. Tanzania used fiscal stimulus and flexible monetary policy to reduce the effect of the global recession. GDP growth in 2009-13 was a respectable 6-7% per year due to high gold prices and increased production.

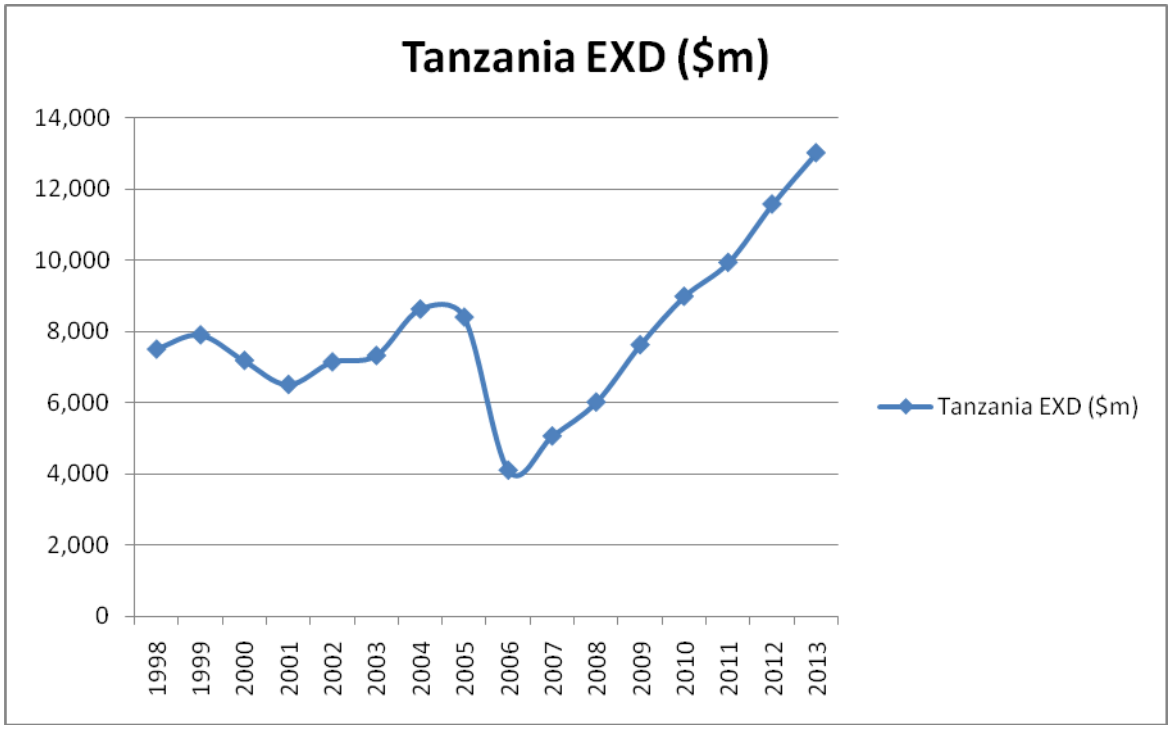

Fig 2.25: Tanzania External Debt in USD
Source: World Bank, International Debt Statistics

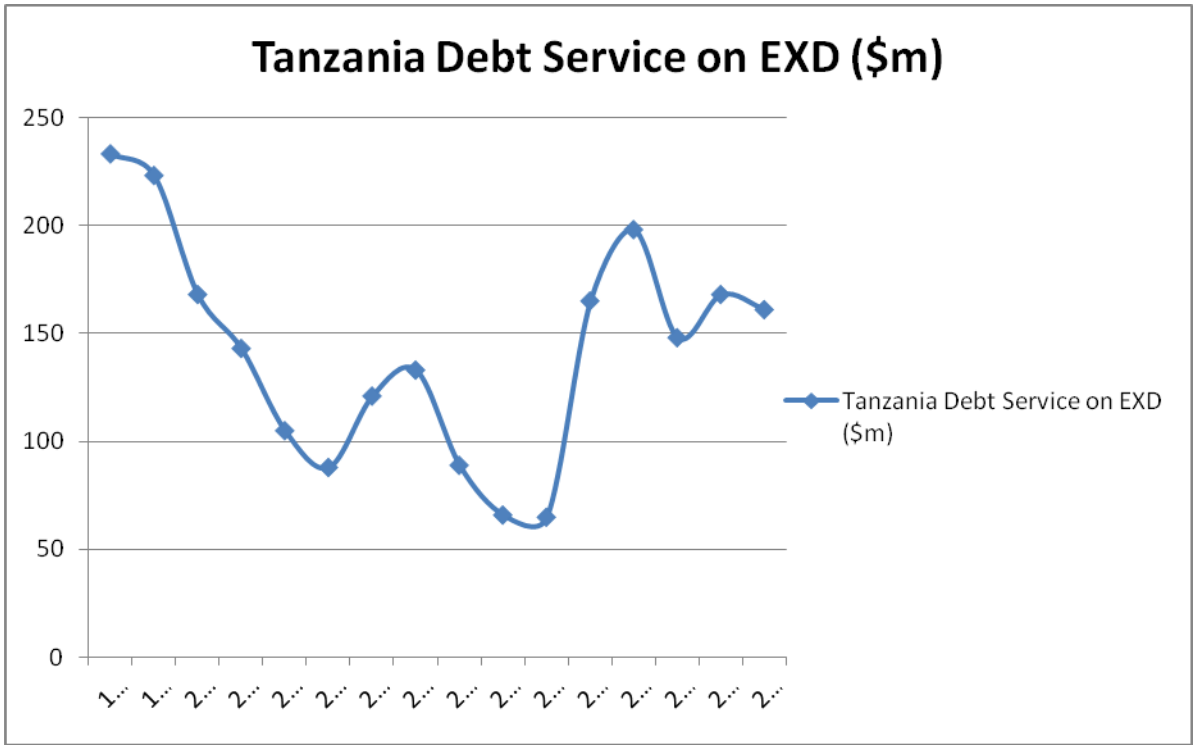

Fig. 2.26: Tanzania Debt Service in USD
Source: World Bank, International Debt Statistics

Debt Crisis on Zimbabwe Economy

External debt stocks, total (DOD, current US$) in Zimbabwe was $8,193,000,000 as of 2013. This indicator for external debt has fluctuated in the past 16 years between $8,193,000,000 in 2013 and $4,559,000,000 in 1998. Debt service on external debt, total (TDS, current US$) in Zimbabwe was $2,651,000,000 as of 2013. This indicator for debt service on external debt has fluctuated in the past 16 years between $943,000,000 in 1998 and $2,651,000,000 in 2013 (World Bank, International Debt Statistics, 2014).

According to World Development Indicators (WDI-2014), Zimbabwe's economy is growing despite continuing political uncertainty. The government of Zimbabwe is challenged with many economic problems which include maladministration, regulatory deficiencies, large external debt burden, and insufficient formal employment.

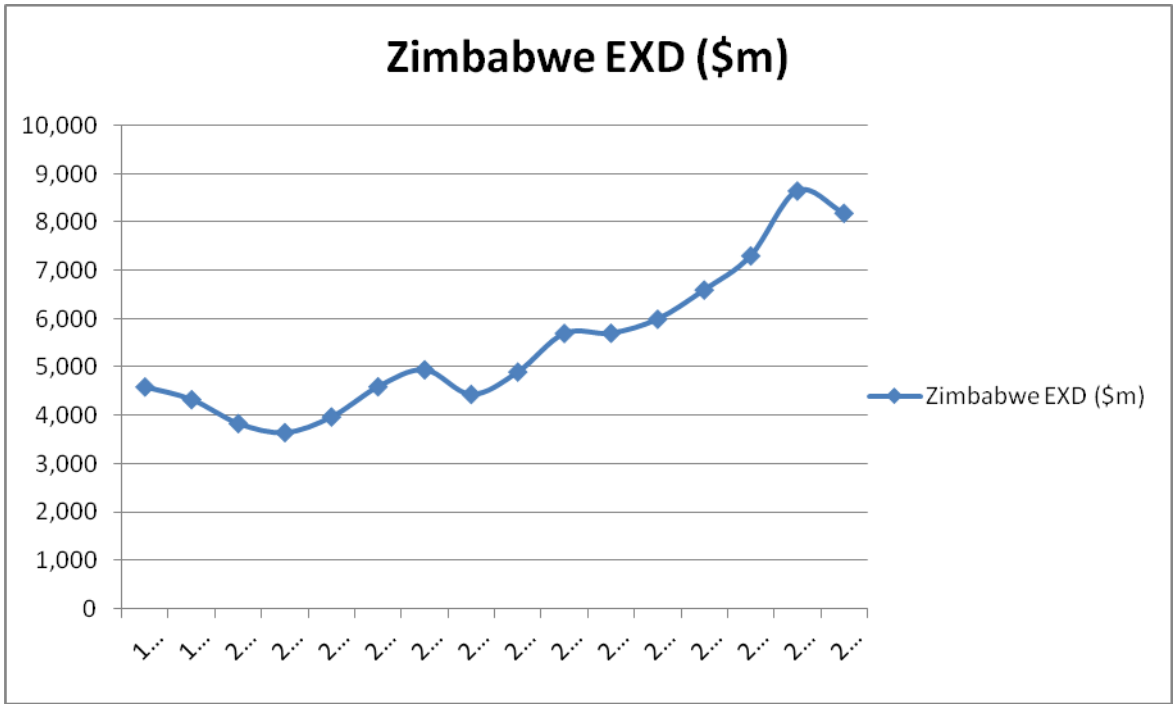

Fig 2.27: Zimbabwe External Debt in USD
Source: World Bank, International Debt Statistics

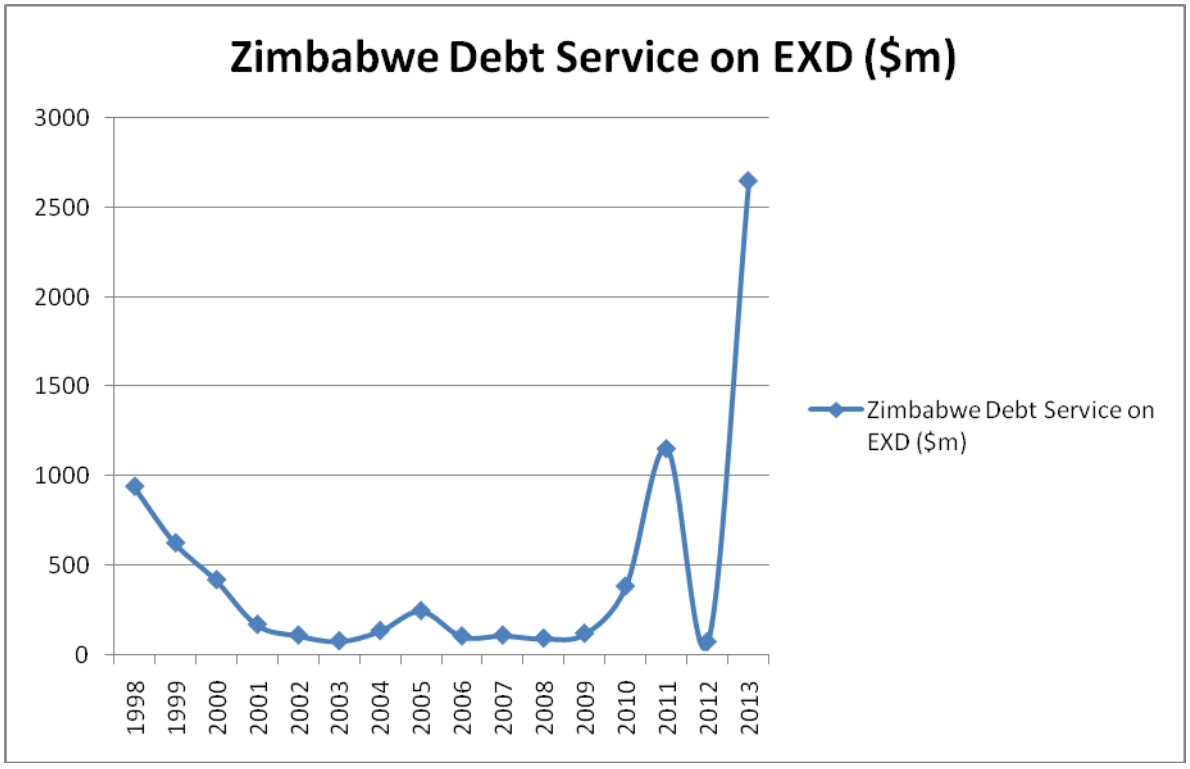

Fig 2.28 Zimbabwe Debt Service in USD
Source: World Bank, International Debt Statistics

Debt Crisis on Mozambique Economy

External debt stocks, total (DOD, current US$) in Mozambique was $6,890,000,000 as of 2013. This indicator for external debt has fluctuated in the past 16 years between $6,890,000,000 in 2013 and $6,556,000,000 in 1998. Debt service on external debt, total (TDS, current US$) in Mozambique was $143,000,000 as of 2013. This indicator for debt service on external debt has fluctuated in the past 16 years between $93,000,000 in 1998 and $143,000,000 in 2013 (World Bank, International Debt Statistics, 2014).

According to World Development Indicators (WDI-2014), at independence in 1975, Mozambique was one of the world's poorest countries. Mozambique's ability to attract large investment projects in natural resources is expected to fuel continued high growth in coming years.

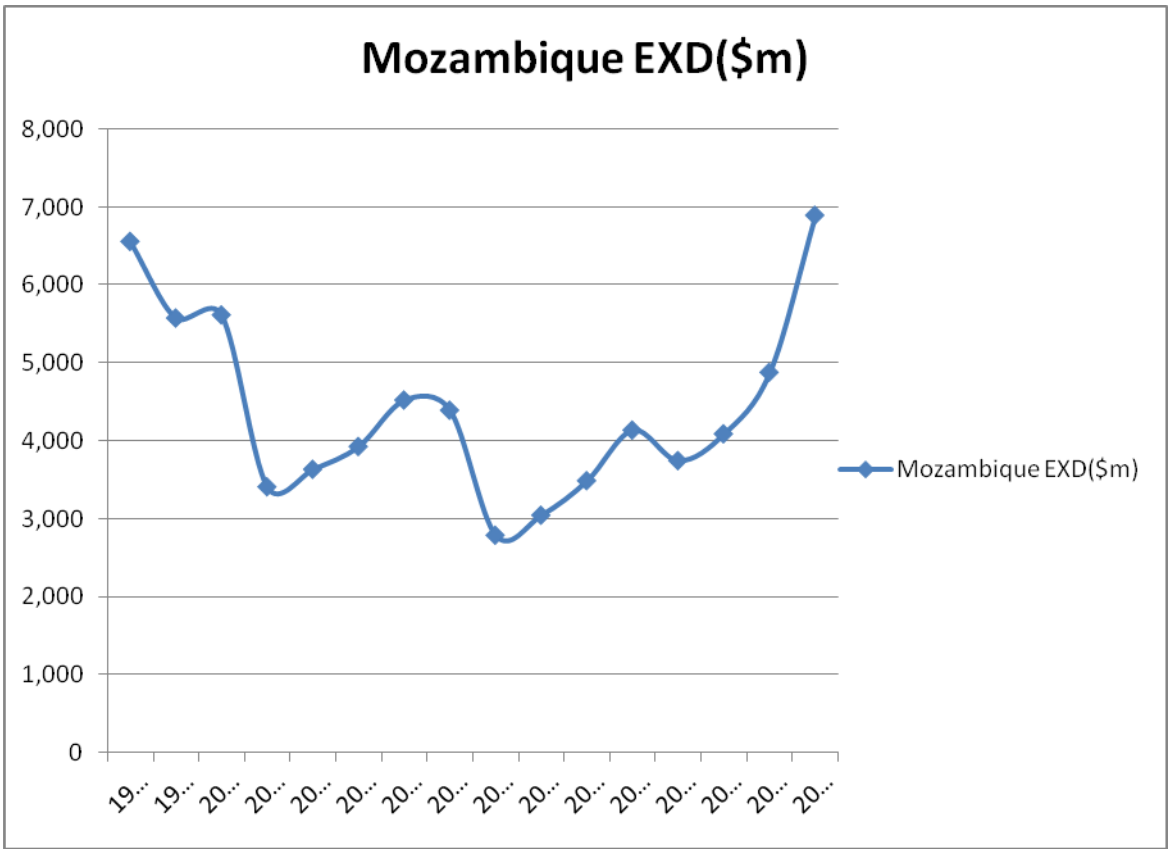

Fig 2.29: Mozambique External Debt in USD
Source: World Bank, International Debt Statistics

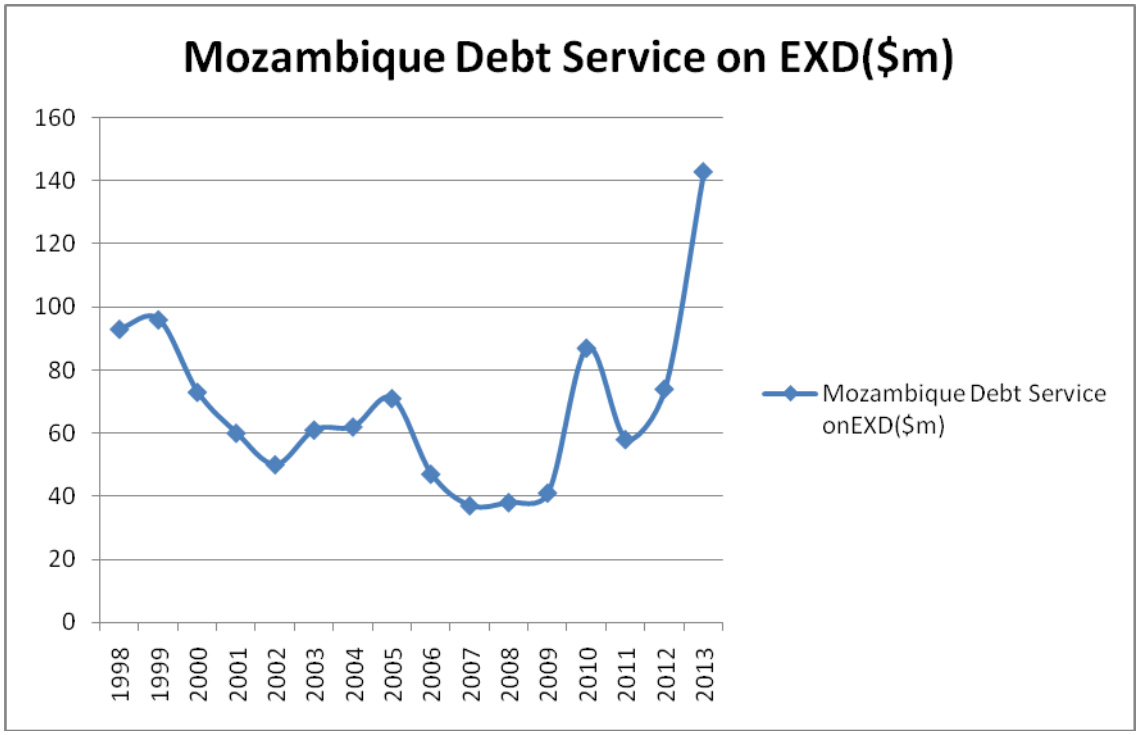

Fig 2.30: Mozambique Debt Service on External Debt in USD
Source: World Bank, International Debt Statistics

2.5.2 Debt Sustainability in Selected SSA Countries

Nigeria External Debt Stock and its Sustainability

Following the final phase of Nigeria's Paris Club Agreement in 2006, which led to an $18 billion reduction in Nigeria's external debt, external public debt is projected to total US$6.5 billion, or 2.4 percent of GDP, at end-2012. Approximately $5.3 billion of that total external debt stock is multilateral debt, of which about 87 percent is owed to IDA. The breakdown for external debt by main creditor as at 2012 is as follows:

Table 2.1 Nigeria's External Debt Stock, in millions of US dollars, end-2012

Category	Balance Outstanding
Multilateral	5,267
World Bank Group	
IBRD	0
IDA	4,570
IFAD	83
African Development Bank Group	
ADB	32
ADF	448
EDF	103
IDB	22
Others	9
Bilateral	671
Commercial	584
Total	6,522

Source: IMF staff estimates based on information provided by the Debt Management Office (DMO) in Nigeria (2012).

Note that Public external debt stock increased by US$0.9 billion during the year of 2012 (from US$5.6 billion at end-2011) due to loans for infrastructural development.

One important limitation here is that it only applies to debt contracted at the consolidated central government level. . Data on state and local governments' borrowing are presently not available. Public debt data analysis is also complicated by a multiplicity of off budget funds. Figures for Nigeria's total debt did not include debts owed by public enterprises.

Kenya External Debt Stock and its Sustainability

Most of Kenya's external debt remains on concessional terms, although its Commercial component has increased.Atend-2012, nominal public foreign debt was 23 percent of GDP (USD 9.1 billion) a lower ratio compared to SSA countries. Multilaterals maintained the biggest source of external credit to Kenya, although their relative share has decreased since 2011.

Likewise, the share of bilateral creditors, the second most important source of external credit, has decreased since 2010. The proportion of commercial debt has increased to about 10 percent at end-2012, largely as a result of a syndicated loan of about US $600 million-on which Kenya managed to bargain favorable conditions credit to the strengthened macroeconomic environment and investment climate. Kenya is yet to benefit from debt relief under either the HIPC or MDRI initiatives.

For the first time, Moody assigned Kenya a rating B1, and S&P a rating of B+, with a stable outlook, which should enable Kenya to negotiate a favorable rate for the planned sovereign bond issuance in 2013-2014.

Table 2.2: Kenya's External Debt as at 2012

Kenya's external debt 2012		
	Billion USD	SHARE%
Multilateral creditors	5.58	61.3
Bilateral creditors	2.65	29.2
Commercial Banks	0.86	9.5
Total	9.09	100.0

Source: Kenya's Statistical Office (2013).

Kenya's net internal debt stood at 20 percent of GDP (KShs 708 billion) at end-2012, It is largely held by commercial banks in the form of T-bills and government bonds (comprising of 30 percent and 70 percent of internal debt, respectively).

However, the share of internal debt held by non-banks has increased from 40.8 percent to 43 percent of the total between 2011 and 2012, indicating a diversification of the domestic investor base. Despite the relatively large size of the internal debt, rollover risks appear moderate as Kenya has focused on extending the average maturity of its debt, which is now 5-6 years.

Burundi External Debt Stock and its Sustainability

The last Low Income Country Debt Sustainability Analysis (LIC DSA) conducted in 2011 concluded that Burundi would continue to face a high risk of debt distress. At the end of 2011, Burundi's public and publicly guaranteed external debt stood at US $476 million or 23.6 percent of GDP. Burundi foreign debt has decreased considerably since 2009 due to debt relief under Highly Indebted Poor Countries (HIPC) Initiative and the Multilateral Debt Relief Initiative (MDRI). About 90 percent of Burundi's foreign debt is owed to multilateral creditors; with bilateral creditors accounting for the remainder .Most internal debt is owed to the central bank, due to the financing of the government's treasury needs. The rest is owed to commercial banks and non-bank creditors.

Cameroon External Debt Stock and its Sustainability

The debt data cover public foreign debt and guaranteed debt of public entities, as well as an estimate of domestic debt. Following HIPC and MDRI, the public debt-to-GDP ratio declined from 52 percent in 2005 to10 percent in 2008. Since 2008, however, domestic and external borrowing has been rising.

Table 2.3: Cameroon: Stock of Public Debt, 2005–2011

	2005	2006	2007	2008	2009	2010	2011
Billions of CFA Franc							
Total public debt	4,534	1,489	1,171	1,015	1,114	1,349	1,633
External	3,294	603	562	578	574	725	899
Multilateral long-term	----	206	230	289	377	460	564
Bilateral	---	316	289	288	196	222	292
Commercial	---	81	43	1	1	43	43
Domestic	1,241	887	608	437	540	623	734
Percentage of total debt							
Total public debt	100	100.0	100.0	100.0	100.0	100.0	100.0
External	72.6	40.5	48.0	56.9	51.5	53.8	55.0
Multilateral long-term	---	13.8	19.7	28.5	33.8	34.1	34.5
Bilateral	---	21.2	24.7	28.4	17.6	16.5	17.9
Commercial	---	5.4	3.7	0.1	0.1	3.2	2.6
Domestic	27.4	59.5	52.0	43.1	48.5	46.2	45.0
Percentage of GDP							
Total public debt	51.8	15.9	12.0	9.5	10.6	12.1	13.7
External	37.6	6.4	5.7	5.4	5.5	6.5	7.5
Multilateral long-term	---	2.2	2.4	2.7	3.6	.1	44.7
Bilateral	---	3.4	2.9	2.7	1.9	2.0	2.5
Commercial	---	0.9	0.4	0.0	0.0	0.4	0.4
Domestic	14.	2 9.	4 6.	2 4.	1 5.2	5.6	6.2

Sources: Cameroonian Monetary authorities; and IMF-World Bank staff estimate

The rise in external debt has been generated by an increase in external borrowing by the central government and public enterprises.

External public debt represented more than half of total public debt at end-2011. Its composition is skewed toward multilateral debt, but the share of non-Paris Club bilateral debt is expected to increase over the forecast period as a result of growing non-concessional borrowing.

Domestic debt has increased significantly since 2008 due to the completion of audits of government arrears, and the issuance of government bonds and treasury bills on the regional market in 2010 and 2011 respectively, and the securitization of arrears to the national oil refinery (Société Nationale de Raffinage; SONARA) in 2011.

Uganda External Debt Stock and its Sustainability

Uganda has been assessed at a low risk of debt distress based on the low-income country debt sustainability analysis (LIC DSA) despite recent problems to the economy from high inflation, weakening external demand, and slower growth. Both baseline public and external DSA suggest Uganda's public sector debt is sustainable due to the volume of the debt stock. The DSA thus includes a rise in the non-concessional borrowing ceiling under the PSI to US$1 billion from US$800 million

Uganda was a beneficiary of debt relief under both the first Heavily Indebted Poor Countries (HIPC) and the Enhanced HIPC Initiative in April 1998 and April 2000 - a move which, according to a study: 'HIPC Debt Relief and Poverty Reduction Strategies: Uganda's Experience' by Florence Kuteesa and Rosetti Nabbumba, was supposed to enable Uganda remain on a sustainable debt path for the foreseeable future, but the intension of the debt relief is yet to be realized.

The countries level of indebtedness has increased in less than five years from $1.4b (Shs3.65t) to $4.29b (Shs11t).

Malawi External Debt Stock and its Sustainability

Malawi's debt situation remains at a moderate risk of distress, but new risks have emerged since the last debt sustainability analysis (DSA). Uncertainty has increased following a scandal involving the theft of public funds. The fraud revealed weaknesses in national fiscal systems serious enough for donors to suspend budget support disbursements. Assuming suitable implementation of remedial measures, medium term borrowing and the overall outlook are expected to be largely unaffected relative to the previous DSA update. The use of a higher constant discount rate for debt service payments (in line with new guidelines) decreased Malawi's debt burden indictors.

Mali External Debt Stock and its Sustainability

Mali's risk of debt distress continues to be assessed as moderately unchanged from the previous Debt Sustainability Analysis (DSA). Mali's stock of public and publicly guaranteed foreign debt decreased from 103 percent of GDP in 2000 to 19 percent in 2006 due to enhanced HIPC debt relief in 2002 and MDRI debt relief in 2006. At end-2010, it had risen to 24.4 percent of GDP due to new loans by the

International Development Association (IDA), the African Development Bank (ADB), the Islamic Development Bank (IsDB) and the IMF (mainly through an allocation of SDR 74 million in2009).

All of Mali's foreign debt is publicly owed to multilateral creditors, majorly IDA, AfDB and IsDB. Mali is a medium policy performer as regards determining the debt burden ceiling under the Debt Sustainability Framework (DSF). Mali's rating on the World Bank's Country Policy and Institutional Assessment (CPIA) averaged 3.65 (on a scale of 1 to 6) during 2008–10, making it a medium policy performer. The corresponding external public debt burden thresholds are shown below.

Table 2.4 Mali External Debt Stock at year end 2000 – 2010
(In Billion CFA Franc)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Total	1939.7	1968.6	1156.1	1169.4	1184.5	1474.3	606.4	697.8	810.8	955.2	1134.1
Percent of GDP	102.6	89.0	52.0	47.7	45.0	50.9	18.9	20.4	20.7	24.4	22.6
Multilateral	1434.9	1503.9	824.5	741.5	878.3	1198.8	357.3	447.6	615.9	766.8	895.8
IMF 1	105.9	110.1	100.1	94.5	78.8	65.7	4.1	6.1	18.6	67.6	72.1
World Bank/IDA	327.6	343.3	106.0	176.5	268.3	383.5	83.8	216.3	262.5	313.2	413.6
African Develop-ment Bank	391.8	328.9	116.0	239.2	289.4	379.7	121.4	133.7	112.3	136.3	57.7
Islamic Development Bank	50.0	45.0	40.5	36.4	54.7	63.9	31.4	57.3	96.3	111.8	113.8
Others	559.6	676.5	461.9	154.9	187.0	290.6	64.0	109.1	129.1	137.9	138.6
Bilateral	498.2	459.0	328.4	423.5	301.9	270.0	246.9	247.7	194.9	188.4	235.8
Paris Club official debt	141.7	127.4	30.6	7.6	16.9	17.7	13.0	15.6	4.4	4.4	10.2
Non-Paris Club official debt	356.5	331.6	297.8	415.9	285.0	252.3	233.8	177.7	145.3	184.0	225.5
Other Creditors	7.3	7.4	4.3	4.4	4.4	5.5	2.3	2.5	2.8	2.9	2.6

Source: Malian Monetary authorities, IMF staff estimates.

Ethiopia External Debt Stock and its Sustainability

Based on the Low-Income Country debt Sustainability Analysis (LIC DSA) framework, the updated DSA found that Ethiopia's risk of foreign debt burden remains moderate. The public DSA suggests Ethiopia's total public debts are sustainable given the baseline scenario but susceptible under various different scenarios. Public sector debt ratios are expected to fall in the medium and long term, starting from a reasonably low level in 2013. An alternative scenario with a government primary deficit set at the 2012 level would have a negative effect on debt-to-GDP and debt-to-revenue ratios, signifying that a strategy be developed by the government to carter for the primary deficit already assumed in the baseline.

The last Debt Sustainability Analysis (DSA), of August 2012, showed that Ethiopia was at a moderate risk of foreign debt crisis. Ethiopia got to the completion

stage under the Heavily Indebted Poor Countries (HIPC) Initiative in 2004 and was given debt relief under the Multilateral Debt Relief Initiative (MDRI) in 2006. In 2011/12, public and publicly guaranteed (PPG) foreign debt fall to 18.4 percent of GDP, more than 5 percentage points relative to the previous year.

Ethiopia remains at moderate risk of external debt distress in 2013. The present value (PV) of PPG external debt is projected to increase slightly from13.2 percent of GDP in 2011/12 to 14.4 percent of GDP in 2012/13. The ratio of PV of PPG external debt to exports would go from 94.3 percent to 110.6 percent in the same period, due to the rapid increase of foreign debt and low exports growth.

Ghana External Debt Stock and its Sustainability

The analysis suggests that Ghana's risk of debt crisis has increased, but remains moderate. Driven by expansionary fiscal policy in 2012, many of Ghana's domestic and foreign debt indicators have worsened, but external debt burden indicators are expected to be below their relevant analytic thresholds, given that fiscal consolidation is realized as designed and goes further than the medium term. Total public debt is expected to remain close to 52 percent of GDP in the long run, with debt service taking more than 40 percent of government revenue. A more frontloaded adjustment would be needed to set the debt ratio on a declining trend.

Rwanda External Debt Stock and its Sustainability

Based on the Low-Income Country debt Sustainability Analysis (LIC DSA) framework, the updated DSA found that Rwanda's risk of foreign debt burden remains moderate. The public DSA suggests Rwanda's total public debts are sustainable given the baseline scenario but susceptible under various different scenarios. Public sector debt ratios are expected to fall in the medium and long term, starting from a reasonably low level in 2013.

Rwanda's total public and publicly guaranteed debt for the fiscal year 2013/14 increased to $2.295.5 billion (30.5 per cent of GDP) in 2014.

Rwanda's external debt amounted to $1,754.2 billion (76.4 per cent) of total public debt, while the domestic debt is $541.3 million which is 23.3 per cent of GDP.

Foreign debt servicing burden rose between 2013 and 2014 majorly as that era marked the first fiscal year when a full year of Eurobond interest repayments were made.

Tanzania External Debt Stock and its Sustainability

Based on the Low-Income Country debt Sustainability Analysis (LIC DSA) framework, the updated DSA found that Tanzania's risk of foreign debt burden remains moderate. The public DSA suggests Tanzania's total public debts are sustainable given the baseline scenario but susceptible under various different scenarios. Public sector debt ratios are expected to fall in the medium and long term, starting from a reasonably low level in 2013.

Tanzania's external debt of amounted to US$ 8.7 billion in 2010 from US$ 6.5 billion in 1990. The external debt to GDP percentage decreased from 130.1% in 1990 to 41.6% in 2010. The annual debt service of Tanzania slightly declined from US$ 0.21 billion in 1990 to US$ 0.20 billion in 2010 (WDI 2011). The sustainability of debt burden indicators shows decreasing trend, so far the foreign debt of Tanzania is sustainable (MOF 2012). The growth rate of GDP increased by 7% while export revenue also increased by 16.4 % (BOT 2012).

In spite of the assistances of debt relief and foreign aids received by Tanzania, its economy still maintains a slow movement to economic growth and stability due to heavy external debt burden and heavily dependent on donor support.

2.6 Review of Empirical Studies on Debt burden in sub-Saharan Africa.

Using macro-economic data for a panel of 100 LDC's for the period 1980-2002 (which include per capita GDP measured at purchasing power parity, population growth, fiscal balance, investment, Aid, primary education, exports and import, terms of trade, inflation, domestic credit, urbanization and debt stock) and institutional variables for the period 1984-1997, Presbitero (2004) noted from the growth model regression that:*...The crowding out effect is due to debt service payment, while the stock debt works in a more complex way, since it has generally a non- linear relation with investment and a strong negative effect on growth.* In conclusion, Presbitero (2005) observed that debt stock reduction should enhance economic growth so far a reduction of net present value of debt to exports ratio is found to increase per capital GDP growth rate by 0.9-1.8% while a greater bearing to reduction in debt service is vital whether the target is in a high investment ratio, because the crowding out effect is estimated to range between 0.15 to 0.27. The empirical literature on the determinants of investment in developing countries is increasing. More recent writing increasingly focused on the effect of external debt on private investment. Two contrasting

deductions have emerged so far. Firstly that the external debt crises has contributed significantly to decline in investment, this is because debt creates disincentives to investment; and secondly, the decline of investment in heavily indebted developing countries is not due to the debt problems, and so, the debt overhang hypothesis is irrelevant. Abrego and Ross (2001), who holds the above view examines the determinants of private investment in Nigeria with particular reference to the effects of debt service burden. Abrego and Ross (2001), after carefully considering the theoretical and empirical argument concludes that external debt burden has contributed significantly to a decline in investment in Nigeria.

The empirical enquiry of Green and Villanueva (1991) covered twenty-three developing countries for the period of 1975 and 1987. It is evident from their quantitative estimates that the ratio of GDP and debt service ratio significantly affect private investment in the sampled countries. The works of Borensztein (1993), Serven and Solimano (1993), and Partor and Hilt (1993) which cover a number of developing countries for much of the 1980s, support the hypothesis that the debt crises was a major determinant of investment decline after 1982. Several factors are being used to prove this result; reference is made to the two considerations repeatedly cited. According to this line of thought, the incentive to invest peters out since a huge share of the returns of investment is used to meet debt services obligations; this has been labeled the debt overhang phenomenon (Sachs, 1998). Second is the inability to honor and meet debt services obligations as at when due, an outcome which had led to a deterioration of relations between debtors and creditors countries, since new lending is substantially reduced to indebted countries, as has been the situation in heavily indebted African countries since the mid-1980s. While these factors work through the supply side, the other channel operates via reduced demand for credit by the private sector, causing a regressive effect on investment. Mukhopadhyay (1995), constructed a disequilibrium frame work to evaluate the relationship between this macro economic variables, his comprehensive study draws data from nine developing countries; Argentina, Brazil, Chile, Columbia, Ecuador, Mexico, Philippines, Thailand and Uruguay from 1971-1992. The results indicated that increasing growth of debt burden\ GDP ratio depressed private investment via their impacts on both the demands for and supply of credit.

The evidence from Tanzania Moshi and Kihindo, (1994) is also instructive, these authors considered the effect of government policies on private investment over the period of 1970-1993. Result of the ordinary least squares estimation technique

showed a substantially significant negative effect of foreign debt on investment in the country. Furthermore, the findings of some other investigators on this subject, however, do not support the proposition that the debt crisis is inimical to private investment. (Warner, 1992; Cohen, 1993). In Warner's view, the external forces which triggered the debt crisis that have also accounted for the fall in the level of investment in heavily indebted countries (Warner 1992) based on well-reasoned argument real interest rates was estimated for some 13 heavily indebted countries (Manly Latin American countries). Relying on the strength of sample forecast between 1982 and 1989, simulated exercise did not validate the finding that rising external debt and debt service deter private investment. Studying 81 countries Cohen (2003) regressed debt to export ratio and other variables on investment ratio. The coefficient of the debt service ratio was not statistically significant, which disproved the finding that increasing external indebtedness of the 1980's was not the cause of decreased profile of investment in the countries investigated.

The empirical evidence on the effect of debt variables on investment and/or growth in Low Developed Countries varies; however, most authors find debt variables to be significantly and negatively correlated with investment or growth (Green and Vilanueva, 1991; Cohen, 2003, 1995; Oshikoya, 1994; Hadjimicheal et al 1995; Iyoha, 1997; Elbadawi et al 1997; and Ajayi and Iyoha, 1998). Savvides (1993), finds that, while debt services crowd out investment, the debt-to-GNP ratio had negative but significant coefficient, indicating that the hypothesis of debt overhang effect cannot be discarded. Kumar and Mlambo (1996) reach the same conclusion in a study of investment in Sub-Saharan African countries. Deshpande (1997) also comes out with a similar result from his study of the experience of 13 severely indebted countries for the period of 1971 to 1991. In study of the connection between growth and investment and debt burdens in heavily indebted poor countries (HIPCs) IMF (1996) also concluded that it is difficult to detangle the role of debt overhang from other factors. In a recent IMF (2011) study of the 41 heavily – indebted countries (32 of which are in Africa), it concluded that the relationship between debt and investment on economic growth seems to be weak in middle- income developing countries as compared to the low-income developing countries. Other factors may have also worked to depress investment or economic growth in these countries.

Results obtained from empirical (Iyoha 2000) confirms that an excessively high stock of external debt depress investment and lowers the rate of economic growth in

developing countries, such as heavily indebted country like Nigeria. Weeks (2010), concludes that for Latin American countries, high debt burden has a negative impact on their growth performance, this result is reconfirmed by Cohen, 2003. Lensink and Morrisseys (2000), hypothesize that it is not so much the amount of debt that may hamper economic growth, but the uncertainty with respect to whom it may Concern: the annual debt services payments that may really matter. They defined uncertainty of debt services payments as the unanticipated or unexpected instability of these payments. They further argue that a close relationship exist between uncertainty and instability; the yearly unstable payments may lead to uncertainty of debt payment. This uncertainty of payments may hamper much needed changes in government policies, which in turn reduces the incentives to private investors. The relationship between growth and indebtedness has drawn a lot of interest in the literature.

According to (Sachs 1980), the debt overhang theory states that beyond a point, high external debt acts as a tax on investment since a fraction of what is gained in increased output goes to the creditor as debt service payments. Empirical evidence largely suggests that the decline in investment occurred at the same time with the beginning of the debt distress (Sachs 1989). Consequently, high indebtedness leads to low investment, low growth and consequently, low payment on indebtedness by the ending 1980s and beginning 1990s in Nigeria; The thinking that a high debt burden (as measured by the various indices) represented a constraint to the economic growth of developing countries became widely accepted.

The empirical findings, based mainly on middle-income countries and a relative few studies on Africa, finds significantly negative relationship between investment (and / or growth) and debt variables. Most of the studies on determinants of investment in the heavily indebted countries in the last two decade found an increase in the debt burden to be associated with a decline in both total and private investment. Examples of such studies are Weeks (2010), Greene and Villanueva (1999). A recent international Monetary Fund (IMF) study of the 41 indebted countries (25 of which are Africa) concludes as follows: the relationship between debt and investment or economic growth seems to be weak in the middle- income developing countries. Given other factors that have worked to depress economic growth and investment in these countries, it is difficult to isolate the role of debt overhang. Heavy external burden nevertheless may have been associated with disincentives to invest, which could have amounted to the comparatively low growth performance of some of these countries. The work of

(Savvides 1992), using simultaneous limited dependent variable approach, found that while debt services crowded out investment, the coefficient of debt to gross domestic national product, though negative, was insignificant. (Warner 1994), concludes that "evidence does not uphold the notion that excessive debt represents an investment deterrent".

Also Daniel Cohen (2003) investigated the extent of debt overhang problem and associated debt crisis from the 1980s to the growth slow-down of the 1990s. He found that the debt variables did play a noticeable role in the reduction in economic growth. Furthermore, Cohen affirmed that the slowdown in growth of indepted countries can be directly as a result of the debt crisis. Deshpande (1997) experimented on the debt overhang hypothesis using empirical examination of investment in thirteen highly indebted countries; he established that in countries with debt overhang; external debt contributed to many of the impacts of other explanatory variables that conventionally explained investment levels. In particular, Deshpande explained that the link between foreign debt and investment in the 1980s was persistently negative for the selected countries. Afxention and Serletis (1996) examined whether indebtedness has been detrimental to per capital growth in moderately and severely indebted countries, they found that there exists ample evidence of the depressing effect that debt overhang exerts on investment and its long term adverse impact on economic growth. Cohen (1993) looked at 81 developing nations for the period of 1965-87, rejecting the debt overhang hypothesis and supporting the crowding out effect. Cohen, did not find the correlation linking the debt-to-export ratio and the investment variables, while the debt service is significant and negatively correlated with investment; the point estimate of the crowding out effect is 0.35, which means that for every 3 percentage point GDP transferred abroad in debt service payment, investment decline by 2 percent point. Pattillo et al (2000) finds evidence of the "debt overhang" hypothesis, since their estimate for 93 developing nations for the period 1969-98 shows that a large external debt reduces economic growth.

The conclusion was that the overall impact of debt on growth is negative. Clement et al (2004), show that a large foreign debt has adverse effects on economic growth and investment and that external debt stock depress directly economic growth or development. Chowdhury (2004), show that debt indicators have negative effect on per capital real GDP growth both in the heavily indebted poor countries (HIPCs) and Non- heavily indebted poor countries (non-HIPC). Furthermore, the evidence is

constraint both with the “debt overhang” and the crowding out” effect, since the stock of external debt and debt service has a significant negative impact on gross domestic product (GDP). As a consequence Chowdhury argues for an extension of the initiative to all the indebted countries, since huge external debt act as a constraint to economic growth and poverty alleviation.

External debt is required to enhance economic growth and development of any nation but the future high debt service payment poses a serious threat to the economy of that nation. Economic scholars have sought to examine the effect of foreign debt burden on the economies of nations with high debt profile which ended with varied views. Sulaiman et al (2012) carried out a study on the impact of foreign debt on the on Nigeria economic growth. Annual data from1970-2010 was used. The empirical analysis was carried out using econometric techniques of Ordinary least squares (OLS), Augmented Dickey-Fuller unit root test, Johansen Co-integration test and error correction method. The co-integration test shows long-run relationship amongst the variables and findings from the error correction model discovered that foreign debt has contributed positively to economic growth in Nigeria. In addition the study recommends that Nigeria should ensure political and economic stability so as to ensure effective debt management.

An empirical investigation conducted by (Audu, 2004) examines the effect of foreign debt on investment and economic growth in Nigeria. The analysis for the study was done using time series data from 1970-2002. The Johansen Co-integration test and Vector Error correction method econometric techniques of estimation were employed in the study. The study concluded that Nigeria’s debt burden had a significant and negative effect on the growth and public investment. Another study by Ogunmuyiwa (2011) investigated if foreign debt enhances Nigeria economic growth using annual data from 1970-2007. In the regression, 37 equations were estimated using econometric techniques such as Augmented Dickey-Fuller test, Granger causality test, Johansenco-integration test and Vector Error Correction Method (VECM). The results revealed that there is no causal relationship linking foreign debt and economic growth in Nigeria.

Ayadi and Ayadi(2008) examined the effect of excessive foreign debt with its service obligations on Nigeria economic growth and the economy of South African. The Neoclassical growth model which incorporates external debt indicators and some macroeconomic variables was examined using both Ordinary Least Square (OLS) and Generalized Least Square (GLS) techniques of estimation. Their findings revealed that

debt and its Service requirement has a negative effect on Nigeria and South African economic growth. Faraji and Makame (2013) studied the effect of foreign debt on the Tanzanian economic growth using annual data on foreign debt and economic performance covering the period 1990-2010. It was observed through the Johansen co-integration test that there is no long-run correlation between foreign debt and GDP. However the findings show that external debt and debt service both have significant impact on GDP growth with the total foreign debt stock having a positive impact of approximately 0.36939 and debt service payment having a negative effect of approximately 28.517.

The study also identified the need for further research on the effect of foreign debt on foreign direct investments (FDIs) and domestic revenues. Safdari and Mehrizi, (2011) analyzed foreign debt and Iranian economic growth by looking at the balance and long term relationship of five variables (GDP, private investment, public investment, external debt and imports). Annual data from the period of 1974-2007 was used and the vector autoregressive model (VAR) technique of estimation was employed. The result showed that foreign debt has a negative impact on gross domestic product and pubic investment has a positive relationship with private investment.

Ejigayehu (2013) also analyzed the impact of foreign debt on the economies growth of eight selected heavily indebted African countries (Benin, Ethiopia, Mali, Madagascar, Mozambique, Senegal, Tanzania and Uganda) through the debt overhang and debt crowding out effect with ratio of external debt to gross national income as a proxy for debt overhang and debt service export ratio as a proxy for debt crowding out. Panel data from the period 1991-2010 was used. The empirical investigation was carried out on a cross-sectional regression model with tests for stationarity using Augmented Dickey Fuller tests, heteroskedasticity and ordinary regression. The concluding result from estimation showed that foreign debt has effects on economic growth through debt crowding out rather than debt overhang.

In their study on foreign debt relief and Nigeria economic growth, (Ekperiware and Oladeji, 2012) studied the structural break relationship linking external debt and Nigeria economic growth. The study employed the quarterly time series data of foreign debt, debt service and real GDP from 1980-2009. An empirical investigation was carried out using the Chow test technique of estimation to evaluate the structural break impact of foreign debt on Nigeria economic growth given the 2005 Paris Club debt relief. The result of their findings revealed that the 2005 external debt relief caused a

structural break effect in the relationship linking foreign debt and economic growth. From the results of the findings, they affirmed that the debt relief provided resources for growth-enhancing projects.

2.7 Synthesis of the Literature Review and Relevance to the Study

The impact of foreign debt on economic growth and investment can be studied best by having a better understanding on the issue of debt overhang, a term which is directly related with investment and economic growth. Different economists explained debt overhang in several ways.

For Krugman (1988) debt overhang is:-

> " *A situation in which the expected repayment on foreign debt falls short of the contractual value of the debt* "

Eduardo Borensztein (1993) defines debt overhang as:-

> *" A situation in which the debtor country benefits very little from the return to any additional investment because of the debt service obligations* "

In discussing the issue of debt overhang, policy makers sought to determine if the challenge is a liquidity problem or problem of solvency. Agenor and montiel,(1996)

As per Ajayi (1991), a liquidity problem is a short term problem faced by countries to service the forth coming debt based on the initial contract. i.e. when countries failed to service current obligation. The challenge of solvency which is long run exists when a country's total external debt stock is more than its ability to repay in a giving time.

For Krugman (1988) most developing countries were solvent. The NPV of their individual resources (computed on their discounted net inflow) are much lower than their total debt service requirements.

Krugman (1988) result can no longer used to assess the current position of the heavily indebted poor countries in general and the countries under this study in particular. As an alternative measurement, if we take foreign debt as a portion of gross national income as a yard stick of ability to pay and see the situation for the countries under this study, ability to pay are improved, as a high ratio means that a particular country would face difficulties in generating enough income to service its external obligations. And the reverse is true for a low External Debt % of GNI.

Table 2.6: External Debt – GNI Percentage of eight HIPCs for 1991 and 2010

S/No.	Country	External Debt % of GNI	External Debt % of GNI
		1991	2010
1.	Benin	62.7	18. 4
2.	Ethiopia	68.7	24.12
3.	Madagascar	156.5	26. 6
4.	Mali	107.3	26. 1
5.	Mozambique	183.6	43. 7
6.	Senegal	66.19	28. 5
7.	Tanzania	137.3	37. 6
8.	Uganda	85.8	17. 9

Source: World Bank data base 2012

The result from the above table and the assumption to use foreign debt-GNI ratio to measure ability to pay is unacceptable Krugman (1988) findings (liquidity versus solvency). But at the same time, there is no reason inferred from the table to reject the result as well. Therefore, it is hard to measure the current position of the chosen countries debt condition before determining if it is liquidity or solvency problem. But as can be inferred from the table, ability to pay are improved significantly in the year 2010 compared with year 1991.

In the other way for Savvides (1992), if an indebted country is unable to pay its external debt, the situation can be related to the country's economic circumstance. This kind of countries

benefit little from the increase in output or export income; as part of the income is used to pay forthcoming debt. This way the debt overhang can be handled like a marginal tax rate on the country that reduces earnings from investment and a impediment to domestic capital formation.

Even in the situation that all foreign debts are owned by government, debt overhang has adverse effect on private saving and investment. In the other side, government become preventative to make policies that will enhance domestic capital formation or to decrease domestic consumption for a higher future economic growth as the benefit is paid to creditors as debt payments.

In an attempt to find the impact of external debt on Investment; Eduardo Borensztein (1993) classified the impact of external debt on investment in two. i.e "Debt Overhang" and "credit Rationing" effect.

According to Borensztein, Debt overhang is a situation when a country is unable to meet its debt service obligations given its present resources, and undertake a negotiation with creditors to establish real debt payment; this time the payment linked

to the economic condition of the debtor country. As a result, a portion of the output will be used to pay the forthcoming debt. This will result to discouragement on private investment and poses a hindrance on the government to pursue the right policies. For Borensztein, debt overhang have a negative impact on private investment and gets strong when private debt used as measure of debt overhang.

According to Borensztein, the next way external debt affects investment is via the credit rationing effect. This is a condition faced by countries that failed to get a new loan because of their inability or willingness to pay.

Classens and Diwan (1990) classified the impact of foreign debt on investment and growth into two. First, debt servicing might put away (take) the limited resource of poor countries which would have been used for public investment. Essentially, resources spent on debt service could crowd out public investment and also private investment given complementary role of the two.

Second, foreign debt can impact on economic growth via the debt overhang effect; this happens when debt servicing dampens both current and future investment plans. Ajiya (2007), the dampening impact on investment happens when debtor countries are unable to service their debts in line with the terms of the agreement. It is therefore not too essential to evaluate debt overhang on the basis of external debt stock. Ajiya further recommended the maintenance a stable and unaffected trend in production and investment

First, debt servicing may require an increase in tax to generate resources and an increase in tax will dampen investment; this is a situation of debt overhang.

Second, as payments are made using foreign exchange; most indebted countries transfer domestic resources to foreign exchange. To raise large sum of foreign exchange, countries might use aid income. And this will in turn affect overall economic performance.

Third, when Poor countries faced a high debt service payment request, they might be forced to reduce spending on public investment. This in turn related to the crowding out effect of foreign debt.

In general huge debt service payment decreases government expenditure and retards growth. Osei (2000) suggested the ratio of total foreign debt to income (GNP) and the ratio of debt service to exports of goods and services as a better measure of debt burden, as they help to counter debt overhang and debt crowding out effects respectively. The higher the ratio, the greater the burden.

Various empirical studies have been conducted to investigate the impact of debt burden on growth in SSA countries and have arrived at different results using the same scope of study (see Bhattarchanya& Nguyen, 2003; Fosu, 2007; Hunt, 2007; Ayadi, 2008). These results were hampered by limited scopes and methodologies adopted by the researchers.

Different empirical studies are carried out at the beginning of the debt distress in the early 1980's. The main objective of these studies centered mainly on the impact of foreign debt on investment and economic growth. The result from the studies showed both positive and negative impacts of foreign debt on investment and economic growth.

Some of these studies are stated below chronologically.

Bauerfreund (1989) attempted to find the cost of foreign debt on the Turkish economy by adopting a computable general equilibrium model. He tried to explain the concept of debt overhang using a multi sector , non-linear general equilibrium model by evaluating two debt overhang measures. The two debt overhang measures are set by Sachs (1986) and Feldstein (1986) independently. According to Sachs (1986), when indebted countries faced a high debt service payment, they are forced to levy a tax on the private sector, with the aim of transferring resources to the public sector. Due to an increase in tax, return from investment decrease on the private sector. As a result, overall investment will decrease.

For Feldstein (1986), debt payment also needs a transferring of resources to foreign exchange. After using these two measures on the Turkish economy; Bauerfreund found a negative effect of external debt payment on investment in 1985. He also pointed out poor internal and external economic policies as the major reason for the debt overhang problem.

Opposed to Bauerfreund finding, Warner (1992) got a positive link between foreign debt and investment. The analysis was carried out on 13 LDC's from 1982-1989, using least square estimation. For Warner: a decline in export prices, high international interest rate and sluggish economic growth in the developed world were the major reasons that puts back the growth rate of investment in most indebted countries. To trap the debt effect, Warner forecast investment on the debt crisis period (1982-1989) by incorporating the above three effects in the model without the

debt crisis effect.

According to the study if the debt crisis effect is critical, the forecast that incorporate increase in export price, high international interest rate and recession in the developed world couldn't track investment; but would track investment if debt crisis is not critical. In other words, if debt crisis effects are important, then this investment prediction which disregards debt distress should be greater than actual investment.

Finally, a panel regression was used on both forecasted models. The one which encompass debt crisis as a dummy variable took a positive coefficient for the debt crisis dummy variable, which is opposite to external debt theories.

In 1998, Rockerbie criticized Warner (1992) and pointed out the following short comings:

First, the study failed to perform a nested and a non-nested test to compare the competing models developed to forecast investment.

Second, the study failed to incorporate debt variables in the investment model as these variables are expected to be endogenous in the model.

Third, structural changes like domestic polices and world economic conditions happened in 1982 were expected to be the cause of the debt crisis that has occurred in most indebted countries on the same period. This may weaken the effectiveness of a forecasting equation estimated using sample period of 1960-1981.

After the above suggestions, Rockerbie did an ordinary least square estimate for the 13 countries over the same period 1965 – 1990. The estimated result goes well with debt theories; i.e. the debt crisis of the 1982 affected the investment condition of the countries under study. The study encompasses variables that represent domestic monetary and fiscal policies, debt stock flows and more world economic condition.

According to Cohen (1997) the level of debt can't explain the decrease in investment in the highly rescheduling countries. He estimated the investment equation of 81 developing countries using ordinary least square method for three different periods: 1965-1973, 1974-1981 and 1982-1987. As per the result, external debt didn't affect the GNP growth rate of the 81 countries.

Afxentiou and Serletis (2006) attempted to find the statistical relationship between foreign debt and Productivity on 55 developing countries that faced debt service problem. They categorized the 55 countries into four based on per capita income and the level of debt. 14 out of the 55 countries are categorized in one group as indebted middle income countries, 10 as moderately indebted low income countries, 12 as severely indebted middle income countries and the rest 19 as indebted low income countries.

The time for the analysis was 1970-1990 and it was classified in two sub periods: the first period (1970 – 1980) which was characterized by an alarming growth in foreign debt and the second period (1981 -1998) was the era o f debt servicing problem.

The analysis was carried out on both time periods using the four categories. For a better analysis, each group was treated as a separate specific case and the effect of six debt indicators on the growth of its per capita income was investigated. According to the result from the first period (1970-1980), there was no negative relationship linking borrowing and national productivity in all the four groups or at all income levels. Accor ding to them on this period developing countries used the foreign debt to overcome the shock from the oil price increase.

The result from the second group showed a negative relationship between borrowing and productivity on two groups of the severely indebted developing countries. This was the period where debt forgiveness and Rescheduling began. According to Afxentiou and Serletis (1996), the foreign loan was misused by indebted developing countries. And they faced a debt service problem when they were asked to pay their debt obligation based on the contractual agreements.

Deshpaned (2007) try to examine the debt overhang hypothesis after empirically investigating the investment experience of 13 severely indebted poor African countries. These countries include; Algeria, Benin, Cameroon, Ethiopia, Ivory Coast, Kenya, Madagascar, Morocco, Rwanda, Senegal, Sierra Leone and Zambia

Accordingly debt overhang can't be explained by the normal debt obligation; rather it can be explained best with the actual amount paid, which is determined by creditor and debtor countries. Due to this fact, debtor countries used the increase in production and the income from export to service their debt.

After all, the result from a panel data regression using OLS estimation for two independent consecutive time periods 1975 -1983 and 1994-2011) yielded a negative impact of foreign debt on Investment.

Fosu (2009) tried to explain the impact of foreign debt over economic growth on sub - Saharan Africa countries by applying an augmented production function. The study used the debt crisis period, 1980-2007 for the analysis.

The main aim of Fosu was to examine the debt overhang hypothesis directly. The hypothesis which states that foreign debt imposes a negative effect on countries economic growth even without or hardly affecting the level of investment. As per the result, the debt variables which are included in the model took a negative coefficient on the period 1980-2007.

2.8 Summary of Literature and Empirical Studies on Debt Burden in sub Saharan Africa

The analyses of debt burden sustainability are inherently forward looking. A number of factors come into play to establish if a country will be able to service its debt. These factors are the accumulated debt stock and related debt service, the financing mix of the debt and the ability to pay in terms of exchange rate value of GDP, exports and government revenues (Abrego et al 2001).

In measuring debt burden literature expounds good number of indicators as provided here under: Ogunlana (2005) mentioned several indicators which have been applied to determine debt burden and its sustainability. The indicators are usually reported in proportions (ratios). These include: Debt Stock/Export, Debt Service/GDP, Debt Service/Export, Debt Stock/GDP, Reserves/Import and Reserves/Debt Stock. Each of these indicators has its merits and its limitations, suggesting that they should be used in combination and with caution.

The strength of any economy depends on its output and export potentials. Its debt stock with regard to its export should be well balanced and sustainable. In the same way, external debt stock/GDP is a scaled measure of debt stock position. They will measure foreign presence in an economy in the form of past reliance on contractual foreign capital inflow with the potential of attracting capital outflow in the future. Whether these will create debt burden in the future or not depends on the terms of the loan regarding its maturity structure, interest rate and usage.

The Debt Service/Export and Debt Service/ GDP indicate the proportion of exports and national output that are committed to service of debt incurred in the past. In particular, debt service/export is a liquidity measure. The debtor's ability to service the debt declines as the ratio increases. This directly shows that the debt is likely to be unsustainable. This situation can be costly as it can require greater adjustment to compensate for adverse balance of payments developments. For the debt service/GDP, it measures the magnitude of current domestic output used in meeting debt service commitments entered in the previous period.

The Reserves/Debt Stock ratio, though not a common measure of debt sustainability, assumes that if the total debt stock of the borrower is to be paid off with the reserves, how far would it go. The greater the ratio the more comfortable the debtor appears to be in terms of its capacity to meet its external commitments. Similarly, the Reserves/Import ratio measures the country's ability to pay for its imports.

The debt burden indicators suffer the limitations endemic to ordinal measurement. For instance, a country with a low ratio of debt stock/GDP may record unsustainable external debt if the value of exportable constitutes a very small proportion of its GDP. Foreign exchange resources may not be available to service the debt. Furthermore, the debt/GDP can also be influenced by exchange rate since local currency depreciation can raise the ratio while physical output and debt stock in foreign currency remain unchanged.

In addition, many debt ratios such as debt stock/GDP and debt stock/exports do not convey the terms and conditions and mix of concessionality and non-concessionality in the debt. These conditions have different impacts on the magnitude of the subsequent debt service payments (Omoruyi, 2005). The greater the level of concessionality in a stock of debt, which allows for long grace and maturity periods and low interest, the better, compared with debt with short maturity and high interest rate. This is because the debt service difficulty will be minimized.

Another important dimension to measuring the burden or sustainability of external debt is the use of the net present value (NPV) of such debt in terms of the discounted value of future debt service payments. However, the problem with this is that it compares future debt service obligations with existing payment capability not minding the country's growth prospect. This is particularly relevant when the debt maturity period is long. Moreover, while NPV indicators may signal debt servicing difficulties sometime in the future, they do not provide information on when these

problems may become pressing. Similarly, the discount rate may vary with market conditions. The NPV approach has to its advantage the capacity to make an effective comparison of debt burden among the countries on the same level of development.

The choice of relevant denominators in establishing debt ratios is another important issue. In general, this depends on the constraints that are most binding in an individual country. The use of GDP captures overall resource constraints, export relates to foreign exchange constraints while revenue indicates government's ability to generate fiscal resources. For external debt, it is helpful to observe and assess debt sustainability in relation to GDP and export earnings while public debt in general could be related to GDP and fiscal revenues (IMF, 2000).

It is important to observe a review of a country's external debt sustainability with total neglect of the level and constraint associated with domestic debt servicing will be underestimating the seriousness of indebtedness and the stress of debt servicing. This is because the effect of debt servicing on the budget is independent of whether payments are due to external or domestic debt obligations. Indeed they both have the effect of reducing allocation on other expenditure heads which may be important for sustainable growth.

Some general thresholds have been considered in the empirical literature for each of these ratios under the enhanced HIPC Initiative beyond which a country's debt might be considered unsustainable. These include NPV Debt-to -Export ≥ 150 per cent, Export-to- GDP ≥ 30 per cent, and Government Revenue-to-GDP ≥15, NPV Debt – to-Government Revenue ≥ 250 per cent, Debt Service-to-Export ≥ 15 per cent and Debt Service-to- Revenue ≥ 25 per cent.

Under the Country Policy and Institutional Assessment (CPIA) in which institutional strength and quality of policies play important determining factors, classification of countries to poor, medium and strong, determines what ratio should apply for Debt Service to export as well as Debt Service to Revenue. Countries classified as strong are to observe the ratios of 25 and 35 percent for debt service-export and debt service-government revenue, respectively.

The HIPC initiative was not intended to address the debt problems of all debtor countries. Hence its thresholds may not be applicable to all. However, the critical issue is that its eligibility criteria even for the HIPC are neither based on a comprehensive measure of poverty nor on a comprehensive measure of indebtedness. For example, the classification of Tanzania, which is poor and highly indebted by all standard, as a

"blend" country rather than "IDA Only" has shown some discrimination which can partly be explained by political factors.

Some researchers have disputed that the use of the indicators such as debt and debt service to exports should be complemented with NPV debt-to-GDP which in itself is a good overall indicator of a country's indebtedness. This is not only because it puts all countries at par in considering the heaviness of debt, but also it is less volatile than NPV debt-to- exports indicator and more easily available than the NPV debt-to-government revenue indicator (Sachs, 2000)

Kappagoda and Alexandra (2004) developed five indicators that together allow for sustainability conclusions to be drawn: The first indicator is the Present value of Debt to GDP ratio: The GDP figure used is the average of the current year and two preceding years. Comparisons of GDP demonstrate the size of debt in comparison to the largeness of the economy. The second indicator is the NPV of debt to Export ratio: The exports figure used is the average of the current and the two preceding years. Comparisons to exports demonstrate the ability to pay for the debt, however the availability of funds to pay for the debt depends on the openness of the economy and arrangements made for attracting foreign direct investment.

The third indicator is NPV of debt to Government revenues ration: The Government revenues figure used is the average of the current year and two preceding years. Domestic revenues are the best way out of debt problems; so reducing the ratio between the debt and government revenues must be a policy target. The fourth indicator is Debt service to exports ratio: The exports figure used is the average of the current and the two preceding years. Comparisons to exports demonstrate the ability to pay for the debt, however the availability of funds to pay for the debt depends on the openness of the economy and arrangements made for attracting foreign direct investment. And the firth indicator is Debt service to Government revenue ratio: The Government revenues figure used is the average of the current year and two preceding years. Domestic revenues are the best way out of debt problems; so reducing the ratio between the debt and government revenues must be a policy target.

Due to the fact that the country does default to service their debts, IMF (2000), Kappagoda and Alexander (2004) established debt threshold. The debt threshold aims at providing strength and quality of debt servicing policies.

2.9 Limitations of Previous Studies

In general, a number of empirical researches tried to reveal the exact relationship linking foreign debt and economic growth. As the content of the empirical literature review (previous studies) showed the findings differ in terms of geographical or economical areas covered, methods adopted during analysis affected the result they came up with. Therefore, none could show a priori the exact relationship between debt burden, investment and economic growth in a particular region of the world. Modified econometric analysis is required to establish the relationships.

This study will focus on determining the long run relationship between external debt burden on investment and economic growth by expanding the scope of study beyond what has been done in times past. This will be in the area of number of countries to be used in the cross sectional data, increased period of time and improved methodology in data analysis.

2.10 Theoretical Framework

The theoretical Framework of this study was structured on Debt Overhang Hypothesis.

Debt overhang is the situation in an institution (business, government, or family) that has accumulated debt so much that it finds it difficult to borrow additional money, even when that new borrowing is in fact a high-quality investment that would more than pay for itself. This problem emerges, for example, if a company has a new investment project with positive net present value (NPV), but will not utilize the opportunity due to high level of accumulated debt, the equity holders will not be willing to invest in such a venture because nearly all the profit will be taken by the debt holders who will not be willing to finance the new project. This situation renders the NPV of the new project negative.

The result of having excessive debt is that any earnings generated by new investment projects are partially appropriated by existing debt holders. This problem was first discussed by Myers (1977).

The concept of debt overhang has been applied to sovereign governments, predominantly in developing countries (Krugman, 1988). It narrated a condition where the debt of a country exceeds its future capacity to repay it.

The relationship between a country's foreign debt and growth has mostly based on the negative effects of "debt overhang." Krugman (1988) explains debt overhang as

a condition in which the expected repayment on foreign debt falls short of the contractual value of debt. If the external debt of a country exceeds its capacity to repay, the expected debt service is likely to be an increasing function of the country's output level. Thus, larger part of the country's domestic earnings is effectively "taxed away" by existing foreign creditors and investment by domestic and foreign investors and thus economic growth is discouraged.

The concepts of debt overhang theory centered on the negative effects of foreign debt on investment in physical capital. A high level of external debt can hamper government's ability to execute structural and fiscal reforms, since larger part of earnings from both domestic and foreign are used to repay foreign creditors. This condition has severe adverse effects on low-income countries, where accelerated structural reforms are needed to sustain rapid economic growth.

Debt overhang also depresses investment and growth by increasing uncertainty. As the size of the public debt increases, there is increasing uncertainty as regards the measures government will resort to in order to meet its debt service obligations, with negative effects on investment. In particular, as external debt accumulates, expectations are that government will increase tax in order to service its debt obligations service obligations Freytag and Pehnelt (2009).

Excessive debt can also lead to capital flight if the private investors fears imminent devaluation and/or increases in taxes to service the debt (Abrego and Ross, 2001). The theoretical literature suggests that external debt has a positive effect on investment and growth up to a certain threshold level; away from this level, however, its effect is adverse. As indicated in Cohen (1997), the relationship linking the face value of external debt and investment can be represented as a kind of "Laffer curve": as accumulated debt increases beyond a threshold level, the expected repayment starts to fall due to the adverse effects explained above.

The implication is that an increase in the face value of debt gives rise to an increase in repayment up to the "threshold" level; along the "wrong" side of the debt Laffer curve. Given the positive effects of capital accumulation on economic activity, a similar type of Laffer curve linking foreign debt and growth could also be expected.

The key macroeconomic variables which public debts impact on are;

i. Gross Domestic Product (GDP)

ii. Investment

CHAPTER THREE
RESEARCH METHODS

This chapter explored the methods used in estimating the models specified in this chapter. The longitudinal data regression analysis is employed for this purpose. The longitudinal data regression was chosen since the study involved cross sectional data from 15 sub-Saharan African countries and time series data from 1998 to 2013.

3.1 Nature and Sources of Data

The data used for the study are secondary in nature. The data are balanced longitudinal data because they are made up of time series data which covered the period of 16 years (1998 to 2013) and cross sectional data of 15 sub-Saharan African countries obtained from World Bank Data bases and Central Bank Reports of the countries, making up a balanced panel of 240 observations. The data include those on

i. Real Gross Domestic Product,
ii. External debt,
iii. Debt service,
iv. Internal debt
v. Investment.
vi. Exchange Rate
vii. Inflation
viii. Lending Rate

3.2 Research Design

The study adopted an ex-post facto research design as data used in the analysis were obtained essentially from World Bank data bases that are already in existence.

3.3 Model Specification

The models for this study established the effect of debt burden on investment and growth of 15 sub-Saharan African countries. In general debt burden presents the following features in an economy:

1. In some cases the size of the debt might be huge in relation with the economy size of the borrower and this leads to a possible capital flight and moreover it discourages private investment.
2. Servicing a debt by income from export may affect economic growth by draining available resources for social service activities.

3. The debt administrative systems have a positive macro-economic impact on the countries borrowing the debt.

In particular, debt burden may affect investment and economic growth in two ways:-

a. Through the debt overhang effect:- a situation when an accumulated debt, discourage and overhang investment, particularly private investment; as private investors anticipate an increase in tax by government to pay the accumulated debt.

b. Through debt crowding out effect, this is a situation when income from export is used to repay and service the accumulated debt. This in turn may affects investment.

This study adopted the approach in Ejigayehu (2013) who analyzed the effect of external debt on the economic growth of eight selected heavily indebted African countries (Benin, Ethiopia, Mali, Madagascar, Mozambique, Senegal, Tanzania and Uganda) through the debt overhang and debt crowding out effect with ratio of external debt to gross national income as a proxy for debt overhang and debt service export ratio as a proxy for debt crowding out. Panel data covering the period 1991-2010 was used. The empirical investigation was carried out on a cross-sectional regression model with tests for stationarity using Augmented Dickey Fuller tests, heteroskedasticity and ordinary regression. The concluding result from estimation showed that external debt affects economic growth through debt crowding out rather than debt overhang.

Bearing these a priori expectations, the models can be specified functionally below:

$$GDP = F(EXD, DS, IND, INFL, EXR, LENDR) \quad (3.1)$$

$$GDP = F(TDEBT, DS, INFL, EXR, LENDR) \quad (3.2)$$

$$INV = F(EXD, DS, IND, INFL, EXR, LENDR) \quad (3.3)$$

$$INV = F(TDEBT, DS, INFL, EXR, LENDR) \quad (3.4)$$

These models could be linearly specified below:

$$GDP = b_0 + b_1EXD + b_2DS + b_3IND + b_4INFL + b_5EXR + b_6LENDR + U_t \quad (3.5)$$

$$b_1, b_2, b_3, b_4, b_5 < 0$$

$$GDP = b_0 + b_1TDEBT + b_2DS + b_3INFL + b_4EXR + b_5LENDR + U_t$$

$$b_1, b_2, b_3, b_4, b_5 < 0 \quad (3.6)$$

$$INV = b_0 + b_1EXD + b_2DS + b_3IND + b_4INFL + b_5EXR + b_6LENDR + U_t \quad (3.7)$$

$$b_1, b_2, b_3, b_4, b_5, b_6 < 0$$

$$INV = b_0 + b_1TDEBT + b_2DS + b_3INFL + b_4EXR + b_5LENDR + U_t \quad (3.8)$$

$$b_1, b_2, b_3, b_4, b_5, < 0$$

Where:

GDP = Is the Gross Domestic Product of the selected 15 Sub-Saharan African countries

EXD = External Debt of 15 Sub-Saharan African countries

INV = Aggregate investment/Gross Fixed Capital Formation of the 15 Sub-Saharan African countries

DS = Debt service of the 15 Sub-Saharan African countries

IND = Internal debt/Public Debt of the 15 Sub-Saharan African countries

TDEBT = Total Debt of the 15 Sub-Saharan African countries

INFL = Inflation in the 15 Sub-Saharan African countries

EXR = Exchange Rate of the 15 Sub-Saharan African countries

LENDR = Lending Rate of the 15 Sub-Saharan African countries

U_t = Error term

3.4 Justification for Estimation Technique

The longitudinal data econometric analysis was used for this study. Longitudinal data is a situation in which the same cross-sectional unit like the 15 Sub-Saharan African countries are surveyed over time. It has the following advantages:

Since longitudinal data relates to individuals, firm, states, countries etc., overtime, there is bound to be heterogeneity in these units. The techniques of longitudinal data evaluation can absorb such heterogeneity explicitly into account by making provision for individual-specific variables.

By combining time series and cross-sectional observations, longitudinal data provide more useful data, more variability, less collinearity among variables, greater degree of freedom and more efficiency.

Longitudinal data detect and measure effects that cannot be observed in pure cross-section or pure time series data.

Longitudinal data helps us to study more complicated behavioral models better than pure cross-section or pure time series data.

By providing data for several thousand units, longitudinal data can reduce the bias that may happen if we cumulate individuals or firms into large aggregates.

In short, longitudinal data can enrich empirical analysis in ways that will not be possible if we use only cross-section or time series data. This is not to suggest that there are no problems with longitudinal data modelling.

3.5 The Fixed and Random effects model

The Random effects (REM) or Error component model (ECM) has some relevant aspects. An obvious issue with the least square dummy variable (LSDV) model is on whether the inclusion of the dummy variable and the consequent loss of number of degrees of freedom are really necessary. The reason underlying the covariance model is that in specifying the regression model, we omitted to add relevant explanatory variables that do not change over time (and possibly others that do change over time but have similar value for all cross-sectional units) and that the addition of dummy variables is a cover-up of ignorance. This ignorance is thus expressed through the disturbance term in the random effects model or error components model. We can start with one of the two models;

$$GDP_{it} = bo_i + b_1EXD_{it} + b_2Ds_{it} + b_3IND_{it} + b_4EXR_{it} + b_6INFL_{it} + b_7LENDR_{it} + U_{it} \quad (3.9)$$

Instead of treating bo_i as fixed, it was assured that it is random variable with a mean value of b_o. The intercept value for each of the fifteen sub- Saharan African countries can be expressed as:

$$bo_i = bo + E_i \quad (3.10)$$

where Ei is a random error term with a mean value of zero and a variance of δ^2.

What this suggests is that the fifteen sub- Saharan African countries included in our sample are a drawing from a much larger universe of over 50 countries in sub- Saharan Africa. The individual differences in the intercept values of each of the fifteen selected sub- Saharan Africa countries are reflected in the error term E_i.

The overall equations are restated as;

$$GDP_{it} = bo + b_iEXD_{it} + b_2DS_{it} + b_3IND_{it} + b_5INFL_{it}\ b_6EXR_{it} + + b_7LENDR_{it} + E_i + U_{it} \quad (3.11)$$

$GDP_{it} = bo + b_iTDEBT_{it} + b_2DS_{it} + b_4INFL_{it}\ b_5EXR_{it} + + b_6LENDR_{it} + E_i + U_{it}$ (3.12)

$INV_{it} = bo + b_iEXD_{it} + b_2DS_{it} + b_3IND_{it} + b_5INFL_{it}\ b_6EXR_{it} + + b_7LENDR_{it} + E_i + U_{it}$ (3.13)

$INV_{it} = bo + b_iTDEBT_{it} + b_2DS_{it} + b_4INFL_{it}\ b_5EXR_{it} + + b_6LENDR_{it} + E_i + U_{it}$ (3.14)

Where:

$W_{it} = E_i + U_{it}$

The composite error term W_{it} consists of two components; E_i, which is the cross section, or individual- specific error component, and U_{it}, which is the combination of time series and cross section error component and it varies over cross- section as well as time series. The error components model (ECM) is so mentioned because the composite error term is made up of two or more error components.

Simple guides on the option of the fixed effects model or the random effects model are;

1. If the number of time series data is larger and the number of cross sectional units is small, there may likely to be slight disparity in the values of the parameters estimated by fixed effect model and error components model. The choice is on computational convenience. FEM may however be preferable.
2. If cross- sectional data is large and time series is small, the error components estimators are more efficient.

3.6 Estimation Procedure

In other to determine whether to use Fixed Effect Model or Random Effect Model in the analysis of the longitudinal data, any of the following Statistical estimation techniques are available. They include;

i. The Hausman-Taylor Instrumental Variable (IV) Estimator
ii. The Breusch-Pagan Test
iii. The Hausman Test

The Hausman test was used for the study and its statistical applications are explained below.

3.6.1 The Hausman Test

As outlined, the salient distinction between the random effects model and fixed effects model is whether there is correlation between the U_t and the set of regressors. This distinction is sufficient to put up the Hausman test which is based on the following (verbal) hypotheses:

H0:σ_i is uncorrelated with **X,**

H1:σ_I is correlated with **X.**

There now is a simple motivation for the development of an appropriate test-statistic: Under the null hypothesis, H_0,i.e. if the α are uncorrelated with the covariates X_{it}, the random effects (GLS -)estimator (β_{RE}) is consistent and efficient; the fixed effects (within-)estimator ***(β_{FE})*** is consistent, though not efficient
Under the alternative hypothesis, ***H_1,*** i.e. if the α are correlated with the α_i explanatory variables X_{it}, the fixed effects estimator is consistent and efficient but the random effects estimator is now inconsistent.

Therefore, under the null hypothesis, there should be no systematic differences between β_{FE}und β_{RE}. The hypotheses can then be modified as follows:

H_0: $(\beta_{FE} - \beta_{RE}) = 0$,

H_1: $(\beta FE - \beta RE) \neq 0$.

The variance of both estimators is needed to compute the test-statistic. In general, the variance of the differences is:

$$\text{Var}(\beta_{FE} - \beta_{RE}) = \text{Var}(\beta_{FE}) + \text{Var}(\beta_{FE}) - \text{Cov}(\beta_{FE}, \beta_{RE}) - \text{Cov}(\beta_{FE}, \beta_{RE})'. \quad (3.9.9_3)$$

The first two components on the right hand side are known from the estimations. The covariances, however, are unknown. Hausman (1978) showed that the covariance of an

efficient estimator with its difference from an inefficient estimator is zero, which implies that

$$\text{Cov}[(\beta_{FE}, \beta_{RE}), \beta_{RE}] = \text{Cov}(\beta_{FE}, \beta_{RE}) \text{ Var } (\beta_{RE}) = 0 \quad (3.9.9_4)$$

Therefore,

$$\text{Cov}(\beta_{FE} - \beta_{RE}) = \text{Var } (\beta_{RE})$$

Using this result yields the required covariance matrix for the test:

$$Var(\beta_{FE} - \beta_{RE}) = Var\ (\beta_{FE}) - Var\ (\beta_{RE}) = S \quad (3.9.9_5)$$

S can be computed using the estimated covariance matrices from the within- and the GLS - estimation The Hausman test-statistic then is:

$$HT = (\beta_{FE} - \beta_{RE})\ 'S\text{-}1\ (\beta_{FE} - \beta_{RE}) = \chi_k^2 \quad (3.9.9_6)$$

Under the null hypothesis, *HT* is asymptotically distributed as chi-squared with *K* degrees of freedom.

3.7 Economic Criterion

This involves examining the results of the estimated model with a view to finding out whether the estimated parameters meet the A priori expectation or conform to theory. Our interests here are the signs and the sizes of the coefficients.

CHAPTER FOUR

PRESENTATION OF RESULTS AND DISCUSSION OF FINDINGS

In this chapter, the results of data analysis will be presented and discussed. Other topics covered in this chapter include;

i. Profile of debt burden in the SSA countries

ii. Profile of the Debt burden across the fifteen SSA countries

iii. Descriptive Statistics of the data used for study

iv. Correlation Matrix of Variables

v. Presentation of Panel unit root results and findings

vi. Panel Cointegration Test

vii. Hausman Tests

viii. Discussion of Regression Results in Relation to the Hypothesis

ix. Evaluation of Working Hypotheses

4.1 Profile of Debt Burden in the SSA countries

This section reviewed the effect of debt burden on the economy of the selected fifteen sub-Saharan African countries for the period of the study 1998 to 2013. The total debt/GDP ratio which indicates the country's ability to pay its debt per annum was analysed. If the ratio is high, it signifies that the country's ability to meet its debt obligation is low and the reverse is the case when the ratio is low.

4.1.1 Debt burden on Angola Economy

Below are data for total debt, external debt, internal/domestic debt and debt service of Angola for the period 1998 to 2013

Table 4.1: Data for Angola Debt Burden in (US$m)

YEAR	TDEBT($m)	EXD($m)	IND($m)	DS ($m)	TDEBT/GDP
1998	11,645	10,784	861	1,532	0.34
1999	11,405	10,673	732	1,443	0.32
2000	10,466	9,764	702	1,721	0.28
2001	9,462	8,777	685	2,239	0.24
2002	9,586	9,111	475	1,450	0.21
2003	9,532	9,101	431	1,489	0.19
2004	10,128	9,786	342	1,885	0.18
2005	12,506	12,224	282	2,614	0.18
2006	10,026	9,891	135	4,429	0.12
2007	12,054	11,932	122	4,490	0.11
2008	15,625	15,502	123	1,631	0.13

2009	17,383	17,014	369	3,555	0.13
2010	17,244	16,949	295	2,310	0.13
2011	19,537	19,298	239	2,851	0.14
2012	20,326	20,107	219	4,208	0.13
2013	24,264	24,004	260	4,872	0.15

Source: World Bank International Debt Statistics

Total debt stocks, (DOD current US$) in Angola was $24,264,000 as of 2013. The fluctuation in the value of this indicator for the past sixteen years has been between $24,264,000,000 in 2013 and $10,784,000 in 1998. Debt service on total debt (US$) in Angola was $4,872,000,000 as of 2013. The fluctuation in the value of this indicator for the past sixteen years has been between $1,532,000 in 1998 and $4,872,000,000 in 2013 (World Bank, International Debt Statistics, 2014).

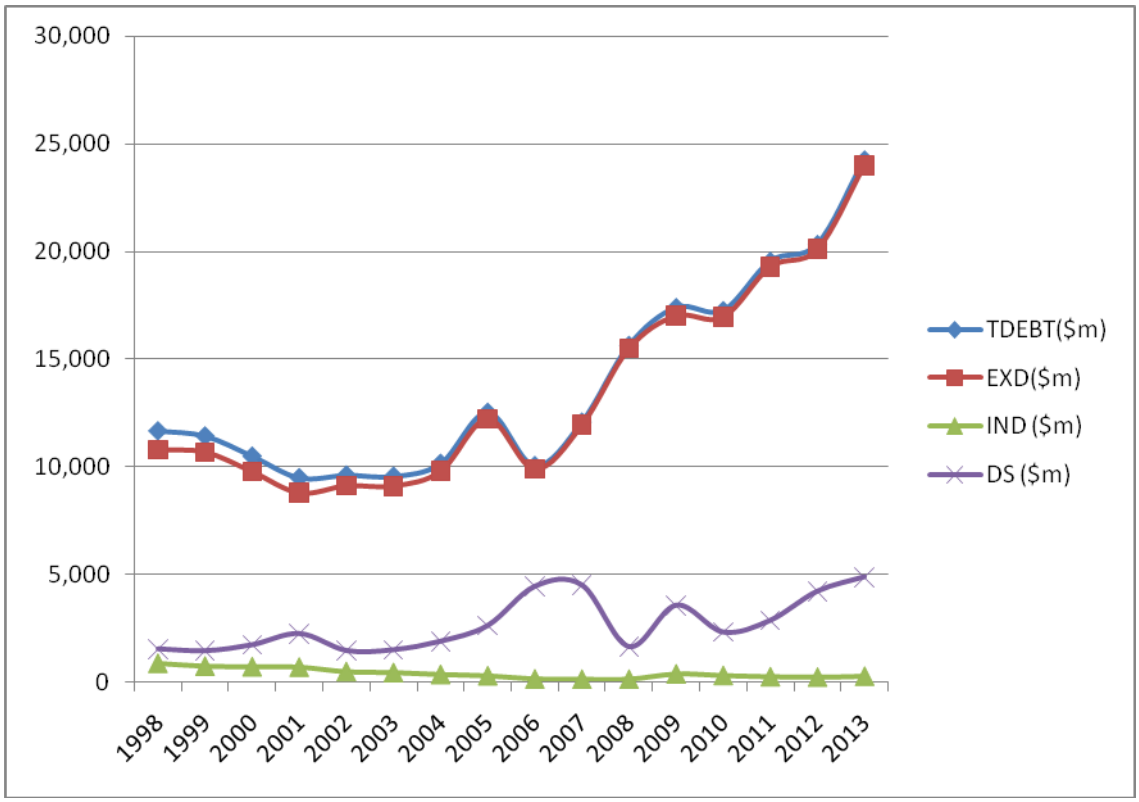

Fig 4.1: Trend of Angola Total Debt and Debt service in (US$m)
Source: World Bank International Debt Statistics

The indicator for Angola total debt shows decline between 1998 and 2001. The total debt increased sharply from 2006 getting to the peak in 2013. Angola recorded its lowest total debt in 2003 and the highest in 2013.

The indicator here shows that debt service in Angola rose between 2002 and 2007 and sharply between 2010 and 2013. This is as a result of increase in the total debt of Angola during the period

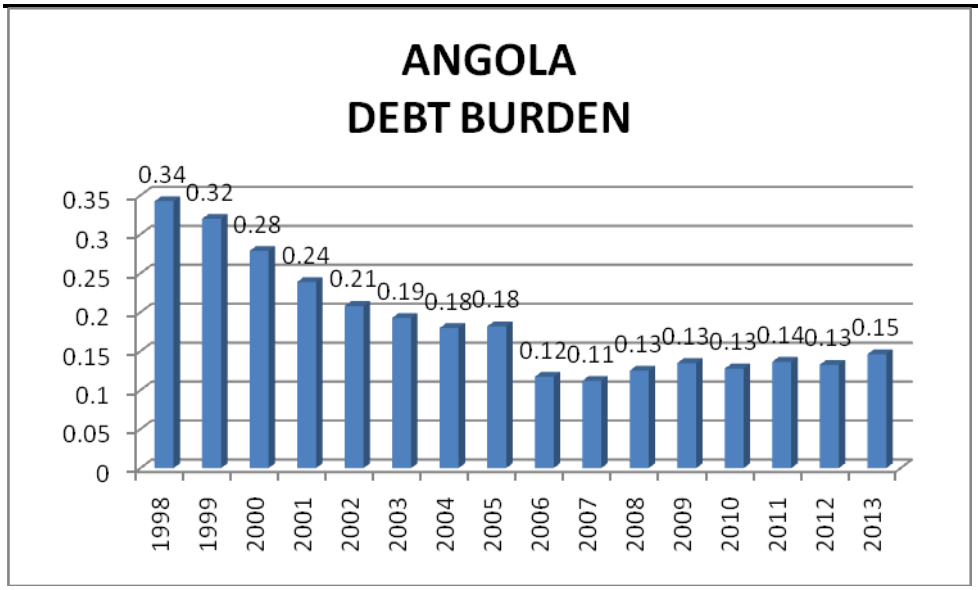

Fig 4.2: Statistical Analysis of Total Debt/GDP Ratio in Angola in USD

Source: Extract from computer printout of descriptive statistics

LEGEND OF DEBT BURDEN

N	16
Sum	2.9748
Mean	0.1859
SD	0.0736
Variance	5.42203
C.V.	39.603
Minimum	0.1119
Maximum	0.3426

From fig 4.2 Angola recorded the highest total debt/GDP ratio of 34% in 1998 and 11% in 2007 which is the lowest. The average ratio was 18% for the period of the study 1998 - 2013.

4.1.2 Debt Burden on Burundi Economy

Below are data for total debt, external debt, internal/domestic debt and debt service of Burundi for the period 1998 to 2013

Table 4.2: Data for Burundi Debt Burden in (USD)

YEAR	TDEBT($)	EXD($m)	IND($m)	DS($m)	TDEBT/GDP
1998	1,125	1,122	3.2	31	0.31
1999	1,157	1,154	3.4	30	0.32
2000	1,130	1,126	3.6	23	0.30
2001	1,098	1,094	3.7	24	0.28
2002	1,236	1,232	4.1	24	0.31
2003	1,352	1,348	4	30	0.32
2004	1,362	1,358	3.6	88	0.30
2005	1,291	1,288	3.1	40	0.27
2006	1,374	1,372	2.1	20	0.26

2007	1,412	1,411	1.3	18	0.25
2008	1,392	1,391	1.3	20	0.23
2009	608	607	1.2	20	0.10
2010	623	621	1.5	4	0.09
2011	606	604	1.5	10	0.09
2012	669	667	1.6	21	0.09
2013	685	683	1.8	33	0.09

Source: World Bank International Debt Statistics

Total debt stocks, total (DOD, current US$) in Burundi was $685,000,000 as of 2013. The fluctuation in the value of this indicator for the past sixteen years has been between $1,125,000,000 in 1998 and $685,613,000 in 2013. Debt service on total debt (TDS, current US$) in Burundi was $33,000,000 as of 2013. The fluctuation in the value of this indicator for the past sixteen years has been between $31,905,000 in 1998 and $33,000,000 in 2013 (World Bank, International Debt Statistics, 2014).

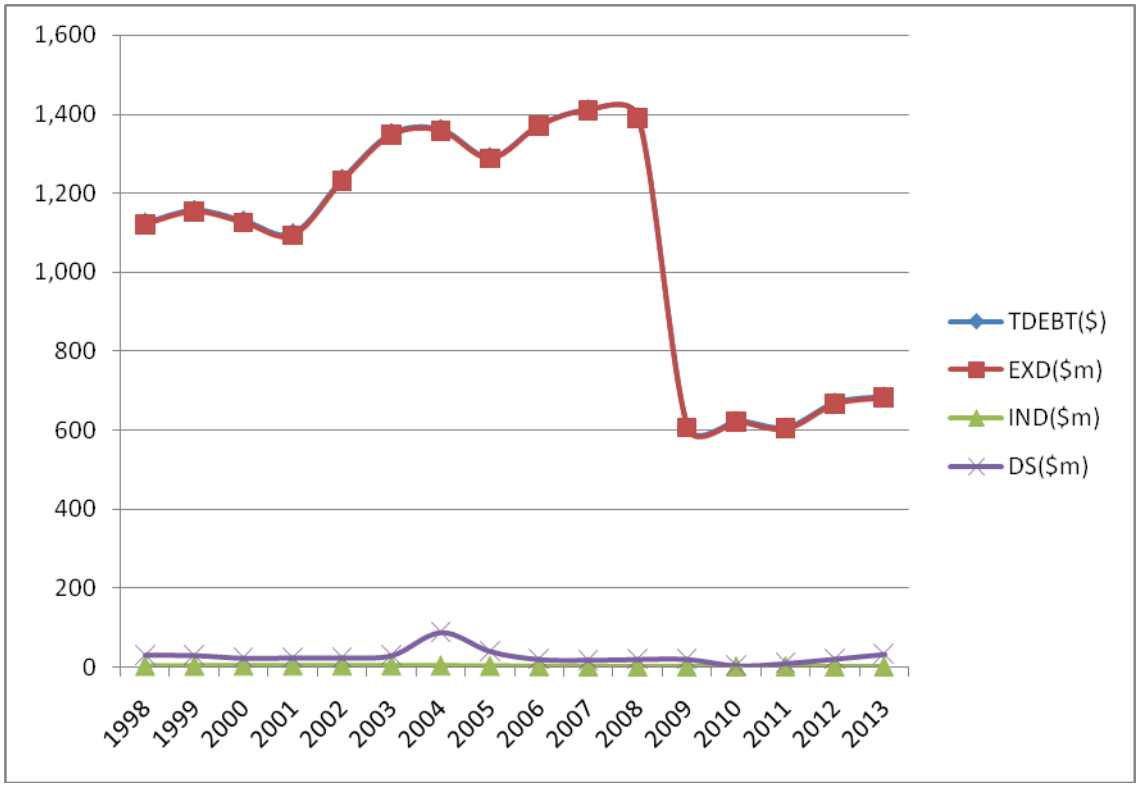

Fig 4.3: Trend of Burundi Total Debt in (USD)

Source: World Bank International Debt Statistics

Burundi recorded high total debt between 1998 and 2008. The total debt declined sharply in 2009 when the country benefited from the HIPC initiative and increased slowly between 2010 and 2013

Burundi recorded a declining debt service between 1998 and 2002. Debt service was high in 2004 and 2005 but declined between 2006 and 2012

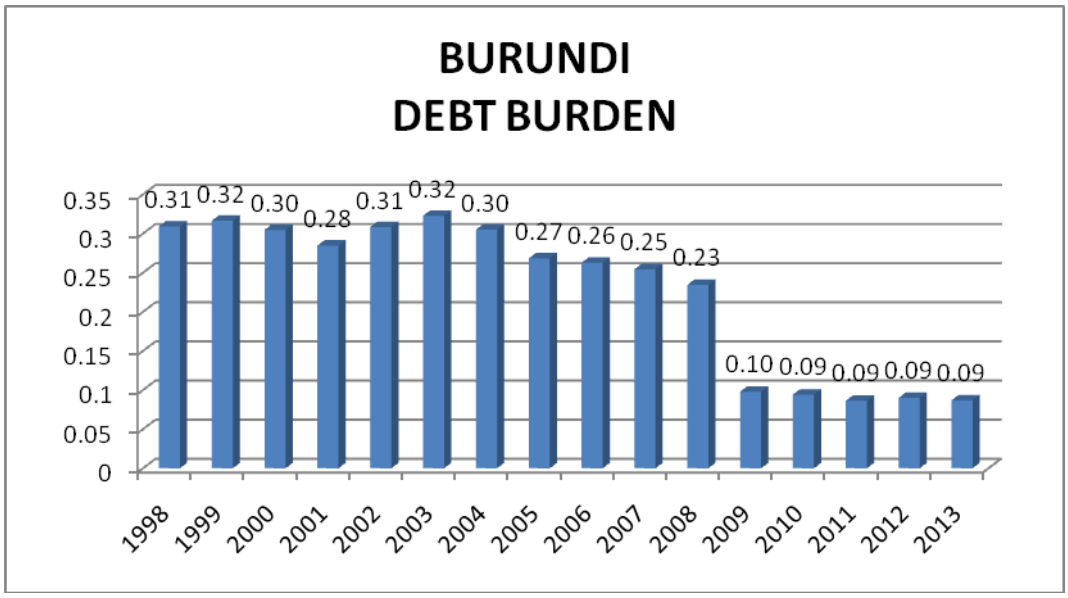

Fig 4.4: Statistical Analysis of Total Debt/GDP Ratio in Burundi in USD

Source: Extract from computer printout of descriptive statistics

LEGEND OF DEBT BURDEN

N	16
Sum	3.6265
Mean	0.2267
SD	0.0974
Variance	9.484E-03
C.V.	42.967
Minimum	0.0863
Maximum	0.3228

From fig 4.4 Burundi recorded the highest total debt/GDP ratio of 32% in 2003 and 9% in 2013 which is the lowest. The average ratio was 23% for the period of the study 1998 - 2013.

4.1.3 Debt Burden on Cameroon Economy

Below are data for total debt, external debt, internal/domestic debt and debt service of Cameroon for the period 1998 to 2013

Table 4.3: Data for Cameroon Debt Burden in (USD)

YEAR	TDEBT	EXD($m)	IND($m)	DS($m)	TDEBT/GDP
1998	11,352	11,308	44	520	0.42
1999	10,811	10,765	46	550	0.38
2000	10,611	10,561	50	560	0.35
2001	9,798	9,745	53	343	0.30
2002	10,344	10,288	56	350	0.30
2003	11,468	11,408	60	437	0.32
2004	10,919	10,856	63	609	0.28
2005	7,767	7,700	67	819	0.19
2006	3,490	3,419	71	494	0.08
2007	3,161	3,086	75	489	0.07

2008	2,905	2,826	79	449	0.06
2009	3,319	3,238	81	393	0.07
2010	3,279	3,194	85	198	0.06
2011	3,200	3,110	90	320	0.06
2012	3,847	3,751	96	241	0.07
2013	5,025	4,922	103	216	0.08

Source: World Bank International Debt Statistics

Total debt stocks (DOD, current US$) in Cameroon was $5,025,311,000 as of 2013. The fluctuation in the value of this indicator for the past sixteen years has been between $5,025,311,000 in 2013 and $11,352,361,000 in 1998. Debt service on total debt (TDS, current US$) in Cameroon was $216,944,000 as of 2013. The fluctuation in the value of this indicator for the past sixteen years has been between $520,577,000 in 1998 and $216,944,000 in 2013 (World Bank, International Debt Statistics, 2014).

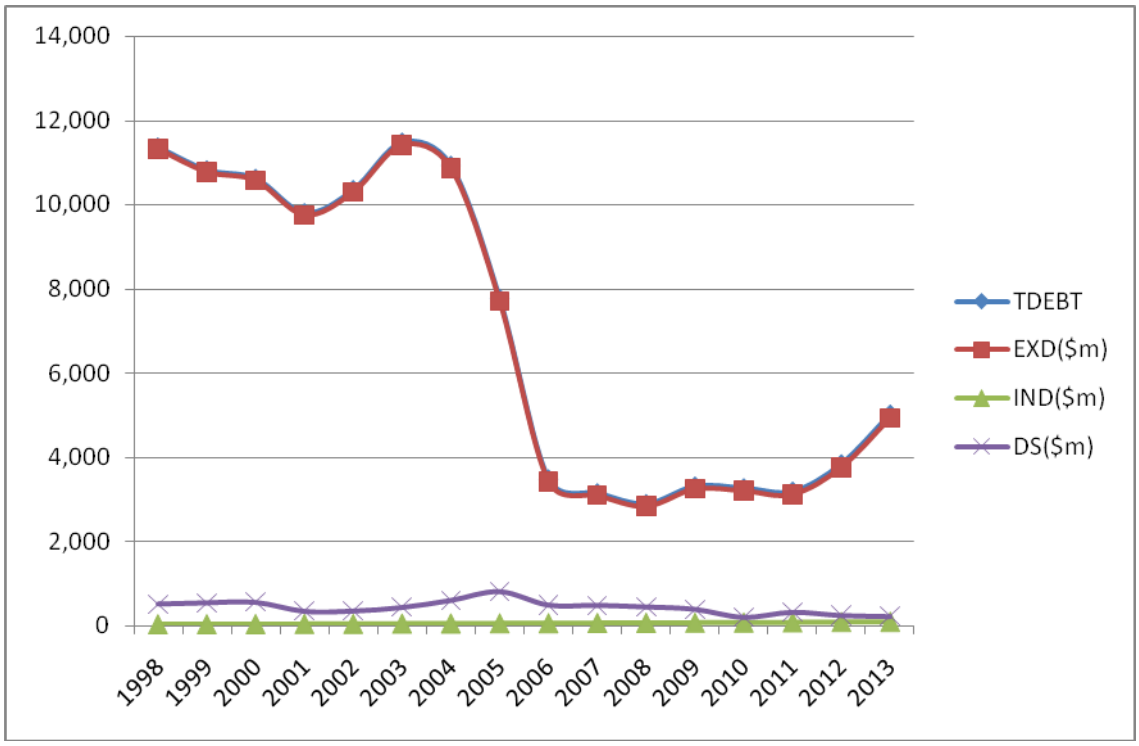

Fig 4.5: Trend of Cameroon Total Debt in (USD)
Source: World Bank International Debt Statistics

Cameroon recorded high total debt level between 1998 and 2005. It declined in 2006 and increased steadily afterward. Cameroon recorded its highest total debt in 2003. Debt service payment in Cameroon was at high level between 1998 and 2000 and declined to the lowest in 2010. The peak was in 2005 when it declined steadily up to 2013.

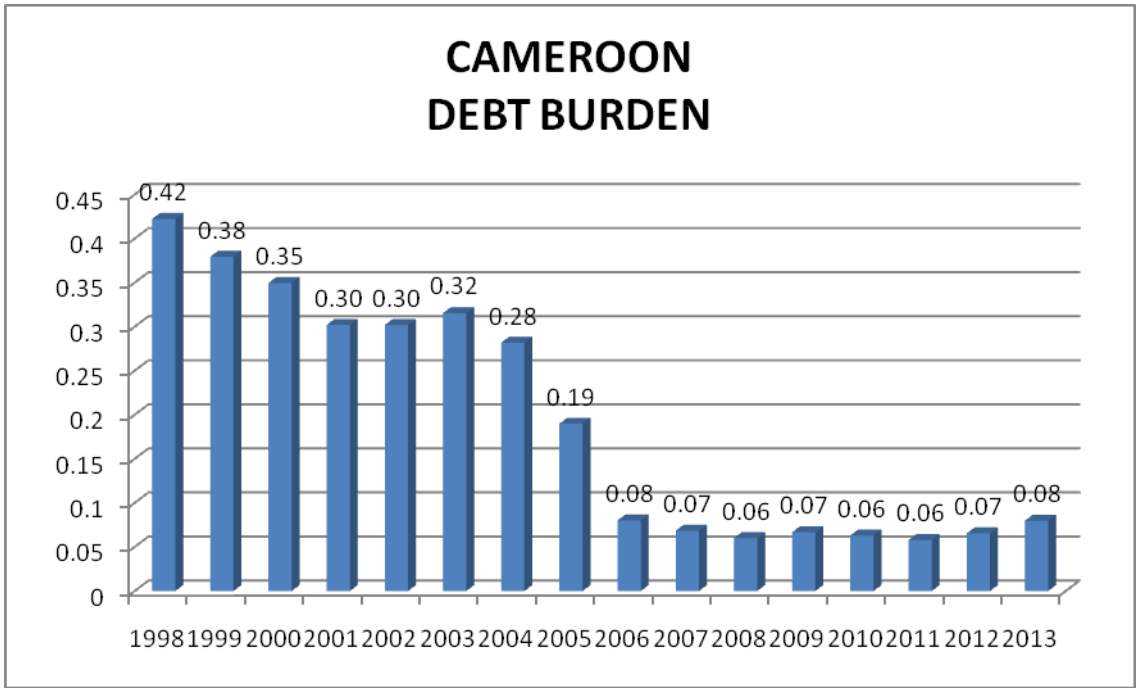

Fig 4.6: Statistical Analysis of Total Debt/GDP Ratio in Cameroon in USD

Source: Extract from computer printout of descriptive statistics

LEGEND OF DEBT BURDEN

N	16
Sum	3.0845
Mean	0.1928
SD	0.1377
Variance	0.0190
C.V.	71.449
Minimum	0.0580
Maximum	0.4223

From fig 4.6 Cameroon recorded the highest total debt/GDP ratio of 42% in 1998 and 6% in 2008 which is the lowest. The average ratio was 19% for the period of the study 1998 - 2013.

4.1.4 Debt Burden on DR Congo Economy

Below are data for total debt, external debt, internal/domestic debt and debt service of DR Congo for the period 1998 to 2013

Table 4.4: Data for DR Congo Debt Burden in (USD)

YEAR	TDEBT($m)	EXD($m)	IND($m)	DS ($m)	TDEBT/GDP
1998	13,488	13,203	285	19	0.63
1999	12,417	12,167	250	25	0.60
2000	11,981	11,805	176	30	0.61
2001	11,839	11,628	211	20	0.60
2002	10,371	10,177	194	928	0.50
2003	11,584	11364	220	148	0.52
2004	11,772	11,558	214	134	0.48
2005	10,830	10,713	117	218	0.41

2006	11,450	11,343	107	290	0.39
2007	12,578	12,472	106	501	0.40
2008	12,395	12,322	73	593	0.36
2009	13,149	13,083	66	625	0.37
2010	6,213	6,188	25	275	0.16
2011	5,567	5,531	36	256	0.13
2012	5,628	5,591	37	279	0.12
2013	6,221	6,180	41	401	0.12

Source: World Bank International Debt Statistics

Total debt stocks (DOD, current US$) in Congo DR was $6,221,000,000 as of 2013. The fluctuation in the value of this indicator for the past sixteen years has been between $6,221,282,000 in 2013 and $13,488,805,000 in 1998. Debt service on total debt (TDS, current US$) in Congo DR was $401,000,000 as of 2013. The fluctuation in the value of this indicator for the past sixteen years has been between $928,391,000 in 2001 and $401,000,000 in 2013.

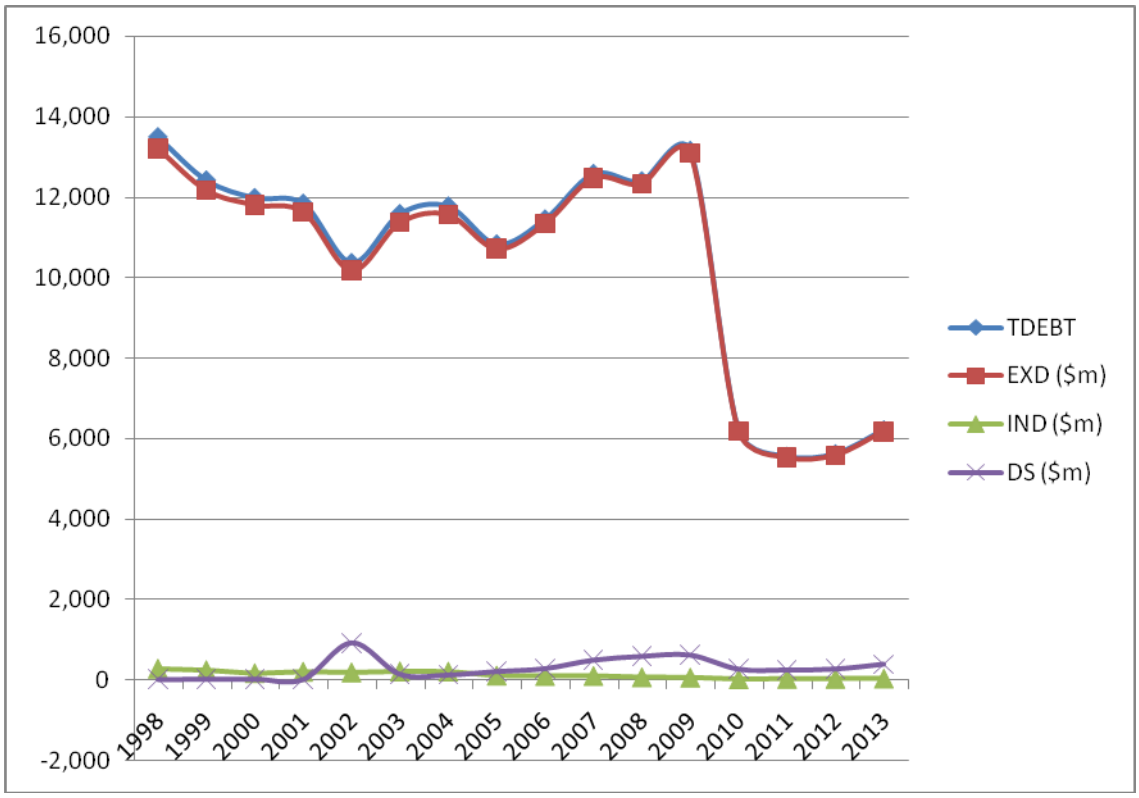

Fig 4.7: Trend of DR Congo Total Debt in (USD)
Source: World Bank International Debt Statistics

DR Congo recorded high level of total debt between the period 1998 and 2009. It thereafter declined in 2010 to 2012

DR Congo debt service was low between the periods 1998 to 2001. It rose sharply to its peak in 2002 and fluctuated between 2003and 2012.

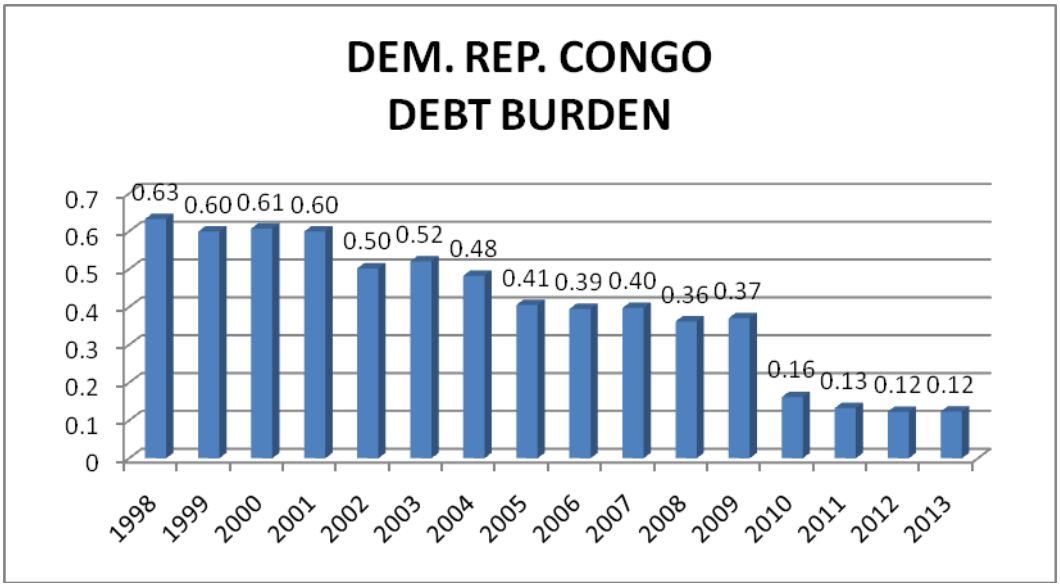

Fig 4.8: Statistical Analysis of Total debt/GDP Ratio in DR Congo in USD

Source: Extract from computer printout of descriptive statistics

LEGEND OF DEBTBURDEN

N	16
Sum	6.4135
Mean	0.4008
SD	0.1812
Variance	0.0328
C.V.	45.202
Minimum	0.1229
Maximum	0.6326

From fig 4.8 DR Congo recorded the highest total debt/GDP ratio of 63% in 1998 and 12% in 2013 which is the lowest. The average ratio was 40% for the period of the study 1998 - 2013.

4.1.5 Debt Burden on Ethiopia Economy

Below are data for total debt, external debt, internal/domestic debt and debt service of Ethiopia for the period 1998 to 2013

Table 4.5: Data for Ethiopia Debt Burden in (USD)

YEAR	TDEBT($m)	EXD($m)	IND($m)	DS ($m)	TDEBT/GDP
1998	14,553	10,360	4,193	119	0,52
1999	10,167	5,572	4,595	156	0.34
2000	10,069	5,504	4,565	139	0.31
2001	10,410	5,752	4,658	183	0.29
2002	11,981	6,559	5,422	86	0.32
2003	12,707	7,307	5,400	93	0.34
2004	11,624	6,680	4,944	101	0.27
2005	9,782	6,224	3,558	94	0.20
2006	4,119	2,294	1,825	140	0.07
2007	4,362	2,638	1,724	134	0.07
2008	4,322	2,896	1,426	111	0.06

2009	6,406	5,232	1,174	103	0.08
2010	8,641	7,347	1,294	184	0.09
2011	9,818	8,604	1,214	353	0.09
2012	11,450	10,462	988	431	0.10
2013	13,573	12,557	1,016	664	0.11

Source: World Bank International Debt Statistics

Total debt stocks (DOD, current US$) in Ethiopia was $13,573,580,000 as of 2013. The fluctuation in the value of this indicator for the past sixteen years has been between $13,573,580,000 in 2013 and $14,553,292,000 in 1998. Debt service on total debt (TDS, current US$) in Ethiopia was $664,230,000 as of 2013. The fluctuation in the value of this indicator for the past sixteen years has been between $664,230,000 in 2013 and $119,202,000 in 1998 (World Bank, International Debt Statistics, 2014).

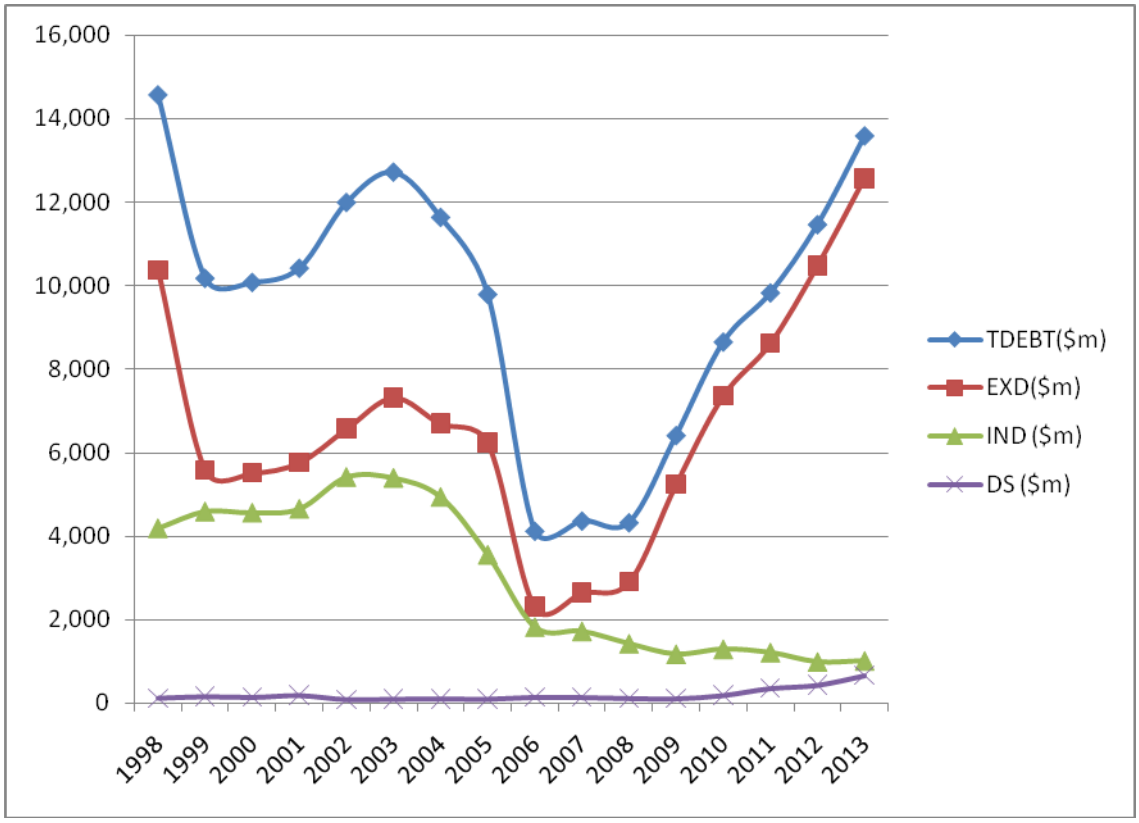

Fig 4.9: Trend of Ethiopia Total Debt in (USD)
Source: World Bank International Debt Statistics

Ethiopia recorded high level of total debt between the periods 1998 to 2005. Total debt declined sharply in 2006 and 2008 and increased steadily afterward.
Ethiopia recorded low debt service between 1998 and 2010. It however increased sharply afterward to the peak 2013.

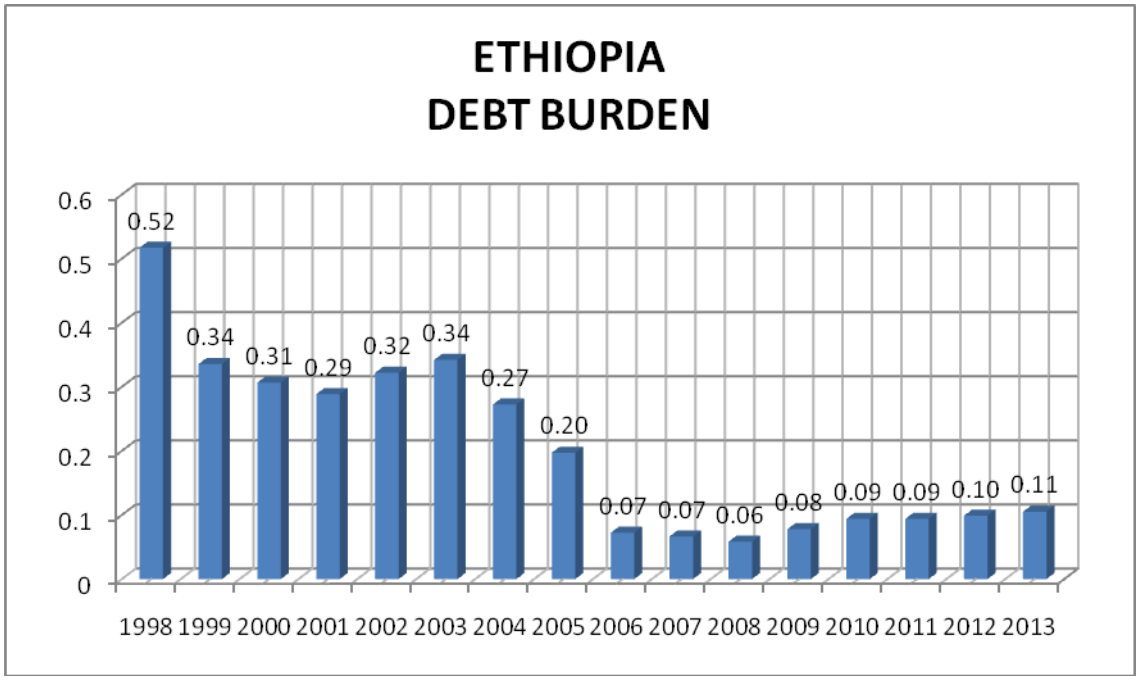

Fig 4.10: Statistical Analysis of Total debt/GDP Ratio in Ethiopia in USD

Source: Extract from computer printout of descriptive statistics

LEGEND OF DEBT BURDEN

N	16
Sum	3.2473
Mean	0.2030
SD	0.1388
Variance	0.0193
C.V.	68.397
Minimum	0.0582
Maximum	0.5170

From fig 4.10 Ethiopia recorded the highest total debt/GDP ratio of 52% in 1998 and 7% in 2007 which is the lowest. The average ratio was 20% for the period of the study 1998 - 2013.

4.1.6 Debt Burden on Ghana Economy

Below are data for total debt, external debt, internal/domestic debt and debt service of Ghana for the period 1998 to 2013

Table 4.6: Data for Ghana Debt Burden in (USD)

YEAR	TDEBT($m)	EXD($m)	IND($m)	DS ($m)	TDEBT/GDP
1998	23,727	6,311	17,416	478	0.80
1999	29,228	6,506	22,722	428	0.93
2000	38,588	6,254	32,334	392	1.15
2001	33,157	6,550	26,607	281	0.93
2002	29,913	7,197	22,716	203	0.79
2003	29,585	7,878	21,707	456	0.73
2004	22,456	7,428	15,028	282	0.51
2005	19,756	7,168	12,588	332	0.41
2006	10,543	3,677	6,866	287	0.20

2007	13,228	5,101	8,127	234	0.23
2008	14,432	5,679	8,753	298	0.23
2009	16,678	7,182	9,496	276	0.25
2010	21,480	9,300	12,180	363	0.29
2011	22,436	11,282	11,154	343	0.26
2012	25,432	12,568	12,864	522	0.27
2013	30,272	15,832	14,440	931	0.30

Source: World Bank International Debt Statistics

Total debt stocks (DOD current US$) in Ghana was $30,272,510,000 as of 2013. The fluctuation in the value of this indicator for the past sixteen years has been between $30,272,510,000 in 2013 and $23,727,219,000 in 1998. Debt service on total debt (US$) in Ghana was $931,201,000 as of 2013. The fluctuation in the value of this indicator for the past sixteen years has been between $931,201,000 in 2013 and $478,348,000 in 1998 (World Bank, International Debt Statistics, 2014).

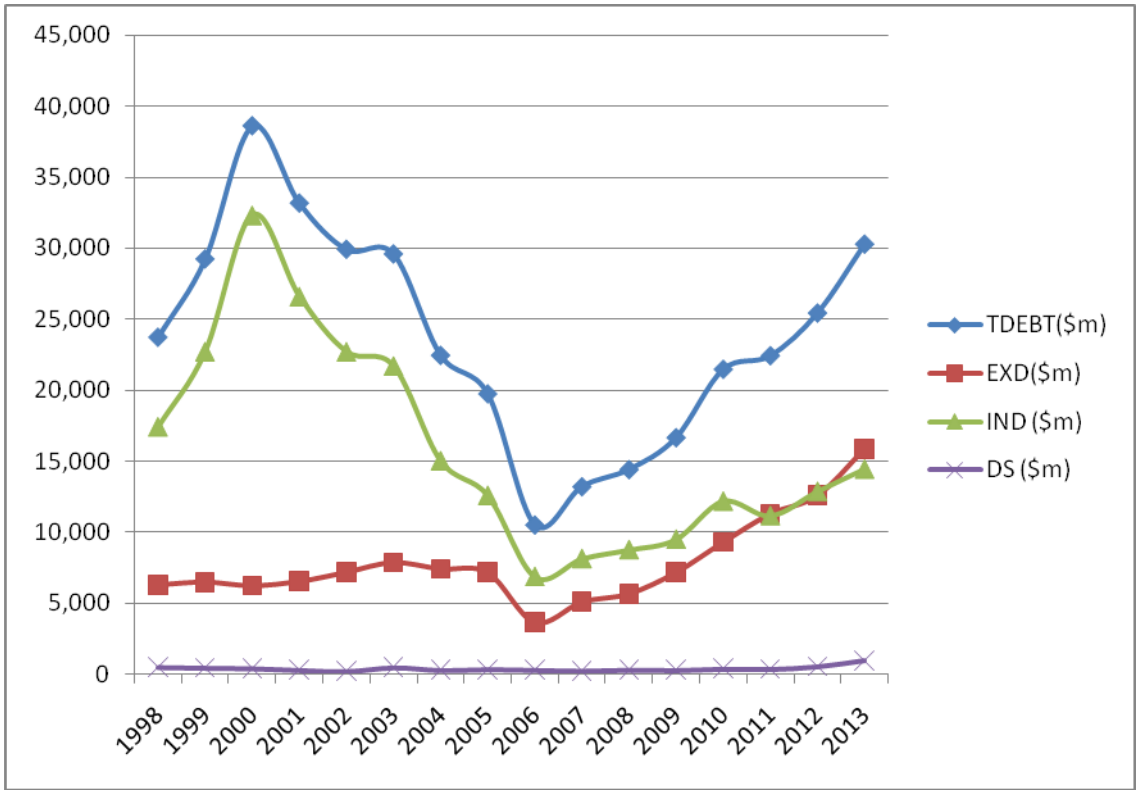

Fig 4.11: Trend of Ghana Total Debt in (USD)
Source: World Bank International Debt Statistics

Ghana total debt was high between 1998 and 2005 and declined in 2006. It increased steadily between 2007 up to 2013

Ghana debt service fluctuated in the period 1998 to 2012 getting to the peak in 2013.

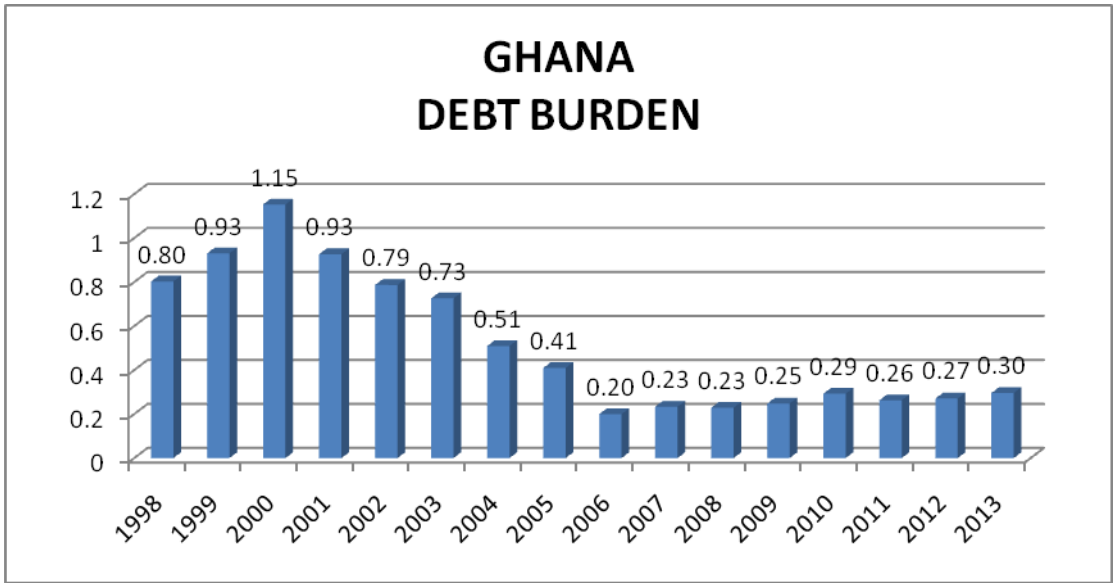

Fig 4.12: Statistical Analysis of Total Debt/GDP Ratio in Ghana in USD

Source: Extract from computer printout of descriptive statistics

LEGEND OF DEBT BURDEN

N	16
Sum	8.2739
Mean	0.5171
SD	0.3177
Variance	0.1010
C.V.	61.445
Minimum	0.1997
Maximum	1.1527

From fig 4.12 Ghana recorded the highest total debt/GDP ratio of 1.15% in 2000 and 20% in 2006 which is the lowest. The average ratio was 52% for the period of the study 1998 - 2013.

4.1.7 Debt Burden on Kenya Economy

Below are data for total debt, external debt, internal/domestic debt and debt service of Kenya for the period 1998 to 2013

Table 4.7: Data for Kenya Debt Burden in (USD)

YEAR	TDEBT($m)	EXD($m)	IND($m)	DS ($m)	TDEBT/GDP
1998	7,354	6,824	530.3	663	0.15
1999	7,046	6,525	521.1	695	0.13
2000	6,700	6,189	510.5	593	0.12
2001	6,116	5,566	550.1	486	0.11
2002	6,782	6,177	604.5	531	0.12
2003	7,510	6,922	588.3	581	0.12
2004	7,502	6,976	526.1	357	0.11
2005	6,955	6,482	473	540	0.10
2006	7,110	6,680	430.1	430	0.09
2007	7,897	7,522	375.1	456	0.09

2008	8,012	7,607	405.4	412	0.09
2009	8,991	8,589	402.1	387	0.10
2010	9,235	8,801	434.1	401	0.09
2011	10,708	10,286	421.5	437	0.10
2012	11,968	11,569	399.1	569	0.10
2013	13,884	13,471	413.2	620	0.11

Source: World Bank International Debt Statistics

Total debt stocks (DOD, current US$) in Kenya was $13,884,480,000 as of 2013. The fluctuation in the value of this indicator for the past sixteen years has been between $13,884,480,000 in 2013 and $7,354,531,000 in 1998. Debt service on total debt (TDS, current US$) in Kenya was $619,788,000 as of 2013. The fluctuation in the value of this indicator for the past sixteen years has been between $663,429,000 in 1998 and $619,788,000 in 2013 (World Bank, International Debt Statistics, 2014).

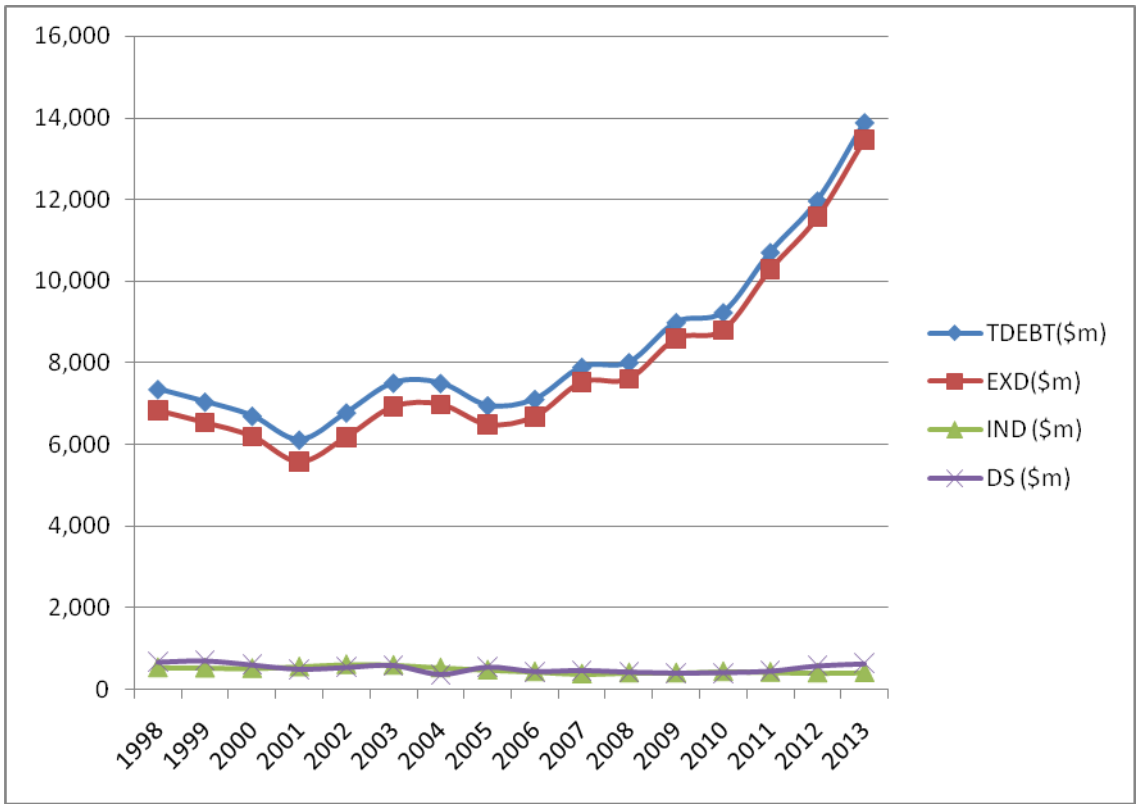

Fig 4.13: Trend of Kenya Total Debt in (USD)
Source: World Bank International Debt Statistics

Kenya recorded a steadily increasing total debt in the period of study with the peak in 2013.

Kenya recorded huge fluctuating debt service in the period 1998 and 2013 with the peak in 1999.

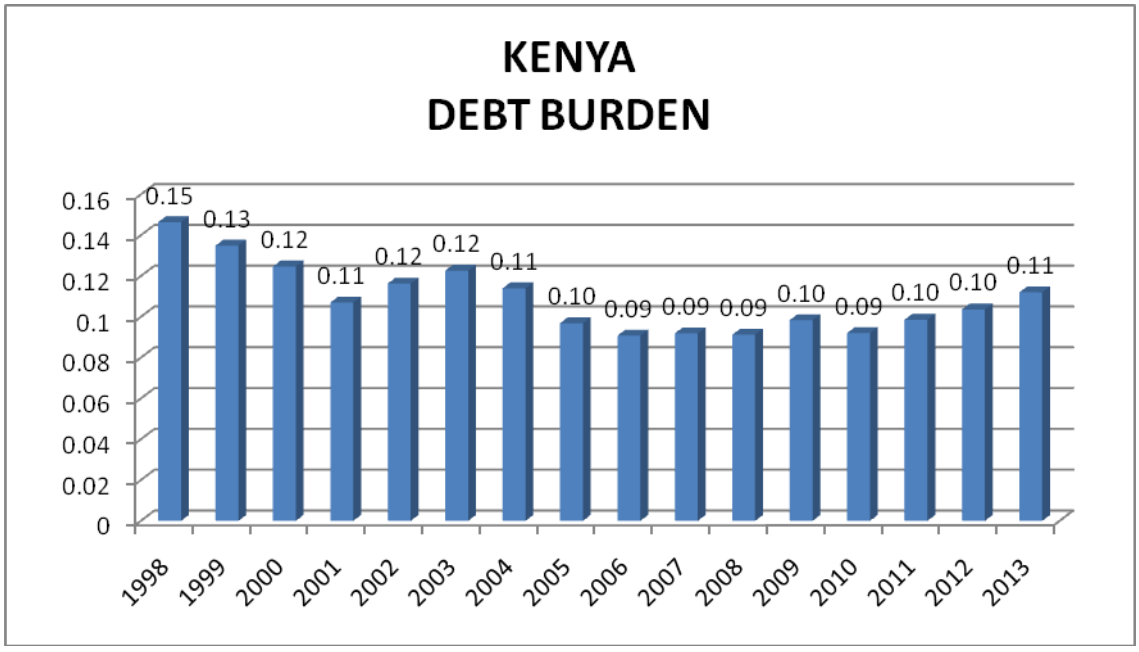

Fig 4.14: Statistical Analysis of Total Debt/GDP Ratio in Kenya in USD
Source: Extract from computer printout of descriptive statistics

LEGEND OF DEBT BURDEN

N	16
Sum	1.7413
Mean	0.1088
SD	0.0168
Variance	2.811E-04
C.V.	15.404
Minimum	0.0908
Maximum	0.1464

From fig 4.14 Kenya recorded the highest total debt/GDP ratio of 15% in 1998 and 9% in 2000 which is the lowest. The average ratio was 11% for the period of the study 1998 - 2013.

4.1.8 Debt Burden on Malawi Economy

Below are data for total debt, external debt, internal/domestic debt and debt service of Malawi for the period 1998 to 2013

Table 4.8: Data for Malawi Debt Burden in (USD)

YEAR	TDEBT($m)	EXD($m)	IND($m)	DS($m)	TDEBT/GDP
1998	2,614	2,438	176	87	0.51
1999	2,951	2,756	195	74	0.54
2000	2,910	2,719	191	64	0.52
2001	2,809	2,598	211	46	0.51
2002	3,121	2,902	219	37	0.55
2003	3,361	3,115	246	42	0.55
2004	3,656	3,444	212	61	0.55
2005	3,410	3,196	214	76	0.49
2006	925	870	55	70	0.13

2007	923	869	54	34	0.11
2008	1,064	996	68	32	0.12
2009	1,209	1,144	65	39	0.12
2010	1,096	1,039	57	21	0.10
2011	1,269	1,206	63	22	0.11
2012	1,397	1,316	81	29	0.12
2013	1,669	1,558	111	44	0.13

Source: World Bank International Debt Statistics

Total debt stocks (DOD, current US$) in Malawi was $1,669,000,000 as of 2013. The fluctuation in the value of this indicator for the past sixteen years has been between $1,669,000,000 in 2013 and $2,614,554,000 in 1998. Debt service on total debt (TDS, current US$) in Malawi was $44,000,000 as of 2013. The fluctuation in the value of this indicator for the past sixteen years has been between $87,447,000 in 1998 and $44,000,000 in 2013.

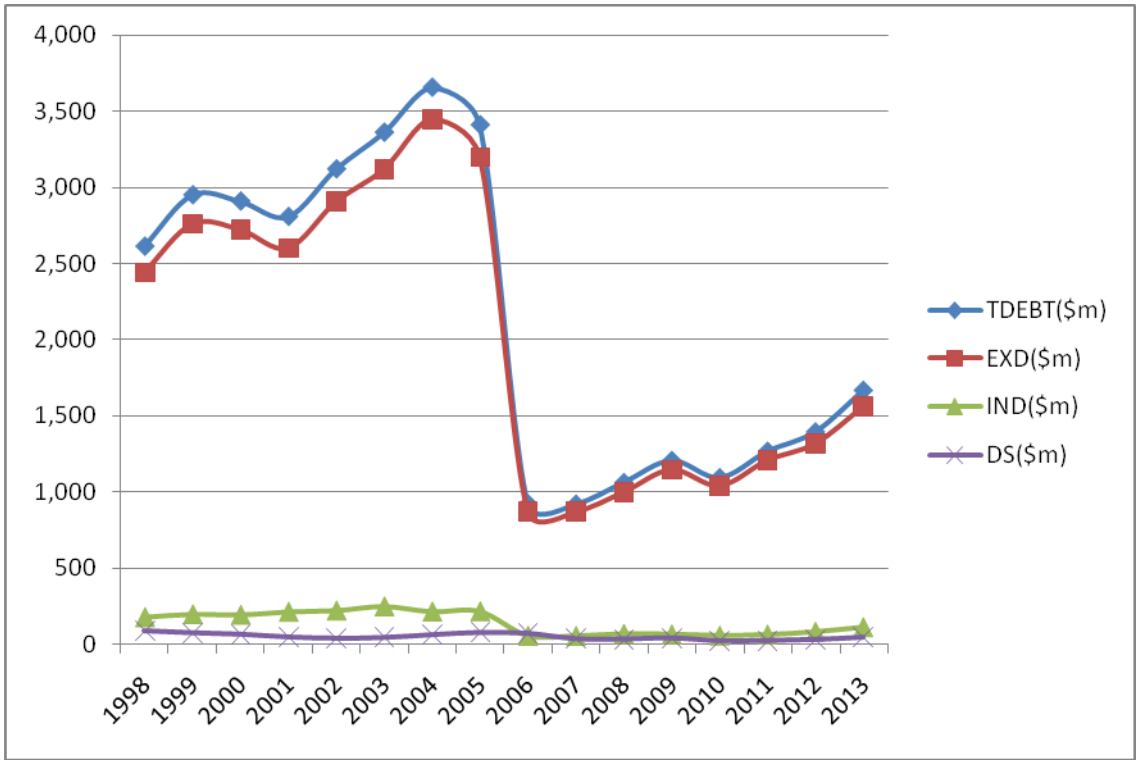

Fig 4.15: Trend of Malawi Total Debt in (USD)
Source: World Bank International Debt Statistics

Malawi recorded huge total debt between 1998 and 2005 which declined sharply in 2006 and increased steadily afterward to 2013.

Malawi debt service fluctuated in the period 1998 to 2013. Debt service payment was highest in 1998.

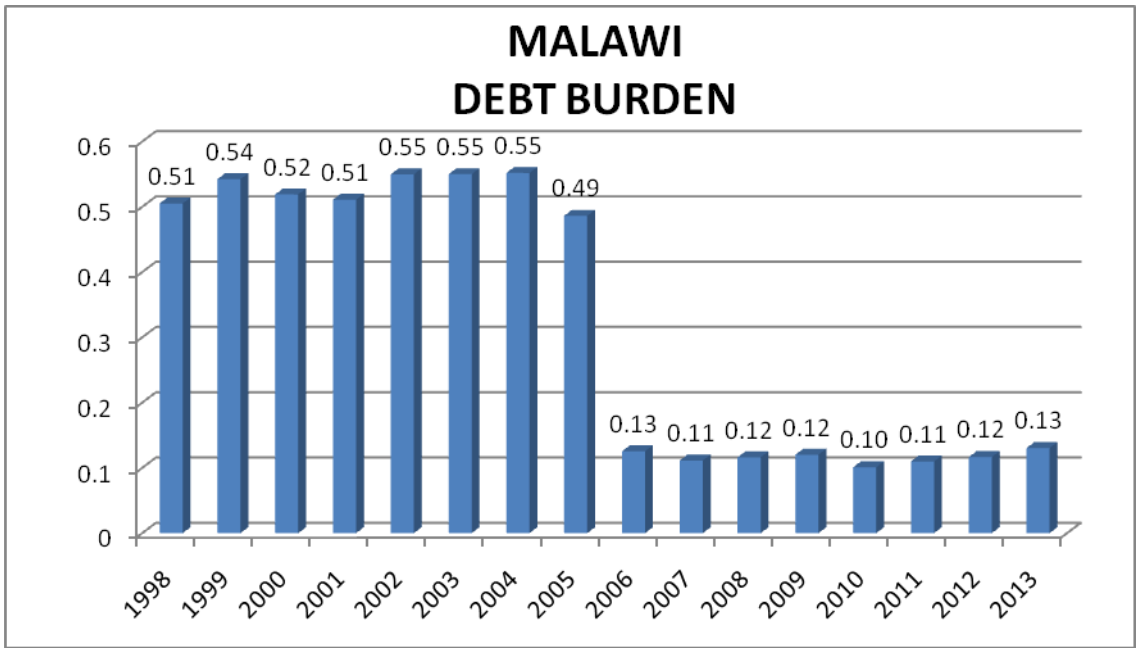

Fig 4.16: Statistical Analysis of Total Debt/GDP Ratio in Malawi in USD

Source: Extract from computer printout of descriptive statistics

LEGEND OF DEBT BURDEN

N	16
Sum	5.1462
Mean	0.3216
SD	0.2128
Variance	0.0453
C.V.	66.165
Minimum	0.1010
Maximum	0.5519

From fig 4.16 Malawi recorded the highest total debt/GDP ratio of 55% in 2001,2002 and 2003 and 10% in 2010 which is the lowest. The average ratio was 32% for the period of the study 1998 - 2013. .

4.1.9 Debt Burden on Mali Economy

Below are data for total debt, external debt, internal/domestic debt and debt service of Mali for the period 1998 to 2013

Table 4.9: Data for Mali Debt Burden in (USD)

YEAR	TDEBT($m)	EXD($m)	IND($m)	DS ($m)	TDEBT/GDP
1998	3,355	3,205	150.1	82.1	0.33
1999	3,380	3,218	162	107	0.31
2000	3,154	2,981	173.2	94	0.30
2001	3,031	2,878	153	80.3	0.25
2002	2,883	2,792	91	83	0.22
2003	3,158	3,076	82.1	77	0.22
2004	3,367	3,290	77.4	99	0.23
2005	3,313	3,224	89	100	0.20

2006	1,649	1,615	34	86	0.09
2007	1,885	1,850	35.3	64.2	0.10
2008	2,093	2,055	38	69.1	0.10
2009	2,252	2,210	42	69	0.11
2010	2,504	2,456	48	62	0.11
2011	2,973	2,924	49	67	0.12
2012	3,115	3,064	51	54	0.13
2013	3,476	3,423	53	99	0.14

Source: World Bank International Debt Statistics

Total debt stocks (DOD, current US$) in Mali was $3,476,795,000 as of 2013. The fluctuation in the value of this indicator for the past sixteen years has been between $3,476,795,000 in 2013 and $3,355,266,000 in 1998. Debt service on total debt (TDS, current US$) in Mali was $99,888,000 as of 2013. The fluctuation in the value of this indicator for the past sixteen years has been between $82,192,000 in 1998 and $99,888,000 in 2013 (World Bank, International Debt Statistics, 2014).

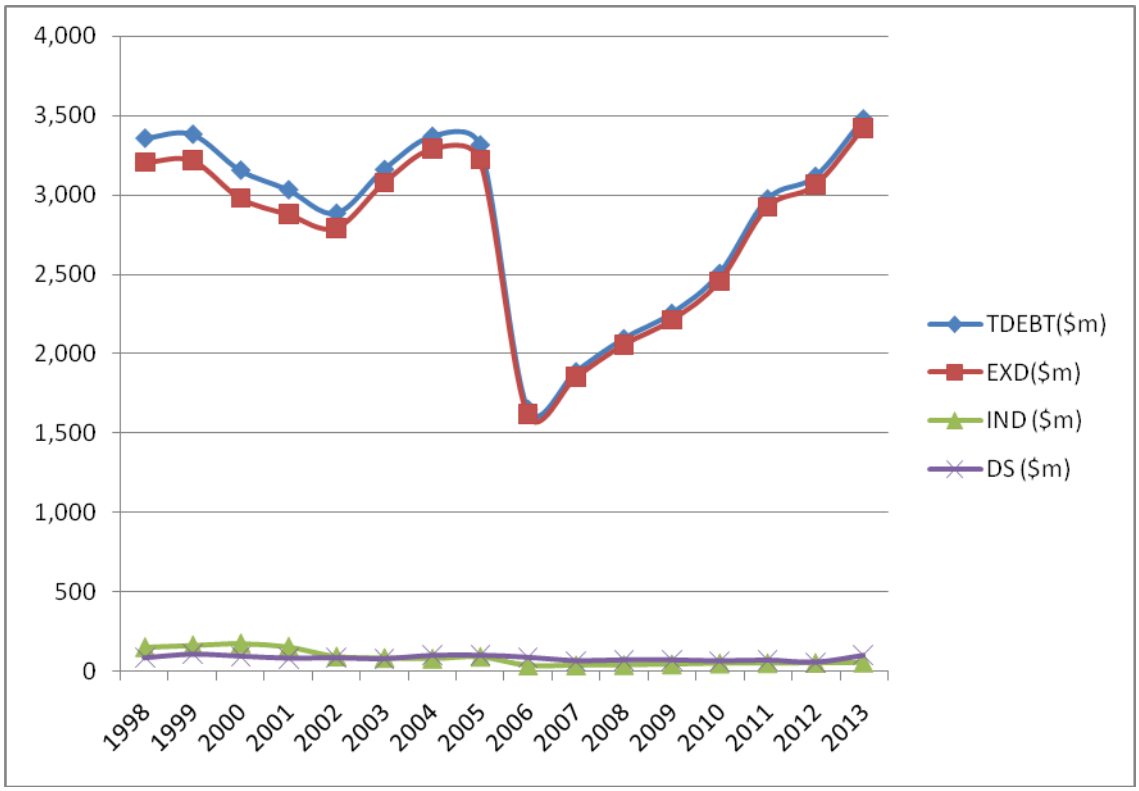

Fig 4.17: Trend of Mali Total Debt in (USD)

Source: World Bank International Debt Statistics

Mali recorded huge total debt in the period 1998 to 2013. Total debt dropped sharply in 2006 and increased steadily afterward to 2013.

Mali recorded high debt service in the period 1998 to 2013 with the peak in 1999.

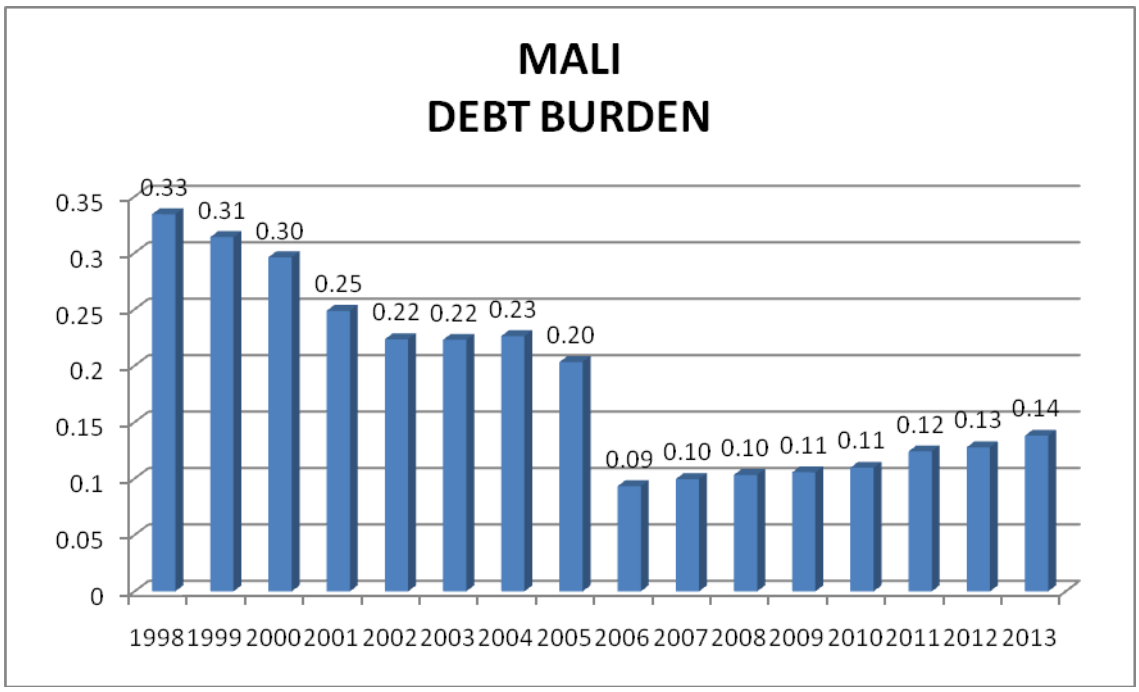

Fig 4.18: Statistical Analysis of Total Debt/GDP Ratio in Mali in USD

Source: Extract from computer printout of descriptive statistics

```
LEGEND OF DEBT BURDEN
N                    16
Sum              2.9693
Mean             0.1856
SD               0.0832
Variance      6.925E-03
C.V.             44.839
Minimum          0.0932
Maximum          0.3343
```

From fig 4.18 Mali recorded the highest total debt/GDP ratio of 33% in 1998 and 9% in 2006 which is the lowest. The average ratio was 18% for the period of the study 1998 - 2013.

4.1.10 Debt Burden on Mozambique Economy

Below are data for total debt, external debt, internal/domestic debt and debt service of Mozambique for the period 1998 to 2013

Table 4.10: Data for Mozambique Debt Burden in (USD)

YEAR	TDEBT($m)	EXD($m)	IND($m)	DS ($m)	TDEBT/GDP
1998	9,047	6,556	2,491	93	0.50
1999	8,105	5,574	2,531	96	0.44
2000	8,159	5,614	2,545	73	0.31
2001	6,069	3,412	2,657	60	0.28
2002	5,266	3,636	1,630	50	0.30
2003	5,542	3,929	1,613	61	0.34
2004	5,808	4,523	1,285	62	0.27

2005	5,902	4,393	1,509	71	0.20
2006	3,795	2,792	1,003	47	0.08
2007	3,837	3,048	789	37	0.08
2008	4,304	3,490	814	38	0.07
2009	5,023	4,138	885	41	0.07
2010	4,647	3,747	900	87	0.09
2011	4,898	4,091	807	58	0.09
2012	5,762	4,878	884	74	0.10
2013	7,899	6,890	1,009	143	0.10

Source: World Bank International Debt Statistics

Total debt stocks (DOD, current US$) in Mozambique was $7,899,000,000 as of 2013. The fluctuation in the value of this indicator for the past sixteen years has been between $7,899,000,000 in 2013 and $9,047,000,000 in 1998. Debt service on total debt (TDS, current US$) in Mozambique was $143,000,000 as of 2013. The fluctuation in the value of this indicator for the past sixteen years has been between $93,000,000 in 1998 and $143,000,000 in 2013 (World Bank, International Debt Statistics, 2014).

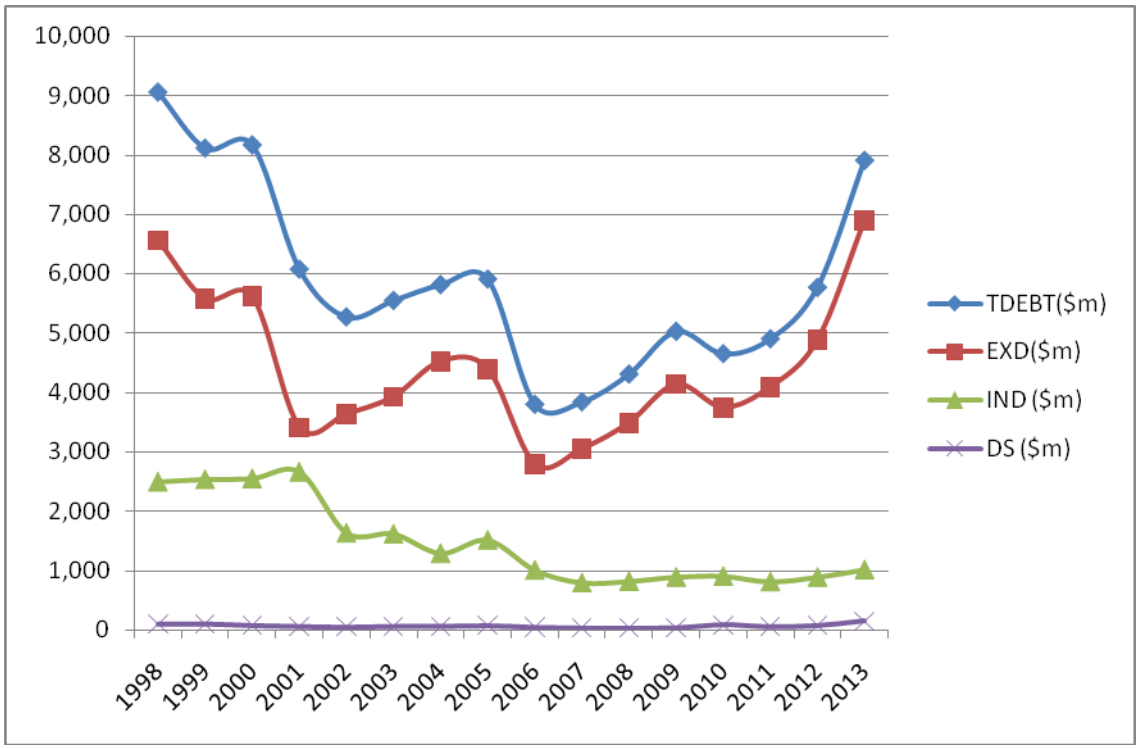

Fig 4.19: Trend of Mozambique Total Debt in (USD)

Source: World Bank International Debt Statistics

Mozambique total debt fluctuated between 1998 and 2009 and recorded the highest total debt in 1998.

Mozambique debt service fluctuated between 1998 and 2012 and get to the peak in 2013.

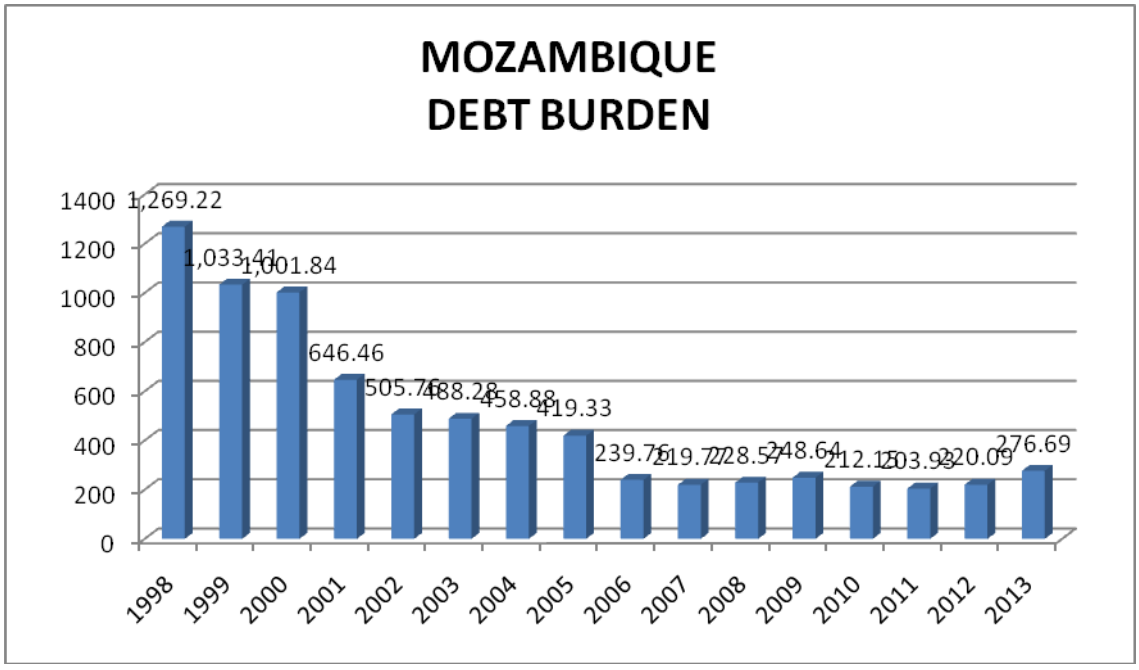

Fig 4.20: Statistical Analysis of Total Debt/GDP Ratio in Mozambique in USD

Source: Extract from computer printout of descriptive statistics

LEGEND OF DEBT BURDEN

N	16
Sum	7672.8
Mean	479.55
SD	339.90
Variance	115535
C.V.	70.880
Minimum	203.93
Maximum	1269.2

From fig 4.20, Mozambique had the highest debt burden in 1998 and the lowest 2011.

The average Total debt/GDP was 47% for the period of the study.

4.1.11 Debt Burden on Nigeria Economy

Below are data for total debt, external debt, internal/domestic debt and debt service of Nigeria for the period 1998 to 2013

Table 4.11: Data for Nigeria Debt Burden in (USD)

YEAR	TDEBT($m)	EXD($m)	IND($m)	DS($m)	TDEBT/GDP
1998	30,725	30,314	411	1,332	0.13
1999	29,760	29,368	392	1,072	0.12
2000	31,903	31,582	321	1,855	0.11
2001	30,359	30,032	327	2,524	0.10
2002	30,169	29,918	251	1,477	0.09
2003	34,365	34,137	228	1,631	0.09
2004	36,881	36,689	192	1,711	0.09
2005	20,574	20,476	98	8,807	0.04
2006	3,968	3,964	4	6,711	0.01
2007	3,790	3,748	42	1,015	0.01
2008	4,080	4,043	37	413	0.01
2009	6,813	6,765	48	408	0.01

2010	7,255	7,207	48	292	0.01
2011	9,014	8,963	51	351	0.01
2012	10,111	10,059	52	303	0.01
2013	13,845	13,792	53	486	0.01

Source: World Bank International Debt Statistics

Total debt stocks (DOD current US$) in Nigeria was $13,845,940,000 as of 2013. The fluctuation in the value of this indicator for the past sixteen years has been between $30,725,360,000 in 1998 and $13,845,940,000 in 2013. Debt service on total debt, (TDS, current US$) in Nigeria was $486,424,000 as of 2013. The fluctuation in the value of this indicator for the past sixteen years has been between $8,807,116,000 in 2005 and $486,424,000 in 2013 (World Bank, International Debt Statistics, 2014).

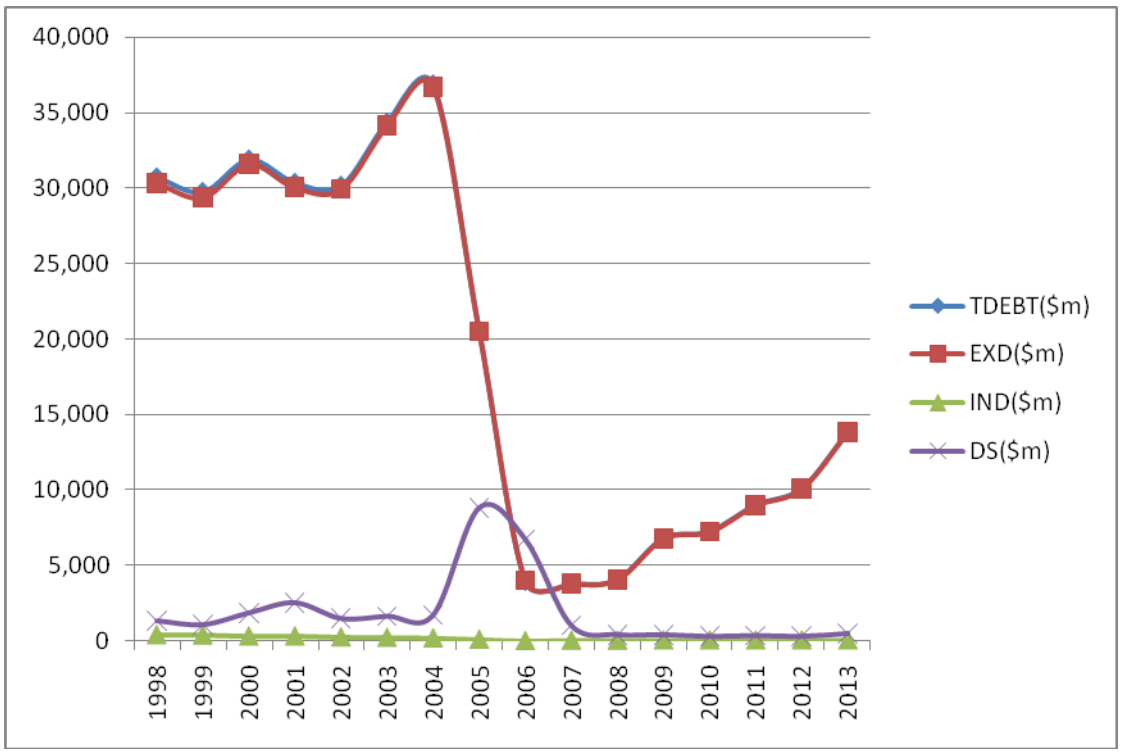

Fig 4.21: Trend of Nigeria Total Debt in (USD)
Source: World Bank International Debt Statistics

Nigeria total debt was high between 1998 and 2005. The total debt was at lowest level in 2006 and 2008 when she got debt relieve from her creditors. Total debt however increased steadily afterward till 2013.

Nigeria debt service payment fluctuated between 1998 and 2004. The debt service was high in 2005 and 2006.

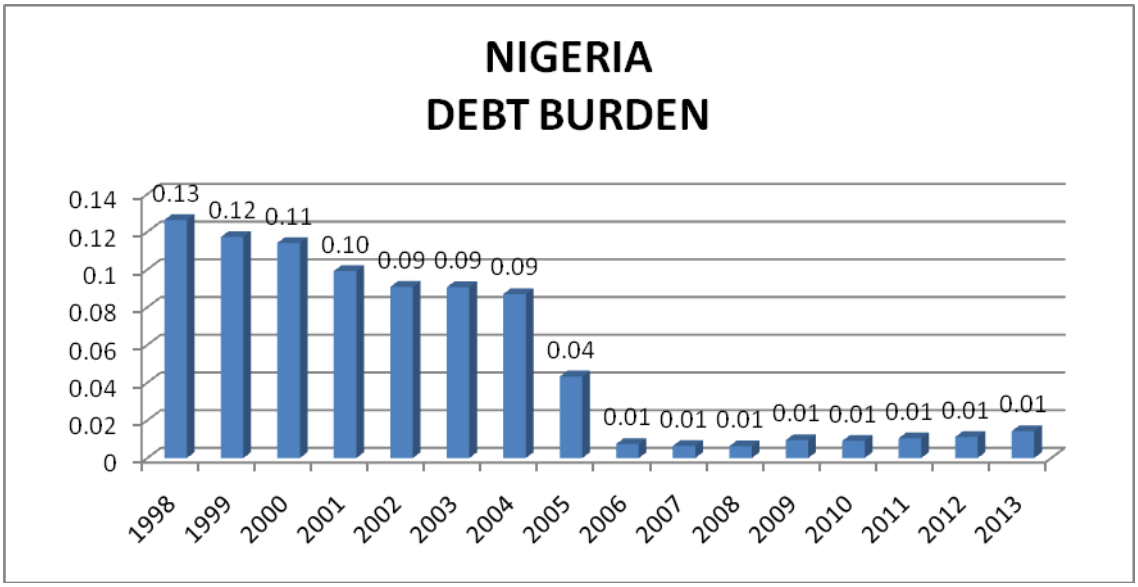

Fig 4.22: Statistical Analysis of Total Debt/GDP Ratio in Nigeria in USD

Source: Extract from computer printout of descriptive statistics

LEGEND OF DEBT BURDEN

N	16
Sum	0.8429
Mean	0.0527
SD	0.0481
Variance	2.318E-03
C.V.	91.386
Minimum	6.232E-03
Maximum	0.1263

From fig 4.22 Nigeria recorded the highest total debt/GDP ratio of 13% in 1998 and 1% in 2006-2013 which is the lowest. The average ratio was 5% for the period of the study 1998 - 2013.

4.1.12 Debt Burden on Rwanda Economy

Below are data for total debt, external debt, internal/domestic debt and debt service of Rwanda for the period 1998 to 2013

Table 4.12: Data for Rwanda Debt Burden in (USD)

YEAR	TDEBT($m)	EXD($m)	IND($m)	DS($m)	TDEBT/GDP
1998	1,339	1,228	111	21	0.31
1999	1,436	1,312	124	33	0.31
2000	1,427	1,289	138	36	0.29
2001	1,431	1,299	132	21	0.26
2002	1,596	1,452	144	19	0.25
2003	1,690	1,556	134	22	0.25
2004	1,800	1,678	122	27	0.24
2005	1,623	1,528	95	28	0.20
2006	470	434	36	27	0.05
2007	642	606	36	24	0.06

2008	712	684	28	14	0.06
2009	899	869	30	12	0.07
2010	943	913	30	15	0.07
2011	1,135	1,103	32	20	0.08
2012	1,300	1,268	32	23	0.08
2013	1,730	1,691	39	43	0.10

Source: World Bank International Debt Statistics

Total debt stocks (DOD, current US$) in Rwanda was $1,730,000,000 as of 2013. The fluctuation in the value of this indicator for the past sixteen years has been between $1,730,000,000 in 2013 and $1,339,000,000 in 1998. Debt service on external debt, total (TDS, current US$) in Rwanda was $43,000,000 as of 2013. The fluctuation in the value of this indicator for the past sixteen years has been between $21,000,000 in 1998 and $43,000,000 in 2013 (World Bank, International Debt Statistics, 2014).

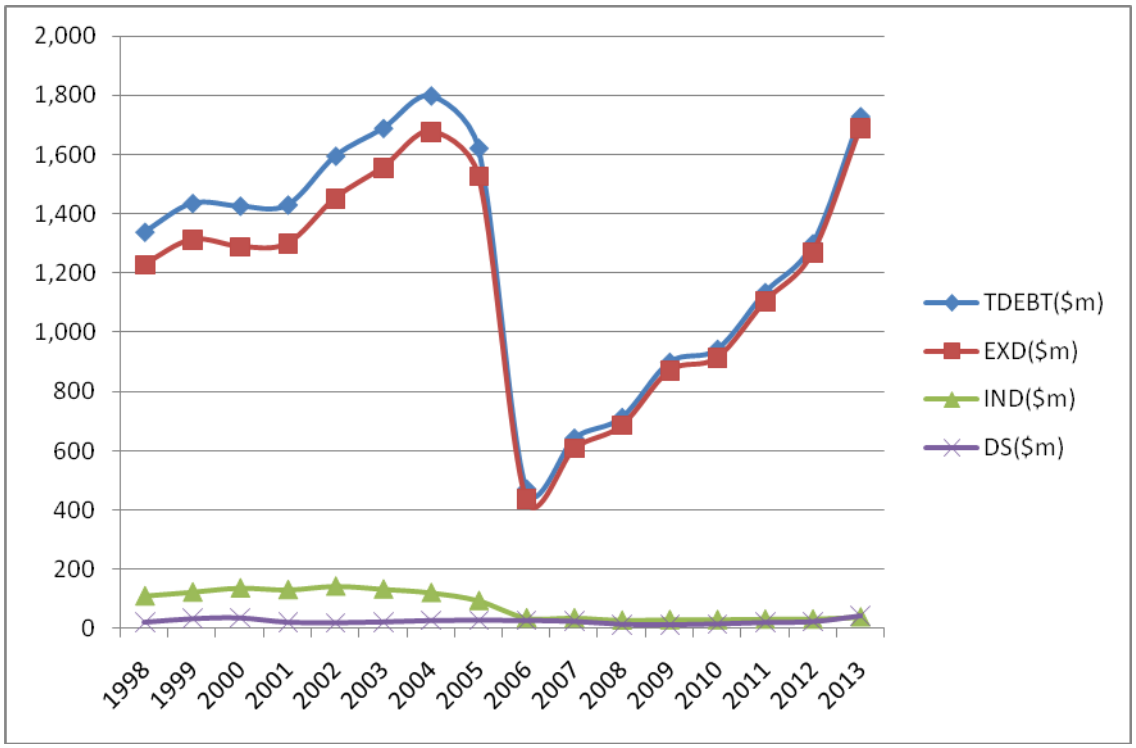

Fig 4.23: Trend of Rwanda Total Debt in (USD)

Source: World Bank International Debt Statistics

Rwanda recorded huge total debt between 1998 and 2005. The total debt declined sharply in 2006 and increased steadily between 2007 and 2013.

Rwanda debt service fluctuated in the period 1998 to 2013 and recorded the highest debt service in 2013. The lowest was in 2009

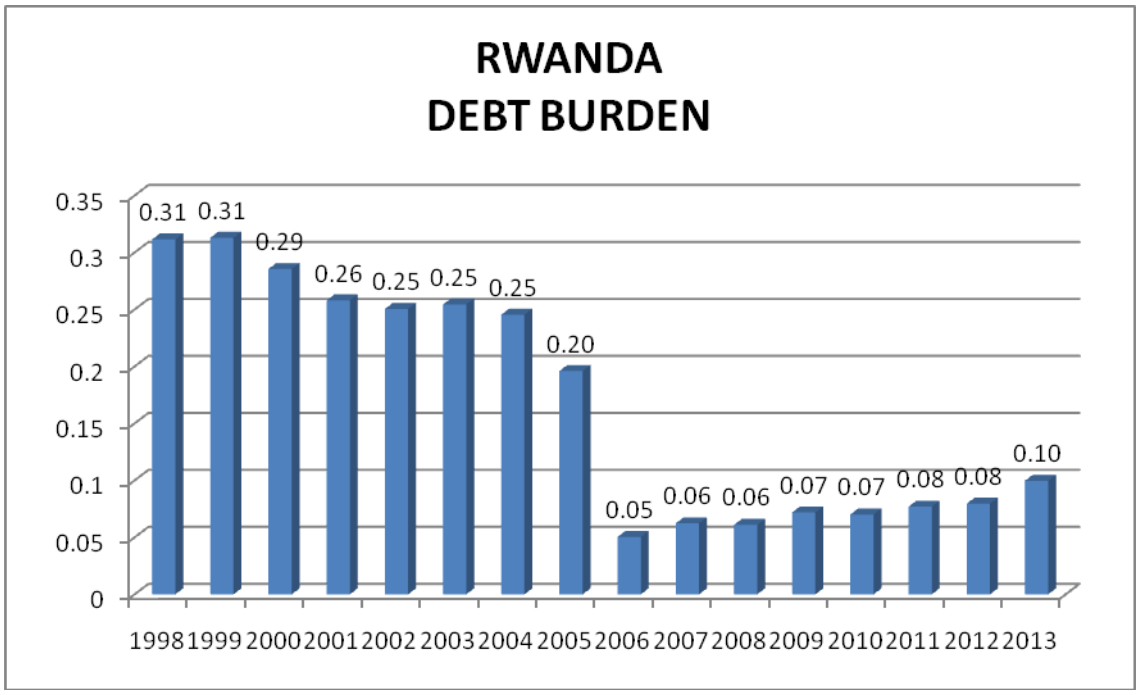

Fig 4.24: Statistical Analysis of Total Debt/GDP Ratio in Rwanda in USD

Source: Extract from computer printout of descriptive statistics

LEGEND OF DEBT BURDEN

N	16
Sum	2.6860
Mean	0.1679
SD	0.1035
Variance	0.0107
C.V.	61.628
Minimum	0.0504
Maximum	0.3129

From fig 4.24 Rwanda recorded the highest total debt/GDP ratio of 31% in 1999 and 5% in 2006 which is the lowest. The average ratio was 16% for the period of the study 1998 - 2013.

4.1.13 Debt Burden on Tanzania Economy

Below are data for total debt, external debt, internal/domestic debt and debt service of Tanzania for the period 1998 to 2013

Table 4.13: Data for Tanzania Debt Burden in (USD)

YEAR	TDEBT($m)	EXD($m)	IND($m)	DS ($m)	TDEBT/GDP
1998	7,526	7,501	25	233	0.21
1999	7,928	7,902	26	223	0.21
2000	7,211	7,183	28	168	0.18
2001	6,529	6,506	23	143	0.15
2002	7,163	7,141	22	105	0.15
2003	7,342	7,321	21	88	0.14

2004	8,648	8,627	21	121	0.15
2005	8,423	8,401	22	133	0.14
2006	4,111	4,096	15	89	0.06
2007	5,068	5,057	11	66	0.07
2008	6,023	6,012	11	65	0.08
2009	7,636	7,624	12	165	0.09
2010	9,000	8,987	13	198	0.10
2011	9,955	9,941	14	148	0.10
2012	11,595	11,581	14	168	0.11
2013	13,039	13,024	15	161	0.11

Source: World Bank International Debt Statistics

Total debt stocks (DOD, current US$) in Tanzania was $13,039,000,000 as of 2013. The fluctuation in the value of this indicator for the past sixteen years has been between $13,039,000,000 in 2013 and $7,526,000,000 in 1998. Debt service on total debt (TDS, current US$) in Tanzania was $161,000,000 as of 2013. The fluctuation in the value of this indicator for the past sixteen years has been between $233,447,000 in 1998 and $161,000,000 in 2013 (World Bank, International Debt Statistics, 2014).

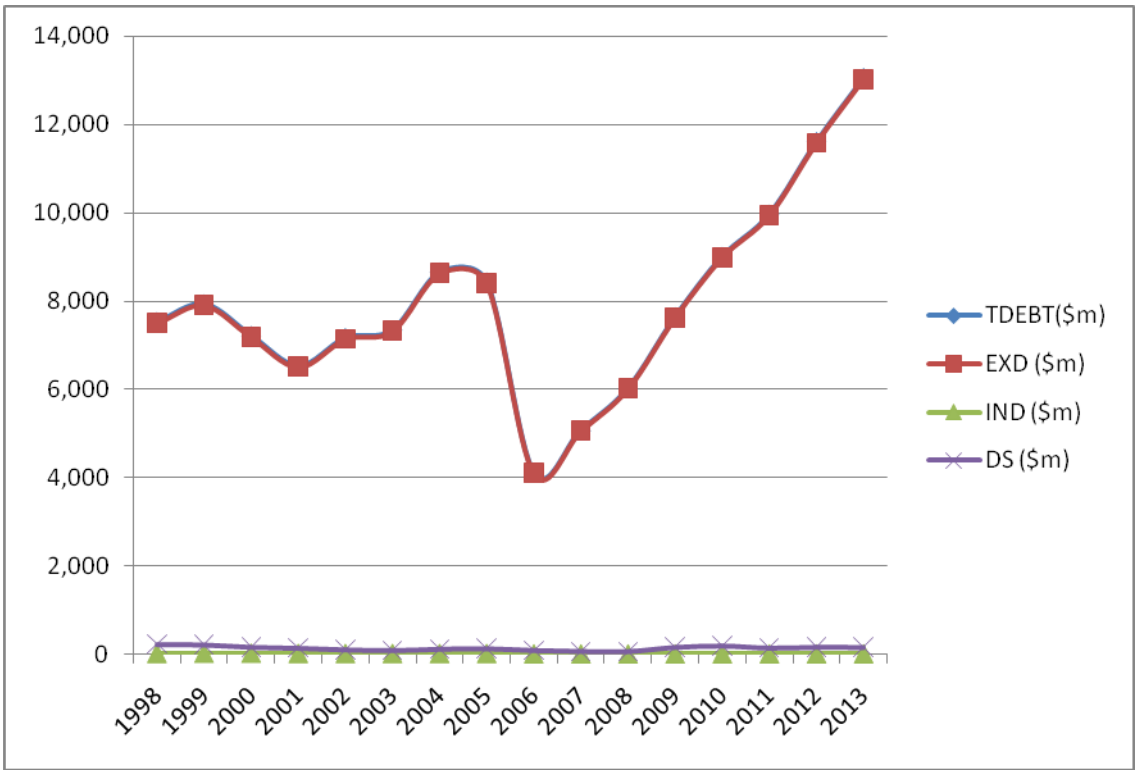

Fig 4.25: Trend of Tanzania Total Debt in (USD)
Source: World Bank International Debt Statistics

Tanzania total debt declined steadily between 1998 and 2003 and recorded a steady increase between 2006 and 2013.

Tanzania debt service declined steadily between 1998 and 2003 and recorded a sharp increase between 2009 and 2013.

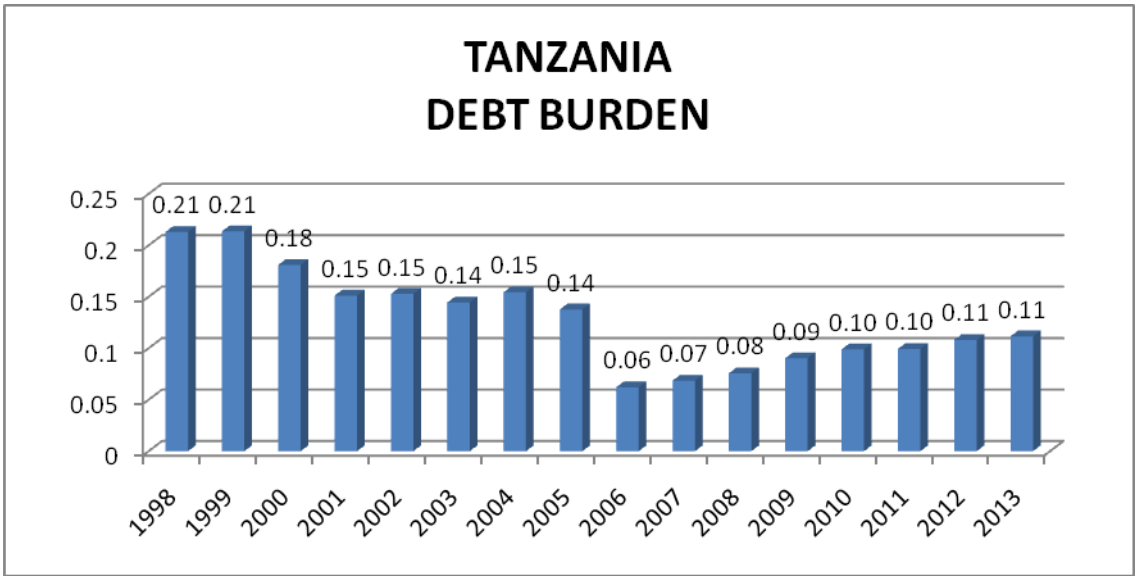

Fig 4.26: Statistical Analysis of Total Debt/GDP Ratio in Tanzania in USD

Source: Extract from computer printout of descriptive statistics

LEGEND OF DEBT BURDEN

N	16
Sum	2.0625
Mean	0.1289
SD	0.0476
Variance	2.263E-03
C.V.	36.901
Minimum	0.0621
Maximum	0.2135

From fig 4.26 Tanzania recorded the highest total debt/GDP ratio of 21% in 1998 and 6% in 2006 which is the lowest. The average ratio was 12% for the period of the study 1998 - 2013.

4.1.14 Debt Burden on Uganda Economy

Below are data for total debt, external debt, internal/domestic debt and debt service of Uganda for the period 1998 to 2013

Table 4.14: Data for Uganda Debt Burden in (USD)

YEAR	TDEBT($m)	EXD($m)	IND($m)	DS ($m)	TDEBT/GDP
1998	3,956	3,942	14.1	153	0.23
1999	3,554	3,538	16.3	133	0.19
2000	3,552	3,535	17.2	76	0.18
2001	3,785	3,768	17.1	51	0.18
2002	4,033	4,015	18.2	71	0.17
2003	4,583	4,565	18.1	85	0.18
2004	4,787	4,770	17.1	104	0.17

2005	4,451	4,437	14	172	0.14
2006	1,285	1,276	9.1	100	0.04
2007	1,635	1,629	6.2	67	0.04
2008	2,275	2,269	6.1	74	0.05
2009	2,745	2,739	6	72	0.06
2010	2,982	2,975	7.1	64	0.06
2011	3,270	3,263	7.2	64	0.06
2012	3,783	3,776	7.3	68	0.06
2013	4,369	4,361	8.1	82	0.07

Source: World Bank International Debt Statistics

Total debt stocks (DOD, current US$) in Uganda was $4,369,282,000 as of 2013. The fluctuation in the value of this indicator for the past sixteen years has been between $4,369,282,000 in 2013 and $3,956,175,000 in 1998. Debt service on total debt (TDS, current US$) in Uganda was $82,000,000 as of 2013. The fluctuation in the value of this indicator for the past sixteen years has been between $153,312,000 in 1998 and $82,000,000 in 2013 (World Bank, International Debt Statistics, 2014).

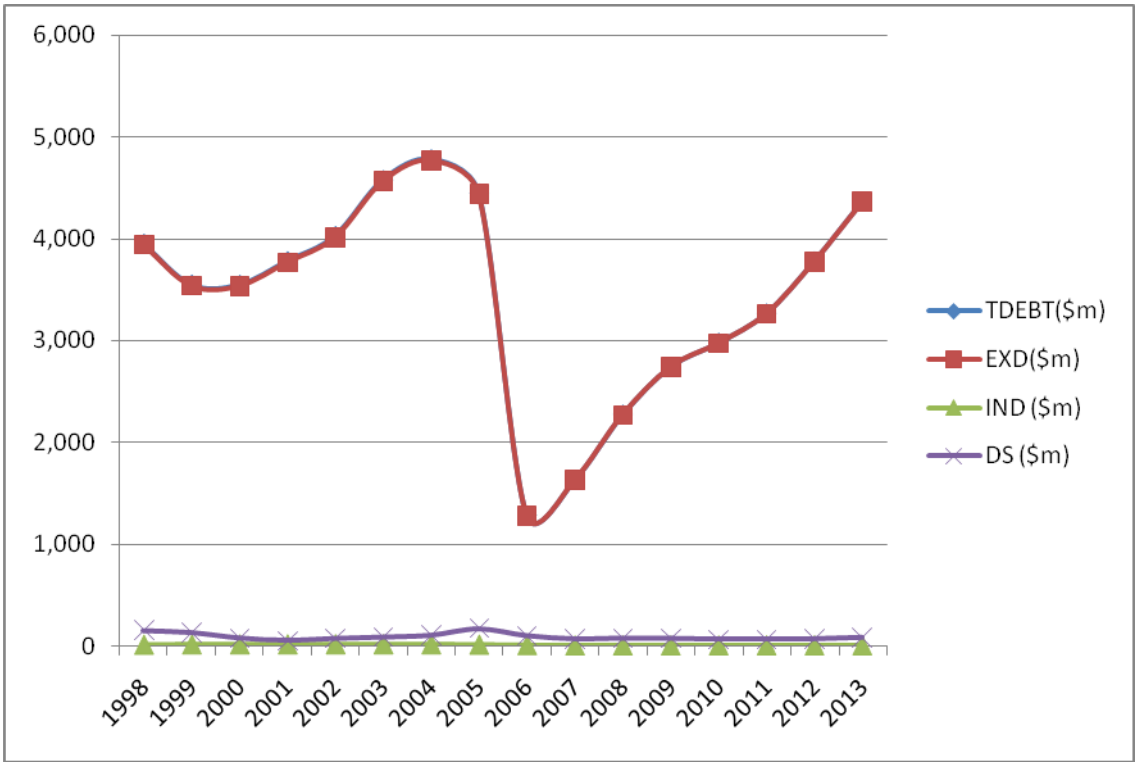

Fig 4.27: Trend of Uganda Total Debt in (USD)
Source: World Bank International Debt Statistics

Uganda recorded very huge debt between 1998 and 2005. The total debt declined sharply in 2006 and increased steadily from 2007 to 2013.

Uganda debt service fluctuated in the period 1998 – 2013 and paid the highest debt service in 2005

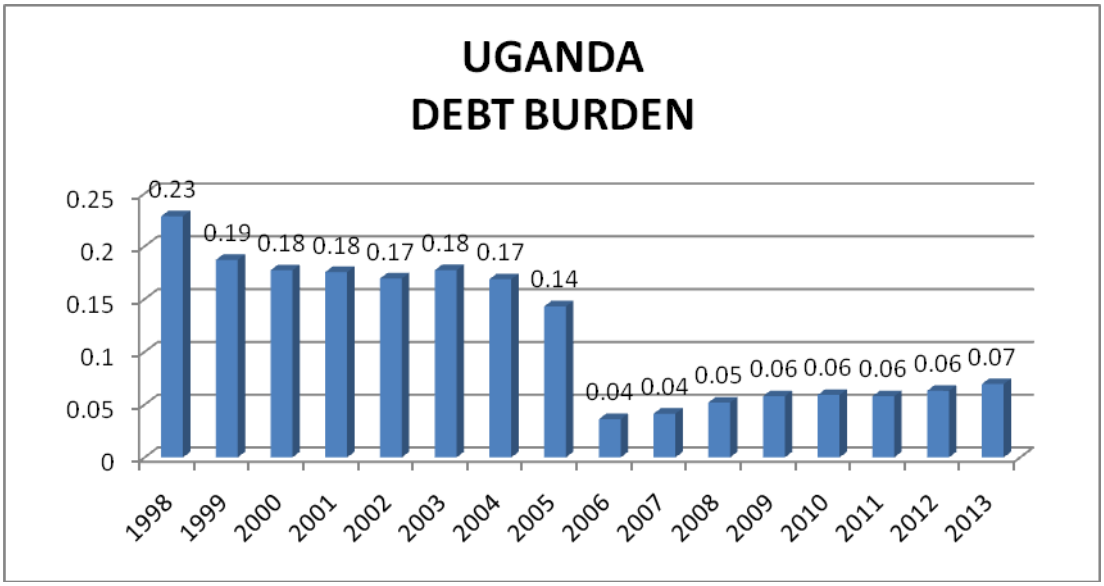

Fig 4.28: Statistical Analysis of Total Debt/GDP Ratio in Uganda in USD
Source: Extract from computer printout of descriptive statistics

LEGEND OF DEBT BURDE

N	16
Sum	1.8635
Mean	0.1165
SD	0.0664
Variance	4.409E-03
C.V.	57.012
Minimum	0.0361
Maximum	0.2284

From fig 4.28 Uganda recorded the highest total debt/GDP ratio of 23% in 1998 and 4% in 2007 which is the lowest. The average ratio was 11% for the period of the study 1998 - 2013.

4.1.15 Debt Burden on Zimbabwe Economy

Below are data for total debt, external debt, internal/domestic debt and debt service of Zimbabwe for the period 1998 to 2013

Table 4.15: Data for Zimbabwe Debt Burden in (USD)

YEAR	TDEBT($m)	EXD($m)	IND($m)	DS ($m)	TDEBT/GDP
1998	4,781	4,599	182	943	0.19
1999	4,469	4,337	132	627	0.18
2000	3,985	3,842	143	421	0.16
2001	3,817	3,655	162	171	0.15
2002	4,101	3,979	122	111	0.17
2003	4,731	4,604	127	79	0.23
2004	5,066	4,954	112	136	0.26

2005	4,552	4,445	107	248	0.25
2006	5,032	4,908	124	106	0.27
2007	5,845	5,707	138	111	0.32
2008	5,902	5,711	191	94	0.38
2009	6,190	6,001	189	121	0.37
2010	6,780	6,605	175	385	0.36
2011	7,454	7,311	143	1,153	0.34
2012	8,810	8,653	157	74	0.36
2013	8,344	8,193	151	2,651	0.32

Source: World Bank International Debt Statistics

Total debt stocks (TDS, current US$) in Zimbabwe was $8,344,000,000 as of 2013. The fluctuation in the value of this indicator for the past sixteen years has been between $8,344,000,000 in 2013 and $4,781,000,000 in 1998. Debt service on total debt (TDS current US$) in Zimbabwe was $2,651,000,000 as of 2013. The fluctuation in the value of this indicator for the past sixteen years has been between $943,000,000 in 1998 and $2,651,000,000 in 2013 (World Bank, International Debt Statistics, 2014).

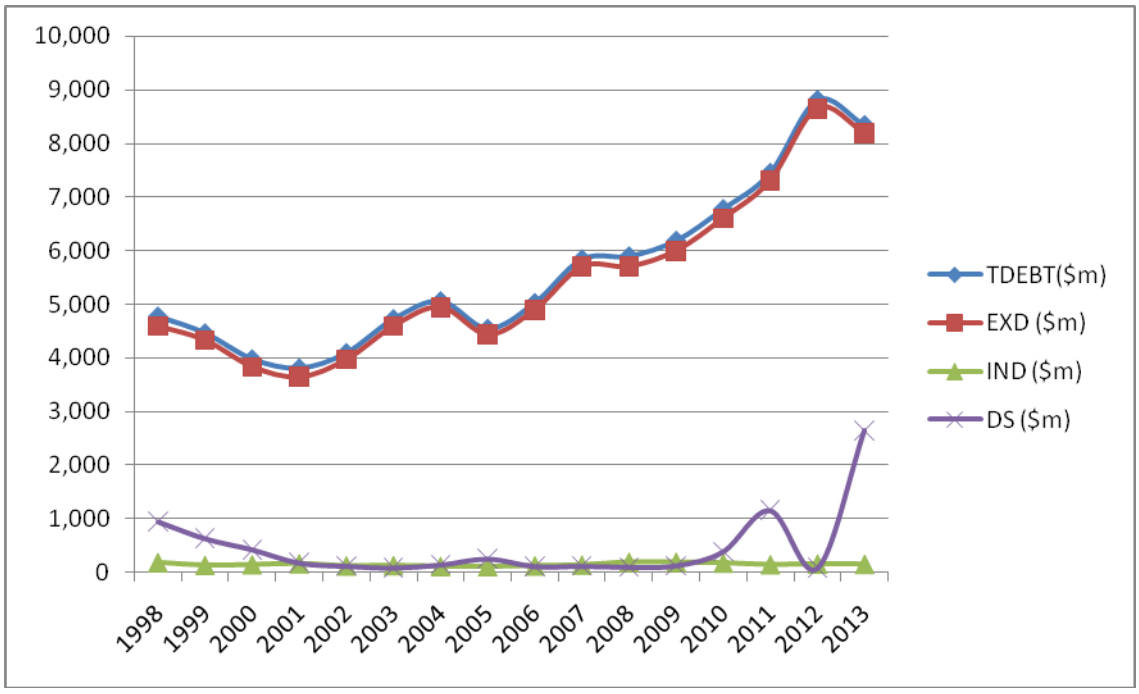

Fig 4.29: Trend of Zimbabwe Total Debt in (USD)
Source: World Bank International Debt Statistics

Zimbabwe total debt declined between 1998 and 2001 and increase rapidly and steadily from 2005 getting to the peak in 2013

Zimbabwe debt service declined between 1998 and 2000. It recorded low debt service in period 2001 and 2009. The country paid a very high debt service in 2013

Fig 4.30: Statistical Analysis of Total Debt/GDP Ratio in Zimbabwe in USD

Source: Extract from computer printout of descriptive statistics

LEGEND OF DEBT BURDEN

N	16
Sum	4.3088
Mean	0.2693
SD	0.0818
Variance	6.69903
C.V.	30.392
Minimum	0.1500
Maximum	0.3791

From fig 4.30 Zimbabwe recorded the highest total debt/GDP ratio of 38% in 2008 and 15% in 2001 which is the lowest. The average ratio was 26% for the period of the study 1998 - 2013.

Table 4.16: Summary of Debt Burden on the SSA countries

COUNTRY	AVR TDEBT($m)	AVR DS($m)	AVR TDEBT/GDP
ANGOLA	12,725	2,670	0.18
BURUNDI	1,070	27	0.23
CAMEROON	6,956	406	0.19
DR CONGO	10,467	296	0.4
ETHIOPIA	9,624	194	0.2
GHANA	23,807	381	0.52
KENYA	8,361	509	0.11
MALAWI	2,149	49	0.32
MALI	2,849	81	0.19
MOZAMBIQUE	5,879	68	0.48
NIGERIA	18,976	1,899	0.05
RWANDA	1,260	23	0.16
TANZANIA	21,200	142	0.13
UGANDA	3,422	90	0.11
ZIMBABWE	5,611	464	0.26

Source: Extract from computer printout of descriptive statistics

From the above, Ghana recorded the highest average total debt of more than $23b followed Tanzania, Nigeria, Angola and DR Congo in that order in the period of the study.

Angola had the highest average debt service in the period of study followed by Nigeria, Kenya, Cameroon and Zimbabwe in that order. The highest average debt burden was recorded by Ghana followed by Mozambique, Malawi, Zimbabwe and Burundi in that order.

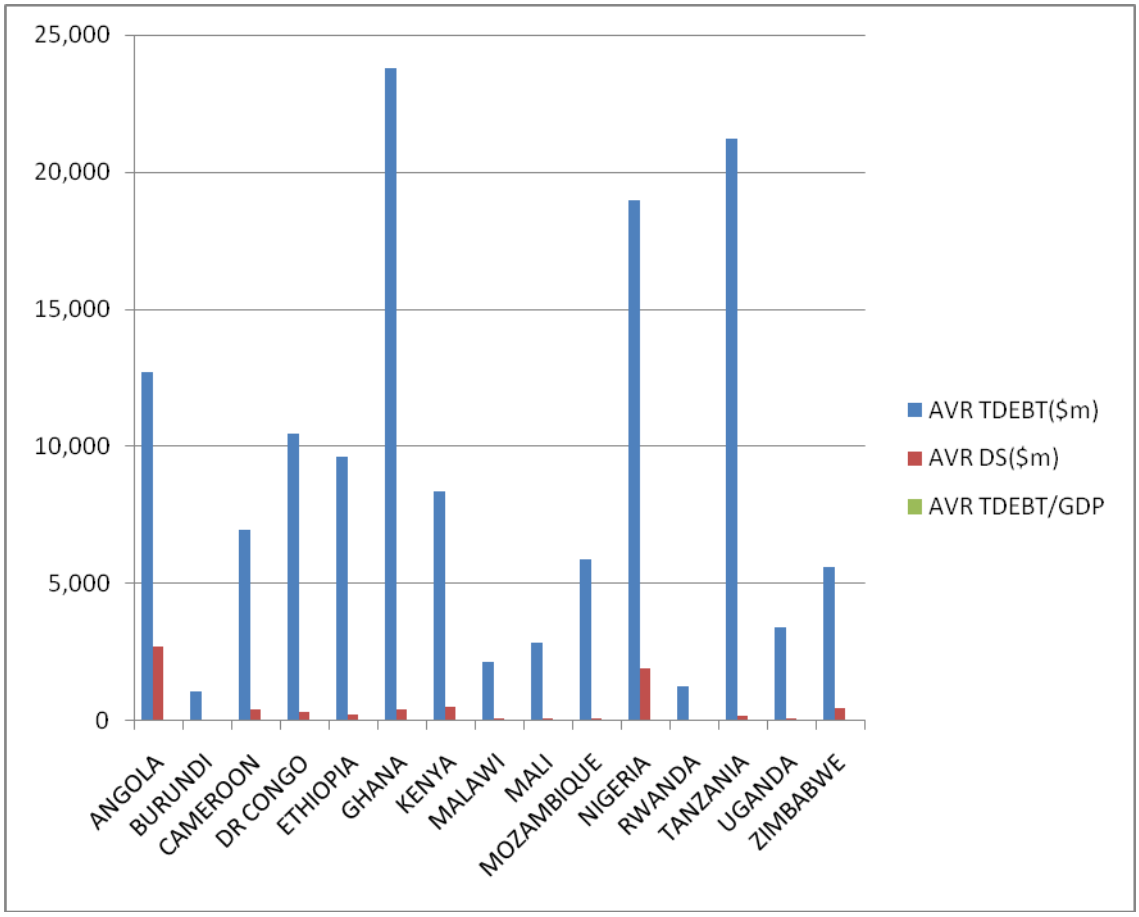

Fig 4.31: Summary of Debt Burden on the SSA countries

Source: Extract from computer printout of descriptive statistics

4.2 Debt burden across the fifteen SSA countries

4.2.1 Profile of total Debt across the fifteen SSA countries

To better understand the trend of total debts across the fifteen countries under consideration, the study shows the total external and internal debt of these countries between 1998 and 2013 in a line graph as shown below:

Source: World Bank International Debt Statistics

The illustration shows that Ghana and Nigeria had highest total debt between 1998 and 2004 after which they both dropped and then Ghana increased again alongside Angola till 2013. While the other countries did not record up to $US15 billion during the period under study, and most of their debts dropped in 2006 and increased again slightly. Burundi and Rwanda had the least debts all through.

4.2.2 Profile of Debt Service across the fifteen countries

In the same light, the debt service for these fifteen countries is equally presented in a line graph between 1998 and 2013 as shown below:

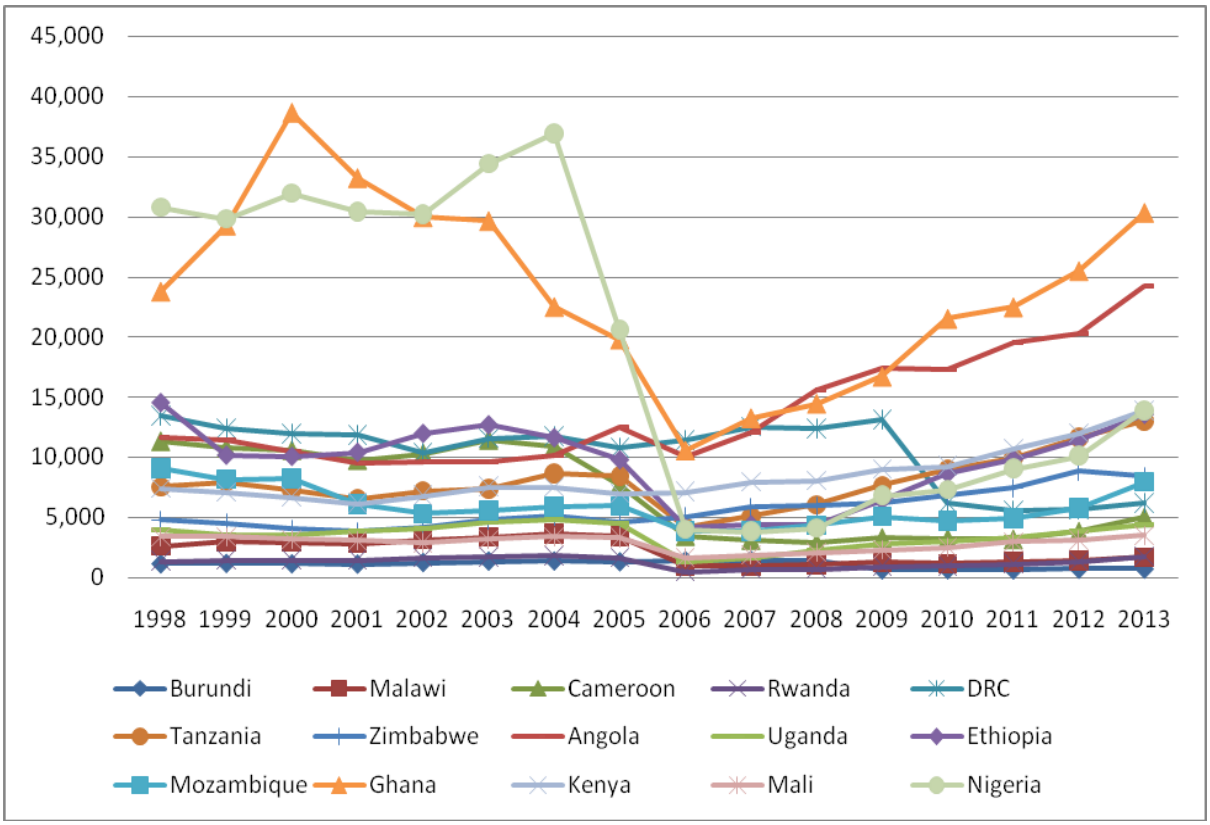

Fig 4.32: Total Debt Across the SSA for the Period 1998-2013

Source: World Bank International Debt Statistics

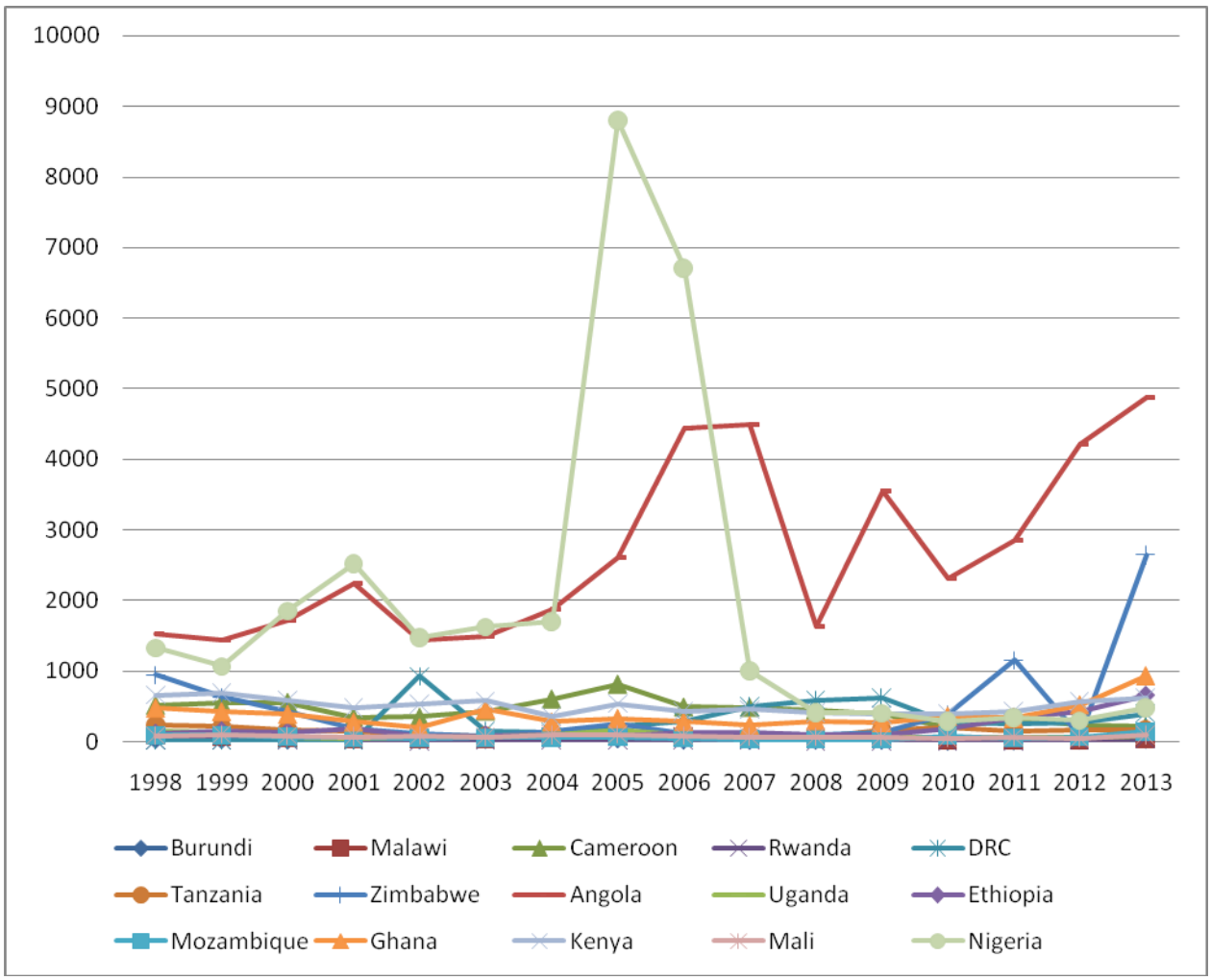

Fig 4.33: Debt Service Across the SSA for the Period 1998-2013
Source: World Bank International Debt Statistics

As is the case with total debt, the illustration shows that Angola and Nigeria had highest debt service between 1998 and 2013, however Nigeria's debt service rose up to about $US9 billion in 2005, while the others barely reach $US1 billion between 1998 and 2013. Democratic republic of Congo however increases at an increasing rate between 2012 and 2013. In fact it records above $US2.5 billion in 2013.

4.2.3 Descriptive Statistics of the Data used in the Analysis

Below is the summary of statistical analysis of the data for the variables used indicating the number of observations, mean and standard deviation of the overall data.

Table 4.17: Statistics of the Data used in the Study

Variables	Obs	Mean	Std. Dev.	Min	Max	
No. of Coun	240	8	4.329523	1	15	
Period	240	2005.5	4.619406	1998	2013	
gdp	240	71442.37	145172.8	7.128	972646	
exd	240	6674.813	6048.301	434	36689	
ind	240	1473.841	4383.584	1.2	32334	
ds	240	488.8154	1021.926	4	8807	
inv	240	4397.525	9187.256	24	75511	
exr	235	2.8607	4.3908	0 .02370	6.7209	
infl	223	13.69562	31.05235	-8.2378	324.9969	
lendr	234	28.33993	54.57614	7578.95	7578.95	

Source: Extract from computer printout of descriptive statistics

Table 4.18: Correlation Matrix of the Variables used for the Study

	gdp	inv	exd	ind	tdebt	ds	exchange	lending	inflation
gdp	1.0000								
inv	0.8515	1.0000							
exd	0.4111	0.2393	1.0000						
ind	-0.0613	-0.0346	0.0473	1.0000					
tdebt	0.2899	0.1694	0.8182	0.6130	1.0000				
ds	0.3479	0.1571	0.5245	-0.0385	0.3927	1.0000			
exchangerate	-0.1693	-0.1162	-0.2465	-0.2877	-0.3606	-0.2397	-0.2234	1.0000	
lendingrate	-0.0786	-0.1292	0.0210	-0.0774	-0.0280	0.1600	-0.0858	-0.1172	1.0000
inflation	0.0041	-0.0143	0.0674	0.0564	0.0857	0.1809	0.0923	-0.1554	0.7224 1.000

Source: Extract from computer printout of descriptive statistics

The result from correlation matrix reveals the relationship among the variables used for the study. There is positive relationship among GDP, external debt, total debt, debt

service and inflation while negative relationship exist among GDP, internal debt, exchange rate and lending rate.

Positive relationship exist among investment, external debt, total debt and debt service while negative relationship exist among investment, internal debt, exchange rate, lending rate and inflation. In all there is no strong relationship existing among the independent variables suggesting absence of multicollinearity.

4.3 Presentation of the Panel Unit Root Results

The Im Persaran-Shin (IPS) unit root test was employed to test for panel unit root for all the macroeconomic variables employed for the study. The results are presented on the table below:

Table 4.19: Panel Unit Root Test Result using IM Persaran-Shin

Variable	t-statistic	P-value	Critical value	Order of Integration
GDP	t-bar = -4.6218 t-tlde-bar= -2.7468 z-t-tidle-bar= -7.3371	0.0000	1% = -2.100 5% = -1.920 10%= -1.830	I(2)
EXD	t-bar = -2.8005 t-tlde-bar= -2.2287 z-t-tidle-bar= -4.5328	0.0000	1% = -2.100 5% = -1.920 10%= -1.830	I(1)
IND	t-bar = -3.8910 t-tlde-bar= -2.5520 z-t-tidle-bar= -6.1985	0.0000	1% = -2.100 5% = -1.920 10%= -1.830	I(1)
DS	t-bar = -3.6632 t-tlde-bar= -2.4805 z-t-tidle-bar= -5.8302	0.0000	1% = -2.100 5% = -1.920 10%= -1.830	I(1)
TDEBT	t-bar = -2.8005 t-tlde-bar= -2.2287 z-t-tidle-bar= -4.5328	0.0000	1% = -2.100 5% = -1.920 10%= -1.830	I(1)
INV	t-bar = -3.9413 t-tlde-bar= -2.6160 z-t-tidle-bar= -6.5282	0.0000	1% = -2.100 5% = -1.920 10%= -1.830	I(1)
EXR	t-bar = -9.5316 t-tlde-bar= -3.6858 z-t-tidle-bar= -1.7655	0.0037	1% = -2.100 5% = -1.920 10%= -1.830	I(1)
LENDR	t-bar = -3.8910 t-tlde-bar= -2.5520 z-t-tidle-bar= -6.1985	0.0000	1% = -2.100 5% = -1.920 10%= -1.830	I(1)
INFL	t-bar = -5.1699 t-tlde-bar= -2.9638 z-t-tidle-bar= -8.0482	0.0000	1% = -2.100 5% = -1.920 10%= -1.830	I(1)

Source: Extract from computer on regression of data using Stata version 11

The decision rule using Im Persaran-Shin (IPS) is that when the t-statistics is greater than the critical value at 5% significance level and the probability value (P-

Value) is less than 0.05, it shows that the variable is stationary at level otherwise the difference is taken until it becomes stationary.

The results show that all the variables tested were not stationary at level and were stationary only at first difference except for Gross Domestic Product that became stationary only after the second difference hence I(2) stationary. The t-statistic values are all greater than the critical values at the standard 5% significant level except for the z-t-tidle bar for exchange rate. However we note that the probability value for exchange rate is 0.0037 which is less than 0.05 hence like every other variable it is significant at 5% significant level. The fact that the variables are not all stationary at level however connotes the existence of unit root and indication for co-integration. Therefore in order to avoid the misinterpretation bias that comes with analyzing co-integrated variables using the Ordinary least square estimation technique, the study tests for cointegration.

4.4 Panel Cointegration Test

The engle granger estimation technique is employed to test for panel co-integration which entails predicting the residual of the model and testing for unit root. Again, the residuals of the regression for both models are tested using the Im Persaran-Shin and the results are shown below:

Table 4.20: Panel Cointegration Results

Variable	t-statistic	P-value	Critical value	Order of Integration
Residual for GDP Model	t-bar = -1.0782 t-tlde-bar= -1.0299 z-t-tidle-bar= 1.6165	0.9470	1% = -2.100 5% = -1.920 10%= -1.830	Not Stationary
Residual for INV Model	t-bar = -0.8922 t-tlde-bar= -0.8526 z-t-tidle-bar= 2.4962	0.9937	1% = -2.100 5% = -1.920 10%= -1.830	Not Stationary

Source: Extract from computer on regression of data using Stata version 11

The decision rule in using engle granger estimation technique is that when the residual of the unit root test of the model is not stationary, it indicates absence of cointegration.

The results of the panel unit root of the residuals shows that they were both not stationary at level. This implies that there exist no cointegration and hence no need for the Fully Modified Ordinary least square (FMOLS) estimation technique, since the OLS estimation technique will not be biased in estimations.

4.5 Results of the Fixed Effect Models

Table 4.21: Results of Fixed Effects Analysis of Effect of Total Debt and Debt Service on GDP (See Equation 3.12 pg 87 in Chapter 3)

Variable	Coefficient	Z-value	Probability Value
DS	-19.83964	-3.65	0.000
TDEBT	-7.909269	-9.34	0.000
EXR	59.5435	2.52	0.012
LENDR	-1963.211	-3.87	0.000
INFL	-68.04528	-0.34	0.737
Constant	164318.4	9.62	0.000

$F(13, 204) = 90.45$. Overall $R^2 = 0.0830$

Prob>F = 0.0000

Source: Extract from computer on regression of data using Stata version 11

The decision rule here is that if the probability value of a variable is less than 0.05that is at 5% significance level and the Z-Value is greater than 1.96 critical value, it indicates that that variable is a significant determinant of the dependent variable otherwise it is not a significant determinant of the dependent variable. If the value of the coefficient is negative it signifies inverse relationship and vice versa.

The probability chi square is 0.000 which indicates that the model is significant. The key variables of interest – debt service and total debt are significant determinant of GDP for both having probability values of 0.000. They are equally negative determinant of GDP with coefficients of -19.83964 and -7.909269. Exchange rate and lending rate are significant determinant of GDP having P-value of 0.012 and 0.000 respectively. While exchange rate is positively related to GDP, lending rate is negatively related to it. Inflation is not a significant determinant of GDP but it is negatively related to it.

Table 4.22: **Results of Fixed Effects Analysis of Effect of External Debt, Internal Debt and Debt Service on GDP (See Equation 3.11 pg 86 in Chapter 3)**

Variable	Coefficient	z-value	Probability Value
EXD	-9.305523	-9.99	0.000
IND	-2.571902	-1.41	0.161
DS	-19.08174	-3.59	0.000
EXR	61.60916	2.67	0.008
LENDR	-2051.422	-4.13	0.000
INFL	-95.92862	-.48	0.629

Constant	166189.7	9.95	0.000

F(13, 203) = 88.24. Overall R^2 = 0.1145
Prob>F = 0.0000

Source: Extract from computer on regression of data using Stata version 11

The F- probability value of 0.000 suggests that the model is significant at 5% significance level. The probability value of 0.000 and 0.000 respectively for external and debt service imply that they are significant determinant of GDP in the SSA countries while internal debt is not with P-value of 0.161. The coefficient of -9.305523, -19.081 and -2.571 respectively for external debt, debt service and internal debt signified a negative relationship with GDP.

Exchange rate and lending rate are significant determinant of GDP having P-value of 0.008 and 0.000 respectively. While exchange rate is positively related to GDP, lending rate is negatively related to it. Inflation is not a significant determinant of GDP but it is negatively related to it.

Table 4.23: Results of Fixed Effects Analysis of Total Debt and Debt Service on Investment (See Equation 3.14 pg 87 in Chapter 3)

Variable	Coefficient	Z-value	Probability Value
DS	-3.296911	-4.99	0.000
TDEBT	-0.5909313	-5.73	0.000
EXR	6.93256	2.41	0.017
LENDR	-254.3444	-4.12	0.000
INFL	-0.5314881	-0.02	0.983
Constant	13225.28	6.36	0.000

F(13, 204) = 16.25. Overall R^2 = 0.0830
Prob>F = 0.0000

Source: Extract from computer on regression of data using Stata version 11

The probability chi square is 0.000 which shows that the overall model is significant. The key variables of interest – debt service and total debt are significant and negatively related to investment in SSA countries with probability values of 0.000 each and coefficient -3.296911 for debt service and –0.5909313 for total debt. Exchange rate and lending rate are significant determinant of investment. While exchange rate is positively related to investment, lending rate is negatively related to it. Inflation though not a significant determinant of investment is negatively related to it.

Table 4.24: Results of Fixed Effects Analysis of Effect of External Debt, Internal Debt and Debt Service on the Investment (See Equation 3.13 pg 87 in chapter 3)

Variable	Coefficient	z-value	Probability Value
EXD	-0.6429906	-5.54	0.000
IND	-0.3919279	-1.72	0.087
DS	-3.268653	-4.94	0.000
EXR	7.009578	2.44	0.016
LENDR	-257.6333	-4.17	0.000
INFL	-1.571117	-0.06	0.949
Constant	13 295.05	6.39	0.000

F(13, 203) = 15.37. Overall R^2 = 0.0185
Prob>F = 0.0000

Source: Extract from computer on regression of data using Stata version 11

The F- probability value of 0.000 suggests that the model is significant at 5% significance level. The probability value of 0.000 and 0.000respectively for external and debt service imply that they are significant determinant of investment in the SSA countries while internal debt is significant at 10%. The coefficient of -0.6429906, -0.3919279 and -3.268653 respectively for external debt, internal debt and debt service signified their negative relationship with investment.

Exchange rate and lending rate are significant determinant of investment having P-values of 0.016 and 0.000 respectively. While exchange rate is positively related to investment, lending rate is negatively related to it. Inflation is not a significant determinant of investment but it is negatively related to it.

4.6 Results of Random Effects Models

Table 4.25: Results of Random Effects Analysis of Effect of Total Debt and Debt Service on GDP (See Equation 3.12 pg 87 in Chapter 3)

Variable	Coefficient	Z-value	Probability Value
DS	-12.94593	-2,11	0.035
TDEBT	-6.377278	-6.75	0.000
EXR	10.33369	0.45	0.651
LENDR	-1872.084	-3.25	0.001
INFL	23.9349	0.10	0.918
Constant	168439.6	5.84	0.000

Wald chi2(5) = 66.69
Prob>chi2 = 0.0000

Source: Extract from computer on regression of data using Stata version 11

The probability chi square is 0.000 which shows that the overall model is significant. The key variables of interest – debt service and total debt are significant determinant of GDP for both having probability values of 0.000. They are equally negative determinant of GDP with coefficients of -12.945 and -6.377.

Lending rate is a significant determinant of GDP having P-value of 0.001 and negatively related to it. Exchange rate and inflation are not significant determinant of GDP but are positively related to GDP.

Table 4.26: **Results of Random Effects Analysis of Effect of External Debt, Internal Debt and Debt Service on GDP (See Equation 3.11 pg 86 in Chapter 3)**

Variable	Coefficient	z-value	Probability Value
EXD	-7.756981	-7.43	0.000
IND	-2.484022	-1.26	0.209
DS	-12.96453	-2.17	0.030
EXR	18.82601	0.83	0.407
LENDR	-1929.776	-3.45	0.001
INFL	-14.15435	-0.06	0.950
Constant	169310.8	5.71	0.000

Wald chi2(6) = 80.79
Prob>chi2 = 0.0000

Source: Extract from computer on regression of data using Stata version 11

The prob>chi2 value of 0.000 suggests that the model is significant at 5% significance level. The probability value of 0.000 and 0.030 respectively for external and debt service imply that they are significant determinant of GDP in the SSA countries while internal debt is not with p-value 0.209. The coefficient of -7.756, -2.484 and -12.964 signified that external debt, internal debt and debt service has a negative relationship with GDP.

Exchange rate and inflation are not significant determinant of GDP having P-value of 0.407 and 0.950 respectively. While exchange rate is positively related to GDP, inflation is negatively related to it. Lending rate is a significant determinant of GDP and negatively related to it.

Table 4.27: **Results of Random Effects Analysis of Effect of Total Debt and Debt Service on Investment (See Equation 3.14 pg 87 of chapter 3)**

Variable	Coefficient	Z-value	Probability Value
DS	-0.6640091	-0.97	0.332
TDEBT	-0.1406268	-1.39	0.165
EXR	-1.878837	-1.13	0.259
LENDR	-187.1739	-2.82	0.005

INFL	27.21852	0.96	0.339
Constant	10612.85	5.16	0.000

Wald chi2(5) = 12.97
Prob>chi2 = 0.0237

Source: Extract from computer on regression of data using Stata version 11

The probability chi square is 0.000 which shows that the model is significant. The key variables of interest – debt service and total debt are not significant determinant of investment having p-values of 0.322 and 0.165 respectively. They are equally negatively related to investment with coefficients of -0.664 and -0.1406.

Lending rate is a significant determinant of investment having P-value of 0.005 and negatively related to it. Exchange rate and inflation are not significant determinant of investment, while has a negative coefficient, inflation has a positive coefficient.

Table 4.28: **Results of Random Effects Analysis of Effect of External Debt, Internal Debt and Debt Service on Investment (See Equation 3.13 pg 87 of Chapter 3)**

Variable	**Coefficient**	**z-value**	**Probability Value**
EXD	-0.1136108	-0.93	0.351
IND	-0.2722192	-1.44	0.150
DS	-0.9079089	-1.29	0.197
EXR	-2.014638	-1.17	0.242
LENDR	-192.6608	-2.90	0.004
INFL	-27.56398	0.97	0.332
Constant	10932.51	5.24	0.000

Wald chi2(7) = 159.2
Prob>chi2 = 0.0000

Source: Extract from computer on regression of data using Stata version 11

The prob>chi2 value of 0.000 suggests that the model is significant at 5% significance level. The probability value of 0.351, 0.150 and 0.197 for external debt, internal debt and debt service imply that they are not significant determinant of investment in the SSA countries. The coefficients of -0.113, -0.272 and -0.907 respectively for external debt internal debt and debt service signified that they have a negative relationship with investment.

4.7 The Hausman Tests

Table 4.29: **Results of Hausman test of fixed effects and random effects of Equation 3.12 pg 87 in chapter 3**

Variable	Fixed Coefficient	Random Coefficient	Difference
DS	-19.83964	-12.94593	-6.893709
TDEBT	-7.909269	-6.377278	-1.531991
EXR	59.5435	10.33369	49.20981
LENDR	-1963.211	-1872.084	-91.98018
INFL	-68.04528	23.9349	-91.98018

Chi2(6) = 68.91
Prob>chi2 = 0.0000

Source: Extract from computer on regression of data using Stata version 11

To be able to establish the effect of total debt and debt service on the Gross Domestic Product of sub-Saharan African countries, the fixed effect or random effect static panel model has to be used as discussed above in chapter three. The study therefore employed the Hausman specification test to identify whether to use the panel fixed effects or random effects.

It is a test of hypothesis of the coefficients whether they are systematic or otherwise. If the probability chi-squares of the model is less than 0.05 that is at 5% significance level the null hypothesis is rejected meaning that the difference in coefficients of the model is systematic otherwise the random effect panel regression will be adopted.

The results of the hausman specification test above shows that the probability chi square is 0.0000 hence significant and so we reject the null hypothesis of 'difference in coefficients not systematic' and conclude to use the fixed effects panel model for analysis of this regression.

Table 4.30: **Results of Hausman test of fixed effects and random effects of Equation 3.11 pg 86 in chapter 3**

Variable	Fixed Coefficient	Random Coefficient	Difference
EXD	-9.305523	-7.756981	-1.548542
IND	-2.571902	-2.48402	-0.0878797
DS	-19.08174	-12.96453	-6.117207
EXR	61.60916	18.82601	42.78315

LENDR	-2051.422	-1929.776	-121.646
INFL	-95.92862	-14.15435	-81.77427

Chi2(6) = 67.80
Prob>chi2 = 0.0000

Source: Extract from computer on regression of data using Stata version 11

The results of the hausman specification test above shows that the probability chi square is 0.0000 hence significant and so we reject the null hypothesis of 'difference in coefficients not systematic' and conclude to use the fixed effects panel model for analysis of this regression.

Table 4.31: **Results of Hausman test of fixed effects and random effects of Equation 3.14 pg 87 in chapter 3**

Variable	**Fixed Coefficient**	**Random Coefficient**	**Difference**
DS	-3.296911	-0.6640091	-2.632902
TDEBT	-0.5909313	-0.1406268	-0.4503045
EXR	6.93256	-1.878837	8.811397
LENDR	-254.3444	-187.1739	-67.1705
INFL	-0.5314881	27.21852	-27.75001

Chi2(5) = 623.53
Prob>chi2 = 0.0000

Source: Extract from computer on regression of data using Stata version 11
The results of the hausman specification test above shows that the probability chi square is 0.0000 hence significant and so we reject the null hypothesis of 'difference in coefficients not systematic' and conclude to use the fixed effects panel model for analysis of this regression.

Table 4.32: **Results of Hausman test of fixed effects and random effects of Equation 3.13 pg 87 in chapter 3**

Variable	**Random Coefficient**	**Fixed Coefficient**	**Difference**
EXD	-0.6429906	-0.1136108	-0.5293799
IND	-0.3919279	-0.2722192	-0.1197082
DS	-3.268653	-0.9079089	-2.360744
EXR	7.009578	-2.014638	9.024216
LENDR	-257.6333	-192.6608	-64.97256
INFL	-1.571117	27.56398	-29.13509

Chi2(6) = 197.95
Prob>chi2 = 0.0000

Source: Extract from computer on regression of data using Stata version 11

The results of the hausman specification test above shows that the probability chi square is 0.0000 hence significant and so we reject the null hypothesis of 'difference in coefficients not systematic' and conclude to use the fixed effects panel model for analysis of this regression.

4.8 Discussion of Results in Relation to the Hypotheses

Table 4.33: Regression Results of the effect of total debt and debt service on the GDP

Variable	Coefficient	Z-value	Probability Value
DS	-19.83964	-3.65	0.000
TDEBT	-7.909269	-9.34	0.000
EXR	59.5435	2.52	0.012
LENDR	-1963.211	-3.87	0.000
INFL	-68.04528	-0.34	0.737
Constant	164318.4	9.62	0.000

F(13, 204) = 90.45
Prob>F = 0.0000

Source: Extract from computer on regression of data using Stata version 11

As earlier stated the decision rule here is that if the probability value of a variable is less than 0.05that is at 5% significance level and the Z-Value is greater than 1.96 critical value, it indicates that that variable is a significant determinant of the dependent variable otherwise it is not a significant determinant of the dependent variable. If the value of the coefficient is negative it signifies inverse relationship and vice versa.

The probability chi square is 0.000 which shows that the overall model is significant. The key variables of interest – debt service and total debt are significant and negatively related to GDP. This result conformed to the findings in Krugman (1988), Borensztein (1993), Iyoha (1998) and Ejigayehu (2013).

The absolute t-value for debt service is 3.65 which is greater than 1.96 and the probability value is 0.000 hence a significant determinant of GDP at 5% significant level. The coefficient of -19.83964 suggests that for a unit increase in amount spent in servicing debt results to approximately19.83964 reduction in GDP. This result conformed to a priori expectation in the model. It indicated that approximately

19.83964% of GDP of the SSA countries was spent on debt service in the period of this study

The total debt is significant and negative determinant of GDP, given the fact that the coefficient is negative and the probability value is 0.000 which suggests that total debt is significant not only at 5% significance level but also at 1% significance level since it is less than 0.05 and less than 0.01 respectively. Again this result conformed to the findings in Krugman (1988), Borensztein (1993), Iyoha (1998) and Ejigayehu (2013).

The coefficient of total debt is -7.909269 which suggests that for a unit increase in total debt, there is a 7.909269 decrease in GDP. Again this is in conformity with a priori expectation expressed in the model. This might not have been the case if the debt were used for capital projects that are capable of liquidating itself. The result indicated crowding out effect of debt on gross domestic products in the fifteen sub-Saharan African countries as income from other sources are used in debt repayment.

This result conformed to the profligacy thesis, a component of the system stability theory that recognized that debt crisis arose from weak institutions and policies that have misused resources through unchecked corruption with resultant effects on standard of living and infrastructural development. Many other factors that can be identified as responsible for the dissonance between total debt and growth from the findings include (1) adverse terms of trade (ii) waste of resources due to policy deficiencies, poor governance, and weak institutions in public sector dominated economies (iii) inadequate debt management resulting in excessive borrowing at unfavorable condition. (iv) non-concessional lending and in financing policies motivated in part by the desire of lenders to promote their own exports. (v) political factors such as social strive or tension with adverse economic consequences.

On the other hand exchange rate and lending rate are significant determinants of GDP. However, given the positive signs of the coefficient of exchange rate, it implies a positive or direct relationship with GDP. The probability value of exchange rate is 0.012 while that for lending rate is 0.000 hence both less than the standard 0.05 and therefore significant at 5% significant level. The negative sign of lending rate is also expected; given that as lending rates increases, entrepreneurs tend to borrow less for investment and consequently impact negatively on GDP.

Inflation on the other hand is not a significant determinant of GDP and is negatively related to GDP. The probability value is 0.737 which is greater than 0.05 and hence not a significant determinant of GDP.

Table 4.34: Regression Results of the effect of external debt, internal debt and debt service on GDP

Variable	Coefficient	z-value	Probability Value
EXD	-9.305523	-9.99	0.000
IND	-2.571902	-1.41	0.161
DS	-19.08174	-3.59	0.000
EXR	61.60916	2.67	0.008
LENDR	-2051.422	-4.13	0.000
INFL	-95.92862	-.48	0.629
Constant	166189.7	9.95	0.000

F(13, 203) = 88.24
Prob>F = 0.0000

Source: Extract from computer on regression of data using Stata version 11

The F- probability value of 0.000 suggests that the model is significant at 5%. The probability value of 0.000 indicates that external debt is a significant determinant of GDP in the SSA countries. The coefficient of -9.305523 signified that external debt has a negative relationship with GDP. An increase in external debt will lead to a decrease in GDP in the SSA countries.

The probability value of 0.161 indicates that internal debt is not a significant determinant of GDP in the SSA countries but negatively related to it. An increase in internal debt will lead to a decrease in GDP in the SSA countries.

The probability value of 0.000 indicates that debt service is a significant determinant of GDP in the SSA countries. The coefficient of -19.08174 signified that debt service has a negative relationship with GDP. An increase in debt service will lead to a decrease in GDP by 19.08174% in the SSA countries.

The probability value of 0.629 suggests that inflation is not a significant determinant of GDP in the SSA countries. The coefficient of -95.92862 signified that inflation has a negative relationship with GDP. An increase in inflation will lead to a decrease in GDP in the SSA countries by the percentage.

The probability value of 0.000 implies that lending rate is a significant determinant of GDP in the SSA countries. The negative coefficient of signified that

lending rate has a negative relationship with GDP. An increase in lending rate will lead to a decrease in GDP in the SSA countries.

The probability value of 0.008 suggests that exchange rate is a significant determinant of GDP in the SSA countries. The positive coefficient signified that exchange rate has a positive relationship with GDP. An increase in exchange rate will lead to a increase in GDP in the SSA countries.

Table 4.35: **Regression Results of the effect of total debt and debt service on Investment**

Variable	Coefficient	Z-value	Probability Value
DS	-3.296911	-4.99	0.000
TDEBT	-0.5909313	-5.73	0.000
EXR	6.93256	2.41	0.017
LENDR	-254.3444	-4.12	0.000
INFL	-0.5314881	-0.02	0.983
Constant	13225.28	6.36	0.000

F(13, 204) = 16.25
Prob>F = 0.0000

Source: Extract from computer on regression of data

Again the chi square probability value of 0.000 also suggests that the model is significant at 5% and 1% significant levels. The key variables of interest to the study are again both significant and negatively related to Investment. The probability value of debt service is 0.000 hence a significant determinant of investment at the standard 5% significance level. The coefficient of -3.296911 suggests a negative relationship between debt service and investment in the fifteen sub-Saharan African countries. This result conformed to the findings in Krugman (1988), Borensztein (1993), Iyoha (1998) and Ejigayehu (2013).

This equally conformed to a priori in the model and implied that a percentage increase in money spent on debt service approximately results in 3.296911 % decrease in Investment. The negative relationship is expected as money that would have been invested in human capital and infrastructural development is used in servicing debt.

The findings also indicated that debt service has exacerbated the economic situation in the SSA countries by reducing significantly the current account balances of these countries through a large drop in domestic investment as result of debt over overhang due to excessive foreign debt. When foreign debt becomes excessive, actual

payment to creditors become linked to the economic performance of the debtor country. Therefore, possible increases in debt repayments lower the proceeds from productive investment and discourage capital accumulation. Debt overhang occurs when countries are unable to service their debt in full and repayments are determined by some negotiating process between the debtor country and its creditors.

The total debt is also a significant and negative determinant of Investment, given the fact that the coefficient is negative and the probability value is 0.000 which suggests that total debt is significant at 5% . This result again conformed to the findings in Krugman (1988), Borensztein (1993), Iyoha (1998) and Ejigayehu (2013).

The coefficient of -0.5909313 implied that for a percentage increase on total debt, there is a decrease in Investment by 0.5909313%. The negative relationship confirmed the a priori in the model. The result indicated a 0.590% reduction on investment in the SSA countries in the period of the study. This result would have been different if the countries borrowed within their capacities to repay. It therefore suggests that total debt of the SSA countries exceeded their ability to repay leading to debt overhang on investment due to capital flight and disincentive to invest by investors as a result of huge debt.

The Solow growth model supported these findings. Under the model the implication of total debt on growth is evident on its effect on the domestic saving and investment. The general effect of total debt on investment is through debt overhang. According to the debt overhang hypothesis, the government in a move to amortize the excessive debt will raise tax rate on the private sector (as means of transferring resources to the public sector). This will discourage investment and also lower government expenditure on infrastructural development as the resources are used to pay up huge debt service payments instead of being put into good use. This will lead to a reduction of total (private and public) investment in the economy and a shift downward of both the investment and production. In the case of debt crowding out, revenue from export earnings are used to pay accumulated debt and in other cases resources from both foreign aid and foreign exchange are used to service their forthcoming debt. The countries use income from export which could have been used for investment in the economy to repay accumulated debts. This will discourage public investment and in turn w decrease economic growth and investment in production.

Exchange rate and lending rate are significant determinant of investment. While exchange rate is positively related to investment lending rate is negatively related to it.

Given the negative sign of the coefficient of lending rate, implies that investment increases as lending rate falls while that of exchange rate is in reverse. The probability value of exchange rate is 0.017 while that of lending rate is 0.000 hence both less than the standard 0.05 and therefore significant at 5%.

Inflation is not a significant determinant of investment and is negatively related to it. The probability value is 0.983 which is greater than 0.05 and hence not a significant determinant of investment while the negative coefficient connotes a negative relationship.

Table 4.36: Regression Results of the effect of External debt, internal debt and debt service on Investment

Variable	Coefficient	z-value	Probability Value
EXD	-0.6429906	-5.54	0.000
IND	-0.3919279	-1.72	0.087
DS	-3.268653	-4.94	0.000
EXR	7.009578	2.44	0.016
LENDR	-257.6333	-4.17	0.000
INFL	-1.571117	-0.06	0.949
Constant	13 295.05	6.39	0.000

F(13, 203) = 15.37
Prob>F = 0.0000

Source: Extract from computer on regression of data

The Prob>chi2 value of 0.000 suggests that the model is significant at 5% significance level. The probability value of 0.000 indicates that external debt is a significant determinant of investment in the SSA countries. The coefficient of -0.6429906 signified that external debt has a negative relationship with investment. An increase in external debt will lead to a decrease in investment in the SSA countries by 0.642%.

The probability value of 0.087 suggests that internal debt is not a significant determinant of investment at 5% but significant 10% significance level in the SSA countries. The coefficient of -0.3919297 signified that internal debt has a negative relationship with investment. An increase in internal debt will lead to a decrease in investment in the SSA countries by 0.391%.

The probability value of 0.000 indicates that debt service is a significant determinant of investment in the SSA countries. The coefficient of -3.268653 signified that debt service has a negative relationship with investment. An increase in debt service will lead to a decrease in investment in the SSA countries by 3.26%.

The probability value of 0.949 implies that inflation is not a significant determinant of investment in the SSA countries. The coefficient of -1.571117 signified that inflation has a negative relationship with investment. An increase in inflation will lead to a decrease in investment in the SSA countries.

The probability value of 0.016 suggests that exchange rate is a significant determinant of investment in the SSA countries. The coefficient of 7.009578 signified that exchange rate has a positive relationship with investment. An increase in exchange rate will lead to an increase in investment in the SSA countries.

The probability value of 0.000 suggests that lending rate is a significant determinant of investment in the SSA countries. The negative coefficient signified that lending rate has a negative relationship with investment. An increase in lending rate will lead to a decrease in investment in the SSA countries..

4.9 Evaluation of Hypotheses of the Study

As stated in chapter 1.5 of the study, the null and alternative hypotheses are evaluated as follows:

4.9.1 Evaluation of Working Hypothesis one

H_0: Total debt has no effect on economic growth of sub-Saharan African countries.

H_1: Total debt has a significant effect on economic growth of sub-Saharan African countries.

DECISION:

The p-value of the slope of total debt when regressed on GDP is 0.000 which is less than 0.05 at 95% confidence interval. We therefore reject the null hypothesis that total debt has no effect on economic growth of sub-Saharan African countries. Hence, we conclude that total debt has a significant effect on Economic Growth of sub-Saharan African countries. This result conformed to the findings in Ejigayehu (2013).

4.9.2 Evaluation of Working Hypothesis two

H_0: Debt service has no effect on economic growth of sub-Saharan African countries.

H_1: Debt service has a significant effect on economic growth of sub-Saharan African countries.

DECISION:

The p-value of the slope of debt service when regressed on GDP is 0.000 which is less than 0.05 at 95% confidence interval. We thus reject the null hypothesis that debt service has no effect on economic growth of sub-Saharan African countries. Hence, we conclude that debt service has a significant effect on economic growth of sub-Saharan African countries. This result conformed to the findings in Krugman (1988) and Borensztein (1993).

4.9.3 Evaluation of Working Hypothesis three

H_0: Total debt has no effect on investment of sub-Saharan African countries.

H_1: Total debt has a significant effect on investment of sub-Saharan African countries

DECISION:

The p-value of the slope of total debt burden when regressed on investment is 0.000 which is less than 0.05 at 95% confidence interval. We thus reject the null hypothesis that total debt burden has no effect on investment of sub-Saharan African countries. Hence, we conclude that total debt burden has a significant effect on investment of sub Saharan African countries.

This result conformed to the findings in Krugman (1988), Borensztein (1993) and Iyoha (1998)

4.9.4 Evaluation of Working Hypothesis four

H_0: Debt service has no effect on investment of sub-Saharan African countries.

H_1: Debt service has a significant effect on investment of sub-Saharan African countries.

DECISION:

The p-value of the slope of debt service when regressed on investment is 0.000 which is less than 0.05 at 95% confidence interval. We thus reject the null hypothesis that debt service has no effect on investment of sub-Saharan African countries. Hence, we conclude that debt service has a significant effect on investment of sub-Saharan African countries. This result conformed to the findings in Krugman (1988), Borensztein (1993), Iyoha (1998) and Ejigayehu (2013).

CHAPTER FIVE

SUMMARY, CONCLUSION AND POLICY RECOMMENDATIONS

5.1 Summary of the Study

The study is motivated by the reoccurring heavy debt cycle that countries in sub-Saharan Africa keep experiencing and its implications for investment and economic growth. The study therefore employs panel regression models for a pool of 15 countries in sub-Saharan Africa. The research used cross country time series data obtained from the World Bank databases. The study analysed five specific objectives which are to establish; the debt profile and burden of the selected SSA countries, if total debt has any effect on the economic growth of sub-Saharan African countries, if debt service has any effect on economic growth of sub-Saharan African countries, if total debt has any effect on investment of sub-Saharan African countries and if debt service has any effect on Investment of sub-Saharan African countries.

The trends for total debt show that Ghana and Nigeria had highest total debt between 1998 and 2004 after which they both dropped and then Ghana increased again alongside Angola till 2013. While the other countries did not record up to $US15 billion during the period under study, and most of their debts dropped in 2006 and increased again slightly. Burundi and Rwanda had the least debts all through.

The trends for debt service show that Angola and Nigeria had highest debt service between 1998 and 2013, however Nigeria's debt service rose up to about $US9 billion in 2005, while the others barely reach $US1 billion between 1998 and 2013. Democratic Republic of Congo's debt service however increased at an increasing rate between 2012 and 2013. In fact it recorded above $US2.5 billion in 2013.

The Im Persaran-Shin (IPS) unit root test was employed to test for panel unit root for all the macroeconomic variables employed for the study and the results show that all the variables were I(1) stationary while GDP was I(2) stationary. The study further investigated for cointegration to avoid the long run relationship bias amongst the variables and found no existence of cointegration.

The common constant models and hausman specification test were therefore estimated and the results suggested the use of the fixed effect panel model regression. The results of the fixed effect panel regression showed that total debt and debt service were significant determinants of economic growth and investment and were negatively related. These results conformed to results in empirical studies in Krugman (1988), Borensztein (1990), Iyoha (1999) and Eyigayehu (2013).

Major findings of the study are summarised below;

- Total debt is a significant and negative determinant of GDP. From the estimated models, a unit increase in total debt resulted in 7.909269 decrease in GDP in the sub-Saharan African (SSA) countries.
- Total debt is a significant and negative determinant of investment. From the estimated models, a unit increase in total debt resulted in a decrease in investment by 0.5909313 in SSA countries,
- Debt service is a significant and inverse determinant of GDP. From the estimated models, a unit increase in debt service resulted to approximately 19.83964 reduction in GDP in the SSA countries.
- Debt service is a significant and inverse determinant of investment. From the estimated models, a unit increase in debt service resulted in 3.296911 decrease in investment in SSA countries.
- Exchange rate is a significant determinant of GDP and investment in SSA countries and has a positive relationship with both.
- Lending rate is a significant determinant of GDP and investment in SSA countries and has a negative relationship with both.
- Inflation is not a significant determinant of GDP and investment in SSA countries and has a negative relationship with both.

5.2 Concluding Remarks

Sub-Saharan Africa is made up of developing countries faced with the challenges of infrastructural bottlenecks and capital inadequacy and therefore often end up borrowing repeatedly from foreign countries and international financial institutions. These have giving rise to huge total debt and high debt service obligations.

Motivated by the increasing debt burden in sub-Saharan Africa, the study analysed the effects of debt burden on investment and economic growth in selected fifteen sub-Saharan African countries. Among the several findings of the study is that debt service and total debt significantly and negatively impacted on investment and economic growth in the sub-Saharan Africa. The main recommendation from the findings of this study is that SSA countries should not continue to procure public debts as such debts actually depress growth and investment. Loans should be applied on investment in infrastructures that promotes productivity and human capital development.

5.3 Policy Implications/Recommendations

The study led to several findings and therefore several policy implications as well as recommendations are discussed below:

- The results show that total debt is a negative and significant determinant to investment and GDP of sub Saharan Countries. The coefficient of total debt is -7.909269 which suggests that for a unit increase in total debt, there is a 7.909269 decrease in GDP. This might not have been the case if the debt were used for capital projects that are capable of liquidating itself. The result indicated crowding out effect of debt on gross domestic products in the fifteen sub-Saharan African countries as income from other sources are used in debt repayment. The coefficient of -0.5909313 implied that for a unit increase on total debt, there is a decrease in investment by 0.5909313. The result indicated a 0.590% reduction on investment in the SSA countries in the period of the study. This result would have been different if the countries borrowed within their capacities to repay. It implied therefore that total debt of the SSA countries exceeded their ability to repay leading to debt overhang on investment due to capital flight and disincentive to invest as a result of huge debt. The study therefore recommends that economies of sub-Saharan African countries should apply loans only on beneficial capital investments capable of liquidating itself rather than spend it on recurrent expenditure. This will reduce the crowding out effect of debt and debt overhang on the economies. Only external loans with favourable terms and conditions should be sort for by the countries to avoid excessive debt burden on the economies.
- In the same light, debt service is equally a significant and inverse determinant of investment and economic growth which implies that as debt service increases, investment and growth reduce significantly. The coefficient of -19.83964 suggests that for a percentage increase in amount spent in servicing debt results to approximately 19.83964% reduction in GDP. It indicated that approximately 19.839% of GDP of the SSA countries was spent on debt service in the period of this study. In the same vein, a percentage increase in money spent on debt service approximately results in 3.296911% decrease in Investment. The negative relationship implied that money that would have been invested in human capital and infrastructural development is used in servicing debt. The study recommends that the countries in SSA should sort for loans with

favourable terms and conditions after a rigorous evaluation not on exigency to reduce the cost of the debt. A well-developed capital market will reduce the rate of external borrowing.

- ❖ Exchange rate is a significant determinant of GDP and investment in SSA countries and has a positive relationship with both. Measures that will stabilize exchange rates in the SSA countries should be put in place to check its adverse effects on the economy.
- ❖ Lending rate is a significant determinant of GDP and investment in SSA countries and has a negative relationship with both. The Central banks in the SSA countries should enact policies that will reduce lending rates to stimulate economic performance.
- ❖ Inflation is not a significant determinant of GDP and investment in SSA countries and has a negative relationship with both. Measures to check inflation in the SSA countries should be applied.

5.4 Contribution to Knowledge

This study provided far-reaching suggestions to reoccurring debt burden in the economies of sub-Saharan Africa and other developing countries of the world. This was indicated from the findings of this study that total debt has significant negative relationships with investment and economic growth.

The findings of this study indicated that foreign loans especially not invested in beneficial capital investments capable of liquidating it and in infrastructure and human capital development may result to crowding-out effect and debt overhang in the economy.

The study also suggested that SSA countries should not continue to procure public debts as such debts actually depress growth and investment. This was indicated from the findings of this study that debt service has significant negative relationships with investment and economic growth.

The study equally indicated that a unit increase in debt service resulted to approximately 19.839 decrease in GDP and 3.296 decrease in investment in the SSA countries. Also a unit increase in total debt resulted in 7.909 decrease in GDP and 0.590 decrease in investment in the SSA countries. This implied that loans especially should be applied on investment in infrastructures that promotes productivity and human capital development.

5.5 Suggested Areas for Further Studies

The relationship between debt burden and economic growth in developing countries is a very significant and reoccurring phenomenon that needs to be addressed by every government or economy. So this study needs to be replicated across other regions of developing countries to ascertain the impact of total debt and debt service on investment and economic growth. Developed countries also sometimes have debts and it is in their interest to also investigate to what extent such debts could be a limitation to their growth or investment as the case may be.

Debt could further be decomposed into internal and external debt, in order to assimilate if there is any preference that could help generate income for the state and yet not have the negative effect it has. Other studies on debt burden could equally be analysed on other macroeconomic indicators using simulations to better ascertain the role of debts in economic development of a nation. The study could equally employ other methodologies to either support or counter the findings thereof as to further enrich the existing stock of research on the subject matter.

5.6 Limitations of the Study

This study like every other research faced some limitations which could be grouped into two: data availability and finance. The study found it difficult to access some of the data it needed. The study intended analyzing public and private investments separately but could not credit to unavailable data across the fifteen countries under consideration. Also such panel data of African countries were not available in several data banks which made it more difficult as the study was confined to these limited periods of time and countries. There is need for other organizations based in African to have such data other than the regular World Bank, International Monetary fund and few others.

On the other hand, the study incurred some expenses that led to a delay in the progress of the work and this would not have been the case if the research was funded by government, corporate bodies or grant from the researcher's institution. It is worth noting however that these limitations did not forestall the potent of the research.

References

Abrego and Ross D.C. (2001). Debt Relief under HIPC Initiative: Context and Outlook for Debt Sustainability and Resource Flows, *World Institute for Economic Research, IMF Working Paper WP/01/144*

Abdelmawla and Mohammed (2005). The Impact of External Debt on Economic Growth: An Empirical Assessment of the Sudan: 1978 – 2001, *Eastern Social Science Research Review,* Vol. 21(2), 53-66.

Adebayo O.O. (1990): Nigeria External Debt Crisis Its Management: Malthouse Press Ltd, Lagos Pg 23-27

Adegbite, E. O., Ayadi, F. S. and Ayadi, O. F. (2008). 'The Impact of Nigeria's External Debt on Economic Development'. *International Journal of Emerging Markets, Vol. 3, 3, 2008, pp. 285-301.*

Adejuwon, K.D., James K.S. and Soneye, O.A. (2010). "Debt Burden and Nigerian Development ". *Journal of Business and Organisational Development*,Vol.2.

Adepoju, A.A., Salau, A.S., & Obayelu, A.E., (2007). The Effects of External Debt Management on Sustainable Economic Growth and Development: Lessons from Nigeria, *MPRA. Paper* No. 2147.

Adesola, W.A. (2009). Debt Servicing and Economic Growth in Nigeria: An Empirical Investigation. *Global Journal of Social Sciences,* Vol. 8, No. 2, 1-11.

Adeusi and Dare (2001). *Financial Aspects of Development*. Tomol Publisher, pp. 51-52

Afxentiou, P. C. and Serletis, A. (1996[a]). 'Foreign Indebtedness in Low and Middle Income Developing Countries'. *Social and Economic Studies,* 45(1), 133-159.

Afxentiou, P.C. and Serletis, A. (1996). 'Growth and Foreign Indebtedness in Developing Countries: An Empirical Study Using Long-term Cross-Country Data.' *The Journal of Developing Areas*, 31, Fall, pp. 25-40.

Ahmed, A. (1984). "Short and Medium Term Approaches to Solving African Debt Problem". *Central Bank of Nigeria Bullion*, 12(22).

Ajayi, E.A. (1989): Nigeria Debt Management Experience C.B.N of Nigeria Bullion April/June 1987 Vol 13 No 2 Pg 25

Ajayi L.B., (2005): *Mathematics of Finance*. Abisco Press, Abuja Nigeria

Ajayi, K (2000). "The Feasibility of Democracy in Africa". Dakar: CODESRIA Books.

Ajiya, S.I.(2007). "Capital flight and external debt in Nigeria." *AERC Research Paper no.35. Nairobi: AERC.*

Akperan Adams (2001), External Debt: A burden on African's Growth and Poverty Reduction" *Selected paper for the annual conference of Nigeria's Economic Society*

Aluko, F. and Arowolo, D. (2010). "Foreign Aid, the Third World Debt Crisis and the Implication for Economic Development: The Nigerian Experience". *African Journal of Political Science and International Relations.4(4), 120 127.*

Amin, S. (1976). "Unequal Development: An Essay on the Social Formations of Peripheral Capitalism". *New York: Monthly Review Press.*

Amoako A. (2002): Unidirectional and Positive Causal Relationship between Foreign Debt service and GDP Growth: The Special Issue on Contemporary Research in Arts and Social Science © Centre for Promoting Ideas, USA 304 Annual Report and Statement of Account:

Amoateng, K. and Amoako, A. B. (1996). 'Economic Growth, Export and External Debt Causality: The Case of African Countries'. *Applied Economics, Vol. 28, 1, pp. 21 27.*

Anyanwu (1997): The Structure of the Nigeria Economy. Pg 631

Arias (2002): Striking Diversity of Experience with Growth Episode and Poverty Changes.

Ashinye J.O. and Onwiodulait E.A (1996): "Economic Growth and Foreign Debt: A Case Study of Nigeria" *Central Bank of Nigeria, Economic and Financial Review Vol 34 (1) Pg 523-540*

Asley (2002): Argued that Debt Burden is not a Problem of Freely Resource to Debt Services Payment.

Asteriou, D. and Hall, S.G. (2007). 'Applied Econometrics, A Modern Approach'. Palgrave Macmillan, Basingstoke.

Audu, I. (2004). The Impact of External Debt on Economic Growth and Public Investment: The Case of Nigeria*, African Institute for Economic Development and Planning (IDEP)*, Dakar.

Ayadi, F.S and Ayadi, F.O (2008). The Impact of External Debt on Economic Growth: A Comparative Study of Nigeria and South Africa, *Journal of Sustainable Development in Africa,* Vol. 10, No.3, 234-264.

Ayandiji D. (2010) "Globalization and the Challenges on National Development: the case of Post Debt Relief in Nigeria" .African Journal of Political Science.

Banerfreund. (1989). Productivity and Public debt: The difficult quest for growth in Jamaica, *IMF Working paper, WP/06/235* .

Bank of Tanzania, Monthly Economic Review (MER) - June 2011. Available on http:// www.bot-tz.org/Publications/Monthly Economic Review/MER_ JUNE_2011.pdf accessed on 24.09. 2012.

Bank of Tanzania, Monthly Economic Reviews, Quarterly Reports, Annual Report and various issues (2012). Available on http:// www.bot-tz.org/Publications/publications And Statistics.asp accessed on 13th September, 2012.

Barbara M. (1997)., Growth and foreign debt: The Ugandan experience, *African Economic Research Consortium- Kenya, AERC Research Paper 66*,

Bayo O. (2002): Principle of International Finance. Vol. 1 Pg 142 - 147. Forthright Educational Publishers (A Division of Forthright Consult Limited) Lagos

Benedict, R. B. and Nguyen T.O. , (2003), External Debt, Public Investment, and Growth in Low-Income Countries*, IMF Working Paper WP/03/249.*

Blavy S. (2006). Public debt and productivity: The difficult quest for growth in Jamaica, *IMF Working paper, WP/06/235* .

Boboye L. and Ojo O.M. (2012),, Effect of External Debt on Economic Growth and Development of Nigeria, *International Journal of Business and Social Science, 3(12), 297- 304.*

Borensztein N. (1993) Domestic, public debt, and external financing, and economic growth, *Working Paper No. 2011-12*. Available at: http://wp.demm.unimi.it/tl_files/wp/2011/DEMM-2011_012wp.pdf accessed on 15.02.2015.

Borensztein, E., Marcos C., Olivier J., Paolo M. (2004), "Domestic Debt Market in Sub-Saharan Africa" *IMF working Paper WP/0646*

Bowe, M and Dean J.W (1997) "Has the Market Solved the Foreign Debt Crisis?' Princeton Studies in International Economics, 83 International Economics Section, Department of Economics Princeton University

Boyce, J.K. and Ndikumana, L. (2002). 'Africa's Debt: who owes whom?'. University of Massachusetts, Department of Economics and Political Economy Research Institute, Working Paper 32.

Brooks, C. (2002). 'Introductory Econometrics for Finance'. Cambridge University Press, Cambridge.

Bullow, J. and Rogoff, K. (1990). 'Cleaning up third world debt without getting taken to the cleaners'. *Journal of Economic Perspectives*, Vol. 4, 1, pp. 31-42.

Butts, H. C. 2009. 'Short Term External Debt and Economic Growth—Granger Causality: Evidence from Latin America and the Caribbean'. *The Review of Black political economy, Vol. 36, pp. 93–111.*

Caliari, A. (2013), 'Regulatory Aspects of the World Debt Problem'. *Journal of cato Vol. 4, No1*

Calvo R and Guillermo A. 1998, "Growth, Debt and Economic Transformation: The Capital Flight Problem" in New Theories in Growth and Development , ed. by Fabrizio Coricelli,

CBN Statistical Bulletin 2007

CBN Economic and Financial Review Volume 36 (Mar 1980 Pg 22-44**)**

Central Bank of Nigeria CBN (1998) Economic and Financial Review, Volume 36 (March 1998) Pg 22- 44

Central Bank of Nigeria (CBN) 2002, Annual Reports and Statement of Accounts.

Central Bank of Nigeria (CBN) 2005, Annual Reports and Statement of Accounts

Chenery, H.B. and Strout, A. (1966). 'Foreign Assistance and Economic Development'. *American Economic Review, Vol. 56, pp. 679-733.*

Cholifihani M. (2008),, A Co-integration Analysis of Public Debt Service and GDP in Indonesia, *Journal of Management and Social Sciences, 4(2), 68-81.*

Choong, C., Lau, E., Liew, V.K., & Puah, C. (2010). Does Debts Foster Economic Growth? The Experience of Malaysia, *African Journal of Business Management,* Vol. 4(8), 1564-1575.

Chowdhury R. (1994),, Structural Analysis of External Debt and Economic Growth: Some Evidence From Selected Countries in Asia and the Pacific, Applied Economics, 26 (12), 1121- 1131.

Chowdhury R (2001). External Debt and Growth in Developing Countries: A Sensitivity and Causal Analysis, *World Institute for Economic Research, Discussion Paper No.95,*

CIA (2010). 'The World FactBook'. Retrieved on 15 July, 2010 from https://www.cia.gov/library/publications/the-world-factbook/index.html

Classens S, and Diwan, B (1991). Debt Overhang and Economic Growth in HIPC Countries. *International Journal of Economics and Finance, 4(10), 82-92.*

Claessens, S. 1990. "The debt laffer curve: Some empirical estimates." World Development, December.

Cline, W. 1988. "International debt: Progress and strategy". Finance and Development, vol. 25, no. 2.

Clements, B., Benedict B, and Nguyen, T.Q. (2003). 'External Debt, Public Investment, and Growth in Low-Income Countries'. *IMF Working Paper* No. 03/249, IMF, Washington, DC.

Cohen, D. (1997). 'Growth and external debt: A new perspective on the African and Latin American tragedies'. Centre for Economic Policy Research Discussion Paper, No. 1753.

Cohen, D. (2003). "Slow growth and large LDC debt in the eighties: An empirical analysis". *CEPREMAP Working Paper* No. 9002, November

Cordella, R.A and Ruiz-Arranz, M, (2005) Debt overhang or debt irrelevance? Revisiting the debt-growth Link, *IMF Working Paper No. 05/223.*

Cunningham T. (1993). The Effects of Debt Burden on Economic Growth in Heavily Indebted Nations, *Journal of economic development, 18(1), 115-126*

Deshpande, (1997) The debt overhang and the disincentive to invest, *Journal of Economics Development, 52(1), , 169-87.*

Dickey A. and Fuller W.A. (1979), Distribution of the estimators for autoregressive time-series with a unit root, *Journal of the American Statistical Association, 74 (366), , 427-31.*

Durbarry, R., Padachi, K. and Seetanah, B. (2008). 'An Empirical Assessment of External Debt on Economic Growth: The Case of Africa in a Panel VAR'. *Journal of International Finance and Economics.* Retrieved on 12 August, 2010 from http://findarticles.com/p/articles/mi_6765/is_1_8/ai_n28552128

Eaton, (1993) Sovereign Debt: A Primer, *The World Bank Economic Review, 7(2), , 137-172.*

Easterly, W. (2002). 'How Did Heavily Indebted Poor Countries get Heavily Indebted? Reviewing Two Decades of Debt Relief'. World Development, Vol. 30, 10, pp. 1677-1696.

Ejigayehu, D.A. (2013). "The Effect of External Debt in Economic Growth". *Journal of the Department of Economics Sodertorn University.*

Ekperiware, M.C. and Oladeji, S.I. (2012). "External Debt Relief and Economic Growth in Nigeria". American Journal of Economics. 2(7).

Elbadawi, I.A., Ndulu, B.J. and Ndungu, N. in Iqbal, Z. and Ravi, K. (1999), 'Debt Overhang and Economic Growth in Sub-Saharan Africa'. External Finance for Low-income Countries, IMF Institute, Washington, DC, Ch. 5.

Ellig, J. (Ed.) (2001). 'Dynamic Competition and Public Policy: Technology, Innovation and Antitrust Issues', Cambridge University Press, Cambridge.

Engle, R. F. Granger, C. W. J. (1987). 'Co-Integration and Error Correction: Representation, Estimation, and Testing.' Econometrica, Vol. 55 No. 2 (March 1987) pp. 251-276.

Faraji K. and Makame S. A. (1993)*Impact* of External Debt on Economic Growth: A Case Study of Tanzania 81

Falegan, S.B. (1992): "Nigeria External Debt Burden" *CBN Economic and Financial Review Vol 30, No 2 Foundation Publication Ibadan.*

Feldstein T (1986), Public Investment, External Debt and Growth in Low-Income Countries*, IMF Working Paper WP/03/249*

Fosu K. (1996),, The Impact of External Debt on Economic Growth in Sub-Saharan Africa, *Journal of Economic Development, 21(1), 93–117.*

Fosu K.. (2009), The External Debt-Servicing Constraint and Public Expenditure Composition in Sub- Sahara Africa, *World Institute for Economic Research, Working Paper W36.*

Freytag and Pehnelt G. (2009),, Debt relief and governance quality in developing countries, *World Development, 37 (1), 62-80.*

Frimpong M. and Oteng-Abayie E.F. (2003),, The impact of external debt on economic growth in Ghana: A Cointegration Analysis, *Journal of Science and Technology, 26 (3), 121-130.*

Geiger, L. T. (1990). 'Debt and Economic Development in Latin America'. *The Journal of Developing Areas, 24, pp. 181-194.*

Gohar M., Bhutto N.A. and Butt F. (2012), The Impact of External Debt Servicing on the growth of Low-Income Countries, Sukkur Institute of Business Administration, Proceedings of 2nd International Conference on Business Management (ISBN: 978-969-9368-06-6),. Available at: http://www.umt.edu.pk/ icobm2012/pdf/2C-85P.pdf accessed on 15.02.2015.

Granger W.J (1969). Investigating causal relations by econometric models and cross spectral methods, Econometrica, 37(3), 424-438.

Greene, J and Villanueva N. (1991). "The External Debt Problem of sub-Saharan Africa". *IMF Staff Papers.36 (4), 836-74*.

Green and Khan (1990): "The African Debt Crisis". AERC. Special Paper Nairobi: Initiative Publishers.

Gujarati, D.N. (2004). Basic Econometrics. Delhi: Tata McGraw- Hill.

Gujarati, D.N. and Portar, D.C. (2009) Basic Econometrics. Singapore: McGraw- Hill International Edition.

Hadjimichael, A. (1995). 'Debt and Economic Growth in Developing and Industrial Countries'. Working Papers 2005:34, Lund University, Department of Economics.

Hameed, A. and Chaudhary M.A. (2008),, External Debt and its Impact on Economic and Business Growth in Pakistan, *International Research Journal of Finance and Economics, Issue 20 132-140.*

Hameed, H (2008), Impact of External Debt on Economic Growth: A Case Study of Tanzania

Hernandez C. , (1974), Issues in design of Growth Exercises, *IMF Working Paper, WP/88/65.*

Hoeffler, Anke E. (2002), "The Augmented Solow Model and the African Growth Debate', Oxford Bulletin of Economics

Hofman, B. and Reisen, H. (1991) 'Some Evidence on Debt-Related Determinants of Investment and Consumption in Heavily Indebted Countries'. Weltwirtschafliches Archiv, Vol. 127, 2, pp. 280-297.

Hunt, S.D. (2007). "Economic Growth: Should Policy Focus on Investment on Dynamic Competition?" *European Business Review*.19(4), 279-291.

Iftikharul Husnain M, Khan M., ulHaqPadda I, Akram N. and Haider A. (2011),, Public Spending, Foreign Direct Investment and Economic Growth, *International Research Journal of Finance and Economics, Issue 61, 20-28.*

International Development Association (IDA) and International Monetary Fund (IMF). (2007). 'Heavily Indebted Poor Countries (HIPC) Initiative and Multilateral Debt Relief Initiative (MDRI) − Status of Implementation'. A report prepared on September 28, 2007 for the October 21, 2007 Development Committee Meeting.

International Monetary Fund (IMF). (1989). World Economic Outlook, Supplementary Note 1, Washington, USA. Retrieved on 20 July, 2010 from http://www.allbusiness.com/finance/110797-1.html

International Monetary Fund (IMF). (2011). 'Debt Relief under the Heavily Indebted Poor Countries (HIPC) Initiative'. A fact sheet, July. IMF, Washington, D. C

Iyoha M.A. (1998)., External debt and economic growth in sub-Saharan African countries: An econometric study, *African Economic Research Consortium, AERC Research Paper 90.*

Iyoha M.A. (1997): "An Econometric Study of Debt Overhang, Debt Reduction, Investment and Economic Growth in Nigeria" National Centre for Economic Management and Administration (NCEMA) Monograph Series No 8 Ibadan

Iyoha, M.A (2000). "Policy Simulation with a Model of External Debt and Economic Growth in Sub- Saharan African countries" *Nigerian Economic and Financial Review, Vol. 2.*

Johansen, S. (1988). 'Statistical Analysis of Cointegrating Vectors'. Journal of Economic Dynamics and Control, Vol. 12, pp. 231-254.

Johansen, S. and Juselius, K. (1990). 'Maximum Likelihood Estimation and Inference on Cointegration with Application to the Demand for Money'. Oxford Bulletin of Economics and Statistics, Vol. 52, 2, pp. 169-211.

John K. and Sammy M. (2001),, The debt service burden and growth: evidence from low income countries, *Journal of Development Economics, 32(2), 315-335.*

Jayaraman T.K and Lau. E, (2009). Does external debt lead to economic growth in Pacific island countries, *Journal of Policy Modelling, 31(2), 272-288.*

Kappagoda M. and Alexander N.C, (2004). Debt Sustainability Framework for Low Income Countries: Policy and Resource Implications, Paper Submitted for the G-24 Technical Group Meeting, Washington, D.C., September 27-28 Available at: http://www.nsi-ins.ca/wp-content/uploads/2012/10/2004-Debt-Sustainability-Framework-for-Low-Income-Countries-Policy-and-Resource-Implications.pdf accessed on 15.02.2015.

Karagol, E. (2002). 'The Causality Analysis of External Debt Service and GNP: The Case of Turkey'. *Central Bank Review, Vol. 2, 1, pp. 39-64.*

King B.B. (1968). Notes on Mechanics of Growth and Debt, World Bank Staff Occasional Papers 6, Baltimore B. Chenery and A.M. Strout (1966), Foreign Assistance and Economies, *American Review, 56(4), (1966), 679–733.*

Krugman, P. (1988). 'Financing Versus Forgiving a Debt Overhang'. Journal of Development Economics, Vol. 29, 3, pp. 253–68.

Krumm, K. L. (1985). 'The External Debt of Sub-Saharan Africa'. *World Bank Staff Working Paper No. 741 (June).*

Kuma, J and Mlambo, N. (1996). "The External Debt Problem of sub-Saharan Africa". *IMF Staff Papers*.36 (4), 836-74.

Kumar M.S and Woo J. (2010). Public Debt and Growth, *IMF Working Paper, WP/10/174.*

Kutivadze N. (2011) Public debt, domestic and external financing, and economic growth, *Working Paper No. 2011-12*. Available at:

http://wp.demm.unimi.it/tl_files/wp/2011/DEMM-2011_012wp.pdf accessed on 15.02.2015.

Leipziger, D.M. (2001) "The Unfinished Poverty Agenda: Why Latin America and the Caribbean Lag Behind "Finance and Development Vol. 38.

Lensink, K. and Morrisseys, L (2000). External debt and economic growth: A vector error correction approach, *International Journal of Business Research, 7(5)*

Lewis M., Lizondo S and Desruelle D. (2011),, Debt Sustainability Analysis: United Republic of Tanzania, *Joint WB and IMF, 4(21), 54-66.*

Mallik G. (2008). 'Foreign Aid and Economic Growth: A Cointegration Analysis of the Six Poorest African Countries'. *Economic Analysis and Policy, Vol. 38, pp. 251-260.*

Malik S, Hayat M.K and Hayat M.U, (2010). External Debt and Economic Growth: Empirical Evidence from Pakistan, *International Research Journal of Finance and Economics, Issue 44, 88-97.*

Mc Donald C. (1982), Debt Capacity and Developing Country Borrowing: A Survey of the literature, *IMF Working Paper, W29 (4),.*

McGroarty S, Vorisek D and Zaidi A (2009) Tanzania Country brief, *The World Bank Report, Washington*. Available at:

http://issuu.com/world.bank.publications/docs/97808213786871/1?mode=a_p accessed on 15.02.2015.

Metwally, M. M. and Tamaschke, R. (1994). 'The interaction among foreign debt, capital flows and growth; case studies'. Journal of Policy Modelling, Vol. 16, 6, pp. 597-608.

Mimiko, O.M. (1997). "The Global Village: Selected Topics on International Relations". Akure: ABM Research and Services.

Ministry of Finance and Economic Affairs, , (2007). Zanzibar debt policy, Zanzibar

Ministry of Finance 2012, Medium - Term debt management strategy, United Republic of Tanzania, Dar Es Salaam, Available on:

http://www.docstoc.com/docs/83297612/The-United-Republic-Of-Tanzania

Ministry-Of-Finance-Medium-Term-Debt-Management-Strategy-June-2011 accessed on 13th August, 2012.

Ministry of Finance, Medium Term debt management strategy, United Republic of Tanzania, Dar Es Salaam, 2011.

Ministry of Finance, The Economic Survey, United Republic of Tanzania, Dar Es Salaam, 2009.

Modigliani, F and M. Miller (1961) "Cost of Capital, Corporate Finance and the Theory of Investment" *American Economic Review*.

Morisset, J. (1991). 'Can debt reduction restore economic growth in highly indebted countries?'. *Revie D'economique Politique*, Vol. 101, 4, pp. 639-666.

Moshi, E and Kihindo, M. (1994). 'The Causality Analysis of External Debt Service and GNP: The Case of Tanzania'. Central Bank Review, Vol. 2, 1, pp. 39-64.

Muhanji S. and Ojah K. (2011) External shocks and persistence of external debt in open vulnerable economies: The case of Africa, *Economic Modeling, 28(4), 1615-1628*.

Muganda, T. (2004). Economic Reform and Lesson Learned, *The World Bank Report, Washington, D. C.*

Mukhopadhyay, S (1995). 'Debt Overhang and Economic Growth - The Asian and the Latin American Experience'. Economic Systems, Vol. 31, 1, pp. 3-11

Nakatani, P and Herrera, R. (2007). 'The south has already repaid its external debt to the north, but the north refuses to recognize its debts to the south'. CES Working Paper, 2007.14.

National Bureau of Statistic (2005): Nigeria Statistic Fact Sheet on Economic Social and Development Pg 31-32

Nawaz M, Quresh M and Awan N,W (2012). Does External Debt Causes Economic Growth: A Case of Pakistan, *Romanian Economic Journal, 15(43), 131-144.*

Ndikumana L, (2004) Additionality of debt relief and debt forgiveness, and implications for future volumes of official assistance, *International Review of Economics and Finance Vol. 13, 325-40.*

Nnoli, O. (2003) "Globalization and African Political Science". *African Journal of Political Science vol.8*

Nweke C. (1990): "The Origin and Dimension of Nigeria External Debt" In Nigeria External Debt Crisis Its Management. Malthouse Press Ltd, Pg 42-61

Nurske R. (1953): Problem of Capital Formation in Under Developed Countries, Oxford.Oxford University Press.

Nyoni S.T, (1997). Foreign Aid and Economic Performance in Tanzania, African Economic *Research Consortium, Research Paper No.61*. Available at: http://idl-bnc.idrc.ca/dspace/bitstream/10625/15736/1/106834.pdf accessed on 15.02.2013.

Obadan M.I and Uga J (2004): Foreign Capital Flows and External Debt. Broadway Press Limited Lagos, Nigeria. E-ISSN 2281-4612 ISSN 2281-3993 *Academic Journal of Interdisciplinary Studies*

Ocampo (2004): Utilized ordinary least Square for each of the Thirteen Less Developed Countries over the Sample Period 1965-1990

Ogbe N.E. (1992): "Evaluation of Nigeria's Debt Relief Experience (1985-1990)" Technical Paper No 55 Organization for Economic Co-operation and Development Paris.

Ogbeifun, M.I. (2007). "The Politics of External Debt Relief: Nigeria's Unique Experience". African Journal of Stability and Development.1(1).

Ogundipe. A and Philip O. (2013) "Interest Rate Pass Through to Macroeconomic Variables: The Nigerian Experience."*International Journal of Economics and Finance 5.10, p18.*

Ogundipe, A., & Amaghionyeodiwe, L. (2013).Transnational Trade In Ecowas: Does Export Content Matter? (No. 51617). University Library of Munich, Germany

Ogunmuyiwa, M.S. (2011). Does External Debt Promote Economic Growth?, *Current Research Journal of Economic Theory* 3(1), 29 – 35.

Ogunlana A. (2005), Nigeria and the burden of external debt: The need for debt relief, Central Bank of Nigeria,. Available at http://www.g24.org/TGM/ongu0905.pdf accessed on 15.02.2015.

Okonjo-Iweala, N., Soludo, C. and Muhtar, M. (eds.) (2003). "The Debt Trap in Nigeria". Trenton NJ: Africa World Press Inc.

Oloyede, B. (2002). *Principles of International Finance*, Forthright Educational Publishers, Lagos.

Omoruyi S. (2005). Debt Burden (Sustainability) Indicators, Presentation Paper at Regional Course on Debt Recording and Statistical Analysis, Organized by WAIFEM, July 18-29, Lagos.

Omotoye, O.R., Sharma, H.P., Ngassam, C. & Eseonu, M.C. (2006). Sub-Saharan Africa's Debt Crisis: Analysis andForecast Based on Nigeria, *Managerial Finance,* Vol. 32, No.7, 606-602.

Onah, F.E. (1994): "External Debt and Economic Growth African Debt Burden and Economic Development" selected papers for the 1994 Annual Conference of the Nigeria Economic Society (NES), May, 1994

Osei, S.I. (2000). "Macroeconomic approach to external debt: The case of Nigeria". *AERC Research Paper no. 8. Nairobi: AERC*

Oshikoya J.O. (1994): "Foreign Debt and Economic Growth: A Case Study of Nigeria" Central Bank of Nigeria, Economic and Financial Review Vol 34 (1) Pg 523-540

Osinubi, T.S. And Olaleru, O.E. (2006). "Budget Deficits, External Debt and Economic Growth in Nigeria". Applied Econometrics and International Development. 6(3).

Oxfam (1998): Problems Faced by the Tanzanian Government

Oyejide, T. A et al (1995). Nigeria and the IMF. Heinemann Books (Nigeria) ltd, Ibadan.

Patillo, C., Poirson, H., and Ricci, L. (2002). 'External debt and growth'. IMF Working Paper 02/69, IMF, Washington, DC.

Patillo, C., Poirson, H., and Ricci, L. (2004). 'What are the channels through which external debt affects growth?'. IMF Working Paper 04/15, IMF, Washington, DC.

Pattillo C., Ricci L. and Poirson H. (2001): Non-linear Impact of External Debt Growth

Parto, A. and Hilt, M.A. (1993),Impact of External Debt on Economic and Business Growth in Pakistan, *International Research Journal of Finance and Economics, Issue 20 132-140.*

Presbitero F,(2013) Total public debt and growth in developing countries, UniversitàPolitecnicadelle Marche (Italy), MoFiR Working Paper No. 44. Available at : http://docs.dises.univpm.it/web/quaderni/pdfmofir/Mofir044.pdf accessed on 15.02.2015

Presbitero F. (2005). 'The Debt – Growth Nexus: A Dynamic Panel Data Estimation". Available electronically http://ssm.com/abstract=785965

Quresh M.N and Ali K, (2010) Public Debt Burden and Economic Growth: Evidence from Pakistan, *International Research Journal of Finance and Economics, Issue 53, 101-108.*

Robinson, J. A. and Torvik, R. (2005). 'White Elephants.' *Journal of Public Economics, Vol. 89, pp. 197– 210.*

Rockerbie, K. (1998) External shocks and Persistence of external debt in open vulnerable economies: The case of Africa, *Economic Modeling, 28(4), 1615-1628*.

Rubby S. (2012) Economic Growth and External Public Debt: Empirical Evidence from Bangladesh, Available at:

http://www.publicdebtnet.org/public/results/intenet.org/public/results/index.jps?cmb country=17 accessed on 15.02.2015.

Sachs J, (2000) The Charade of Debt Sustainability, The Financial Times dated on Tuesday, 26th September,. Available at: http://www.earth.columbia.edu/sitefiles/

file/Sachs%20Writing/2000/FT_2000_The_Charade_of_Debt_Sustainability_09_26_00.pdf accessed on 15.02.2015.

Sachs, J and Keen, H (1990) 'The Debt Crises Structural Explanation of Country's Performance.' *Journal of Development Economics, ELSE Vier Vol. 29 (3) November*

Safdari, M. and Mehrizi, M.A. (2011). "External Debt and Economic Growth in Iran". *Journal of Economic and International Finance. 3(5).*

Savvides, A. (1992): "Investment Slowdown in Development Countries During the1980s; Debt Overhang or Foreign Capital Inflow" Kyklos Cilt 45 say; B SS 363-378

Schclarek, A. (2004). 'Debt and Economic Growth in Developing and Industrial Countries'. Working Papers 2005:34, Lund University, Department of Economics.

Seetanah, K. Padachi and R. Durbarry, (2007). External debt and economic growth: A vector error correction approach, *International Journal of Business Research, 7(5).*Available at http://www.freepatentsonline.com/article/International-Journal-Business-Research/178945825.html accessed on 15.02.2014.

Sen, S., Kasibhatla, K.M., and Stewart D.B. (2007). 'Debt Overhang and Economic Growth - The Asian and the Latin American Experience'. Economic Systems, Vol. 31, 1, pp. 3-11

Serven C. and Solimano, L. (1993). 'External debt and economic growth'. *IMF Working Paper 02/69, IMF, Washington, DC.*

Sharif, S. Malik and M. Ramazan, (2009). Impact of foreign debt and savings on Pakistan, *Journal of Quality and Technology Management, 5(11), 101-115.*

Sichula M, (2012). Debt Overhang and Economic Growth in HIPC Countries: The Case of Southern African Development Community (SADC), *International Journal of Economics and Finance, 4(10), 82-92.*

Smyth D. and Hsing A. (1995): The Federal Government Debts Impact on Economic Growth

Solomon, A (1977). Perspective on the Debt of Developing Countries, Brookings, *Paper on Economic Activity, 2, 479-510*. Available at:

http://www.brookings.edu/~/media/Projects/BPEA/1977%202/1977b_bpea_solomon_greenspan_kareken_ohlin.PDF accessed on 15.02.2014.

Soludo C..(2003), Debt, Poverty and Inequality, in Okonjo-Iweala, Soludo and Muntar (Eds). The debt trap in Nigeria, African World Press NJ, 23-74.

Sulaiman, L.A (2004): Conceptual Issue in Monetary and Fiscal Policies Vol 1 Pg 96-104 Adeyemo Public House, Akure.

Sulaiman, L.A. and Azeez, B.A. (2012). "Effect of External Debt on Economic Growth of Nigeria". Journal of Economic and Sustainable Development.3(8).

Ubok-Udom, E.U. (1978). 'Development through Debt: Rationalizing the Costs of External Borrowing'. The Nigerian Journal of Economic and Social Studies, Vol. 20, pp. 48-56.

UNCTAD, (2002) From Adjustment to Poverty Reduction: What is New? Economic Development in Africa, Geneva, United Nations Conference on Trade and Development. Available at: http://unctad.org/en/Docs/pogdsafricad2.en.pdf accessed on 15.02.2015.

Warner, L. T. (1992). 'Debt and Economic Development in Latin America'. The Journal of Developing Areas, 24, pp. 181-194.

Weeks, K. L. (2010). 'The External Debt of Sub-Saharan Africa'. IMF Staff Working Paper No. 741 (June).

Were M. (2001). The Impact of External Debt on Economic Growth in Kenya: An Empirical Assessment, *World Institute for Economic Research, Paper No.2001/116*.Availableat: http://www.wider.unu.edu/stc/repec/pdfs/dp2001/dp2001-116.pdf accessed on 24.09. 2015.

Wijeweera B. and Pathberiya P. (2012). Available at: http://www.une.edu.au/business-school/working-papers/economics/1999-2007/econ-2005-8.pdf accessed on 24.09.15

World Bank (2010). 'Heavy Indebted Poor Countries'. Retrieved on 23 August, 2015 from *http://go.worldbank.org/4IMVXTQ090*

World Development Indicators. The World Bank. http://data.worldbank.org/data-catalog/world-development-indicators.

World Bank (2013) *Development Indicators.*

World Bank (2011) *Development Indicators.*

World Bank (1988) *Development Indicators.*

World Bank (1982) *Development Indicators.*

World Bank (2014) *International Debt Statistics.*

Yesufu T.M. (1996): The Nigeria Economy "Growth Without Development" Benin Social Series for Africa University of Benin, Benin City, Pg 89-111

APPENDICES

Appendix 1: IM-PESARAN-SHIN UNIT-ROOT TEST FOR VARIABLES

__ ___ ___ ___ ___ (R)
/__ / ___/ / ___/

```
___/ / /___/ / /___/ 11.0 Copyright 1984-2009
  Statistics/Data Analysis StataCorp
                4905 Lakeway Drive
   MP - Parallel Edition College Station, Texas 77845 USA
                800-STATA-PC http://www.stata.com
                979-696-4600 stata@stata.com
                979-696-4601 (fax)

Single-user 4-core Stata license expires 31 Dec 9999:
       Serial number: 71606281563
         Licensed to: Modestus Nsonwu
                      Veritas University

Notes:
      1. (/m# option or -set memory-) 50.00 MB allocated to data
      2. (/v# option or -set maxvar-) 5000 maximum variables

. *(12 variables, 240 observations pasted into data editor)

. xtset id year
       panel variable: id (strongly balanced)
        time variable: year, 1998 to 2013
                delta: 1 unit

. . xtunitroot ips ddgdp

Im-Pesaran-Shin unit-root test for ddgdp
----------------------------------------
Ho: All panels contain unit roots          Number of panels  =    15
Ha: Some panels are stationary             Number of periods =    14

AR parameter: Panel-specific               Asymptotics: T,N -> Infinity
Panel means:  Included                                  sequentially
Time trend:   Not included

ADF regressions: No lags included
------------------------------------------------------------------------------
                                     Fixed-N exact critical values
               Statistic     p-value       1%      5%      10%
------------------------------------------------------------------------------
 t-bar            -4.6218                -2.100  -1.920  -1.830
 t-tilde-bar      -2.7468
 Z-t-tilde-bar    -7.3371     0.0000
------------------------------------------------------------------------------
. . xtunitroot ips dds

Im-Pesaran-Shin unit-root test for dds
--------------------------------------
Ho: All panels contain unit roots          Number of panels  =    15
Ha: Some panels are stationary             Number of periods =    15

AR parameter: Panel-specific               Asymptotics: T,N -> Infinity
Panel means:  Included                                  sequentially
Time trend:   Not included

ADF regressions: No lags included
------------------------------------------------------------------------------
                                     Fixed-N exact critical values
               Statistic     p-value       1%      5%      10%
------------------------------------------------------------------------------
 t-bar            -3.6632                -2.100  -1.920  -1.830
 t-tilde-bar      -2.4805
 Z-t-tilde-bar    -5.8302     0.0000
------------------------------------------------------------------------------

. . xtunitroot ips dtdebt

Im-Pesaran-Shin unit-root test for dtdebt
-----------------------------------------
Ho: All panels contain unit roots          Number of panels  =    15
Ha: Some panels are stationary             Number of periods =    15

AR parameter: Panel-specific               Asymptotics: T,N -> Infinity
Panel means:  Included                                  sequentially
Time trend:   Not included

ADF regressions: No lags included
```

```
------------------------------------------------------------------------------
                              Fixed-N exact critical values
              Statistic     p-value       1%     5%     10%
------------------------------------------------------------------------------
 t-bar            -2.8005                  -2.100  -1.920  -1.830
 t-tilde-bar      -2.2287
 Z-t-tilde-bar     -4.5328      0.0000
------------------------------------------------------------------------------
. . xtunitroot ips dinv

Im-Pesaran-Shin unit-root test for dinv
---------------------------------------
Ho: All panels contain unit roots         Number of panels  =     15
Ha: Some panels are stationary            Number of periods =     15

AR parameter: Panel-specific              Asymptotics: T,N -> Infinity
Panel means:  Included                              sequentially
Time trend:   Not included

ADF regressions: No lags included
------------------------------------------------------------------------------
                              Fixed-N exact critical values
              Statistic     p-value       1%     5%     10%
------------------------------------------------------------------------------
 t-bar            -3.9413                  -2.100  -1.920  -1.830
 t-tilde-bar      -2.6160
 Z-t-tilde-bar     -6.5282      0.0000
------------------------------------------------------------------------------

. . xtunitroot ips dexchangerate

Im-Pesaran-Shin unit-root test for dexchangerate
------------------------------------------------
Ho: All panels contain unit roots         Number of panels       =     15
Ha: Some panels are stationary            Avg. number of periods =  14.67

AR parameter: Panel-specific              Asymptotics: T,N -> Infinity
Panel means:  Included                              sequentially
Time trend:   Not included

ADF regressions: No lags included
------------------------------------------------------------------------------
                              Fixed-N exact critical values
              Statistic     p-value       1%     5%     10%
------------------------------------------------------------------------------
 t-bar            -9.5316                    -2.100  -1.920  -1.830
 t-tilde-bar      -3.6858
 Z-t-tilde-bar     -1.7655      0.0037
------------------------------------------------------------------------------

. . xtunitroot ips dlendingrate

Im-Pesaran-Shin unit-root test for dlendingrate
-----------------------------------------------
Ho: All panels contain unit roots         Number of panels  =     15
Ha: Some panels are stationary            Number of periods =     15

AR parameter: Panel-specific              Asymptotics: T,N -> Infinity
Panel means:  Included                              sequentially
Time trend:   Not included

ADF regressions: No lags included
------------------------------------------------------------------------------
                              Fixed-N exact critical values
              Statistic     p-value       1%     5%     10%
------------------------------------------------------------------------------
 t-bar            -3.8910                  -2.100  -1.920  -1.830
 t-tilde-bar      -2.5520
 Z-t-tilde-bar     -6.1985      0.0000
------------------------------------------------------------------------------

. . xtunitroot ips dgovtexp

Im-Pesaran-Shin unit-root test for dgovtexp
-------------------------------------------
Ho: All panels contain unit roots         Number of panels       =     15
Ha: Some panels are stationary            Avg. number of periods =  14.87
```

```
AR parameter: Panel-specific                Asymptotics: T,N -> Infinity
Panel means:  Included                                   sequentially
Time trend:   Not included

ADF regressions: No lags included
------------------------------------------------------------------------------
                                        Fixed-N exact critical values
                 Statistic      p-value        1%      5%      10%
------------------------------------------------------------------------------
 t-bar             -2.6916                    -2.100  -1.920  -1.830
 t-tilde-bar       -2.0030
 Z-t-tilde-bar     -3.3838       0.0004
------------------------------------------------------------------------------

. . xtunitroot ips dinflation

Im-Pesaran-Shin unit-root test for dinflation
----------------------------------------------
Ho: All panels contain unit roots           Number of panels      =     14
Ha: Some panels are stationary              Avg. number of periods =  14.93

AR parameter: Panel-specific                Asymptotics: T,N -> Infinity
Panel means:  Included                                   sequentially
Time trend:   Not included

ADF regressions: No lags included
------------------------------------------------------------------------------
                                        Fixed-N exact critical values
                 Statistic      p-value        1%      5%      10%
------------------------------------------------------------------------------
 t-bar             -5.1699                    -2.100  -1.920  -1.830
 t-tilde-bar       -2.9638
 Z-t-tilde-bar     -8.0482       0.0000
------------------------------------------------------------------------------
```

Appendix 2: Im Pesaran-Shin Unit root for regression residuals –Test for cointegration

```
. qui xtreg  inv ds exchangerate lendingrate lgovtexp inflation tdebt, fe

. predict residuinv
(option xb assumed; fitted values)
(19 missing values generated)

. xtunitroot ips  residuinv

Im-Pesaran-Shin unit-root test for residu
-----------------------------------------
Ho: All panels contain unit roots         Number of panels      =     14
Ha: Some panels are stationary            Avg. number of periods =  15.79

AR parameter: Panel-specific              Asymptotics: T,N -> Infinity
Panel means:  Included                                 sequentially
Time trend:   Not included

ADF regressions: No lags included
--------------------------------------------------------------------------------
                                        Fixed-N exact critical values
                 Statistic      p-value        1%      5%      10%
--------------------------------------------------------------------------------
 t-bar             -0.8922                      (Not available)
 t-tilde-bar       -0.8526
 Z-t-tilde-bar      2.4962       0.9937
--------------------------------------------------------------------------------
. qui xtreg  gdp ds exchangerate lendingrate lgovtexp inflation tdebt, fe

. predict residugdp
(option xb assumed; fitted values)
(19 missing values generated)
. xtunitroot ips  residugdp
Im-Pesaran-Shin unit-root test for residugdp
--------------------------------------------
Ho: All panels contain unit roots         Number of panels      =     14
Ha: Some panels are stationary            Avg. number of periods =  15.79

AR parameter: Panel-specific              Asymptotics: T,N -> Infinity
Panel means:  Included                                 sequentially
Time trend:   Not included

ADF regressions: No lags included
--------------------------------------------------------------------------------
                                        Fixed-N exact critical values
                 Statistic      p-value        1%      5%      10%
--------------------------------------------------------------------------------
 t-bar             -1.0782                      (Not available)
 t-tilde-bar       -1.0299
 Z-t-tilde-bar      1.6165       0.9470
--------------------------------------------------------------------------------
```