AN INVESTIGATION INTO THE IMPACT OF DOMESTIC AND EXTERNAL DEBT ON ECONOMIC GROWTH IN NIGERIA

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EDS/11/0194

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BEING

A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE BACHELOR OF SCIENCE DEGREE IN ECONOMICS AND DEVELOPMENT STUDIES

AUGUST, 2015.

CERTIFICATION

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DEDICATION

I dedicate this project to God Almighty, who has been my helper, provider, shepherd, giver of wisdom, knowledge and understanding, all through my young life. And to my family for their prayers, care and support, I am truly grateful.

ACKNOWLEDGEMENTS

I am forever grateful to the Almighty God for how he has led me through my Four years in this citadel of learning, being my help, provider, and shepherd all through. Father, I give you all glory, honour, adoration, and praise, cause all I have been able to achieve in this my academic pursuit were made possible only by your grace. Thank you.

I would like to appreciate the Vice Chancellor, Professor Isaac Asuzu for his visionary leadership style, and for ensuring that students from humble background are not denied their right to education in the school, through the reduction of the school fees to an affordable amount. I also like to say thank you to the Registrar Mr. Daniel Abiodun Adeyemo (DAA), for his act of fairness and justice in the admission of qualified students into the Institution.

To my wonderful and caring mum, Mrs. Umunna Mercy, I am truly blessed to have someone like you as a mother, and for all the sacrifices you made to see me through school. I say may the Almighty God continue to bless and protect you. I also appreciate the contribution of Aunty Chioma Igwe and Uncle Christian Nkume to my Education, God almighty will reward you in multiple folds Amen.

To my project supervisor, Mrs. Stella Mbah, I am most grateful for your support and guidance in writing this research project. May God continue to prosper you in all your endeavours.

My profound gratitude also goes to all the lecturers in my department particularly the following lecturers: Dr. Rufus Akindola, Dr. Omolade Adeleke, Mrs. Y.O. Adegoke, Mr. Agu Osmond, Mr. Ogbuagu Matthew, and Mr. Imoh Ekpenyong. For how they have contributed in so many ways towards making me the Development Economists that I am today, to you all I say a very big thank you.

Finally to all my friends and colleagues in school I am happy to have been with you throughout these years on campus, I have learnt a lot from you and I hope you have also learnt from me. I shall always remember our life on campus.

ABSTRACT

Successive governments in Nigeria have over the years continued to rely on borrowing (Domestic and External) to finance deficit spending. This has led to a persistent rise in the country's debt profile with its attendant implications on the growth and development aspirations of the country. The study thus examined the impact of domestic and external debt (public debt) on economic growth in Nigeria, covering the period 1970-2013. The study focused on determining the short and long run and also the causal relationship existing between public debt and economic growth in Nigeria. The estimation techniques employed is the Bound Testing technique, which none of the Nigerian Authors works reviewed employed as such this study fill the gap. Result of the regression analysis, revealed that domestic debt impacts negatively on economic growth, while external debt has a positive effect on economic growth in Nigeria. Also the result of the causality test showed a unidirectional causation from Domestic debt to GDP ratio to GDP growth rate, while no causation exist between External debt to GDP ratio and economic growth. The Study recommends that governments borrowing should be mainly for economic purposes, thus government should borrow to invest in the development of economic infrastructures particularly the power and transport sector. They should also channel loans to the development of the productive sectors like the manufacturing and agricultural sectors as they will yield adequate returns for debt repayment.

Key words: Bound Testing, Domestic debt, External Debt, GDP annual growth rate

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CHAPTER ONE

INTRODUCTION

1.1 Back ground to the study

Every Government requires a substantial amount of capital finance to be able to achieve the goals of economic growth and development, through investment expenditures on infrastructural and productive capacity development (Umaru, Hamidu, and Musa, 2013). This should facilitate the growth of the gross domestic product (GDP), which if persistent should culminate in economic development, a status vigorously pursued by all less developed countries (LDCs) which Nigeria happens to be among. However the amount of capital available in most developing countries treasury is grossly inadequate to meet economic growth needs (Uma et al, 2012), mainly due to low savings and high consumption pattern. Governments thus resort to borrowing from within and outside the country (domestic and external debt). Countries borrow to promote economic growth and development, by creating conducive environment for people to invest in various sectors of the economy (Umaru et al, 2013). According to Chenery's (1996) Dual-gap theory, government, borrow to augment limited resources so as to bridge the savings-investment gap. Obudah and Tombofa (2013), further argued that the specific reasons why countries may borrow include: to be able to finance reoccurring Budget deficit, as a means of deepening the financial market, to enable them fund the increasing Government expenditures, to enhance narrow revenue sources and low output productivity which results in poor economic growth.

Baumol and Blinder (1988) in Kanu (2014), defines economic growth as a situation where the economy produces more goods and services for its citizens. While Miller (1991), on his path views economic growth as the ability of an economy to increase its output of goods and services and create more jobs and wealth for its population. This can be achieved when a country increases its productive capacity, by borrowing to finance capital investments when available resources are insufficient.

Investopedia (2015) an online financial business dictionary defines debt as any amount of money which one party owes another, thus Public debt may be viewed as the total amount borrowed by government, including those it guarantees its affiliate bodies to contract both from within and outside the country. Debt, arguably, remains one of the major economic challenges facing

governments in low income countries. This is essentially due to their persistence budget deficit. For example, the levels of indebtedness particularly among the highly indebted poor countries (HIPCs), and low income countries (LICs), have continued to attract the attention of international financial institutions, and bilateral lenders. This has brought about the adoption of several initiatives capable of alleviating the debt burden which continues to hinder the growth prospects of most HIPCs economies. These initiatives range from debt rescheduling to outright cancellation (Udeh, 2013). Nigeria's external debt can be traced back to the period before independence, though the debt level was minimal until 1978, when the first Jumbo loan of more than $1.0 billion was raised from the International Capital Market (ICM)[Debt management office (DMO, 2004)]. However, from 1977, the debt stock incurred by the country has been on a steady increase, rising from $0.763 billion in 1977 to $5.09 billion in 1978 and $8.65 billion in 1980, an increase of over 73.96 percent (DMO, 2004). Total debt outstanding as at December 2004 was $35.94 billion while domestic debt was put at N1, 370.32 billion (DMO, 2004).

 The Obasanjo' led administration stepped in to secure a debt relief from the Paris club creditors in 2005, an action that enabled his government clear the nation's over US $30billion debt in 2005 (Udeh, 2013). However, the Jonathan led administration seems to have succeeded in returning the country to her ignominy days of indebtedness. According to Amaefule (2015), Nigeria's total debt as at December 2014 stood at N12.4 Trillion. Furthermore in April 2014, Standard and Poor rating service, a global credit rating agency for markets and economies revised Nigeria's credit rating to negative in terms of the country's capability to meet her financial obligations in full and on time (Udo, 2014).

The Keynesian economics school of thought posits that government borrowing can be used to promote economic growth, through the financing of government deficit expenditures which stimulates aggregate demand and thus encourage increase private investments. However excessive public debt can create great debt burden for the country. Soludo (2003) argues that when the debt stock is allowed to grow to a threshold point, servicing the debts becomes a burden, and such countries are likely find themselves on the wrong side of the Debt Laffer Curve, were debt may crowd-out investment and growth in the country. Similarly, Audu (2004) asserts that in the international community, it is a common believe that the excessive foreign indebtedness of most developing countries is a major impediment to their quest for economic

growth and stability. As a result of their debt burden, resources meant for boosting productive capacity of a country are diverted for debt servicing. As stated by Ademola, Olaleya, and Olusiyi (2013), Nigeria spent more than $2.0 billion annually between 1991 and 1997 on debt servicing.

Despite the huge amount of debts which the country has continued to incur over the years, with the aim of achieving economic growth and development, it is disheartening that high unemployment remains a major macroeconomic issue, poverty is still pervasive in the country about 70 per cent of the Nigerians are said to be living below the poverty line, which is closed to $1.25 per day (CIA World Factbook, 2010), and standard of living of most Nigerians remaining appalling (world Bank, 2012).

Given the foregoing, it therefore becomes imperative to empirically ascertain the impact of the debts which the various governments have incurred over the years on the economic growth of Nigeria, In order to proffer appropriate policy recommendations to those in authority as regards Nigeria's debt venture.

1.2   Statement of the Research Problem

A country's indebtedness does not necessarily slow growth, rather it is the nation's inability to optimally utilize these loans to foster economic growth and development and ensure effective servicing of such debt that hampers the benefits derivable from borrowed capital resources (Bakare, 2010).

The inability of Nigeria to effectively meet her debt obligations has adverse effect on the economy, as interests arrears accumulate over the years, thereby creating a much greater debt burden on the nation resulting in a greater percent of her revenue being spent on debt service arrears. According to the index mundi, an online countries economic statistics website, Nigeria external debt service payment in 2013 amounted to $486,424,000.

Audu (2004) opined that the debt service burden has continued to hamper the needed economic growth and development in Nigeria and heightened the social problems; this is because debt servicing crowds out investment and growth. Furthermore, Pattilo et al (2002) asserted that at low levels, debt has positive effects on growth but above the threshold point accumulated debt begins to have a negative impact on growth. Similarly, Soludo (2003) argues that when the debt stock is allowed to grow to a threshold point, servicing the debts becomes a burden, and such

countries are likely find themselves on the wrong side of the Debt Laffer Curve, with debt crowding out investment and growth.

In May 2015, the Vice president Professor Yemi Osinbanjo lamented that the new administration inherited a debt stock of $60 billion (Alechenu, 2015).

Notwithstanding the huge debt which the country has incurred over the years, with the aim of achieving economic growth and development, the burning question then is why do we still have; high unemployment, poverty, and low standard of living still prevalent in the country, as observed by (Aiyedogbon and Ohwojasa, 2012, Nwagwu, 2014).

Whereas there are conflicting views on both theoretical and empirical basis as to the effect of debt on economic growth, while authors like Safdari and Mehrizi (2011), Boboye and Ojo (2012) asserts that debt has a negative effect on growth supporting the Classical stance, other authors like Kabadayi et al (2011), and Sulaiman and Azeez (2012), in their studies found evidence to support positive relation between debt and economic growth buttressing the view of the Keynesian school. This therefore has informed the need to embark on the present study with a view to empirically ascertain the impact of Nigeria's debt on her economic growth.

1.3   Objective of the study

The broad objective of this study is to ascertain the impact of domestic and external debt on economic growth in Nigeria, while the specific objectives of the study include:

1. To determine the long run relationship between public debt (domestic and external) and economic growth in Nigeria.

2. To examine the impact of domestic and external debt on economic growth in Nigeria.

3. To check for the direction of causality between external debt and economic growth and between domestic debt and economic growth in Nigeria.

1.4   Research Questions

This study aims to determine the impact of domestic and external debts (public debt) on economic growth in Nigeria, and will therefore answer the following research questions:

1.   Is there a long run relationship between public debt and economic growth in Nigeria?

2.   What are the impacts of domestic and external debt on economic growth in Nigeria?

3.   Is there any causal relationship between external debt and economic growth and between domestic debt and economic growth in Nigeria?

1.5   Research Hypotheses

The hypotheses tested in the course of this study include:

Hypothesis 1

Ho: There is no significant long run relationship between Public debt and economic growth in Nigeria.

H_1: There is a significant long run relationship between Public debt and economic growth in Nigeria.

Hypothesis 2

Ho: Domestic debt has no impact on economic growth in Nigeria.

H_1: Domestic debt has significant impact on economic growth in Nigeria.

Hypothesis 3

Ho: External debt has no significant impact on economic growth in Nigeria.

H_1: External debt has a significant impact on economic growth in Nigeria.

Hypothesis 4

H_o: There is no causal relationship between external debt and economic growth in Nigeria.

H_1: There is causal relationship between external debt and economic growth in Nigeria.

Hypothesis 5

H_o: No causation exists between domestic debt and economic growth in Nigeria.

H_1: Causation exists between domestic debt and economic growth in Nigeria.

1.6   Justification of the study

Public debt is an important issue in the management of a country's economy, due to the fact that debt is usually contracted by most countries as means of raising funds to augment their limited resources in order to fully finance their public expenditures (deficit Budget) for growth and development purposes.

As such, successive governments in Nigeria have over the years continued to rely on borrowing (Domestic and External) to finance its deficit spending, this has led to a persistent rise in the country's debt profile with its attendant implications on the growth and development aspirations

of the country.

This study will therefore, provide veritable evidence in respect of the impact of public debt (domestic and external) on the economy of Nigeria, which will enable policy makers formulate and implement appropriate debt policies.

This research will also provide useful information to governments in the area of debt management, regarding the best concessionary terms under which borrowing should be undertaken as regards interest and maturity of loans.

Furthermore, the study will help government to see the need to invest borrowed funds efficiently in the economy and the importance of appropriate debt servicing.

The impact of domestic and external debt on economic growth is well discussed in the international literature, but in Nigeria, such studies are very few as most of the studies reviewed have mostly focused on the impact of external debt on growth in Nigeria; as such this study will contribute in filling the dearth in studies in the Nigerian context.

In the course of reviewing relevant literature for this work, we observed that most authors in Nigeria employed the Johansen test for co-integration and Error Correction Mechanism (ECM) or (VECM), a few employed the Ordinary Least Square method, in determining the relationship between Debt and economic growth. This study will however adopt the bound testing approach of Pesaran and Shin (2001) in checking for the long run impact of domestic and external debt on economic growth in Nigeria, a technique which none of the Nigerian authors whose work were reviewed employed. Also while most authors that investigated the causal relation between debt and economic growth employed the use of the conventional Granger causality approach, this study will adopt the more contemporary Vector Autoregressive Granger causality Test. This approach is informed by (Babatunde, 2013, Riasat 2013, and Egbetunde, 2012) in their different studies.

Finally this study is also significant as it will be of great benefit to other researchers, students and stakeholders in the Nigerian debt venture because it will serve as a reliable reference material primarily geared towards expanding the frontiers of knowledge in this area of economic discuss.

1.7   Scope of the Study

This study aims at ascertaining the impact of domestic and external debt on Nigeria's economic growth. In order to fully capture this effect on the economy, an empirical investigation was conducted with data covering the 1970-2013 (44 years) period. This period was chosen to cover the period of the oil boom and after oil collapse (the major source of Nigeria's revenue), the post debt relief, and also to be able to capture the long run effect of debt on economic growth in Nigeria.

1.8 Organization of the Study

This study is segmented into five chapters: Chapter one contains the general introduction which elucidates the background to the study, statement of the problem, scope of the study, research questions, research objectives, research hypotheses, justification of the study, and the definition of terms.

Chapter two focuses on the literature review and evaluates the works of other authors relevant to this study. It also gives meanings and explanations of key concepts under the conceptual framework while also reviewing theoretical and empirical literature for the study.

Chapter three dwells mainly on the methodology employed for the research. It also contains the specification of models, it describes the estimation techniques employed for the study, and explains key statistical concepts applied.

Chapter four focuses on the analysis of the data, presentation of empirical results, and discussion of findings emanating from the analysis.

Chapter five summaries the study, gives overall conclusion of the study, and makes appropriate policy recommendations based on findings of the study.

1.9   Definition of concepts in this study

1.9.1   Economic Growth

Todaro (1977) in (Kanu et al, 2014) defined economic growth as the increase overtime of an economy's capacity to produce those goods and services needed for the improvement of the wellbeing of its citizens in increasing numbers and diversity. On their part, Sichel and Eckstein (1974) simply defined economic growth as an increase in the ability of the economy to produce goods and services. While Arthur Lewis (1963) in his view on the concept of economic growth

incorporates the human factor, asserting that economic growth results from the growth of output per head of the population in the country. It is the steady process of increasing an economy's productive capacity overtime which yields high levels of national income (Kanu et al, 2014). Theoretically economic growth typically refers to growth of potential output i.e. Production at full employment level. This can however be achieved by increased investment in productive factors such as infrastructures, labour, technology. This requires huge resources that is scarce hence the need for borrowing. Growth is usually calculated in real terms i.e. Adjusted for Inflation, to eliminate the distorting effect of inflation on the prices of goods.

1.9.2   Government Expenditure

Government expenditure incorporates all government payments for consumption, investment, and transfer payments. In national income accounting the acquisition by government of goods and services for current use, to directly satisfy the individual or collective needs of the people is classified as government final consumption expenditure. While Government acquisition of goods and services intended to create future benefits such as infrastructural investment or research spending, are referred to as government investment (Government gross capital formation). These two types of government spending on final consumption and on gross capital formation together constitute one of the major components of gross domestic product (Wikipedia, 2014).

Because of the role of gross capital formation on future growth, greater percentage of loans obtained by government should be channeled to this aspect of government expenditure so as to be able to generate revenue for the repayment of loans.

1.9.3   Investment

Investopedia, the online business dictionary defines investment as an act of purchasing an item or assets, with the hope that it will generate income or appreciate in value in the future. In economic context an investment is the purchase of goods that are not consumed today but are used to create future wealth. Private and public investments of borrowed resources in boosting productive capacity will therefore create future wealth for the economy via economic growth.

1.9.4 Public Debt

Likita (2000) in Umaru et al (2013) defined debt as a contractual obligation of owing or accumulated borrowing with a promise to payback at a future date. Internal (domestic) debt is that part of a nation's debt owed to lenders within the country. External debt on the other hand refers to that part of a nation's debt owed to creditors outside a country. The debtors can be the government, corporations or citizens of the country. The debt can include: money owed to private commercial banks, other governments, or international financial institutions such as the international monetary fund (IMF) and the World Bank. Nigeria has incurred both domestic and external debt in pursuit of better economic growth.

Sustainable Debt refers to the level of debt which allows a debtor country to meet its current and future debt service obligation in full without recourse to further debt relief or rescheduling, avoiding accumulating debt arrears, while allowing an acceptable level of economic growth. It can be said that Nigeria's debt is still sustainable given the fact that her debt is still below the IMF level of 250% of Government revenue and the improved debt management practice by the Debt management of Office (DMO) of Nigeria.

CHAPTER TWO
LITERATURE REVIEW

2.1   Introduction

There is no common ground in the views of some economists schools of thought in respect of whether debt has a positive, negative or neutral effect on economic growth. Among the main stream analytical perspectives, the classical views public debt as a burden to the society, the neoclassical considers public debt detrimental to investment and growth, conversely in the Keynesian paradigm, debt constitutes a key policy prescription. However in the Ricardian view, government debt is considered equivalent to future taxes which implies neutrality of debt to growth. While the neoclassical and Ricardian schools focus on the long run, the Keynesians emphasizes the short run effect (Barik, 2012).

The decades of the 1950s and 1960s have often been described in most economic development literature as the golden years for developing countries, this is mainly attributable to the rate of growth within this era which was not just high, but was mostly internally initiated. In those decades, the less developed countries (LDCs) increased their investments with less reliance on borrowed resources, on the contrary most of the growth recorded in the 1970s were "debt induced" as the countries maintained persistent current account deficits, and borrowed heavily from the (ICM) to finance payments gaps (Boboye and Ojo, 2012).

For debt to have a positive effect on growth, debt financed investments need to be productive and well managed enough to earn a rate of return higher than the cost of debt servicing. Theoretically, it's expected that the marginal product of capital in the developing regions be greater than the world's interest rate, only then would they enjoy the benefits of foreign loans (Eaton, 1993).

As a result of the increasing importance of debt on economic growth, plethora of literature abounds on the topic. Evidence from available literature reveals that there exist conflicting opinions regarding the effect of debt on economic growth. Thus the literature review for this study is divided into two sections, section one is focused on theoretical review, while section two deals with the methodological and empirical reviews of previous studies.

2.2. Theoretical Issues

2.2.1 Why Countries Borrow

Every economy desires to improve their economic growth by increasing their productive capacity in order to boost output. Capital a major factor of production is relatively scarce hence the need to borrow, even the top economies of the world engage in borrowing. The total debt of The United States of America as at 2013 was $17.075 trillion while that of China stood at $3.727 trillion (CIA 2013).

Soludo (2003) argue that the two main reasons why countries borrow are; firstly for investment in productive capacity and human capital development and secondly to ease budget constraint by financing fiscal and balance of payments deficits. On the other hand Chenery (1996) argued that the major reason why countries borrow is to bridge the savings-investment gap, based on the dual gap theory; which describes an economy with growth dependent on investment and investment being a positive function of savings. When domestic resources are insufficient, it becomes necessary to augment domestic resources with foreign loans in order to be able to achieve growth and sustainable economic development.

Another reason why countries may borrow is to fill the foreign exchange gap (Imports-exports gap) (Utomi, 2014). As a result of the continuous balance of payments deficit faced by developing countries like Nigeria, the inflow of capital needed for investment to boost growth is low, as such they engage in borrowing so as to access the needed capital for investment in order to achieve the desired economic growth rate.

2.2.2 Nigeria's Debt History

2.2.2.1 External Debt

The history of Nigeria's external debt can be traced back to the period before independence, though the quantum of our indebtedness remained at a minimal level until 1978. The country contracted debt mainly on long term basis from multilateral and official sources, such as the World Bank, and bilateral loans from its trading partners Like the US and United Kingdom. These loans were mostly obtained on soft term conditions and were not much of a burden to the economy, more especially as the country received more revenue from Oil windfalls of 1973-1976. However with the fall in Oil prices and thus Oil revenue in 1977/78, the country experienced a dearth of resources mainly due to mismanagement of the countries resources, this

led the country to embark on its very first huge borrowing of over $1.0 billion from (ICM). Under the loan agreement, the country was to be given a three years moratorium period. The fund was used to finance medium and long term development projects which did not yield sufficient returns for the repayment of the loans.

The recovery of the Oil market in 1979 saw Oil prices soaring to a record high of $39.00 per barrel in1980/81(Wikipedia, 2014), leading to large amounts of Oil revenue into the country, what ensued was a misleading ideology among the ruling class that the country was wealthy, the aftermath of this was that some deflationary policies initiated in 1978 were relaxed and consumption patterns which encouraged importation of foreign goods continued. The economy thus suffered the consequences of over reliance on importation. With a fall in oil price and hence foreign exchange inflow, the import and consumption pattern of the Oil boom era could no longer be sustained, this resulted in the frantic move by both the central and state governments back to the (ICM) for more loans with the hope that they will pay back when the Oil market booms again.

However, by 1985, the nation's debt profile had worsened due to poor debt management practices, as at 1980, Nigeria's external debt stock was about $8.885 billion while the nation's total debt stock increased to about 154% of total export earnings and 24% of the nation's GDP (DMO, 2004). In this period the debt service obligation was over $4 billion, about 33% of the country's total export earnings, though only $1.5 billion payment was made in that year (1980).

According to the DMO, the country's debt as at 31st December 2001 was put at $28.35 billion, this amounted to about 59.4% of the GDP and 153.9 % of export earnings. By 2002 of the same period, the debt stock rose to $30.99 billion showing an increase of 9.33 percent or $2.64 billion. This increase was largely influenced by accumulated interest arrears. The effects of these factors were however cushioned through the buyback of the London Paris club bond of $0.601 billion. The debt stock for 2002 constituted $25.38 billion owed to Paris club, $2.96 billion to multilateral institutions, $1.44 billion owed the London club, $1.15 billion owed holders of promissory notes and about $0.056 billion owed to non-Paris club creditors. According to the World Bank data Nigeria's external debt in 2010 stood at $7,206,781.000 while it rose to in $13,791,937,000.00 year 2013.

2.2.2.2   DOMESTIC DEBT

Domestic debt refers to that aspect of public debt owed to creditors living within the country; such debts are usually denominated in the local currency. The management of domestic debt in Nigeria has initially been conducted by the central bank of Nigeria (CBN) through the issuance of government debt instruments, which consisted of:

I. Nigerian Treasury Bills

ii. Nigerian Treasury certificates

iii. Federal government Development Stocks

iv. Treasury Bonds

v. Ways and Means Advances

The above however, does not include contractor debts and supplier credit owed by the government, which amounted to about N650 billion, it also does not include contingent liabilities which are loans guaranteed by the Federal Government, nor inter-agency debts.

The domestic debt stock outstanding as at 31st December 2004 amounted to N1, 370.32 billion, from N1, 329.72 billion as at December 31st 2003, this figure represent an increase of N40.63 billion or 3.1 percent over the previous year's figure. This was the lowest annual growth in the domestic debt stock for eight years. According to the DMO, Growth averaged 22 percent per year over 1997-2003, and peaked at 50 percent growth during 1998 period. From year 1995 to 2003, domestic debt multiplied by more than four fold. The increase of N40.63 billion in the domestic debt stock constituted mainly of new issues of Treasury Bonds and FGN Development stocks valued at N5.67 billion and N0.22billion respectively. As at 2003 the Treasury Bills remained the dominant instrument accounting for N871.57 billion or which is about 64 percent of the whole value of domestic debt stock. The balance of the total domestic debt stock was made up of Treasury Bonds N424.94 billion or 31 percent, Federal Republic of Nigeria Government Development Stock N1.25billion or 0.1 percent and the 1st FGN Bonds N72.56 billion or 5.3 percent (DMO 2009).

2.3.1. Sources of Nigeria's Debt

Over the years Nigeria has incurred debts for its economic growth objective from both domestic and external sources. The domestic sources of Nigeria's debt are mostly through the issuance of Government interest bearing securities issued by the CBN acting as an the agent of the Federal government of Nigeria and these includes: Nigerian Treasury Bills (NTB), Nigerian Treasury certificates (NTC), Federal Republic of Nigeria Development stock (FRNDS), and Federal Government of Nigeria (FGN) bonds.

I. Nigeria Treasury Bills (NTB): These are short-term securities issued at a discount for a period ranging from 91 to 364 days, such that income received is the difference between the purchase price and the amount received at maturity,

II. Nigerian Treasury Certificates (NTC): These are similar in all respects to NTB, except that they have longer maturity periods of one or two years.

III. Federal Government of Nigeria (FGN) Bonds: These are also long term interest bearing instruments issued by the government, ensuring wider maturity spectrum for its financing through the effective use of the money market and the capital market and in particularly longer term financing of its capital expenditure programs. They have a tenor that range from two to ten years.

IV. Federal Republic of Nigeria Development stock (FRNDS): These are long term interest bearing debt instruments issued by the governments to finance its development projects. The stocks have tenors ranging from two to twenty five years (CBN, 2013).

2.3.2. Sources of Nigeria's External loans

I. Paris Club

The Paris club is an informal group of official creditors, whose role is to find appropriate and effective solutions to the payment difficulties experienced by debtor countries. As debtor countries undertake reforms aimed at stabilizing and restoring their macroeconomic and financial institutions. Paris club creditors provide appropriate debt treatment, in the form of debt rescheduling, reduction in debt service obligations. In 2005 Nigeria succeeded in looping $30 billion debt it owed the Paris club with $18 billion debt relief by the club (Ademola, 2013).

II. London Club

The London club performs similar operations as the Paris club but differs in the sense that while the Paris club specializes on the rescheduling, refinancing, and forgiveness of official debts, the London club however is a consortium of international commercial banks and which handles private commercial debt (Audu, 2004). According to (Chiakwelu, 2014) Nigeria in 2006 paid the London club $2.15 billion being the last batch of outstanding debts owed to the club in settlement of her debt.

III. Ways and Means Advances

This is a system whereby the central bank of Nigeria extends loans to the federal Government to offset temporary cash flow problems they may have. Ways and Means advances may be issued without a collateral (normal WMAs) or and can also be guaranteed by government bonds (Specialized WMAs) Ways and Means Advances come due three months after issue.

IV Bilateral Loan

A bilateral loan is that type of that involves a borrower and a single lender. It is the opposite of syndicate loan, which is a loan between an individual and multiple lenders. Bilateral loans are believed to be less complicated than syndicate loans, since the lender has more control over the terms and conditions surrounding the loan. Nigeria has in recent times contracted bilateral loans from China and the USA (Ojonugwa, 2015).

V Promissory Notes

This is a financial instrument that contains a written promise by one party to pay another party a definite sum of money either on demand or at a specified future date. A promissory note typically contains all the terms pertaining to the indebtedness by the issuer such as the amount, interest rate, maturity date, date and place of issuance, and the issuer's signature.

VI Multilateral Loan

This refers to government and government guaranteed loans and credits which Nigeria obtains from international financial institutions like the World Bank, IMF and their affiliates, regional development banks like the African Development Bank (ADB), and other multilateral and intergovernmental agencies.

Table1. Nigeria's loan and sources

Years	Nigeria Treasury Bills	Federal Government of Nigeria Bond	Federal Republic of Nigeria Development stock	Treasury Bonds	Multilateral debt	Paris Club	London Club	Promissory Notes	Others
1990	25.5	………..	4.4	20.0	34.6	154.6	53.4	41.0	15.1
2000	165.5	………….	2.1	430.6	379.0	2320.3	223.8	158.5	15.8
2010	1,277.1	2,901.6	0.2	372.9	635.4	0.0	0.0	0.0	54.4

Data sourced from NBS

2.3.3.   Nigeria's Debt Relief

The online encyclopedia Wikipedia (2014) defined Debt relief as the partial or total forgiveness of debt, or the slowing stopping the growth of the debt. In 2005 after a relentless effort of the administration of Obansanjo, through the then minister of finance Dr. Ngozi Okonjo-iweala, Nigeria succeeded in getting debt relief of $18 billion from the Paris club of creditors being 60 percent of the total of $30 billion which Nigeria owed the Paris club at that time. The Paris club agreed to grant Nigeria an International Development Assistance (IDA), which was supportive of the debt relief struggle. To give a practical effect to this, a delegation from the country met with the Paris club creditors on October 20, 2005 and a final agreement was reached to write off 60 percent ($18 billion) of Nigeria's debt with the Paris club (DMO).

The breakdown of the debt owed to the Paris club was:

Principal balance: **$25,199, 180.0**

Arrears: **$5,684,634.53**

Totaling: **$30,883,814.53**

The agreement involved a debt reduction under the Naples terms, on eligible debt. This was to be implemented in two phases; conditional on the implementation of a comprehensive economic reform program under the policy support Instrument (PSI) as approved by the executive board of the International Monetary Fund (IMF) on October 17, 2005. The Naples terms are a more generous debt relief package reserved only for lower income countries with good performance on their economic reform programs.

In The first phase, Nigeria undertook to pay arrears of $6.3 billion due on all categories of debts, while the Paris club creditors would grant a 33 percent. The second phase became due after the approval of the first review of the PSI by the Executive Board of the International Monetary Fund during the first half of 2006. Then, Nigeria would pay $6.1 billion, the amount due under the post cutoff debt date. The Paris club creditors granted a further cancellation of 34 percent on eligible debts and then bought back the remaining eligible debts. The execution of the fifth bilateral agreement with Paris club creditors facilitated the resumption of normal bilateral economic relationship with the member countries (Ademola and olusuyi, 2013). The balance of $12.4 billion paid by the Nigerian government under the Olusegun Obasanjo's administration bailed Nigeria from the debt burden problem with the Paris club debt. (Bakare , 2010)

2.3.4. Problem of Nigeria's External Debt Burden

The causes of Nigeria's external debt burden according to the DMO could be attributed to the following:

I.   **Insufficient Trade and Exchange Rate policies**: Our trade and exchange (monetary) policies were not flexible enough, as such it could not respond quickly to the deepening in Oil market to show the external value of the Naira. This led to a fall in the inflow of resources into the economy, resulting to foreign borrowing with the consequence of external debt accumulation.

ii.   **Stringent loan terms:** Another facet to Nigerian's debt burden is that most loans obtained were obtained under commercial terms rather than on concessionary terms, resulting to high cost of repayment of principals and interests.

iii.   **Poor lending and Inefficient loan Utilization:** Another issue is that most loans obtained are not efficiently utilized for the appropriate projects, which makes it difficult to generate the required returns for servicing the debts.

iv.   **Poor debt management practices**: Also our inability to effectively manage our debts has led to high debt burden and accumulation of arrears of both Principal and interest, such that in 1986 some creditors refuse to grant us any more loans.

2.4   Theoretical Framework

There are several contributions by various economists and schools of thoughts as regards the subject matter of debt and economic growth. These concepts are relevant to this study as they serve as dependable framework upon which this study is built and as such some of them are discussed which includes: The dual gap theory, the debt overhang theory, Debt Laffer curve, crowding in and crowding out hypothesis theory, dependency theory, and the Solow- growth model of the neo classical Economist school.

2.4.1   Dual gap theory

The dual gap theory of Chenery (1996) describes an economy with growth dependent on investment, and investment being a function of savings. Growth can be sustained by domestic savings, however when national savings becomes insufficient to fund investment for development purposes, the need to sought for resources from foreign sources to fill the savings investment gap becomes imminent. The dual gap theory is coined from a national income accounting identity which connotes that excess investment expenditure (savings-Investment gap) is equivalent to the surplus of imports over exports (foreign exchange gap) (Utomi, 2014).

2.4.2   Debt overhang theory

The debt overhang theory of Krugman (1989), posits that huge borrowing leads to high indebtedness, debt traps and slow down of economic growth. He therefore suggest that accumulated debt stock results to higher tax on future output and thus crowds out private investment.

2.4.3   The Dependency theory

This theory which emerged in 1949 from the separate writings of authors; Hans Singer and Paul Prebisch, is built on the premise that poor countries provide natural resources, primary materials, and cheap markets for developed nations without which the latter could not have the standard of living they enjoy, on the other hand Wealthy nations actively perpetuate a state of dependency in the developing nations. The phenomenon associated with the theory is that poor states are impoverished while rich ones continue to be enriched by the way in which the poor countries are integrated in the world system (Todaro, 2011).

According to the Bourgeoisie scholars, the state of underdevelopment and the constant dependence of less developed countries on developed nations are as a result of their domestic mishaps. They attribute the problem of the developing countries to lack of close integration, diffusion of capital, low level technology, poor institutional framework, bad leadership, corruption, and mismanagement of resources (Momoh and Hundeyin, 1999 in Utomi, 2014). They argue that the underdevelopment and dependency of the less developed nations (LDCs) are internally inflicted rather than externally afflicted. This school of thought believe that the way out of the problem is for the LDCs to seek external assistance in form of Aid, loans, Technological transfer, Investment, and allow undisrupted operations of the Multinational Corporations (MNCs).

Due to the underdeveloped nature of most LDCs, they are dependent on the developed nations for virtually everything ranging from technology, aid, technical assistance, and culture. The depended position of most underdeveloped countries has made them vulnerable to the whims and caprices of the Western Region and the Bretton wood institutions (Ajayi, 2000).

2.4.4 The Debt Laffer Curve and Crowding out effect

The Debt laffer curve emphasize the relationship between the amount of debt repayment and the size of the debt. When the effect is so strong, the debtor is said to be on the wrong side of the laffer curve, the idea of the Laffer curve also implies that there is a limit to which debt incurred can stimulate growth (Elbadawi et al, 1996) in (Ademola, 2013). When the debt exceeds the threshold point, it becomes a burden as the cost of servicing the debt brings strain to the amount of resources available for productive investments, thereby crowding out investment which ultimately slows growth.

Figure 1: Debt Laffer Curve
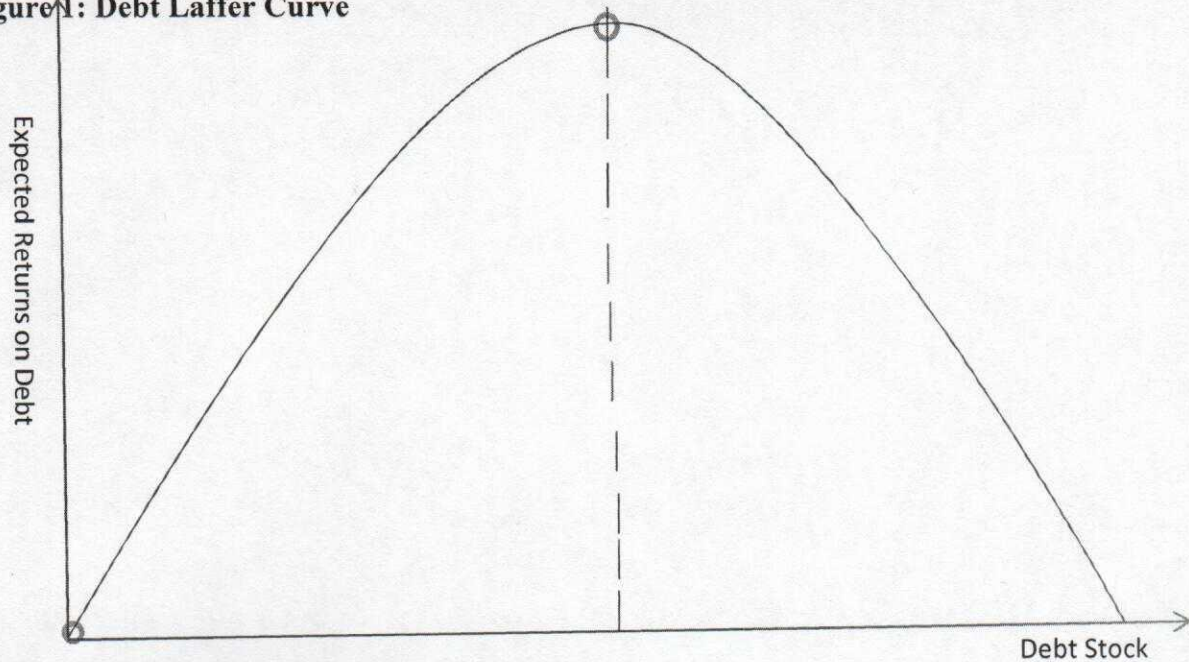
Economic literature, posits that debt will impact positively on an economy up to a threshold point, beyond which any further increase in debt will bring about a negative impact on the economy (Kabadayi, 2012). However this study is investigating the impact of debt on economic growth in Nigeria, without reference to the threshold point, on the assumption that Nigeria is yet to reach its threshold borrowing point.

2.4.5 Crowding in Hypothesis

The crowding in hypothesis refers to the concept of inducement of private investments by the government, through its increased expenditure on capital projects like Transportation facilities, electricity generation, education, healthcare, and other socio-economic infrastructures which facilitates the reduction in the cost of production of goods and services in the private sector (Piana, 2001). This increase in government require increased government resources, which can either be achieved by imposing higher taxes on the citizens or through public borrowing (domestic and external debt).

2.4.6 Solow growth Model

The Solow growth model is an economic model of long run economic growth, set within the framework of the neo classical economists. It attempts to explain long run economic growth by looking at capital accumulation, labour or population growth, and increases in productivity commonly referred to as technological progress. Its core is a neoclassical aggregate production function, usually of the Cobb-Douglas form. The model was developed by Robert Solow in 1956.

The Solow model allows for substitution between capital and labour, it also assumes diminishing returns to capital and labour. The aggregate production function, $Y = f(K,L)$ is assumed to be characterized by constant returns to scale. In the Cobb-Douglas production function, at any time 't' we have

$$Y_t = K(t)^\alpha (A(t) L(t))^{1-\alpha} \ldots(1)$$

Where:

Y = Gross domestic Product

K = Capital Stock

L = Labour

$A(t)$ = Labour productivity parameter, which grows overtime at an exogenous rate.

Due to the assumption of constant returns to scale, when all inputs are increased by equal proportions say 20%, then output will equally increase by the same amount.

More generally $\phi Y = f(\phi K, \phi L) \ldots(2)$ where ϕ is some positive amount (i.e the 20% increase in inputs, since ϕ can be any positive real number, the mathematical trick employed in analyzing the implications of the model is to set $\phi = 1/L$ so that

$$Y/L = f(K/L, 1) \text{ or } y = f(k) \ldots(3)$$

Lower case variables are expressed in terms of per worker in these equations Todaro and Smith (2011). In the Solow growth model, $f(K)$ is increasing at a decreasing rate indicating diminishing returns to capital per worker. Unlike the Cobb-Douglass production function of (1), equation (4), $Y = AK^\alpha \ldots(4)$ presents another way to think about a production function where everything will be measured in terms of per worker. (4) States that output per worker is a function of the amount of capital per worker. That is the larger the amount of capital available for each worker to work with, the higher the output from each worker.

The labour force grows at a rate say n per year, also labour productivity growth, i.e. the rate at which the value of 'A' in the production function increases, occurs at rate 'ð'. Total capital stock grows when savings are greater than depreciation but capital per worker grows when savings are also larger than what is required to equip new workers with the same amount of capital as the existing workers.

Equation (5) below represents the growth of the capital-labour ratio, and shows that the growth of K depends on savings Sf(k) or (K=f(s)), after allowing for the amount of capital needed for servicing depreciation ðK, and after capital widening, that is, providing the existing amount of capital per worker to net new workers giving the labour force, nK thus

$$\Delta K = sf(k) - (\delta + n)K^* \ldots (6)$$

The notation K* represents the level of capital per worker when the economy is in its steady state. The capital per worker K* is the steady state capital. If K moves higher or lower than K*, the economy will still return to K* as it represents the state of equilibrium.

Considering what happens in the Solow growth model when the rate of savings 'S' is increased. A temporal increase in the rate of output growth will be realized as K is increased by raising the rate of savings, the economy will later return to the original steady-state growth, though at a higher output per worker level, in each later year. The main point here according to (Todaro and Smith, 2011), is that an increase in savings 'S' will not increase growth in the long run, it will only increase the equilibrium K*. That is when the economy adjust to the increase in 'S', the result will be an increase in capital-labour ratio, and also an increase in output-labour ratio, but not the rate of growth. Worthy of note is that increase in 'S' does raise equilibrium rate of growth. Also the growth rate does increase temporarily as the economy rises to a higher equilibrium capital per worker. However (Todaro and Smith, 2011) asserts that simulations based on cross-national data suggest that if 'S' is increased, the economy may not return even half way to its steady state (it will stay far higher) for decades, suggesting that an increase in savings may substantially increase the growth rate for many years to come.

Finally since the rate of savings (leading to investments) is positively related to the rate of technological progress itself, so that the growth of 'A' depends on 'S' emphasizing the relevance of savings in achieving growth via investments, and since Nigeria like most developing countries does not have sufficient savings, borrowing to augment available national savings becomes inevitable if investment for growth purposes is the goal.

2.5 Main Theories on Debt and Economic Growth

2.5.1 The Ricardian Equivalence

David Ricardo an English economist had in early part of the 19th century, proposed his theory on public expenditure known as the Ricardian equivalence. Where he stated that, increasing government expenditures by borrowing with the hope of stimulating aggregate demand as a means of boosting economic activities will not have any significant impact on consumers spending especially when they are forward looking. This is because they view todays borrowing as yielding tomorrow's higher taxes which the citizens will have to bear. Thus taken cognizance of this fact, when the public sector borrows money to invest in the economy as a means of stimulating economic activities for growth, the private sector increases savings almost equal to the amount of debt incurred by the government (perhaps preparing for future higher taxes). As a result the impact of the borrowed funds will not be felt in the economy; hence we say that the debt financed public expenditure has a neutral effect on the economy (Hudson, 2011)

2.5.2 The Classical View

The classical economist are of the view that public debt will in the long run impact negatively on the economy, this view is of course not surprising, given their laissez-faire stance. David Humen was quoted in Churchman (2001) to have argued in 1752 that *"Either the nation destroys public debt or public debt destroyed the nation"*. He stated that public debt if not checked will have social and political consequences. Adam Smith further asserted the classical view on public debt based on this quote from his (1776, Book Five, Chapter III entitled "Of Public Debts.") *"The progress of the enormous debts which at present oppress, and will in the long-run probably ruin, all the great nations of Europe, has been pretty uniform."* (Holtfrerich, 2012)

2.5.3 The Keynesian View

The Keynesian school of economists thought on their own part gives full credence to government borrowing. They argue that in periods of recession, the government can stimulate aggregate demand as a means of boosting economic activities, which if sustained should restore the economy to the path of economic boom. Government can increase aggregate demand by either using tax cuts to increase consumers spending or borrowing to increase government expenditure (Chude and Chude, 2013).

From the different views of the above theories, it is obvious they have different perspectives regarding the effect of debt on the economy, to the Classicals, debt will hamper the economic growth and development of a nation, The Keynesians believe in the capability of government deficit financing through borrowing to spur economic growth, while to David Ricardo, debt will have no significant influence in the economy in the long run. However this study is based on the Classical and Keynesian theories with a view to determine which of the theories holds in the Nigerian economy.

Fajana (1993) argues that incurring external debt is not really bad, but the problem arises from mismanagement of such funds. In his view, borrowing is unavoidable because external borrowing is a first order condition for bridging the domestic gap; while the second order condition is that such funds should be invested in viable projects whose rate of return is higher than that of the interest rate on the loan, he went further by saying that for external debt to serve as an engine for growth, it has to be properly managed and the resources it makes should be prudently and efficiently utilized.

Accumulated debt service payments constitutes a source of worry to many economies particularly those of the developing nations, as debt is actually serviced for more than the amount it was incurred, this thus slows the growth process of such nations, (Gohar et al, 2012). Audu (2004) opined that high debt service payments shifts spending away from health, education and other social services, thereby depriving these sectors of needed investment which should have contributed to improved standard of living and development. He concludes by asserting that the inability of Nigeria to meet her debt service obligation has resulted in debt overhang problem which has contributed in slowing growth and development.

2.6. Review of Empirical Findings

Iyoha (1999) investigated the impact of external debt on economies in Sub- Saharan Africa within the period of 1970-1994. Using a macroeconomic model, the study found evidence of a significant debt overhang problem on investments, which suggest that rising external debt depress investments by creating disincentives to invest thereby crowding out investment. The study also found that reduction in debt stock would have significant positive effect on investment and growth. According to the result of the study, a 20 percent debt stock reduction would averagely increase investment by 18% and increase GDP growth for the period of 1970-1994. The result suggests that debt forgiveness could provide the much needed stimulus to increased investment and economic growth in Sub-Saharan Africa.

In the study conducted by Adesola (2009) to examine the relationship between debt servicing and economic growth in Nigeria, using the ordinary least square multiple regression approach, he found that debt payments to the London club creditors, Paris club creditors, Promissory notes holders and other creditors have significant impact on the GDP and GFCF, while debt payments to Paris club and debt payment to Promissory notes holders are positively related to GFCF and GDP, the debt payments to London club creditors and other creditors revealed a negative effect on GFCF and GDP for the period of 1981-2004.

Akram (2010) in the study of the impact of public debt on economic growth and investment in Pakistan, developed a hybrid model that explicitly incorporates the role of public debt in growth equations, he adopted the Autoregressive distributed lag (ARDL) technique in estimating the model. The study revealed that public external debt has negative relationship with per capita GDP and investment, confirming the existence of "Debt overhang effect", also domestic debt has a negative relationship with investment and per capita GDP showing that domestic debt seems to have crowded out private investment.

In their study to ascertain the causal relationship between public debt and economic growth Safdari and Mehirizi (2011) investigated the effect of external debt on economic growth in Iran for the period of 1974-2007, by observing the balance and long term relation of five variables: GDP, Private investment, Public Investment, external debt and Imports. They employed the Vector autoregressive model (VAR), the Augmented Dickey Fuller (ADF) test was used to test for stationarity of variables, Johansen approach was used to determine the long run relationship

of the variables. The result of the research showed that external debt and imports had a negative effect on gross domestic product, but variables of private and public investments had positive effects on economic growth.

Amassoma (2011) in his study of the causal nexus between external debt, domestic debt, and economic growth in Nigeria, employed Augmented Dickey Fuller and Phillip Perron test in testing the stationary properties of the variables, Johansen and Julelius (1980) was used to determine the order of co-integration of the time series data, and Granger causality test was used in determining the direction of causality of the variables. He found that there exist a bi-directional causal relationship between internal debt and economic growth, while external debt and economic growth have a unidirectional causal relationship suggesting that economic growth causes external debt in Nigeria.

In the study carried to determine the impact of external debt on economic growth in 19 Transitional economies by (Kabadayi et al, 2011), the study adopted the panel autoregressive distributed lag model (ARDL), stationarity properties of variables were checked with first and second generation unit root test, for second generation unit root tests, ADF test was used, also cross section dependency was examined using LM test. It was found that external debt has positive impact on economic growth, also openness of the economy has a positive impact in the long run, while external debt to export ratio has a negative impact on growth rate of the transitional economies in the short run.

Egbetunde (2012) in his study of causal relations tested for the stationary properties of variables and found them stationary at first difference, the result of the co-integration test showed the presence of long run relationship between Public debt and economic growth in Nigeria. The result of the study revealed that there exist a bi-directional relationship between public debt and economic growth, implying that improvement in economic activities call for borrowing to enhance on-going development processes in the economy, and borrowing also promotes growth in Nigeria. Similarly Rahman et al (2012) in their study of relationship between external debt and gross domestic product in Bangladesh used annual time series data to avoid seasonal biases, the ADF and Phillips-Perron test were carried out to ascertain the stationary properties of the variables, Granger causality and co-integration models were also employed to determine the

Long run relationship as well as the direction of causality that exists between the variables, they found that there exist a bi-directional causal relationship between GDP and external debt.

Sulaiman and Azeez (2012) on their path when they investigated the impact of external debt on economic growth in Nigeria, in their model specification used the variable of GDP as dependent the variable, ratio of external debt to export, inflation and exchange rate were used as the independent variables. Annual time series data covering the period of 1970 to 2010 were used, which were analyzed using the ordinary least square technique, ADF, unit root test, Johansen co-integration test and Error correction model (ECM). Results from the study showed that external debt has a positive impact on the Nigerian economy in the long run. They therefore recommended that external borrowing should be obtained for economic growth reasons rather than social and political motives.

According to the study conducted by Boboye and Ojo (2012) on the effect of external debt burden on economic growth and development of Nigeria, they employed the Ordinary Least Square regression analysis using variables like National Income, Debt service payment, External Reserves and Interest rates. The result of their work showed that external debt burden had a negative impact on national and per capita income in Nigeria. They hence recommended that the nation's debt service obligations should not be allowed to rise higher than the Foreign exchange earnings and that there should be proper investments of borrowed funds in the economy so as to facilitate the yielding of high enough return for timely repayment of loans.

Similarly Umaru et al (2013) in their study of the impact of external and domestic debt on economic growth in Nigeria covering 1970-2010 period, where they adopted the ordinary least square estimation technique, they also employed the ADF to ascertain the level of stationarity of the variables, and also the Granger causality test to determine the direction of causality between Public debt and economic growth in Nigeria. The result of the Granger causality test revealed that there exist a bi-directional causality between external debt and GDP, while it showed no causation between domestic debt and GDP. The result of the OLS proved that external debt had a negative effect on economic growth, while domestic debt had a positive impact on economic growth in Nigeria. The study recommends the formulation and implementation of policies by Government that will aid increase in domestic savings and also bridge the savings investment gap as a means of reducing Nigeria's debt accumulation.

In a similar research by Ijeoma and Blessing (2013) on the impact of Debt on selected macroeconomic indicators in Nigeria. Using linear regression, they found that Nigeria's external debt stock has a significant effect on her economic growth, the study also revealed a significant relationship between Debt service payment in Nigeria and her Gross Fixed Capital Formation (GFCF). Also Aliyu and Usman (2013) in their study of the impact of external Debt, Public debt, and Debt servicing on National Savings in Nigeria also employed the OLS technique, while augmented Dickey Fuller generalized least square ADFGLS was used to test the stationarity of variables, Johansen co-integration test was preferred in determining the long run relationship of variables, and the Vector error correction mechanism (VECM) was adopted to show the nature of long run relationship. The study found that there exist a negative relationship between external debt and national savings, while public debt and debt service depicts a positive relationship with national savings in Nigeria within the period of 1970-2010.

Barik (2012) researched on the indirect relationship between government debt and economic growth in India for the period of 1981-2011, he conducted an econometric analysis with an augmented Solow (1956) Neoclassical growth model, and found that there exists an indirect relationship between public debt and economic growth in India, the result of the study reveals that public debt appears to be positively related to both investment and output growth and thereby has an indirect impact on economic growth through its positive effect on investment.

In the empirical research by Ishola and Olaye (2013), on the effect of external debt on sustainable economic growth in Nigeria for the period of 1980-2010, using the ordinary least Square regression method, the study found that a 12.3 percent change in economic growth is as a result of external debt and prime lending rate in Nigeria. It therefore recommends that the government should through an act of its political will address the fundamental causes of external debt and also ensure adequate utilization of borrowed funds to develop the different sectors of the economy so as to enhance the economic growth of the nation.

2.7. Conclusion

As can be observed from above reviews, the relationship between Public debt and economic growth is well discussed in the international research studies, but the relationship between Public debt and economic growth in the Nigerian context remains much to be desired. Also the above literature review confirms earlier assertion that the views of economists regarding the nexus between debt and economic growth differs greatly: Safdari and Mehrizi (2011), Boboye and Ojo (2012) and Aliyu and Usman (2013), found evidence for a negative relationship between external debt and economic growth. Conversely Milton and Iyoha (1999), Kabadayi et al (2011), and Sulaiman and Azeez (2012) in their study found evidence for a positive relationship between debt and economic growth, Akram (2010) however posits in his study that both external and domestic debts have negative effects on the economy as they bring about the debt overhang and crowding out problem on the economy, Umaru et al (2013), and Rahman et al (2012), found that there exists bi-directional relationship between external debt and economic growth, Amassoma (2011) found a unidirectional causal relationship between external debt and economic growth. While Egbetunde (2012) in his study found evidence of a bi-directional relationship between public debt (domestic and external debt) and economic growth in Nigeria.

The divergence observed in these results can be said to be brought about by differences in theoretical and methodological approaches. The nature of the relationship between domestic and external debt in the Nigerian context is subject to empirical investigation, such enquiry is what this study is set to achieve and to find out if this study will corroborate any of the above outcomes.

CHAPTER THREE
METHODOLOGY

3.1 Introduction

The aim of this research is to determine the impact of domestic and external debt on economic growth in Nigeria. This chapter three therefore focus on the methodology employed for the study in order to empirically achieve the objectives of the study, as such it discusses the type and sources of data used for the study, specification of models estimated, Apriori expectation between the dependent and independent variables in the models, the estimation technique employed, and the significance of some key statistical concept employed in the study.

Contemporary techniques and approaches which lead to valid analysis and logical presentations of empirical results are employed in this study. This research is built on econometric method of analysis, this is because the method does not only provide the best technique for verification and regulation of theories, but also provides quantitative estimates of the magnitude and relationship among the variables (Maddla , 1992).

3.2 Sources of Data

This Research adopted the secondary type of data covering the period of 1970-2013 (44 years). The secondary data were sourced from Central bank of Nigeria (CBN) statistical bulletin, World Bank data base, National Bureau of Statistics (NBS) statistical bulletin, reports, and other statistical sources.

3.3 Model Specification

In order to fully investigate the impact of external and domestic debt on economic growth in Nigeria an open macroeconomic model is specified, the model is specified following (Chongo, 2013). The study argued that a framework linking the various sectors of the economy was needed to be able to fully analyze the effect of Public debt on economic growth. As such a national income identity model augmented with debt and monetary variables were employed. The model is specified as follows:

$$Y_t = \beta_0 + \beta_1 L_t + \beta_2 Z_t + \mu_t \dots\dots\dots\dots\dots(1)$$

Where t is the time, Y is GDP growth rate, L is a vector of explanatory (NEXP,TRD,EXCH) variables that have been empirically shown to be robust determinants of real growth, Z

represents the stock of Public debt-to-GDP ratio (DDS AND EDS), and U is the error term which is assumed to have a Zero mean and a constant variance (Chongo, 2013).

$$GDPG= f\ (\ ^{+}NEXPGDP,^{+}RDT,^{+}EXCH,^{-}DDSGDP,^{-}EDSGDP)..(2)$$

3.4   Justification of Variables

Real Gross Domestic product is used to ascertain the real value of goods and services produced in a nation in a given year. It is an appropriate proxy for economic growth as it is adjusted for inflation. GDP growth rate is used to as a proxy for the economy's annual growth and it is the dependent variable in the model.

National expenditure refers to the total amount expended on goods, services and capital stock in an economy, according to the World Bank it is the summation of private consumption, government consumption expenditure, and gross capital formation which is a form of investment. Thus the national expenditure contains private, government and investment expenditure variables that have been proven to impact positively on the economic growth of countries as such the apriori expectation for the NEXP/GDP is a positive impact on GDP growth rate.

Trade openness is a measure of how an economy is open to international trade. It is included in the model so as to give the model a foreign outlook, since we are analyzing the Nigerian economy as typical modern economy which is usually open. The apriori expectation is a positive relationship between trade openness (TRD) of an economy and the country's economic growth.

The real effective exchange rate measures the rate at which a countries currency can be converted to currencies of other nations. It is included in the model to give the model a monetary aspect, so we can examine the impact of a monetary variable on economic growth in Nigeria. The apriori expectation is a positive relationship, that is the higher the rate with which a nations currency exchange with foreign currencies like the dollar, Euro, or pound the more beneficial it will be to the economy's growth rate as a higher exchange rate means that the countries goods will be more attractive in the international market, leading to higher demand for the nations goods. This will induce higher productivity and growth of the economy.

Domestic debt stock captures the total amount which the Nigerian government owes to creditors within the country, while external debt stock is used to capture the total amount it owes to creditors outside the nation. The apriori expectation is that there can be a negative, positive, or

neutral effect on the economy based on the differing views of the Classical, Keynesians and Richardian theories. The domestic and external debt stocks constitute the main variables whose impacts on the GDP growth rate is the main objective of the study.

3.5   Estimation Techniques

Time series data covering a period of 1970-2013 (44) years were estimated in this study. The study employed the Augmented Dickey Fuller and Phillips-Perron test of stationarity to check the stationary properties of the variables, the Wald Test coefficient restriction(Bound test) was used to check for Co-integration among the variables, while the Autoregressive Distributed lag (ARDL) technique was used to check for short and long run impacts of the explanatory variables on the dependent variables, and the Vector Autoregressive Granger causality test, under the VAR framework was used to determine the causal relationship existing among the variables. This approach is informed by (Babatunde, 2013, Apanisile and okunola, 2013, and Riasat 2013).

3.6   The ARDL model Specification

The Model is specified in the ARDL form as:

$$\Delta GDPG_t = \beta_0 + \beta_1 GDPG_{t-j} + \beta_2 DDSGDP_{t-j} + \beta_3 EDSGDP_{t-j} + \beta_4 TRD_{t-j} + \beta_5 EXCH_{t-j} +$$

$$\beta_6 NEXPSGDP_{t-j} + \beta_7 \Delta GDPG_{t-j} + \beta_8 \Delta DDSGDP_{t-j} + \beta_9 \Delta EDSGDP_{t-j} + \beta_{10} \Delta TRD_{t-j} +$$

$$\beta_{11} \Delta EXCH_{t-j} + \beta_{12} \Delta NEXPSGDP_{t-j} + \mu_t \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots(3)$$

Where:

GDPG$_t$:   GDP Growth Rate at Time T

NEXPGDP$_{t-j}$:   Lag value of Ratio of Gross national Expenditure to GDP

RDT$_{t-j}$:   Lag value of Trade openness of the Economy.

EXCH$_{t-j}$:   Lag value of Real Official Exchange Rate.

DDSGDP$_{t-j}$:   Lag value of Total Domestic Debt stock ratio to GDP.

EDSGDP$_{t-j}$:   Lag value of Total External Debt stock ratio to GDP.

Also Where:

β_0 = Constant term

β_1-β_5 = Constant elasticity of the explanatory variables

t-j = Can be any number of appropriate lag using the Akaike, Schwarz criterion

μ= Error term

Apriori Expectation= β1, β2 <0, β3, β4, β5, >0

The model of causality test for this study is specified following (Egbetunde, 2012), the model is specified in the Vector Autoregressive Model form as follows:

$$GDPG_t = \alpha_1 + \alpha_2\sum GDPG_{t-j} + \alpha_3\sum EDS_{t-j} + \alpha_4\sum DDS_{t-j} + \alpha_5\sum GDP_{t-j} + \alpha_6\sum EXCH_{t-j} + \alpha_7\sum TRD_{t-j} + U_t \ldots\ldots(4)$$

$$DDS_t = \alpha_1 + \alpha_2\sum GDPG_{t-j} + \alpha_3\sum EDS_{t-j} + \alpha_4\sum DDS_{t-j} + \alpha_5\sum GDP_{t-j} + \alpha_6\sum EXCH_{t-j} + \alpha_7\sum TRD_{t-j} + U_t \ldots\ldots(5)$$

$$EDS_t = \alpha_1 + \alpha_2\sum GDPG_{t-j} + \alpha_3\sum EDS_{t-j} + \alpha_4\sum DDS_{t-j} + \alpha_5\sum GDP_{t-j} + \alpha_6\sum EXCH_{t-j} + \alpha_7\sum TRD_{t-j} + U_t \ldots\ldots(6)$$

$$EXCH_t = \alpha_1 + \alpha_2\sum GDPG_{t-j} + \alpha_3\sum EDS_{t-j} + \alpha_4\sum DDS_{t-j} + \alpha_5\sum GDP_{t-j} + \alpha_6\sum EXCH_{t-j} + \alpha_7\sum TRD_{t-j} + U_t \ldots\ldots(7)$$

$$TRD_t = \alpha_1 + \alpha_2\sum GDPG_{t-j} + \alpha_3\sum EDS_{t-j} + \alpha_4\sum DDS_{t-j} + \alpha_5\sum GDP_{t-j} + \alpha_6\sum EXCH_{t-j} + \alpha_7\sum TRD_{t-j} + U_t \ldots\ldots(8)$$

3.7 Definitions of Statistical Properties

In analyzing the results obtained with regards to validity of the variables used in terms of their statistical significance, decision making shall be made based on the following criteria:

1. **Signs and magnitude of the Parameter**: The signs (+ or -) are the economic apriori conditions set by economic theories and usually refers to the kind of economic relationships (Positive or Negative) existing between the variables. Parameters in the models are expected to have signs and sizes that conform to economic theory, if they do they are accepted, if they don't they are rejected, unless an explanation is given as to why in that instance economic theory does not hold.

2. **Coefficient of determination (R^2):** This shows the percentage of total variation of the explained variable that is explained by the explanatory variable(s). It shows the extent to which the independent variable(s) impacts on the dependent variable. It is a measure of the goodness of fit of the model; the closer the R^2 is to zero the weaker the fit.

3. **Adjusted Coefficient of Determination:** The adjusted R^2 is also important because it gives a better measure of the goodness of fit, having been adjusted for loss of degree of freedom as more explanatory variables are added. It lies between zero and one and the closer it is to one

the stronger the goodness of fit.

4. **P-value:** It is used to determine the statistical significance of the parameters in the model. They will be tested at 1%, 5%, 10% levels of significance. The rule of thumb states that when the P-value is less than 5%, we reject the null hypothesis and accept the alternate hypothesis and the result is statistically significant.

5. **F-statistic:** It is meant to test the overall significance of the entire model regarding the dependent variable. It checks the joint variance of the explanatory variables. The level of significance to be used is the standard 5% for social science. Hence if the probability is ≤ 0.05, the explanatory variables' parameter estimates will be jointly statistically significant. Any value greater than 5% makes them jointly statistically insignificant.

6. **The Durbin-Watson Statistic (D.W.):** The D.W. test is used to test for the presence of positive or negative autocorrelation in a model. The simple correlation matrix of the variables would be used as a guide in determining what combinations of the explanatory variables are responsible for multi-colinearity. It is a simple guide used to specify the right combination of the explanatory variables.

CHAPTER FOUR

ANALYSIS OF DATA AND INTERPRETATION

4.1   Introduction

The aim of this study is, to investigate the impact of domestic and external debt (Public Debt) on the Nigerian economy. This chapter four concentrates on the data analysis, interpretation of empirical results, and discussion of findings from the result of the analysis. The chapter also highlights the relationships existing among the variables of interest (Economic growth, Domestic and External debt) in both the short and long run. It also present the trend of the data used, with a view to analyze the trend of the time series data from 1970-2013. The descriptive analysis which explains the statistical properties of the data used for the analysis, such as the measures of central tendencies which refers to their means, medians, mode, as well as other measures of variation and other statistical characteristics of the variables were highlighted. Also the Econometric analysis of the data was conducted with the Test for unit root, co-integration, and regression analysis.

4.2   Trend Analysis Figures 2-7

TRD

NEXP

GDP

EXCH

EDS

DDS
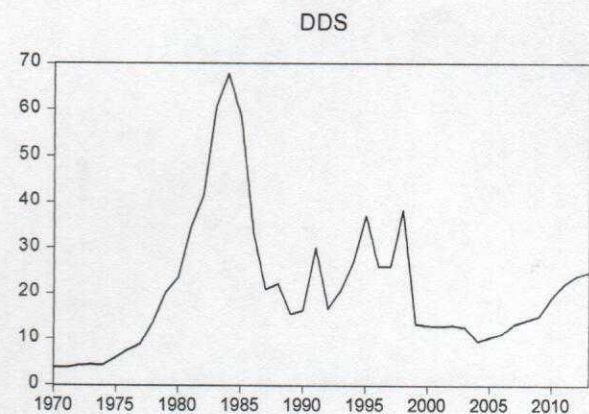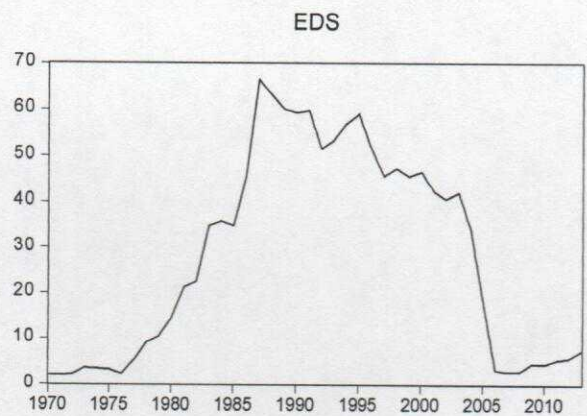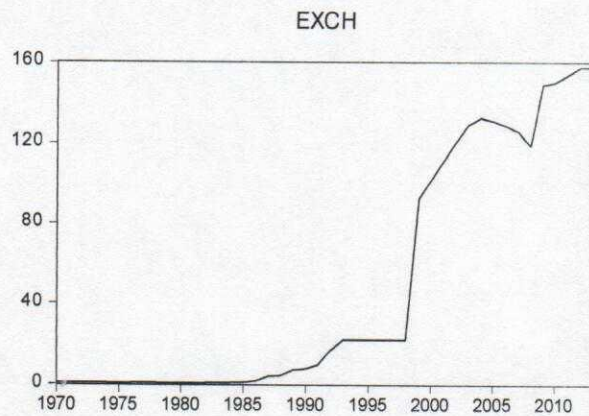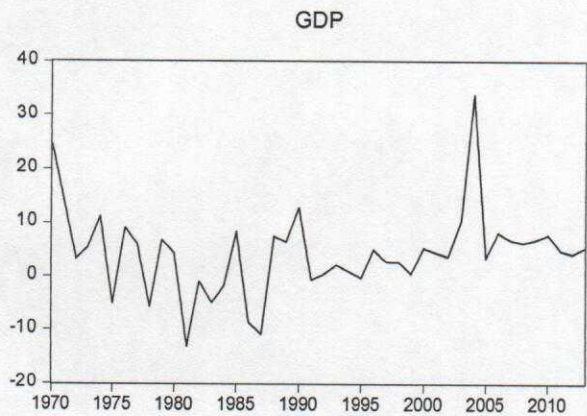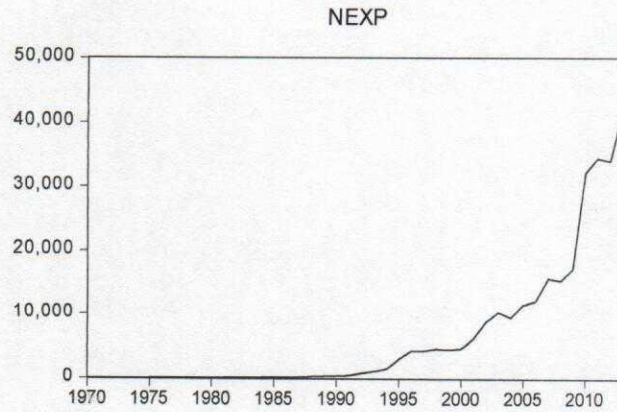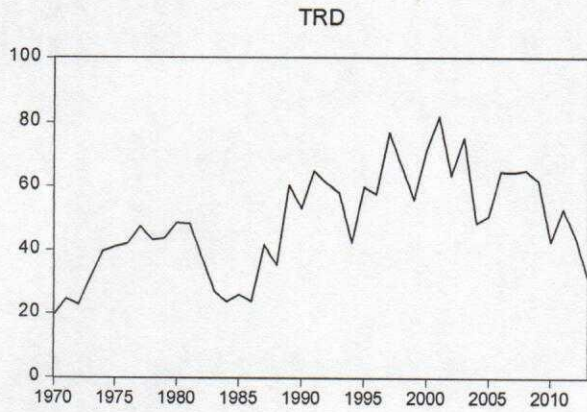
The figures above presents the Trend analysis of the data used for this study. A critical observation of the data reveals that TRD and GDPG has no trend, while NEXP and EXCH have positive trends which starts very low and then rises very high to the peak level. However EDS also starts very low rises to the top and then declines strongly but still above zero after which it resumes an upward trend. DDS like EDS also starts very low, rises, falls a bit and then fluctuates for a period after which it falls and starts rising again.

4.3 Descriptive Analysis.

Table 2. Summary of the descriptive properties of our variables.

DESCRIPTIVE STATISTICS	DDSGDP	EDSGDP	EXCH	GDP GROWTH RATE	NEXPGDP	TRD
Mean	20.91304	28.04682	48.98548	4.402923	6390.544	48.66757
Median	16.47661	28.16705	13.60396	4.649226	663.2675	48.37073
Maximum	67.61810	66.42290	157.4994	33.73578	41958.26	81.81285
Minimum	3.865027	2.146233	0.546781	-13.12788	23.63304	19.62060
Std. Dev.	14.88334	22.65235	60.93446	8.080945	10586.82	16.09786
Skewness	1.441671	0.171984	0.737839	0.963436	2.031276	-0.014878
Kurtosis	4.932460	1.434798	1.730911	6.407793	6.262560	2.176463
Jarque-Bera	22.08812	4.708314	6.945052	28.09746	49.77248	1.245013

Source: Author's compilation From Eviews7

Mean refers to the average value of any set of observations, and it is determined by dividing the total value of the sum of the series, by the number of observations present in the series. From table 2 above we observe that the means for the DDSGDP (Domestic debt stock ratio to GDP), EDSGDP (External debt stock ratio to GDP), EXCH (Exchange rate), GDP (GDP growth rate), and NEXPGDP (National expenditure ratio to GDP), and TRD (Trade openness) are; 20.91304, 28.04682, 48.98548, 4.402923, 6390.544, and 48.66757 respectively.

The median refers to the middle value when the series are arranged in either ascending or descending order. From the table we observe that the median for the variables of: DDSGDP, EDSGDP, EXCH, GDPG, NEXP and TRD are: 16.47661, 28.16705, 13.60396, 4.649226, 663.2675, and 48.37073 respectively.

Maximum and minimum refers to the highest and lowest values in each of the series. The maximum and minimum values for DDSGDP, EDSGDP, EXCH, GDPG, NEXPGDP and, TRD are: maximum values: 67.61810, 66.42290, 157.4994, 33.753578, 41958.26, and 81.81285

Minimum values: 3.865027, 2.146233, 0.546781, -13.12788, 23.63304, and 19.62060 respectively

The standard deviation, measures the degree of spread or dispersion of the series. From the table we observe that the standard deviation for DDSGDP, EDSGDP, EXCH, GDPG, NEXPGDP and, TRD are: 14.88334, 22.65235, 60.93446, 8.080945, 10586.82, and 16.09786.

Skewness measures the asymmetric distribution of the series around its mean. The skewness of a normal distribution is equal to zero, a positively skewed distribution has a long tail to its right, while a negatively skewed distribution will have a long tail to its left. From the table, we observe that DDSGDP, EDSGDP, EXCH, and GDPG, are positively skewed while only TRD is negatively skewed.

Kurtosis measures the peakness or flatness of the distribution of each series, if the kurtosis value is above 3, then the distribution is peaked or leptokurtic relative to the normal, if on the other hand the Kurtosis is below 3 then the distribution is said to be flat or platykurtic relative to the normal. From the table above DDSGDP, GDPG, and NEXPGDP are above 3, showing that they are peaked relative to normal distribution, while only EDSGDP, EXCH, and TRD has value below 3 Which means they are flat relative to a normal distribution.

Jarque-bera is a test statistic, used to test for the normal distribution of the series. It measures the difference between the Skewness and the Kurtosis of the series with those with normal distribution. From the table 3 above, the Jarque-bera value for DDSGDP, EDSGDP, EXCH, GDP, NEXPGDP and, TRD are: 22.08812, 6.945052, 28.09746, 49.77248, and 1.245013.

4.4 Econometric Analysis

4.4.1 Table 3 Stationarity Test.

VARIABLES	AUGMENTED DICKEY-FULLER T-STATISTICS	P-VALUE	PHILLPS-PERRON T-STATISITCS	P-VALUE	ORDER OF INTEGRATION
EDS/GDP	-4.215756	0.0018	-4.170145	0.0021	I(1)
DDS/GDP	-5.611684	0.0000	-5.613875	0.0000	I(1)
EXCH	-4.215756	0.0018	-6.018658	0.0000	I(1)
TRD	-6.019774	0.0000	-8.744361	0.0000	I(1)
NEXP/GDP	1.234893	0.9977	-5.404599	0.0009	I(1)
GDPG	-5.738307	0.0000	-5.74694	0.0000	I(0)
GDPG	-5.738307	0.0000	-5.74694	0.0000	I(0)

Source: Author's compilation From Eviews7

The Apriori expectation when conducting a stationarity Test using Phillips-Perron and Augmented Dickey-Fuller test with the 1%, 5%, 10% critical value, is that a variable is stationary when the P-Value of the test result is less than 0.05, that is to say under these conditions we can reject the Null Hypothesis (Ho) which says the variables has unit root, and accept our alternate hypothesis which says the variable has no unit root, meaning that the variable in question is stationary. Thus from table 3 above, only GDP growth rate conformed to this rule at levels and is therefore integrated of order I(0), while DDSGDP, EDSGDP, and EXCH, NEXPGDP, TRD variables conformed to this rule, only after first difference, meaning that they are integrated of order I(1).

4.4.2 Emperical Results and Interpretation

Table 4: Regression Result of the ARDL Model

VARIABLES	COEFFICIENTS	T-STATISTICS	P-VALUES
GDPG(-1)	-1.374433	-5.218068	0.0000
TRD(-1)	-0.203916	-1.625053	0.1150
EDS/GDP(-1)	0.118689	1.659803	0.1077
DDS/GDP(-1)	-0.253800	-2.362607	0.0251
EXCH(-1)	0.116026	2.325201	0.0273
NEXP/GDP(-1)	-0.000243	-0.857194	0.3984
D(GDPG(-1))	0.227820	1.448976	0.1581
D(TRD(-1))	0.231182	1.937701	0.0625
D(EDS/GDP(-1))	-0.165957	-0.713422	0.4813
D(DDS/GDP(-1))	0.315926	1.885399	0.0694
D(EXCH(-1))	0.046697	0.405679	0.6880
D(NEXP/GDP(-1))	0.000148	0.268901	0.7899
C	12.62435	2.030889	0.0515

Source: Author's compilation from Eviews.

R-squared =0.66671   F-statistic= 4.833419

Prob(F-stat)=0.0002

Durbin-Watson stat   2.056240

Table 4 presents the ARDL model specified in the previous chapter. From the table, three of the coefficients are significant at 5% level of significance and three are significant at 10% level. The beauty of the ARDL is that it combines both the long run and short run coefficients of the variables. To test if the variables co-integrate in the long run, the Wald coefficient restrictions test showed a significant F statistic of 5.45, this value is greater than the critical value provided by Pesaran and Shin (2001). This also suggests that the value lies above the upper bound meaning that the variables co-integrate in the long run.

Table 4.1

Wald Test:Result		Critical values		
Equation: Untitled	lower bound	Upper Bound		
	2.39	3.38		
Test Statistic	Value	df	Probability	
F-statistic	6.721116	(5, 31)	0.0002	
Chi-square	33.60558	5	0.0000	

Table 5: Most Parsimonious ARDL Model Result

VARIABLES	COEFFICIENTS	T-STATISTICS	P-VALUE
C	9.625441	1.798693	0.0812
GDPG(-1)	-1.267595	-5.941493	0.0000
DDS/GDP(-1)	-0.257144	-2.555159	0.0154
TRD(-1)	-0.141509	-1.289027	0.2064
EXCH(-1)	0.081353	3.078874	0.0042
EDS/GDP(-1)	0.123006	1.862065	0.0715
D(GDPG(-1))	0.185563	1.286699	0.2072
D(DDS/GDP(-1))	0.250573	1.759902	0.0877
D(TRD(-1))	0.193548	1.781179	0.0841

R-squared = 0.647047 Durbin Watson= 2.055038 F-statistics = 7.562121 Prob. (F-statistics) = 0.000011

Adjusted R-squared   0.561483

Table 5 above presents the most parsimonious ARDL model. The table shows that four of the long run coefficients and two of the short run coefficients are significant. The coefficient of GDPG is negative and significant. This result is expected because it represents the error correction component of the model. It can also be referred to as the speed of convergence. This implies that the error correction components, corrects the long run disequilibrium in the model at about 1.27% in the current period.

The long run coefficient of DDS/GDP is negative and significant at 5% level of significance. A one percentage increase in the current value of the ratio of domestic debt to GDP ratio will lead to a 0.25% decline in GDP growth rate.

The long run coefficient of EDS/GDP is positive and significant at 10% level of significance. A one percentage increase in the current value of external debt to GDP ratio will lead to a 0.12% rise in GDP growth rate.

The table also shows the long run coefficient of EXCH is positive and significant. A one percent increase in Exchange rate will bring about a 0.12% rise in GDP growth rate.

The short run coefficient of DDS/GDP is positive and significant at 10% level of significance. This implies that DDS/GDP impacts on the growth rate of GDP in both the short run and long run with opposing effects. A one percent rise in the domestic debt to GDP ratio will increase the growth rate of GDP by about 0.25%. This impact however becomes negative in the long run.

The short run coefficient of Trade openness is positive and significant. This suggests that openness of the economy impacts positively on the GDP growth. A one percent increase in Trade openness will improve GDP growth rate by about 0.95% in the short run. Finally, the constant term is also positive and significant.

The F statistic of 7.56 is significant at one percent level. This implies that all the coefficients are jointly significant. Thus, we can reject the null hypothesis that all the estimated coefficients are jointly equal to zero. The Durbin-Watson stat is 2.05. A Durbin-Watson stat that is at least 2 implies the absence of autocorrelation. Thus, our estimated model does not suffer from first order serial correlation. The R-squared of about 0.65 implies that 65% of the variation in the dependent variable (GDP growth) is explained by variations in the independent variables.

Table 6 Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.425456	Prob. F(8,33)	0.8973
Obs*R-squared	3.926897	Prob. Chi-Square(8)	0.8637
Scaled explained SS	6.312227	Prob. Chi-Square(8)	0.6123

The Table above presents the result of the Breusch-Pagan-Godfrey test for Heteroskedasticity from the value of the observed R-squared we cannot reject the null-hypothesis which says there is homoscedasticity which is desirable in the model. We however reject the alternate hypothesis which says there is heteroskedsaticity.
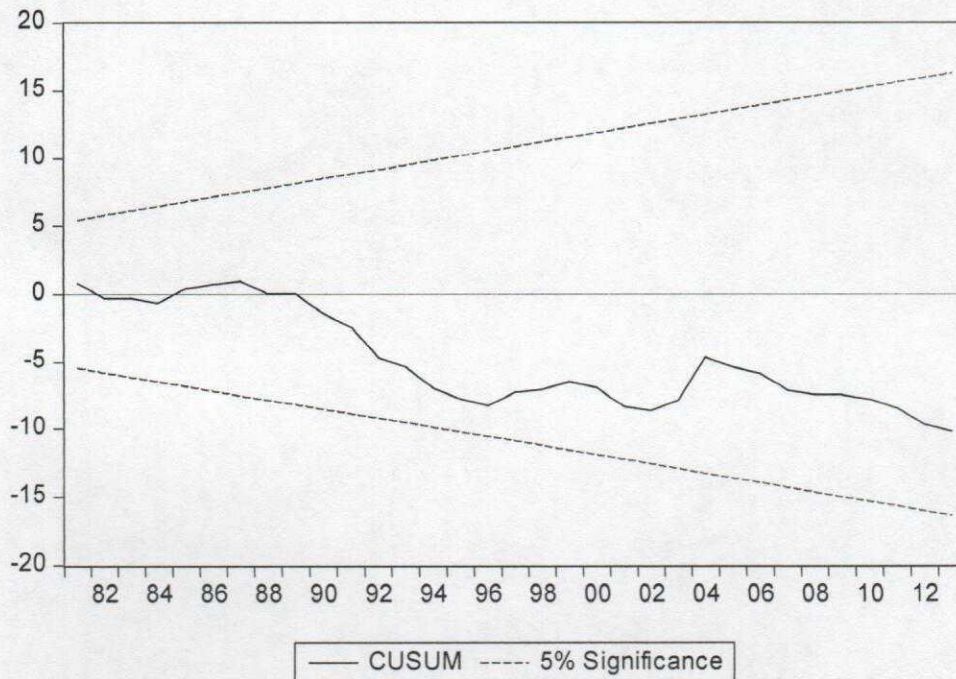
Figure 3

The figure above shows the outcome of the Cusum test of stability which shows the model to be stable, given the fact that its blue line in the middle lies in between the two red boarder lines, and does not stray out.

Table 7: VAR GRANGER CAUSALITY/BLOCK EXOGENEITY WALD TESTS RESULT

VARIABLES	CHI-SQUARE	PROB.
DDS/GDP GRANGER CAUSES GDP GROWTH RATE	7.603981	0.0223
EXCH GRANGER CAUSES GDP GROWTH RATE	10.04542	0.0066
TRD GRNAGER CAUSES EXCH	7.999633	0.0183
EXCH GRANGER CAUSES EDS/GDP	7.198162`	0.0273
DDS/GDP GRANGER CAUSES EDS/GDP	15.75671	0.0004
EDS/GDP GRANGER CAUSES TRD	10.35189	0.0057
DDS/GDP GRANGER CAUSES TRD	8.016073	0.0182

Table 7 presents the Vector Autoregressive Granger causality Test result. The first row shows that DDS/GDP does Granger cause GDP growth rate. This is evident by the Chi-square and p-values which are significant at 5% level. Similarly, the second row shows that EXCH granger causes GDP growth rate. The result of the third row implies that TRD granger causes EXCH and the fourth suggests that EXCH granger causes EDS/GDP the fifth row shows that DDS/GDP granger causes EDS/GDP, and the Sixth indicates that EDS/GDP granger causes TRD finally, the result of the seventh row implies that DDS/GDP Granger causes TRD. All the results are significant given their Chi-square statistics and probability values. The results only show unidirectional causation with no bi-directional causation among the variables as seen in the first row with the causation effect running from DDS/GDP to GDP growth rate.

4.5 Discussion of Findings

We started by examining the trend of the variables and found the variables to have trends and intercepts. Following this, was the analysis of the descriptive properties of the variables and the outcome is presented in table 2 it shows that NEXP/GDP has the highest mean value of 90.26868, while GDP growth rate has the lowest mean value of 2.895428, also the result of the standard deviation shows that NEXP/GDP variables has the highest standard deviation meaning that its observation deviates far from the mean than observations of other variables, while the standard deviation of GDPG has the lowest value which implies that its observations concentrates more around its mean than those of other variables. The result also shows that the series of DDSGDP, EXCH, GDPG, EDSGDP, and NEXPGDP are positively skewed which

implies that they each have long tails to the right, while the series of TRD, is negatively skewed implying that it has a long tail to the left.

Table 3 presents the result of the stationarity test using the Phillips-Perron test of stationarity, the result shows that only the GDP growth rate (GDPG) is integrated of order I (0) at 5% level of significance, meaning that it is stationary at levels, while the variables of DDS/GDP, EDS/GDP, TRD, NEXP/GDP, EXCH becomes stationary only after first difference, implying that they are integrated of order I(1).

Since the unit root test result showed our variables to be integrated of order I(0) and I(1), we could not adopt the Johansen test for co-integration and the Error Correction Mechanism(ECM), as they both require all the variables to be integrated of order I(1), thus we resorted to the use of the Autoregressive Distributive Lag Model (ARDL), which is flexible enough to allow for estimation of a model whose variables are integrated of both order I(0) and I(1). However before satisfying the ARDL approach we had to test for the co-integration relationship among the variables. Thus we adopt the Wald-test coefficient restriction, to check if the variables move together in the long run, the result of the test, with F-statistics of 5.45 is greater than the upper bound value of Pearson and Shin (2008) critical value table at 5% level is significant, implying that the variables in the model have long run association. This gave the go ahead to estimate our model employing the ARDL Bound test technique.

Table 5, presents the result of the most parsimonious ARDL model using the general to specific method. The result from the table shows that DDSGDP, EXCH, and EDSGDP have significant impacts on economic growth in the long run, while of, DDSGDP, and TRD (Trade) both have significant impacts on growth rate of the GDP in the short run. The result reveals that domestic debt to GDP ratio impacts negatively on the economic growth of Nigeria in the long run, a one percent rise in domestic debt ratio to GDP will bring about a 0.25% decline in GDP growth rate, supporting the Classical theory on debt, that government borrowing will have a negative impact on the national economy in the long run. However, DDSGDP also has a positive impact on the economy in the short run, a one percent rise in the domestic debt to GDP ratio will cause the GDP growth rate to rise by 0.25% in the short run, thus validating the Keynesian view which is believed to be of a short run perspective.

The result also revealed that external debt impacts positively on the nation's economic growth, a one percent rise in the external debt to GDP ratio will cause the GDP growth rate to increase by

0.12%. It also shows that exchange rate has a positive impact on economic growth in Nigeria revealing that a one percent increase in exchange rate, will result in a 0.08% rise in the GDP growth rate, This is in conformity with apriori expectation, and also corroborate the empirical findings of (Utomi, 2014) for exchange rate, Kabadayi et al (2011), and Sulaiman and Azeez (2012) who also found evidence of a positive relationship between external debt and economic growth.

The study also reveals that domestic debt and Trade, both impacts positively on economic growth in the short run, as a one percent increase in trade openness of the economy, will contribute to the growth rate of the nation's GDP by 0.19% and a one percent increase in the domestic debt to GDP ratio will lead to 0.25% increase in the GDP growth rate in the short run, this impact however turns negative in the long run.

The result of the causality test showed uni-directional causation between domestic debt to GDP ratio (DDS/GDP) and GDP growth rate with the causation effect running from DDS/GDP to GDP growth rate, and no causal relation existing between external debt ratio to GDP and GDP growth rate. These findings corroborate the result of Umaru, et al, (2013) and Egbetunde (2012).

4.6 Conclusion

This chapter concentrated on the data analysis, interpretation of empirical results, and discussion of findings. It began with trend analysis of the data used for the study, after which the descriptive analysis of the variables, which focused on the statistical properties of our variables, was done, Following this was the econometric analysis, were the presence of unit roots in the variables was tested, the result showed all variables to be stationary after first difference, with the exception of GDP growth rate which is stationary at levels. This necessitated the use of ARDL Bound Test approach to Integration, after ascertaining that our variables have long run association using the Wald test.

CHAPTER FIVE
SUMMARY, CONCLUSION, AND RECOMMENDATION

5.1. Summary of Findings

The result of the empirical analysis revealed that domestic debt impacts negatively on economic growth, a one percent increase in Domestic debt to GDP ratio will cause a decline of about 0.25% in the growth of the GDP holding other variables constant confirming the classical theory on debt, while external debt has positive impacts on the economic growth in Nigeria in the Long run at 5% level of significance corroborating the view of the Keynesian school, as a one percent rise in external debt to GDP ratio will bring about 0.12% rise in the GDP growth rate holding other variables constant. Exchange rate showed a positive effect on GDP growth rate as a one percent rise in the exchange rate will result in a 0.08% increase in the GDP growth rate holding other variables constant. Also Trade and domestic debt seems to have positive impact on GDP growth in the short run at 10% level of significance.

The result of the Granger causality test showed a unidirectional causality between GDP growth and domestic debt to GDP ratio, with the effect running from domestic debt to GDP ratio to GDP growth rate but no significant causal relationship exists between external debt ratio to GDP and GDP growth rate.

5.2. Conclusion

The study examined the impact of domestic and external debt on economic growth in Nigeria covering the period of 1970-2013. Chapter one started with the introduction which emphasized the importance of debt in modern economies seeking growth and development, it also stated the major problem associated with debt and objectives of the study were pin pointed. In chapter two major theories and concepts for the study were explained, review of relevant literature for this study was undertaken, diverse views and findings were observed. Chapter three concentrated on the methodology adopted for the study, in order to determine the short, long run and causal relationship existing among the variables. GDP annual growth rate was used as a proxy for economic growth, which is the dependent variable in our model, Domestic and External debt ratio to GDP, Gross national expenditure ratio to GDP, Exchange rate, and Trade are all independent variables in the model, external and domestic debt ratio were used to capture the

debt burden in the Nigerian economy while NEXP/GDP was used to represent consumption and investment expenditures in the economy, though it was found to be insignificant in the model and was dropped using the general to specific approach.

Chapter four focused on the data analysis and interpretation of result.

The Phillips-Perron and Augmented Dickey- Fuller Tests, were used to test for stationarity of the variables, which both showed all variables to be integrated of I(1), with the exception of GDP growth rate which was stationary at level and thus integrated of I(0). Thus we adopted the use of ARDL Bound test approach, which is more flexible than the Error Correction Method that does not allow for the estimation of a model with I (0) variables. The result of Wald coefficient restriction test indicate the presence of co-integration among the variables, thus we estimated our ARDL model; also result from our estimated model revealed that domestic debt impacts negatively on the Nigerian economy in the Long run, while external debt and exchange rate affects the economy positively in the long run. However, the result of the Vector Autoregressive Granger causality test, reveals that no casual nexus exists between external debt and economic growth in Nigeria, while it showed a unidirectional causation between GDP growth rate, and domestic debt to GDP ratio, with the causation moving from domestic debt ratio to GDP growth. Given the above conclusion and the evidence of the outcomes of the research, this study makes some recommendations.

5.3.   Recommendations

Having investigated the impact of domestic and external debt on economic growth in Nigeria, the following recommendations are given based on the findings:

Firstly, governments borrowing should be mainly for economic purposes, thus government should borrow to invest in the development of economic infrastructures particularly the power and transport sector. They should also channel loans to the development of the productive sectors like the manufacturing and Agricultural sectors, as they can yield adequate returns for the repayment of the loans. This is because the lack of evidence of a positive relation between domestic debt and economic growth in Nigeria can be traced to the fact that the domestically borrowed funds might have been used for social and political expenditures rather than for productive purposes. Also external borrowing should be encouraged in Nigeria as it augments the insufficient capital resources in our economy, thereby increasing available resources for

capital investment, but this should be restricted to loans of concessionary nature and appropriate repayment of the debt should be ensured to avoid the occurrence of a debt overhang situation.

Government's domestic borrowing should be discouraged as it seems to crowd out private investment, as government borrowing within the country drives up interest rate which discourages private borrowing for investment purposes.

The current administration should ensure that it fights and wins the battle against corruption so as to ensure that borrowed funds are not channeled into private pockets, to the detriment of the economy.

Finally, Government should also expedite actions towards diversifying the economy and encourage investments in the underdeveloped sectors of the economy such as industrial, power, and Agricultural sectors, so as to expand the export base of the economy, as high exchange rate will make our goods attractive in the international market and will thus earn us more foreign exchange.

5.4   Limitations of the Study

The author encountered some challenges in the area of sorting and gathering of relevant data for the study, this led to the omission of some relevant variables from the model.

5.5   Suggestions for further Research Study

Having ascertained that external debt impacts positively on the economic growth rate of Nigeria, we suggest that further study should be geared towards identifying the channels through which external debt impacts on the economy's growth and also the debt threshold point for Nigeria's external borrowing, so as to avoid being on the wrong side of the debt lafferCurve, so as to avoid experiencing diminishing returns on debt.

REFERENCES

Ademola, I. S, Olaleya, S.O., and Olusiyi A. E (2013)." *External Debt and the Nigerian Economy"* International Journal of Humanities and Social science Invention. Vol.2

Adesola, W.A. (2009). "*Debt servicing and Economic Growth in Nigeria: An Empirical Investigation"* Global Journal of Social Sciences Vol.8

Amassoma, D., (2011) "External Debt, Internal Debt and Economic Growth Bound in Nigeria using a Causality Approach" Current Research Journal of Social Sciences Vol.4

Audu, I. (2004). "*The impact of External debt on Economic growth and Public Investment: The case of Nigeria"* African Institute of Economic Development and Planning (IDEP) Dakar Sengal.

Amin, S. (1976). "*Unequal Development: An Essay on the social formation of Peripheral Capitals."* New York: Monthly Review Press

Aliyu R. M., and Usman, U. A. (2013). " *An Econometric study of the impact of External Debt, Public Debt and Debt Servicing on National Savings in Nigeria"* International Journal of Management and social Science Research (IJMSSR). Vol.2

Ademola, I.S., Olaleye, S.O., Olosuyi, A.L., and Babatunde, G. A.(2013)."*External Debt and the Nigerian Economy"* International Journal of Humanities and social science Invention.

Ademola, I.S., and Olusuyi, A. E.(2013)."*External Debt and the Nigerian Economy"* International Journal of Humanities and Social science Invention.

Alechenu J., (2015) "*We inherit worst economy in Nigeria's history-Osinbanjo"* www.Punchng.com

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

Aiyedogbon, J. O. and Ohwojaso, B. O. (2012) "*Poverty and youth unemployment in Nigeria"* International Journal of Business and Social Science

Anifalo, S. O. and Gboyega, A (eds) (2003). "*Essays in Nigerian Contemporary History Lagos"* First Academic Publishers

Apansile, T.O. and okunola, O.C, (2013) "*An empirical Analysis of Effects of military spending on Economic growth in Nigeria: A Bound testing Approach to cointegration."*

Abu, N. and Abdulahi, U. (2010). "*Government Expenditure and Economic growth in Nigeria: A Disaggregated analysis"* Business and Economic Journal astoujournal/com

Barik, A. (2012). *"Government Debt and Economic growth in India"* Centre for Economic studies and Planning (CESP). Jawahanlal Nelno University New Delhi

Boboye, A. L, and Ojo, M.O. (2012). "Effect of External Debt on Economic growth and Development in Nigeria" International Journal of Business and social science Vol.3

Babatunde, M.A. *"A Bound Testing Analyis of Wagner's Law on Public expenditure in Nigeria context"* www.africametrics.org/documents/conference08/day1/session2/babatunde.pdf

CIA World Factbook, 2010

Chiakwelu, G. (2014): www.Afripol.org

CIA World Factbook, 2013

Chongo.B.M, (2013). *"An Econometric Analysis of the Impact of Public Debt of Economic Growth": The Case of Zambia.* A Dissertation Submitted to the University of Zambia in Partial Fulfilment of the Requirement for the Degree of Master of Arts in Economics to The university of zambia Lusaka

Debt Management Office of Nigeria (DMO)(2014). www.dmo.gov.ng

David, M.S., Ahmed, A.H., Azman-Saini, W.W.W.(2013).*"Does External Debt Contribute to Malaysia Economic Growth?"* Ekonomska Istrazavanja-Economic Research. Vol.26

Eaton, J.,(1993). *Sovereign Debt*: A Primer Worldbank Econ. Rev., 7(3): 137-172

El-mahely, A.M. and Torayeh, N.M,(2009) *"Debt sustainability and Economic growth in Egypt"*. International Journal of applied Econometrics and Quantitative Studies Vol.6

Fajana, F.O., (1993) "Nigeria Debt Crisis" United National Economic Commission for African Socio-Economic Research and planning Division Addis-Ababa, Ethiopia

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.

Glomm, J.J and Ravikumor, D.J. (1997) *" The Growth of Public expenditure in selected Developing nations: Six Caribbean countries"* journal of Public finance/finances publique

Holtfrerich, C.(2012),*"Government Debt in Economic Thought of the long 19th century"*. J.F. Kennedy Institute for North American studies, Free University of Berlin. Contributed to the symposium on Government Debt in Democracies in Berlin

Hudson, M., (2011) *"How economic theories came to ignore the role of Debt"* University of Missouni Kansas city USA":*http://www.paecon.net/PAEReview/issue57/Hudson57.pdf*

http://www.dmo.gov.ng/ardrnigeriaexternalanddomesticdebt.php

Iyoha, M. A,(1999)." *External Debt and Economic growth in Sub-Saharan African Countries"* AERC Research Paper 90. African Economic Research Consortium, Nairobi.

Ijeoma N. B., (2013) " An Empirical Analysis of the impact of Debt on the Nigerian Economy" An International Journal of Arts and Humanities Bahir Dar, Ethopia

http://www.indexmundi.com/facts/nigeria/debt-service-on-external-debt

Nwagwu, E. J. (2014). *"Unemployment and Poverty in Nigeria: A link to National insecurity"* European centre for Research Training and Development UK.:www.ea-journals.org.

Obudah, B.C. and Tombofa, S.S. (2013)., *"Effects of Interest Rate and Debt on Equity Investment"* American Journal of Humanities and Social Sciences. Vol. 1

Okonjo- Iweala, N., Soludo, C, and Muhta, M., (2003), *"The Debt Trap in Nigeria"* Trenton NJ: Africa World press Inc.

Ojonugwa, F. U (2015) *"Nigeria Economy: How China and USA battle for Relevance"* Leadership Newspaper

Okon, B.E., Mayi, A., and Denies, C.O.(2013).*" The Relative Potency of External and Domestic Debts on Economic Performance in Nigeria"* European Journal of Humanities and Social Science. Vol.2

Okojie, C. E. E.(1995). *"Human Capital Formation for productivity Growth in Nigeria"* Nigerian Economic and Financial Review, tune.

Peoples Daily (2011): *Report on Agriculture in Nigeria.* Sept. 16.pg.18 peoples media publication. Lagos

Piana, V. (2001).Economic web Institute: www.economicwebinstitute.org

Rahman, M.M., Basher, M.A., and Dey, S. (2012). *"External Debt and Gross domestic Product in Bagladesh":* A Co-integration Analysis. Management Research and Practice. Vol.4

Safadari, M. and Mehrizi, M. A (2011). *"External debt and Economic growth in Iran"* Journal of Economics and International Finance. Vol. 3

Suliaman, L.A. and Azeez, B.A. (2012). "Effect of External Debt on Economic Growth of Nigeria" Journal of Economics and Sustainable Development.

Todaro, M.P. and Smith, S.C. (2011). *Economic Development 11th edition.* Pearson Education limited

Uzun, A., Karakoy, C., Kabadiyi B., and Emsen, O. S., (2012). *"The Impact of External Debt on Economic growth in Transitional Economies"*. Chinese Business Review Vol.11

Udeh,M.C.,(2013).*"The Impact of External Debt on the Nigerian Economy."* Department of Economics, Falculty of Management and Social Sciences. Caritas University Enugu State.

Umaru, A. Hamidu, A.A, and Musa, S.,(2013).*" External debt and Domestic Impact on the Growth of the Nigerian Economy."* International Journal of Educational Research

Udo, B., (2014*)."Standard and Poor revises Nigeria's sovereign credit rating to negative"*: www.premiumtimes.ng.com/business/157996-standard-poor-revises-nigeria-soverieign-credit-rating-negative.ht

WorldBank (2012): *"Human Development Reports."* The World Bank. Washington D.C

www.wikipedia.org/wiki/Economicgrowth

www.investopedia.com/../investment.asp

www.cenbank.org/out/2013/2012%25...

www.dmo.gov.ng/../nigdebtreldeal.pdf

APPENDICES

Appendix 1: Data Presentation

Data for this study

YEARS	GDPG	NEXP/GDP	EXCH	EDS/GDP	DDS/GDP	TRD
1970	25.00724193	23.6330364	0.714286	2.146232674	3.921291977	19.62059923
1971	14.23753156	23.94896727	0.712855833	2.156478149	3.865026692	24.46363514
1972	3.36426203	24.17009123	0.657894999	2.350016738	4.332279662	22.76364559
1973	5.392760484	25.11001946	0.657894999	3.666899705	4.458690098	31.26775278
1974	11.16067455	32.49454986	0.630282046	3.487395419	4.356216149	39.74699041
1975	-5.227747559	46.91138359	0.615501553	3.301075348	5.940274448	41.17034351
1976	9.04235173	54.26771481	0.626601004	2.400432307	7.693588569	42.1380988
1977	6.024117846	55.50291011	0.644701062	5.324958257	8.942500175	47.39526574
1978	-5.764158392	67.47289961	0.635271994	9.143192362	13.60759433	43.31484204
1979	6.759430935	68.03245245	0.604007374	10.50454245	20.09128594	43.87840231
1980	4.204831047	72.89077841	0.546780892	14.42900365	23.36988064	48.57131433
1981	-13.12788049	99.89759916	0.617708175	21.268685	34.42285864	48.29332215
1982	-1.05318606	102.8703226	0.673461262	22.52228576	41.39611945	37.74850235
1983	-5.050451109	112.3141058	0.724409851	34.76605797	60.67334167	27.03717231
1984	-2.021537569	119.7265998	0.766527449	35.89986578	67.6181005	23.60888246
1985	8.3228297	124.8980091	0.893774083	34.76676876	58.28346453	25.90006366
1986	-8.754176979	148.5345561	1.754523004	45.37417317	33.11988028	23.71675632
1987	-10.75170014	224.7702192	4.016037344	66.42290068	20.9645919	41.64666228
1988	7.542522025	282.0832099	4.536966667	63.03947029	22.05904037	35.31197849
1989	6.467191144	330.718481	7.364735	60.20534659	15.48310892	60.39176112
1990	12.76600917	410.9121211	8.038285	59.26869357	16.33342325	53.03022086
1991	-0.617850589	478.1622898	9.909491667	59.79460824	29.91195785	64.87659873
1992	0.433725357	848.3727621	17.298425	51.53037049	16.61980504	61.03097314
1993	2.090377801	1125.284636	22.0654	53.46164433	20.5820221	58.10984891
1994	0.909763335	1527.005888	21.996	57.04188559	26.78630802	42.30886996
1995	-0.307468969	3064.640373	21.89525833	58.95057819	37.08349403	59.76783433
1996	4.993705537	4296.652234	21.884425	51.73385484	25.86144313	57.6909942

1997	2.802256439	4344.696657	21.88605	45.60248677	25.98751408	76.85999096
1998	2.715640179	4690.603008	21.886	47.27604092	38.30070031	66.17324503
1999	0.474237575	4529.822749	92.3381	45.58500595	13.36065167	55.84639139
2000	5.318093381	4722.121954	101.6973333	46.54587729	13.01768723	71.38053117
2001	4.411065196	6300.587749	111.23125	42.39145121	12.90567702	81.81284909
2002	3.784648183	8866.23282	120.5781583	40.6912066	13.09569615	63.38363717
2003	10.35418456	10305.57959	129.22235	42.07235771	12.68233018	75.2189025
2004	33.73577503	9480.697152	132.888025	33.81180456	9.502941339	48.44813069
2005	3.444666813	11477.89482	131.2743333	18.24163262	10.3553882	50.74835925
2006	8.210964859	12074.24059	128.6516667	3.263718075	11.2199179	64.60931392
2007	6.828398348	15655.09527	125.8081083	2.888374492	13.29025108	64.46290877
2008	6.270263697	15240.86561	118.5460167	2.931768247	14.19409024	64.97297381
2009	6.934416004	17159.57096	148.9017417	4.587788441	14.974934	61.80285424
2010	7.839739477	32134.82443	150.298025	4.532057179	19.04513052	42.6513849
2011	4.887386611	34431.21299	153.8616083	5.373712755	21.91054394	52.7941049
2012	4.279277314	34020.35729	157.4994258	5.78340511	23.86522348	44.38013665
2013	5.394416311	41958.26301	157.311225	7.523855394	24.68734892	31.02589221

Source: Author's Compilation and Computation form WorldBank, CBN, and NBS database.

Appendix 2: Result of Unit Root Test

Phillips-Perron Test Equation

Dependent Variable: D(DDS)

Method: Least Squares

Date: 07/30/15   Time: 03:24

Sample (adjusted): 1971 2013

Included observations: 43 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DDS(-1)	-0.174776	0.084026	-2.080027	0.0438
C	4.122690	2.150252	1.917305	0.0622

R-squared	0.095452	Mean dependent var	0.482932
Adjusted R-squared	0.073390	S.D. dependent var	8.512686

S.E. of regression	8.194361	Akaike info criterion	7.090165
Sum squared resid	2753.050	Schwarz criterion	7.172081
Log likelihood	-150.4385	Hannan-Quinn criter.	7.120373
F-statistic	4.326512	Durbin-Watson stat	1.641194
Prob(F-statistic)	0.043815		

Null Hypothesis: D(EDS) has a unit root

Exogenous: Constant

Bandwidth: 2 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-4.170145	0.0021
Test critical values:	1% level	-3.596616	
	5% level	-2.933158	
	10% level	-2.604867	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	31.84045
HAC corrected variance (Bartlett kernel)	30.19449

Phillips-Perron Test Equation

Dependent Variable: D(EDS,2)

Method: Least Squares

Date: 07/30/15   Time: 03:25

Sample (adjusted): 1972 2013

Included observations: 42 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(EDS(-1))	-0.616108	0.146144	-4.215756	0.0001
C	0.094550	0.892284	0.105964	0.9161

R-squared	0.307630	Mean dependent var	0.041195
Adjusted R-squared	0.290321	S.D. dependent var	6.863620
S.E. of regression	5.782082	Akaike info criterion	6.393853
Sum squared resid	1337.299	Schwarz criterion	6.476599
Log likelihood	-132.2709	Hannan-Quinn criter.	6.424182
F-statistic	17.77260	Durbin-Watson stat	1.902073
Prob(F-statistic)	0.000138		

Null Hypothesis: D(EXCH) has a unit root

Exogenous: Constant

Bandwidth: 1 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-6.018658	0.0000
Test critical values:	1% level	-3.596616	
	5% level	-2.933158	
	10% level	-2.604867	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	138.9192
HAC corrected variance (Bartlett kernel)	138.2261

Phillips-Perron Test Equation

Dependent Variable: D(EXCH,2)

Method: Least Squares

Date: 07/30/15   Time: 03:26

Sample (adjusted): 1972 2013

Included observations: 42 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(EXCH(-1))	-0.950772	0.157942	-6.019774	0.0000
C	3.544766	1.954635	1.813518	0.0773

R-squared	0.475325	Mean dependent var	-0.004447
Adjusted R-squared	0.462208	S.D. dependent var	16.46905
S.E. of regression	12.07746	Akaike info criterion	7.867008
Sum squared resid	5834.606	Schwarz criterion	7.949754
Log likelihood	-163.2072	Hannan-Quinn criter.	7.897337
F-statistic	36.23768	Durbin-Watson stat	2.005134
Prob(F-statistic)	0.000000		

Null Hypothesis: GDP has a unit root

Exogenous: Constant

Bandwidth: 4 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-5.746942	0.0000
Test critical values:	1% level	-3.592462	
	5% level	-2.931404	
	10% level	-2.603944	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	52.72780
HAC corrected variance (Bartlett kernel)	56.45145

Phillips-Perron Test Equation

Dependent Variable: D(GDP)

Method: Least Squares

Date: 07/30/15   Time: 03:27

Sample (adjusted): 1971 2013

Included observations: 43 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP(-1)	-0.805429	0.140360	-5.738307	0.0000
C	3.071558	1.289950	2.381145	0.0220

R-squared	0.445408	Mean dependent var		-0.456112
Adjusted R-squared	0.431881	S.D. dependent var		9.866031
S.E. of regression	7.436390	Akaike info criterion		6.896043
Sum squared resid	2267.296	Schwarz criterion		6.977959
Log likelihood	-146.2649	Hannan-Quinn criter.		6.926251
F-statistic	32.92817	Durbin-Watson stat		2.107181
Prob(F-statistic)	0.000001			

Phillips-Perron Test Equation

Dependent Variable: D(NEXP)

Method: Least Squares

Date: 07/30/15   Time: 03:27

Sample (adjusted): 1971 2013

Included observations: 43 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.

NEXP(-1)	0.136720	0.039302	3.478725	0.0012
C	214.5970	417.6503	0.513820	0.6101

R-squared	0.227894	Mean dependent var	975.2240
Adjusted R-squared	0.209062	S.D. dependent var	2623.737
S.E. of regression	2333.412	Akaike info criterion	18.39345
Sum squared resid	2.23E+08	Schwarz criterion	18.47536
Log likelihood	-393.4591	Hannan-Quinn criter.	18.42365
F-statistic	12.10153	Durbin-Watson stat	2.332008
Prob(F-statistic)	0.001208		

Phillips-Perron Test Equation

Dependent Variable: D(TRD)

Method: Least Squares

Date: 07/30/15   Time: 03:29

Sample (adjusted): 1971 2013

Included observations: 43 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TRD(-1)	-0.270606	0.100928	-2.681169	0.0105
C	13.54597	5.205752	2.602117	0.0128

R-squared	0.149178	Mean dependent var	0.265239
Adjusted R-squared	0.128426	S.D. dependent var	11.24777
S.E. of regression	10.50071	Akaike info criterion	7.586157
Sum squared resid	4520.859	Schwarz criterion	7.668074
Log likelihood	-161.1024	Hannan-Quinn criter.	7.616366
F-statistic	7.188669	Durbin-Watson stat	2.323471
Prob(F-statistic)	0.010521		

Null Hypothesis: D(DDS) has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.611684	0.0000
Test critical values:	1% level	-3.596616	
	5% level	-2.933158	
	10% level	-2.604867	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(DDS,2)

Method: Least Squares

Date: 07/30/15   Time: 03:32

Sample (adjusted): 1972 2013

Included observations: 42 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(DDS(-1))	-0.880948	0.156985	-5.611684	0.0000
C	0.439237	1.338413	0.328178	0.7445
R-squared	0.440489	Mean dependent var		0.020914
Adjusted R-squared	0.426501	S.D. dependent var		11.43599
S.E. of regression	8.660443	Akaike info criterion		7.201857
Sum squared resid	3000.131	Schwarz criterion		7.284603
Log likelihood	-149.2390	Hannan-Quinn criter.		7.232187
F-statistic	31.49099	Durbin-Watson stat		1.989404

Prob(F-statistic)   0.000002

Null Hypothesis: D(EDS) has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.215756	0.0018
Test critical values:	1% level	-3.596616	
	5% level	-2.933158	
	10% level	-2.604867	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(EDS,2)

Method: Least Squares

Date: 07/30/15   Time: 03:33

Sample (adjusted): 1972 2013

Included observations: 42 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(EDS(-1))	-0.616108	0.146144	-4.215756	0.0001
C	0.094550	0.892284	0.105964	0.9161
R-squared	0.307630	Mean dependent var		0.041195
Adjusted R-squared	0.290321	S.D. dependent var		6.863620
S.E. of regression	5.782082	Akaike info criterion		6.393853
Sum squared resid	1337.299	Schwarz criterion		6.476599
Log likelihood	-132.2709	Hannan-Quinn criter.		6.424182

F-statistic	17.77260	Durbin-Watson stat	1.902073
Prob(F-statistic)	0.000138		

Null Hypothesis: D(EXCH) has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.019774	0.0000
Test critical values:	1% level	-3.596616	
	5% level	-2.933158	
	10% level	-2.604867	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(EXCH,2)

Method: Least Squares

Date: 07/30/15   Time: 03:33

Sample (adjusted): 1972 2013

Included observations: 42 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(EXCH(-1))	-0.950772	0.157942	-6.019774	0.0000
C	3.544766	1.954635	1.813518	0.0773
R-squared	0.475325	Mean dependent var		-0.004447
Adjusted R-squared	0.462208	S.D. dependent var		16.46905
S.E. of regression	12.07746	Akaike info criterion		7.867008

Sum squared resid	5834.606	Schwarz criterion	7.949754
Log likelihood	-163.2072	Hannan-Quinn criter.	7.897337
F-statistic	36.23768	Durbin-Watson stat	2.005134
Prob(F-statistic)	0.000000		

Null Hypothesis: GDP has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.738307	0.0000
Test critical values:	1% level	-3.592462	
	5% level	-2.931404	
	10% level	-2.603944	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(GDP)

Method: Least Squares

Date: 07/30/15   Time: 03:34

Sample (adjusted): 1971 2013

Included observations: 43 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP(-1)	-0.805429	0.140360	-5.738307	0.0000
C	3.071558	1.289950	2.381145	0.0220
R-squared	0.445408	Mean dependent var		-0.456112
Adjusted R-squared	0.431881	S.D. dependent var		9.866031
S.E. of regression	7.436390	Akaike info criterion		6.896043

Sum squared resid	2267.296	Schwarz criterion	6.977959
Log likelihood	-146.2649	Hannan-Quinn criter.	6.926251
F-statistic	32.92817	Durbin-Watson stat	2.107181
Prob(F-statistic)	0.000001		

Null Hypothesis: D(NEXP) has a unit root

Exogenous: Constant

Lag Length: 9 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		1.234893	0.9977
Test critical values:	1% level	-3.646342	
	5% level	-2.954021	
	10% level	-2.615817	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(NEXP,2)

Method: Least Squares

Date: 07/30/15   Time: 03:34

Sample (adjusted): 1981 2013

Included observations: 33 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(NEXP(-1))	1.447515	1.172178	1.234893	0.2299
D(NEXP(-1),2)	-2.224268	1.348521	-1.649413	0.1133
D(NEXP(-2),2)	-2.623033	1.426464	-1.838835	0.0795
D(NEXP(-3),2)	-1.472665	1.645347	-0.895048	0.3804
D(NEXP(-4),2)	-0.932409	1.847890	-0.504580	0.6189
D(NEXP(-5),2)	0.467365	1.864415	0.250676	0.8044

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(NEXP(-6),2)	-0.757471	1.540919	-0.491571	0.6279
D(NEXP(-7),2)	0.805424	1.823249	0.441752	0.6630
D(NEXP(-8),2)	0.784703	1.184474	0.662490	0.5145
D(NEXP(-9),2)	2.860744	1.291721	2.214676	0.0374
C	-275.1925	354.0434	-0.777285	0.4453

R-squared	0.893024	Mean dependent var	240.3954
Adjusted R-squared	0.844398	S.D. dependent var	3788.374
S.E. of regression	1494.376	Akaike info criterion	17.71801
Sum squared resid	49129500	Schwarz criterion	18.21684
Log likelihood	-281.3471	Hannan-Quinn criter.	17.88585
F-statistic	18.36534	Durbin-Watson stat	1.766515
Prob(F-statistic)	0.000000		

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(TRD)

Method: Least Squares

Date: 07/30/15   Time: 03:41

Sample (adjusted): 1971 2013

Included observations: 43 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TRD(-1)	-0.270606	0.100928	-2.681169	0.0105
C	13.54597	5.205752	2.602117	0.0128

R-squared	0.149178	Mean dependent var	0.265239
Adjusted R-squared	0.128426	S.D. dependent var	11.24777
S.E. of regression	10.50071	Akaike info criterion	7.586157
Sum squared resid	4520.859	Schwarz criterion	7.668074
Log likelihood	-161.1024	Hannan-Quinn criter.	7.616366
F-statistic	7.188669	Durbin-Watson stat	2.323471

Prob(F-statistic)   0.010521

Appendix 3: Result of ARDL Regression

Dependent Variable: D(GDP)

Method: Least Squares

Date: 07/30/15   Time: 02:48

Sample (adjusted): 1972 2013

Included observations: 42 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	12.62435	6.216172	2.030889	0.0515
GDP(-1)	-1.374433	0.263399	-5.218068	0.0000
DDS(-1)	-0.253800	0.107424	-2.362607	0.0251
TRD(-1)	-0.203916	0.125482	-1.625053	0.1150
NEXP(-1)	-0.000243	0.000283	-0.857194	0.3984
EXCH(-1)	0.116026	0.049899	2.325201	0.0273
EDS(-1)	0.118689	0.071508	1.659803	0.1077
D(GDP(-1))	0.227820	0.157228	1.448976	0.1581
D(DDS(-1))	0.315926	0.167564	1.885399	0.0694
D(EDS(-1))	-0.165957	0.232621	-0.713422	0.4813
D(RDT(-1))	0.231182	0.119307	1.937701	0.0625
D(NEXP(-1))	0.000148	0.000549	0.268901	0.7899
D(EXCH(-1))	0.046697	0.115109	0.405679	0.6880

R-squared	0.666671	Mean dependent var		-0.210550
Adjusted R-squared	0.528741	S.D. dependent var		9.851726
S.E. of regression	6.763041	Akaike info criterion		6.909496
Sum squared resid	1326.423	Schwarz criterion		7.447346
Log likelihood	-132.0994	Hannan-Quinn criter.		7.106640
F-statistic	4.833419	Durbin-Watson stat		2.056240

Prob(F-statistic)   0.000253

Wald Test coefficient restriction result

Wald Test:

Equation: Untitled

Test Statistic	Value	df	Probability
F-statistic	5.446227	(6, 29)	0.0007
Chi-square	32.67736	6	0.0000

Null Hypothesis: C(1)=0, C(2)=0, C(3)=0, C(4)=0, C(5)=0,

    C(6)=0

Null Hypothesis Summary:

Normalized Restriction (= 0)	Value	Std. Err.
C(1)	12.62435	6.216172
C(2)	-1.374433	0.263399
C(3)	-0.253800	0.107424
C(4)	-0.203916	0.125482
C(5)	-0.000243	0.000283
C(6)	0.116026	0.049899

Restrictions are linear in coefficients.

Result of the Most Parsimonious ARDL Model

Dependent Variable: D(GDP)

Method: Least Squares

Date: 07/30/15   Time: 03:13

Sample (adjusted): 1972 2013

Included observations: 42 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.625441	5.351354	1.798693	0.0812
GDP(-1)	-1.267595	0.213346	-5.941493	0.0000
DDS(-1)	-0.257144	0.100637	-2.555159	0.0154
TRD(-1)	-0.141509	0.109780	-1.289027	0.2064
EXCH(-1)	0.081353	0.026423	3.078874	0.0042
EDS(-1)	0.123006	0.066059	1.862065	0.0715
D(GDP(-1))	0.185563	0.144216	1.286699	0.2072
D(DDS(-1))	0.250573	0.142379	1.759902	0.0877
D(TRD(-1))	0.193548	0.108663	1.781179	0.0841

R-squared	0.647047	Mean dependent var	-0.210550
Adjusted R-squared	0.561483	S.D. dependent var	9.851726
S.E. of regression	6.523873	Akaike info criterion	6.776223
Sum squared resid	1404.510	Schwarz criterion	7.148581
Log likelihood	-133.3007	Hannan-Quinn criter.	6.912707
F-statistic	7.562121	Durbin-Watson stat	2.055038
Prob(F-statistic)	0.000011		

Appendix 4: Vector Autoregressive Granger causality Test result

Vector Autoregression Estimates

Date: 08/07/15   Time: 13:46

Sample (adjusted): 1972 2013

Included observations: 42 after adjustments

Standard errors in ( ) & t-statistics in [ ]

	GDP	EXCH	EDS	DDS	TRD
GDP(-1)	-0.135596	0.142608	-0.107538	-0.230356	-0.370786
	(0.18251)	(0.32450)	(0.12532)	(0.23747)	(0.25337)
	[-0.74297]	[0.43947]	[-0.85808]	[-0.97003]	[-1.46344]
GDP(-2)	-0.216189	0.237261	-0.120824	-0.219341	-0.092043
	(0.15342)	(0.27278)	(0.10535)	(0.19962)	(0.21298)
	[-1.40917]	[0.86980]	[-1.14690]	[-1.09879]	[-0.43216]
EXCH(-1)	0.150751	0.906462	-0.119794	-0.004779	-0.070211
	(0.10837)	(0.19268)	(0.07442)	(0.14101)	(0.15045)
	[1.39107]	[4.70438]	[-1.60978]	[-0.03389]	[-0.46668]
EXCH(-2)	-0.069235	0.030184	0.076419	-0.009031	0.083893
	(0.10873)	(0.19332)	(0.07466)	(0.14147)	(0.15094)
	[-0.63679]	[0.15614]	[1.02356]	[-0.06384]	[0.55580]
EDS(-1)	-0.056413	0.402182	1.055926	-0.082713	-0.562291
	(0.22410)	(0.39845)	(0.15389)	(0.29159)	(0.31111)
	[-0.25173]	[1.00935]	[6.86172]	[-0.28366]	[-1.80737]
EDS(-2)	0.188750	-0.488221	-0.238142	0.031426	0.792222
	(0.22632)	(0.40240)	(0.15541)	(0.29448)	(0.31419)
	[0.83399]	[-1.21326]	[-1.53233]	[0.10672]	[2.52144]
DDS(-1)	0.050279	0.127885	-0.281691	0.909080	-0.457913
	(0.15263)	(0.27138)	(0.10481)	(0.19860)	(0.21189)
	[0.32941]	[0.47124]	[-2.68764]	[4.57743]	[-2.16106]
DDS(-2)	-0.318845	0.098228	0.440722	-0.202773	0.131239
	(0.16387)	(0.29137)	(0.11253)	(0.21323)	(0.22750)
	[-1.94570]	[0.33713]	[3.91654]	[-0.95098]	[0.57688]

TRD(-1)	0.033025	0.183139	0.005414	-0.103473	0.247420
	(0.12106)	(0.21524)	(0.08313)	(0.15752)	(0.16806)
	[0.27281]	[0.85084]	[0.06512]	[-0.65689]	[1.47220]
TRD(-2)	-0.221848	0.404278	0.128203	0.157144	0.259553
	(0.11489)	(0.20427)	(0.07889)	(0.14949)	(0.15949)
	[-1.93105]	[1.97915]	[1.62507]	[1.05123]	[1.62738]
C	11.99464	-26.03041	-1.027499	8.032764	26.72204
	(6.02673)	(10.7157)	(4.13849)	(7.84187)	(8.36674)
	[1.99024]	[-2.42919]	[-C.24828]	[1.02434]	[3.19384]
R-squared	0.399416	0.972219	0.968956	0.741788	0.728245
Adj. R-squared	0.205679	0.963258	0.958942	0.658494	0.640583
Sum sq. resids	1360.115	4299.827	641.3500	2302.774	2621.345
S.E. equation	6.623797	11.77727	4.548484	8.618760	9.195625
F-statistic	2.061642	108.4880	96.75893	8.905637	8.307351
Log likelihood	-132.6262	-156.7973	-116.8394	-143.6836	-146.4047
Akaike AIC	6.839342	7.990347	6.087592	7.365887	7.495460
Schwarz SC	7.294446	8.445451	6.542696	7.820990	7.950564
Mean dependent	3.678186	51.28414	29.27993	21.72351	49.93545
S.D. dependent	7.432057	61.44144	22.44751	14.74842	15.33846

Determinant resid covariance (dof adj.)	3.32E+08
Determinant resid covariance	72625933
Log likelihood	-678.0946
Akaike information criterion	34.90927
Schwarz criterion	37.18479

VAR Granger Causality/Block Exogeneity Wald Tests Result

VAR Granger Causality/Block Exogeneity Wald Tests

Sample: 1970 2013

Included observations: 42

Dependent variable: GDP

Excluded	Chi-sq	df	Prob.
EXCH	10.04542	2	0.0066
EDS	3.996593	2	0.1356
DDS	7.603981	2	0.0223
TRD	4.249133	2	0.1195
All	19.52559	8	0.0123

Dependent variable: EXCH

Excluded	Chi-sq	df	Prob.
GDP	0.854763	2	0.6522
EDS	1.717155	2	0.4238
DDS	1.544964	2	0.4619
TRD	7.999633	2	0.0183
All	10.97318	8	0.2032

Dependent variable: EDS

Excluded	Chi-sq	df	Prob.
GDP	1.798354	2	0.4069
EXCH	7.198162	2	0.0273
DDS	15.75671	2	0.0004
TRD	3.526353	2	0.1715
All	30.37350	8	0.0002

Dependent variable: DDS

Excluded	Chi-sq	df	Prob.
GDP	1.872265	2	0.3921
EXCH	0.151324	2	0.9271
EDS	0.380221	2	0.8269
TRD	1.138790	2	0.5659
All	4.107170	8	0.8473

Dependent variable: TRD

Excluded	Chi-sq	df	Prob.
GDP	2.188548	2	0.3348
EXCH	0.391212	2	0.8223
EDS	10.35189	2	0.0057
DDS	8.010673	2	0.0182
All	19.22307	8	0.0137

Appendix 5: Heteroskedasticity Test Result

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.425456	Prob. F(8,33)	0.8973
Obs*R-squared	3.926897	Prob. Chi-Square(8)	0.8637
Scaled explained SS	6.312227	Prob. Chi-Square(8)	0.6123

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 08/10/15   Time: 15:57
Sample: 1972 2013
Included observations: 42

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	13.49088	67.23616	0.200649	0.8422
GDP(-1)	0.516870	2.680552	0.192822	0.8483
DDS(-1)	0.416238	1.264440	0.329187	0.7441
TRD(-1)	-0.107923	1.379312	-0.078244	0.9381
EXCH(-1)	0.213147	0.331986	0.642037	0.5253
EDS(-1)	0.117320	0.829984	0.141352	0.8885
D(GDP(-1))	0.725967	1.811982	0.400648	0.6913
D(DDS(-1))	0.135188	1.788896	0.075571	0.9402
D(TRD(-1))	2.059322	1.365273	1.508360	0.1410

R-squared	0.093498	Mean dependent var	33.44072
Adjusted R-squared	-0.126261	S.D. dependent var	77.23698
S.E. of regression	81.96808	Akaike info criterion	11.83795
Sum squared resid	221719.3	Schwarz criterion	12.21030
Log likelihood	-239.5969	Hannan-Quinn criter.	11.97443
F-statistic	0.425456	Durbin-Watson stat	2.068258
Prob(F-statistic)	0.897274		