EXTERNAL RESERVES, PUBLIC EXPENDITURE AND NIGERIA ECONOMY

BY

NAME: OLA-OLOYE EMMANUEL TEMILOPEOLUWA

MAT NO: SSC2105599

DEPARTMENT OF ECONOMICS
FACULTY OF SOCIAL SCIENCES
UNIVERSITY OF BENIN
BENIN CITY

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BEING A PROJECT SUBMITTED TO THE DEPARTMENT OF ECONOMICS, FACULTY OF SOCIAL SCIENCES, UNIVERSITY OF BENIN, IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF BACHELOR OF SCIENCE (B.Sc.) DEGREE IN ECONOMICS

OCTOBER, 2025.

CERTIFICATION

We the undersigned, certify that this research was carried out by OLA-OLOYE EMMANUEL TEMILOPEOLUWA **with mat no** SSC2105599 and is adequate in scope and quality in partial fulfillment of the requirements for the award of Bachelor of Science (B.Sc) Degree in the Department of Economics, Faculty of Social Sciences, University of Benin.

Dr. J.N. Izevbigie **(Project Supervisor)**	**Date**
Prof. S.O. Igbinedion **(Project Coordinator)**	**Date**
Dr. C.A Ighodaro **(Head of Department)**	**Date**

DEDICATION

This project is dedicated to the Almighty God, through His beloved son our Lord Jesus Christ who in his infinite mercies guided and provided the resources needed all through the period of my study in the university of Benin. May the Lord's name be praised.

This project is also dedicated to my parents Mr.Ola-oloye and Mrs.Ola-oloye and loved ones for their endless support, love, and belief in me.

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I am deeply grateful to my wonderful parents, Mr. Samuel Ola-oloye and Mrs. Victoria Ola-oloye, for their endless love, prayers, and sacrifices. Your encouragement and faith in me have been my greatest motivation.

My heartfelt thanks also go to my Senior Daddy, Mr. Agboola Famudele, for his fatherly advice and moral support; my uncle, Mr. Femi Olotu, for his generosity and guidance; and my other mummy in abroad, Mrs. Toyin Nnwanye, for her care, prayers, and encouragement from afar. A special appreciation goes to my beloved brother, Toluwalase Ola-Oloye, whose love and cheerful words constantly lifted my spirit.

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Finally, I appreciate myself for remaining resilient, and committed to completing this research work successfully.

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ABSTRACT

The study examines the relative impact of government expenditure and external reserves on economic growth in Nigeria within the period 1986-2023, using vector autoregressive methodology. The results revealed that government expenditure on health sector impacts negatively on economic growth while that of education, defence and external reserves impact positively on economic growth. The study recommends that government should increase budgetary allocation and stimulate more funding channels to education and health sectors of the economy. Also, government should allocate more to capital expenditures of education and health than to recurrent expenditures of same in order improve the quality of facilities, materials and equipment in the education and health sectors.

CHAPTER ONE

INTRODUCTION

1.1 Preamble

Economic growth refers to the increase in a country's potential GDP, although this differs depending on how national product has been measured. Economic growth must be sustained for a developing economy to break the circle of poverty. Countries usually pursue fiscal policy to achieve accelerated economic growth. Tanzi (1994) observes that fiscal policy refers to the use of fiscal instruments (taxation and spending) to influence the working of the economic system in order to maximize economic welfare with the overriding objective of promoting long-term growth of the economy.

Perhaps, the aspect of public finance that has received much attention in the literature debate and empirical analysis is the economic effects of public expenditures. Many support a larger public expenditure on the ground that it puts money into circulation, increased investment and employment and reduce tax averseness. However, public expenditure has some obvious economic consequences. For instance, when the state enters the market for factor inputs or labour, it stimulates unhealthy competition with the private sector firms for these same materials or labour serves. As such, the government becomes the largest purchaser of goods and services because of its wide spread activities, as dither to evidenced in Nigeria.

To this extent, Suleiman (2009) observes that the size of government and its impact on economic growth has emerged as a major fiscal management issue facing economics in transition. He notes that previous research focused predominantly on size of government in industrialized countries, but given the openness of most developing countries (DCS), trade

dependency, the invariability to external shocks, and volatility of finances, the role and size of government become germane to adjustment and stabilization programmes. Mitchell (2005) has argued that a large and graving government is not conducive to better economic performance. For decades, public expenditures have been expanding in Nigeria, as in any other country of the world. Akpan (2005) opines that the observed growth in public spending appears to apply to most countries regardless of their level of economic development. This necessitates the need to determine whether the behaviour of Nigerian public expenditure and the economy can be lunged on the Wagner's (1993) law of Ever-increasing state activity, or the Keynesian (1936) Theory and Friedman (1078) or peacock and Wiseman's (1979) hypothesis. The Nigerian external reserves accumulation has exhibited an unprecedented growth with the arrival of Charles Soludo as governor of Central Bank of Nigeria (CBN) in 2004.

After decades of economic mismanagement, the Central Bank of Nigeria has successfully guided the Nigerian economy to a stable inflation rate. Domestically, the instituted financial intermediary recapitalization a gender has amplified the merits hypothesis. Susceptible to attack from developed economics at anything considered necessary. Although adequate reserves do contribute to confidence in a nation by guaranteeing the availability of foreign exchange to domestic borrowers to meet international debt servicing and enhance its credit rating (Humphries, 1990: Archer and Halliday, 1998), the confidence is often influenced by the soundness of a nation's economic policies and overall investment climate (UNCTAD, 2007. Thus, this becomes very crucial when examining the position of reserve holding in Nigeria especially when accumulated external reserves are usually financed by government oil-fund surplus.

External reserves are variously called international reserves, reserves, foreign reserve or foreign exchange reserves. While there are several definitions of international reserves the most widely accepted is the one proposed by the IMF in its balance of payments manual, 5th addition. It deferred international reserves as considering of official public sector foreign assets that are readily available to, and controlled by the monetary authorities for direct financing of payment imbalances, and directly regulating the magnitude of such imbalance, through intervention in the exchange markets to affect the currency exchange rate and/or for other purposes (CBN 2007).

The level of external reserve in a country is influenced by external sector developments such as international trade transactions, exchange rate, external debt and other related external obligations. However, when foreign exchange needs, they could exert pressures on the internal monetary environment. Thus, if a country's trade volume increases, banks and other financial intermediaries may exert increasing pressure on her foreign reserves. This scenario calls for a continuous effort by a country at effectively managing her foreign reserves to an optimum level that would sustain her numerous external commitments (CBN 1997). However, it has been provide by various countries (especially developing countries like Nigeria) that government expenditure and external reserves in a way of the other has contributed a large quota on economic growth and development.

1.2 Statement of the Problem

The importance of government expenditure and external reserves to any country cannot be over-emphasized. It can said to be the official public sector foreign assets controlled by the central bank of a country. The reserves position of Nigeria at any given time is a reflection of the circumstances prevailing in the international oil market (George 2007). The size of Nigeria's external reserves has been fluctuating over the years.

This work sees the following as constituting the major statement of problem for this study:

a. The non-utilization of Nigeria's huge external reserves for the development of infrastructure social services.
b. The poor management of the reserves which has, to a large extent affected the growth of the economy.

1.3 Objectives of the Study

The need to better the lots of citizens through government expenditure and external reserves has raised questions on the impact of government expenditure, external reserves on its impact on economic growth nations. It is against this background that this paper examines the impact of government expenditure (disaggregated into recurrent and capital expenditure), external reserves (exports and imports) on economic growth from 1981to 2018. The major objectives of this research is to examine the impact of government expenditure and external reserves on economic growth. An increase in export will lead to a favourable balance of trade and this in turn will lead to an increase government expenditure.

The specific objectives of this research include the following:

a. To theoretically investigate the impact of government expenditure and external reserves on economy growth in Nigeria.
b. To empirically determine the impact of government expenditure and external reserves on economic growth in Nigeria.

Building on existing literature and employing disaggregated data set on government expenditure and external reserves and economic growth variables, this study atte3mpt to examine the determinants of government expenditure and external reserves and thus advances

knowledge in the aspect of the relationship between government expenditure and external reserves on economic growth.

1.4 Hypothesis of the Study

In pursuance of the set objectives of this study, the following hypotheses were drawn for testing where recurrent and capital expenditures is the independent variable and exports the imports is also the independent variable, where economic growth is the dependent variable.

Ho: 1 = There is no significant relationship between recurrent expenditure and economic growth

Ho: 2= There is significant relationship between capital and expenditure and economic growth.

Hi: 1= There is significant relationship between exports and economic growth

Hi 2 = There is significant relationship between imports and economic growth

1.5 Significance of the Study

According to Abu and Abdullah (2010) observed that government expenditure has continued to rise due to the huge receipt from production and sales of crude oil, and the increased demean for public goods like road, communication, power, education and health. Available CBN statistical data show that total government expenditure (capital and recurrent) continued to rise throughout the study period. For instance, while government capital expenditure on economic services, social and community services, and transfers increased from N15.5million, N1.4million and 100.7 million respectively in 1970 to N809121.5million, N120049.2million and N211758.1million respectively in 2009, N1,152,796.50million,

N883,874.50 in 2010 to 2011. Recurrent expenditure on same services increased from N25.15million, N43.55million and N511.42milion respectively in 1970 to N340193.77 million, N346071.95milion and N622171.10million respectively in 2009, N1,290201.90million, N1589270.00million in 2010 to 2011. Government expenditure on these and other services or sectors would be expected to generate a corresponding growth trend in the economy. This necessitates the research interest for empirical quantitative measures of the impact of government expenditure and external reserves on the growth of the economy.

However, the importance of this study cannot be over-emphasized. It is believed that this study will provide an appropriate framework for the analysis of government expenditure or spending and external reserves as well as to manage it and its impact on economic growth.

1.6 Scope and Limitations of the Study

The scope of this research study of the impact of government expenditure and external reserves on economic growth in Nigeria covers 1986to 2023. (38 years). This is to ensure updated information and to follow trend.

A major limitation encountered in the cause of this study is incompleteness of data.

CHAPTER TWO

LITERATURE REVIEW

2.1.Introduction

A review of relevant theoretical and empirical literature will provide better insights into the rationale and dynamics of government expenditure and external reserves and thus, enhance the theoretical framework for empirical analysis in this study. This section discusses some empirical and theoretical literature on the cause-and-effect linkage between government expenditure, external reserves and economic growth. Extensive research has been undertaken in an attempt to gauge the extent to which government spending (GS) affects economics growth (EC) theoretically speaking, the pendulum appears to be swaying towards the conventional wisdom, i.e GS is a source of economics instability from an empirical perspective, however, the evidence generated points towards a more mixed picture.

Central banks cannot accumulate reserves indefinitely. Excessive reserve hoarding entails significant sterilizations cost, since the negative spread between the interest earned on reserves and the interest paid on the country's public debt increases with reserves accumulation moreover, if capital flow are not sterilized, sustained reserve accumulation will, at some point generate inflationary pressures that could interest the risk of domestic financial crises. On the other hand, if these central banks decide to stop accumulating Nigerian naira reserves, they could triggered and trigger an abrupt depreciation of the Nigerian naira and sharp rise in interest rates.

2.2 Theoretical/Conceptual Issues

Generally, economic growth theory deals with long-run growth trend of the economy, or potential growth path (Branson, 2002). The focus is on factors that lead to economic

growth over time and analysis of the forces is on factors that lead to economic growth over time and analysis of the force that allow some economics to growth rapidly, some slowly and others not at all. Early growth theories emphasized on different aspect of the economy. For instance, mercantilist emphasized surplus balance of trade, physiocrats emphasize agriculture as the source of all wealth, while the cameralists favoured taxation and state regulation for strong economy (Lombardini, 1996.

Within the frame work of the classical models of Smith and Malthus, economic growth is described in terms of fixed land and growing population. But without technological change, increasing population eventually exhausts the supply of free land and triggers law of diminishing returns which results to declining real to wage down to subsistence level at which point Malthusian equilibrium obtains.

The Keynesians see demand as a pre requisite for growth therefore; their analysis concludes that aggregate demand management policies can and should be used to improve economic performance. In the Keynesian model, increase in government expenditure cans infrastructures lead to higher economic growth. Contrary to this view, the neo-classical growth models argue that government of national output. However, it has been argued that government fiscal policy (intervention) helps to improve failure that might arise from the inefficiencies of the market. Exploring the Keynesian frame work, Harroddomar model points out some synmics of growth. For instance, to determine growth rate in the economy, the balance between supply and demand for a country's output should be maintained. On supply side, saving is a function of the level of GDP. Investment is an important component of the demand for the output of an economy as well as the increase in capital stock. Therefore, the equilibrium rate of growth is given by matching proportionate change in output with the ratio of saving output to that of capital-output. This sustains the economy along some

warranted steady growth path. According to the model, temporary deviations from the warranted growth path would not be self-correcting. Because of the lack of self it is said to be characterized by “knife-edge instability”. That is unstable and, thus, necessitates government intervention.

Conventionally, countries hold external reserves in foreign currencies in order to maintain in desirable exchange rate policy by interfering significantly in foreign exchange markets. Archer and Halliday (1998) identified the main seasons for a country holding external reserves as foreign exchange market stability exchange rate stability, exchange rate targeting, credit worthiness, transactions buffer, and emergency (e.g natural disasters). Humptroyes (1990) had earlier shared this view, nothing that central bank holding of reserve in a nation is essential to ensure stable foreign market operations and credit worthiness.

IMF (2003) established the possible factors that determine reserve holdings in 122 emerging market economics 1980-1999). These are: real per capital GDP, population, ratio of imports to GDP, and volatility of the exchange rate. Among the afore mentioned determinants GDP per capita, population level, ratio of import to GDP, and the volatility of exchange rate were statistically significant while opportunity cost and capital account vulnerability were not.

In a related study Obaseki (2007) noted that the uses of external reserves cannot be over emphasized. Essentially, external obligations have to be settled in foreign exchange. Therefore, the stocks of reserves become important as a source of financing external imbalances. Other uses to which external reserves can be put are to intervene in the foreign exchange market, guide against unforeseen volatility and maintain natural wealth for future generations.

Typically, the purpose of holding reserves is to allow the central bank an additional mean to stabilize the issued currencies from shocks. In addition to meeting the transaction needs of countries, reserves are used as a precautionary purpose to provide a cushion to absorb unexpected shocks or a sharp determination in their terms of trade or to meet unexpected capital out flows, like the negotiated exit payment of the Paris club debt by Nigeria. Reserves are also used to manage the exchange rate through intervention in the foreign exchange market. Thus, the motives for holding adequate level of external reserves can therefore be summarized as the reason why individuals hold money (CBN 2007).

From the late 1990s to the present, accumulation of foreign reserve by Nigerian government has shown some profound features, with reference to size, pace, and ownership categorizations. The figure for 1996 was $47.00billion. In (2005 and 2007), respectively as evident from CBN (2005) and the Nigerian Tribune newspaper, of Monday October 22, 2007. The reasons behind this development were documented by Soludo (2005) and Nda (2006) without ethnographic examination of turning capacity underutilization, instability in domestic prices, internal debt, electricity problem, and the risk/cost of reserve holding or accumulation. Not surprisingly, the substance of external reserve holding has generated serious global economic and academic debate, as different economics search for alternative strategies that will protect their economics against financial instability and stimulate economic growth. The conventional perspective sees national reserves as a store of assets that central banks could use to influence the exchange rate of their domestic currency (Nugee, 2000; Williams, 2003; IMF, 2004). From this understanding, the Nigerian economy recently moved from fixed exchange regime to partially floating exchange rate which need the external reserves as a cushion strategy. Hence, the question of opportunity cost of reserve holding within the Nigerian context has never been a walk-over question. Some perpetuate base answers were

given by a growing number of scholars including Yuguda (2003), Soludo (2005) and Nda (2006). Their argument is that external reserves help build international community confidence in the nation's policies and credit worthiness. In contrast to the current lack of confidence in Nigerian economy. The reserve thus performs a defensive mechanism role (Mendoza 2004) as against lack of confidence can adequate cushion against financial turbulence. The opportunity cost of stock piling Nigeria's external reserve in order to cushion financial crisis vulnerability appears a risk aversion strategy. Nevertheless, this strategy undermines the marginal benefit if the reserve is pumped into investment to stimulate economics productivity. Alternatively, the elasticity of reserve accumulation to the degree of unlikely financial shocks affects the forgone utilization benefits. Traditionally, the Nigerian reserve is to some degree extensively held in government bonds (Nda, 2006). Hence, it attracts low yield, and provide security and liquidity that are highly priced by reserves managers. As a result, the cost benefit analysis between security and liquidity vis-à-vis the return constitute a better pill for the acceptance by the general public.

Sound foreign reserves management practices are important because the can increase a country's overall resilience to shocks as the central bank will have the ability to respond effectively to financial crisis sound foreign reserves management can equally support but not substitute for sound macro-economic management. Similarly, inappropriate economic policies can pose serious risk to the ability to manage foreign reserves. However, the process of foreign reserves management has spanned over the areas of risk management, securitization and the use of derivations (Anifowose 1997).

The CBN has narrowly focused on reserves defence mechanism without proportionate evaluation of the lost confidence in areas of corruption, financial fraud, power outrage, political instability poverty, and low human capital development.

2.3 Review of Related Concepts

2.3.1 Concept of External Reserves

Prior to the inception of the central bank of Nigeria in 1959, the country formed part of the defunct West African Currency Board (WACB). In that period, management of external reserves posed little or no problems to the country because the manner in which the board operated prevented such problems from arising. Optimal deployment of reserves which was really not an issue since Nigeria's non-sterling earnings were deposited in London. In exchange for credit entries in the starting accounts maintained there (Aizenman 2005).

Subsequently, the 1959 Act with established the Central Bank of Nigeria (CBN) required the bank to hold external 1962 of this Act, the bank acquire the mandate to maintain the country's foreign exchange reserves not only in starting balance but also in non-starling assets such as gold coin or bullion, bank balances, bills of exchange, government and government guaranteed securities of countries other than Britain and treasury bills. In other countries the monetary options available to the country widened upon joining the international monetary fund (IMF) in 1961 to include many more assets (Yuguda 2003).

The problems of reserve management began during the periods of the first national development plan. In 1962 to 1966 and the Nigerian civil war of 1967 to 1970. In these periods, financing the plan and the war consumed a large portion of the country's reserves. Also, the tempo in the foreign trade sector dropped, following the disruption of economic activities in the country. The problems became compounded immediately after the war in the wake of the federal government's efforts to reconstruct and reactivate the ware ravaged economy which continued to demand immense foreign exchange reserves. Because of the

exigencies of this period the CBN became committed to maintaining an adequate level of external reserves (Olawoyin 2005).

In related development, (Odozi 2000) noted that in addition to the problem of depicting reserves Nigeria faced a new scenario with reserve management. Following the admission into the organization of the petroleum exporting countries (OPEC) in 1973 and the oil boom of the era, the problem of reserve management switched from that of "inadequate" to that of excess reserves'. This remained so until 1981 when the country was international by the global economic recession that led to a consistent decline in her external reserves. In the light of this development, economic stabilization measures revolving stringent exchange control, which ran from April 1982 to June, 1956, it was evident that the use of stringent economic controls was ineffective in restraining external reserves depletion. To this end, exchange and trade controls were discontinued in 1986, following the adoption of market based policy measures, the structural adjustment programme (SAP) in July 1986. However, after more than seven years of liberation, government felt that the overall performance of the economy was unsatisfactory. Hence, in January 1994, some measures of control wire reintroduced which saw the CBN as the sole custodian of foreign exchange and together with it designated agents, the avenues for foreign exchange important. Again the trade and exchange policies in 1994 failed to substantially achieve the desired objectives. The guided deregulation introduced in 1995, among other things, abolished the 1962 exchange control Act, in a bid to enhance the flow of capital and the reserves position of the country. Other measures aimed at boosting the external reserves included the introduction of an Autonomous foreign Exchange Market (AFEM) for the purpose of trading in foreign currencies at market determined rates and further liberation of the foreign exchange system in 1997 and the trade and exchange regime in 1998.

2.3.2 Sources of Nigeria External Reserves Inflows

Nigeria's external reserves derive mainly from the proceeds of crude oil production and sales. Nigeria crude oil in joint venture with some international oil companies notably shall, mobil, and cheveron. Out of this, Nigeria sell a predetermined proportion directly, while the joint venture partners sell the rest. The joint venture partners pay petroleum profit tax to the federal government through the federal board of inland revenue (CBN 2007).

The five categories of revenue from crude oil production and sales are:

i. Sale of Nigeria's crude oil equity

The Nigerian National Petroleum Corporation (NNPC) has the responsibility for the sale of Nigeria's crude oil. Receipts from such sales are warehoused into our foreign accounts constituted part of external reserve.

ii. Royalties

These are funds paid by oil companies to the nation arising from the commercial exploration of Nigeria's oil resources. The petroleum Act of 1960 provides a percentage to be paid as loyalty on the chargeable value of the crude oil/petroleum spirit production in a particular period.

iii. Petroleum Profit Tax (PPT)

This is the tax paid by oil companies on profit arising from their operations. A tax rate of 85% effective 1st April 1975 was specified by the petroleum profit Tax Act.

iv. Penalty for gas flaring, rentals, signature bonuses foreign exchange is realized from penalties for gas flaring rental payments from oil prospecting license (OPL), conversion oil mining leaso, oil exploration license, and concession block allocation.

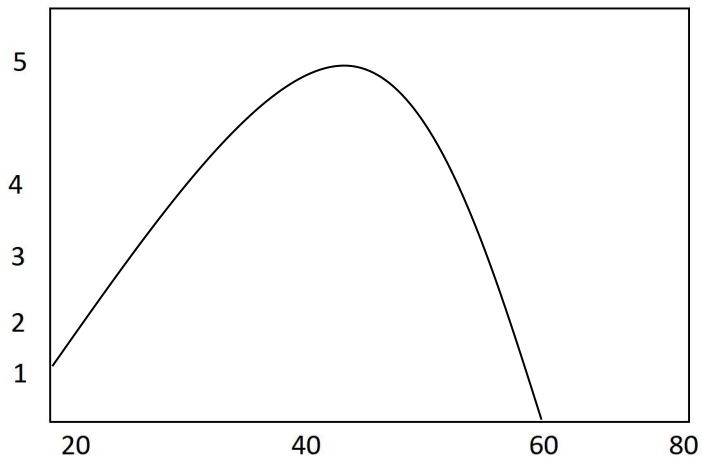
Also signature bonus can amount payable at the signing of an agreement for the award of OPL as part of the validity process of oil contract agreement) is a source of foreign exchange:

v. **Receipt from gas sales**

Other sources of foreign exchange inflows include: withdrawing tax, value added tax, company income tax education tax, and rent/interests received from investment abroad personal home remittances.

2.3.3 The Theory

Economics of government spending: economic theory does not automatically generate strong conclusions about the impact of government outlays on economic performance. Indeed, almost every economist would agree that there are circumstances in which lower levels of government spending would enhance economic growth and other circumstances in which higher levels of government spending would be desirable.



If government spending is zero: presumably, these will be very little economic growth because enforcing contracts protecting property, and developing an infrastructure would be very difficult if there were no government at all. In other words some government spending is

necessary for the successful operation of the rule of law. The figure above illustrates this point. Economic activity is very low of non-existent in the absence of government, but it jump dramatically as core functions of government are financed. This does not mean that government costs outweigh the costs.

Cost vs Benefits. Economists will generally agree that government spending becomes a burden at some point their because government becomes too large or because outlays are misallocated. In such cases, the cost of government exceeds the benefit. The downward sloping portion of the curve in the above diagram can exist for a number of reasons, including:

a. The Extraction Cost

Government spending requires costly financing choices. The federal government cannot spend money from someone. All of the options used to finance government spending have adverse consequences. Taxes discourage productive behaviour, particularly tax rates on word, saving, investment, and the forms of productive behaviour. Borrowing consumes capital that otherwise would be available for private investment and in extreme cases, may lead to higher interest rates. Inflation debased a nation's currency, causing wide spread economic distortion.

b. The Displacement Cost

Government spending displaces private-sector activity. Every dollar that the government spends necessarily means are less dollar. In the productive sector of the economy. This dampens growth since economic force guide the allocation of resources in the private sector, where as political forces dominate when politicians and bureaucrats decide how money is spent.

c. The Behavioural Penalty Cost

Government spending discourage productive choices.

Government programs often discourage economically desirable decisions. Saving is important to help provide capital for new investment, yet the incentive to save has been undermined by government programs that subsidize retirement, housing and education.

d. The Inefficiency Cost

Government spending is a less effective way to deliver services.

Government directly provides many services and activities, such as education, airports, and postal operations. However, there is evidence that the private sector could provide these important services at a higher quality and lower cost.

e. The Stagnation Cost

Government spending inhibits innovation. Because of competition and the desire to increase income and wealth individuals and entities in the private sector constantly search for new options and opportunities. Economic growth is greatly enhanced by this, discovery process of "creative destruction". Government programs, however, are inherently inflexible, both because of centralization and because of bureaucracy. Reducing government-or-developing federal programs to the state and local levels can elimination or mitigate this effects.

2.4 Review of Empirical Literature

The question whether or not government expansion causes economic growth has derided policy makers into two distinctive theoretical camps, as proponents of either big government of small government. Economic theory would suggest that on some occasions,

lower levels of government spending would enhance economic growth while another occasions higher levels of government spending would be more desirable form an empirical perspective the evidence generated becomes more confusing as a number of studies favour on our the other approach. The main focus of this paper will be to concisely review the existing empirical literature rather than explicate the intricacies of theoretical issues.

Evidence pointing towards a negative relationship

Starting with the US economy, Knoop (1999) using time series data from 1970 to 1995 found that a reduction in the size of the government would have an adverse impact on economic growth and welfare. Estimates obtained by Folstar and Henrekson (199,2001) when conducting a panel study on a sample of rich countries over the period of 1970-1995 lent support to the nation that large public expenditure affect growth negatively. In another empirical study, Ghura (1995), using pooled time series and cross section data for 33 countries in sub-Saharan Africa for the period 1970-1990 produced between that points towards the existence of a negative relationship between government consumption and economic growth. In that study the sample countries were classified into four groups: high-growth countries with growth rate above 2.0%, 0% and 1.9%; weak-growth countries, with growth between 0.9%. During his investigation, it transpired that, the fact that higher growth countries experienced higher investment ratios, higher export volume growth. Higher life expectancy at birth, lower inflation rate, and lower standard deviations of inflation did not necessarily imply better terms of trade outcome.

Barro (1991) in a cross section study of 98 courtiers for a period spanning from 1960 to 1985, using average annual growth rates in real GDP capital GDP and the ratio of real government consumption is negative and significant. Additional evidence suggested that

growth rates were positively related to measures of political stability and inversely related to a proxy for market distortions.

Young-Wih Lee (1995) produced further evidence on the relationship between government consumption and economic growth. More specifically, by using an endogenous growth model of an open economy, it was found that government consumption of economic output was associated with slower growth. In addition, the composition of investment and the volume of total capital accumulation were also thought to significantly condition economic growth.

In an attempt to investigate the relationship between government size and the unemployment rate Burton (1999) using a structural error correction model for twenty OECD countries from 1970, found that government size, measured as total government outlays as a percentage of GDP, an instrumental role in affecting the steady-state. Unemployment rate, i.e unemployment rises. Further evidence obtained using disaggregated government expenditure pointed towards a significant relationship between, transfers, subsidies and the steady-state unemployment rate while government expenditure on goods and services was found to be insignificant.

Using pooled cross-section/time-series data on 113 countries, Grier and Tullock (1989) investigated empirical regularities in post war economic growth. Among other result, they found the government consumption is negatively associated with economic growth. From the same study it also emerged that political repression is negatively correlated with growth in Africa and Central South America.

Guseh (1997) in a study on the effect of government size on the rate of economic growth conducted OLS estimation, using time-series data over the period 1960-1985 for 59

middle-income developing countries. The yielding evidence suggested that growth in government size has negative effect on economic growth, but the negative effects are three times as great in non-democratic socialists system as in democratic market systems. Further estimates provided by Engen and Skimes (1992) for 107 countries over the period 1970-1985, suggested that a balance-budget increase in government spending and taxation is predicted to reduce output growth, whilst Carlstrom and Gokhale (1991) reported stimulation results according to which government expenditures increases caused a long-run decline in output.

Adopting a Granger causality approach, contend Darrat (1988) investigated to the causal dimension between public sector growth and real the feedback effects from economic growth to government growth that resulted from macroeconomic policy. On the basis of the yielding evidences government growth has had mixed effects on economic growth rates, positive for some countries and negative for others. For the bulk of the OECD economies however, no discernable impact of government growth on the rate of real economic growth was perceived.

Evidence pointing towards a positive relationship

Contrary to the negative association between government spending and economic growth established by the aforementioned studies a growing body of literature attempts to redress the balance by suggesting that the state can actually, through implementing appropriate policies, nurture productive active and reduce unproductive ones (see for instance Amsden, 1989, Epstein and Gintis 1995, Burton 1991).

More specifically, Kelly (1997) by exploring the effects of public expenditures on growth among 73 countries over the period 1970-1989 found that the crowding-out and rent-seeking concerns might have been overstated in the literature. According to the evidence

obtained the contributions for public investment and social expenditures to growth is rather significant. Furthermore, Alexion (2007) in a study for the Greek economy, after disaggregating government spending, reported evidence on the basis of which there is a positive association between the growth in the components of governments spending and GDP growth. Aschauer (1990) also documented a positive and significant relationship between government spending and the level of output.

Despite the fact that even the crowding out literature, has recognized a limited but significant effect of public investment on growths social programmes have been rendered unproductive, with the exception of education. Thereby most of the studies conducted have exclusively focused on education as a significant factors which impacts growth through its effect on human capital (Barro, 1991; Roubini and Sala-1 martin, 1991; Birdsall, Ross and Sabot 1995).

In sketch of the preceding exposition it becomes apparent that the relationship between government spending and economic growth is far from clear. Two key points however can be made when reviewing the empirical studies: empirical results are specification sensitive and the relationship between government spending and economic growth is generally negative when the former is expressed as percent of GDP and is generally positive when expressed as an annual parentage change.

Table 1: Summary of Empirical Studies Conducted

Author(s)	Type of study (period)	Sample countries	Findings
Conte and Darrat (1988)	Granger Causality approach	OECD countries	For the majority of the OEDC countries. There was no discernable impact of government growth

			on the rate of real economic growth
Engen and Skinner (1992)	Pooled cross section/time series data period 1970-1985)	107 countries	Found that a balanced budget increase in government spending and taxation is predicted to reduce output growth.
Guesh (1997)	OLS-method, using time-series data (period 1960-85)	Middle income developing countries 59	Growth in government size has negative effects on economic growth, but the negative effects are three times as great in non-democratic socialists system as in democratic market system
Barro (1991)	Pooled cross section/time series data (period 1960-85)	98 countries	GDP is positively related to human capital and negatively related to the level of real per capital GDP
Shura (1995)	Pooled cross section/time series data (period 1970-1005)	Sub Saharan Africa 133	Negative relationship between government consumption and economic growth
Folster and Henrekson (1999)	OLS-method, time-series data (period 1970-95)	Rich countries	Report a tendency towards a more robust negative growth effect of large public expenditures
Knoop (1999)	Pooled cross section/time series data/period 1960-85)	USA	Finds that a reduction in the size of the government will have an adverse impact on economic growth and welfare.
Jong-Ulha Lee (1995)	Pooled cross section/time series data/period 1960-85)	Developing countries	Found the government consumption of economic output was associated with

			slower growth.
Burton (1992)	Pooled cross section/time series data/period 1970-99)	OECD countries	Government outlays as percentage of GDP, plays a significant role in raising the unemployment rate
Nelson and Sigh (1994)	Pooled cross section/time series data	70 countries	Their findings were rather inconclusive as no significant relationship was established
Grier and Tullock (1989)	Pooled cross section/time series data/period 1950-1981)	113 countries	Growth of government consumption negatively correlated with the economic growth
Carlstrom and Gokhale (1991)	Performed simulation	USA	Government expenditure increased per moments (used a long-run decline in output)
Kelly (1997)	Pooled cross section/time series data/period 1970-89)	73 countries	The article highlights the contributions that public investment and social expenditures may make to growth.
Alexius (2007)	OLS method time series data (period 1970-2001)	Greece	Evidence is reported on the basis of which there is a positive association between the growth in government spending and GDP growth

Nelson and Sigh (1994), when they examined the relationship between the overall government size, the proxy by the central government revenue as a percent of GDP, and the average growth rate of GDP arrived at inconclusive evidence as no significant relationship

was established that the influence on the efficiency of the private sector allocation of inputs might be a potential channel through which government spending might affect economic growth in a positive way.

CHAPTER THREE

THEORETICAL FRAMEWORK AND METHODOLOGY

3.1 Theoretical Framework

3.1.1 Theories of Economic Growth

Economic growth put simply means the steady process of increasing a country's national income (Todaro 1977). According to Anyanwu and Oaikhenan (1995), economic growth refers to increases overtime of an economy's capacity to produce those goods and services needed to improve the well being of the citizens in increasing number and diversity. Friedman defines growth as an expansion of the system in one or more dimensions without a change in its structure. Thus economic growth is related to a quantitative sustained increased in the country's per capita output or income accompanied by expansion in its labour force, consumption, capital and volume of trade.

Growth theories aim at expanding the development process of the developed countries and most importantly prescribe the basic criteria, needed for a given level of development to take place, though most of their theories use the advanced countries in their build up, they are also highly relevant to less developed countries like Nigeria, since they capture most of their prevailing features.

3.1.1.1 Adam Smith's Theory of Growth

Adam Smith (1723-1790) was a Scottish philosopher and economist who are renowned as the author of The Wealth of Nations (1776), one of the most influential books on market economics ever written. Adam Smith has not received as much recognition for his

theory of growth as he has for his theory of value and rent, but the fact still remains that he does provide a consistent dynamic model.

Adam Smith Identified three major sources of growth:

i. Growth the labour force and stock of capital

ii. Improvement in the efficiency with which capital is used in labour through greater division of labour and technologies progress.

iii. Promotion of foreign trade that widens the market and reinforces the other two sources of growth.

To understand the final growth process as stated by Adam Smith in this theory, we first need to look into the individual components, which have laid the foundation of the theory. These are Adam Smith's Production Function, his views on the process of growth of labour force and capital accumulation in the economy. The main points of his theory of economic growth are

i. Natural law

ii. Laissez-faire

iii. The division of labour

iv. Capital accumulation

Adam Smith advocated natural law in economic affairs. He opposed any government intervention in economic affairs of a country. He was a staunch free trader and advocated the policy of laissez-faire in economic affairs. He opined that natural laws are superior to law of states. Adam Smith recognized three factors of production, namely land, labour, and capital.

Adam Smith posited a supply side driven model of growth and his production function was as follows:

Y = f (K,L,N)

Y = output/income

K=stock of capital

L=labour force

N=land

So income was related to capital, labour and land inputs. Consequently, output growth (gy) was driven by population growth (gl), investment (gk) and land growth (gt) and increases in overall productivity (gf). Therefore: gy =φ (gf,gk,gl,gt). In Smith's growth model, the process of development is initiated by the employment of productive labour, accelerated by the division of labour, and regulated by capital accumulation. The determinants of economic growth are:

a. Capital accumulation

b. The size of the working population

c. The extent of the market

Smith's dynamics of the growth process can be understood with the help of the following three propositions.

i. A rise in capital accumulation raises the ratio of productive to unproductive workers.

ii. An increased demand for a work force raises the wage rate above the subsistence level which, in turn, increases the supply of the work force

iii. An increases in the working population enlarges the size of the market, and widens the scope of division of labour.

Given adequate market possibilities and the basis for the capital accumulation, a division of labour takes place which increases the productivity of labour. The incrased productivity of labour enhances national income, and enlarges the size of the working population. Both these elements widen market possibilities, and broaden the base for capital accumulation. This further increases the scope for the division of labour. Thus, the system becomes self-sustaining and the cumulative. Smith observed that farmers, producers, and businessmen are the key agents of economic growth. It is free trade, enterprise, and corruption and led farmers, producers, and businessmen to expand the market and which subsequently makes economic development interrelated. Smith argued that growth was self-reinforcing as it exhibited increasing returns to scale. Moreover, he viewed savings as a creator of investment and hence growth, therefore, he saw income distribution as being one of the most important determinants of how fast (or slow) a nation would grow. He also posited that profits decline not because of decreasing marginal productivity, but rather because the competition of capitalist for workers.

3.1.1.2 Rostow's Stage of Economic Growth

The Rostow's Stage of Growth model (also called "Rostovian take- off model") is one of the major historical models of economic growth. It was developed by W.W. Rostow. The model postulates that economic growth occurs in five basic stages, of varying length:

1. Traditional society

2. Preconditions for take-off

3. Take – off

4. Drive to maturity

5. Age of high mass consumption

Rostow's model is one of the structuralist models of economic growth, particularly in comparison with the "backwardness" model developed by Alexander Gerschenkron, although the two models are not mutually exclusive. Rostow argued that economic take-off must initially be led by a few individual sectors. This belief echoes David Ricardo's comparative self-reliance in that it pushes for the "initial" development of only one or two sectors over the development of all sectors equally. This became one of the important concepts in the theory of modernization in the social evolutionism.

Below is a detailed outline of Rostow's Stages:

- Traditional Society

a. Characterized by subsistence agriculture or hunting and gathering; almost wholly a "primary" sector economy.

b. Limited technology

c. A static or "rigid" society: lack of class or individual economic mobility, with stability prioritized and change seen negatively.

- Pre-conditions to "Take-Off

Rostow said that these changes in society and the economy had to be of fundamental nature in the socio-political structure and production techniques. This pattern was followed in

Europe, parts of Asia, the Middle East and Africa. There is also a second pattern in which he said that there was no need for change in socio-political structure because these economies were not deeply caught up in older, traditional social and political structures. The only changes required were in economic and technical dimensions. The nations which followed these patterns were in North America and Occeania (New Zealand & Australia).

There are three important dimensions to this transition; firstly, the shift from an agrarian to an industrial or manufacturing society begins, albeit slowly. Secondly, trade and other commercial activities of the nation broaden the market's reach not only to neighbouring areas but also to far-flung regions, creating international markets. Lastly, the surplus attained should not be wasted on the conspicuous consumption of the land owners or the state, but should be spent on the development of industries, infrastructure and thereby prepare for self-sustained growth of the economy later on.

- **Take Off**

a. Manufacturing begins to rationalize and scale increases in a few leading industries, as goods are made both for export and domestic consumption.

b. The "secondary" (goods-producing) sector expands and ratio of secondary vs. primary sectors in the economy shifts quickly towards secondary.

c. Textiles and apparel are usually the first "take-off" industry, as happened in Great Britain's classic "Industrial Revolution".

The main features of this stage is rapid, self-sustained growth. Take-off occurs when sector led growth becomes common and society is driven more by economic processes than traditions. At this point, the norms of economic growth are well established and growth becomes a nation's "second nature" and a shared goal. In discussing the take-off, Rostow is

noted to have adopted the term “transition”, which describes the process of a traditional economy becoming a modern one. After take-off, a country will generally take as long as fifty to one hundred years to reach the mature stage according to the model, as occurred in countries that participated in the Industrial Revolution and were established as such when Rostow developed his ideas in the 1950s. According to Rostow there are three main requirements for take-off:

1. “The rate of productive investment should rise from approximately 5% to over 10% of national income or net national product (this happened in Canada before the 1890’s and Argentina before 1914.

2. The development of one or more substantial manufacturing sectors, with a high rate of growth.

3. The existence or quick emergence of a political, social and institutional framework which exploits the impulses to expansion in the modern sector and the potential external economy effects of the take-off”. The needed capital is mobilized from domestic resources and is steered into the economy and not into domestic or state consumption.

* **Drive to Maturity**

After take-off there follows a long interval of sustained growth known as the stage of drive to maturity. Rostow defines it “as the period when has effectively applied the range of modern technology to the bulk of its resources. “Now regularly growing economy drives to extend modern technology over the whole front of its economic activity. Some 10-20% of the national income is steadily invested, permitting output regularly to outstrip the increase in

population. The make-up of the economy changes unceasingly as technique improves, new industries accelerate, and older industries level off. This stage is characterized by:

a. Diversification of the industrial base; multiple industries expand and new ones take root quickly.

b. Manufacturing shifts from investment-driven (capital goods) towards consumer durables and domestic consumption.

c. Rapid development of transportation infrastructure

d. Large-scale investment in social infrastructure (schools, universities, hospitals, etc).

- Age of Mass Consumption

a. The industrial base dominates the economy; the primary sector is of greate3ly diminished weight in economy and society.

b. Widespread and normative consumption of high-value consumer goods (e.g. automobiles).

c. Consumers typically (if not universally), have disposable income, beyond all basic needs, for additional goods.

Rostow claimed that these stages of the growth were designed to tackle a number of issues, some of which he identified himself; and wrote, “under what impulses did traditional, agricultural societies begin the process of their modernization? When and how did regular growth become a built-in feature of each society? What forces drove the process of sustained growth along and determined its contours? What common social and political features of the

growth process may be discerned at each stage? What forces have determined relations between the more developed and less developed areas; and what relation if any did the relative sequence of growth bear to outbreak of war? And finally where is compound interest taking us? Is it taking us to communism; or to the affluent suburbs, nicely rounded out with social overhead capital; to destruction; to the moon; or where?"

Rostow asserts that countries go through each of these stages fairly linearly, and set out a number of conditions that were likely to occur in investment, consumption and social trends at each state. Not all of the conditions were certain to occur at each stage, however, and the stages and transition periods may occur at varying lengths from country to country and even from region to region.

3.2 Model Specification

To analyse the relationship between education expenditure, health expenditure, defense expenditure, external reserve, and real gross domestic product, a VAR model was estimated. The VAR model for this study posits that education expenditure, health expenditure, defence expenditure, external reserve, and real gross domestic product are simultaneously interrelated.

Following the above theoretical discussions the appropriate VAR model for this study is specified as follows;

$H_t = \Sigma A_i H_{t-1} + U_{t-1}$

H_t = (EDUEX, HELTEX, DEFEX, EXTR, RGDP)

H_t is the vector of the variables of interest (i.e education expenditure, health expenditure, defence expenditure, external reserve, an real gross domestic product) in the model.

A_i = is the matrix of coefficients of the variables of interest (i.e education expenditure, health expenditure, defence expenditure, external reserve, and real gross domestic product) in the model.

Z_{t-1} = is the vector of the lagged variables

μ_t = is the vector of the stochastic error term

3.3 Nature and Sources of Data

Economic growth is taken as the dependent variable and education expenditure, health expenditure, defence expenditure and external reserve are taken as the3 explanatory variables. Data from 1986 to 2023 is used for all the variables. Data on nominal GDP was obtained from the CBN (Central Bank of Nigeria) Statistical Bulletin and the consumer price index (CPI) from the same source is used as the deflator to compute the real GDP figures.

3.4 Method of Data Analysis

To fully examine the hypothesized relationship between education expenditure, health expenditure, defence expenditure, external reserve, and real gross domestic product as set out in the literature review, this study makes use of the techniques of Vector Auto regressions (VAR). More specifically, the model includes the use of descriptive statistics, pairwise granger causality tests, unit roots tests and multivariate co-integration analysis, and error correction model.

Forecast Variance Decomposition (FEVD) and Impulse Response Functions (IRFs) are applied to examine interrelationships between variables in the VAR system, that is, to analyses the dynamic relationships between education expenditure, health expenditure, defence expenditure, external reserve, and real gross domestic product.

The VAR approach avoids the endogeneity/exogeneity problem by treating all variables as endogenous, and it is a system of equations in which the current level of each variable in the system depends on past movements in that variable and all other variables in the system. We can also run VAR estimation test to discover optimal lag length. In this study, the Akaike Information Criteria (AIC) is used to select an optimal lag length for each of the variables of interest. The estimation of the model was carried out using the E-view 10.0 econometric software.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.0 Introduction

This chapter entails the presentation and discussion of the empirical results from the study. First, the summary statistics of the key variables in this study (education expenditure, health expenditure, external reserves, defence expenditure and real gross domestic product) are presented. In addition, the results from the models estimated are presented and discussed. It is however divided into four main sections. The first segment presents the discussion of the findings from the preliminary analyses, using basic descriptive statistics, while the second segment reports the findings of the study from other preliminary tests, such as unit root tests and cointegration test.

Similarly, the third segment presents the discussion of the findings from the main estimation procedure (VECM), while the last section entails the analyses of the post estimation results obtained in the course of the empirical assessments. These include the vector error lag exclusion test, Forecast Error Variance Decomposition and its counterpart Impulse Response Function.

4.1 Descriptive Statistics

The summary statistics of all the variables employed in this study obtained in the course of the empirical evaluation are analyzed below. Explicitly, the mean otherwise knowns as the average of the distribution, median, minimum and maximum values, standard deviation, skewness, kurtosis, Jarque-Bera statistics, as well as their resulting probability ratio of the series were also indicated in Table 4.1. The mean value for each variable

indicated the average of the specific variable, while the standard deviation revealed the extent to which the variable was distributed around its mean.

Thus, it showed the volatile nature of the variables captured in the study. Also, the skewness and kurtosis values exposed the asymmetry and peakedness of the distribution, accordingly, whereas the Jarque-Bera test was employed for the assessment of the normality status of each variable. Thus, it was used to examine whether a variable is normally distributed or otherwise.

Specifically, the results reported in Table 4.1 revealed that, defence expenditure, education expenditure, external reserves, health expenditure and real gross domestic product had their average trend reported as ₦144.39 billion, ₦110.94billion, ₦2686.92billion, ₦65.30 billion and ₦35384.23 billion, in that order. In addition, the standard deviation of defence expenditure, education expenditure, external reserves, health expenditure and real gross domestic product were₦139.45 billion, ₦145.23 billion, ₦3534.14 billion, ₦90.46billionand ₦18788.69 billion correspondingly, during the estimation period.

From the table also, The Jarque-Bera statistics and their corresponding probability values indicate that education expenditure and real gross domestic product were found to be normally distributed over the thirty-nine-year assessments period. In addition, all variables were positively skewed in their distributions. In similar fashion, health expenditure and external reserves had moderate kurtosis value of 3.86 and 3.10 implying a mesokurtic trend, while education expenditure, defense expenditure and real gross domestic product found to be platykurtic in its distribution. The results are however reported in Table 4.1 below.

Table 4.1: Descriptive Statistics of all Variables Used

statistic	Federal Government Expenditure on Defence (₦' Billion)	Federal Government Expenditure on Education (₦' Billion)	External Reserves (₦' Billion)	Federal Government Expenditure on Health (₦' Billion)	GDP (constant NBN)
Mean	144.39	110.94	2686.92	65.30	35384.23
Median	72.10	41.75	713.54	15.93	24823.10
Maximum	442.15	465.30	13037.59	296.44	70546.39
Minimum	4.21	0.16	0.16	0.04	16211.49
Std. Dev.	139.45	145.23	3534.14	90.46	18788.69
Skewness	0.76	1.14	1.25	1.24	0.76
Kurtosis	2.07	2.82	3.86	3.10	2.05
Jarque-Bera	3.33	8.35	11.04	9.72	5.12
Probability	0.19	0.02	0.00	0.01	0.08
Sum	3609.76	4215.72	102102.80	2481.51	1344601
Sum Sq. Dev.	466741	780390	4.62E+08	302784	1.31E+10
Obs	25	38	38	38	38

Source: Author's Computation using E-views

4.2 Testing for Stationarity (Unit Root tests)

Unit Root tests are carried out to ascertain whether a time series variable is stationary or not. That is, whether a variable drift round a long-run mean that is approximately zero. Essentially, Table 4.2 reports the results of the stationarity tests using both the Augmented Dickey Fuller and Phillip-Perron tests of the time series employed in this study.

This was to validate earlier findings of Granger and Newbold (1977) who averred that, a number of time series variables at levels often drift in non-stationary manner. Consequently, utilising such non-stationary series might result in spurious regression outcomes. Thus, the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests were employed with a view to evaluating the stationarity properties of the variables used in the study. Interestingly, the

results showed that all the variables under consideration had first-order integration (all stationary at first difference) from both the Augmented Dickey Fuller and Phillip-Perron test results.

However, from the stationarity test results, real gross domestic product was significant at 5 percent test level in both the Augmented Dickey-Fuller test and Phillips-Perron test. However, education expenditure, health expenditure, external reserves and defence expenditure were all significant at 1 percent test level in the Augmented Dickey-Fuller test and Phillips-Perron test. Evidently, all the variables drift round a long-run mean that is approximately zero at first differences. This is consistent with the choice of the Vector Error Correction Mechanism (VECM), since theoretical bedrock of the VECM is predicated on stationarity supposition. The stationarity test results for all the variables (1981-2018) are summarized in Table 4.2below.

Table 4.2: Augmented Dickey Fuller and Philips Perron Unit Root Tests

Variables	Test statistic	Critical values			Remarks
		1percent	5percent	10percent	
Panel A. Augmented Dickey Fuller Tests Results					
DEFEX	-4.60	-3.75	-3.00	-2.64	Stationary***
EDUEX	-4.91	-3.63	-2.95	-2.61	Stationary***
EXREV	-4.03	-3.63	-2.95	-2.61	Stationary***
HELTEX	-7.35	-3.63	-2.95	-2.61	Stationary***
RGDP	-3.17	-3.62	-2.94	-2.61	Stationary**
Panel B. Phillips-Perron Tests Results					
DEFEX	-4.59	-3.75	-3.00	-2.64	Stationary***
EDUEX	-4.82	-3.63	-2.95	-2.61	Stationary***
EXREV	-4.03	-3.63	-2.95	-2.61	Stationary***
HELTEX	-7.35	-3.63	-2.95	-2.61	Stationary***
RGDP	-3.17	-3.62	-2.94	-2.61	Stationary**

NB: *Significant at 10percent, **Significant at 5percent, and ***Significant at 1percent.
Source: Author's Computation using E-views

4.3 Co-Integration Test

Cointegration tests are generally carried out to determine the presence (or otherwise) of long-run relationship among the variables in a Regression equation. This study thus adopted the procedure advanced by Johansen (1988) as well as Johansen and Juselius (1990). By using the approach presented by Johansen and Juselius (1990), the Max-Eigen and Trace statistic were utilised in evaluating the number of possible cointegrating vectors. The test statistics however dispel the null hypothesis of no cointegration. In a nutshell, the co-integration results reveal evidence of co-integrating relationships as shown by the significance of the Fisher statistics from Trace test and that from Max-Eigen test results presented in Table 4.3.

In addition, the result shows that all the variables utilised in the study are all statistically significant at the conventional 5 percent and 1 percent test levels as displayed in Table 4.3. Essentially, the test was conducted to establish the possibility of continuing with the time series data analysis using the Vector Error Correction Modelling (VECM) approach, since one of the necessary conditions for the choice of VECM is that, the variables must be cointegrated. The first two columns display the null and the alternative hypothesis with respect to the number of the cointegrating equations. The trace statistic and Maximum Eigenvalue test the null hypothesis of ‘’r’’ cointegrating vectors as against the alternative hypothesis of ‘’k’’ cointegrating equations.

Clearly, Trace test indicates 3 cointegrating equations at the 5percent level and 2 cointegrating equations at the 1percent level, while Max-eigenvalue test indicates 2 cointegrating equations at both 5percent and 1percent levels, respectively. Judging from earlier submission of Pesaran (1997), the inference is that, there is a stable long run

relationship among the series under investigation and this is essential in the area of macroeconomic policy visualization. This further validates our choice of estimation technique, since the underlying theoretical postulation is predicated on stationarity and cointegration assumptions (Enders, 1995). Table 4.3 reports the results obtained from the Johansen cointegration rank tests below.

Table 4.3: Johansen Cointegration Rank Test results
Series: RGDP DEFEX EDUEX EXREV HELTEX
Lags interval (in first differences): 1 to 2

Hypotheses		**Test statistic**	**Critical values**	
Null Hypothesis	**Alternative**	**p = 10**	**5percent**	**1percent**
Panel E. λ_{trace}-statistic				
H_0: r = 0	H_1: r ≥ 1	164.8678**	68.52	76.07
H_0: r ≤ 1	H_1: r ≥ 2	77.53053**	47.21	54.46
H_0: r ≤ 2	H_1: r ≥ 3	30.78969*	29.68	35.65
H_0: r ≤ 3	H_1: r ≥ 4	11.54660	15.41	20.04
H_0: r ≤ 4	H_1: r ≥ 5	0.436670	3.76	6.65
Panel F. λ_{max}-statistic				
H_0: r = 0	H_1: r = 1	87.33729**	33.46	38.77
H_0: r ≤ 1	H_1: r = 2	46.74085**	27.07	32.24
H_0: r ≤ 2	H_1: r = 3	19.24309	20.97	25.52
H_0: r ≤ 3	H_1: r = 4	11.10993	14.07	18.63
H_0: r ≤ 4	H_1: r = 5	0.436670	3.76	6.65
Notes: Trend assumption: Linear deterministic trend in the data				
**(**) denotes rejection of the hypothesis at the 5percent(1percent) level*				

Source: Author's Computation Using E-Views

Although, while the Johansen cointegration rank tests showed evidence of cointegrating relationship (s) among the macroeconomic series, it failed to point out the exact equation (s) establishing the linkage(s). Consequently, these cointegrating equations were estimated using the VECM cointegration approach built into the VECM specification so as to

allow the long run behaviour of the endogenous series to converge to their equilibriums point, while controlling for possible short run dynamics in the adjustment process.

This is a default normalization that detects all cointegrating relations. The result from the VECM cointegration approach showed that, all the cointegrating series (except defence expenditure) were collectively significant at 1percent test level. The results from the first step Johansen procedure are reported in Table 4. 4 below.

Table 4.4: Vector Error Correction Cointegration
Standard errors and t-statistics

Cointegrating Eq:	CointEq1
RGDP(-1)	1.000000
DEFEX(-1)	-29.94806
	(39.1299)
	[-0.76535]
EDUEX(-1)	-356.4512
	(40.1362)
	[-8.88104]
EXREV(-1)	-3.965003
	(0.50322)
	[-7.87934]
HELTEX(-1)	559.3023
	(44.8811)
	[12.4619]
C	-19210.81

Source: Author's Computation Using E-Views

4.4 The Vector Error Correction Estimates

The existence of long-term relationship does not reveal causal effect among these series. Also, it does not show the channel through which these variables interrelate. Thus, this is what the VECM was set to achieve in this study. Basically, the second segment of the VECM output presents the results from the Johansen second step VECM in first differences, with the incorporation of the error correction terms (ECM) derived from the first step. The

short run coefficients of the unrestricted VAR/VECM are also reported in the m x n matrix as presented in Table 4.5.

Specifically, the Vector Error Correction Estimates revealed that, the coefficients representing the Error Correction term were statistically significant at 1 percent test level from the health expenditure and external reserves models. Though, it only returned negative (correctly signed) in both education expenditure, health expenditure and real gross domestic product specifications. Kalim& Hassan (2013) however advanced that, a statistically significant error correction factor is another platform to substantiate the manifestation of long run linkage among series in a Regression model.

From the result also, education expenditure, external reserves, defence expenditure and real gross domestic product in their one period lag exhibited a positive behaviour toward current level Real GDP, while the result turned negative in the case of its (RGDP) relationship with health expenditure. Similarly, defence expenditure responded positively to its one period lag and one-period lagged health expenditure, external reserves, and real gross domestic product.

It however responded negatively to one period lagged education expenditure, while education expenditures responded positively to one period lagged external reserves, defence expenditure and real gross domestic product. It however responded negatively to its one period lagged values and that of defence expenditure. In similar findings, external reserves maintained a positive association with its one period lag as well as one period lagged education expenditure and defence expenditure. Though it exhibited a negative response from GDP and health expenditure. t was further established that one period lagged real gross domestic product was statistically significant in own equation and in defence expenditure model, while one period lagged defence expenditure was statistically significant in both the

education expenditure and health expenditure model. Similarly, one period lagged education expenditure was statistically significant in both the health expenditure and external reserves models, while one period lagged external reserves was statistically significant in own equation as well as education expenditure and health expenditure models. However, one period lagged health expenditure was statistically significant only in the external reserves model. Table 4.5 reports the Vector Error Correction Estimates below.

Table 4.5: Vector Error Correction Estimates

Error Correction:	D(RGDP)	D(DEFEX)	D(EDUEX)	D(EXREV)	D(HELTEX)
CointEq1	-0.034865	0.000224	-0.000188	0.072669	-0.002381
	(0.02963)	(0.00089)	(0.00066)	(0.02074)	(0.00057)
	[-1.17688]	[0.25037]	[-0.28683]	[3.50457]	[-4.15150]
D(RGDP(-1))	0.695434	0.006936	0.001872	-0.069834	0.002930
	(0.11895)	(0.00359)	(0.00263)	(0.08325)	(0.00230)
	[5.84656]	[1.93301]	[0.71147]	[-0.83880]	[1.27194]
D(DEFEX(-1))	0.527125	0.053466	0.989380	7.806872	0.882778
	(8.56633)	(0.25840)	(0.18952)	(5.99580)	(0.16587)
	[0.06153]	[0.20691]	[5.22054]	[1.30206]	[5.32209]
D(EDUEX(-1))	4.206976	-0.504482	-0.375291	17.16740	-0.718877
	(11.3812)	(0.34331)	(0.25179)	(7.96601)	(0.22038)
	[0.36964]	[-1.46948]	[-1.49048]	[2.15508]	[-3.26206]
D(EXREV(-1))	0.147573	0.007654	0.017107	0.494302	0.005857
	(0.19931)	(0.00601)	(0.00441)	(0.13950)	(0.00386)
	[0.74040]	[1.27317]	[3.87963]	[3.54327]	[1.51757]
D(HELTEX(-1))	-6.884707	0.451561	-0.152185	-26.61267	0.308795
	(12.7825)	(0.38557)	(0.28279)	(8.94679)	(0.24751)
	[-0.53861]	[1.17114]	[-0.53815]	[-2.97455]	[1.24762]
C	438.0425	2.241972	-0.071225	203.0096	-0.664408
	(251.711)	(7.59267)	(5.56872)	(176.179)	(4.87390)
	[1.74026]	[0.29528]	[-0.01279]	[1.15229]	[-0.13632]
R-squared	0.614882	0.266108	0.610461	0.602066	0.589959
Adj. R-squared	0.535203	0.114268	0.529867	0.519734	0.505123
F-statistic	7.716936	1.752558	7.574509	7.312725	6.954101

Log likelihood	-298.3291	-172.2896	-161.1289	-285.4850	-156.3312

Source: Author's Computation Using E-Views

4.5 Post Estimation Results

4.5.1 VEC Lag Exclusion Wald Tests

This section is devoted to the empirical investigation of the lag structure that was utilised in estimating the parameters of the Vector Error Correction Models reported above. Specifically, the VEC lag exclusion Wald test is a diagnostic test that helps in determining the suitability of the lag structure considered in the VECM framework. Thus, is indicates whether there was a lag exclusion bias in the process of obtaining the coefficients of the VECM.

From the result of the VEC lag exclusion Wald tests, Lag 1, 1 differenced variable used in the estimation process was the optimal lag structure as revealed by the statistical significance of the Chi-squared test statistics (from the individual and Joint estimations) as well as their associated probability values. The results of the VEC lag exclusion Wald tests are reported in Table 4.6 below.

Table 4.6: VEC Lag Exclusion Wald Tests

Chi-squared test statistics for lag exclusion:
Numbers in [ ] are p-values

	D(RGDP)	D(DEFEX)	D(EDUEX)	D(EXREV)	D(HELTEX)	Joint
DLag 1	38.10502 [0.000000]	7.933575 [0.159935]	43.73729 [0.000000]	37.07700 [0.000000]	34.43312 [0.000000]	448.7441 [0.000000]
df	5	5	5	5	5	25

Source: Author's Computation Using E-Views

4.5.2. VEC Residual Portmanteau Tests for Autocorrelations

Autocorrelation test is a diagnostic check used to determine when the residuals generated from estimating the parameters in a regression model are serially correlated or otherwise. When there is autocorrelation in an estimated result, the efficiency, consistency and reliability of the estimates are inherently jeopardized. Consequently, this study computed the multivariate Box-Pierce also known as Ljung/Box Q-statistics for testing the residual serial correlation up to lag order 10. The Q-statistics and its counterpart adjusted Q-statistics were simultaneously reported alongside their corresponding probability values. From the result, the Null hypothesis of No Serial Correlation was sustained over the estimation period. Table 4.7 specifically reports the VEC Residual Portmanteau Tests for Autocorrelations below.

Table 4.7: VEC Residual Portmanteau Tests for Autocorrelations
Null Hypothesis: no residual autocorrelations up to lag h
Included observations: 36

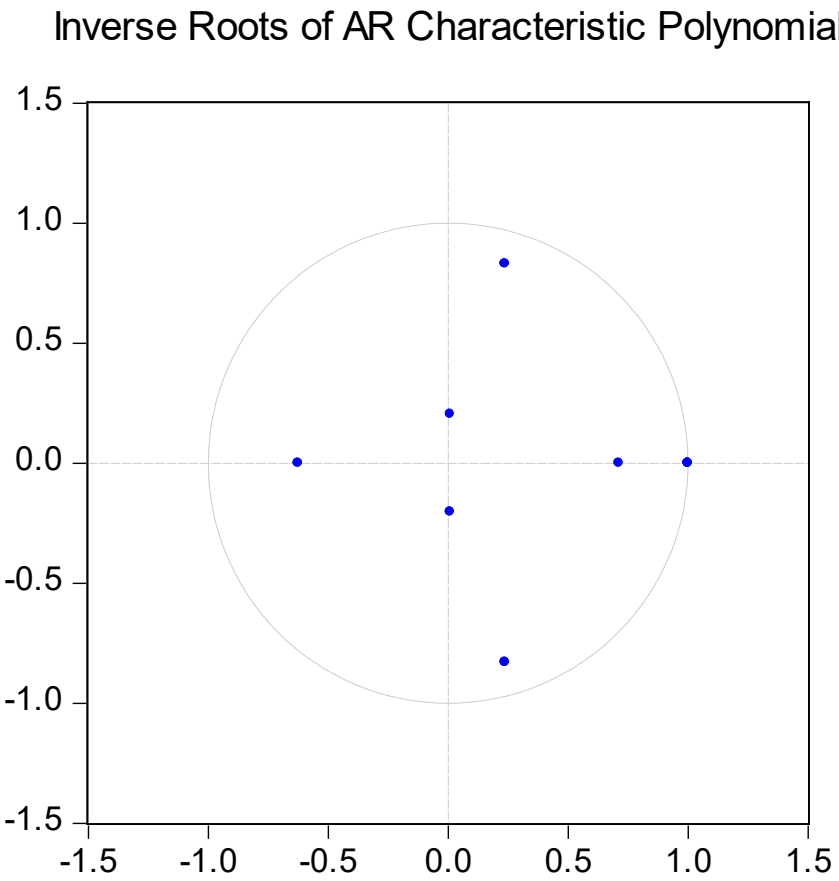
Lags	Q-Stat	Prob.	Adj Q-Stat	Prob.	df
1	29.51073	NA*	30.35390	NA*	NA*
2	51.87405	0.2236	54.03271	0.1675	45
3	72.59380	0.3925	76.63607	0.2743	70
4	96.96791	0.4246	104.0569	0.2466	95
5	114.7625	0.6179	124.7216	0.3655	120
6	128.2738	0.8372	140.9352	0.5799	145
7	154.8252	0.7917	173.8956	0.4029	170
8	174.0947	0.8565	198.6706	0.4135	195
9	187.7085	0.9441	216.8224	0.5479	220
10	208.2699	0.9573	245.2919	0.4827	245

*The test is valid only for lags larger than the VAR lag order.
df is degrees of freedom for (approximate) chi-square distribution
Source: Author's Computation Using E-Views

4.5.3 Model Stability Test: Inverse Roots of AR Characteristic Polynomial

Figure 1 reports the VEC Stability Test. From the result, all Inverse Roots of AR Characteristic Polynomial lie inside the circle, thus indicating that, the VEC model is stable.

Figure 1: Model Stability Test: Inverse Roots of AR Characteristic Polynomial



Source: Author's Computation Using E-Views

4.5.4 Structural Stability Appraisal: Forecast Error Variance Decomposition and Impulse Response Function

The study further considered the analysis of the structural stability by utilizing the forecast error variance decomposition (FEVD) and its counterpart Impulse Response Function (IRF), which are very important in discussing transmission mechanisms. FEVD indicates the fraction of unexpected shocks in a variable that is linked to its own innovations as well as the shocks originating from other series in the structural system while IRF reveals the dynamic responses of a variable to an innovation due to another variable during the course of assessments. The FEVD and IRF results are reported in Table 4.8 through table 4.9 respectively.

Forecast Error Variance Decomposition

Estimates of the forecast error variance decomposition of education expenditure, health expenditure, external reserves, defence expenditure and real gross domestic product were generated over lengthy period of 15years. The 15-year forecast period was considered in order to capture the various economic reforms that have taken place in Nigeria and the results were obtained and reported in Table 4.8. From the results, real GDP accounted for 100 percent of own shocks, while defence expenditure, education expenditure and external reserves, health expenditure accounted for 0.00 percent of the total shocks in GDP respectively, in the first year.

Similarly, it was found that, GDP accounted for 98.21percent of own innovations in the seventh year, while defence expenditure, education expenditure and external reserves, health expenditure accounted for about 0.26percent, 0.28percent, 0.81percent and 0.44 percent of the total shocks in GDP in that same year. However, as of year 15, own shocks triggered about 98.34percent of the dynamics in GDP, while shocks originating from defence expenditure, education expenditure and external reserves, health expenditure accounted for

about 0.14percent, 0.17percent, 1.04percent and 0.31percent of the remaining dynamics in GDP on year-by-year basis in that same period.

From the result also, defence expenditure accounted for 99.63 percent of own shocks, while RGDP, education expenditure and external reserves, health expenditure accounted for about 0.37percent, 0.00percent, 0.00percent and 0.00percent of the total shocks in defence expenditure respectively, in the first year. In the same way, it was found that, defence expenditure accounted for 72.93percent of own innovations in the seventh year, while RGDP, education expenditure and external reserves, health expenditure accounted for about 17.80percent, 1.73percent, 7.12percent and 0.43percent of the total shocks in defence expenditure in that same year.

However, as of year 15, own shocks triggered about 63.08percent of the dynamics in defence expenditure, while shocks originating from RGDP, education expenditure and external reserves, health expenditure accounted for about 27.56percent, 1.47percent, 7.63percent and 0.27percent of the remaining dynamics in defence expenditure on year-by-year basis in that same period.

From the result also, education expenditure accounted for 35.85percent of own shocks, while RGDP, defence expenditure and external reserves, health expenditure accounted for about 5.39percent, 58.76percent, 0.00percent and 0.00percent of the total shocks in education expenditure respectively, in the first year. In the same way, it was found that, education expenditure accounted for as low as 3.10percent of own innovations in the seventh year, while RGDP, defence expenditure and external reserves, health expenditure accounted for about 16.92percent, 61.46percent, 17.76percent and 0.76percent of the total shocks in education expenditure in that same year.

However, as of year 15, own shocks triggered only1.61percent of the dynamics in education expenditure, while shocks originating from RGDP, defence expenditure and external reserves, health expenditure accounted for about 25.10percent, 54.21percent, 18.47percent and 0.62percent of the remaining dynamics in education expenditure on year-by-year basis in that same period.

The results further revealed that, external reserves accounted for 91.92percent of own shocks, while RGDP, defence expenditure and education expenditure, health expenditure accounted for about 0.03percent, 7.51percent, 0.54percent and 0.00percent of the total shocks in external reserves respectively, in the first year. Similarly, it was found that, external reserves accounted for 85.11percent of own innovations in the seventh year, while RGDP, defence expenditure and education expenditure, health expenditure accounted for about 1.42percent, 1.91percent, 7.04percent and 4.52percent of the total shocks in external reserves in that same year.

However, as of year 15, own shocks triggered 84.89percent of the dynamics in external reserves, while shocks originating from RGDP, defence expenditure and education expenditure, health expenditure accounted for about 1.89percent, 1.30percent, 7.40percent and 4.51percent of the remaining dynamics in external reserves on year-by-year basis in that same period.

From the result also, health expenditure accounted for 14.08percent of own shocks, while RGDP, defence expenditure and external reserves, education expenditure accounted for about 1.22percent, 57.23percent, 2.58percent and 24.90percent of the total shocks in health expenditure respectively, in the first year. In the same way, it was found that, health expenditure accounted for as low as 2.53percent of own innovations in the seventh year, while RGDP, defence expenditure and external reserves, education expenditure accounted for

about 5.82percent, 56.33percent, 0.41percent and 34.91percent of the total shocks in health expenditure in that same year.

However, as of year 15, own shocks triggered only 1.95percent of the dynamics in health expenditure, while shocks originating from RGDP, defence expenditure and external reserves, education expenditure accounted for about 10.46percent, 50.79percent, 0.20percent and 36.60percent of the remaining dynamics in health expenditure on year-by-year basis in that same period. Estimates of the forecast error variance decomposition of education expenditure, health expenditure, external reserves, defence expenditure and real gross domestic product over lengthy period of 15years in Nigeria are reported in Table 4.8 below.

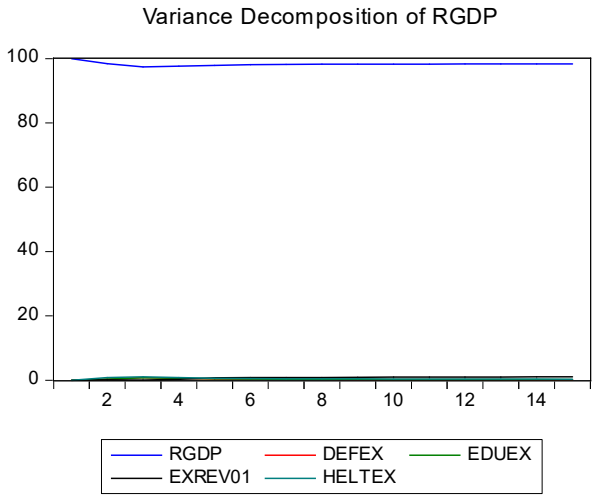
Table 4.8: Forecast Error Variance Decomposition

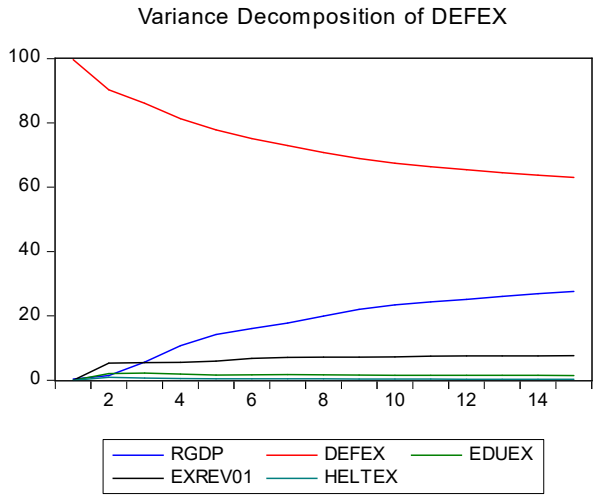
Variance Decomposition of RGDP:						
Period	S.E.	RGDP	DEFEX	EDUEX	EXREV	HELTEX
1	1070.73	100.00	0.00	0.00	0.00	0.00
2	2230.42	98.42	0.29	0.35	0.09	0.85
3	3361.62	97.40	0.79	0.70	0.06	1.05
4	4350.49	97.67	0.56	0.62	0.31	0.85
5	5251.64	97.85	0.38	0.44	0.72	0.61
6	6130.77	98.07	0.28	0.33	0.84	0.48
7	6996.52	98.21	0.26	0.28	0.81	0.44
8	7812.81	98.23	0.25	0.28	0.80	0.44
9	8556.88	98.24	0.23	0.26	0.87	0.41
10	9247.85	98.26	0.20	0.23	0.95	0.37
11	9911.10	98.29	0.18	0.20	0.99	0.34
12	10552.83	98.32	0.17	0.19	0.98	0.34
13	11163.10	98.33	0.16	0.19	0.99	0.33
14	11737.26	98.33	0.15	0.18	1.01	0.32
15	12283.85	98.34	0.14	0.17	1.04	0.31
Variance Decomposition of DEFEX:						
Period	S.E.	RGDP	DEFEX	EDUEX	EXREV	HELTEX
1	32.30	0.37	99.63	0.00	0.00	0.00
2	46.92	1.44	90.26	2.06	5.33	0.91
3	57.18	5.60	86.08	2.19	5.44	0.69
4	65.20	10.71	81.34	1.86	5.56	0.53
5	73.44	14.17	77.83	1.62	5.96	0.42

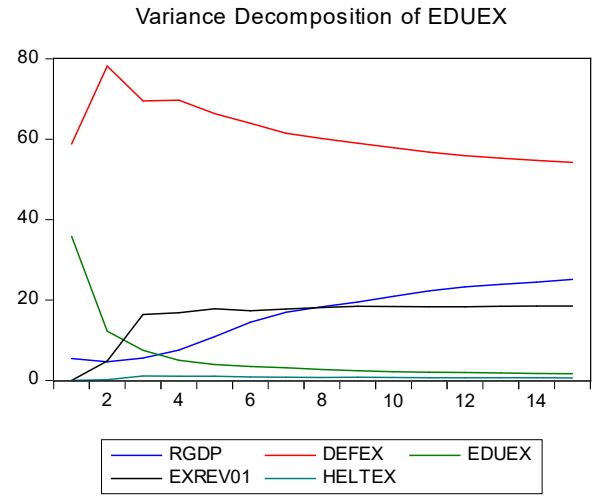
6	81.91	16.07	75.12	1.63	6.76	0.42
7	90.02	17.80	72.93	1.73	7.12	0.43
8	97.16	19.97	70.79	1.70	7.16	0.39
9	103.71	22.02	68.89	1.61	7.14	0.35
10	110.10	23.43	67.45	1.54	7.27	0.32
11	116.44	24.32	66.38	1.54	7.45	0.31
12	122.49	25.15	65.44	1.55	7.55	0.31
13	128.13	26.08	64.54	1.53	7.56	0.29
14	133.48	26.93	63.72	1.49	7.57	0.28
15	138.70	27.56	63.08	1.47	7.63	0.27
Variance Decomposition of EDUEX:						
Period	S.E.	RGDP	DEFEX	EDUEX	EXREV	HELTEX
1	23.69	5.39	58.76	35.85	0.00	0.00
2	46.54	4.63	78.19	12.22	4.77	0.19
3	60.45	5.52	69.53	7.49	16.40	1.07
4	74.67	7.53	69.68	4.97	16.78	1.04
5	85.13	10.87	66.37	3.92	17.80	1.03
6	94.85	14.46	63.91	3.45	17.33	0.85
7	103.97	16.92	61.46	3.10	17.76	0.76
8	113.32	18.30	60.15	2.71	18.11	0.74
9	122.09	19.49	58.98	2.38	18.40	0.76
10	130.11	20.90	57.88	2.16	18.34	0.72
11	137.53	22.26	56.74	2.04	18.29	0.67
12	144.76	23.23	55.88	1.93	18.32	0.64
13	151.86	23.87	55.25	1.80	18.44	0.64
14	158.67	24.46	54.73	1.69	18.48	0.63
15	165.09	25.10	54.21	1.61	18.47	0.62
Variance Decomposition of EXREV:						
Period	S.E.	RGDP	DEFEX	EDUEX	EXREV	HELTEX
1	749.43	0.03	7.51	0.54	91.92	0.00
2	1273.03	0.17	2.60	1.46	95.03	0.74
3	1893.71	0.74	2.47	5.01	87.45	4.32
4	2325.82	0.53	3.04	7.63	83.21	5.58
5	2567.86	0.79	2.51	8.02	83.35	5.33
6	2758.97	1.37	2.23	7.48	84.14	4.79
7	2988.20	1.42	1.91	7.04	85.11	4.52
8	3255.30	1.26	1.90	7.21	84.91	4.72
9	3489.21	1.24	1.86	7.56	84.47	4.87
10	3667.99	1.47	1.70	7.58	84.49	4.76
11	3832.15	1.71	1.55	7.40	84.75	4.58
12	4010.27	1.77	1.45	7.28	85.00	4.50
13	4198.29	1.75	1.42	7.33	84.96	4.55

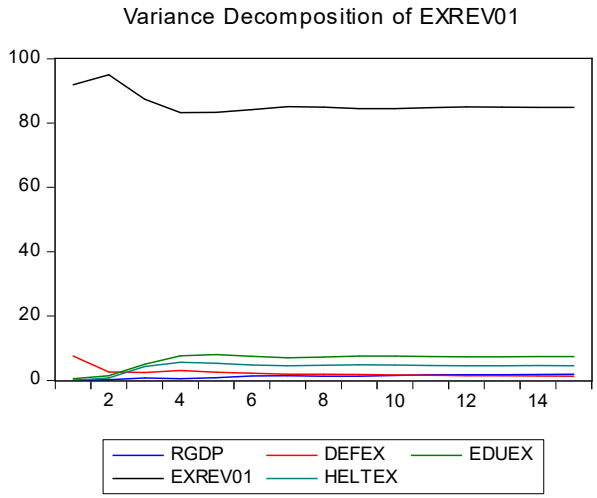
14	4369.80	1.78	1.38	7.41	84.86	4.57
15	4520.01	1.89	1.30	7.40	84.89	4.51
Variance Decomposition of HELTEX:						
Period	S.E.	RGDP	DEFEX	EDUEX	EXREV	HELTEX
1	20.73	1.22	57.23	2.58	24.90	14.08
2	37.88	1.18	78.25	0.83	15.52	4.22
3	45.48	2.58	64.20	0.76	29.05	3.42
4	55.24	3.28	63.42	0.58	30.22	2.50
5	64.83	3.38	58.82	0.52	34.38	2.90
6	72.96	4.28	58.17	0.48	34.34	2.75
7	79.05	5.82	56.33	0.41	34.91	2.53
8	84.84	7.16	55.11	0.37	35.07	2.29
9	90.92	7.79	53.96	0.33	35.74	2.20
10	97.11	8.14	53.33	0.30	36.05	2.19
11	102.64	8.67	52.70	0.28	36.20	2.16
12	107.54	9.36	52.11	0.25	36.21	2.07
13	112.26	9.91	51.53	0.23	36.33	1.99
14	117.07	10.23	51.11	0.22	36.48	1.96
15	121.80	10.46	50.79	0.20	36.60	1.95
Cholesky Ordering: RGDP DEFEX EDUEX EXREV HELTEX						

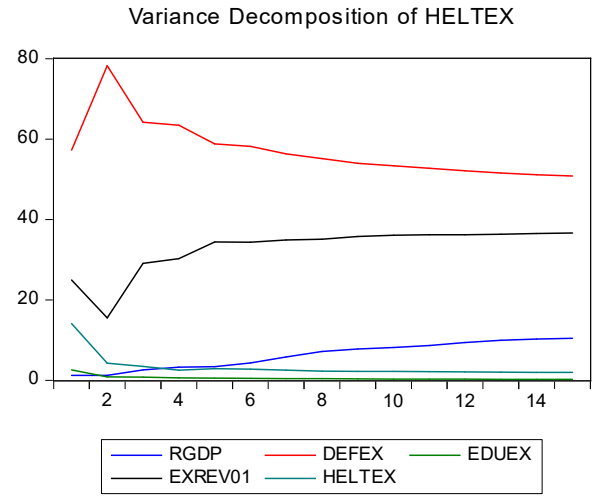
Source: Author's Computation Using E-Views











Source: Author's Computation Using E-Views

Impulse response function

Table 4.9 reports estimates from the impulse response function of all the macroeconomic variables against own shocks and the shocks resulting from other series over a fifteen-year forecast. From the results, GDP responded positively to own innovations as well as shock arising from education expenditure and external reserves throughout the 15-year forecast period. Its response to shocks originating from defence expenditure and health expenditure was however negative throughout the 15-year forecast period.

In addition, the response of defence expenditure to shocks arising from own innovations as well as innovation originating from real gross domestic product, defence expenditure and external reserves, health expenditure was positive, while its response to innovations due to education expenditure was negative throughout the 15-year forecast period. From the results also, education expenditure responded positively to own innovations as well as shock arising from real gross domestic product, defence expenditure and external reserves, health expenditure throughout the 15-year forecast period.

Furthermore, the response of external reserves to shocks originating from own innovationsand health expenditure was positive, while its response to shocks in education expenditure was negative throughout the 15-year forecast period. Its response to variations in real gross domestic product and defence expenditure alternated between negative and positive. For instance, its response to shocks in real GDP was negative in year 2 up to year 4, but however returned positive in year 1 as well as year 5throughyear 15. Similarly, its response to shocks in defence expenditure was negative in year 1, year 2 and in year 6. It however returned positive from year 3 to year 5, as well as year 7 through year 15.

Finally, the response of health expenditure to own shocks and innovations in real gross domestic product, defence expenditure and external reserves was positive throughout the 15-year forecast period, while its response to education expenditure alternated between negative and positive. For instance, its response to shocks ineducation expenditure was positive between year 1 and year 4 after which it turned negative in year 5 and year 6.

However, the relationship further proved positive from year 7 to year 9 as well as year 12 and year 13, but returned negative from year 10 to year 11 as well as year 14 and year 15 respectively. Table 4.9 below reports estimates from the impulse response function of all the macroeconomic variables against own shocks and the shocks resulting from other series over the 15-year forecast.

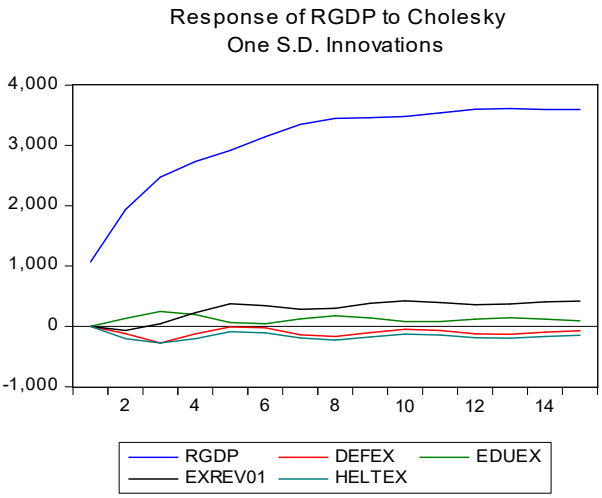
Table 4.9: Impulse Response Function

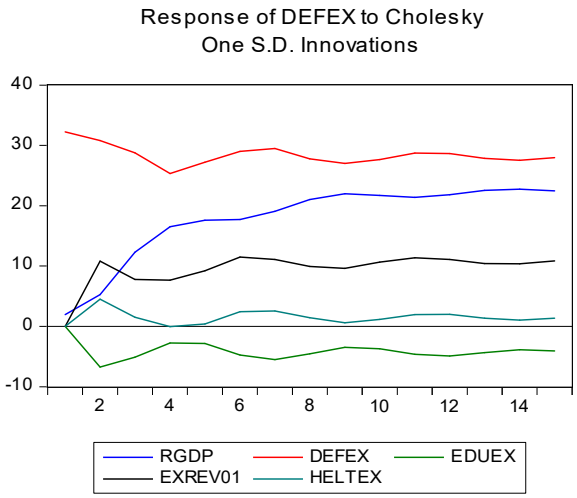
Response of RGDP:					
Period	RGDP	DEFEX	EDUEX	EXREV	HELTEX
1	1070.73	0.00	0.00	0.00	0.00
2	1936.42	-119.80	132.33	67.58	-205.28
3	2471.89	-273.95	247.71	44.55	-277.62
4	2734.77	-125.31	194.37	228.00	-204.55
5	2915.55	-10.37	63.93	375.15	-87.31
6	3142.40	-22.42	41.70	343.87	-106.85
7	3348.56	-139.99	121.81	283.06	-193.69
8	3447.80	-169.17	175.68	299.45	-228.66
9	3460.05	-105.43	138.43	383.11	-176.78
10	3478.25	-46.37	79.91	423.13	-129.38
11	3538.33	-69.72	78.44	394.42	-144.18
12	3597.15	-122.11	120.99	357.77	-187.95
13	3611.14	-131.08	141.65	368.89	-197.24
14	3596.15	-95.17	119.49	405.21	-169.57
15	3594.29	-71.96	93.22	417.68	-149.32
Response of DEFEX:					
Period	RGDP	DEFEX	EDUEX	EXREV	HELTEX
1	1.97	32.24	0.00	0.00	0.00
2	5.28	30.79	-6.74	10.83	4.49

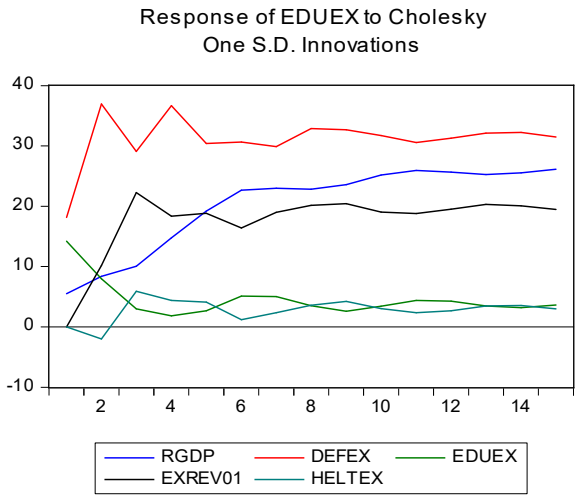
3	12.30	28.77	-5.13	7.79	1.52
4	16.50	25.34	-2.75	7.64	0.04
5	17.59	27.22	-2.82	9.22	0.41
6	17.70	29.00	-4.74	11.49	2.41
7	19.09	29.50	-5.51	11.10	2.57
8	21.03	27.79	-4.54	9.93	1.42
9	22.00	27.00	-3.48	9.61	0.58
10	21.71	27.65	-3.73	10.64	1.14
11	21.40	28.72	-4.64	11.37	1.96
12	21.82	28.63	-4.89	11.08	1.97
13	22.53	27.86	-4.34	10.42	1.34
14	22.74	27.52	-3.89	10.38	1.04
15	22.44	27.96	-4.09	10.86	1.36
Response of EDUEX:					
Period	RGDP	DEFEX	EDUEX	EXREV	HELTEX
1	5.50	18.16	14.18	0.00	0.00
2	8.37	36.93	7.97	10.17	2.00
3	10.06	29.10	3.00	22.27	5.91
4	14.76	36.67	1.84	18.34	4.37
5	19.18	30.41	2.68	18.83	4.11
6	22.66	30.65	5.11	16.39	1.20
7	22.99	29.90	5.01	18.99	2.35
8	22.81	32.88	3.50	20.14	3.58
9	23.56	32.67	2.59	20.44	4.22
10	25.16	31.72	3.42	19.02	3.03
11	25.93	30.57	4.39	18.81	2.34
12	25.65	31.27	4.28	19.52	2.67
13	25.25	32.13	3.47	20.30	3.48
14	25.53	32.22	3.18	20.05	3.53
15	26.13	31.50	3.63	19.47	3.00
Response of EXREV:					
Period	RGDP	DEFEX	EDUEX	EXREV	HELTEX
1	12.15	-205.39	-55.03	718.53	0.00
2	-51.35	-4.78	-143.54	1011.82	109.17
3	-153.79	215.62	-395.01	1263.41	378.38
4	-45.77	275.48	-482.90	1168.40	383.36
5	152.88	31.18	-341.00	997.29	221.92
6	228.34	-65.93	-199.74	953.24	113.93
7	149.44	32.40	-243.61	1093.17	199.17
8	85.66	175.60	-367.72	1182.43	309.99

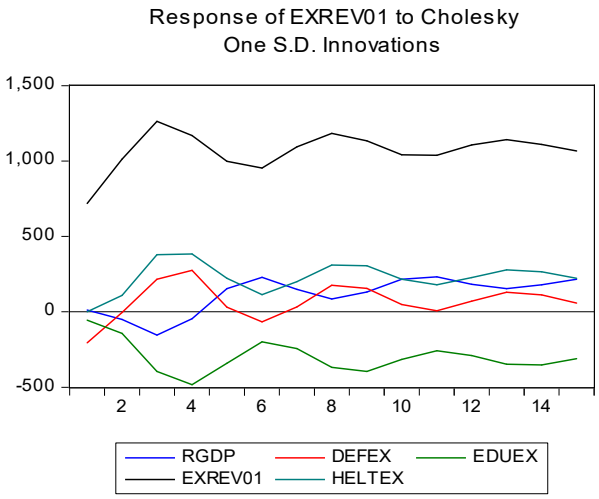
9	131.87	155.43	-395.96	1134.04	305.30
10	216.38	48.42	-315.98	1041.05	216.35
11	231.27	6.79	-257.69	1038.69	179.96
12	182.78	70.50	-289.35	1105.93	227.43
13	153.36	129.60	-348.22	1142.14	278.08
14	179.30	111.60	-352.49	1108.97	266.12
15	216.02	58.08	-310.75	1067.26	223.02
Response of HELTEX:					
Period	RGDP	DEFEX	EDUEX	EXREV	HELTEX
1	2.29	15.68	3.33	10.34	7.78
2	3.42	29.61	0.92	10.75	0.18
3	6.03	14.31	1.95	19.44	3.18
4	6.84	24.65	1.39	17.93	2.40
5	6.47	23.17	-2.03	22.86	6.75
6	9.25	24.99	-1.89	19.57	4.91
7	11.66	20.57	0.01	18.81	3.49
8	12.32	21.15	1.23	18.51	2.48
9	11.33	22.21	0.10	20.73	4.12
10	11.13	23.85	-1.18	21.10	4.99
11	12.06	22.86	-1.07	20.34	4.58
12	13.01	21.78	0.01	19.36	3.49
13	12.93	21.63	0.39	19.75	3.43
14	12.36	22.59	-0.21	20.54	4.11
15	12.23	23.02	-0.80	20.74	4.55
Cholesky Ordering: RGDP DEFEX EDUEX EXREV HELTEX					

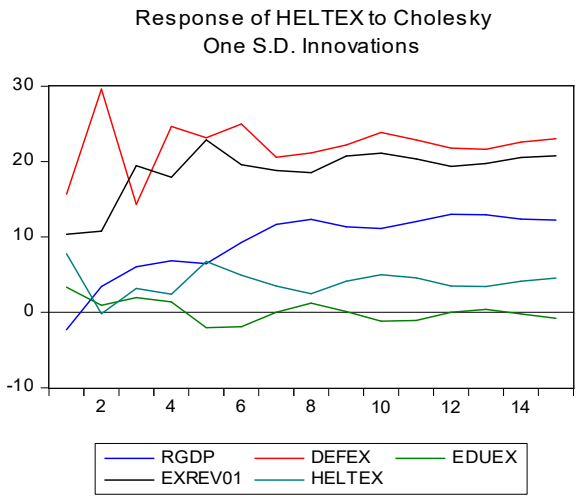
Source: Author's Computation Using E-Views 11 (2020)











Source: Author's Computation Using E-Views 11 (2020)

4.5.5 Policy Implications of the Research Findings

The results obtained from the various estimation processes suggest a lotto relevant stakeholder in the country. For instance, the vector error correction estimates revealed that, the coefficients representing the error correction term were statistically significant at 1 percent test level from the health expenditure and external reserves models. Also, it was negative (correctly signed) in education expenditure, health expenditure and real gross domestic product specifications.

This is very important in the area of macroeconomic policy assessment, particularly in this period of economic uncertainties that we are currently in. The result from the VECM analysis further revealed the relevance of these variables as they interrelate. The outputs of the forecast error variance decomposition and impulse response function, go a long way in enhancing macroeconomic forecasting, which in turns stimulates the formulation of relevant economic policies.

CHAPTER FIVE

SUMMARY, RECOMAMENDATIONS AND CONCLUSION

5.1 Summary of Findings

This research has provided evidence on the impact of government expenditure and external resources on economic growth by empirically investigating the relationship between economic growth and government expenditure and external resouces in Nigeria using annual time series data from 1981 to 2018. Some statistical and econometric tools were employed to explore the relationship between these variables. The study made use of descriptive statistics, correlation, aauanit root, co-integration, error correction, pair wise granger causality, forecast error variance decomposition, impulse respnse and parameter stability.

Estimaton was faciliated by the use of statistical software programme-econometric views [E-views 8.0] in order to analyze the impact of government expenditure and external reserves on the growth of the Nigerian economy.Evaluation of parameter estimates and test of research hypothesis was based on relevant statisitcs from regression result.

The findings revealed that an increase in health expenditure by 1 unit will lead to decrease in Real Gross Domestic product by 0.64 unit. Also the findings revealed that an increase in defence expenditure by 1 unit will lead to an increase to real gross domestic product by 0.48 unit.

An increse in education expenditure by 1 unit will lead to an increase in real gross domestic product by 0.84unit. An increase in external reserves by 1 unit will lead to an increase in real gross domestic product by 2.07unit.

In order for government expenditure and external reserves to have a significant impact on economic growth, the following recommendations are given as follows:

5.2 Recommendations

Since the study has found a relationship between government and external reserves on economic government, it is thus recommended that;

i. Government should increase budgeting allocation and stimulate more funding channels to education and health sectors of the economy. At least, government should adopt the twenty six percent (26%) bench mark recommended by the United Nations. To achieve this, government should allocate more to capital expenditure on education and health than to recurent expenditure of same in order to improve the quality of facilities, materials and equipment in the education and health sectors adequately. Also donor agencies like the World Bank, United Nations Development Programme (UNDP), United Nations Education Scientific and Cultural Organization (UNESCO), etc, should also be encouraged to inject funds into the educational and health sectors.

ii. A trained labour that is unemployed cannot contribute meaningfully to economic growth. Improvement in employment also encourages physical capital formation. Therefore government should increase employment opportunties by creating an enabling environment for entrepreneurship to thrive. There is also the need to

improve on the pay package of the health workers and teachers at all levels of education.

iii. Finally, government should institute a genuine effort to fight corruption in all its ramifications. This calls for transparency, morality, ethical and accountability.

iv. On the part of public office holders, this can be achieved by giving more autonomy in financial management in public educational and health institutions. For instance, through autonomy, institutions of learning and healing could improve their financial situation by improving the effeciency and effectivenss of resources use and cutting costs.

5.3 Conclusion

This study examined the impact of government and external reserves on economics growth. Based on the quantitative exploration of the relationshp between economic growth and the government expenditure and external reserve and the findings thereof, this study concludes that there is a clear-out and obvious relationship between government expenditure and external reserves and economic growth.

Also, government expenditure on education and health jointly exert signficant effect on economic growth, although, expenditure on health was found to be negative. Also external reserves is also found to positively impact on economic growth.

Further, the government has a major responsibility of providing quality education and satisfactory health care delivery, with the private sector playing a complementary role.

Genuine action to back meaningful government expenditure and external reserves effort needs to be put in place to give effects to the importance of government expenditure and external reserves noted in the past and present national plans of the country.

REFERENCES

Archer, B. & Halliday, J. (1998). The rationale for holding foreign currency reserves. Reserve bank of New Zealand Bulletin, vol. 61 No. 4.pp, 346-354.

CBN (1997). Statistical Bulletin, vol. 10, December

CBN (2007). Building and managing external reserves for economic development. The CBN Bullion vol. 31, No. 2.

Dickey, D. A. and Fuller, W.A. (1981), Likelihood ratio statistics for autoregressive time series with a unit root. *Econometrica*, 49(4), 1057-1072. doi.org/10.1016/j.eneco.2010.08.003.

Enders, W. (1995). *Applied Econometric Time series*. New York: John Wiley.

Friedman, M. (1978)." The limitations of tax limitation" policy review, summary T-14.

George, O. (2007). External reserves management in Nigeria, the billion publication of the CBN, vol. 31. No. 2 April-June.

Granger, C. W. J. and Newbold, P. (1977). The Time Series Approach to Econometric Model Building. In C.A. Sims (ed.) New Methods in Business Cycle Research. Proceeding from a Conference at the Federal Reserve Bank of Minneapolis.

Granger, C. W. J., & Newbold, P. (1974). Spurious regressions in econometrics. *Journal of Econometrics,* 2, 111-120.

Humphres, N. (1990). "External reserves and management of risk" reserve bank of New Zealand bulletin, vol 53, pp 277-287.

Johannes, B., & Clemens, F. (2008). *Tax competition — greenfield investment versus mergers and acquisitions* (Working paper No. 2247). CESifo.

Johansen, S. (1988), Statistical analysis of cointegration vectors. *Journal of Economic Dynamics and Control*, 12(2–3), 231-254.

Johansen, S. and Juselius, K. (1990). Maximum Likelihood Estimation and Inference on Co-integration-With Applications to the Demand for Money. *Oxford Bulletin of Economics and Statistics* 52: 169-210.

Kalim, R. and Hassan, M. S. (2013). Military expenditure and poverty in Pakistan: A complex phenomenon. Proceedings of 3rd International Conference on Business, School of Business and Economics, University of Management and technology, Lahore, Pakistan.

Kaynes, J.M. (1936). General theory of employment, interest and money London: Macmillan.

Mitchel, D.J. (2005). "The impact of government on economic growth". The heritage foundation, Washington DC.

Peacock, A. & J. Wiseman (1979). "Approaches to the analysis of government expenditures growth". Public finance quarterly, Jan. 3-23.

Pesaran, M. H. (1997). The role of economic theory in modeling the long-run. *The Economic Journal*, 10, 178-191

Phillips, P. C. B., and Perron P. (1988), Testing for a unit root in time series regression. *Biometrika*, 75(2), 335-346.

Suleiman, A.S. Aruwa (2009). "Public finances and economic growth in Nigeria: Fiscal policy.

Tanzi, V. (1994). "Public finance in developing countries", Edward Elgar publishing ltd, England.

UNCTAD (2007). Activities undertaken by UNCTAD in favour of Africa, trade and development board, 42nd Executive session, Geneva, June 27.

Wagner, A., (1883). "Three extracts on public finance". Translated and reprinted in R.A. Musgrave and A.T. Peacock (eds) classics in the theory of public finance, London: Macmillan, 1958.