THE IMPACT OF EDUCATION EXPENDITURE ON UNEMPLOYMENTIN NIGERIA (1970 - 2015)

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CERTIFICATION

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DEDICATION

I dedicate this work to the author and finisher of our faith, the only God who knows the end even from the beginning (the Almighty God); and to my renowned parents MR. and MRS. ADEBAYO for their support throughout the pursuit of my academic career.I also extend my dedication to my outstanding Supervisor Mr Ephraim Ugwu for his fatherlysupport.

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TABLE OF CONTENT

CHAPTER THREE

CHAPTER FOUR

CHAPTER FIVE

ABSTRACT

This study analyses the impact of education expenditure on unemployment growth in Nigeria from 1970 to 2016. Using Ordinary Least Square (OLS), unit root, cointegration and Granger causality test procedures, the descriptive statistics result indicates that all the variable have positive mean values. The standard deviation result indicates that the highest standard deviation is recorded by the TDEBT while the least standard deviation is recorded by UNEMPR. The regression result of the variables shows that the coefficient of the variables, LOG (M2) and EXCH indicate positive signs.The coefficient of the variables, EDUEXP, CPI and TDEBT show negative signs. Statistically, the t-statistic result show that two variables, LOG (AGRICEXP) and LOG (TRANSEXP) are significant statistically. The F-statistics result shows that the overall estimate of the regression has a good fit and is statistically ssignificant. The R^2 - (R-squared) result indicates that the independent variables explain the dependent variable to the tune of 56%. The Durbin Watson (DW) statistics shows that the overall regression is statistically significance. The unit root test result indicate that all the variables under consideration, are stationary and integrated of order one at 5% level of significance. The trace likelihood ratio and maximum eigenvalue results of the cointegration test indicate four and two cointegrating equations respectively at 5% significant level. The multicolinearity test result shows that there is no multicolinearity among the variables under consideration. The Granger Causality test result shows that there is no direction of causality between EDUEXP and UNEMPR, M2 and UNEMPR. A uni-directional causality existing from CPI to UNEMPR. A uni-directional causality exists from TDEBT to UNEMPR. The result also shows a uni-directional causality from EXCH and UNEMPR. The study therefore recommend that there is need for the government to increase their funding in the educational sector.

CHAPTER ONE

1.0. INTRODUCTION

1.1. Background to the study

There is increasing empirical evidence that education matters, not only for the personal development, health status, social inclusion and labour market prospects of individual learners, but also for the broader economic performance of countries (The Organization for Economic Co-operation and Development(OECD, 2003). As the world has entered the age of the knowledge economy, education and human capital generally play a critical role in driving economic growth in both the world's most advanced economies and the emerging economies that are currently experiencing profound transformations and periods of rapid growth and development.(OECD,2006).Educational expenditure as an aspect of educational finance deals with how the amount allocated to education is spent. It may be used not only as an instrument for analyzing financial aspects of education, but also as a parameter for projecting the trends of an educational system (Hallak, 1969). Thus, one of the methods of determining the flow of educational finance is to study the time trend of educational expenditure. Supporting this point, Adesina (1982) reported that expenditure on education is determined by budgetary allocations. The measurement of expenditure includes the expenditure by pupils, their families, charities and the State.

The total costs of education to an individual are divided into monetary expenditures borne by him and opportunity costs while the true economic cost of education is the cost of acting in a different manner, that is, foregoing the opportunity of doing one thing in order to do something else (Vaizey 1962).In developing countries, Mingat and Tan (1986) reported that the share of education in public spending has already become very large, reaching between one tenth and one-third of public budget. Considering the sources of financing education, Vaizey (1961) raised the question, "how can education be financed?'Answering the question, he argued that the financing of education can be derived from fees paid by parents, repayable loans to parents, local government taxes, general budgetary funds, gifts and remission of taxes. Apart from direct tax, Vaizey (1962) mentioned indirect tax and property

tax. According to him, indirect taxation is a growing source of public finance while property tax is an important source of educational finance in countries with a decentralized educational system. Agreeing with this argument, United Nations Economic Social Commission (1968) remarked that in developed countries, education is entirely financed by taxation, but in developing countries other sources could be explored.Wosley (2012) in his article on the increasing importance of education in any economy, stated that the importance of education cannot be over emphasized. Investment in education and training is imperative to propel any economy to higher level of productivity and accelerate the rate of economic growth. Education increases the number of knowledgeable workers by improving their skills and preparing them adequately for new challenges. More so, education enhances occupational mobility, reduces the level of unemployment in the economy, increases the earning capacity and productivity of the country's work force, improves access to health information which will increase life expectancy and, at the same time manage the fertility rate (Wosley, 2012). According to franklin (2012) education is capable of enhancing the efficient production of goods and services by ensuring thorough screening whereby the best people are selected and made available for the world of research. Investment in knowledge pays the best interest.

Education has also been found to play a crucial role in the adoption of new agricultural technologies (Foster and Rosen Zweig, 1996). In addition, education is seen as a means to improve health and reduce fertility (Schultz, 1999 and 2002; Strauss and Thomas, 1995), being an intrinsic good in itself (Sen, 1999). On the other hand, Behrman (1999), and Glewwe (2002) in their recent reviews of the microeconomic literature on the impact of education on income and other outcomes in developing countries, stated that support for education among economists is matched by equal or greater enthusiasm among development policymakers (United Nations Development Programme, 1990).One example demonstrating the focus policymakers have placed on education is that two of the eight Millennium Development Goals (MDGs) adopted at the United Nations Millennium Summit in September 2000 focus on education: first, for all children to complete primary school by 2015, and second, to achieve gender equality at all levels of education by

2015(Akpan,2009). It is important to note also that the budgetary allocation to the education sector reduced to 8.7 and 7 per cent in 2000 and 2001 respectively and 8.5 in 2002 (Akpan, 2009). Unemployment is generally agreed to be a symptom of macroeconomic disorder which could be "voluntary" or "involuntary". When it is said voluntary it means a condition where somebody chooses not to work because they have a means of support other than employment example is the idle rich man. Then again, automatic unemployment exists when people will work at the overall rate of pay however not able to look for some kind of employment. (Anyanwu 1995).Unemployment rate can be defined by either the national definition, the ILO harmonized definition, or the OECD harmonized definition. The OECD harmonized unemployment rate gives the number of unemployed persons as a percentage of the labor force (the total number of people employed plus unemployed). [OECD Main Economic Indicators, OECD, monthly] As defined by the International Labour Organization, "unemployed workers" are those who are currently not working but are willing and able to work for pay, currently available to work, and have actively searched for work. [ILO].Unemployment problem in Nigeria has different dimensions. There are underemployment cases in which people receive incomes that are inadequate to support their basic needs, in terms of food, clothing and shelter. There are also cases of disguised unemployment where people take up jobs that are below their educational attainment and experience. The worst case of all is that of people seeking for job opportunities but who cannot find any either in the public or the private sector. Some people are willing and ready to set up enterprises themselves and engage in one type of economic activity or the other but are constrained by the prevailing poor macroeconomic environment. All these have contributed significantly to the high level of unemployment and poverty in Africa (Oni, 2006).

There are many types of unemployment in Nigeria: structural unemployment, cyclical unemployment, frictional unemployment and classical unemployment. Structural unemployment occurs due to globalization and technological advancement which replace the workers with the machinery that causes the layoffs in the economy. It is also caused by mismatch of skills of workers from the underlying jobs. Cyclical unemployment is also

known as Keynesian unemployment; it occurs when the aggregate demand of the economy is not sufficient to give the jobs to everyone who wants to work, because aggregate supply of goods and services exceed from the aggregate demand that can discourage the production and consequently it reduces the workers. Frictional unemployment occurs when the skills of the workers are mismatched with the underlying jobs, it is like a structural unemployment but it is short run in nature while structural unemployment has long lasting effect. Classical unemployment arises when government set the wage rates above the equilibrium prices that cause labour to rush for the jobs in the labour market which exceeds from the existingvacancies. (Unemployment and Economic Growth in Nigeria, Kemi F. Akeju,Dayo B. Olanipekun 2012)

Figure1:   Diagrammatic representation of Nigeria's unemployment rate trend from 1980-2012
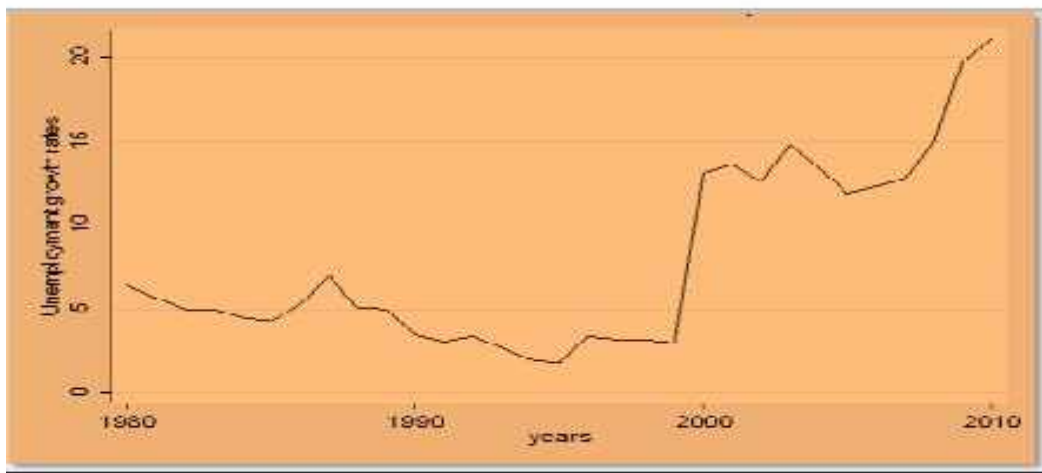
Analysis of employment data for the past years shows that the rate of new entrants into the labour market has not been uniform.The rate was on the increase from 2007 to 2009, but declined significantly from 2009 to 2010, and increased again from 2010 to 2011. "Within the five-year period, there has been an average of about 1.8 million new entrants into the active labour market per year" (NBS, 2011). Nigeria's unemployment rate increased to 23.9 percent in 2011 compared with 21.1 percent in 2010 and 19.7 percent in 2009, as revealed by the National Bureau of Statistics (NBS). The "Nigerian unemployment report 2011" prepared by the NBS shows that the rate is higher in the rural areas (25.6 percent) than in the

urban areas (17.1 percent). The rise in the unemployment rate was largely attributed to the increased number of school graduates with no matching job opportunities, a freeze on employment in many public and private sector institutions as well as the slow disbursement of the capital budget by the Federal Government. The result of the survey by International LabourOrganisation (ILO) in Nigeria shows that persons aged 0 to14 years constituted 39.6 percent, those aged between 15 and 64 (the economically active population), constituted 56.3 percent, while those aged 65 years and above constituted 4.2 percent. Before now, not a few economic watchers have queried the recorded Gross Domestic Product, GDP, growth rates in Nigeria, which over time are contrary to the growing rate of unemployment.For instance, GDP report for third-quarter of last year showed that the Nigerian economy, when measured by the real GDP on an aggregate basis, grew by 7.4 percent in the third-quarter of2011 as against 7.9 percent in the corresponding quarter of 2010. Amid this high rate of unemployment, the economic watchers have noticed that there is an increasing trend of disinterest by the emerging younger generation in highly labor-intensive works such as agriculture and factory work in preference for white collar jobs, resulting in many preferring to remain in the labour market rather than take up such jobs. Unemployment has been a major problem for most countries across the world.

1.2.STATEMENT OF PROBLEM

Despite the rising trend in government expenditure in Nigeria, it is paradoxical and worrisome to note that social economic indicators has shown gloomy pictures. Although the rate of economic growth has been impressive from 2000 to 2011 (with an average growth of 6.4 percent); the rate of unemployment has been on the increase rising from 1.8 percent in 1995 to 23.9 percent in 2011 (Central Bank of Nigeria (CBN) annual report). The situation in Nigeria between rising government expenditure and social economic indicators (especially unemployment rate) makes it unclear on the exact relationship between government expenditure and unemployment rate. Although, empirical literature on this issue have produced inconclusive results (Holden and Sparrman, 2013). Also, Adedayo (1988) argued that although enrolment is increasing at the primary, secondary and tertiary levels of Nigerian educational system, government's expenditure is decreasing proportionately. He observed a sharp drop in the total capital expenditures between 1975

and 1983 and remarked that this might not have been unconnected with the economic depression which was compounded by the structural adjustment programme. Urwick (1993) supported this argument and remarked that such harsh economic conditions could raise correspondingly difficult issues for educational management. Unemployment, therefore has achieved an exceptionally disturbing extent in Nigeria, with a more noteworthy number of the unemployment being essential and auxiliary school learners and college graduates. This circumstance as of late has been exacerbated by the expanding unemployment of experts, for example, investors, architects and specialists. The toll is inside the beneficial section of the Nigeria populace (Vision 2010). Therefore this research work aims at answering the following research questions;

(a) What are the impacts government spending on education on unemployment growth rate in Nigeria?

(b) What is the direction of causality between government expenditure on education and unemployment growth rate in Nigeria?

(C) Is there a long run relationship between government expenditure on education and unemployment growth rate in Nigeria?

1.3. Objectives of the Study

The major objective of this study is to evaluate the impacts of the government expenditure on education and unemployment rate in Nigeria covering the period of time between 1970-2015. The specific objectives of the study are:

(a)To evaluate the impact of government spending on educational sector in Nigeria.

(b)To examine the direction of causality between government expenditure on education and unemployment in Nigeria.

(c) To establish if there exista long run relationship between government expenditure on education and unemployment in Nigeria.

1.4.Research Question

(a)The research work aim to answer the question?

(b) What are the impacts government spending on education has on unemployment?

(c)To what extent has government spending on education impacted on unemployment outcome in Nigeria?

(d)What is the direction of causality between government expenditure on education and unemployment in Nigeria?

(e)Is there a long run relationship between government expenditure on education and unemployment in Nigeria?

1.5.The Significance of Study

This study will assist policy makers in designing and implementing policies targeted at alleviating unemployment and also illiteracy in Nigeria. Secondly, many researchers have conducted researches on unemployment and education in Nigeria, such as Olugbenga and Owoye, (2007),Egwaikhide and Ohwofasa,(2008) and Nurudeen and Usman, 2010, Ndiyo (2002) also talked on the"Paradox of education and Economic Growth in Nigeria" Babatunde and Adefabi (2005) investigate the long run relationship between education and economic growth in Nigeria from 1970 and 2003. Hence, the need for this study, is arguing that income increased government spending reduces unemployment. Very few focused on education expenditure and unemployment in Nigeria. This study intends to bridge the gap in literature and empirically investigate the relationships that exist between education expenditure and unemployment.

1.6. Scope of Study

This research focuses on the impact of government expenditure on unemployment, the choice of case study is based on the proximity consideration to which this study employs secondary data from 1970-2015. The choice of this study period is based on the availability of relevant data for the years under study.

1.7.Organisation of Study

This work has been divided into five chapters. Chapter one provides information on the introduction of the study. This chapter highlights; the background to the study, statement of

the problem, objective of the study, justification of the study, and finally, scheme of chapters. Chapter two is the literature review with particular emphasis on theoretical framework, review of theoretical literature on income inequality as a contributing factor of poverty, and review of related empirical literature.Chapter three presents methodology employed in carrying out the research. It provides information on the types and sources of data, variable measurement, model specification, and method of data analysis.Chapter four delineates on data analysis and presentation. With particular emphasis on data, analysis and presenting the results of various tests conducted. Chapter five provides summary, conclusion and recommendations.

1.8.Definition of Terms

(a)EDUCATION EXPENDITURES: Education expenditures are from public revenue sources (governments) and private revenue sources, and include current and capital expenditures. Private sources include payments from households for school-based expenses such as tuition, transportation fees, book rentals, and food services, as well as public funding via subsidies to households, private fees for education services, and other private spending that goes through the educational institution. The totaleducationexpenditures *as a* percentage *of GDP* measure allows for a comparison of countries' expenditures relative to their ability to finance education.

(b)GOVERNMENT SPENDING: Government spending or expenditure includes all government consumption, investment, and transfer payments. In national income accounting the acquisition by governments of goods and services for current use, to directly satisfy the individual or collective needs of the community, is classed as government final consumption expenditure. Government acquisition of goods and services intended to create future benefits, such as infrastructure investment or research spending, is classed as government investment (government gross capital formation). These two types of government spending, on final consumption and on gross capital formation, together constitute one of the major components of gross domestic product. Government spending can be financed by government borrowing, or taxes.

(C)UNEMPLOYMENT: The unemployment rate is a measure of the prevalence of unemployment and it is calculated as a percentage by dividing the number of unemployed individuals by all individuals currently in the labor force. During periods of recession, an economy usually experiences a relatively highunemployment rate. According to International Labour Organization report, more than 200 million people globally or 6% of the world's workforce were without a job in 2012.The state of being without any work both for an educated & uneducated person, for earning one's livelihood is meant by unemployment. Economists distinguish between various overlapping types of and theories of unemployment, including cyclical or Keynesian unemployment, frictional unemployment, structural unemployment and classical unemployment.

CHAPTER TWO

2.0. LITERATURE REVIEW

2.1. Introduction

This chapter reviews the conceptual issues, theoretical framework, as well as empirical studies on the impact of education expenditure on unemployment. In achieving this, the chapter is divided into five sections. Besides this introduction, section one discusses the conceptual issues, section two, the relevant theories on the link between education expenditure and unemployment, section three concentrates on empirical review of the nexus between income distribution and poverty, section four highlights some of the determinants of economic growth, and section five gives the theoretical framework.

2.2. Conceptual Issues

A conceptual framework is an analytical tool with several variations and contexts. It is used to create conceptual distinctions and make ideas clear. Therefore, this section focuses on the explanation of the major concepts used in the study.

2.2.1. Concept of Education and Education Expenditure

Education can play a major role in reducing poverty. According to the World Bank (2011), education is central to development. It promotes economic growth, national productivity and innovation, and values of democracy and social cohesion. Education is therefore commonly regarded as the most direct avenue to rescue a substantial number of people out of poverty

since there is likely to be more employment opportunities and higher wages for skilled workers. However, public spending on education has been low, being only 0.9 percent of the GNP in 2002 (World Bank, 2004).

Education has been considered as one of the most significant investments in human capital, It has been argued that education can affect employment rate through many different mechanisms. For instance, increasing the efficiency of the workforce, by reducing inequality, by promoting health, by reducing fertility levels, by creating better condition for goodgovernance, and by increasing the knowledge and the innovative capacity of an economy (Aghion et al., 1999; Castelló-Climentand Doménech, 2008; Lipset, 1960; Glaeser et al., 2004; Castelló-Climent, 2008; Benhabib and Spiegel, 1994;Hanushek and Woessmann, 2008).

Educational expenditure as an aspect of educational finance deals with how the amount allocated to education is spent. It may be used not only as an instrument for analyzing financial aspects of education, but also as a parameter for projecting the trends of an educational system (Hallak, 1969). Thus, one of the methods of determining the flow of educational finance is to study the time trend of educational expenditure. Supporting this point, Adesina (1982) reported that expenditure on education is determined by budgetary allocations. He described a budget as an estimate of revenues and expenditures for a given period of time, usually a twelve-month period called a financial year. The measurement of expenditure includes the expenditure by pupils, their families, charities and the State. The total costs of education to an individual are divided into monetary expenditures borne by him and opportunity costs while the true economic cost of education is the cost of acting in a different manner, that is, foregoing the opportunity of doing one thing in order to do something else (Vaizey 1962; Chan, Chen, and Steiner, 2002).

Thus, in developing countries, Mingat and Tan (1986) reported that the share of education in public spending has already become very large, reaching between one tenth and one-third of public budget. Supporting this argument, Tilak (1988) found in India, that public costs per pupil are very high. In Nigeria, Hinchliffe (1989) gave estimates of recurrent expenditures

per pupil in four States based on aggregate statistics of expenditures and enrolment. His findings showed that the private contribution to costs is higher in the Southern States and this partly explains why their public costs are lower in the Northern States. Contrary to what operates in many countries, Funding for the education sector depends on the overall availability of public revenue and the share of total public budget that is spent on education. The share of education is a key indicator of the overall commitment of federal, state and local governments to the development of educational provision in their respective jurisdictions.

There are four main sources of public funding for the public (non-federal) educationSector namely state governments, local government councils (LGCs), direct allocations from the federal government (through the UBE Intervention Fund and the Education Tax Fund) and international donors. Other funding sources are private individuals and organizations (including NGOs) and international donor agencies. The salaries of the teaching and the staff at government primary schools are the responsibility of local government education authorities (LGEAs). The total salary bill for primary school teachers and support staff is deducted as a first charge from the federal budget allocation for each LGEA and administered by SUBEB. In Nigeria, Hinchliffe (1989) gave estimates of recurrent expenditures per pupil in four States based on aggregate statistics of expenditures and enrolment. His findings showed that the private contribution to costs is higher in the Southern States and this partly explains why their public costs are lower in the Northern States. Contrary to what operates in many countries, Adedayo (1988) argued that although enrolment is increasing at the primary, secondary and tertiary levels of Nigerian educational system, government's expenditure is decreasing proportionately.

2.2.2 Stages of Educational Financing in Nigeria

Period 1953 –1980: The period 1953 to 1980 witnessed a lot of development in the financing of education in Nigeria. It was a period of the massive expansion of schools. It was a period of attainment of self-government by the various regional governments. It was a period when Nigeria attained its independence in 1960. It was also a period when the Federal and Regional Governments had constitutional roles for educational development.

19

Educational financing increased manifold especially with the takeover of schools by the new Federal and Regional Governments from the Missionaries and voluntary agencies. The First National Development Plan (1962-1966) which took place during this period made provision for the Federal Government to be responsible for education in the capital territory of Lagos and in some institutions of higher learning while the Regional governments had primary responsibility for education in their areas even though Federal Government still continued to assist in the funding of education in the Regions.

Period 1981 -2003: The financing of education in Nigeria as from 1981 was remarkably financed by the public sector. It was a period of educational expansion. It was a period when the public finance of education increased phenomenally. It was also a period when government was solely responsible for financing education in Nigeria although the amount spent on education might be small perhaps due to debt servicing. The same situation was noticed in other developing countries.

Notwithstanding, the Federal Government has increased its commitment towards the financing of education at all levels in the country as indicated in the Fourth National Development Plan (1981-1985). As such, the National Policy on Education (1998) emphasized that education in Nigerian is no more a private enterprise, but a huge venture that has witnessed government's complete intervention and active participation. Although the Nigerian Federal Government has taken education as an instrument for effecting national development, how far the policy has been implemented is subject to criticism.However, education at the primary, teacher and technical levels were free during this period while secondary school education was free in some States although fees otherwise known as education development levies were charged at one period or the other in many States. University education was however, not free. Apart from the tuition fees, students were still required to pay for other services. On an average, an average university student paid not less than #10,000.00 in a Session.

2.2.3. Concept of Unemployment

Keynesian Economist see unemployment as a situation in which the number of people able and are willing to work at prevailing wage exceeds the number of job available and at the

same time, firms are unable to sell all the goods they would like to sell (bannock et al 1998). When carefully analysed, the Keynesian unemployment largely applies to situations in Nigeria (Bello 2003).Here, unemployment can result to a situation where many Nigerians despite the fact that they are educated and has all it takes to be employed can still not find work to do.

 It can also mean that firms don't have what it takes to keep them in existence, especially the small scale ones till they are pushed out of the market resulting in the loss of more jobs, the long- term unemployment remains in the market for too long and thereby reducing his cause of job finding. Virtually, all countries exhibit negative direction dependence that is if one takes two unemployed people at random, one would expect that one with shorter unemployment duration to leave unemployment more quickly (Machine and manning 1998). According to olueye (2006) classical economist argued thatunemployment exist when unions maintain wages above their equilibrium level. When this happens, we have a situation of involuntary unemployment. Keynesian unemployment is the part of total unemployment could help mop up by using fiscal and monetary policy to boost aggregate demand (Olueye2006). Cyclical unemployment differs from structure and frictional (lindbeeket al1999). It is an unemployment result from lack of aggregate demand in a down swing in the business cycle (Bannock et al 1998). For instance in Nigeria, since the collapse of oil boom in the late seventies, the economic has generally remained in a passive state even though some other period of oil price surge were later experienced (Bello 2003).

What sound like cyclical unemployment in the most sub- Saharan Africa economist is the seasonal unemployment that is inherent in the agricultural sector then it may be best described as the very long Kondratieff cycle which lasts for over a period of fifty years (Bello 2003). This implies that to solve unemployment problem, it is simply to remove the artificial critical ceiling placed by the union. In case of Keynesian unemployment it is demand that is deficient "such involuntary unemployment, is coursed by sluggish labour market adjustment beyond the control of individual workers or union" (Begg 1994). The demand deficit or cyclical unemployment is the disequilibrium level of involuntary

unemployment caused by the combination of low aggregate demand and sluggish wage adjustment. The classical case of unemployment is premised on the inflexibility of wages. Unemployment result because labour, due to organize activities do not allow wage to decline for the accommodation of excess labour when there is incidence of unemployment. Given-wage-price flexibility, there are automatic forces in the economic system that tends to draw the economy into equilibrium state. (Jhingan 2000).

Unemployment incidence from classical perspective cannot really be situated in most sub-Sahara Africa economics. Although, price flexibility is not actually feasible due to trade union activities, but its existence wouldn't have efficiently addressed the problem of unemployment. This is because for instance, in Nigeria, most sector if not all especially the public sector enterprise have the problem of labour redundancy due to over staffing (Bello 2003). Macro-economic model of structural employment assume that unemployed workers are not able or willing to get jobs by underbidding the prevailing wages of incumbent workers.   The most obvious microeconomic explanation of the absence of wage underbidding is perhaps the minimum wage laws. But there seems to rather general agreement among labour market economist that minimum wages have not been high enough in recent decades in developed countries to explain much of aggregate structure unemployment (Lindbect 1999). So the problem is not that of wage price inflexibility or wage under binding declination but that of poor manufacturing output that is unable to sustain the population and labour supply growth rates. Thirlwall (1983) referred to the concept of disguised unemployment which he defined as the Gap between the actual numbers of workers available for employment and the level of employment at which the marginal product is below the institutional or subsistence wage. He was of the opinion that since there are many reasons, particularly in developing countries, why labour may be fulfilling its potentials and why small changes may release substantial quantities of labour, we should be concerned with dynamic rather than static surplus. Unemployment rate according to Begg (1994),is the percentage of the labour force without a job. According to him, labour force means those people of working age who in principle would like to work if a suitable job were available. He added that, those who are of working age but have no intension of work, should not be counted as unemployed. This view seems to be general

consensus among economist. A person is defined as being unemployed, if he or she does not have a job but is available to take a job. Parkin (1998) he added that unemployment rate is the percentage of the people in the labour force who are employed. According to him, the unemployment rate is the best available measure of under those who do not have a job, are available for work and are willing to work but do not have the efforts to find work and measure unemployed people rather than unemployed labour hours as a result excluding part time workers who want full time jobs. He however noted that unemployment is a persistent feature of economic life. Begg (1994) classified unemployment into frictional, structural demand deficient (Keynesian) and (classical). He saw frictional unemployment in a dynamic society which includes people whose physical or mental handicaps make them almost unemployable and those who are temporally unemployed as a result of changing jobs. Structural unemployment arises because there is a mismatch of skills and job opportunities when the pattern of demand failing and wage is deliberately maintained above the level at which the labour demand schedule intersects. Begg (1994) however held that behavioural implication of types of unemployment and the consequences for government policy have necessitated different classification modern analysis of unemployment. A worker is involuntary employed if he or she would accept job offer at the going wage rate. Employment and unemployment in developing countries have been the concern in recent years to the extent that international labour force has sponsored missions to several countries to undertake detailed analysis as part of world employment programmed (Olueye 2006).

Nigeria's unemployment rate increased to 23.9 percent in 2011 compared with 21.1 percent in 2010 and 19.7 percent in 2009, as revealed by the National Bureau of Statistics (NBS). The "Nigerian unemployment report 2011" prepared by the NBS shows that the rate is higher in the rural areas (25.6 percent) than in the urban areas (17.1 percent). The rise in the unemployment rate was largely attributed to the increased number of school graduates with no matching job opportunities, a freeze on employment in many public and private sector institutions as well as the slow disbursement of the capital budget by the Federal Government. The result of the survey by International LabourOrganisation (ILO) in Nigeria shows that persons aged 0 to14 years constituted 39.6 percent, those aged between 15 and 64

(the economically active population), constituted 56.3 percent, while those aged 65 years and above constituted 4.2 percent. Before now, not a few economic watchers have queried the recorded Gross Domestic Product, GDP, growth rates in Nigeria, which over time are contrary to the growing rate of unemployment. For instance, GDP report for third-quarter of last year showed that the Nigerian economy, when measured by the real GDP on an aggregate basis, grew by 7.4 percent in the third-quarter of 2011 as against 7.9 percent in the corresponding quarter of 2010. Amid this high rate of unemployment, the economic watchers have noticed that there is an increasing trend of disinterest by the emerging younger generation in highly labour-intensive works such as agriculture and factory work in preference for white collar jobs, resulting in many preferring to remain in the labour market rather than take up such work.

2.3.   The economic impact of education on the individual

Traditional human capital theory stresses the central role of education Becker, G. S. (1964). The main idea is that education by an individual can be regarded as an investment in human capital. Similarly, training or medical treatment are investments in human capital. As any investment, the investment in human capital entails costs and yields future benefits, and an internal rate of return to the investment can be calculated. Costs cover direct expenditure and the opportunity cost of the student's time, notably the foregone earnings as the student is not working. The investment is expected to yield future benefits to the individual, in terms of higher productivity, which will command higher earnings, and also the quality of his or her employment as educated workers tend to have higher wages, greater employment stability, and greater upward mobility in income, relative to less-educated workers, Mukherjee, A. N. (2007).. Just as with all investments, the outcome is subject to considerable uncertainty, especially at the individual level. In addition, benefits will accrue to society at large, such as the increase in the total output of goods and services produced through the increased productivity of the individual, an increased rate of productivity growth in the economy, and additional benefits to society such as more informed and socially-involved citizens and in better health. Building on traditional human capital theory, Cunha, F., & Heckman, J. (2009)

24

developed a perspective to assess education policies over the life cycle of an individual. An investment in education matters in so far as skills are successfully acquired. In a nutshell, skills acquired over the life cycle are complementary, with two important features.The first one can be best summarized by Heckman's words: "skills beget skills". This is because already acquired skills are an input to the acquisition of further skills. The second feature is that the acquisition of skills is more productive when skills were acquired earlier on. These features result in a "skill multiplier", by which an investment in education at one stage raises the skills attained at that stage but, also, the productivity of the transformation of future educational investments into skills. If education at secondary level is of insufficient quality, then the productivity with which investments in education at tertiary level are translated into valuable skills will be negatively affected. Investments in secondary level education in turn are more productive if the young have acquired earlier skills, in primary, pre-primary education institutions and, of course, in the home. In the context of the efficiency of public expenditure, earlier public interventions are key to make investments in tertiary education productive. A productive tertiary education system requires sound learning foundations acquired by students at earlier stages, unless it relies on attracting talented students (and faculty) from abroad. Empirical analysis, mostly for the United States, shows that education is indeed such a life-cycle process. There is also European evidence supporting this view, although far less developed Omotor, D. (2004).

There is abundant empirical literature on the private returns to education; however there are very few cross-country comparative studies. Card, D. (1999). Surveyed literature and found a very robust positive association between education and individual earnings in the labour market. Economic literature also considers signaling and screening models to explain the link between education and productivity. It stresses the role that education plays to signal the productivity of the individual, which is seen as an innate ability. In contrast, human capital models stress the role of education in raising individuals' productivity, which is rewarded in the labour market by higher earnings Card, D. (1999). There are some challenges in the estimation of returns because education may, at least partly, reflect apreexisting ability.Thus the earnings differential does not only reflect the skills acquired via educational attainment, but would also result from the way employers use educational attainment to screen for

ability. Furthermore, there are many technical issues surrounding the estimation of the return to schooling, especially related to the measurement of human capital. In particular, Okeke, B. C. (2014)Provide evidence that education is productivity-enhancing rather than a mere device used by individuals to signal their level of ability to their employer. De la Fuente, A., &Ciccone, A. (2002) also confirm causation from education to productivity. Most studies on rates of return to schooling do not explicitly distinguish between primary, secondary and tertiary education. Furthermore, returns to education can vary across the population and the marginal return to schooling is a decreasing function of schooling Card, D. (1999)

2.4.Theories of Public Expenditure

Public expenditure theory, traditionally, received only a scanty attention till recently. Partly, this lop-sided interest in the theory of public finance is explained by a general acceptance of the philosophy of laissez-faire and belief in the efficacy of free market mechanism. However, with the advent of welfare economics the role of the state has expanded especially in the area of infrastructural provision and theory of public expenditure is attracting increasing attention. This tendency has been reinforced by the widening interest of economists in the problems of economic growth, planning, regional disparities, distributive justice and the like (Bhatia, 2002).

(a)Musgrave Theory OfPublic Expenditure Growth

This theory was propounded by Musgrave as he found changes in the income elasticity of demand for public services in three ranges of per capita income. He posits that at low levels of per capita income, demand for public services tends to be very low, this is so because according to him such income is devoted to satisfying primary needs and that when per capita income starts to rise above these levels of low income, the demand for services supplied by the public sector such as health, education and transport starts to rise, thereby forcing government to increase expenditure on them. He observes that at the high levels of

per capita income, typical of developed economics, the rate of public sector growth tends to fall as the more basic wants are being satisfied.

(b)Peacock and Wiseman Theory of Public Expenditure

In 1961, Peacock and Wiseman elicited salient shaft of light about the nature of increase in public expenditure based on their study of public expenditure in England. Peacock and Wiseman (1967) suggested that the growth in public expenditure does not occur in the same way that Wagner theorized. Peacock and Wiseman choose the political propositions instead of the organic state where it is deemed that government like to spend money, people do not like increasing taxation and the population voting for ever-increasing social services. There may be divergence of ideas about desirable public spending and limits of taxation but these can be narrowed by large-scale disturbances, such as major wars. According to Peacock and Wiseman, these disturbances will cause displacement effect, shifting public revenue and public expenditure to new levels. Government will fall short of revenue and there will be an upward revision of taxation. Initially, citizens will engender displeasure but later on, will accept the verdict in times of crisis. There will be a new level of "tax tolerance". Individuals will now accept new taxation levels, previously thought to be intolerable. Furthermore, the public expect the state to heal up the economy and adjust to the new social ideas, or otherwise, there will be the inspection effect.

Peacock and Wiseman viewed the period of displacement as reducing barriers that protect local autonomy and increasing the concentration power over public expenditure to the Central government. During the process of public expenditure centralization, the role of state activities tend to grew larger and larger. This can be referred to the concentration process of increasing public sector activities. Nowadays, the growth in public expenditure has become a compulsion and thus, the disturbance situations matter little.

(c)Bowen's Model of Public Expenditure

Bowen, H. R. (1943) opined that social goods are not equally available to all voters. According to him, since social goods are consumed by all individuals in a community, each of them needs to contribute for the social goods.But as Bowen rightly pointed out, we must in the case of public goods add different individuals' curves vertically. This is so because the capacity to enjoy the social goods is different for different individuals. Since

each of the individuals has different valuation of the social goods, it is expected of them to contribute different amounts. Thus, the government will produce an amount of social goods equal to the marginal cost of supplying that good, to be equal to the marginal utilities received by the community

(d)Wagner's law of increasing public expenditure

Wagner's Law is named after the German political economist Adolph Wagner (1835-1917), who developed a "law of increasing state activity" after empirical analysis on Western Europe at the end of the 19th century. The law states that there are inherent tendencies for the activities of different layers of governments to increase both intensively and extensively. It assumes the existence of an economy and the growth of the government activities in which the government sector grows faster than the economyDauda, R. (2011).

(e)**Human capital investment theory**

Becker, G. (1975) developed the human capital investment theory in which he outlined the various interactions paths between income expenditure and human capital development. According to the theory, high income allows people invest more financial resources in the quantity of education. Money can also be used to buy better educational quality, which may affect both current educational performance and future demand for education. Moreover, low income parents might push their children towards work in the labour market in order to contribute to family finances; in the absence of sufficient money transfers from their parents, children from low income families may decide to work while studying De la Fuente, A. (2004), with possible negative effects on their school performance, or decide to quit education at the minimum leaving age.

2.5.   Theoretical Framework on Unemployment

According to theoretical concepts that were developed during the seventies, periods of rising unemployment are interpreted as deviations from the natural rate due to expectation

errors.Unfortunately, since the adjustment of expectations can be considered to be short-lived, the model is at odds with the evidence. Moreover, the error correction process is unlikely to differ so substantially across countries that this factor could explain the significant international differences in absorbing shocks. In this sense, Phelps (1994) argues that long Swings in unemployment are an equilibrium phenomenon, not a matter of misperceptions or misforecasts and consequent wage-pence misalignment**ts**.Other theoretical concepts for the explanation of stubborn unemployment, that were en Vogueduring the seventies and eighties, have more or less disappeared from sight. Among these is the quantity rationing theory as developed by Malinvaud(1977, 1980) and others. Today many economists still concede that market disequilibria may be relevant in the short run. Yet at the same time it is argued that rationing phenomena, especially on the goods market, are not likely to persist over a longer time horizon (cf. Zirnrnennann (1997)). A furtherapproach, known as real wage-gap analysis, claims that "too high" real wages can be blamed for aggregate unemployment (cf. Bruno, Sachs (1985)). However, this approach can be criticized since the wage formation process is not modeled explicitly. Moreover, the real wage-gap analysis is too partial in nature, since it neglects the interaction between wage and price-setting agents. The attempt to develop a more convincing framework for explaining high unemployment *as an equilibrium phenomenon* has led to at least three major trends in macroeconomics since the mid-eighties. First, the micro-foundation of macroeconomic theory has been strengthened. The modem analysis of the behavior of households and unions is based on rational decisions. Second, the theoretical Model increasingly leave behind partial analysis and move on to a general equilibrium Framework. Third, Walrasian-type models which assume perfect markets have become more and more obsolete. Today, the dominant explanation of aggregate unemployment, the so-called "structuralist" approach, starts with imperfect competition on labor and goods markets. In the basic Scenario exert some influence on the prices for their products and wages are determined in a bargaining process between unions andemployers or by efficiency wage considerations. This implies that the interdependent of wage and price formation is explicitly taken into account. The unemploymentrate is the key variable that equilibrates the conflicting claims of wage and price-setting agents.In the seventies and eighties various competing theories put forward by the classical and Keynesian cramps tried to find a convincing explanation for the

unemployment problem. Thestructuralist model emerged from these research effort as dominant approach of the nineties, combining both classical and Keynesian features. Moreover, by generating a relationship between changes in inflation and deviations of unemployment from the long run equilibrium, this approach carries on where the old Phillip's curve debate left off.

2.5.1. Unemployment as a structural labor market problem

Rejecting the unrealistic construction of a Walrasian auctioneer, the structuralism model takes the assumption of imperfect competition on goods and labor markets as a starting point instead. The different variants of this approach can, in principle, be condensed into two central equations for real wages and unemployment which serve as substitutes for the supply and demand relationships in traditional labor market analysis. The first relationship, called the price-setting equation, stems from behavior on the goods markets and is usually derived under the assumption of monopolistic .Competition using a variant of the influential Blanchard, Kiyotaki (1987) model. This approach offers the great advantage that strategic interactions among firm can be neglected as the Single fm is small compared to the economy. A sensible, but rarely used, alternative to this type of modeling rests on the assumption of "conditional monopolies" whose market power is constrained by the (higher) marginal costs of potential competitors (cf. Vogt (1996)). However, both approaches, Share the assumption of identical firms and individuals and of a symmetric demand for commodities, which, in principle, leads to the same price-setting equation in the correct-expectation equilibrium.

Profit maximizing firmset prices as a mark-up on marginal costs, the latter depending on wages and employment. This price-setting equation can be solved for real wages, thus determining the real wage the fm are willing to pay at each level of employment. We use the term "price-setting equation" for this transformed expression as well. Assuming the labor force, L, to be given, the level of employment, M, can also be expressed as (1 - *U)* L, where *u* is the unemployment rate. Hence the price-setting equation can be written as

$$\frac{W}{P} = \frac{A}{\mu} G\big((1-u)L\big),$$

$$\mu > 1, \; G_U > 0, \; G_L < 0,$$

Where W is the wage including non-wage labor costs, P the producer price level and A productivity. The sign of the partial derivatives of G, denoted by subscripts, is due to the declining marginal product of labor given by A.G (N).in the special case of perfect competition on the goods market (**U=I**), the price-setting equation can be solved for employment as a function of the predetermined real wage, which leads to a standard labor demand function. In accordance with the static nature of most models, the capital stock is assumed to be given and therefore only implicitly included in G.

In a real wage/unemployment diagram the price-setting schedule is upward sloping. However, some authors argue that a horizontal price-setting curve would be more relevant empirically, since it could explain why there is no strong pattern in the movement of the real wage over the business cycle. There are several possibilities for justifying such an assumption which implies that $G_{U=}G_{L=}0$. For instance, carlin, Soskice(1990) point out that the assumption of normal- cost pricing U as well as the combination of increasing marginal costs and a counter-cyclical mark-up would both lead to flat price-setting curve. This would also result in the case of flexible capital stock and constant returns to scale(cf. bean(1989) and landmann, jerger(1993).Depending on the chosen micro-model, other indicators for the state of the labor market can be considered instead of the unemployment rate. For example, following the matching approach as formalised by diamond (1982) and pissarides(1990), a preferablelabor-market indicator would be the exit rate from unemployment, defined by number of hires divided by the number of unemployed(Blanchard,katz 1997).

According to the structuralist model, inflation will increase or decrease depending on whether unemployment is above or below the NAIRU, but corresponds to money growth minus productivity growth if unemployment is at the natural rate. Layard (1991) attributethe extent of real wage rigidity prevailing in an economy to institutional factors. According to his analysis, the real wage rigidity is influenced, for instance, bythe duration of unemployment benefits. Another important factor affecting the shape and position of the wage-setting curve is the level of wage negotiations. Consider a bargaining framework where wages are negotiated at the national level instead of being set at the industry or firm

level. In this case, wage pressure may be lower since rational behaviour of unions implies that the effect of a wage increase on the aggregate will be taken into account.

Figure 2: THE CONSEQUENCES OF AN INCREASE IN WAGE PRESSURE FOR COUNTRIES WITH DIFFERENT DEGREES OF REAL WAGE RIGIDITY
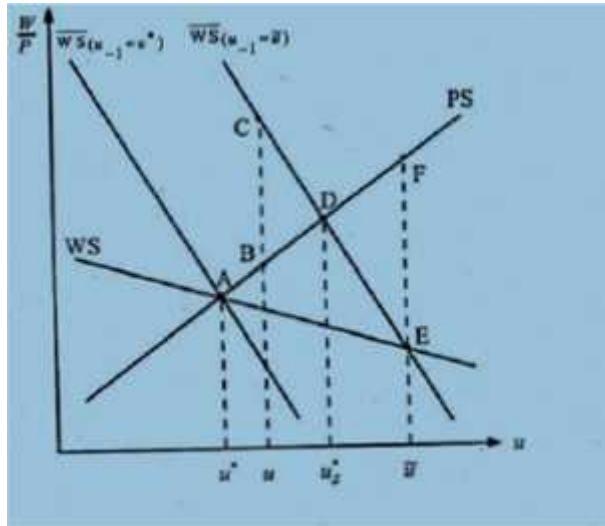
In the diagram above, rising wage pressure leads to a higher real wage due to the upward sloping price setting curve. However, if the price-setting curve is horizontal higher wage pressure will cause higher unemployment without increasing real wages, hence in a situation it would be quite misleading to too high real wages for unemployment. The higher the degree of real wage rigidity, the greater is the response of NAIRU to a given supply shock. This result can also be seen in the diagram above, where WS_0 and WS curves represents wage setting in two countries with different degrees of reak wage rigidity, both countries share the same price setting curve. This can be justified by arguing that the slopes of the price setting curves will not differ much across countries, because production technologies and price mark-ups are rather similar. Therefore, differences in the degrees of real rigidity have to be mainly attributed to wage-setting process. In the diagram both countries are hit by the same supply shock shifting the wage setting curve from point A to B.

2.6.   Theoretical Framework on Education

It is impossible to do justice to existing models of education and growth in a few sentences, but we must identify some key precursors. Early on, Nelson and Phelps (1966) argued that a

more educated labor force would imitate frontier technology faster. The further a state was from the frontier, the greater the benefits of this catch-up. Benhabib and Spiegal (1994) expanded on their work, arguing that a more educated labor force would also innovate faster. Lucas (1988) and Mankiw, Romer, and Weil (1992) observed that the accumulation of human capital could increase the productivity of other factors and thereby raise growth. Notice that, at this point, we have separate arguments for why the stock of human capital, the rate of accumulation of human capital, and distance to the technological frontier should affect growth. Our model coherently integrates all these strands, is the first to distinguish between types of education spending, and is the first to consider the interplay between the composition of spending and a state's distance from the frontier.Acemoglu, Aghion, and Zilibotti (2003)'s model and our model do not provide the only explanation for why higher education might be more growth enhancing in some states than in others. Suppose that there are strategic complementarities ("O-ring" complementarities) amonghighly educatedworkers. Then, states in which highly educated workers make up a large shareof the labor force would get more growth out of investing in higher education than states in which highly educated workers make up only a small share. The strategic complementarity model does not rely on distance to the technological frontier or the nature of technical change (the imitation/innovation distinction). However, we see two problems with the strategic complementarity model. First, it is unclear what the complementaries are if they do not correspond to something like innovation. What exactly are the highly educated workers doing together (that is so sensitive to their being highly educated) if it does not involve things changing at the margin? Second, a model entirely based on skill complementarities does not predict convergence in growth rates between frontier and far-from-frontier states. Yet, there is ample evidence that state growth rates converge.

2.7. Empirical Literature

Olorunfemi, (2008) studies the direction and strength of the relationship between public investment and economic growth in Nigeria, using time series data from 1975 to 2004 and observed that public expenditure impacted positively on economic growth and that there was no link between gross fixed capital formation and Gross Domestic Product. He averred that from disaggregated analysis, the result reveal that only 37.1% of government expenditure is

devoted to capital expenditure while 62.9% share is to current expenditure. Mitchell (2005) evaluates the impact of government spending on economic performance in developed countries. He assessed the international evidence, reviewed the latest academic research, cited examples of countries that have significantly reduced government spending as a share of national output and analyzed the economic consequences of these reforms. Regardless of the methodology or model employed, he concluded that a large and growing government is not conducive to better economic performance. He further argued that reducing the size of government would lead to higher incomes and improve American's competitiveness.Oluwatobi and Ogunrinola (2011), examine the impact of government recurrent and capital expenditures on education and health in Nigeria and their effect on economic growth. The study adopted the augmented Solow model and real output as dependent variable while the explanatory variables are government capital and recurrent expenditures on education and health, gross fixed capital formation and the labour force. Olopade et al (2010) examine the impact of government expenditure on economic growth and development in Nigeria. The analytical frame is based on economic models, statistical methods encompassing trends analysis, and simple regression. The study finds no signified relationship between most of the components expenditure, economic growth and development. Some of the estimated variables were weakly significant as a result of none inclusion of effect of environmental impacts.

Nurudeen and Usman (2010) investigate the effect of government expenditure oneconomic growth using disaggregated analysis. The results reveal that government total capital expenditure, total recurrent expenditures, and government expenditure on education have negative effect on economic growth. On the contrary, rising government expenditure on transport, communication and health increases economic growth.

In addition,Adesoye et al (2010) examines the link between government spending and economic growth in Nigeria over the last three decades (1977-2006) using time series data to analyze the Ram (1986) model. Three variants of Ram (1986) model were developed-regressing real GDP on private investment, human capital investment, government investment and consumption spending at absolute levels, regressing it as a share of real

output and regressing the growth rate real output to the explanatory variable as share of real GDP, in other to capture the precise link between public investment spending and economic growth in Nigeria based on different levels.Abu and Abdullah (2010) investigate the relationship between government expenditure and economic growth in Nigeria from the period ranging from 1970 to 2008.They used disaggregated analysis in an attempt to unravel the impact of government expenditure on economic growth. Their results reveal that government total capital expenditure, total recurrent expenditure and Education have negative effect on economic growth. On the contrary, government expenditure on transport, communication and health result in an increase in economic growth. They recommend that government should increase both capital expenditure and recurrent expenditure including expenditure on education as well as ensure that funds meant for development on these sectors are properly utilized. They also recommend that government should encourage and increase the funding of anti-corruption agencies in order to tackle the high level of corruption found in public offices in Nigeria.

Mitchell (2005) evaluates the impact of government spending on economic performance in developed countries. He assessed the international evidence, reviewed the latest academic research, cited examples of countries that have significantly reduced government spending as a share of national output and analyzed the economic consequences of these reforms. Regardless of the methodology or model employed, he concluded that a large and growing government is not conducive to better economic performance. He further argued that reducing the size of government would lead to higher incomes and improve American's competitiveness. Odior (2011) analyzes the dynamic direct and indirect effects of government policy onhealth and its relation to the cyclical economic growth in the long run. His main objective is tosimulate if government expenditure on health would help to improve economic performance inNigeria in long run. He used an integrated sequential dynamic computable general equilibrium(CGE) model to examine the potential impact of increase in government expenditure on health inNigeria. The model is calibrated with a 2004 social accounting matrix (SAM) data of the Nigerianeconomy. The result showed that the re-allocation of government expenditure to health sector issignificant in explaining economic growth in Nigeria. He therefore recommends that in order toachieve a steady economic growth, investment in health services should also receive greatattention in the public

investment portfolio. The policy implication of the paper is that, theNigerian government should be able to move resources from other sectors to provide qualityhealth for her citizens.John C. Anyanwuand Andrew E. O. Erhijakpor (2007) examines Education Expenditures and School Enrolment in Africa making use of Illustrations from Nigeria and other SANE (South Africa, Algeria, Nigeria, and Egypt) countries. Using panel data of African countries from 1990 to 2002, the paper studies the relationship between government expenditure on educationenrolments, with illustration from Nigeria and other SANE (South Africa, Algeria, Nigeria, and Egypt) countries at the primary and secondary school levels. The result indicates that the absolute education expenditure is paramount in determining education outcomes also has major implications for international assistance policy for African countries.

CHAPTER THREE

3.0.METHODOLOGY

3.1.   Introduction

The objective of this study is to investigate the impact of education expenditure on unemployment in Nigeria. This section, therefore, explains how the data for the study was collected. This includes the research instruments and data analysis. Research requires the use of data. The quality of data used in a research work, however, goes a long way in determining the validity of the research. Therefore, methodology is a collection of agreed processes, methods and tools to accomplish a research objective.

3.2.   Research Design

This research is conducted to critically investigate the impacts of education expenditure on unemployment in Nigeria. This is a quantitative research that involves formulating and testing of hypotheses, making use of measureable data and on the Co-integration analysis is employed to analyze data gathered from the Central Bank of Nigeria, the World Bank and the Nigeria Bureau of Statistics for various years covering 1970- 2016.

3.3.   Data Analysis Method

The Unemployment rate will be used as the dependent variable, while Government expenditure on education, broad money supply, consumer price index, total debt and Exchange rate will be used as independent variables. Developing a model for the impact of government expenditure on education on unemployment growth rate in Nigeria could be stated as follows: In this study therefore, we specify a functional form of the model as follows: $UNEMPR = F(EDUEXP, M2, CPI, TDEBT, EXCH)$ where UNEMPR = Growth rate of unemployment,

 EDUEXP =Government expenditure on education

CONSUM = Consumption expenditure

M2 = Broad money supply

CPI = Consumer price index

TDEBT = Total government debt

EXCH = Exchange rate

Assuming a linear relationship between our dependent variable and independent variables, our equation using the multiple regression analysis can be shown as follows:

$$UNEMPR = r_0 + r_1 EDUEXP + r_2 M2 + r_3 CPI + r_4 TDEBT + r_5 EXCH + \sim_t$$

where r_0 = the constant term

r_s = the parameters to be estimated

$\sim_t$ = stochastic error

For statistical reason, this study adopts a log-linear model specification as specified below:

$$LOG(UNEMPR) = S_0 + S_1 LOG(EDUEXP) + S_2 LOG(M2) + S_3 CPI +$$
$$S_4 LOG(TDEBT) + S_5 \ EXCH + v_t$$

3.4.Estimation procedure

Descriptive statistics are used to describe the basic features of the data in a study. They provide simple summaries about the sample and the measures. Together with simple graphics analysis, they form the basis of virtually every quantitative analysis of data.Descriptive statistics are typically distinguished from <u>inferential statistics</u>. With descriptive statistics you are simply describing what is or what the data shows. With inferential statistics, you are trying to reach conclusions that extend beyond the immediate data alone. For instance, we use inferential statistics to try to infer from the sample data what the population might think. Or, we use inferential statistics to make judgments of the probability that an observed difference between groups is a dependable one or one that might have happened by chance in this study. Thus, we use inferential statistics to make inferences from our data to more general conditions; we use descriptive statistics simply to describe what's going on in our data.The study utilizes the Ordinary Least Square (OLS) method of estimation while conducting the econometrics test. The OLS method has been used in a wide range of economic relationships with satisfactory result.

 The method employs sound statistical techniques appropriate for empirical problems; and it has become so standard that its estimates techniques are used. More so, the reliability of this method lies on its desirability properties which are efficiency, consistency, and unbiased. This implies that its error term has a minimum and equal variance. The conditional mean value is zero and normally distributed (Gujarat, 2004).

3.5.   Unit root test

To test for stationarity or the absence of unit roots, this test is done using the Augmented Dickey Fuller test (ADF) with the hypothesis which states as follows: If the absolute value of the Augmented Dickey Fuller (ADF) test is greater than the critical value either at the 1%

, 5% ,or 10% level of significance , then the variables are stationary either at order zero, one ,or two. The AugumentedDicky Fuller test equation is specicied below as follows:

$$\Delta \widehat{u}_t = S \widehat{u}_{t-1} + \sum_{i=1}^{k} \Delta \widehat{u}_{t-1} + V_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(3)$$

3.6. The cointegration approach

The presence of a (long-run) relationship between real budget deficits (or surpluses) and exchange rates is examined through the methodology of cointegration as it was developed by Engle and Granger (1987) and Johansen and Juselius (1990). For the purposes of this paper use will be made of the technique by Johansen and Juselius (1990), who developed a method to estimate whether two or more variables are cointegrated, via a multivariate maximum likelihood procedure that overcomes many of the limitations of the bivariate tests of Engle and Granger (1987). These limitations require that one of the two variables is considered exogenous, while these tests do not have well-defined limiting distributions and, therefore, their critical values are sensitive to sample size.The Johansen maximum likelihood procedure begins by expressing a process of NI(1) variables in an Nx1 vector x as an unrestricted autoregression:

$$X_t = \}_1 + X_{t-1} + \}_2 X_{t-2} + \ldots\ldots + \}_k X_{t-k} + \sim_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots.(4)$$

With t = 1, 2, …, T and μ_t being the random error term. The long-run static equilibrium is given by $\prod_x = 0$, where the long run coefficient matrix   is defined as:

$$\prod = 1 - \prod_1 - \prod_2 - \ldots\ldots - \prod_k \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(5)$$ where

I is the identity matrix and   is an nxn matrix whose rank determines the number of distinct cointegrating vectors which exist between the variables in x. Define two nxr matrices   and , such that:

$$\prod = r s' \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots.(6)$$

With the rows of   to form the r distinct cointegrating vectors. The likelihood ratio statistic (LR) or trace test for the hypothesis that there are at most r cointegrating vectors is:

$$\text{LR or TRACE} = -T\sum_{i=r+1}^{n}\ln(1\text{-}\}i) \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots.(7)$$

Where r + 1… n are n-r the smallest squared canonical correlations between the residuals of xt–k and xt series, corrected for the effect of the lagged differences of the x process. Additionally, the likelihood ratio statistic for testing at most r cointegrating vectors against the alternative of r + 1 cointegrating vectors, namely, the maximum eigenvalue statistic, is given as:

$$\}MAX = T\ln(1 - \}r + 1) \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots..(8)$$

Both statistics have non-standard distributions under the null hypothesis, although approximate critical values have been generated by Monte Carlo methods and tabulated by Johansen and Juselius (1990). If exchange rates are found to be cointegrated with budget deficits, among other macroeconomic variables, the next step is to examine the associated causality tests, since if two or more variables are cointegrated causality in at least one direction must be implied (Hall and Milne, 1994).

3.7.Econometrics software

The EViews 9 econometrics packages were utilized in analyzing the data while excel worksheet was used in imputing the data.

CHAPTER FOUR

4.0. DATA PRESENTATION AND ANALYSIS

4.1.   Introduction

In econometric analysis an attempt is usually made in discovering and establishing existing relationship among the macroeconomic variables involved in the analysis. To this effect, this chapter will attempt to evaluate the impact of education expenditure on unemployment in Nigeria. This can be achieved by establishing the relationship that exists between unemployment and Government expenditure on education, Consumption expenditure, Broad money supply, Consumer price index, and Total government debt .This shall be done using

unit root and co-integration. The computationaldevice that was used is econometric view (E-VIEW) software programmed.

4.2.   Descriptive Statistics

The Jarque-Bera (JB) test statistic was used to determine the impact of government expenditure variables (control variables) on unemployment in Nigeria. The JB test of normality is a large-sample or asymptotic test that computes kurtosis and the skewness measures and uses the following test statistic: Sample mean, standard deviation, skewness and kurtosis, and the Jacque-Bera statistics and the p-value have been reported.

Table 1: The descriptive statistics

	UNEMPR	EDUEXP	M2	CPI	TDEBT	EXCH
Mean	11.31144	93444.90	4086.535	74.39681	1650369.	56.33541
Median	12.68133	7999.100	1269.322	70.40000	906980.8	21.88600
Maximum	14.80000	493458.1	15160.43	126.0000	6260595.	157.5000
Minimum	8.074924	3.940000	14.47117	30.10000	1252.900	0.544500
Std. Dev.	2.138226	150160.5	5266.820	31.15950	1865282.	65.25595
Skewness	-0.274778	1.639625	1.120797	0.287910	0.772061	0.548626
Kurtosis	1.433471	4.332655	2.738354	1.745848	2.310749	1.452414
Jarque-Bera	5.397216	24.53684	9.974184	3.729577	5.599620	7.048016
Probability	0.067299	0.000005	0.006825	0.154929	0.060822	0.029481
Sum	531.6379	4391910.	192067.1	3496.650	77567351	2647.764
Sum Sq. Dev.	210.3126	1.04E+12	1.28E+09	44662.06	1.60E+14	195883.6
Observations	47	47	47	47	47	47

Source: Author's computation from Eviews result

From the result table above, the descriptive statistics indicates that from 1980 to 2016, the unemployment, capital and consumption expenditures, exchange rate, consumer price index and broad money supply variables show an averaged positive mean values   from   4.243617 to 154820.2. The maximum values of the variables shows   14.80000, 493458.1, 15160.43, 126.0000, and 6260595.and157.5000 respectively with their minimum values ranging from 8.074924, 3.940000, 14.47117, 30.10000, 1252.900 and 0.544500 correspondingly. The standard deviation showed that the highest standard deviation of (1865282) is recorded by the TDEBT while the least standard deviation of (2.138226) is recorded by UNEMPR. The skewness statistics from the table revealed that five of the variables are positively skewed

while one variable is skewed negatively; the kurtosis coefficients showed that one of the variables is leptokurtic, suggesting that the distribution is high relative to normal distribution while the two variables M2 and TDEBT are mesokurtic, indicating not too flat topped and three variables UNEMPR, CPI and EXCH are platykurtic, indicating a flat topped. The probabilities of Jarque-Bera test of normality for the variables indicates that six of the variables have values greater than 5% level of significance.

4.3.   Regression Result

The result is interpreted based on the various expectations of the economic theory. These are the apriori expectations of the behavior of the coefficients of the regressor variables on the dependent variables. Therefore, for the variables under consideration and their exhibition of the apriori signs which actually meets with the expectation of the economic theory are therefore presented at the table below:

Table 2: The Regression result

Dependent Variable: LOG(UNEMPR)				
Method: Least Squares				
Date: 07/12/17 Time: 16:06				
Sample: 1970 2016				
Included observations: 47				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.630634	0.128069	20.54083	0.0000

LOG(EDUEXP)	-0.008324	0.013940	-0.597133	0.5537
LOG(M2)	0.037554	0.008519	4.408307	0.0001
CPI	-0.002900	0.000923	-3.142676	0.0031
LOG(TDEBT)	-0.029763	0.013838	-2.150806	0.0374
EXCH	0.003173	0.000468	6.787077	0.0000
R-squared	0.864266	Mean dependent var		2.407246
Adjusted R-squared	0.847713	S.D. dependent var		0.197640
S.E. of regression	0.077127	Akaike info criterion		-2.167978
Sum squared resid	0.243893	Schwarz criterion		-1.931789
Log likelihood	56.94749	Hannan-Quinn criter.		-2.079099
F-statistic	52.21221	Durbin-Watson stat		2.186241
Prob(F-statistic)	0.000000			

Source: Author's computation from Eviews result

The table above shows the regression result on the impact of government expenditure on education and unemployment in Nigeria. From the table, the coefficient of the variables, LOG (M2) and E0XCH indicate positive signs.The coefficient of the variables, EDUEXP, CPI and TDEBT show negative signs.

4.4. Statistical Criterion

Statistically, the t-statistic of the variable under consideration is interpreted based on the following decision rule: if the t values of the variables under consideration is $\leq -2 \geq 2$ it shows that the variables under consideration is statistically significant otherwisethey are not.

Table 3:The t-statistic results

Variable	Coefficient	t-Statistic	Prob.
C	2.630634	20.54083	0.0000
LOG(EDUEXP)	-0.008324	-0.597133	0.5537

LOG(M2)	0.037554	4.408307	0.0001
CPI	-0.002900	-3.142676	0.0031
LOG(TDEBT)	-0.029763	-2.150806	0.0374
EXCH	0.003173	6.787077	0.0000

Source: Author's computation from Eviews result

The result show that four variables, LOG(M2),CPI, LOG(TDEBT) and EXCH exhibited valuesthat is greater than positive two and less than the negative two. This shows that the variables are statistically significant, while the other variables are not significant statistically.The F-statistic is interpreted following this decisions: if F-cal is greater that the F tabulated = if F-cal> F-tab reject otherwise accept. It follows the following assumptions:

$V_1 = K-1$

$V_2 = N-K$

 where

K = number of parameter

N = number of observation

For the variable under consideration:

K-1= 5-1= 4

N-K =37 -5 = 32

The F-Cal (4, 32) = 52.21221 while the F- tabulated (4, 32) = 4.02

Decision: Since the F-calculated is greater that the F- tabulated, it shows that the overall estimate of the regression has a good fit and is statistically significant. The R^2 - (R-squared) which measures the overall goodness of fit of the entire regression shows the value asfollows: 0.864266= 86%, while the adjusted R^2 (0.847713)=84%, shows that the independent variables explain the dependent variable to the tune of 84%. Also the Durbinn Watson (DW) statistics DW = 2.186241 which is greater than the R^2 shows that the overall regression is statistically significance. Thus the result indicates no serial auto correlation among the variables under consideration.

4.5.unit root /staionarity test

Economic variables are generally non-stationary and they are a random process. Linear combination of non-stationary series in general is a non-stationary series and closely associated with economic theory. Because economic theory guarantees stagnation of combination of economic variables, in this study Dickey Fuller's generalized Test for investigation of stationary variables is used. In order to assess the time series properties of the data, unit root tests was conducted. As Engle and Granger (1987) argued, if individual time series data are non-stationary, their linear combinations could be stationary if the variables were integrated of the same order. The assumption is stated as follows: If the absolute value of the Augmented Dickey Fuller (ADF) test is greater than the critical value either at 1%, 5%, or 10% level of significance at order zero, one or two, it shows that the variable under consideration is stationary otherwise it is not.The results of the Augmented Dickey Fuller (ADF) test obtained are as follow:

Table 4:the unit root test

Variable	Level difference	Probability	Order of integration	First difference	probability	Order of integration
UNEMPR	-2.096595	0.2470	I(0)	-9.026752	0.0000	I(1)
EDUEXP	1.922915	0.9998	I(0)	-6.354538	0.0000	I(1)
M2	-0.883675	0.7846	I(0)	-7.424976	0.0000	I(1)
TDEBT	-1.470382	0.5393	I(0)	-4.886701	0.0002	I(1)
EXCH	0.144095	0.9658	I(0)	-5.513290	0.0000	I(1)

CPI	-0.801962	0.8091	I(0)	-6.548431	0.0000	I(1)

The stationarity tests result indicate that one of the variable under consideration, UNEMPR is stationary at level difference while the other variables are non-stationary at level. However, after first differencing the variables became stationary; hence all the variables under consideration, are stationary and integrated of order one at 5% level of significance. A cointegration test is therefore, conducted

4.6. Cointegration Test

When a linear combination of variables that are I(1) produces a stationary series, then the variables may need to be cointegrated. This means that a long-run relationship may exist among them, which connotes that they may wander from one another in the short-run but in the long-run they will move together. To establish whether long-run relationship exists among the variables or not, cointegration tests are conducted by using the multivariate procedure developed by Johansen (1988) and Johansen and Juselius (1990). The nature of the estimator means that the estimates are robust to simultaneity bias, and it is robust to departure from normality (Johansen, 1995). Johansen method detects a number of cointegrating vectors in non-stationary time series. It offers two tests, the trace test and the Eigen value test, with a view to identify the number of cointegrating relationships. The results of the cointegration test is as follows

Table 5:the cointegration test

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.568330	117.7520	83.93712	0.0000
At most 1 *	0.519282	80.78781	60.06141	0.0004
At most 2 *	0.422064	48.55893	40.17493	0.0058
At most 3 *	0.287204	24.43408	24.27596	0.0478
At most 4	0.186704	9.537444	12.32090	0.1401

At most 5	0.010049	0.444381	4.129906	0.5684
Trace test indicates 4 cointegratingeqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.568330	36.96416	36.63019	0.0457
At most 1 *	0.519282	32.22887	30.43961	0.0296
At most 2	0.422064	24.12485	24.15921	0.0506
At most 3	0.287204	14.89664	17.79730	0.1297
At most 4	0.186704	9.093062	11.22480	0.1158
At most 5	0.010049	0.444381	4.129906	0.5684
Max-eigenvalue test indicates 2 cointegratingeqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

Source: Author's computation from Eviews result

From the table above, the trace likelihood ratio and maximum eigenvalue results point out that the null hypothesis of no cointegration among the variables is rejected in favour of the alternative hypothesis up to four and two cointegrating equations respectively at 5% significant level because their values exceed the critical values. This means there are at most four cointegrating equations, which implies that a unique long-run relationship exists among the variables and the coefficients of estimated regression can be taken as equilibrium values.

4.7. The multicolinearity test

Under the Multicolinearity test, we conduct the test to ascertain the degree of relationship that exists between the dependent variable and the independent variables. This is done using the correlation matrix. In the correlation test, we test the variables to ascertain the degree of relationship that exist between the independent variables and the dependent variable. The relationships among the studied variables depicted in the model were tested using correlation matrix and the result presented below:

Table 6: The Correlation matrix

	UNEMPR	EDUEXP	M2	CPI	TDEBT	EXCH
UNEMPR	1.000000	0.404743	0.542389	0.031321	0.431366	0.494047
EDUEXP	0.404743	1.000000	0.812179	0.780131	0.616253	0.841821
M2	0.542389	0.812179	1.000000	0.484046	0.353079	0.596998
CPI	0.031321	0.780131	0.484046	1.000000	0.691134	0.782261
TDEBT	0.431366	0.616253	0.353079	0.691134	1.000000	0.916785
EXCH	0.494047	0.841821	0.596998	0.782261	0.916785	1.000000

Source: Author's computation from Eviews result

The correlation result shows that all of the variables, have positive relationships with the UNEMPR. The relationships are actually at 40%, 54%, 3%, 43% and 49% respectively. This result suggests there exist no multicolinearity among the variables under consideration.

4.8.   Granger Causality Test

The procedure used in this study for testing statistical causality is the "Granger-causality" test developed by C.W.J. Granger in 1969. The Granger causality tests determine the predictive content of one variable beyond that inherent in the explanatory variable itself. Granger and Engle (Granger and Engle, 1987) have showed that in case of a cointegration between the variables, there may be one way or two way Granger-causality between the variables which have stochastic error terms in I (0). Thus, regression is purified from spurious regression.

In order to examine the Granger causal relationships between the variables under examination, we used the estimated model in the previous section. F -statistic was used as a testing criterion.   The results relating to the existence of Granger causal relationships between the variables are presented in the table below;

Table 7; The Granger causality test result

Pairwise Granger Causality Tests			
Null Hypothesis:	Obs	F-Statistic	Prob.
EDUEXP does not Granger Cause	45	0.76335	0.4728

UNEMPR			
UNEMPR does not Granger Cause EDUEXP		0.53892	0.5876
M2 does not Granger Cause UNEMPR	45	0.36318	0.6977
UNEMPR does not Granger Cause M2		0.81322	0.4506
CPI does not Granger Cause UNEMPR	45	6.82398	0.0028
UNEMPR does not Granger Cause CPI		0.13510	0.8740
TDEBT does not Granger Cause UNEMPR	45	6.29758	0.0042
UNEMPR does not Granger Cause TDEBT		3.28202	0.0479
EXCH does not Granger Cause UNEMPR	45	18.6019	2.E-06
UNEMPR does not Granger Cause EXCH		1.47138	0.2418

Source: Author's computation from Eviews result

From the pairwise Granger Causality test result, it shows that there is no direction of causality between EDUEXP and UNEMPR, M2 and UNEMPR. The result table equally shows that a uni-directional causality existing from CPI to UNEMPR. This shows that consumer price index granger causes unemployment in the Nigerian economy during the period under review. Equally, a uni-directional causality exists from TDEBT to UNEMPR. The result also shows a uni-directional causality from EXCH and UNEMPR. This imply that exchange rate granger causes unemployment in Nigeria.

CHAPTER FIVE
5.0. SUMMARY, CONCLUSION AND POLICY RECOMMENDATION

5.1.   Summary

Greater government expenditure on primary and secondary education is being advocated by many, little empirical evidence exists on the beneficial impact of such expenditure on education attainment.Therefore, governments will have to cut spending in other areas, or raise taxes to sustain their educational systems and to reduce the issue of unemployment in the country.The structuralism modeltakes the assumption of imperfect competition on goods and labor markets as a starting point instead. It offers great advantage that strategic interactions among firm can be neglected as the Single firm is small compared to the

economy.Relative to the significant cost of raising expenditure, the strong effects of education expenditure on education attainment also confirm the important role of reforms aimed at improving the efficiency and targeting of education outlays. If budgetary allocations for primary and secondary education are to boost economic growth and promote the wellbeing of the poor, policymakers in African countries, including the Nigeria and other countries need to pay attention to absolute expenditures within the education sector.

Therefore from research work it is concluded that broad money supply and exchange rate affect unemployment positively while education expenditure, consumer price index and total debt affect unemployment negatively.

5.2. Conclusion

The descriptive statistics result indicates that from 1980 to 2016, the unemployment, capital and consumption expenditures, exchange rate, consumer price index and broad money supply variables show an averaged positive mean values   from   4.243617 to 154820.2. The maximum values of the variables shows   14.80000, 493458.1, 15160.43, 126.0000, and 6260595.and157.5000 respectively with their minimum values ranging from 8.074924, 3.940000, 14.47117, 30.10000, 1252.900 and 0.544500 correspondingly. The standard deviation showed that the highest standard deviation of (1865282) is recorded by the TDEBT while the least standard deviation of (2.138226) is recorded by UNEMPR. The skewness statistics from the table revealed that five of the variables are positively skewed while one variable is skewed negatively; the kurtosis coefficients showed that one of the variables is leptokurtic while the two variables M2 and TDEBT are mesokurtic and three variables UNEMPR, CPI and EXCH are platykurtic. The probabilities of Jarque-Bera test of normality for the variables indicates that six of the variables have values greater than 5% level of significance. The regression result on the impact of government expenditure on education on unemployment in Nigeria shows that the coefficient of the variables, LOG(M2) and EXCH indicate positive signs.The coefficient of the variables, EDUEXP, CPI and TDEBT show negative signs.

Statistically, the t-statistic result obtained show that two variables, LOG(AGRICEXP) and LOG(TRANSEXP) exhibited values that is greater than positive two and less than the negative two.The F-statistics of the variables under consideration shows that the overall estimate of the regression has a good fit and is statistically significant. The R^2 - (R-squared) the entire regression shows that the independent variables explain the dependent variable to the tune of 56%. Also the Durbin Watson (DW) statistics DW = shows that the overall regression is statistically significance.

Econometrically, the unit root test resultindicate that of all the variables under consideration, are stationary and integrated of order one at 5% level of significance. The cointegration test result obtained indicates the trace likelihood ratio and maximum eigenvalue results point out that the null hypothesis of no cointegration among the variables is rejected in favour of the alternative hypothesis up to four and two cointegrating equations respectively at 5% significant level. The Multicolinearity testresult shows that all of the variables, have positive relationships with the UNEMPR. The relationships are actually at 40%, 54%, 3%, 43% and 49% respectively. The pairwise Granger Causality test result shows that there is no direction of causality between EDUEXP and UNEMPR, M2 and UNEMPR. A uni-directional causality existing from CPI to UNEMPR. Equally, a uni-directional causality exists from TDEBT to UNEMPR. The result also shows a uni-directional causality from EXCH and UNEMPR.

5.3. Policy Recommendation

After investigating the impact of education expenditure on unemployment in Nigeria and also considering the findings, the strength of the findings have been able to recommend the following to further impact economic growth and also reduce the issue of unemployment in the country. To help in the issue of educational financing of a country, it is pertinent to suggestother sources of financing education in Nigeria. Such suggestions include the raising bank loans for capital development, introduction of property tax, donations from endowment, donations from parents/teachers associations, education tax, development levy,

taxes from lotteries to finance education and donations from alumni associations. Since the educational system needs to be financed, the private and public sector assistance or contribution should be more encouraged thereby upholding Charles' (2002) suggestion that African Assemblymen should strive for better funding of education in Africa.

Also, it is also recommended that,

The government should release funds to the research institutes so that they will be imotivated they will be motivated to carry out research works. When government do these they are indirectly investing in education because those that are not educated can actually not go for research works.

a) The research institute in turn comes out with new invention and ideas, all because of the financial help that was given by the government, this new invention is then sold out to interested investors.

b) Investors decides to carry out the project, therefore needs to employ more labour arises.The investors employ more labour force, meaning they have as well helped reduced unemployment issue in the country.

C) Finally the government gets their returns back by imposing tax on the income of the workers and then the cycle continues.

D) If government can be able to follow this cycle accordingly, then we should not have problem about education as well as unemployment in the country anymore, at least the cycle will help reduce the economic issues to a reasonable point.

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APPENDIX

APPENDIX 1

Null Hypothesis: UNEMPR has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.096595	0.2470
Test critical values:	1% level	-3.581152	
	5% level	-2.926622	
	10% level	-2.601424	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(UNEMPR)
Method: Least Squares
Date: 07/12/17   Time: 16:24
Sample (adjusted): 1971 2016
Included observations: 46 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
UNEMPR(-1)	-0.172885	0.082460	-2.096595	0.0418
C	1.931120	0.946328	2.040646	0.0473

R-squared	0.090829	Mean dependent var	-0.018616
Adjusted R-squared	0.070166	S.D. dependent var	1.232841
S.E. of regression	1.188803	Akaike info criterion	3.226275
Sum squared resid	62.18307	Schwarz criterion	3.305781
Log likelihood	-72.20433	Hannan-Quinn criter.	3.256058
F-statistic	4.395710	Durbin-Watson stat	2.412980
Prob(F-statistic)	0.041812		

APPENDIX 2
Null Hypothesis: D(UNEMPR) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-9.026752	0.0000
Test critical values:	1% level	-3.584743	
	5% level	-2.928142	
	10% level	-2.602225	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(UNEMPR,2)
Method: Least Squares
Date: 07/12/17   Time: 16:25
Sample (adjusted): 1972 2016
Included observations: 45 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(UNEMPR(-1))	-1.308677	0.144978	-9.026752	0.0000
C	-0.018949	0.178755	-0.106003	0.9161

R-squared	0.654569	Mean dependent var	0.005932
Adjusted R-squared	0.646536	S.D. dependent var	2.016696
S.E. of regression	1.198983	Akaike info criterion	3.244251
Sum squared resid	61.81510	Schwarz criterion	3.324547
Log likelihood	-70.99565	Hannan-Quinn criter.	3.274185
F-statistic	81.48225	Durbin-Watson stat	2.036727
Prob(F-statistic)	0.000000		

APPENDIX 3
Null Hypothesis: EDUEXP has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		1.922915	0.9998
Test critical values:	1% level	-3.581152	
	5% level	-2.926622	
	10% level	-2.601424	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(EDUEXP)
Method: Least Squares
Date: 07/12/17   Time: 16:26
Sample (adjusted): 1971 2016
Included observations: 46 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EDUEXP(-1)	0.058386	0.030363	1.922915	0.0610
C	5429.542	4942.490	1.098544	0.2779

R-squared	0.077522	Mean dependent var	10396.94
Adjusted R-squared	0.056556	S.D. dependent var	29422.57
S.E. of regression	28578.45	Akaike info criterion	23.40120
Sum squared resid	3.59E+10	Schwarz criterion	23.48070
Log likelihood	-536.2276	Hannan-Quinn criter.	23.43098
F-statistic	3.697602	Durbin-Watson stat	2.219986
Prob(F-statistic)	0.060978		

APPENDIX 4

Null Hypothesis: D(EDUEXP) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.354538	0.0000
Test critical values:	1% level	-3.584743	
	5% level	-2.928142	
	10% level	-2.602225	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(EDUEXP,2)
Method: Least Squares
Date: 07/12/17   Time: 16:26
Sample (adjusted): 1972 2016
Included observations: 45 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(EDUEXP(-1))	-0.967453	0.152246	-6.354538	0.0000
C	10293.51	4744.289	2.169663	0.0356
R-squared	0.484290	Mean dependent var		337.6633
Adjusted R-squared	0.472297	S.D. dependent var		41353.07
S.E. of regression	30040.20	Akaike info criterion		23.50189
Sum squared resid	3.88E+10	Schwarz criterion		23.58218
Log likelihood	-526.7925	Hannan-Quinn criter.		23.53182
F-statistic	40.38016	Durbin-Watson stat		2.003797
Prob(F-statistic)	0.000000			

APPENDIX 5

Null Hypothesis: M2 has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-0.883675	0.7846
Test critical values:	1% level	-3.581152	
	5% level	-2.926622	
	10% level	-2.601424	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(M2)
Method: Least Squares
Date: 07/12/17   Time: 16:27
Sample (adjusted): 1971 2016
Included observations: 46 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
M2(-1)	-0.062720	0.070976	-0.883675	0.3817
C	550.1305	447.8029	1.228510	0.2258
R-squared	0.017438	Mean dependent var		308.9216
	59			
Adjusted R-squared	-0.004893	S.D. dependent var		2401.807
S.E. of regression	2407.676	Akaike info criterion		18.45322
Sum squared resid	2.55E+08	Schwarz criterion		18.53272
Log likelihood	-422.4240	Hannan-Quinn criter.		18.48300
F-statistic	0.780882	Durbin-Watson stat		2.147162
Prob(F-statistic)	0.381675			

APPENDIX 6
Null Hypothesis: D(M2) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-7.424976	0.0000
Test critical values: 1% level		-3.584743	
5% level		-2.928142	
10% level		-2.602225	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(M2,2)
Method: Least Squares
Date: 07/12/17   Time: 16:28
Sample (adjusted): 1972 2016
Included observations: 45 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(M2(-1))	-1.123675	0.151337	-7.424976	0.0000
C	353.6103	366.5434	0.964716	0.3401

R-squared	0.561807	Mean dependent var	-1.230333
Adjusted R-squared	0.551616	S.D. dependent var	3640.690
S.E. of regression	2437.859	Akaike info criterion	18.47905
Sum squared resid	2.56E+08	Schwarz criterion	18.55935
Log likelihood	-413.7787	Hannan-Quinn criter.	18.50899
F-statistic	55.13027	Durbin-Watson stat	2.009649
Prob(F-statistic)	0.000000		

APPENDIX 7

Null Hypothesis: CPI has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-0.801962	0.8091
Test critical values:	1% level	-3.581152	
	5% level	-2.926622	
	10% level	-2.601424	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(CPI)
Method: Least Squares
Date: 07/12/17   Time: 16:30
Sample (adjusted): 1971 2016
Included observations: 46 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CPI(-1)	-0.035048	0.043703	-0.801962	0.4269
C	4.637179	3.464679	1.338415	0.1876

R-squared	0.014406	Mean dependent var	2.068478
Adjusted R-squared	-0.007994	S.D. dependent var	8.922888
S.E. of regression	8.958480	Akaike info criterion	7.265583
Sum squared resid	3531.192	Schwarz criterion	7.345089
Log likelihood	-165.1084	Hannan-Quinn criter.	7.295366
F-statistic	0.643143	Durbin-Watson stat	1.956331
Prob(F-statistic)	0.426885		

APPENDIX 8

Null Hypothesis: D(CPI) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.548431	0.0000
Test critical values:	1% level	-3.584743	
	5% level	-2.928142	
	10% level	-2.602225	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(CPI,2)
Method: Least Squares
Date: 07/12/17   Time: 16:30
Sample (adjusted): 1972 2016
Included observations: 45 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(CPI(-1))	-0.999294	0.152601	-6.548431	0.0000
C	2.048504	1.398526	1.464759	0.1503

R-squared	0.499313	Mean dependent var	-0.070000
Adjusted R-squared	0.487669	S.D. dependent var	12.75144
S.E. of regression	9.127136	Akaike info criterion	7.303807
Sum squared resid	3582.098	Schwarz criterion	7.384104
Log likelihood	-162.3357	Hannan-Quinn criter.	7.333741
F-statistic	42.88195	Durbin-Watson stat	1.997786
Prob(F-statistic)	0.000000		

APPENDIX 9

Null Hypothesis: TDEBT has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.470382	0.5393
Test critical values:	1% level	-3.584743	
	5% level	-2.928142	
	10% level	-2.602225	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(TDEBT)
Method: Least Squares
Date: 07/12/17   Time: 16:31
Sample (adjusted): 1972 2016
Included observations: 45 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TDEBT(-1)	-0.070315	0.047821	-1.470382	0.1489
D(TDEBT(-1))	0.323057	0.146410	2.206528	0.0329
C	168047.0	116659.1	1.440496	0.1571

R-squared	0.126660	Mean dependent var	77321.25
Adjusted R-squared	0.085072	S.D. dependent var	611033.3
S.E. of regression	584464.8	Akaike info criterion	29.45912

62

Sum squared resid	1.43E+13	Schwarz criterion	29.57957
Log likelihood	-659.8302	Hannan-Quinn criter.	29.50402
F-statistic	3.045609	Durbin-Watson stat	1.913223
Prob(F-statistic)	0.058191		

APPENDIX 10

Null Hypothesis: D(TDEBT) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.886701	0.0002
Test critical values:	1% level	-3.584743	
	5% level	-2.928142	
	10% level	-2.602225	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(TDEBT,2)
Method: Least Squares
Date: 07/12/17   Time: 16:31
Sample (adjusted): 1972 2016
Included observations: 45 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(TDEBT(-1))	-0.714151	0.146142	-4.886701	0.0000
C	55168.32	89019.69	0.619732	0.5387

R-squared	0.357056	Mean dependent var	-177.5761
Adjusted R-squared	0.342104	S.D. dependent var	730247.2
S.E. of regression	592309.3	Akaike info criterion	29.46487
Sum squared resid	1.51E+13	Schwarz criterion	29.54517
Log likelihood	-660.9596	Hannan-Quinn criter.	29.49481
F-statistic	23.87985	Durbin-Watson stat	1.895771
Prob(F-statistic)	0.000015		

APPENDIX 11

Null Hypothesis: EXCH has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		0.144095	0.9658
Test critical values:	1% level	-3.581152	
	5% level	-2.926622	
	10% level	-2.601424	

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

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Augmented Dickey-Fuller Test Equation
Dependent Variable: D(EXCH)
Method: Least Squares
Date: 07/12/17   Time: 16:32
Sample (adjusted): 1971 2016
Included observations: 46 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EXCH(-1)	0.003855	0.026750	0.144095	0.8861
C	3.197124	2.232065	1.432362	0.1591

R-squared	0.000472	Mean dependent var	3.405803
Adjusted R-squared	-0.022245	S.D. dependent var	11.39358
S.E. of regression	11.51960	Akaike info criterion	7.768482
Sum squared resid	5838.856	Schwarz criterion	7.847988
Log likelihood	-176.6751	Hannan-Quinn criter.	7.798266
F-statistic	0.020763	Durbin-Watson stat	1.660223
Prob(F-statistic)	0.886084		

APPENDIX 12

Null Hypothesis: D(EXCH) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-5.513290	0.0000
Test critical values: 1% level	-3.584743	
5% level	-2.928142	
10% level	-2.602225	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(EXCH,2)
Method: Least Squares
Date: 07/12/17   Time: 16:32
Sample (adjusted): 1972 2016
Included observations: 45 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(EXCH(-1))	-0.828232	0.150225	-5.513290	0.0000
C	2.884823	1.788057	1.613384	0.1140

R-squared	0.414140	Mean dependent var	0.001781
Adjusted R-squared	0.400515	S.D. dependent var	14.81437
S.E. of regression	11.47023	Akaike info criterion	7.760814
Sum squared resid	5657.350	Schwarz criterion	7.841110
Log likelihood	-172.6183	Hannan-Quinn criter.	7.790748
F-statistic	30.39637	Durbin-Watson stat	1.980751
Prob(F-statistic)	0.000002		

Unempreduexp m2 cpitdebtexch

APPENDIX13

	UNEMPR	EDUEXP	M2	CPI	TDEBT	EXCH
Mean	11.31144	93444.90	4086.535	74.39681	1650369.	56.33541
Median	12.68133	7999.100	1269.322	70.40000	906980.8	21.88600
Maximum	14.80000	493458.1	15160.43	126.0000	6260595.	157.5000

Minimum	8.074924	3.940000	14.47117	30.10000	1252.900	0.544500
Std. Dev.	2.138226	150160.5	5266.820	31.15950	1865282.	65.25595
Skewness	-0.274778	1.639625	1.120797	0.287910	0.772061	0.548626
Kurtosis	1.433471	4.332655	2.738354	1.745848	2.310749	1.452414
Jarque-Bera	5.397216	24.53684	9.974184	3.729577	5.599620	7.048016
Probability	0.067299	0.000005	0.006825	0.154929	0.060822	0.029481
Sum	531.6379	4391910.	192067.1	3496.650	77567351	2647.764
Sum Sq. Dev.	210.3126	1.04E+12	1.28E+09	44662.06	1.60E+14	195883.6
Observations	47	47	47	47	47	47