

Assessment of Impact of Government Budget Deficits on Unemployment Rate in Nigeria

Ayoguezze, Nkechi F.¹ and Anidiobu, Gabriel A.²

¹*Department of Banking & Finance, Enugu State University of Science & Technology (ESUT), Enugu, Nigeria*

²*Department of Banking and Finance, Enugu State University of Science & Technology (ESUT), Enugu, Nigeria*
Corresponding Author: Anidiobu, Gabriel A.²¹

Abstract: *This study assessed the impact of government budget deficits on unemployment rate in Nigeria spanning the sampled period, 1986 – 2015. The annual time series data were obtained from the Central Bank of Nigeria (CBN) Statistical Bulletin of various years and the National Bureau of Statistics (NBS). This study employed the ex-post facto research design because available data could not be manipulated to the advantage of the researcher(s). Ordinary Least Square (OLS) econometric technique was used to estimate the variables. Decisions were made based on a five per cent level of significance. The empirical results indicated that government budget deficit had a positive and non-significant impact on unemployment rate in Nigeria within the period under review. This study suggested that expansionary fiscal policy should be encouraged since it hastened development process of the economy. It is also recommended that appropriate policy combination should be pursued especially in the area of infrastructure improvement like power generation in the interest of the public so as to accomplish desirable national productivity and promote job creation for the teeming unemployed Nigerians.*

Keywords: *Fiscal Policy, Government budget deficit, regression analysis, sampled period, unemployment rate.*

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I. Introduction

Incessant government budget deficits and poor macroeconomic performance generate concerns in both industrialized and unindustrialized countries. Part of the worry arises from general perception that high real interest rates are fuelled by large scale budget deficits, which also crowd out private investment, hamper capital formation and adversely affect economic growth and productivity. Another cause of worry relates to the competence of monetary authorities to control the level of inflation in the event of large scale deficits, mainly because inflation erodes confidence in the system, retards growth and exacerbates social tensions on fixed income earners. Nevertheless, most governments employ deficit financing as veritable mechanism for achieving their economic goal (Antwi, Zhao & Atta Mills, 2013 [1]). However, Eminer (2015 [2]) ascribes manifestation of budget deficit to large government spending or inability to harvest tax revenue or both of them arguing that budget deficits or increased government spending does not usually influence the economy negatively. He argues further that increased government expenditure could affect the economy positively if the resources are channeled to productive ventures rather than to pursue political interests. Generally, in the event of limited resources, governments usually incur deficits to finance economic and social infrastructures. When countries prepare their budget, one out of three types of budget concepts must be witnessed, namely: balance budget, surplus budget and deficit budget. The balance budget signifies that government revenue and expenditure are equal; the surplus budget denotes that government revenue is greater than expenditure, and if government revenue is surpassed by expenditure, the outcome is referred to as deficit budget. Recourse to huge budget deficits may be an unavoidable policy objective if such deficits are effectively used to promote healthy macroeconomy (Aslam, 2016 [3]). Thus governments try to achieve this feat through the instrumentality of fiscal policy. This policy examines the way a government manages the totality of its incomes and expenditures over a known period. A deficit policy makes a significant contribution by ensuring that countries gain macroeconomic stability in the areas of inflation (price stability), full employment (in order to reduce poverty level), income redistribution and sustainable output growth, which form the most common objectives of macroeconomic policy of governments globally (Bawa & Abdullahi, no date [4]). In the course of ensuring realization of aforementioned economic targets, political or military leaders occasionally are inclined to spend more money than they have budgeted or earned as income. This incidence is referred to as “budget deficit”. Ezeamama, Anyanwaokoro & Mgbodille (2015 [5]) and Awe & Shina (2012 [6]) trace evolution of budget deficit to the Keynesian proposition of the 1930s, which assumes that economic growth positively and significantly responds to budget deficit. The scholars, however, caution that the macroeconomic implications of

budget deficits cannot be underestimated in Nigeria, as well as in other jurisdictions. Similarly, Aslam (2016) and Ahmad (2012 [7]) acknowledge two other theoretical postulations: neo-classical and Ricardian Equivalence (authored by David Ricardo) that also relate to our research interest. While the neo-classical approach posits that there is an inverse relationship between budget deficit and economic growth, Ricardian hypothesis argues that there is neutral relation between budget deficits and economic growth. It is important to note that different scholars align their studies with the positions of the aforementioned theories.

The history of deficit financing that emanates from budget deficit in Nigeria dates back to 1978 when the country absorbed US\$1 billion jumbo credit presumably required to reconstruct, rehabilitate and develop infrastructures destroyed during the Nigerian civil war (1967 – 1970). This incident subsequently led to massive borrowing by governments at various levels including their agencies in a bid to revitalize the battered economy (Akinmulegun, 2014 [8]). In view of this, Asogwa & Okeke (2013 [9]) lament that the country does not present an impressive record of fiscal prudence as she has been addicted to budget deficits from her early days of independence, and every measure put in place to wriggle out of the quagmire has not been fruitful (Wosowei, 2013 [10]). For instance, the overall fiscal balance deteriorated from 1980 – 1994, and in 1982 greater deficit of about -12.44% of GDP on the average. However, between 1995 and 2013, the economy recorded a surplus of about 1.19% of GDP on the average in 1996, while other years witnessed different deficit percentages to GDP (CBN, 2012 [11]). Furthermore, the value of deficits as a percentage of Gross Domestic Product (GDP) fell to -0.1 per cent in 1999. The share of deficits in total GDP has been diminishing from -2.0 percent in 2003 to -1.1 percent in 2005 and -0.6 percent in 2006. Nigeria recorded budget deficit equal to 1.80 percent of the country's GDP in 2013 (CBN, 2014 [12]). The Nigerian government budget averaged 2.10 percent of the GDP from 2006 up till 2013, attaining an all-time high of 4.60 percent of GDP in 2008, and subsequently declined to -6.6 percent of GDP in 2009 (CBN, 2014). A macroeconomy may be adjudged to be healthy when there is steady growth and near absence of excessive fluctuations in the system. Large budget deficits in Nigeria over time probably have reduced the amount of loanable funds available to private investors for investment in the financial market through a raise in the interest rate. Increase in the interest rate was made possible by the sale of government securities in the financial market was of high value due to loan repayment ability of the government. Increase in interest rate reduces loanable funds (the amount of money available in commercial banks to lend in the economy). Since there is large number of private firms that operate locally, an increase in interest rate may result in reduction of firm size, thereby culminating in cutting the work force, inflation (if the budget deficit is financed through minting of money), low rate of industrialization, low aggregate demand and low economic growth. Normally when deficit arises a number of pragmatic approaches are open to the government for adoption so as to fill the revenue-expenditure gap. In this regard, government can raise funds internally (through bank credit, issuance of financial instruments, print more paper currencies, increase tax rate or use foreign reserve) or from foreign sources in order to nip the shortfall in the bud. Note that prolong deficit financing impacts negatively on the economy by crowding out private investment (Paiko, 2012 [13]). Borrowing (from internal or external sources) requires government to subscribe to a repayment term and condition, which are usually stringent. This will eventually exacerbate the deficit as government will defray the cost of servicing the debt thereby creating more expenditure and deficit. Continuation of this may lead to high and variable inflation, debt crisis, with crowding out of investment, growth, as well as macroeconomic imbalance generally (Paiko, 2012). Borrowing is considered as a better source as it does not cause a rise in the money supply, which is regarded as the major catalyst of inflation. In contrast, the printing of more currencies (Ways and Means method) may result in inflationary trends in the economy on account of increased money supply (Onwe, 2014 [14]). The constant practice of deliberately permitting government spending to surpass its revenues (deficit financing) in order to attempt to stimulate economic activities and reduce unemployment rate, among other desirables was expected to put Nigeria on better springboard towards economic turnaround. On the contrary, the economy seemed to deteriorate by the day with worrisome unemployment rate, lower living standard, poorer infrastructure development, uncontrollable inflation and interest rates, etc. Clearly, this phenomenon has remained the focus of research and public debate. It is against this backdrop that this paper intends to investigate empirically the extent utilization of deficit financing has positively and significantly influenced the unemployment level in Nigeria.

The controversy relating to budget deficits - macroeconomy nexus in the literature is far from producing clear-cut results and therefore, remains inconclusive. Government budget deficit apparently is viewed as a major cause of macroeconomic instability, but most empirical findings do not entirely support this assumption as findings from various studies are mixed and contentious across countries. In light of this, researchers seem to focus more on budget deficit-economic growth; while less emphasis has been put on another economic index like unemployment shocks on the performance of an economy. This paper therefore sought to add to the few literatures relating to impact of government budget deficits on unemployment rate in Nigeria for the sampled period 1986 – 2015.

II. Review Of Related Literature

2.1 Explaining Budget Deficit

A budget is a summary of intended expenditures along with proposals on how to meet them (Peterson, 2007 [15]). It provides a plan about the earning and spending of a country for a period of time. A budget can be balanced, surplus or deficit. In circumstances in which inflows equals outflows, the budget is said to be balanced. For a sustainable economic growth of a country, balanced budget is decisive. When a budget surplus is witnessed, revenue becomes more than current expenditures and results in an excess of funds that can be appropriated as desired. However, in circumstances in which a budget deficit is identified, current expenses exceed the amount of income being received through standard operations. In order to correct a budget deficit, a nation may need to cut back on certain expenditures or increase revenue-generating activities, or employ a combination of the two. Antwi, et al. (2013) affirms that a robust fiscal policy is a sine qua non for macroeconomic stability and sustainable growth is a cardinal target of nearly all emerging market economies. Nevertheless, the size of budget deficit and means of financing it decide the fiscal inhibition of a country in the long term. In this regard, sustainable budget deficits become a critical indicator for which government officials should take into account. The government's capacity to borrow is hampered by the extent of its income just like an individual, even if it remains in power indefinitely. This suggests that whatever debt it accumulates must be liquidated later. According to Dictionary of Banking and Finance (2005 [16]) a budget deficit is regarded as a deficit in a country's estimated budget where income from taxation will not be sufficient to pay for the government's expenditure. Anyanwaokoro (2004 [17]) states that deficit budgeting implies that the government intends to expend much more money than it earns from diverse income sources. Budget deficit is also called national debt, when referring to federal government accrued deficits. Countries having huge fiscal deficits experience difficulty in financing expenditures than those with lesser deficits. In addition, Maji & Achegbulu (2012 [18]) define budget deficit in terms of loan financing and drawing down of cash balances, which implies the difference between the budget receipts and budget expenditures funded by withdrawal of cash balance and borrowing from public. The concept is perceived as a sign of financial health in which government expenditures fall short of its revenues over a given period. The term budget deficit is most ordinarily used to represent government spending rather than individual or business spending, though it can be applied to all of these entities. Budget deficits could be brought about as reaction against some unexpected activities. For instance, the current high deficit spending necessitated by unceasing Boko Haram terror attacks in North Eastern Nigeria are contributing to budget deficit in Nigeria. Similarly, the activities of Avenger and other militant operations in the Niger Delta has continued to deny Nigeria billions of US dollar oil revenue, thereby giving rise to fiscal deficit. These are just to cite few examples, there are lots more. Budget deficit was developed as an instrument of finance after the two world wars, oil crisis and present financial and economic crises resulting in adoption of three deficit financing approaches – taxes, borrowing and monetization (inflation tax). Of these models, borrowing, which is normally executed by issuing of government bonds is widely used (Stevan, 2010 [19]).

2.2 Unemployment Rate (UNEMR)

Unemployment refers to the condition of having no job. The International Labour Organization (ILO) defines the unemployed as numbers of the economically active population who are without work but available for and seeking work, including people who have lost their jobs and those who have voluntarily left work (World Bank, 1998 [20]). It can also mean the number of people who are unemployed in an area, often given as a percentage of the total labour force. Unemployment rate is the percentage of the working population that is not currently employed. The percentage only takes into account the number of unemployed persons who are actively seeking employment. Those who are unemployed and not seeking jobs are considered to be "voluntarily" unemployed. Many governments set benchmark unemployment rates since they are aware that a zero rate is not achievable. If the actual aggregate unemployment rate is at or below the benchmark rate, the economy is considered to be fully employed. In most countries, particularly Nigeria, people below the age of 15 years and those above the age of 55, who are actively engaged in economic activities, is often excluded from labour statistical surveys. All these factors have the tendency to result in underestimation of unemployment thereby making international comparison very difficult. Factors such as the preponderance of full housewives (but who are willing to be engaged in paid job) and unpaid family workers also contribute significantly to the underestimation of unemployment (Obumneke, 2012 [21]).

2.3 Theoretical Framework

A number of theories have been developed in an attempt to explain the implications of budget deficit financing on economic performance worldwide. Some of them include the Keynesian economics theory, neoclassical economics theory, Ricardian equivalence approach and Musgrave theory of public. However, Keynesian theory forms the theoretical underpinning of our study.

2.4 Keynesian Theory

The Keynesian view was developed by a British Economist, John Maynard Keynes in 1936, and was adopted by the works of Eze & Nwambeke (2015 [22]); Bakare, Adesanya & Bolarinwa (2014 [23]); Ali (2014 [24]), among others. The basic assumption of Keynesianism is that government expenditure can positively influence economic growth by increasing government consumption through increase in investment, employment and profitability (Eze & Nwambeke, 2015 [25]). This means that government expenditure programmes ought to correct perceived insufficient private investments in an economy in a time of budget deficit. In other words, deficit financing can lead to improved private investment since this financing option promotes government expenditure and money supply. Another assumption of the Keynesian thought is that government can turn recession around by raising funds from private sources (e.g. commercial bank, capital market, etc) and make repayments via its diverse spending channels. Keynesianism presumes that government participation in the financial market in a bid to remedy its fiscal deficit is the panacea for achieving desirable economic goals through efficient resource allocation cum other regulatory, harmonizing and stabilizing policies. Generally, the Keynesian hypothesis sees an economy as being primarily volatile that demands government action through spending to ensure economic stability in the short-run.

2.5 Empirical Review

In reviewing the empirical literature relevant to our study, due diligence was applied to critically analyze the available works in line with our study. Our review was ordered in time as follows: Obayori (2016 [26]) examined the effect of fiscal policy on unemployment rate using annualized Nigeria's data for the period 1980 – 2013. The specific objective of study investigated the effect of government capital and recurrent expenditure on unemployment rate in Nigeria employing co-integration and error correction model (ECM) as techniques of analysis. The ADF pre-test for stationarity indicated that the variables were stationary at various levels. Findings revealed that the Johansen-Juselius co-integration test showed co-integrating relationship among the variables. The ECM result showed that the two regressors (i.e. Government Capital and Recurrent Expenditure) had both negative and significant impact on unemployment in Nigeria for the period studied. The result equally indicated a long-run relationship between fiscal policy and unemployment as depicted by both the sign and the statistical significant of the coefficient of the ECM. The study concluded that fiscal policy was effective in curbing unemployment rate in Nigeria. Abubakar (2016 [27]) assessed the effects of fiscal policy shocks on output and unemployment rate in Nigeria in line with the Keynesian principles by adopting the Structural Vector Autoregression (SVAR) methodology to analyze annualized data for the period 1981 – 2015. ADF test for unit root result indicated that all variables were integrated of order one, and that Johansen Co-integration test affirmed long-run association among the variables. Results of the SVAR model indicated shock in public expenditure as having a long-lasting positive influence on output. Revenue shock was discovered to exert a positive impact (lower than that of public expenditure shock) on output. In contrast, the impact of revenue shock on unemployment was seen to be short-lived but negative.

Okoye, Ebuomwan, Modebe & Ezeji (2016 [28]) used annualized Nigeria's data spanning 1981 – 2014 obtained from publications of the Central Bank of Nigeria (CBN) and National Bureau of Statistics (NBS) to investigate impact of key macroeconomic indicators on fiscal deficits in Nigeria. Exchange rate, inflation rate, unemployment rate and gross fixed capital formation made up the independent variables, while fiscal deficit was used as dependent variable. Vector error correction model (VECM) served as the technique of analysis. Results revealed significant positive effect of gross fixed capital formation, and significant negative impact of inflation rate including unemployment rate on fiscal deficits in Nigeria within the period under review. Finally, the exchange rate showed negative and non-significant effect on fiscal deficits. The results aforementioned mean that existing policies targeting at uplifting the infrastructure level of the country seem to engender deficit budgeting. Likewise, economic policies that seem to control inflation (such as increasing GDP level) and unemployment result in increased budget deficits. The causality tests indicate proof of causal effect of government budget deficits on exchange rate, inflation rate and unemployment rate, but failed to display sign of causation between fiscal deficit and gross fixed capital formation. Nkalu (2015 [29]) examined the effects of budget deficits on selected macroeconomic variables in Nigeria and Ghana employing annual time-series data of the two countries spanning from 1970 to 2013. The specific objectives of the study include: to determine the impact of budget deficits on inflation rate, interest rate and economic growth in Nigeria and Ghana based on the methodological framework of Seemingly Unrelated Regression (SUR) model and Two-Stage Least Squares (2SLS). The paper adopted Engle-Granger Co-integration test, Augmented Dickey Fuller (ADF) and Phillips-Perron (PP) tests in estimating the model equations. Data retrieved from World Bank, IMF - World Economic Outlook, Central Bank of Nigeria, Bank of Ghana and other sources were analyzed using SUR technique with various diagnostic and specification tests to determine objectives of the study. The findings showed that budget deficit impacted negatively on inflation rate, interest rate and economic growth thereby affirming the neoclassical position in the literature that budget deficit impedes growth of the economy through resources

crowding-out. Following from the findings, it was recommended that interest rates in both economies should be further lessened to encourage availability and accessibility of credit facilities for private sector investment, which would contribute appreciably to economic growth in Nigeria and Ghana and exchange rate depreciation, should be discouraged in both economies as it has harmful effect on economic growth.

Eze & Nwambeke (2015) studied the effect of deficit financing on unemployment rate in Nigeria applying an error correction model. The study employed *ex-post facto* design. Annual time series data spanning 1970 – 2013 (44years) were obtained from Central Bank of Nigeria Statistical Bulletin, National Bureau of Statistics and World Bank Handbook of Statistics. The study utilized unemployment rate (UNEMR) as dependent variable, whereas external source of deficit financing (EXDF), ways and means (WM), banking system source of deficit financing (BSDF), non-banking public source of deficit financing (NBPDF), interest rate (INTR) and exchange rate (EXR)) constituted the explanatory variables. The result showed that external source of deficit financing (EXDF), ways and means source of deficit financing (WM) and interest rate (INTR) had negative and non-significant implications on economic stability through unemployment rate in Nigeria, whereas banking system source of deficit financing (BSDF), non-banking public source of deficit financing (NBPF), and exchange rate (EXR) had positive and significant implication on economic stability in Nigeria, except non-banking system financing, which was non-significant. The implications of this result is that deficit financing through external source of deficit financing (EXDF) and ways and means source of deficit financing (WM) lessened the rate of unemployment in Nigeria, which maintained economic stability in the short and long run. The result further indicated that deficit financing through banking sector source of deficit financing and non-banking public source of deficit financing raised unemployment level and thereby caused instability in the economy. Unemployment rate (UNEMR) increased in 1980 and decreased in 1981. Unemployment had been fluctuating from 1970 – 1987; unemployment rate had continually witnessed an increase with the highest level of unemployment registered from 1988 to 2013. In conclusion, deficit financing positively related to unemployment rate suggesting that sound policies are needed to enhance economic stability in Nigeria through reduction of the level of unemployment rate in Nigeria. Osuka & Achinihu (2014 [30]) investigated impact of budget deficits on macroeconomic variables in Nigeria stretching the period 1981 – 2012. The researchers conducted preliminary test using ADF method to ascertain stationarity of the variables, which were stationary (absence of unit root) at first differencing. They equally employed Johansen Co-integration test to check for the co-integration of the variables and discovered that the variables in the study were all co-integrated of order one denoting the existence of long-run link between budget deficits and designated macroeconomic indices (GDP, interest rate, nominal exchange rate and inflation rate). The Granger Causality results indicated a unidirectional causal relationship between Budget deficits and GDP with GDP granger causing budget deficit. Conversely, the test for causality further revealed absence of causality between deficits and interest rate, budget deficits and inflation and budget deficit and nominal exchange rate. Based on the results, the study concluded that budget deficits impacted significantly on the macroeconomic behaviour of the Nigerian economy within the period studied.

Musa & Mawejje (2014 [31]) in their study on macroeconomic effects of budget deficits in Uganda using Vector Error Correction Model (VECM) for the period 1999 to 2011 clearly showed that widening current account deficit and rising interest rates were due to budget deficits. The scholars argued that it was necessary for governments to intensify the crusade against corruption deals and tax, which weaken their efforts in tax collection.

Wosowei (2013 [32]) studied the relationship between fiscal deficit and macroeconomic performance in Nigeria over the period 1989 – 2010. Specifically the paper examined the following objectives: to explore the influence of fiscal deficit on macroeconomic aggregates in Nigeria, and to investigate whether fiscal deficit had influenced economic growth in Nigeria, among others employing data secondary in nature. OLS method was used to estimate the variables. Preliminary test of stationarity that used ADF and co-integration of variables that applied Engle Granger techniques were carried out. However, the findings showed that fiscal deficits even though that it satisfied the economic a priori in terms of its negative coefficients, yet did not significantly affect macroeconomic output. The result also showed a bilateral causality relationship between government deficit and gross domestic product, government tax, and unemployment, while there was an independent relationship between government deficit, government expenditure and inflation. Umeora (2013 [33]) analyzed the relationship between fiscal deficits and selected macroeconomic variables (such as gross domestic product, exchange rate, inflation rate, money supply and lending interest rate in Nigeria covering the period 1970 – 2011. OLS method was used to analyze the relationships. Relevant data were sourced from the CBN Statistical Bulletin. The findings included, that fiscal deficit related positively and significantly with gross domestic product, exchange rate, inflation rate and money supply, and that fiscal deficit related negatively with lending interest rate. Onuorah & Ogbonna (2013 [34]) investigated effect of deficit financing on economic growth in Nigeria using data contained in the Annual Report and Statement of Account and Statistical Bulletin of the Central Bank of Nigeria (CBN) for the period 1981 – 2012. The paper applied descriptive statistics, OLS

econometric method, diagnostic test, ADF unit root test and Johansen Co-integration test, as well as Pair-wise Granger causality test as techniques of analysis. The results revealed that the variables were stationary at first difference - 1(1). The variables were jointly co-integrated at 5% level. This implied that deficit financing were statistically significant and positively related to economic growth in Nigeria. This meant that both domestic debt and external debt liability contributed effectively to the liquidation of our debt stock within the sampled period. Based on the regression result, it is clear that the country's domestic debt and foreign debt constituted a veritable instrument of finance in Nigeria. The study therefore concluded that a long-run equilibrium connection occurred between the dependent and independent variables. This means that deficit financing exerted substantial influence on the growth cum debt management and debt services in Nigeria. Ojong, Owuiz & Effiong (2013 [35]) examined effect of budget financing on economic development in Nigeria. Annual time series secondary in nature spanning over the period 1980 – 2008 were sourced from the CBN Statistical Bulletin. Six research hypotheses developed to assess the relationship between budget deficit financing, unemployment, inflation rate, balance of payment, government financing, government revenue, which formed the explanatory variables, while GDP was used as dependent variable. OLS econometric method was used to estimate equations specified for the study. The results proved as follows that: (i) there existed a significant connection budget deficit financing and economic growth, (ii) an inverse relationship occurred between GDP and unemployment, (iii) a direct relationship showed between GDP and inflation rate, (iv) a significant relationship was observed between GDP and government expenditure, (v) an inverse relationship occurred between GDP and government revenue.

Saeidi & Valizadeh (2012 [36]) examined impact of budget on inflation and unemployment in Iran's economy. The theoretical foundation of the study was the Keynesian hypothesis. OLS and LS square were used to estimate the parameters contained in the three models adopted by the researchers to measure the impact of each independent variable on dependent ones. The results revealed that budget deficit had a positive influence on inflation and unemployment in Iran. The implication is that Keynesian theory is prevalent in Iran's economy. The authors concluded that general price levels, inflation and unemployment rates remained critical variables of macroeconomy, which promoted growth. They added that sound policy making guaranteed desirable rate of inflation and unemployment, stressing that budget constituted the primary instrument available to government for policy making.

Doh-Nani (2011 [37]) investigated budget deficit sustainability in Ghana between 1960 and 2007 utilizing the present value budget constraint approach. Conducting the ADF and PP tests for stationarity, the annual time series data used for the study became stationary at 1 percent significance level after first difference. Hence, both government expenditure and revenue of Ghana were stationary and integrated of order one. The Granger causality test affirmed a bi-directional causation such that both expenditure and revenue of Ghana had temporal precedence over each other. This implied past and present values of government revenue presented relevant information to predict future values of expenditure. The test for co-integration proved sustainability of budget deficit of Ghana at 10 percent significance level in a strong sense. In this regard, government should continue to service its past accumulated deficits without large future correction to the balance of income and expenditure. Furthermore, the paper achieved the usual negative sign of the speed of adjustment to long-run equilibrium as a consequence of shocks to the system at 5 percent significance level. This suggested that 53 percent of disequilibrium was restored annually as a consequence of shocks to the system. This means that any disequilibrium associated with the budget deficit of Ghana in the short run is immediately adjusted and restored to equilibrium in the long term. The study concluded that government expenditure-GDP and revenue-GDP series during the study period indicated stable long-run co-integration. Hence, the budget deficit of Ghana was sustainable over the entire period studied.

Kosimbei (2009 [38]) studied the relationship between budget deficit on macroeconomic performance in Kenya. The study was based on the Mundel-Fleming model, and adopted the Vector Autoregressions (VARs) as well as the annual time series data covering 1963 – 2007. The selected macroeconomic variables involved current account of the balance of payments, private consumption, private investments, money supply, treasury bill rates and real GDP. The results showed that budget deficits had a significant effect on private consumption, private investments, money supply (M_3), treasury bills rate, current account and real GDP.

III. Methodology

Ex-post facto design was adopted for this paper. *Ex-post* design was applied on the premise that the study depended on phenomena that had occurred, which were beyond the manipulation of researchers. This means that the relevant explained and explanatory variables used for analysis cannot be subjected to any control whatsoever by the researchers (Onwumere, 2009 [39]). Undoubtedly, the researcher is expected to make use of the relevant data as collated by the institutionalized agencies charged with such statutory task. Therefore, *ex-post facto* design suits the objectives of this study.

This study utilized Nigerian annualized time-series data that are secondary in nature spanning the period from 1986 to 2015. The data were collected from diverse sources, including Central Bank of Nigeria Statistical Bulletin and National Bureau of Statistics (NBS).

3.1 Model Specification

This study assessed the impact of government budget deficits on unemployment rate covering the time 1986 - 2015 by using Nigerian data. For this purpose, the model used by Osuka and Achinihu (2014) that carried out similar study in Nigeria for the period 1981 – 2012 was adopted as specified hereunder:

$$BD = f(\text{GDP, INT, NER, INF}) \dots \dots \dots (1)$$

Where BD means budget deficits; GDP is gross domestic product; INT is interest rates; NER is nominal exchange rates and INF means inflation rates. The parametric model on the effect of budget deficits on economic growth is represented functionally thus:

$$Y = \alpha_0 + \alpha_1 X_1 + \alpha_2 X_2 + \alpha_3 X_3 + \alpha_4 X_4 + \epsilon \dots \dots \dots (2)$$

The model above is thus rewritten as indicated hereunder:

$$BD_t = \alpha_0 + \alpha_1 \text{GDP}_t + \alpha_2 \text{INT}_t + \alpha_3 \text{NER}_t + \alpha_4 \text{INF}_t \dots \dots \dots (3)$$

However, this study modified the above model to suit our objective, and rewritten as:

$$\text{UNEMR}_t = \alpha + \beta_1 \text{BDCT}_t + \beta_2 \text{INTR}_t + \beta_3 \text{EXR}_t + \epsilon_t \dots \dots \dots (4)$$

Where, UNEMR means unemployment rate; BDCT is budget deficit; INTR is interest rate and EXR becomes exchange rate. For the other acronyms, α is constant, ϵ is error term and t is time period.

IV. Results And Analysis

4.1 Unit Root Test

Unit root test was conducted using Augmented Dickey-Fuller (ADF) technique so as to ascertain the stationarity properties in the model as presented in Table 4.2.

Table 4.1: Augmented Dickey-Fuller Unit Root Test Results

Variable	ADF Stat.	Critical Value@ 5%	P-Value	Order of Int.	Remarks
BDCT	-5.23	-2.99	0.0003	1(1)	Stationary @ 1 st difference
INTR	-6.67	-2.98	0.0000	1(1)	Stationary @ 1 st difference
EXR	-4.78	-2.98	0.0007	1(1)	Stationary @ 1 st difference
UNEMR	-3.77	-2.98	0.0085	1(1)	Stationary @ 1 st difference

Source: Authors’ computation, 2017

Table 4.2 presents the unit root test results and shows that all our variables are stationary; hence devoid of presence of unit root. It should be noted that time series data that lack stationarity certainly produce spurious regression results. As can be deduced from Table 4.2 the ADF values are bigger in absolute terms than the critical values at 5%. In that regard, all the variables became stationary at 5% critical values after first differencing (integrated of order one).

4.2 Normality Test

Table 4.2: Descriptive Statistics Results

	BDCT	EXR	INTR	UNEMR
Mean	-211512.8	83.41367	13,63667	11,52667
Median	-85834.05	107.0250	13,50000	12,10000
Maximum	32049.40	195.5200	26,00000	27,80000
Minimum	-1158519.	2.020000	6,100000	1,800000
Std. Dev.	335099.2	64.51317	3,957401	8.420948
Observations	30	30	30	30

Source: Authors’ computation, 2017

Table 4.2 displays individual characteristics of the variables, namely: Budget Deficit (BDCT) averaged ₦2.1 trillion and Unemployment Rate (UNEMR) averaged 11.5 per cent) between 1986 and 2015. Other indicators, which include Exchange Rate (EXR) and Interest Rate (INTR) averaged N83.4 and 13.6 per cent respectively over the 30-year study period. The highest UNEMR was in 20015 at 27.8 per cent, while it was lowest in 1995 at 1.8 per cent. Moreover, the country witnessed worst INTR in 1993 at 26.0 per cent, and best experience of 6.1 per cent in 2010; EXR recorded best exchange rate of ₦2.02 to US\$1 in 1986 and worst rate of N195.5 to US\$1 in 2015. Also, the mean and median of the variables can be observed to be sharing near symmetry – an indication that the series seem normally distributed.

Table 4.3: Regression Results

Dependent Variable: D(UNEMR)				
Method: Least Squares				
Date: 09/04/17 Time: 23:50				
Sample (adjusted): 1987 2015				
Included observations: 29 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.267530	0.361514	0.740025	0.4662
D(LOG(BDCT))	0.087324	0.195525	0.446615	0.6590
D(EXR)	0.077099	0.022559	3.417629	0.0022
D(INTR)	-0.059934	0.087849	-0.682239	0.5014
R-squared	0.348441	Mean dependent var		0.775862
Adjusted R-squared	0.270254	S.D. dependent var		2.066165
S.E. of regression	1.765025	Akaike info criterion		4.101649
Sum squared resid	77.88283	Schwarz criterion		4.290241
Log likelihood	-55.47391	Hannan-Quinn criter.		4.160714
F-statistic	4.456510	Durbin-Watson stat		1.827623
Prob(F-statistic)	0.012207			

Source: Authors' computation, 2017

$$UNEMR_t = 0.267530 + 0.0873243\log BDCT - 0.059934INTR + 0.077099EXR$$

Table 4.3 shows that Budget Deficit (BDCT) has a positive and non-significant impact on Unemployment Rate in Nigeria within the period under review. This is explained by the positive coefficient value (0.087) of our independent variable (BDCT) and the corresponding probability value of the t-statistic (0.659), which is greater than 0.05 critical values. The R² of 0.348 shows that 35% variation in unemployment rate is explained by a change in budget deficit, and the remaining 65% is explained by variables not included in the model. The adjusted R² records account of more number of independent variables if included, and it still explains 27% variations in the dependent variable. The F-statistic (4.4565) is significant (i.e. p-value = 0.0000) at a critical value of 0.05. This implies that the overall regression result is significant. Furthermore, the value of Durbin Watson statistic (DW Stat.) is 1.827623, which is approximately 2.0. This affirms absence of serial autocorrelation in our estimated model equation.

V. Conclusion And Recommendations

Impact of government budget deficits has been critically assessed theoretically and empirically. Usually, deficit financing can bring about improved private investment since this financing option promotes government expenditure and money supply. Most of the previous works in this regard mainly focused on impact of government budget deficits on economic growth. One of the cardinal objectives of government fiscal deficits is to increase government spending and positively grow the economy by ensuring that resources are channelled to productive ventures rather than to pursue political interests. However, since few studies have been conducted on budget deficit-unemployment nexus, we considered it appropriate to concentrate on this subject. Therefore, the OLS econometric method was used as our technique of analysis. This study discovered that government budget deficit had a positive but non-significant influence on unemployment rate within the period studied. In conclusion, since deficit financing positively related to unemployment rate based on our finding, it means that sound policies are needed to enhance economic stability in Nigeria through drastic cuts in subsisting high unemployment level in Nigeria. This paper therefore recommends that expansionary fiscal policy should be encouraged since it hastened development process of an economy. Moreover, it is recommended that appropriate policy combination should be pursued especially in the area of infrastructure improvement like power generation in the interest of the public so as to accomplish desirable national productivity and promote job creation.

References

- [1]. S. Antwsi, X. Zhao and E .F. Atta-Mills. Consequential effects of budget deficit on economic growth: Empirical evidence from Ghana. *International Journal of Economics and Finance*, 5(3), 2013, 90 – 101.
- [2]. F. Eminer, The impact of budget deficit on economic growth in North Cyprus. *West East Institute International Academic Conf. on Impact of Budget Deficit*, North Nicosia, NC. 2015, 228 – 235.
- [3]. A.L.M. Aslam, Budget deficit and economic growth in Sri Lanka: An econometric dynamic analysis, *World Scientific News*, 46, 2016, 176 – 188.
- [4]. S. Bawa and I.S. Abdullahi, Threshold effect of inflation on economic growth in Nigeria, *Central Bank of Nigeria Journal of Applied Statistics*, 3(1), (no date), 43 - 63.

- [5]. M. Ezeamama, M. Anyanwaokoro and C.C. Mgbodille, Budget deficit and inflation in Nigeria: A causal relationship. *Nigerian Journal of Finance* 4(1), 2015, 156 – 168.
- [6]. A. A. Awe, and O.S. Shina, The nexus between budget deficit and inflation in the Nigerian economy. *Research Journal of Finance and Accounting*, 3(10), 2012, 78 – 92.
- [7]. N.Ahmad, The role of budget deficit in the economic growth of Pakistan, *Global Journal of Management and Business Research Economics and Commerce*, 13(5), 2012, 1 – 5.
- [8]. S.O. Akinmulegun, Deficit financing and economic growth in Nigeria: A preliminary investigation, *British Journal of Economics, Management and Trade*, 4(11), 2014, 1624 – 1643.
- [9]. F.O. Asogwa and I.C. Okeke, The crowding out effect budget deficit on private investment in Nigeria. *European Journal of Business and Management* 5(20), 2013, 61 – 65.
- [10]. E. Wosowei, Fiscal deficit and macroeconomic aggregates in Nigeria. *Kuwait Chapter of Arabian Journal of Business and Management Review*, 2(9), 2013, 72 – 82.
- [11]. Central Bank of Nigeria (CBN), *Statistical Bulletin* (Abuja: CBN Publication, 2012).
- [12]. Central Bank of Nigeria (CBN), *Statistical Bulletin* (Abuja: CBN Publication, 2014)
- [13]. I.I. Paiko, Deficit financing and its implication on private sector investment: The Nigerian experience. *Arabian Journal of Business and Management Review*, 1(10), 2012, 45 – 62.
- [14]. B.U. Onwe, Implication of deficit financing on economic growth in Nigeria. *European Journal of Accounting and Finance Research*, 2(10), 2014, 122 – 135.
- [15]. S.K. Peterson, *Academic's dictionary of business* (New Delhi, India: Academic Publishers, 2007).
- [16]. Dictionary of Banking & Finance, *Budget deficit* (London, UK: A & C Black Publishers Ltd, 2005).
- [17]. M. Anyanwaokoro, *Elements of public finance*, (Enugu, NG: Hosanna Publications, 2004).
- [18]. A. Maji and J.O. Achegbulu, The impact of fiscal deficit on economic growth in Nigeria. *International Journal of Business and Management*, 4(2), 2012, 127- 132.
- [19]. G. Stevan, Economic implication from deficit financing, *69 Paper Series Bamberg Economic Research Conf. on Government and Growth*, 2010, 1 - 19
- [20]. World Bank, Report on Unemployment, 1998. Available (on line) at: <http://www.worldbank/unemployment/report.org>. Retrieved on 20th February, 2016.
- [21]. E. Obumneke, Youth unemployment and its socio-economic implications in Nigeria. *Journal of Social Science & Public Policy*, 4, 2012, 47 – 59.
- [22]. O.R. Eze, and G.C. Nwambeke, Effect of deficit financing on unemployment rate in Nigeria: An error correction model. *International Journal of Small Business and Entrepreneurship Research*, 3(7), 2015, 28 – 46.
- [23]. I.A.O. Bakare, O.A. Adesanya and S.A. Bolarinwa, Empirical investigation between budget deficit, inflation and money supply in Nigeria. *European Journal of Business and Social Sciences*, 2(12), 2014, 120 – 134.
- [24]. S.A. Ali, The impact of public expenditures on economic growth in Jordan. *International Journal of Economics and Finance*, 6(10), 2014, 157-167.
- [25]. J.B. Obayori, Fiscal policy and unemployment in Nigeria. *International Journal of Social Sciences and Humanities Invention*, 3(2), 2016, 1887 – 1891.
- [26]. A.B. Abubakar, Dynamic effects of fiscal policy on output and unemployment in Nigeria: An econometric investigation. *CBN Journal of Applied Statistics*, 7(2), 2016, 101 – 122.
- [27]. L.U. Okoye, G.O. Evbuomwan, N.J. Modebe and F.N. Ezeji, Macroeconomic performance and government fiscal deficits: Evidence from Nigeria, *Journal of Management Technology and Development*, 7(2), 2016, 1 – 8.
- [28]. C.N. Nkulu, The effects of budget deficits on selected macroeconomic variables in Nigeria and Ghana. *Asian Journal of Empirical Research*, 5(10), 2015, 167 – 180.
- [29]. B.O. Osuka, and J.C. Achinihu, The impact of budget deficits on macroeconomic variables in the Nigerian economy. *International Journal of Innovation Education and Research*, 2(11), 2014, 164 – 183.
- [30]. M.L. Musa and J. Mawejje, J. (2014). Macroeconomic effects of budget deficits in Uganda: A VAR-VECM Approach. *Economics Policy Research Centre*. 2014.
- [31]. C.E. Umeora, (2013). Analysis of the relationship between fiscal deficits and selected macroeconomic variables in Nigeria. *Journal of Business and Management*, 12(6), 2013, 19 – 27.
- [32]. A.C. Onuorah, and G.N. Ogbonna, Deficit financing and the growth of Nigeria economy. *International Journal of Management Sciences and Business Research*, 3(2), 2013, 1 – 15.
- [33]. C.M. Ojong, H.O. Owuiz and C. Effiong, Effect of budget deficit financing on the development of the Nigerian economy. *European Journal of Business Management*, 5(3), 2013, 61 – 83.
- [34]. P. Saeidi and Y. Valizadeh, Impact of budget deficit on inflation and unemployment in Iran's economy. *Journal of Basic and Applied Scientific Research*, 2(7), 2012, 6979 – 6985.
- [35]. T. Doh-Nani, *Is Ghana's budget deficit sustainable? A co-integration analysis*, doctoral thesis, Kwame Nkrumah University of Science & Technology, Kumasi, GH, 2011.
- [36]. G.K. Kosimbei, *Budget deficit and macroeconomic performance in Kenya: An empirical analysis*, doctoral thesis, Kenyatta University, Nairobi, KE, 2009
- [37]. J.U.J. Onwumere, *Business and economic research methods*, 2nd edition, (Enugu, NG: Vougasen Limited, 2009).

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