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# Fiscal Deficits and Economic Growth in an Emerging Economy: Evidence From Nigeria – An ARDL Analysis

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***Abstract:*** The paper examines the impact of fiscal deficits on Nigerian economy between 1981 and 2019, using Autoregressive Distributed Lag (ARDL) and Pairwise Granger causality techniques to achieve the objective of the study. The variables used in the model are gross domestic product (GDP), fiscal deficits (FDT), inflation rate (INFL), investment (INVT), government expenditure (GEXP), deficits servicing (DS), unemployment (UNEMP), interest rates (INTR) and net export (NEX).The results showed that there were short-run and long-run significant impacts of fiscal deficits on economic growth in Nigeria. From the Pairwise Granger causality analysis, bi-directional causality was established between fiscal deficits and economic growth in Nigeria while unidirectional causality was established between GEXP and GDP, between GDP and UNEMP, between GEXP and FDT, between INVT and INTR and between UNEMP and GEXP. It is therefore recommended that Nigerian government should formulate a set of fiscal deficit (FDT) policy according to Keynes' view to stabilize the economy as well as promoting the economic policy that will enhance sustainable economic growth in the country.

## 1. INTRODUCTION

Fiscal deficits were at the forefront of macroeconomic adjustment and stability in 1980s in both emerging and developed countries, leading to the debt crises which was later resulted to inflation, poor investment and growth performance (Easterly and Schmidt-Hebbel, 1994). Fiscal deficit is a complex macroeconomic problem which is a collectiveissue where the majority of the emerging countriesare requesting for an urgent universal intervention from many rich nations to be financially slavery free (Tung, 2018).

Chronic government fiscal deficits and escalating government debt have become a major concern in both the emerging and developed countries,

leading to budgetary constraints as expressed by (Saleh, 2003) in (Nwokobi, Echekoba andAnanwude, 2018).

Fiscal deficits cannot be undermined for developing economies as it can be financed through government borrowing domestically, government borrowing from international institutions, minting money by Central bank and through foreign aid from donor governments and agencies (Nwakobi *et al*, 2018).

According to Wosowei (2013), fiscal deficit exhibits the gap between the government's total spending and the sum of its revenue receipts and non-debts capital receipts which represents the total amount of borrowed fund to meet its expenditure.

IMF (2015) explains how fiscal policy collaborates with the functionality of fiscal deficits to play an important role in ensuring macroeconomic stability, which is the prerequisite for achieving and maintaining economic growth. At micro level, the policy can boost employment, investment and productivity andplay an important role in supporting strong, lasting and equilibrium growth. However, the main question to be tacked in this research work is; what are the impacts of deficit financing on an emerging economy like Nigeria?

### 1.1 Statement of the Research Problem

Despite government efforts in devising policy measures purposely to truncate fiscal deficits, the deficit has continued in the economy which is having adverse effectson gross domestic product, interest rate, balance of payments, employment rate etc. In an economic emerging nation like Nigeria, borrowing from international financial institutions (World Bank, IMF, etc) and domestic financial institutions (CBN, stock exchange market, etc) to finance reasonable portion of the deficits really contributes not only to liquidity and inflation but also to increase tax rate and interest rates. Enormous and unnecessary deficits are outrageous among the emerging countries especially Nigeria. The economic consequences of such deficits include inflation, devaluation, deteriorating GDP, fiscal adjustment, high interest rates, high foreign exchange rates which constitute vital component of the economic agenda. Fiscal deficits in Nigeria mostly generate serious effects on the macroeconomic growth as it is earmarked on unproductive projects like borrowing to combat War against Boko Haram, terrorism, epidemics and COVID-19 pandemic etc., and borrowing to enhance and encourage corrupt democratic system of government (Ifeanyi andUmeh, 2019).

In spite of the crucial place of fiscal deficits in determining sustainability of an economy, the relevant studies of some authors like Easterly and

Schmit-Hebbel (1993) and Saleh (2003) are outdated. The results of such studies may not be effective for policy making in this 21st century. This study therefore is appropriate to bridge the gap.

### 1.2 Objective of the Study

The main objective of the study is to examine the impacts of fiscal deficits on economic growth in Nigeria spanning for the period between 1981 to 2019.

## 2. LITERATURE REVIEW

### 2.1 Empirical Literature

The fiscal policy is intended to play a key role in the prospective economic growth. Anyway, fiscal situation is a major component that determines the macroeconomic stability but national debt can have inter-generational implications (Artan, 2013). Diokno (2007) examined economic and fiscal policy determinants of public deficits, taking Philippine as a case study between 1981 and 2005 whereby he used Two-stage Least Squares method (2SLS). From the research, it was revealed that real GDP growth in Philippine was found to be positively associated with fiscal balance but insignificant.

Wosowei (2013) determined the relationship between fiscal deficits and macroeconomic performance in Nigeria over the period of 1980 and 2010, using Ordinary Least Square. The empirical findings showed that fiscal deficits met the economic a prior in terms of its negative coefficients, yet did not significantly affect macroeconomic output.Though there was a bilateral causality relationship between government deficits and GDP, government tax and unemployment while there was an independent relationship between government deficit and government expenditure and inflation.

Dikeogu andKarma (2018) examined the effect of fiscal policy on macroeconomic performance in Nigeria from 1970 to 2017 using Secondary data. The study adopted the ARDL, Engle-Granger cointegration and error correction medelling techniques for the analysis. The results of the analysis indicated that a long-run relationship existed among the varaibles (fiscal policy and macroeconomic performance) based on the Bound co-integration test and Engle-Granger cointegraion test.

Nwakobi, *et al.,* (2018) determined the effect of fiscal deficit in an oil dependent revenue country and selected macroeconomic variables from Nigeria (1981–2015) by specifically evaluating the effect of fiscal deficit on

GDP, money supply and inflation. They employed Johansen cointegration, granger causality test. The result reveals that fiscal deficit has no significant effect on gross domestic product, money supply and inflation in Nigeria within the period covered. Also, the study showed that there was a positive insignificant relationship between fiscal deficit and gross domestic product.

Greg and Okoiarikpo (2015) examined the relative impact of fiscal deficits on economic growth in Nigeria using a Chow test approach for data between 1986 and 2013. The study found that fiscal deficits had a significant growth impact during the Military regime, while it has not had a significant impact on economic growth during the democratic regime. Also, it was exhibited that interest rate did not have a significant growth-impact during both regimes.

Ifeanyi andUmeh (2019) analyzed the effect of deficit financing and economic growth using Nigerian experience between 1981 and 2016. Secondary data was used where Johansen cointegration test and normality test were employed for the analysis. The research findings revealed that deficit financing through external debt borrowing has a significant effect on Nigerian economic growth, while debt service has no significant effect on the same economy.

Gyasi (2020) studied the impact of fiscal deficit on economic growth using the Bounds test approach in the case of Morocco between the span period of 1990 and 2017. The results showed that fiscal deficit and economic growth in the long-run as in the equilibrium correction was found to be significant.

Vishal and Ashok (2019) worked on the empirical analysis of macroeconomic effects of fiscal deficit on Indian economy for a period of 1985 to 2015. By employing ARDL model, fiscal deficit has a negative long-run as well as short-run effects on economic growth in the country. Furthermore, the results showed that current account deficit (CAD) was observed to have a negative relationship with GDP in the both long-run and short-run. The granger causality test showed that fiscal deficit had effects on the GDP.

Oluwafadekemi andAdeyemi (2018) investigated the effect of fiscal deficits on Nigerian economic growth from 1981 to 2014. The study established an optimal fiscal deficit level using the Threshold Autoregressive model. The empirical analysis supported the existence of a significant positive relationship between economic growth and the regressors – capital, labour, inflation rate and trade openness. However, the study found that a significant negative relationship existed between fiscal deficits, financing depth and economic growth in Nigeria between the specified period.

Ali and Ahmed (2014) used a disaggregated approach to examine the impact of fiscal deficit and a disaggregated government expenditure on distributed lagged (ARDL) approach. The ARDL estimation revealed that a percentage increase in fiscal deficit expands the national output by 10.05% while a 10% increase in government capital expenditure in Nigeria increases the growth rate of the economy by 62.21%. However, recurrent expenditure has no significant impact on economic growth.

Peter (2018) descriptively appraised fiscal deficit and its implication on Nigerian economic development from 1980 to 2016. The result showed that fiscal deficit contributed positively to the growth of per capita income, economic growth and stabilization of balance of payment only. So, fiscal deficit did not reduce unemployment and inflation rates within the period of study.

Ogunsakin andLawal (2015) examined the impact of fiscal deficit on the growth of Nigerian economy using cointegration and error correction model. From the multivariate cointegration test within the Autoregressive Distributed Lag (ARDL), the results indicated that there existed a stable long-run relationship between economic growth and budgeting components.

Aslam (2016) tested for the dynamic relationship between the fiscal deficit and the economic growth in Sri Lanka between 1959 and 2013. By using Johansen cointegration technique and VECM, fiscal deficit and economic growth of the country shaved and preserved long-run dynamic relationship with no short-run relationship.

Awe andFunmilayo (2014) investigated the short and long-run implications of fiscal deficit on economic growth in Nigeria. Using regression analysis and Johansen cointegration techniquesshowed that there was a long-run relationship between fiscal deficit and economic growth in Nigeria.

## 2.2 Theoretical Literature

John Maynard Keynes, the most influential economist of the 20$^{th}$ century in his economic analysis indicated that fiscal policy would be used to maintain a high level of output and employment. He argued that spending motivated firms to produce output and that if spending falls because of pessimism and other factors, firms would reduce production. If total spending/aggregate demand (AD) is deficient, depressed conditions and high levels of unemployment will persist and this is precisely what Keynes believed that happened during the 1930s. From literature, total spending (AD) is key to the Keynesian macroeconomic model.

According to the Keynesian view, fluctuations in total spending (AD) are the major sources of economic instability. He believed that a budget deficit is present when total government spending exceeds total revenue from all sources. Keynesian supported that counter-cyclical polity to offset fluctuations and opined that budget surpluses when strong total spending threatens to cause inflation) or the budget should shift towards deficit when the economy is threatened by recession and to shift towards surplus when inflation is a threat. Keynes believed that if the government borrows and spends, they can help kick-start the economy and provide economic recovery. That is: GDP=f(fiscal deficit, e), deficit spending is when a government's expenditures exceed its revenues during a fiscal period causing it to run a budget deficit (James, 2020).

Keynesian economics argues that economies are boosted when there is a healthy amount of output driven by sufficient amounts of economic expenditures. Keynes believed that unemployment was caused by a lack of expenditures within an economy which decreased aggregate demand. Keynes advocated a counter-cyclical fiscal policy in which during periods of economic woe, the government should undertake deficit spending to make up for the decline in investment and boost consumer spending in order to stabilize aggregate demand (Barnier, 2020).

## 3. DATA AND METHODOLOGY

### 3.1 Model for the Study

The model for this study was originated from Keynesian model of fiscal policy motivating deficit spending to support the economic growth and the model is a revised version of Nwakobi *et al*, (2018) as thus;

$$GDP = f(FDT, INFL, INVT, GEXP, DS, UNEMP, INTR, NEX) \quad (1)$$

*Where;*

*GDP = Gross domestic product*

*FDT = Fiscal deficits*

*INFL = Inflation rate*

*INVT = Investment*

*GEXP = Government expenditures*

*DS = Deficits servicing*

*UNEMP = Unemployment rate*

*INTR = Interest rates*

*NEX = Net export*

The model to be estimated in econometric analysis can be written as;

$$GDP_t = \alpha_0 + \alpha_1 FDT_t + \alpha_2 INFL_t + \alpha_3 INVT_t + \alpha_4 GEXP_t + \alpha_5 DS_t + \alpha_6 UNEMP_t + \alpha_7 INTR_t + \alpha_8 NEX_t + u_t \quad (2)$$

*Where;*

$\alpha_0$ *= constant intercept*

$\alpha_1$ *to* $\alpha_8$ *= regression coefficients and parameters to be estimated.*

*Ut = residual or error term*

## 4. RESULTS AND DISCUSSIONS

### 4.1 Descriptive Analysis of Data Set

**Table 1**
**Descriptive StatisticsResults**

| | *GDP* | *FDT* | *INFL* | *DS* | *GEXP* | *INVT* | *UNEMP* | *INTR* | *NEX* |
|---|---|---|---|---|---|---|---|---|---|
| Mean | 1.84E+11 | -2374.061 | 19.12154 | 2.21E+09 | 1.75E+11 | 1.726154 | 4.828205 | 0.576667 | 9.300167 |
| Median | 9.62E+10 | -1000.000 | 12.22000 | 1.79E+09 | 9.27E+10 | 1.610000 | 3.780000 | 4.310000 | 9.083293 |
| Std. Dev. | 1.66E+11 | 9720.248 | 17.07428 | 1.63E+09 | 1.60E+11 | 1.254501 | 2.193709 | 14.78928 | 8.055871 |
| Skewness | 0.892743 | 0.048400 | 1.783965 | 2.346769 | 0.915199 | 1.335742 | 1.816431 | -2.563769 | 0.515954 |
| Kurtosis | 2.339008 | 2.883589 | 4.996446 | 9.140870 | 2.393293 | 4.902839 | 5.622728 | 11.87941 | 3.726180 |
| Jarque-Bera | 5.739384 | 0.031517 | 27.16338 | 97.07683 | 5.887548 | 17.48114 | 32.62413 | 170.8453 | 2.587281 |
| Probability | 0.056716 | 0.984365 | 0.000001 | 0.000000 | 0.052667 | 0.000160 | 0.000000 | 0.000000 | 0.274270 |
| Sum | 7.01E+12 | -78344.00 | 745.7400 | 8.62E+10 | 6.66E+12 | 67.32000 | 188.3000 | 22.49000 | 362.7065 |
| Sum Sq. Dev. | 1.02E+24 | 3.02E+09 | 11078.18 | 1.01E+20 | 9.50E+23 | 59.80332 | 182.8696 | 8311.463 | 2466.088 |
| Observa-tions | 38 | 33 | 39 | 39 | 38 | 39 | 39 | 39 | 39 |

*Source:* Authors' Computation, E-view 11, 2020.

The above table 1 shows the summary of the descriptive statistics. It indicates that all the values of mean, median, and standard deviation are positive except in fiscal deficits (FDT). Interest rates (INTR) showed negative skewness while all other variables showed positive skewness. As reflected in Kurtisis, INFL (4.996446), DS(9.140870), INVT(4.902839), UNEMP (5.622728), INTR(11.87941) and NEX(3.726180) showed the peakness of the distribution while GDP(2.339008), FDT(2.883589), and GEXP(2.393293) showed the flatness of the distribution. The Jarque-Bera probability showed that GDP(0.056716), FDT(0.984365), GEXP(0.052667) and NEX(0.274270) are normally distributed while INFL, DS, INVT, UNEMP, INTR are not normally distributed in the model.

## 4.2. Unit Root Test

**Table 2**
**Augmented Dickey Fuller (ADF) Unit Root Results**

| *VARIABLE* | *AT LEVEL* | | *1ST DIFFERENCE* | | *ORDER OF INTEGRATION* |
|---|---|---|---|---|---|
| | *ADF-Test* | *5% C.V* | *ADF-Test* | *5% C.V* | |
| GDP | -2.386365 | -3.540328 | -3.810996 | -3.540328 | I(1) |
| FDT | -3.984867 | -3.562882 | | | I(0) |
| DS | -4.233326 | -3.533083 | | | I(0) |
| INFL | -4.012110 | -3.536601 | | | I(0) |
| GEXP | -2.459410 | -3.540328 | -3.795776 | -3.540328 | I(1) |
| INVT | -3.220421 | -3.533083 | -3.563917 | -3.536601 | I(1) |
| UNEMP | -2.315291 | -3.533083 | -6.966940 | -3.536601 | I(1) |
| INTR | -7.529162 | -3.533083 | | | I(0) |
| NEX | -4.848378 | -3.533083 | | | I(0) |

*Source:* Authors' Computation, E-view 11, 2020.

Table 2 showed the ADF unit root test with trend and intercept where FDT, DS, INFL, INTR and NEX are stationary at level I(0) while GDP, GEXP, INVT, UNEMP are stationary at 1st difference I(1). Based on this information, it is appropriate to use Autoregressive Distribution Lag Bounds (ARDL) for the cointegration test.

## 4.3. ARDL Cointegration Dynamic Analysis

Ata start, we carried out an ARDL lag order selection process. By interactively increasing the lag length to a point where seems to be no more improvement in the choice of lag length, the result in Table 3 was generated.

**Table 3**
**Lag Length Selection Criteria**

| *Criteria* | *VAR (0)* | *VAR (1)* | *VAR (2)* |
|---|---|---|---|
| Akaike | 197.1447 | 192.5539 | 172.9936 |
| Schwarz | 197.5729 | 196.8360 | 181.1296 |
| Hannan-Quinn | 197.2756 | 193.8630 | 175.4809 |

*Source:* Authors' Computation, E-view 11, 2020.

The above Table 3 showed the lag length selection criteria for the model and it indicates the lag 2 be used for the subsequent analysis in this study.

**Table 4**
**ARDL Cointegration Bound Test**

| *STATISTIC* | *VALUE* | *K* |
|---|---|---|
| F-stat | 26.14187 | 8 |
| Critical Bound Values | | |
| Level of significance | Lower bounds | Upper bounds |
| 10% | 1.85 | 2.85 |
| 5% | 2.11 | 3.13 |
| 2.5% | 2.33 | 3.42 |
| 1% | 2.62 | 3.77 |

*Source:* Authors' Computation, E-view 11, 2020.

From the above Table 4, it is exhibited that that the value of f-statistics which is 26.14187 compared with the level of significance, is greater than the upper bounds critical values at 10%, 5%, 2.5% and 1% levels. As a result of this, the condition for long-run relationship among the variables is thereby established. The long run dynamic test was carried out by estimating equation 2, and the results are presented in Table 5 below.

**Table 5**
**ARDL Cointegration Short-Run and Long-Run Estimates**

| *Variable* | | *ARDL short-run form* | | |
|---|---|---|---|---|
| *D(GDP)* | *Coefficient* | *Std. Error* | *t-Statistic* | *Prob.* |
| D(FDT) | 10000656 | 375392.0 | 2.665630 | 0.0145 |
| D(INFL) | -1.25E+08 | 3.77.E+08 | 0.000000 | 0.0000 |
| D(DS) | -0.989582 | 1.485207 | -0.666292 | 0.5125 |
| D(GEXP) | 1.050846 | 0.094510 | 11.11886 | 0.0000 |
| D(INVT) | 1.60E+09 | 3.30E+09 | 0.000000 | 0.0000 |
| D(UNEMP) | -1.32E+09 | 1.63E+09 | 0.000000 | 0.0000 |
| D(INTR) | -83700647 | 5.63E+08 | 0.000000 | 0.0000 |
| D(NEX) | 6.43E+08 | 3.79E+08 | 0.000000 | 0.0000 |
| CointEq(-1) | -0.980271 | 0.050726 | -19.32499 | 0.0000 |
| | | *ARDL long-run form* | | |
| *GDP* | *Coefficient* | *Std. Error* | *t-Statistic* | *Prob.* |
| FDT | 1020796 | 399514.2 | 2.555093 | 0.0184 |
| INFL | -1.28E+08 | 3.88E+08 | -0.328735 | 0.7456 |
| DS | -1.009499 | 1.519044 | -0.664562 | 0.5136 |
| GEXP | 1.071996 | 0.020660 | 51.88669 | 0.0000 |
| INVT | 1.63E+09 | 3.38E+09 | 0.482504 | 0.6344 |
| UNEMP | -1.35E+09 | 1.72E+09 | -0.147906 | 0.4414 |
| INTR | -85385253 | 5.77E+08 | -0.147906 | 0.8838 |
| NEX | 1.02E+09 | 3.91E+08 | 1.675992 | 0.1086 |

*Source:* Authors' Computation, E-view 11, 2020.

The above Table 5 showed the ARDL cointegration short-run and long-run impact of the independent variables on the dependent variable. Thus, in the short-run, it is indicated that all the variables (FDT), (INFL), (GEXP), (INVT), (UNEMP), (INTR), and (NEX) have short-run significant impacts on the independent variables GDP while (DS) has insignificant short-run impact on economic growth in Nigeria within 1981 and 2019. In the long-run, it is only FDT and GEXP that have long-run significant impacts on the economic growth while the other variables like INFL, DS, INVT, UNEMP, INTR and NEX have insignificant long-run impacts on the economic growth. Through the lagged error correction model (ECM) with a coefficient (-0.980271) and p-value (0.0000), it is established that there is long-run causality among the variables running from independent variables to the dependent variable.

## 4.4. Test of Serial Correlation among Variables

**Table 6**
**Breusch-Godfrey Serial Correlation LM Test**

*H0: There is no serial correlation.*

| *Breusch-Godfrey Serial correlation LM Test*<br>*Null hypothesis: No serial correlation at up to 2 lags* | | | |
|---|---|---|---|
| *F-statistic* | *0.796468* | *Prob. F(2,19)* | *0.4654* |
| Obs*R-squared | 2.397960 | Prob.Chi-square(2) | 0.3015 |

*Source:* Authors' Computation, E-view 11.0, 2020.

The Table 6 showed whether the variables are serial correlated or not. The result showed that the value of the f-stat is 0.796468 while the p-value (0.4654) is greater than 5% significance level and based on this, the null hypothesis (H0) is accepted meaning there is no serial correlation among the variables. Hence, the model can be relied upon as a basis for making inferences and valid recommendations.

## 4.5. Causality Test

Pairwise granger causality tests were carried out and the results are as presented in Table 7 below.

**Table 7**
**Pairwise Granger Causality Tests**

*Pairwise Granger Causality Tests*
*Sample: 1981 -2019*
*Lags: 2*

| *Null hypothesis* | *Obs* | *F-statistic* | *Prob.* | *Decision* |
|---|---|---|---|---|
| FDT does not Granger Cause GDP | 28 | 4.01261 | 0.032 | Bi-causality |
| GDP does not Granger Cause FDT | | 6.17735 | 0.0071 | |
| INFL does not Granger Cause GDP | 36 | 0.00252 | 0.9975 | No causality |
| GDP does not Granger Cause INFL | | 1.34977 | 0.2741 | |
| DS does not Granger Cause GDP | 36 | 0.18012 | 0.836 | No causality |
| GDP does not Granger Cause DS | | 0.3122 | 0.7337 | |
| GEXP does not Granger Cause GDP | 36 | 2.95801 | 0.0667 | Unicausality |
| GDP does not Granger Cause GEXP | | 9.44088 | 0.0006 | |
| INVT does not Granger Cause GDP | 36 | 1.10052 | 0.3453 | No causality |
| GDP does not Granger Cause INVT | | 1.18897 | 0.318 | |
| UNEMP does not Granger Cause GDP | 36 | 0.52208 | 0.5984 | Unicausality |
| GDP does not Granger Cause UNEMP | | 4.36647 | 0.0213 | |
| INTR does not Granger Cause GDP | 36 | 0.38344 | 0.6847 | No causality |
| GDP does not Granger Cause INTR | | 2.64058 | 0.0873 | |
| NEX does not Granger Cause GDP | 36 | 0.93426 | 0.4037 | No causality |
| GDP does not Granger Cause NEX | | 1.05454 | 0.3605 | |
| INFL does not Granger Cause FDT | 29 | 0.54984 | 0.5841 | No causality |
| FDT does not Granger Cause INFL | | 0.07319 | 0.9296 | |
| DS does not Granger Cause FDT | 29 | 0.26401 | 0.7702 | No causality |
| FDT does not Granger Cause DS | | 0.19587 | 0.8234 | |
| GEXP does not Granger Cause FDT | 28 | 6.8934 | 0.0045 | Unicausality |
| FDT does not Granger Cause GEXP | | 1.47903 | 0.2487 | |
| INVT does not Granger Cause FDT | 29 | 0.44184 | 0.648 | No causality |
| FDT does not Granger Cause INVT | | 1.31335 | 0.2876 | |
| UNEMP does not Granger Cause FDT | 29 | 0.8976 | 0.4208 | No causality |
| FDT does not Granger Cause UNEMP | | 1.25067 | 0.3071 | |
| INTR does not Granger Cause FDT | 29 | 1.83462 | 0.1814 | No causality |
| FDT does not Granger Cause INTR | | 2.41669 | 0.1106 | |
| NEX does not Granger Cause FDT | 29 | 0.38829 | 0.6824 | No causality |
| FDT does not Granger Cause NEX | | 0.29706 | 0.7457 | |
| DS does not Granger Cause INFL | 37 | 0.48273 | 0.6215 | No causality |
| INFL does no Granger Cause DS | | 0.01244 | 0.9876 | |
| GEXP does not Granger Cause INFL | 37 | 1.16792 | 0.3243 | No causality |
| INFL does not Granger Cause GEXP | | 7.00E-05 | 0.9999 | |
| INVT does not Granger Cause INFL | 37 | 0.49928 | 0.6116 | Unicausality |
| INFL does not Granger Cause INVT | | 7.13991 | 0.0027 | |

*contd. table 7*

| *Null hypothesis* | *Obs* | *F-statistic* | *Prob.* | *Decision* |
|---|---|---|---|---|
| UNEMP does not Granger Cause INFL | 37 | 2.0957 | 0.1395 | No causality |
| INFL does not Granger Cause UNEMP | | 1.78124 | 0.1847 | |
| INTR does not Granger Cause INFL | 37 | 0.54545 | 0.5849 | No causality |
| INFL does not Granger Cause INTR | | 1.48361 | 0.242 | |
| NEX does not Granger Cause INFL | 37 | 0.25215 | 0.7787 | No causality |
| INFL does not Granger Cause NEX | | 0.75887 | 0.4764 | |
| GEXP does not Granger Cause DS | 36 | 0.31437 | 0.7325 | No causality |
| DS does not Granger Cause GEXP | | 0.01348 | 0.9866 | |
| INVT does not Granger cause DS | 37 | 0.42207 | 0.6593 | No causality |
| DS does not granger cause INVT | | 0.21374 | 0.8087 | |
| UNEMP does not granger cause DS | 37 | 0.87354 | 0.4272 | No causality |
| DS does not granger cause UNEMP | | 0.47729 | 0.6248 | |
| INTR does not granger cause DS | 37 | 0.2693 | 0.7656 | No causality |
| DS does not granger cause INTR | | 0.05094 | 0.9504 | |
| NEX does not granger cause DS | 37 | 0.0914 | 0.9129 | No causality |
| DS does not granger cause NEX | | 0.60325 | 0.5531 | |
| INVT does not granger cause GEXP | 36 | 0.97731 | 0.3876 | No causality |
| GEXP does not granger cause INVT | | 1.20566 | 0.3132 | |
| UNEMP does not granger cause GEXP | 36 | 0.47752 | 0.6248 | Unicausality |
| GEXP does not granger cause UNEMP | | 3.79723 | 0.0335 | |
| INTR does not granger cause GEXP | 36 | 0.4315 | 0.6534 | No causality |
| GEXP does not granger cause INTR | | 1.72783 | 0.1943 | |
| NEX does not granger cause GEXP | 36 | 1.92755 | 0.1625 | No causality |
| GEXP does not granger cause NEX | | 1.01336 | 0.3747 | |
| UNEMP does not granger cause INVT | 37 | 0.64716 | 0.5302 | No causality |
| INVT does not granger cause UNEMP | | 1.33453 | 0.2775 | |
| INTR does not granger cause INVT | 37 | 1.56136 | 0.2254 | No causality |
| INVT does not granger cause INTR | | 0.57923 | 0.5661 | |
| NEX does not granger cause INVT | 37 | 0.92738 | 0.406 | No causality |
| INVT does not granger cause NEX | | 0.03683 | 0.9639 | |
| INTR does not granger cause UNEMP | 37 | 1.93799 | 0.1605 | No causality |
| UNEMP does not granger cause INTR | | 0.38695 | 0.6823 | |
| NEX does not granger cause UNEMP | 37 | 0.76697 | 0.4728 | No causality |
| UNEMP does not granger cause NEX | | 0.14655 | 0.8643 | |
| NEX does not granger cause INTR | 37 | 3.15606 | 0.0561 | No causality |
| INTR does not granger cause NEX | | 0.28512 | 0.7538 | |

*Source:* Authors' Computation, E-view 11, 2020.

The above Table 7 showed the Pairewise Granger causality results where the direction of causality among the variables are verified. Based on this finding, bi-directional causality was established between fiscal deficit (FDT) and economic growth (GDP), meaning these two variables granger caused

each other. Unidirectional causality was established between government expenditure (GEXP) and economic growth (GDP), between GDP and UNEMP, between GEXP and FDT, between INVT and INFL and between UNEMP and GEXP whereby economic growth granger caused government expenditure and unemployment. Government expenditure granger caused fiscal deficit and unemployment and finally inflation granger caused investment. The remaining variables showed no causality in the study.

## 5. CONCLUSION AND POLICY RECOMMENDATIONS

Having examined the impact of fiscal deficits on economic growth in Nigeria between 1981 and 2019, it was concluded from the findings that there exists a long-run significant relationship between fiscal deficit and economic growth in Nigeria between the stipulated time-series. Based on the findings, fiscal deficits (FDT), inflation rate(INFL), government expenditures (GEXP), investment (INVT), unemployment (UNEMP), interest rates (INTR) and net export (NEX) have short-run significant impacts on Nigerian economy while only deficits servicing (DS) showed insignificant short-run impact on the GDP. In the long-run, it is only fiscal deficits that has significant impact on the GDP as aligned with Awe andFunmilayo (2014) and Gyasi (2020). However, it is established that there is long-run causality among the variables running from independent variables to dependent variable (GDP). From the Pairewise Granger causality technique, bi-directional causality was established between fiscal deficits and economic growth in Nigeria while unidirectional causality was established between GEXP and GDP, between GDP and UNEMP, between GEXP and FDT, between INVT and INTR and between UNEMP and GEXP. It is therefore recommended that Nigerian government should formulate a set of fiscal deficit (FDT) policy according to Keynes' view to stabilize the economy as well as promoting economic policy to enhance sustainable economic growth, as an economic emerging nation.

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