FISCAL POLICY SUSTAINABILITY AND ECONOMIC GROWTH OF NIGERIA

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Abstract—Sustainable economic growth has been the desire of every nation’s citizen, but has not been fully attained in Nigeria considering the level of infrastructural decay, unemployment rate, and huge public debt despite several strategies in place to increase revenue and public expenditure over time. This study aimed at examining the effect of fiscal policy sustainability on economic growth. The result of the Generalized Least Square regression estimation test conducted using 38-years’ time series data (1981 – 2018) revealed that fiscal policy sustainability significantly affects growth in real gross domestic product of Nigeria. The study opined that there is a need for economic diversification strategies by the government, aiming towards enhancing the growth of the nation, strategies to mitigate corruptions and other leakages in the nation’s resources should be put in place, and lastly, debt should only be considered if targeted towards specific infrastructural projects for the expansion of the economy; and the execution of such should be scrutinized and critically monitored.

Keywords—Economic growth, Public debt, Public expenditure, Real GDP, Tax revenue.

I. INTRODUCTION

The desire of every nation is to build up its national income to a sustainable level, but this is still a mere dream in Nigeria. Despite its endowment in natural resources, the nation is still crawling and has not been able to the desired growth in economy (Ogbole, Amadi & Essi, 2011). Abdul-Kahar, Ebi, Bin, and Nasser (2019) asserted that uncontrollable government spending, piled up of budget deficit, and misuse of debt are the major constraints to be re-engineered if Nigeria intends to enhance its economy to meet global sustainable development goals standard.

Globally, sustenance of economy depends on the availability of fund and resources for the implementation of development goals tending towards the improvement of the well-being of citizens (Burger & Calitz, 2019). Fiscal policy measures are the major tools in the hands of the government of a nation to attain the set sustainable objectives if productively utilized. The fiscal measures constitute government revenue and expenditure, the ability of any government to strike a balance between these two terms determines the achievements of its sustainable growth. Taxation has been known to be major source of revenue to government across the globe while debts are usually incurred to fill the gaps created between generated revenue and expenditure in an economy (Amadi & Alolote, 2020).

OECD (2019) asserted that the unstructured system of the economy has been the major challenge in generating sufficient fund for financing sustainable growth in Africa and its regions. According to World Bank report (2020), it was stated that lack of database in most African countries has been the reason for low...
revenue generation as majority of taxable citizens cannot be assessed due to lack of adequate records. Also, African Development Bank (2020) affirmed that the highest revenue to be generated through taxes among Africa Countries is averagely 16.9 per cent of its Gross Domestic Product and that this happened to be lower by 7.5 credits in comparison to the world benchmark. Debt is not a death sentence, it is expected to be a form of alternative means of developing the real sector of any economy but debt has been a disaster in major African countries due to its mismanagement and unproductive utilization (Bongumusa, Irrshad, & Lorraine, 2019).

According to Friday, Fidelis, Udeme and Olumide (2016); Nwankwo, Kalu, and Chiekezie (2017) economic growth of a nation can be improved through good infrastructural developments, provision of enabling and peaceful environment for both foreign and local investors, availability of affordable shelter, empowerment of the agricultural sector as well as the medium, small and medium scale businesses, restoration of degraded environment. Inventing new innovations and improving the living standards of the masses, government spending plays an important role in ensuring sustainable economic growth (Anyalechi, Onwumere, Uchechukwu & Boloupremo, 2017). The approach consists of simulating the economy by addressing the nations forecast needs. Dealing with these issues requires sustainable fiscal policy (Odetayo & Adeyemi, 2017).

Arin, Braunfels, and Doppelhofer (2015) posited that external debt brings about the capital inflow of funds in the economy and as well as has a positive impact on the national savings, investments, and growth rates. On the contrary, Adepoju, Salau and Obayelu (2007) affirmed that external debt, however, acts as the major constraint to capital formation in Nigeria. The dynamics and the burden of external debt is an indication that its contribution is very insignificant to financing economic development projects in the economy. Currently, CBN report (2020) reported that Nigeria foreign Debt rose from approximately 26 billion US Dollars to 27 billion US Dollars within a quarter difference between first and second quarter of 2019. On the average, Nigeria recorded 10 billion US dollar in foreign debt between 2018 and 2019, increasing to 27 billion in second quarter of 2019 is a troubling hike in foreign debt without much development to show for it. The upsurge in the external debt accumulation of the country was blamed on the persistent hike in the general price level, fiscal imbalances, excessive government spending and inadequate growth in the gross domestic product as well as the decline in public revenue since the commencement of the oil crisis of the early 1980s (Nwankwo et al., 2017). The real GDP has been unstable over the years despite all forms of policy reforms over the decades from independence till date. Averagely, Nigeria’s annual growth in real Gross Domestic Product between 2010 and 2019 was 1.26%; with a decline of -13.97% in the first quarter of 2016 and the highest in 2010 at 10.59%. The country reported a marginal growth rate of 0.81% in 2018 which is far below the expected across the globe (National Bureau of Statistics, 2018; World Bank, 2018; African Development Bank Group, 2020). It is on the basis of this background that this study seeks to examine the effect of tax revenue, public debt and public expenditure sustainability on to economic growth in Nigeria for a period of 38 years (1981-2018).
II. REVIEW OF LITERATURE

THIS SECTION DESALT WITH CONCEPTUALIZATION OF THE VARIABLES, THE THEORIES UNDERLYING THE STUDY AND THE EXTANT EMPIRICS ON FISCAL POLICY SUSTAINABILITY AND ECONOMIC GROWTH.

2.1 CONCEPTUAL REVIEW

Fiscal policy sustainability is essentially a macroeconomic concept which is related to the solvency of government’s treasury. This solvency exists when there is no possibility that the prospective expenses of the government would be threatened by its existing financial obligations (Odetayo & Adeyemi, 2017). Sustainable fiscal policy empower the government with the enabling resources in meeting its financial responsibilities as when due (Collignon, 2012). Fiscal policies are said to be sustainable if an economy possesses a steady and growing means of generating revenue and ability to efficiently utilizes the financial resources in performing their civic roles and manage debts without resulting into fiscal imbalance (Kojo, 2010; Bravo & Silvestre, 2002).

Burger and Calitz (2019) opined that fiscal consolidation in the form of adjustments to government expenditure and revenue, higher economic growth, lower interest rates, and government’s active management of its debt portfolio to lower debt servicing cost, all improve the sustainability of fiscal policy. Fiscal policy sustainability has been studied and measured by several researchers (Bravo & Silvestre, 2002; Odetayo & Adeyemi, 2017; Ogbole, Amadi & Essi, 2011; Oyeleke, 2013) as government revenue, government expenditure and budget deficit. In this context is measured as taxation revenue growth, public debt growth and growth in public expenditure as adapted from the study of Collignon (2012).

The term ‘tax’ has been defined as a compulsory transfer or payment of money occasionally of goods and services from the private individuals, institutions or groups to raise revenue to finance government expenditures (Oyebanji, Akintoye, Adegbie, & Ogundajo, 2019). The Nigeria’s revised 2017 National Tax Policy defines tax as “any compulsory payment to government imposed by law without direct benefit or return of value or a service whether it is called a tax or not” (Federal Ministry of Finance, 2017 pg.1). The core function of taxation as a revenue generating tool in developed and developing countries have been studied by eminent scholars (Izedonmi & Okunbor, 2014; Myles, 2000; Saheed, Abarshi & Ejide, 2014).

Public debt has been described as one of the major indicators of the macroeconomic variables, which forms the image of countries in the international markets (Eze, Nweke, & Atuma, 2019). Prudent management of public debt increases economic growth and stability via resources mobilization with low borrowing cost and limited financial risk exposure (Christabell, 2013). Isaac and Rosa (2016); Nassir and Wani (2016), opined that a debt implies an obligation to pay money, deliver goods, or render service under an express or implied agreement. Hence, they described public debt as the total debts of the nation which include debts of national, state and local governments that revealed how much public spending is financed through borrowing instead of taxation.

According to Ojong, Ogar, and Arikpo (2016) public expenditure is a scheme of the nation on non-market criteria of economic resources derived from corporate bodies and households. Government spending goes to the nation's defense, infrastructure, health and welfare benefits. Government expenditure is presumed to be a veritable tool for economic growth and development leaning on the Keynesian doctrine (Efobi & Osabuohien, 2012). Oyinlola and Akinnibosun, (2013) opined that at any given level of public expenditure, there are important choices between policy instruments that lead to exhaustive public expenditure and those
that involve transfers. Therefore, disequilibrium between demand and supply typically manifests itself in balance of payments problems, rising inflation and low output and growth. Economic growth has long been considered an important goal of economic policy with a substantial body of research dedicated to explaining how this goal can be achieved (Fadare, 2010). Economic growth represents the expansion of a country’s potential GDP or output.

2.2 UNDERLYING THEORIES

Two theories; the Keynesian theory and Wagner’s theory served as the theoretical bedrock guiding this research. Wagner’s law is a principle named after the German economist Adolph Wagner (1835-1917). Wagner advanced his ‘law of rising public expenditures’ Wagner’s analyzed the trends in the growth of public expenditure and in the size of public sector in his theory of increasing State activities. The theory assumed that as the responsibilities of the States increases, the public expenditure also increases in order to meet the current needs of administration and regulation of the economy; the evolution of globalized industrial set up would pressurized the political sector for social development and call for increased allowance for social consideration in the conduct of industry, and the rise in public expenditure will be more than proportional increase in the national income (income elastic wants) and will thus result in a relative expansion of the public sector. Thus, an increase in government expenditure could be justified if it results from a rise in education and health services because they are assumed to be the most important investments in human capital.

Keynesian theory of public expenditure propounded by Lord Keynes in 1967 as a re-examination to ‘the theory of investment’, opined that economic recession or depression in any nation was as a result of imbalance situation between savings and investments; and this could be addressed if government increases public expenditure and implement income redistribution policy. This theory assumed that debt is an additional inflow of fund into the economy through which government can finance its activities, thus reducing unemployment and generate revenue through taxes collected from the engaged citizens to service the debt. Keynesian theory of fiscal policy advocating compensatory spending by the government through deficit financing is an effective contra-cyclical method to maintain economic stability and prevent secular stagnation. The relationship between taxation, public expenditure; public debt and economic growth which was main objective addressed in this study was hinged on these theories.

2.3 EMPIRICAL REVIEW

Odetayo and Adeyemi (2017) discovered that government revenue and government expenditure positively and significantly impacted on economic growth on Nigeria using ARDL and VECM approach. In the same vein, Nwankwo et al., (2017) examined the effect of fiscal policy on the Nigeria economy using the Co-integration and error correction model (ECM) between 1970 and 2014 revealed that both oil and tax revenue and government expenditure positively and significantly influence economic growth in Nigeria. In the same context, using the same technique, Adefeso and Mobalaji (2010) report contradicted the findings of Nwankwo et al., (2017); likewise, Omitogun and Ayinla (2007) examined the contribution of fiscal policy in the achievement of sustainable economic growth in Nigeria using slow growth model and discovered that fiscal policy has not been effective in the area of promoting sustainable economic growth in Nigeria. They were of the opinion that factors such as wasteful spending, poor policy implementation and lack of feedback mechanism for implemented policy evident in Nigeria, which is indeed capable of hampering the effectiveness, of fiscal policy. According to Ogbole, Amadi and Essi (2011) in their comparative analysis study on how fiscal policy influenced the gross domestic product of Nigeria, they concluded that fiscal policy was more effective during the regulated periods. In the same vein, Adeoye (2006) found that growth
in output is negatively affected by the public investment while increase in government expenditure has a negative turn on private investment.

Chowdhury and Afzal (2015) was of the opinion that fiscal rather than monetary action had greater influence on economic activities in Bangladesh. The result of the meta analysis conducted by Nijkamp and Poot (2017) revealed that more than 50% out of 41 studies reviewed found insignificant relationship between fiscal policy and economic while 17% obtained a significant positive relationship, 29% reported that fiscal policy negatively impacted on economic growth. Khosravi and Karimi (2016) suggested that appropriate fiscal measures enhance economic development and growth. Likewise, Mansouri (2008) concluded that long-run relationships exist between fiscal policy and economic growth in Egypt, Morocco and Tunisia and that fiscal policy significantly impacted on the economic growth of these three countries. Ugwuanyi and Ugwunta (2017) report on Sub-Saharan African countries aligned with the findings of Mansouri (2008).

Oyeleke (2013) investigated fiscal policy sustainability in three West African Monetary Zone (WAMZ) countries for the period of 1980 to 2010 and discovered that fiscal policy was weakly sustainable in those countries and the speed of adjustment of government revenue to government expenditure was relatively high in Nigeria compared to Ghana and Guinea.

Eze et al., (2019) analyzed the impact of public debts on economic growth in Nigeria for the period 1981-2017 using ARDL model and Chow Breakpoint test. The results revealed that external debt has a negative and significant impact on GDP while domestic debt has a negative but insignificant effect on GDP. Pegkas (2018) discovered that private and government consumption, investment and trade openness had positive effect on economic growth; while government debt and population growth had a negative impact on growth in Greece using auto-regressive distributed lag (ARDL) model. Alejandro and Ileana (2017), examined the impact of government debt on gross domestic product in 16 Latin American economies including Bolivia, Argentina, Chile, Brazil, Costa Rica, Colombia, Dominican Republic, Mexico, Honduras, Panama, Nicaragua, Peru, Paraguay, Venezuela and Uruguay for the period 1960-2015 using Two-Stage Least Squares and found that debt has a positive impact on GDP growth but declines as ration of public debt-to-GDP rose to 64% and 71%.

Nassir and Wani (2016) investigated the relationship between public debt and economic growth in Afghanistan and discovered that external debt have negative and insignificant influence on the gross domestic product (GDP). Isaac and Rosa (2016) empirical study on Mexico economy showed that public debt has a positive influence on public investment and economic growth in the economy. Similar result was obtained by Reza, Michael, and Mona (2014) in Iran using autoregressive distributed lag (ARDL) model. Contrarily, the study of Akram (2015) in Philippines using the autoregressive distributed lag technique showed that public external debt had a negative and significant impact on economic growth and investment; while, Precious (2015) using ordinary least square (OLS) approach discovered that external debt had insignificant influence on economic growth in Swaziland, while domestic debt had a positive and significant impact on economic growth. Also, in Nigeria context, Lucky and Godday (2017); Okwu, Obiwuru, Obiakor, and Oluwalailey (2016), reported that total public debt have a positive and significant impact on gross domestic product, while the external debt is negative and significant to economic growth, the domestic debt has a positive and significant effect on the economic growth in Nigeria. More so, Igbdika, Jessie and Andabai (2016), investigated empirically the nexus between domestic debt and growth using ordinary least square (OLS) technique; the result showed that domestic debt had a positive and significant influence on the gross domestic product in Nigeria. Contrarily, Elom-Obed, Odo, Elom, and Anoke (2017) and Abula and Ben (2016) employed Vector Error Correction Model (VECM) and Granger causality test, while Elom-Obed et al., (2017) reported that both external debt and domestic debt have negative and significant effect on
economic growth in Nigeria; Abula and Ben (2016) found an insignificant negative impact of external debt on economic development in Nigeria while domestic debt service payment has a negative and significant effect on economic development in Nigeria.

Gitana, Agnė, and Aušra (2018), empirically investigated the impact of government spending on economic growth in the European Union (EU) over the period 1995-2015 and reported that government spending had a significant influence on economic growth in eight EU countries. Friday et al., (2016), assessed the effect of government capital expenditures on economic growth in Nigeria for the period 1970-2012 by applying stationary test, cointegration test, and vector error correction model (VECM) and concluded that government expenditure had positive and significant impact on economic growth. In the same context, using the same econometric techniques, similar result was obtained by Maku (2019).

III. METHODOLOGY

This study is an ex post facto research. The trends in the economic growth and fiscal policy measures were examined over the period of 38 years using existing data derived from the Central Bank of Nigeria (CBN) statistical bulletin and Federal Inland Revenue Service (FIRS) annual reports and accounts between 1981 and 2018. Analyses were conducted using descriptive and inferential analytical techniques. Descriptive statistics (mean, median, mode, standard deviation, kurtosis, skewness, Jacque-Bera, Augmented Dickey-Fuller (ADF) for unit root stationary test as well as VAR Lag Order Selection Criteria) explained the nature of the time series data and also determine the stability of the variables. Also, post-estimation tests in accordance to five assumptions of OLS were carried out to ascertain the appropriateness of the models. Ramsey Reset Test was used to ascertain the existence of linear relationship between the dependent and independent variables; Breusch-Pagan/ Cook-Weisberg for heteroskedasticity tests (i.e. the stability of the residuals over time); Breusch-Godfrey Serial Correlation LM Test to determine existence of serial correlation among the coefficients and the residuals of the models; Skewness, Kurtosis or Jacque-Bera of the model histogram test for the normality and the model; and CUSUM residual test to determine the stability of the model. E-View version 11 was used as aided statistical package for running the analyses. Based on the result of the stationary test and the post estimation tests carried out, Generalized Least Square regression estimation techniques was adopted for the analysis.

**Model Specification**

In line with the basic regression equation of \( Y = f(X) \); this paper examined the effect of fiscal policy on economic growth in Nigeria, where economic growth represent \( Y \) the explained variable while fiscal policy sustainability is the explanatory variable (\( X \)). The regression function is further expanded as obtained in the study of Odetayo and Adeyemi (2017) \( \text{RGDP} = \alpha_0 + \beta_1(\text{GREV}) + \beta_2(\text{GEXP}) + \beta_3(\text{BDEF}) + \varepsilon_t...............(1) \)

where \( \text{RGDP} \) means real gross domestic product, \( \text{GREV} \) means government revenue; \( \text{GEXP} \) means government expenditure, and \( \text{BDEF} \) means budget deficit. Odetayo and Adeyemi (2017) model was modified to fit the purpose of this paper as expressed:

\[
\text{GRGDP}_t = \alpha_0 + \beta_1(\text{GTR}_t) + \beta_2(\text{GPD}_t) + \beta_3(\text{GPE}_t) + \mu_t \quad \text{---------------(2)}
\]

Where:

- \( \text{GRGDP}_t \) represents the Growth in Real Gross Domestic Product (GDP) in time \( t \)
- \( \text{GTR}_t \) represents the Growth in Tax Revenue (TR) in time \( t \)
- \( \text{GPD}_t \) represents the Growth in Public Debt (PD) in time \( t \)
- \( \text{GPE}_t \) represents the Growth in Public Expenditure (PE) in time \( t \)
4.1. PRELIMINARY ANALYSIS

4.1.1 Descriptive Statistics

Table 1: Descriptive Statistics

<table>
<thead>
<tr>
<th>Statistics</th>
<th>GTR</th>
<th>GPD</th>
<th>GPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>20.81</td>
<td>26.2</td>
<td>39.32</td>
</tr>
<tr>
<td>Median</td>
<td>17.38</td>
<td>11.31</td>
<td>19.22</td>
</tr>
<tr>
<td>Maximum</td>
<td>64.24</td>
<td>127.82</td>
<td>307.16</td>
</tr>
<tr>
<td>Minimum</td>
<td>4.53</td>
<td>-38.42</td>
<td>-83.25</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>13.60</td>
<td>43.38</td>
<td>73.45</td>
</tr>
<tr>
<td>Skewness</td>
<td>1.24</td>
<td>0.71</td>
<td>2.28</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>4.46</td>
<td>2.51</td>
<td>8.76</td>
</tr>
<tr>
<td>Jarque-Bera</td>
<td>12.72</td>
<td>3.5</td>
<td>83.16</td>
</tr>
<tr>
<td></td>
<td>0.00</td>
<td>0.17</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Source: Researcher’s Computation, (2020)

The result of the descriptive analysis conducted as presented in Table 1 shows real gross domestic product exhibited consistent growth as its minimum value still remains positive, this implies that the RGDP of Nigeria has not experience decline within the 38 years period covered. The least yearly percentage growth was 4.53% while the highest growth in RGDP was 64.24%. looking at the standard deviation, (13.6), it means that the RGDP over the period covered widely dispersed around the mean, but considering the values of the mean and that of the median (20.81 and 17.38), the variation is fair, which implies that the trend in RGDP growth is averagely stable, although the probability of the Jarque-Bera (0.00) proved that growth in RGDP is not normally distributed. Growth in public expenditure exhibited similar traits with growth in RGDP except for the fact that there was a decline in expenditure growth at some periods in the study as shown in its minimum value of -26.03%. despite the growth in tax revenue widely dispersed from the mean with the result of the standard deviation (43.38), the result of the kurtosis (2.51) which is relatively close to the threshold of 3, and the probability of the Jarque-Bera test (0.17) revealed that growth in tax revenue is normally distributed. Nigeria experienced the highest growth rate of 127.82% in revenue generated through taxes within the 38 year period covered with the decline of 38.42%. The maximum and the minimum values for public debt showed a sharp expand and sharp decline within this periods, the debt decline sharply by 83.25% but at a point also rose by 307.16%. The probability of the Jarque-Bera also depicted that growth in public debt is not normally distributed.

The line graph showed a clearer picture of the periods of sharp rise and sharp decline in public debt. From the line graph, RGDP, TR and PE have demonstrated stable flow over the years as shown in the trend. On the contrary, public debt exhibited a sharp rise in 1982 and 1999. Lots of restructuring programmes were implemented around 1999 towards the democracy which could have led to the government borrowing excessively for its implementation. The sharp decline in 2006 could be as a result of the debt management which occurred during this period, when debt restructuring, debt relief/waiver occurred with the international bodies such as Paris Club, IMF.
4.1.2 **Multicollinearity Analysis**

Table 2: Multicollinearity Test

<table>
<thead>
<tr>
<th>Variable</th>
<th>GRGDP</th>
<th>GTR</th>
<th>GPD</th>
<th>GPE</th>
<th>VIF</th>
<th>1/VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRGDP</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GTR</td>
<td>0.52</td>
<td>1.00</td>
<td></td>
<td></td>
<td>1.21</td>
<td></td>
</tr>
<tr>
<td>GPD</td>
<td>-0.19</td>
<td>0.21</td>
<td>1.00</td>
<td></td>
<td>1.77</td>
<td></td>
</tr>
<tr>
<td>GPE</td>
<td>0.32</td>
<td>-0.41</td>
<td>0.29</td>
<td>1.00</td>
<td>1.82</td>
<td></td>
</tr>
</tbody>
</table>

**Source: Researcher’s Work (2020)**

The least and the highest coefficients of the correlation matrix are 0.19 and 0.59 (in absolute form) respectively which are less than the benchmark of 0.75 depicts that there the series in the model are not unhealthily correlated. The correlation coefficients revealed that growth in real gross domestic product (GRGDP) and growth in tax revenue (GTR) are positively correlated, likewise, GRGDP and growth in public expenditure (GPE). This implies that as tax revenue grows, likewise public expenditure, the real gross domestic product too grows. On the contrary, growth in public debt is negatively associated with GRGDP, which means that as public debt increases, RGDP declines. Considering the correlation coefficient of GPD and GTR, and that of GPD and GPE, it is noticed that they are positive; this indicates that GPD trend moves in the same direction with GTR, likewise with GPE. On the other hand, GTR and GPE result is negative, which means that as tax revenue increases, public expenditure decreases.

The result of the variance inflation factor carried having inverse variance inflation factor of each of the variables ranges from 0.00 to 0.03; which are all below the threshold of “1” with the Variance Inflation Factor (VIF) values fall between 1.21 and 1.91, which are all less than the benchmark of 5.0, aligned with the report of the correlation matrix which indicated that multicollinearity problem does not exist among the variables.

4.1.3. **Result of the Stationary Test**

The behaviour of the variables in the model in respect to their stability was determined using Unit Root Test (Augmented Dickey Fuller (ADF) and the result depicted in Table 3.

**Table 3. Result of the Unit Root Test (Augmented dickey Fuller (ADF) test**

<table>
<thead>
<tr>
<th>Series</th>
<th>Equation Specification</th>
<th>Critical Values</th>
<th>ADF test at level (Prob)</th>
<th>ADF test at 1st. Diff (Prob)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1%</td>
<td>5%</td>
<td>10%</td>
<td>T-cal (Prob)</td>
</tr>
<tr>
<td>GRGDP</td>
<td>None</td>
<td>-2.63</td>
<td>-1.95</td>
<td>-1.61</td>
<td>-1.58 (0.11)</td>
</tr>
<tr>
<td></td>
<td>Intercept</td>
<td>-3.67</td>
<td>-2.96</td>
<td>-2.62</td>
<td>-3.36 (0.02)</td>
</tr>
<tr>
<td></td>
<td>Intercept &amp; Trend</td>
<td>-4.23</td>
<td>-3.54</td>
<td>-3.20</td>
<td>-3.40 (0.07)</td>
</tr>
<tr>
<td>GTR</td>
<td>None</td>
<td>-2.63</td>
<td>-1.95</td>
<td>-1.61</td>
<td>-4.58 (0.00)</td>
</tr>
<tr>
<td></td>
<td>Intercept</td>
<td>-3.62</td>
<td>-2.94</td>
<td>-2.61</td>
<td>-6.01 (0.00)</td>
</tr>
<tr>
<td></td>
<td>Intercept &amp; Trend</td>
<td>-4.23</td>
<td>-3.54</td>
<td>-3.20</td>
<td>-6.13 (0.00)</td>
</tr>
<tr>
<td>GPD</td>
<td>None</td>
<td>-2.63</td>
<td>-1.95</td>
<td>-1.61</td>
<td>-4.60 (0.00)</td>
</tr>
<tr>
<td></td>
<td>Intercept</td>
<td>-3.62</td>
<td>-2.94</td>
<td>-2.61</td>
<td>-5.69 (0.00)</td>
</tr>
<tr>
<td></td>
<td>Intercept &amp; Trend</td>
<td>-4.23</td>
<td>-3.54</td>
<td>-3.20</td>
<td>-6.13 (0.00)</td>
</tr>
</tbody>
</table>
The stationary status of all the series in the models as tested using the Augmented Dickey Fuller (ADF) test revealed that all the series are stable at the same order of integration, (I(0)), that is, all the series become stable at levels. This implies that all the series are predictable at level; and, under this scenario, co-integration test is not required, as any shock to the system in the short run quickly adjusts in the long run. Therefore, only the long run models are estimated.

V. 4.1.4 OPTIMAL LAG LENGTH SELECTION CRITERIA

The lag length selection criteria was carried out as pre-estimation to determine the most suitable lag length of the effect of fiscal policy sustainability on growth of real GDP using VAR Lag Order Selection Criteria as presented in Table 4.

The results of the optimal lag length selection as shown in Table 4 revealed that all the five criteria are significant at lag 1; Therefore, the study concluded that the lag 1 is the appropriate lag length. Having selected lag 1, it implies that the independent variables would have a year preceding effect on the dependent variable. Therefore, the long run functional equation is evaluated with the result shown in Table 5.

VI. 4.2 REGRESSION RESULTS

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>T-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GTR</td>
<td>0.16</td>
<td>0.05</td>
<td>3.50</td>
<td>0.00</td>
</tr>
<tr>
<td>GPD</td>
<td>-0.07</td>
<td>0.03</td>
<td>-2.61</td>
<td>0.01</td>
</tr>
<tr>
<td>GPE</td>
<td>0.11</td>
<td>0.08</td>
<td>1.46</td>
<td>0.14</td>
</tr>
<tr>
<td>C</td>
<td>16.31</td>
<td>2.44</td>
<td>6.68</td>
<td>0.00</td>
</tr>
</tbody>
</table>

R-squared = 0.4; Adj. R² = 0.35; F-Stat = 7.73; Prob(F-Stat) = 0.00

Diagnostic Tests:
Breusch-Godfrey Serial Correlation LM Test: F-statistic = 1.57 Prob. F(1, 33) = 0.22
Heteroskedasticity Test: Breusch-Pagan-Godfrey: F-statistic = 0.15 Prob. F(3, 34) = 0.93
Ramsey RESET Test: F-statistic = 2.35; Prob. F(1, 31) = 0.09
Normality test: Kurtosis = 3.67; Jarque-Bera (Prob) = 0.02
Durbin-Watson: 1.57

Dependent Variable: GDP Sig. level: *10%

Source: Researcher’s Computation, (2020)
The residuals of the model based on the result of the heteroskedasticity test with p-value of 0.93 being greater than 5 per cent chosen level of significance is a reflection of consistencies in the differences of the residuals of the model across the period “t”. The kurtosis and the probability of the Jacque-Bera test of the model were used to estimate the normality test. The result of the kurtosis of 3.67 which is greater three which is the threshold implies that the model is normally distributed. Also, the Jacque-Bera (ρ = 0.02) confirmed the model does not exhibit normal distribution attribute. Durbin Watson test conducted to detect the presence of autocorrelation at lag 1 in the residuals from a regression analysis and predicts if the regression estimate would give a spurious result. The null form of the test is DW>R₂, that is Durbin-Watson result should not be greater than R-squared figure, as depicted in the result of the analysis, DW result is 1.57 while R² = 0.41; therefore, the regression estimate result is not spurious. The test for stability test which determined the suitability of the model in making a long run decision was conducted using Recursive Coefficient graph (Figure 4.2.4) plotted at (5%) critical bound with the charts independent of each other means that the model is structurally stable over time. It was also discovered that there is no autocorrelation problem among the coefficients and standard errors of the model according to the result of Breusch-Godfrey Serial Correlation LM Test having ρ-value of 0.22.

The review of the results of all the diagnostic tests carried out showed that the model is linear, homoscedastic, stable, no serial correlation problem but the residuals are not normally distributed; therefore, the long run functional equation was evaluated using generalized least square regression analysis and the result presented in Table 5.

\[ GRGDP_t = 16.31 + 0.16GTR_t - 0.07GPD_t + 0.11GPE_t + \mu_t \]

The result of the Generalized Least Square regression estimation test as presented in Table 5 shows that: growth in tax revenue positively and significantly affects the growth in real gross domestic product of
Nigeria economy at 10% level of significance. The coefficient of 0.16 indicated that a percentage growth in tax revenue would result to 16% growth in real Gross domestic product; growth in public debt negatively and significantly impacts the growth in real GDP. The coefficient value of 0.07 implies that as the public debt grows by a percentage, the real GDP would decline by 7%; growth in public expenditure positively but insignificantly affects growth in real GDP. Fiscal policy sustainability as shown in the value of the coefficient of multiple determination (adjusted R\(^2\)) of 0.35 means that changes in fiscal policy sustainability would lead to 35% variation in the growth of real gross domestic product while the remaining 65% changes in real GDP growth is caused by other factors outside the scope of this study. Also, the probability of the F-test of 0.00 mean that fiscal policy sustainability significantly impacted on Growth in Real Gross Domestic Product (GRGDP).

**Discussion**

In like manner, the significant negative effect of public debt growth on growth in real GDP supported the findings of Eze et al., (2019) in Nigeria; Panagiotis (2018) in Greece; Naeem (2015) in Philippines using ARDL model. In contrast, using ARDL approach, Isaac and Rosa (2016) study on Mexico economy; Reza et al., (2014) in Iran; and Alejandro and Ileana (2017), found significant positive effect between debt and GDP among 16 Latin American economies while Nassir and Wani (2016) in Afghanistan obtained insignificant negative relationship; but the study of Precious (2015) using ordinary least square (OLS) approach in Swaziland reported positive and insignificant impact of public debt on economic growth. In contrast, Lucky and Godday (2017); Okwu et al., (2016), obtained mixed results; while total public debt and domestic debt have a positive and significant impact, external debt is negative and significant to economic growth. Fiscal policy is found to significantly impacted on economic growth as obtained in previous studies (Khosravi & Karimi, 2016 in Iran; Mansouri, 2018 in Egypt, Morocco and Tunisia; Nwankwo et al., (2017), and Odetayo & Adeyemi, 2017 in Nigeria) but contradicts the findings of Adefeso and Mobalaji (2010) and Omitogun and Ayinla (2007) that discovered that fiscal policy has not been effective in the area of promoting sustainable economic growth in Nigeria. Likewise, Oyeleke (2013) who reported that fiscal policy was weakly sustainable in in Nigeria, Ghana and Guinea.

**VII. CONCLUSION, POLICY IMPLICATION AND RECOMMENDATION:**

This paper examined the effect of fiscal policy sustainability on economic growth in Nigeria; Based on the analysis carried out; it was concluded that growth in tax revenue positively and significantly impacted on growth in real GDP of Nigeria; growth in public expenditure affected the RGDP growth positively and significantly, while as public debt grows, the real GDP growth declines, thus growth in public debt inversely affected the growth in RGDP, although insignificant. Conclusively, fiscal policy sustainability significantly affects economic growth in Nigeria. The findings of this study revealed that increase in public debt causes decline in the growth of the economy. It simply means that debt incurred by the government has not been effectively managed to have transformed into economic growth. Debt should be channeled towards strategic goal and development which could improve the economy. The debt management office in its national debt management framework should critically look into how debt would not turn into a disaster but rather a blessing to the nation. As pointed out by Omitogun and Ayinla (2007) that incessant unproductive foreign borrowing, wasteful spending, poor policy implementation, lack of feedback mechanism for implemented policy and uncontrolled money supply are major challenges of debt mismanagement in Nigeria. Therefore, debt has been unproductive to the economy.
According to Nigerian Constitution 1999 (as amended), the process of fiscal policy implementations involves accountants in one way or the other both in private and public domain, either as a public servant or as a consultant. The significant positive impact of public expenditure growth on economic growth needs to be improved upon; and this is a chain-like responsibility which rest on the officer in charge of controlling expenditure, sub-accounting officer of each ministry and extra-ministerial departments, accounting officers, Accountant-General of the federation, Minister of Finance, then the executive and the legislature arms of government. Public expenditure needs to be controlled to ensure that all the spending done within the organisations are done exactly for the purposes that were agreed. With this, there is tendency of increase in public expenditure to be a true reflection of the increased state activities according to Wagner’s theory, and in turn yield economic growth.

The study suggested that appropriate policy mix and setting of achievable fiscal policy targets should be the focus of Nigerian government; the contributions of tax revenue, public debt and public expenditure call for economic diversification strategies by the government, aiming towards enhancing the growth of the nation; although, several Acts on transparency and accountability, have been established, but these bodies should be strengthened and empowered to work objectively in order to mitigate corruptions and other leakages in the nation’s resources that could have transformed into growth. Lastly, Debt should only be considered if targeted towards specific infrastructural projects for the expansion of the economy; and the execution of such should be scrutinized and critically monitored as the study obtained insignificant effect of increasing debt on the growth of the economy.

REFERENCES


