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Assessment of the Relationship between Fiscal Factors and Economic Growth in Nigeria (1990-2019)

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Abstract: *Fiscal policy has not been able to live up to expectations in Nigeria upon several fiscal measures established since independence and importance of fiscal policy in promoting the attainment of macroeconomic policy objectives. The current work is to examine the relationship between fiscal factors and economic growth in Nigeria. The descriptive research design was utilized for this study. The quantitative aspect involved the use of multiple regression and correlation. The tax was regressed against the fiscal policy of Government. The Regression analysis was subjected to multicollinearity and autocorrelation tests. Data for the study was obtained from secondary sources. The multiple Regression Analysis was used to examine research question at 0.05 α-level. The fiscal factors and economic growth in Nigeria was tested using co-integration and error correction model (ECM) approaches. The capital expenditure, oil revenue, recurrent expenditure and tax revenue of Nigeria experience upward and downward trends within the period of study. It was revealed that the GDP of Nigeria pose a moderate positive relationship with oil revenue and tax revenue but a weak positive relationship with recurrent expenditure and a weak negative relationship with capital expenditure. The result also revealed that oil revenue, tax revenue and recurrent expenditure of Nigeria significantly have positive impact on GDP by 38.95%, 3704.25% and 143.78% respectively, while the capital expenditure significantly reduce the GDP of Nigeria by 258.80%. Result of co-integration shows that there's no long run interrelation between the variables, and that result of correlation analysis reveal a weak positive relationship between GDP oil revenue and tax revenue. Conclusively, the oil revenue, tax revenue, recurrent expenditure and capital expenditure impacted on Nigeria economy. This study recommended that government spending should be channeled more on capital expenditure than on recurrent expenditure while tax system should be strengthened to mitigate the volatility of oil revenue.*

Keywords: Economic growth, Fiscal factors, Capital expenditure, Co-integration

1. INTRODUCTION

Fiscal policy involves the use of government spending, taxation and borrowing to influence the pattern of economic activities and also the level and growth of aggregate demand, output and employment. Fiscal policy entails government's management of the economy through the manipulation of its income and spending power to achieve certain desired macroeconomic objectives (goals) amongst which is economic growth (Medee and Nembee, 2011). Fiscal policy has conventionally been associated with the use of taxation and public expenditure to influence the level of economic activities (Olawunmi and Tajudeen, 2007). They further opined that the implementation of fiscal policy is essentially routed through government's budget. Fiscal policy as mostly to achieve macroeconomic policy; it is to reconcile the changes which government modifies in taxation and expenditure, programmes or to regulate the full employment price and total demand to be used through instruments such as government expenditures, taxation and debt management (Hindriks and Myles, 2006).

From the foregoing, it is clear that if fiscal policy is used with circumspection and synchronized with other measures, it will likely smoothen out business cycles and lead to economic growth and stability. Fiscal policy is the means by which a government adjusts its levels of spending in order to monitor and influence a nation's economy. Fiscal policy serves as an important tool to influence the aggregate demand (The Strategist, 2013). Depending upon existing situation of the economy, government can employ either expansionary or contractionary fiscal policy. Expansionary fiscal policy increases the aggregate demand whereas contractionary or deflationary fiscal policy reduces the aggregate demand. Changes in the level, timing and composition of government spending and taxation have an important effect on the economy.

The relationship between fiscal policy and macroeconomic performance has been subject of long debate in the macroeconomic literature. The empirical evidences have been mixed and inconclusive. While substantial number of studies documents that fiscal policy has significant impact on macroeconomic performance (Afonso and Sousa, 2012; Endegnanew, AmoYartey & Turn-Jones, 2012).Several other studies documents that fiscal policy does not have significant impact on macroeconomic performance (Ramsey,

2008). But there are limited studies in the literature that provide strong empirical evidences from the Nigerian context that capture the role of fiscal policy (tax revenues, expenditures and fiscal balance growth) on macroeconomic performance. This study provides comprehensive assessment of the role of fiscal policy components (tax revenue growth, expenditure growth and fiscal balance growth) on macroeconomic performance in Nigerian.

Nigeria is largely a public sector led economy with huge government consumption expenditure usually finance through oil revenue. The government revenue through taxes is minimal because of the underdeveloped tax environment and weak institutions that cannot guarantee effective tax revenue collection thereby result to revenue loss due to tax evasion. As fiscal policy is expected to play substantial and important role in the stabilization process in Nigeria particularly in the short-to medium term the role of tax revenue supporting the expenditure programmes of government to ensure stable and favourable macroeconomic performance cannot be ignored. The current study is targeted towards the assessment of relationship between fiscal factors and economic growth.

1.1 Statement of Problems

There has been continuous adverse inflationary trend, undulating foreign exchange rates, fall and rise of gross domestic product unfavourable balance of payments, over reliance on oil revenue and high level of unemployment occasioned by low fiscal buffers, expansionary fiscal policy, high volume of maturing instruments; impact of external shocks, dwindling foreign exchange earnings; declining reserves; weak oil market and high unemployment. These culminated to the poor performance in macroeconomic variables. Preponderance of studies on fiscal policy and other macroeconomic variables have continued to arrive at conflicting results making their relationship difficult to understand. There seem to be no well-established conclusion regarding the direction and extent of the effect of fiscal policy on macroeconomic variables. There exists an unsettled gap that needs to be bridged in order to give policy makers the basis upon which to formulate and implement interest rate policies that will promote savings, productivity, inflation and investment in Nigeria.

1.2 Objectives of the study

The broad objective of this study is to assess the relationship fiscal factors and economic growth in Nigeria.
The specific objectives are to:

(i) Assess the relationship of each fiscal factors to the economic growth of Nigeria.

1.3 Research Questions

(i) Is there any relationship in each of the fiscal factors to economic growth?

2. LITERATURE REVIEW

2.1 Conceptual Review

2.1.1 Concept of Fiscal Policy

The term fiscal policy has conventionally been associated with the use of taxation and public expenditure to influence the level of economic activities. Fiscal policy deals with government deliberate actions in spending money and levying taxes with a view to influencing macroeconomic variables in a desired direction. This includes sustainable economic growth, high employment creation and low inflation (Microsoft Corporation, 2004). Thus, fiscal policy aims at stabilizing the economy. Increases in government spending or a reduction in taxes tend to pull the economy out of a recession; while reduced spending or increased taxes slow down a boom (Dornbusch & Fischer, 1990).

Fiscal policy involves the use of government spending, taxation and borrowing to influence the pattern of economic activities and also the level and growth of aggregate demand, output and employment. Fiscal policy entails government's management of the economy through the manipulation of its income and spending power to achieve certain desired macroeconomic objectives (goals) amongst which is economic growth (Medee & Nembee, 2011). Peter and Simeon (2011) define fiscal policy as the process of government management of the economy through the manipulation of its income and expenditure and to achieve certain desired macroeconomic objectives. Central Bank of Nigeria (2011) defined fiscal policy as the use of government expenditure and revenue collection through tax and amount of government spending to influence the economy.

In finance, fiscal policy is the use of government revenue collection (taxation) and expenditure (spending) to influence the economy. The two main instruments of fiscal policy are government taxation and expenditure. Geoff (2012) contended that fiscal policy

involves the use of government spending, taxation and borrowing to affect the level and growth of aggregate demand, output and jobs creation. It is the government spending policies that influence macroeconomic conditions. These policies affect tax rates, interest rates and government spending, in an effort to control the economy. Fiscal policy is the means by which a government adjusts its levels of spending in order to monitor and influence a nation‟s economy.

From all these definition, it was deduced that one of the regulatory policies used by government in achieving its objectives to bring about economic growth is fiscal policy. Fiscal policy is an outgrowth of Keynesian economics; its logical analysis suggests that it offers a sure-fire means of stabilizing the economy. The goal of modern fiscal policy is to achieve economic efficiency and stability. In a modern economy, no sphere of economic life is untouched by the government. Two major instruments or tools are used by government to influence private economic activity; taxes and expenditure but not limited to these two, it may include public debt, public work among others.

2.1.2 Concept of Economic 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 has received much attention among scholars. According to Khorravi and Karimi (2010), classical studies estimate that economic growth is largely linked to labour and capital as factors of production. The emergence of the endogenous growth theory has encouraged specialists to question the role of other factors in explaining the economic growth phenomenon (Bogdanov, 2010).

Economic growth represents the expansion of a country‟s potential GDP or output. For instance, if the social rate of return on investment exceeds the private return, then tax policies that encourage can raise the growth rate and levels of utility. Growth models that incorporate public services, the optimal tax policy lingers on the characteristic of services (Olopade & Olopade, 2010). Economic growth has provided insight into why state growth at different rates over time; and this influence government in her choice of tax rates and expenditure levels that will influence the growth rates.

2.2 Theoretical Reviews

2.2.1 The Savers-Spenders Theory

Savers-Spenders theory of fiscal policy was developed by Mankiw (2000) and used by Matsen, Sveen and Torvik (2008). This theory was developed because of inconsistence of Barro-Ramsey (1974) theory of infinitely-lived families. Savers-Spenders theory is the new theory developed to explain the behavioural pattern of fiscal policy in the economy. The theory is based on some prepositions (Mankiw, 2000).

The first proposition is on temporary tax changes having large effects on the demand for goods and services. This proposition states that the higher take-home pay that spenders received will be offset by higher tax payments, or by lower tax refunds. The implication is that consumers should realize that their lifetime resources were unchanged and therefore, should save the extra take-home pay to meet the upward tax liability.

The second proposition is on government debt in relation to crowd out capital in the long-run. This proposition states that extra consumption reduces investment, which in turn raises marginal product of capital and as well decrease the level of economic growth. It is also of the opinion that higher interest rate margin, induces savers to save more. The implication of this proposition is that extra consumption and higher interest rate margin affect the growth of manufacturing sector which in turn reduce economic growth in Nigeria.

The third proposition states that government debt increases steady-state inequality. This means that a higher level of debt means a higher level of taxation to pay interest on debt. The tax will fall on both the savers and the spenders but the interest will only fall on savers. The implication of this is that a higher level of debt rises the income and consumption of the savers and lowers the income and consumption of the spenders.

2.2.2 The Classical Theory

The earliest organised school of Macroeconomic thought is the classical school. Classical economics is a synthesis of theories put forth by numerous individuals from Adam Smith's time (the late 1700s) to the earliest twentieth century. The classical economists were proponents of the price mechanism (market system) which assumes a smooth functioning market where there is effective resource allocation and a guarantee to economic freedom to all and sundry with built- in flexibility that exclude the need for conscious government planning and intervention. It however has certain limitations and inefficiencies resulting in a condition referred to as

"market failure". The market failed to achieve a satisfactory level of welfare for the society by providing an equitable or fair distribution of income and wealth, or all of these.

The 1930s great depression was a confirmation of the reality of the failure of the market economy which led to the evolution of Keynesian economics. The fundamental principle of the classical theory is that the economy is self- regulating. Classical economists maintained that the economy is always capable of achieving the natural level of the real GDP that is obtained when the economy's resources are fully employed. While circumstances arise from time that cause the economy to fall below or to exceed the natural level of the real GDP, self-adjustment Mechanisms exist within the market system that work to bring the economy back to the natural level of real GDP.

The classical doctrine that the economy is always at or near the natural level of real GDP is based on two firmly held beliefs which are Say's law and the belief that prices, wages and interest rates are flexible. According to says law when an economy produces a certain level of real GDP, it also generates the income needed to purchase that level of real GDP. In other words, the economy is always capable of demanding all of the output that its workers and firms chose to produce. Hence the economy is always capable of achieving the natural level of real GDP. However, the achievement of the natural level of real GDP is not as simple as Say's law would seem to suggest. While it is true that the income obtained from producing a certain level of real GDP must be sufficient to produce that level of real GDP, there is no guarantee that all of this income will be spent. Income that is saved is not used to purchase consumption goods and services implying that the demand for these goods and services will be less than the supply. Wagner's law of increasing scale of public expenditure

2.2.3 The theory of public expenditure development

According to Wagner, the public sector plays a significant role in the management of an economy at all level as of development. This role is usually through its revenue and expenditure policy (fiscal policy). The theory of public expenditure development posits that the role of public spending involves in the course of development since the budgetary function must adapt to the changing needs of the economy. The varying needs of the economy relates to both the allocation and distribution perspectives of public expenditure. The allocation perspective deals with the rising share of the public sector in the economy. That is there is a statistical direct relationship between the growth in public sector size and the growth and development of an economy. The premise of the theory is that in growing economies, the increasing scale of public expenditure naturally increases income.

In order to justify this generalisation into a theoretical fashion, Wagner divides public expenditure into two categories, namely security (including internal and external) and those of welfare. As the level of development increases, the level of expenditure cannot remain constant in many growing economies like Nigeria, the share of public sector in national income has been increasing (Ojong, Ogar and Arikpo, 2016). That is why the government's annual budget dictates the nature and direction of economic activities and the provision of social and economic services to meet the needs of the citizenry

2.3 Empirical Review

Similarly, Komain et al (2007), employing the Granger causality test, examined the relationship between government expenditures and economic growth in Thailand and found that government expenditures and economic growth are not co-integrated. The result also suggested that a unidirectional relationship, as causality runs from government expenditures to growth. However, the result indicated a significant positive effect of government spending on economic growth.

In their study, Olugbenga and Owoeye (2007) investigated the relationships between government expenditure and economic growth in a group of 30 OECD countries for the period 1970-2005 using regression analysis. Their analysis showed that a long-run relationship exists between government expenditure and economic growth. The study also indicated a unidirectional causality from government expenditure to growth for 16 of the countries, thus supporting the Keynesian hypothesis government intervention. But, causality runs from economic growth to government expenditure in 10 of the countries, thereby confirming the Wagner's law. For the remaining four countries, findings indicated existence of feedback relationship between government expenditure and economic growth.

In their empirical analysis of the relationship between government expenditure and economic growth, Folster and Henrekson (2001) employed various econometric approaches to study a sample of wealthy countries for the period 1970 to 1995. Based on their findings, they submitted that that more meaningful and reliable results are generated, as economic problems are addressed.

A study by Ranjan and Sharma (2008) showed that government expenditure exerted significant positive impact on economic growth in India during the period 1950-2007, and that the two sets of variables cointegrated. that, in the bivariate framework, a bi-directional and long run negative relationships existed between government spending and economic growth. But the causality test within the

trivariate framework based on the above variables indicated that military burden has a negative impact on economic growth in all the countries, while civilian government expenditures have positive effect on economic growth for both Israel and Egypt.

In a study of government expenditure and economic growth in the United States, Liu et al (2008) examined the causal relationship between GDP and public expenditure for the period 1947-2002. The causality results revealed that while total government expenditure causes growth of GDP, the latter does not cause expansion of government expenditure. The study concluded that since public expenditure grows the US economy, based on the causality test, Keynesian hypothesis exerts more influence than the Wagner's law in US.

Using data set on Greece, United Kingdom and Ireland, Loizides and Vamvoukas (2005) employed the trivariate causality test to investigate the relationship between government expenditure and economic growth. The result showed that size of government granger-causes economic growth in the three countries. Such growth was experienced both in the long and short runs in Ireland and the UK. When inflation is included in the analysis, the result showed that economic growth granger causes public expenditure expansion in Greece and the UK.

Donald and Shuanglin (1993) investigated the differential effects of various categories of expenditures on economic growth for a sample of 58 countries. Their findings suggested that while government expenditures on education and defence have positive effect, expenditure on warefare has insignificant negative effect, on economic growth. An obvious deficiency of economic theory is that it does not provide a well developed methodology to incorporate government expenditures in standard growth models. To assuage this, empirical studies have been carried out to establish a relationship between size of government and economic growth.

In Nigeria, many studies have attempted to investigate the relationship between government expenditure and economic growth, and the impact thereof. Oyinlola (1993) used defence expenditure and economic growth in Nigeria, and found a positive relationship between defence expenditure and economic growth.

Empirical analysis by Fajingbesi and Odusola (1999) showed that government capital expenditure has a significant positive effect on real output, but that real government recurrent expenditure has insignificant effect on growth.

The study by Ogiogio (1995) indicated a long-term relationship between government expenditure and economic growth. The result also showed that recurrent expenditure exerts more effect than capital expenditure on economic growth. However, some empirical studies in Nigeria suggest no long-run relationship between government expenditure and economic growth

Akpan (2005) used a disaggregated approach to examine the relationship. Components of public expenditure considered in his analysis were capital, recurrent, administrative, economic service, social and community service, and transfers. The study found no significant relationship between economic growth and most components of government expenditure in Nigeria.

Cooray (2009) employed an econometric model that incorporates government expenditure and quality of governance in a cross-sectional study of the relationship between government expenditure and economic growth in 71 countries. The results showed that both the size and quality of governance correlated positively with economic growth. In their own study, Abu-

Bader and Abu-Qarn (2003) used multivariate co-integration and variance decomposition approach to analyze the causal relationship between government expenditures and economic growth in Egypt, Israel, and Syria. The variables used in the analysis included share of government civilian expenditures in GDP, military burden, and economic growth.

Aregbeyen (2007), Ekpo (1994), Amin (1998), Devarajan et al. (1996), Fuente (1997), Kneller et al. (1999) and Bose et al. (2003), established positive relationship between fiscal policy (public spending) and economic growth.

Umeora (2013) showed that GDP, exchange rate, inflation, and money supply have positive significant relationship with government deficit spending; whereas, lending interest rate has negative significant effect with government deficit spending and most likely crowd-out the private sector by raising the cost of funds; and deficit spending has been known to have adverse effects on the economy and government is advised to curtail excessive deficit spending between 1970-2011.

Vincent, Loraverand Wilson(2012) investigated the relationship between fiscal deficits and economic growth. Although macroeconomic theory postulates that fiscal deficits stimulate economic growth, empirical research has been less conclusive about this relationship and adopted a modeling technique that incorporates cointegration and structural analysis. The results indicated that fiscal deficit affects economic growth negatively and there is a strong negative association between government consumption expenditure and economic growth.

In the Nigeria context, Wosowei (2013) reported a bilateral causality relationship between government deficit and gross domestic product, government tax, and unemployment, while there is an independent relationship between government deficit and government expenditure and inflation.

Cottarelli and Jaramillo (2012) in their study discussed the relationships between fiscal policy and growth both in the short and in the long run. While using the tools of debt ratio and GDP ratio with the tools of sensitivity analysis, and cross section data from the G7 countries in 2011 and 2012, findings reveal that a fiscal tightening will have a negative impact on growth. The authors concluded that with the proper policies, the deep links between potential growth and fiscal policy could promote a virtuous circle in which pro-growth fiscal adjustment measures, other structural reforms, and lower debt boost growth and the latter facilitates fiscal adjustment.

A more recent study also carried out by Sangosanya & Atanda (2012) on exchange rate variation and fiscal balance in Nigeria revealed that exchange rate has impacted negatively on fiscal deficit i.e. over-valuation of naira widens fiscal deficit while continuous depreciation contracts fiscal deficit. They resorted that it may be due to the composition of fiscal deficit in Nigeria in which the huge proportion constitute of local currency rather foreign currencies.

3. METHODOLOGY

3.1 Research Design

The descriptive research design was utilized for this study. Joseph and David (2006) state that descriptive research design is useful, when the researcher objectives include determining the degree to which one variable (Independent) affect the other variable (dependent). The quantitative aspect involved the use of multiple regression, t-test and correlation. The tax was regressed against the fiscal policy of Government. The Regression analysis was subjected to multicollinearity and autocorrelation tests.

3.2 Area of Study

This study embraces some States in the South West, Nigeria. The selected States in this region are: Osun, Oyo and Lagos States. Oyo and Lagos was selected because both are among the major commercial hub of the country and characterized with high population while Osun state is a state where I thought high level of tax compliance can be research.

3.3 Method of Data Collection

Data for the study was obtained from secondary sources (time series data), these sources include: the statistical bulletin of the Central Bank of Nigeria (CBN) for various editions; the Central Bank of Nigeria (CBN) annual publications, CBN Economic and Financial Review Bullion, CBN monthly reports, CBN Annual Reports and Statement of Accounts of various years, CBN Briefs, data from the National Bureau of Statistics and relevant journals as well as textbooks on fiscal policy and economic growth in Nigeria. The independent variables will also be calculated based on data gotten from the above sources. The related fiscal policy variables will be sourced from Nigerian Bureau of Statistics (NBS) and complimented with data from World Development Indicator (WDI, 2013).

3.4 Measures of Variables

The explanatory/ independent variables were represented by the components of fiscal factors variables while the dependent variable will be depicted by a proxy for economic growth, real gross domestic product (real GDP). Similar to Agu, et al. (2014) and (Iyeh&Azubuike, 2013) the explanatory variables for the study will be: **Government Capital expenditure (GCE**): Government expenditure on capital projects as well as infrastructure. This is expected to positively impact on economic growth depending on the weight of the effects on economic growth. Some empirical studies as found in (Ekpo, 1995) have shown that public spending on such factors as infrastructure is complimentary with private investment. As such Government expenditures would have both direct and indirect effect on the long-run growth; **Government Recurrent Expenditure (GREC)**. This measures expenditure on wages and salaries of government workforce. It is expected to impact positively on economic growth. The higher the motivation in terms of salaries and allowances received by government workers, the higher the output in the form of economic growth; **Oil Revenue (OREV):** This measures revenue derived from oil as against other sources. The variable is included here to examine how the oil money that accrues from the sales has impacted on economic growth in Nigeria. The relationship between oil revenue and economic growth is expected to be positive. The utilization of the higher oil revenue in promoting productive investment will promote economic growth. This justifies its inclusion among the explanatory variables; **Tax Revenue (TREV):** This is measured by other income other than oil. They may include personal income tax, company tax, profit tax etc; **Economic growth (GDP**). Economic growth is the dependent variable. There are basically two ways of representing economic growth. First, the **real per capita income** and second is the **real gross domestic product (RGDP).** However, this study will adopt the real gross domestic product as a proxy for measuring economic growth.

3.5 Method of Data Analysis

The reliability test was used to indicate how well the items were correlated with one another. Factor analysis was conducted for the independent, moderating and dependent variables to find factors among observed variables in order to reduce the number of variables. The factor analysis assisted to summarize the original information to smaller numbers and to take decisions on the factor to be retained.

Multiple Regression model was used to test the significance of the influence of the independent variables on the dependent variable. The study therefore, conducted Augmented Dickey fuller test , Co integration test and Person correlation. The multiple Regression Analysis was used to examine research question

3.6 Model Specification

The fiscal factors and economic growth in Nigeria was tested using co-integration and error correction model (ECM) approaches. To desist from spurious regression and to give chance for reliable data, stationary and co-integration pre-tests will be carried out (Gujarati, 2013). So to estimate this model, there is need to indicate if the variables are integrated at their levels, or their first and second difference. The use of the ECM approach has two important objectives. First, it can be used to investigate whether the impact of any of the explanatory variables are permanent or temporary. If responses are significant only in the short-run, then the effect of changes in any of the explanatory variables is temporary. However, if the response is significant in both the short-run and long-run, then it can be said that changes of the explanatory variables are permanent. The error term (ECM) provides information about the speed of adjustment in response to a deviation from the long-run equilibrium, which could be useful for policy analysis. The estimation procedure will be carried out using Econometric View 9.0(E-View, 9.0)

$RGDP = \theta 0 + \theta 1\ GCAP + \beta 2\ GREC + \theta 3OREV + \beta 4\ TREV + U$…… ……(1)

The equation (1) is log-linearised to enhance their marginal values and to ensure their linear properties and then re-specified as follows: $LnRGDP = \alpha 0 + \alpha 1LnGCAP + \alpha 2LnGREC + \alpha 3LnOREV + \alpha 4Ln\ TREV + Ut$……..(2)

A Priori Expectation

The theoretical a prior expectation of the variables in relation to the endogenous variables is given as follows; $\alpha 1 > 0$, $\alpha 2 > 0$, $\alpha 3 > 0$, $\alpha 4 > 0$,

Where: GCAP = Government capital expenditure; GREC = Government recurrent expenditures; OREV= Oil revenue; TREV = Tax revenue; Ut = Error term with assumption of independent distribution and zero mean and θ, α, β = coefficients of the parameter

4. RESULTS AND DISCUSSION

4.1 Summary Statistics

4.1.1 Unit Root Test

Table 1: Augmented Dickey Fuller test of the variables

Table below (1) presents the stationary of the variables in the study (GDP, Oil revenue, recurrent expenditure, Capital expenditure, and Tax revenue). In order to prevent spurious result in regression modeling the study adopted Augmented Dickey Fuller test to examine the stationarity of the variables. All the variables were not stationary at original level, but at 1st differencing oil revenue and tax revenue attained stationarity while at 2nd differencing the GDP, recurrent expenditure and capital expenditure attained stationarity.

Augmented Dickey Fuller Tests				
	Variable	Estimated value	Test statistic	p-value
I(0)	GDP	0.0346972	1.38146	1
	Oil Revenue	-0.422201	-2.35948	0.401
	Recurrent Expenditure	0.112772	0.986695	0.9999
	Capital Expenditure	-0.311302	-1.08506	0.9301

	Tax Revenue	-0.0796468	-1.33057	0.8801
I(1)	GDP	-0.489725	-1.79333	0.7083
	Oil Revenue	-1.3553	-4.53209	0.001286
	Recurrent Expenditure	-0.52404	-1.33932	0.8779
	Capital Expenditure	-0.504668	-1.54139	0.8155
	Tax Revenue	-0.94007	-3.89902	0.01209
I(2)	GDP	-1.19965	-3.44952	0.04503
	Recurrent Expenditure	-2.10248	-5.38917	2.902e-005
	Capital Expenditure	-1.63316	-4.18322	0.004675

4.1.2 Correlation Analysis

Table 2 shows the correlation analysis of gross domestic product on each of the fiscal factors (oil revenue, recurrent expenditure, capital expenditure and tax revenue) at the stationary level. The correlation statistic of GDP and oil revenue is 0.4467, GDP and recurrent expenditure is 0.2705, GDP and capital expenditure is -0.2156 while GDP and tax revenue is 0.4693. We therefore concluded that the GDP of Nigeria have is a moderate positive relationship with oil revenue and tax revenue but a weak positive relationship with recurrent expenditure while a weak negative relationship with capital expenditure.

Table 2: Correlation Test of GDP on the Fiscal Factors

	Oil Revenue	Recurrent expenditure	Capital expenditure	Tax revenue
GDP	0.4467	0.2705	-0.2156	0.4693

4.1.3 Regression Analysis

Result in table 3 shows the ordinary least square estimate of GDP on oil revenue, tax revenue, capital expenditure and recurrent expenditure at stationary level of the variables. The coefficient of oil revenue is 0.389532 significant at 10%, tax revenue is 37.0425 significant at 5%, capital expenditure is -2.58796 significant at 5% and recurrent expenditure is 1.4378 significant at 10%. We therefore concluded that a unit increase in oil revenue, tax revenue and recurrent expenditure of Nigeria will increase the GDP by 38.95%, 3704.25% and 143.78% respectively, while a unit increase in capital expenditure will significantly reduce the GDP of Nigeria by 258.80%. The regression equation is:

$$GDP = -250.72 + 0.389532X_1 + 37.0425X_2 - 2,58796X_3 + 1.4378X_4 \quad (1)$$

Where X_1 = Oil revenue, X_2 = Tax revenue X_3 = Capital expenditure X_4 = Recurrent expenditure.

Table 3: Ordinary Least Square Estimate

Variable	**Coefficient**	**Std Error**	**t-statistic**	**p-value**
Const	-250.72	391.123	-0.6410	0.52784
Oil revenue(-1)	0.389532	0.217245	1.7931	0.08613*

Tax revenue(-1)	37.0425	14.7094	2.5183	0.01920**
Capital expenditure(-2)	-2.58796	1.08295	-2.3897	0.02544**
Recurrent expenditure(-2)	1.4378	0.81046	1.7741	0.08929*

*p-value < 0.1 ** p-value < 0.05

4.1.4 Model Summary Statistic

Table 4 presents the summary of regression model in table 6. The F statistic is 5.443 significant at 5%, which implies that the model fitted in equation 1 is a fitted model. The Adjusted $R^2 = 0.4863$, signifies that 48.63% variation in GDP of Nigeria could be explained by explanatory variables (Oil revenue, Tax revenue, Capital expenditure and Recurrent expenditure) included in the model.

Table 4: Model Summary Statistic

Mean of dependent variable	583.985
Standard deviation of dependent variable	1901.3
Sum of squared residuals	5.01403e+007
Adjusted R^2	0.486288
F statistic	5.44304 (0.00311)
Durbin Watson statistic	2.26911
Akaike information criterion	492.608

4.2 Discussion of findings

The GDP of Nigeria have is a moderate positive relationship with oil revenue and tax revenue but a weak positive relationship with recurrent expenditure while a weak negative relationship with capital expenditure. The current result is similar to work of Ogar, Eyo and Arikpo (2019) that examined the impact of government expenditure on the growth of the Nigerian economy using government capital, government recurrent expenditure, government fiscal deficit on the growth of the Nigerian economy. Findings showed that government capital expenditure had a positive but insignificant effect on the growth of the Nigerian economy. Also, it was revealed that government fiscal deficit had insignificant negative effect on the growth of the Nigerian economy. Lastly, the study revealed that at the short run, government recurrent expenditure had an insignificant positive effect on the growth of the Nigerian economy while in the long run it has a positive but insignificant effect on economic growth. This report is related to the findings recorded in the present work.

In similar vein, the results obtain in the present study is in line with research of Abomaye-Nimenibo, Michael, and Friday (2018) that empirically assessed the relationship between tax revenue and economic growth in Nigeria. Discoveries evident in the study revealed that there was a long-run relationship among the variables; it was also revealed that Petroleum Profit Tax and Company Income Tax has no significant relationship with economic growth in Nigeria, although custom and excise duties was found to significantly affect economic growth in Nigeria. This finding is related to the above study where GDP in Nigeria have a moderate relationship with tax revenue.

The result recorded in the current work shows increase in the tax revenue over the years and a relationship between tax revenue and GDP was recorded. This finding was similar to the work of Egbunike, Emudainohwo, and Gunardi (2018) that assessed the effect of tax revenue on the economic growth of Nigeria and Ghana. The study specifically determined whether there is a positive effect of tax revenue on the gross domestic product of Nigeria (as it was done in the current report) and determined whether there is a positive effect of tax revenue on the Central Bank of Nigeria Statistical Bulletin and Bank of Ghana Statistical Bulletin. Findings discovered in the study showed that a positive impact of tax revenue on the gross domestic product of Nigeria similar to result recorded in this work) and Ghana confirming prior studies.

The current work is related to report of Ojong, Anthony, and Arikpo (2016) that evaluated the impact of tax revenue and economic growth in Nigeria. Specifically, the research examined the relationship between petroleum profit tax and the Nigerian economy, ascertained the effectiveness of company income tax on the Nigerian economy and examines the Impact of Personal Income tax on the Nigerian economy. The study used the exploratory and ex-post facto research design and time series data spanning 1986-2010 were gathered from a secondary source - CBN statistical bulletin. It was discovered that there exists a noticeable connection between petroleum profit tax and the growth of the Nigeria economy, it was also indicated in the findings that there is no significant relationship between company income tax and the growth of the Nigeria economy.

5. CONCLUSION AND RECOMMENDATION

5.1Conclusion

The study investigated the relationship of fiscal factors and economic growth in Nigeria from 1990 to 2019, using the ordinary least squares. The result of unit root shows that government capital expenditure oil revenue, recurrent expenditure and tax revenue are stationary at first difference. Result of Cointergation shows that there is no long run interrelation between the variables, and that result of correlation analysis review a positive relationship between GDP oil revenue and tax revenue but a weak positive relationship. Evidence from correlation analysis revealed that the GDP of Nigeria pose a moderate positive relationship with oil revenue and tax revenue but a weak positive relationship with recurrent expenditure while a weak negative relationship with capital expenditure but negative relationship with capital expenditure

Conclusively, the oil revenue, tax revenue, recurrent expenditure and capital expenditure are influential variables that pose an impact to Nigeria economy. The adjusted R^2 is 0.4863 indicating that 48.6% of the total variation in economic growth is explained by the variations in the independent variables of fiscal factors.

5.2 Recommendations

Based on findings from the empirical analysis, the study proffers the following recommendations, among others:

i. Capital and recurrent expenditures on economic services should be directed mainly to productive economic activities. This will stimulate activities in the economic sectors and, perhaps, reverse the negative effect of on economic growth.
ii. The proportion of government total expenditure that goes into capital and recurrent expenditure financing should be increased since these components exert significant positive effect on economic. Similarly, the share of recurrent expenditure on transfers should be increased since it exerts positive effect on economic growth.
iii. Since the analysis showed that capital and recurrent expenditure on social and community services have more positive effect on growth than the other components, they require more favourable attention in the allocation of government expenditures.
iv. The existence of a relationship between government expenditure and economic growth necessitates the continued use of fiscal policy instruments to pursue macroeconomic objectives in Nigeria.

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APPENDIX

Appendix 1: Summary Statistic of Fiscal Factors and the Economic Growth

	GDP	**Capital Expenditure**	**Recurrent Expenditure**	**Tax Revenue**	**Oil Revenue**
Mean	39661	613.996	1860.18	173.547	3155.16
Median	19795.6	508.764	1128.20	91.8227	2942.92
Std. Dev	43618.3	527.110	1924.06	183.956	2713.64

C.V	1.09978	0.858491	1.03434	1.05998	0.860064
Minimum	499.677	24.0486	36.2196	0.00	71.8871
Maximum	144210	2289	6997.39	564.449	8878.97
Skewness	0.941327	1.25186	0.956583	0.720262	0.419703
Ex. Kurtosis	-0.378357	1.71381	-0.000606650	-0.904057	-1.05073

Appendix 2 Fiscal Factors and GDP of Nigeria (₦' Billion)

Year	oil revenue	recurrent expenditure	capital expenditure	GDP	tax revenue
1990	71.8871	36.2196	24.0486	499.6769	0.0000
1991	82.6664	38.2435	28.3409	596.0447	0.0000
1992	164.0781	53.0341	39.7633	909.8033	0.0000
1993	162.1024	136.7271	54.5018	1259.0705	0.0000
1994	160.1924	89.9749	70.9183	1762.8128	5.0260
1995	324.5476	127.6298	121.1383	2895.2014	6.2569
1996	408.7830	124.2913	212.9263	3779.1331	11.2860
1997	416.8111	158.5635	269.6517	4111.6406	13.9053
1998	324.3112	178.0978	309.0156	4588.9898	16.2068
1999	724.4225	449.6624	498.0276	5307.3615	23.7505
2000	1591.6758	461.6000	239.4509	6897.4825	30.6438
2001	1707.5628	579.3000	438.6965	8134.1418	44.9129
2002	1230.8512	696.8000	321.3781	11332.2528	52.6320
2003	2074.2806	984.3000	241.6883	13301.5589	65.8876
2004	3354.8000	1032.7000	351.3000	17321.2952	96.1956
2005	4762.4000	1223.7000	519.5000	22269.9778	87.4498
2006	5287.5669	1290.2019	552.3858	28662.4688	110.5668
2007	4462.9100	1589.2700	759.3230	32995.3844	144.3728
2008	6530.6000	2117.3620	960.8901	39157.8844	198.0653
2009	3191.9380	2127.9715	1152.7965	44285.5605	229.3232
2010	5396.0910	3109.3785	883.8745	54612.2642	275.5746
2011	8878.9699	3314.5133	918.5489	62980.3972	318.0000
2012	8025.9706	3325.1565	874.8340	71713.9351	347.6882
2013	6809.2305	3689.0611	1108.3864	80092.5634	389.5263
2014	6793.8200	3426.8979	783.1224	89043.6153	388.8523
2015	3830.0960	3831.9474	818.3650	94144.9605	381.2652
2016	2693.9000	4160.1104	653.6090	101489.4922	397.0641
2017	4109.8000	4779.9888	1242.2960	113711.6346	473.7655
2018	5545.8000	5675.1861	1682.0990	127762.5456	533.7396
2019	5536.6614	6997.3895	2288.9960	144210.4921	564.4489