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FISCAL CONSTRAINTS AND ECONOMIC GROWTH IN NIGERIA: ANALYSIS OF OIL AND NON- OIL REVENUE STREAMS

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Abstract

Increasing government borrowings is a clear indication that the Nigeria revenue base is low. Hence, this study aims to analyze fiscal constraints and economic growth in Nigeria through the vista of oil and non- oil revenue Streams. Time series data was employed from the period 1981 to 2022 and the data were collected from the Central Bank of Nigeria (CBN) Statistical Bulletin. The model was specified based on the Keynesian growth model with real GDP as the dependent variable while fluctuation in oil and non-oil revenues made up the independent variables. The ARDL technique was deployed to analyze the data. The findings revealed among other things that fluctuations in oil revenue has statistical significant positive impact on the growth of the Nigeria economy in the long-run while fluctuations in non-oil revenue has no statistical significant positive impact on the growth of the Nigeria economy in the long-run. The study therefore concludes that a positive increase in oil and non-oil revenue will cause a positive increase in the growth of the Nigeria economy. Consequently, the need for government to checkmate these fluctuations to the advantage of the economy by ensuring that corruption is reduced to its barest minimum. The diversification of the economy through development of the agricultural and industrial sectors should be advanced with the desired vigour required for sustainable economic growth.

Keywords: Fiscal constraints, oil revenue, non-oil revenue, fluctuation, Nigerian economy.

1. Background to the Study

Revenue generation is very vital to any nation and that is why countries develop and use borrowing to augment revenue shortfalls. According to the Debt Management Office (DMO), Nigeria needs to earn higher revenue and manage its debt profile more efficiently due to the fact that Nigeria's revenue is low relative to other counties (Oyadeyi, 2022). The World Bank's World Economic Outlook for 2020 showed that Nigeria with revenue to GDP ratio of 6.3% was ranked at 194 out of 196 countries covered (Oniha, 2022). Furthermore, Abdullahi (2022) observed the low tax revenue to GDP ratio which dropped from 8.2% in 2011 to 4.4% in 2019. This was admitted to be the lowest in Africa and among Nigeria's contemporaries; hence in 2020 the Nigerian government

raised its Value Added Tax (VAT) from 5% to 7½% with the sole aim of improving revenue collection. Currently, Nigeria Federal Government is reviewing a Presidential Committee Fiscal Policy and Tax Reforms report on VAT. This comprises an immediate rise in VAT from the current 7.5% to 10%, all in favour of up scaling revenue in Nigeria (Asquith, 2024). Similarly, given that oil revenues represent about 80% of the government's income, oil revenue contribution to the total revenue of government is also falling. Oil revenue accounted for only 41.7% in 2017 down from 2006 level of 88.6%. The Federal Government revenue from the oil sector in 2017 at ₦1.13 trillion was not enough to service government outstanding debt. In 2017, debt servicing was in the region of ₦1.664 trillion, while the revenue base is still low. The Central Bank of Nigeria (CBN) recently disclosed that ₦799.10 billion was generated in crude oil sales during the first quarter of the year (Q1 2022), and this amount represented a 28.3% decline from the ₦1.12 trillion realized in Q4 2021.

Furthermore, a cursory look at revenue statistics from the CBN statistical bulletin (2022) showed that federally collected revenue fluctuated from 1981 to 1986; it decreased from ₦13.3 billion in 1981 to ₦12.6 billion in 1986 following the glut in the international oil market. Within this period, oil revenue received a boost following the adoption of deregulatory measures under the Structural Adjustment Programme (SAP); hence, from 1987 there was a tremendous increase in federally collected revenue from ₦25.4 billion to ₦101.0 billion in 1991. It continued to increase after democratic era from 1999 which rose from ₦949.2 billion in 1999 to ₦2,231.6 billion in 2001; decreased to ₦1,731.8 billion in 2002 after which it increased to ₦2,575.1 billion in 2003 this increment continued till 2006 when the federally collected revenue was ₦5,965.1 billion. There was a drop in the revenue collection in 2007 to ₦5,727.5 billion while in 2008 revenue collection increased to ₦7,866.6 billion but had a drastic drop to ₦4,844.6 billion in 2009. These fluctuations continued through 2010 when federally collected revenue increased to ₦7,303.7 billion and a further increase to ₦11,116.8 billion in 2011, dropped to ₦10,654.7 billion and ₦9,759.8 billion in 2012 and 2013 respectively. However, in 2014 there was a slight increase to about ₦10,068.9 billion while in 2015 and 2016 federally collected revenue dropped sharply to ₦6,912.5 billion and ₦5,616.4 billion but afterwards it increased continuously to ₦10,262.3 billion in 2019 and dropped to ₦9,303.2 billion in 2020. This is a clear indication that the revenue base is low and explains the increases in new borrowings. Should the government therefore have a comparable increase in her revenue base then, the need for large amounts of new borrowings witnessed in Nigeria will reduce and will also reduce the debt service to revenue ratio.

Statement of the Problem

Nigeria's dependence on oil revenue has been a cause for concern which has affected total revenue generation in the country, especially as oil is an internationally traded commodity whose price is subject to unpredictable changes. As observed by Onakoya and Agunbiade (2020), about 10% of GDP and 86% of the government's export revenues come from the oil and gas sector. This explains why the sudden decline in crude oil price from about $114 per barrel to about $50 per barrel in 2014 did not go down well in the economy as it preceded the economic downturn in the second quarter of 2016. Worst still is the fact that the country imports refined gasoline to meet up with domestic demand due to inadequate

local production; and these keep one worried over the huge impact of fluctuations in global oil prices as it affects Nigeria's macro economy and its revenue generation. This dependence has also made the economy highly vulnerable to fluctuations in global oil prices, leading to recurring fiscal constraints such as budget deficits, rising public debt, and reduced government spending capacity. Other constraints are in the area of corrupt practices of government revenue collectors which have significantly affected revenues from both tax and non-tax sources, such that most of the revenue collected goes into private pockets. These fiscal challenges have constrained economic growth, limited public investment in critical sectors, and hindered sustainable development. Despite several policy efforts to diversify the revenue base, the non-oil sector's contribution to the fiscal landscape remains weak and underdeveloped. This underperformance raises concerns about the effectiveness of fiscal policies and the adequacy of existing revenue mobilization strategies in achieving economic stability and growth. Moreover, there is limited study that systematically examines the combined impact of oil and non-oil revenue streams on Nigeria's economic growth within the context of fiscal constraints. Most studies have either focused solely on the volatility of oil revenue or provided a fragmented analysis of non-oil revenue without considering their interconnected effects on fiscal policy and growth dynamics.

Objectives of the Study

The main objective of this study is to investigate **fiscal constraints and economic growth in Nigeria: analysis of oil and non- oil revenue streams,** while the specific objectives are stated below:

1. To ascertain the impact of non-oil revenue fluctuation on the growth of the Nigeria economy.
2. To determine the impact of oil revenue fluctuation on the growth of the Nigeria economy.

Research Questions

The following questions were formulated to guide the study:

1. What impact does non-oil revenue fluctuation have on economic growth of Nigeria?
2. What is the implication of oil revenue fluctuation on economic growth of Nigeria?

Research Hypotheses

The hypotheses to be tested in this study were stated in their null forms as follows:

H_{01}: Non-oil revenue fluctuation has no significant impact on economic growth of Nigeria.

H_{02}: Oil revenue fluctuation has no significant impact on economic growth of Nigeria.

Significance of the Study

The Nigeria government can use the findings made here to shape future economic policies that will help accelerate the economic recovery plans of the federal government as the study intends to expose those actions of government detrimental to its fiscal operations.

2. Literature Review

Conceptually, the word 'fiscal' according to the Oxford Advanced Learner's Dictionary relates to government or public money and this includes how government gets money and spends money in order to achieve certain macroeconomic goals. The concept of fiscal constraints refers to the

limitations on government spending and borrowing, often driven by budgetary rules, economic realities, or political pressures. Therefore, fiscal constraints in oil and non-oil revenue are the unfavourable fluctuations in oil and non-oil revenue generation in the country; occasioned by unpredictable changes in global oil prices, corrupt practices of government revenue collectors which have significantly affected revenues from both tax and non-tax sources, and also leakages in the economy; such as an increase in oil theft and pipeline vandalism which have significantly reduced the revenue from oil sales. These unfavourable fluctuations impede economic goals that government policies intend to achieve. Various authors and economists have provided differing perspectives on what these constraints entail and how they impact government policy. Below are some definitions and viewpoints by different authors are expressed: Keynesian Perspective - Keynes did not explicitly define fiscal constraints but suggested that governments should not be constrained by the fear of deficits during periods of economic downturns; Milton Friedman - Friedman argued that government spending should be tightly controlled and that fiscal deficits are naturally inflationary over time; Blanchard has recently suggested that fiscal constraints might be looser than traditionally thought, especially in countries that borrow in their own currency; the IMF often emphasizes the need for fiscal sustainability, advocating that governments must ensure their debt levels remain manageable relative to their economic output (GDP) (Romer & Romer,2019). They argue for the implementation of fiscal rules that limit deficits and debt accumulation. In all, fiscal constraints may lead to underinvestment or distortions in the allocation of public expenditure and, thus, to lower economic growth (Bacchiocchi, Borghi & Missale , 2011).

In line with Section 162 subsection 10 of the 1999 constitution of the Federal Republic of Nigeria, revenue can be define as series of income that flows into the government coffers from different profitable economic engagements of government. In other words, government revenue is the total amount of money generated or earned by the government - federal, state, and local - to cover its expenses for a fiscal year. Government revenues are generated from different sources such as taxes, borrowing, fine, fees etc. Revenue comprises tax and non-tax receipts within a given period, and receipts from non-financial assets used in production process for more than one year. Non-tax revenues are revenues attained by government from sources other than tax. Some of these sources are fees, fines or penalties, grants and gifts, etc.

Government revenue generation in Nigeria is mainly from two sources viz, oil revenue and non-oil revenue. Oil and non-oil revenues are integral sources of government finances; however, oil revenue has been the dominant source of government revenue, contributing over 70% to federally collected revenue (CBN, 2021). The oil revenue includes proceeds from sales of crude oil, petroleum profit tax, rents and royalties while the non-oil revenues are revenues from industrial sources outside the petroleum and gas sector which includes those from the manufacturing, telecommunication, agriculture, finance, tourism, real estate, entertainment, construction, health

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sector, etc. and they consist of companies' income tax, customs and excise duties, value-added tax and personal income tax; others include fees, licenses, and rent on government property.

Theoretically, Wagner (1883) proposed a theory of increasing state activities; the theory states that as the per capita income of a country rises, the share of public spending to gross domestic product also rises. The theory further explains that government expenditures will increase as an economy becomes more industrialized. This implies that the growth of government expenditure depends on economic growth and development. In other words, industrialization that is caused by growth in per capita income will encourage government to increase its expenditures that will impact on the social welfare of the citizenry like education, health, etc., which in turn will cause industries to produce more goods and services because aggregate demand will increase leading to increased aggregate output.

In line with this theory is the Musgrave's Theory of Public Expenditure Growth which states that the demand for public goods increases as per capita income increases. This means that when per capita income level is low, the demand for public goods will also be low because the low income will be committed to satisfying mainly primary needs. However, as the per capita income improves the demand for public goods such as education, transportation, health, etc. will be expected to rise.

Furthermore, Wiseman and Peacock posit that government expenditure depends on government revenue; stressing that industrialization provokes increases in government spending and also government revenue generation, particularly by applying taxes to finance government expenditure. They explained that government revenue from taxes increases in period of unrest because according to them, people pay their taxes during such periods and as such tax resistance level tends to reduce. So, the revenue generated from the increased taxes is used to finance government expenditure which is supposed to increase during the period of unrest. But then, once calmness is finally restored, government expenditure does not usually go back to its previous state; and again, as government generates more revenue, the more they spend it on the economic welfare of the people (Okere, Uzowuru & Amako, 2019).

Empirically, so many scholars have done works on oil and non-oil revenue in Nigeria. Ihegboro, Onah, Nwonye and Ojiako (2022) studied the impact of non-oil revenue on the growth of the Nigerian economy. The time series data was from 1985 to 2018 and the variables are agriculture sector (GDPA), industrial sector (GDPI), commerce sector (GDPC) and the non-oil sector revenue of the Nigerian economy. The study employed Ordinary Least Squares (OLS) technique of regression analysis based on principle of best linear unbiased estimate (blue). The study found that GDPA had a bi-directional causal relationship with non-oil sector of Nigeria Economy, GDPI had bi-directional causal relationship with non-oil sector of Nigeria economy, GDPC had no causal relationship with the non-oil sector of Nigeria economy and GDPTOT had no causal relationship with the non-oil sector of Nigeria economy while concluding that the continuing decline in international crude oil prices, the hostility of militants in Nigeria's oil producing area, the Nigerian Government's profligate spending, the global health pandemic, among other factors, are

undermining Nigeria's economic development. Therefore, the researchers recommended that federal government should encourage more exportation of agricultural output as this in turn will enhance external foreign exchange earnings and improve the competitiveness of Nigerian agricultural produce in the international markets.

Akpokerere and Ekane (2022) examined the effect of oil and non-oil revenue (ONOR) on the Nigerian economy from the period of 1994 to 2021 (28years). Data for the study were total oil revenue (TOR), total non-oil revenue (TNOR) and total revenue (TR) as the independent variables while the Nigerian economy proxied real gross domestic product (RGDP) was the dependent variable. The data were analyzed using descriptive statistics, followed by the correlation analysis in bids to ascertain the co-movement of the measures ONOR (TOR, TNOR and TR) in relation to the Nigerian economy proxied with RGDP and several diagnostics tests conducted in the bids to ascertain if the data were suitable for regression analysis with the aid of E-VIEW version 9. 0. It showed that; TOR with an associated p-value (sig. value) of 0.0000. This implies that TOR has a major significant effect on RGDP; TNOR with an associated p-value (sig. value) of 0.0097. This implies that TNOR positively and significantly affects RGDP in Nigeria and TR with an associated p-value (sig. value) of 0.0000 in the multiple regression results. This shows that the impact of TR on RGDP is significant. The results show that the measurements of ONOR (TOR, TNOR and TR) used in this research has significant effects on the RGDP in Nigeria. Therefore, the study came to the conclusion that ONOR have a considerable effect on the expansion of the Nigerian economy. Recommended that improve revenue generation through non-oil operations, it is high time the government looked into the development of the sector which has wider opportunities for growth. This can be achieved through diversification to create more avenues through which the government can generate revenue to meet its financial needs.

Akinleye, Olowookere and Fajuyagbe (2021) examined the impact of oil revenue on economic growth in Nigeria from 1981 to 2018; the secondary data collected were sourced from the Central Bank of Nigeria Statistical Bulletin and National Bureau of Statistic. The real GDP was the dependent variable and was used as a proxy to economic growth while, exchange rate (EXCR), petroleum profit tax (PPT), inflation rate (INF) and oil revenue (OREV) were the independent variables. An Augmented Dickey Fuller unit root test, autoregressive distributive lag (ARDL) method and ARDL bound test for co-integration with various other diagnostic techniques were employed for the study. The result revealed that exchange rate (EXCR), real gross domestic product (RGDP), petroleum profit tax (PPT) and oil revenue (OREV) were stationary at first difference (I(1)) and it was discovered that the inflation rate (INF) was stationary at level (I(0)); on ARDL, the result showed that the previous values of the economic growth (RGDP (- 1)) and oil revenue were directly related with the economic growth (RGDP) in Nigeria; it was also revealed that the petroleum profit tax (PPT), inflation rate (INF) and exchange rate (EXCR) were inversely related with the economic growth (RGDP) in both the short and long run. The fitted ARDL model was found to be statistically significant and therefore is reliable and appropriate for examining the impact of oil revenue and other identified economic variables on economic growth in Nigeria during the period under study. Hence, the study recommends that government should formulate

appropriate policy that would ensure better and judicious use of oil revenue to enhance the growth of the Nigerian economy; and also that the entire loopholes to oil revenue generation should be blocked to ensure that fund is properly channel for the growth of the economy. Also, government should take a bold step towards the diversification of the economy from oil in order to encourage the growth of the economy from other sectors of the economy.

Ikue, Amabuike, Denwi, Mohammed and Musa (2021) investigated how oil revenue and the activities in the oil industry affected the size of income accrue to each Nigerian (Per capita income) from 1980 to 2019. Using the Auto Regressive Distributional Lag (ARDL) they observed that explorative activities of crude oil in Nigeria positively impacted the size of individual income. The magnitude of the impact was massive irrespective of time; a 1% increase in exploration increases the size of individual income by 0.4786% in the long run and 0.6030% in the short run. Also, the interaction of rigs by output (interaction of rig-count and oil-production) negatively impacted the size of individual income. They concluded that the contribution of oil-revenue to economic growth in Nigeria is promising on the safety of the explorative environment.

Onoja and Ibrahim (2021) examined the relationship between tax revenue and Nigeria Economic Growth using data gathered through secondary means. Tax Revenue was proxy by Petroleum Profit Tax, Value Added Tax and Companies Income Tax, while economic growth was proxy by Gross Domestic Product. Data collected were analyzed with the aid of the Stata computer software. The result revealed that Petroleum Profit Tax (oil tax revenue) has a positive but no significant relationship with Nigeria economic growth, while Value Added Tax and Companies Income Tax (non- oil Tax Revenue) have significant relationship with Nigeria economic growth. The study therefore recommends that government should minimize the wide spread corruption and leakages prevalent in tax administration in Nigeria, and transparently and judiciously account for tax revenue generated through the provision of more quality public goods and services, and need not to increase the rates of Value Added Tax and Companies Income Tax in the short run, but to closely monitor the operations of companies engaged in petroleum operations to minimize tax evasion, and as well as support the development of entrepreneurial activities in order to significantly increase tax revenue so as to sustain the significant relationship of VAT and CIT (non-oil tax) revenue with Nigeria economic growth.

Ifeonyemetalu, Ogu and Ojimadu (2020) examined the impact of oil price fluctuation on economic growth in Nigeria. The study made use of Generalized Auto-Regressive Conditional Heteroskedasticity GARCH (1,1) model to estimate effect of oil price fluctuation on economic growth in Nigeria. The data used was Quarterly data covering the period from 1984 - 2017 sourced from Central Bank of Nigeria Statistical Bulletin and OPEC database 2018. The variables used in the analysis are Gross Domestic product (GDP) was used as dependent variable, oil price, exchange rate and interest rate were used as the independent variable. The results shows that Oil price has positive and significant effect on the economic growth in Nigeria; Fluctuations in oil prices, though has positive effects on economic growth but insignificant; Exchange rate has positive and significant effect on economic growth in Nigeria. The study concluded that oil price

fluctuations do not have significant impact on the economy but oil price itself does. While increase in price positively affect the economy through its contribution to export revenues (and government revenues), surges in oil price induce or worsen uncertainty in the economy through its effect on fiscal instability and vulnerability of budget implementation. It was recommended that since oil price is positively related to economic growth, government should utilize properly the proceeds received from oil occasioned by oil price increase to basic and improve basic infrastructures like good and motorable roads, quality education and stable power supply. Government should as a matter of urgency create both vertical and horizontal linkages in oil sector to diversify the economy through the proceeds from oil. Government should continue to judiciously invest in infrastructural development to address key bottlenecks in order to reduce the cost of domestic production and increase domestic supply.

Uremadu, Nwaeze and Duru-Uremadu (2020) investigated the impact of non-oil revenue on economic growth of Nigeria for the period 1994 to 2017. Data for the study were real gross domestic product (RGDP) proxy for economic growth was adopted as the dependent variable while agricultural revenue (AR), manufacturing revenue (MNR), mining revenue (MR) and value-added tax revenue (VATR) were adopted as the independent variables. The Augmented Dickey-Fuller (ADF) unit root rest was used to test the stationarity of the variables. The results revealed a mixed order of integration; hence, the Auto-Regressive Distributed Lag (ARDL) bounds test was used to test the long- run relationship (co-integration) among the variables in the model and that there was a long-term relationship among the variables. The ARDL results showed that agricultural revenue and mining revenue had a negative and insignificant effect on economic growth of Nigeria in both the short run and long run. Manufacturing revenue had a positive and insignificant effect on economic growth in the short-run and a positive and significant effect on economic growth of Nigeria in the long run. However, VAT revenue had a positive and very significant effect on economic growth of Nigeria both at short run and long run. The study thus recommended amongst others that government should sustain and improve on its policies on the agricultural sector in order to boost agricultural production considering its positive posture on domestic growth while both the manufacturing sector and mining sector should be reinvigorated for increased production in a bid to make a transformed impact on economic growth in the future.

3. Research Method

The ex-post-facto research design was adopted in this study and the study used annual data on RGDP as a proxy for economic growth which is the dependent variable while, fluctuation in oil revenue generation and fluctuation in non-oil revenue generation are the independent variables. The data were sourced from the Central Bank of Nigeria Statistical Bulletin of 2022 edition.

The Autoregressive Distributed Lag model (ARDL) technique of analysis was adopted so that we can analyze the dynamic relationships with time series data in a single equation framework. Also applied in this analysis are the unit root test, the ARDL bounds test for co-integration and Granger causality test.

Model Specification

The relationship of the variables is designed on a linear regression model which assumes a linear relationship between the dependent and independent variables. Hence, the model was specified based on the Keynesian growth model and therefore, the model is given as:

$$RGDP = f(FOR, FNOR) \ldots\ldots. 1$$

In a linear function the model becomes

$RGDP_t = b_0 + b_1FOR_t + b_2FNOR_t + U_t \ldots\ldots\ldots 2$

Where:

$RGDP_t$ = Real Gross Domestic Product (Economic growth) at time t

FOR_t = Fluctuation in Oil Revenue at time t

$FNOR_t$ = Fluctuation in Non-Oil Revenue at time t

U_t = Stochastic error term

b_0 represents constant

b_1 and b_2 are the slope or the coefficients of the independent variables.

However, the logarithms of the data were used. Thus, the equation becomes,

$\ln RGDP_t = b_0 + b_1 \ln FOR_t + b_2 \ln FNOR_t + U_t \ldots\ldots\ldots 3$

Recall that this study tends to analyze the impact of revenue constraints on the growth of the Nigerian economy; hence the ARDL model was selected for the analysis. The ARDL uses a combination of endogenous and exogenous variables, which is different from the VAR model that is strictly for endogenous variables. It is also very necessary to state here that the ARDL model can only be specified on the condition that the variables are integrated of different order; implying that the model should have a combination of variables with I(0) and I(1) order of integration. This model is also composed of an autoregressive component, which is the dependent variable, regressed on one or more of its past values, and a distributed lag component, which is the independent variable and one or more of its lagged components. Therefore, the general ARDL (p, q) model is specified as:

$$RGDP_t = \alpha_1 + \sum_{i=1}^{p} \beta_i RGDP_{t-i} + \sum_{i=1}^{q} \lambda_i FOR_{t-i} + \sum_{i=1}^{q} \phi_i FNOR_{t-i} + \varepsilon_t$$

Where:

The dependent variable is a function of its lagged values, the current and lagged values of the independent variables in the model.

p – the lag length for the dependent variable

q – the lag length for the independent variables

ε_t – is the stochastic error terms

α – is the constant or intercept

β, λ and ϕ – are the coefficients of the independent variables

4. Presentation of Result and Analysis

The technique of analysis adopted by this research as stated above is the multiple regression technique with the application of Autoregressive Distributed Lag model (ARDL). Therefore, the

procedures started by finding stationarity for the variables followed by test for long-run relationship before analyzing the data.

Stationarity Test

Table 4.1: Augmented Dickey Fuller (ADF) Unit Root Test result summary.

Variable	T statistic Level	C values Level 5%	T statistic 1st diff. 5%	C values 1st diff. 5%	Prob. 1st diff.	Prob.	Order of Integration Level
RGDP	-0.168190	-2.936942	-4.222626	-2.938987	0.934	0.0019	First diff. [I(1)]
FOR	-4.124374	-3.523623	-7.706590	-3.529758	0.012	0.0000	Level [I(0)]
FNOR	-4.964859	-3.523623	-6.729410	-3.529758	0.001	0.0000	Level [I(0)]

Source: E-views 12, Econometric result of the study

The result above indicated that real GDP (RGDP) is integrated at first difference while fluctuation in oil revenue (FOR) and fluctuation in non-oil revenue (FNOR) are integrated of order zero. Therefore, we conclude that there is mix order of integration because the variables can be seen to be integrated at different orders. This goes to show that the statistical properties of the variables do not vary or change over time however; they can be influenced by an external factor. Because of the mixed order of integration, we shall therefore test for co-integration among the variables using the ARDL Bounds test approach.

ARDL Bounds Test Approach to Co-integration

H_0: No long-run relationship exists among the variables (i.e., no co-integration).

H_1: There is long-run relationship among the variables.

Table 4.2: Summary of the ARDL Bounds Test

Test Statistic	Value	k
F-statistic	7.644328	2

Critical Value Bounds

Significance	I0 Bound	I1 Bound
10%	3.17	4.14
5%	3.79	4.85
2.5%	4.41	5.52
1%	5.15	6.36

Source: E-views 12, Econometric result of the study

The table above is a summary of the ARDL Bounds test for co-integration. The rule is that if the F-statistic is greater than the 5% critical values at the I(0) and I(1) bounds, we will reject the null

hypothesis and accept the alternative. Therefore, since the F-statistic value of 7.644328 is greater than 3.79 I(0) bound and 4.85 I(1) bound, we therefore reject the null hypothesis and accept the alternative and then conclude that there is long-run relationship between the dependent variable RGDP and the independent variables of FOR and FNOR; meaning that fluctuation in oil revenue and fluctuation in non-oil revenue have long-run effect on the Nigerian economy.

Also, the direction of causal relationship among the variables was determined by testing for Granger causality based on the Pair wise approach. The result is presented below.

Table 4.3: Pairwise Granger Causality Test

Null Hypothesis:	Obs	F-Statistic	Prob.
LNFOR does not Granger Cause LNRGDP	41	12.8897	0.0009
LNRGDP does not Granger Cause LNFOR		5.04717	0.0306
LNFNOR does not Granger Cause LNRGDP	41	2.27447	0.1398
LNRGDP does not Granger Cause LNFNOR		10.1179	0.0029
LNFNOR does not Granger Cause LNFOR	41	5.32513	0.0266
LNFOR does not Granger Cause LNFNOR		5.55960	0.0236

Source: E-views 12, Econometric result of the study

The table above indicates that a bi-directional causality was found between FOR and RGDP at 5% level of significance, because the prob. value of 0.0009 and 0.0306 are less than 0.05 hence, we reject the null hypothesis and accept the alternative that LNFOR granger causes LNRGDP and also LNRGDP granger causes LNFOR. The result also indicated a bi-directional causality between LNFNOR and LNFOR at 5% level of significance, because the prob. value of 0.0266 and 0.0236 are less than 0.05 therefore we also reject the null hypothesis and conclude that LNFNOR granger causes LNFOR and also, LNFOR granger causes LNFNOR.

But again, a one directional causality was found between LNFNOR and LNRGDP. The result showed that LNRGDP granger causes LNFNOR because it has a prob. value of 0.0029 which is less than the 5% level of significance, but LNFNOR does not granger cause LNRGDP because it has a prob. values of 0.1398 which is greater than 0.05. Therefore, we conclude that LNRGDP granger causes LNFNOR.

ARDL co-integrating and long-run form

The ARDL co-integrating short-run and long-run form results are presented below.

Table 4.4: ARDL short-run form

Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNFOR)	0.009193	0.003743	2.456119	0.0190
D(LNFNOR)	0.002584	0.004440	0.581943	0.5642
CointEq(-1)	-0.063844	0.021677	-2.945293	0.0056
Cointeq = LNRGDP - (0.2643*LNFOR + 0.0405*LNFNOR + 4.1379)				

Source: E-views 12, Econometric result of the study

The result above indicates that FOR is positively related with 0.009193 in the current value of RGDP in the short-run period ceteris paribus; implying that a unit increase in fluctuation in oil revenue (FOR) will accounts for 0.009193 units increase in the current RGDP. Again, this positive increase is significant at 5% (0.05) level of significance because the prob. value of 0.0190 is less than 0.05 level of significance.

Furthermore, FNOR is positively related with 0.002584 in the current value of RGDP in the short-run period ceteris paribus; implying that a unit increase in fluctuation in non-oil revenue (FNOR) will account for 0.002584 units increase in the current RGDP. However, this positive increase is not significant at 5% (0.05) level of significance because the prob. value of 0.5642 is greater than 0.05 level of significance.

The CointEq(-1) which is the error correction that captures the speed at which the variables return to their long-run equilibrium after a shock is rightly signed at -0.063844 and is significant because the prob. value of 0.0056 is less than the 0.05 level of significance. This indicate that error correction will take place at a speed of 6.38% (i.e., approximately 6.4%) annually. This means that it will take as long as fifteen years and six months (15.6 years) to achieve long-run equilibrium.

Table 4.5: ARDL long-run coefficient

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNFOR	0.264325	0.084616	3.123832	0.0035
LNFNOR	0.040467	0.063860	0.633686	0.5303
C	4.137919	0.084695	48.856726	0.0000

R-squared	0.995576	Mean dependent var	4.529788
Adjusted R-squared	0.995084	S.D. dependent var	0.235407
S.E. of regression	0.016505	Akaike info criterion	-5.256438
Sum squared resid	0.009807	Schwarz criterion	-5.047466
Log likelihood	112.7570	Hannan-Quinn criter.	-5.180342

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F-statistic	2025.231	Durbin-Watson stat	1.462933
Prob(F-statistic)	0.000000		

Source: E-views 12 Econometric result of the study

From the above table, it can be seen that the FOR is positively related to RGDP with a coefficient of 0.264325 in the long-run period ceteris paribus; and the positive relationship is also significant at 5% (0.05) level of significance because the prob. value of 0.0035 is less than 0.05 level of significance.

Also, the FNOR is positively related to RGDP with a coefficient of 0.040467 in the long-run period ceteris paribus; however, the positive relationship is not significant at 5% (0.05) level of significance because the prob. value of 0.5303 is greater than 0.05 level of significance.

From the table above, the estimated value for b_1 was extracted and presented in the table below.

Table 4.5.1: Extracted values from ARDL long-run coefficient result

Variable	Estimated value	t-statistics	Expected sign	Remark
b_1	0.264325	3.123832	+	Conform
b_2	0.040467	0.633686	+	Conform

$R^2 = 0.995576$

F- statistic = 2025.231

Prob.(F-statistic) = 0.000000

Thus, the regression equation becomes:

LnRGDP = 4.137919 + 0.264325LnFOR + 0.040467LnFNOR

Interpretation of the long-run result

From the result in the above table, the coefficient of fluctuation in oil revenue (FOR) indicates a positive relationship with the real GDP in the long-run period. This conformed to our expected assumption. The implication is that a unit increase in the fluctuation in oil revenue in the economy will cause real GDP to increase by 0.264325 units ceteris paribus; meaning that if the fluctuation is a positive one that will increase oil revenue generation, then a unit increase will lead to 0.264325 units increase in real GDP. But if the fluctuation is a negative one that will reduce oil revenue generation then, a unit decrease will also lead to 0.264325 units decrease in real GDP. And again, from the granger causality test conducted a bi-directional causal relationship was found between fluctuation in oil revenue and real GDP at the 0.05 level of significance. This means that fluctuation in oil revenue can be used to determine changes in real GDP; and also real GDP can be used to determine fluctuation in oil revenue. The study further shows that fluctuation in oil revenue is statistically significant in explaining changes in real GDP since its prob. value of 0.0035 is less than the 0.05 level of significance.

The coefficient of fluctuation in non-oil revenue (FNOR) also indicates a positive relationship with the real GDP in the long-run period. This also conformed to our expected assumption. The implication is that a unit increase in the fluctuation in non-oil revenue in the economy will cause real GDP to increase by 0.040467 units ceteris paribus; meaning that if the fluctuation is a positive

one that will increase non-oil revenue generation, then a unit increase will lead to 0.040467 units increase in real GDP. But if the fluctuation is a negative one that will reduce non-oil revenue generation, then a unit decrease will also lead to 0.040467 units decrease in real GDP. Also, the granger causality test conducted indicated a one directional causal relationship from real GDP to fluctuation in non-oil revenue at the 0.05 level of significance; this means that real GDP can also determine the fluctuation in non-oil revenue generation. The study further showed that fluctuation in non-oil revenue is not statistically significant in explaining changes in real GDP since its prob. value of 0.5303 is greater than the 0.05 level of significance.

Meanwhile, the coefficient of determination (R^2) stood at 0.995576, implying that approximately 100% of the variations in real GDP (dependent variable) is explained or caused by variations in the explanatory or independent variables in the model under consideration. But again, the adjusted R^2 which stood at 0.995084 re-affirms the goodness of fit to be approximately the same 100%; meaning that the explanatory variables jointly affect real GDP by 100%. Furthermore, the prob. value of the F-statistic stood at 0.000000 and is less than the 0.05 level of significance, indicating that the joint influence of the explanatory variables on the dependent variable is statistically significant in explaining the variations in real GDP.

Test of Hypotheses

The hypotheses are tested using the prob. value of the t-statistic of the parameter estimates. The hypotheses to be tested are re-stated here.

Table 4.6: Summary of the t-statistics

Variable	t-statistic	Prob. value	Decision
FOR	3.123832	0.0035	Statistically significant
FNOR	0.633686	0.5303	Not statistically significant

Source: E-views Econometric result of the study

Hypothesis 1

H_0: Non-oil revenue fluctuation has no significant impact on economic growth of Nigeria.

H_1: Non-oil revenue fluctuation has significant impact on economic growth of Nigeria.

From the table above, we conclude that non-oil revenue fluctuation has no significant impact on economic growth of Nigeria.

Hypothesis 2

H_0: Oil revenue fluctuation has no significant impact on economic growth of Nigeria.

H_1: Oil revenue fluctuation has significant impact on economic growth of Nigeria.

From the table above, we conclude that oil revenue fluctuation has significant impact on economic growth of Nigeria.

Test for Autocorrelation

Using the Durbin Watson statistic (DW), if the value is closer to 0; then there is positive autocorrelation, if it is closer to 2; then there is no autocorrelation; if it is closer to 4; then there is negative autocorrelation. However, from our result, the DW value for the model is 1.462933; this is closer to 2 than 4, thus we conclude that there is no autocorrelation.

Discussion of Results

The results obtained in this research are genuine and authentic with regards to the available data because, the variables were found to be stationary over time; making the estimates consistent and reliable for policy formulation. The co-integration test result also indicated that a stable long run relationship exists between the dependent variable real GDP and the explanatory variables of oil revenue fluctuation and non-oil revenue fluctuation in the model. This implies that in the long run, economic growth can be efficiently predicted using fluctuation in oil revenue and fluctuation in non-oil revenue. Also, the result further indicated that, fluctuation in oil revenue and fluctuation in non-oil revenue accounts for 99.5% changes in economic growth while the F-statistic further confirm the strong influence which these two variables have on economic growth in Nigeria.

Oil revenue plays a key role in the structure of the Nigeria economy; hence, our result showed that fluctuation in oil revenue has a significant positive impact on the growth of the Nigeria economy both in the short-run and the long-run periods. Also, fluctuation in non-oil revenue was found to have a positive but not significant impact on the growth of the Nigeria economy both in the short-run and long-run periods. Therefore, with regards to our findings, a positive fluctuation will mean more revenue or increase in total revenue while a negative fluctuation means drop in total revenue; this is in line with the assertion of Ifeonyemetalu, et al (2020), that increase in oil price has a positive effect on the economy because it contributes to total revenue through its export revenue while a drop in oil price has a negative implication on the economy.

The results have indicated that corrupt practices of government revenue collectors have really affected total revenue generation from both tax and non-tax sources, coupled with the increasing oil theft and pipeline vandalism in the south-south, and insecurity witnessed in most parts of the nation; farmers are afraid to go to their farms for fear of been raped, maim or even killed in most Northern States. The business environment is highly unfriendly as it is becoming extremely expensive to do business in the country thereby discouraging investors to invest in the country. Also, the inability of government to reciprocate the sacrifice of tax payers by providing amenities that will enhance their standard of living, has induced tax payers to explore ways to avoid and evade the payment of taxes. All these activities have resulted in negative fluctuations and are constraints to improved revenue generation in Nigeria which have adversely affected the economy.

Conclusion

This research analyzes the impact of revenue constraints on the growth of the Nigeria economy using time series data spanning the period from 1981 to 2022. The model was specified based on the Keynesian growth model with real GDP as the dependent variable while fluctuation in oil revenue and fluctuation in non-oil revenue made up the independent variables.

The findings revealed that fluctuation in oil revenue has statistically significant positive impact on the growth of the Nigeria economy while non-oil revenue has statistically insignificant positive impact on the growth of the Nigeria economy. This means that a positive increase in fluctuation of oil and non-oil revenue will cause a positive increase in the growth of the Nigeria economy. Thus, the growth of the Nigeria economy can be efficiently predicted using fluctuation in oil and non-oil revenue; hence the need for government to checkmate these fluctuations to the advantage

of the economy. In all, Nigeria requires a careful balancing act, meeting urgent developmental needs while ensuring long-term fiscal sustainability. This involves adopting flexible fiscal rules, enhancing domestic revenue mobilization, ensuring prudent debt management, and focusing on growth-enhancing investments. Governance and transparency must improve to address fiscal constraints in a sustainable manner.

Recommendations

The following recommendations made here are in line with the findings of this research.

The development of the agricultural and industrial sectors is paramount in diversifying the economy; because these sectors are key to sustainable economic growth and development. Therefore, government should create an investment friendly environment by encouraging local producers through the provision of basic infrastructures, soft loans, removal of multiple taxes, security of life and property etc. It is very important that government provides improved farm seeds, power, irrigation and the likes to boost the agricultural sector. In the same vein the government should provide steel companies and machine making companies thereby motivating investors to invest in the county not forgetting that efforts should be made to ensure that the nation's refineries work again.

Government should try and reduce corruption to its barest minimum and checkmate the excesses of revenue collectors from both tax and non-tax sources. Anti-graft or anti-corruption agencies like the Economic and Financial Crimes Commission (EFCC), and the Independent Corrupt Practices Commission (ICPC) should be fully empowered to go after offenders. Those who divert and embezzle public funds should be punished according to law of the country. Also important is that government should ensure that tax payers get value for their money by providing amenities that will enhance their standard of living.

References

Abdullahi, I. (2022). How Nigeria can tackle revenue challenges – think tank. *The punch newspaper*, Oct,17

Adegbite, T. A. & Fasina, H. T. (2019). Taxation and revenue generation in Nigeria. *Accounting & taxation review*, 3(1).

Adeusi, A. S., Uniamikogbo, E., Erah, O. D. & Aggreh, M. (2020). Non-oil revenue and economic growth in Nigeria. *Research journal of finance and accounting*, 11(8).

Akinleye, G. T., Olowookere, J. K. & Fajuyagbe, S. B. (2021). The impact of oil revenue on economic growth in Nigeria (1981-2018). *Acta universitatis danubius (AUDOE)*, 17(3), 317 – 329.

Akpokerere, O. E. & Ekane, R. O. (2022). Oil and non-oil revenue and the Nigerian economy. *International journal of management & entrepreneurship research*, 4(11), 441 – 457.

Aluthge, C., Jibir, A., & Abdu, M. (2021). Impact of government expenditure on economic growth in Nigeria (1970-2019). *CBN journal of applied statistics*, 12(1), 139 – 174.

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VOL 3 (2) 2024

Asquith **R** (2024) Fiscal Committee report says large deficit needs VAT rise to 10% now; and 15% by
2030. https://www.vatcalc.com/author/richardasquith/

Bacchiocchi E, Borghi E & Missale A (2011) Public Investment under Fiscal Constraints Fiscal Studies, vol. 32, no. 1, pp. 11–42 (2011) 0143-5671

Central Bank of Nigeria (2022). *CBN economic report, first quarter.*

Central Bank of Nigeria (2021). *CBN statistical bulletin.*

Ifeonyemetalu, J. O., Ogu, C. & Ojimadu, P. K. (2020). Impact of oil price fluctuation on economic growth in Nigeria. *IOSR journal of economics and finance*, 11(6), 43 – 54.

Ihegboro I. M., Onah V. C., Nwonye N. G. & Ojiako, I. (2022). Impact of non- oil revenue on the growth of the Nigerian economy. *Journal of economics and finance*, 13(1), 18 – 27.

Ikue, N. J., Amabuike, L. I., Denwi, J. O., Mohammed, A. U. & Musa, A. U. (2021). Economic growth and crude oil revenue in Nigeria: a control for industrial shocks. *International journal of research in business and social science*, 10(8), 218 – 227.

Okere P. A., Uzowuru L. N. & Amako J. C (2019). Government expenditure and economic growth in Nigeria. *International journal of economics and financial management*, 4(2), 2545 – 5966.

Omesi, I., Ngoke, O. S. & Ordu, P. A. (2020). Non-oil revenue and economic development of Nigeria. *International journal of innovative development and policy studies*, 8(1), 91 – 99.

Onakoya, A. B. & Agunbiade, O.A. (2020). Oil sector performance and Nigerian macroeconomic variables. *International journal of economics, management and accounting*, 28(1), 35 – 62.

Oniha, P. (2022). Nigeria doing poorly in revenue generation, *Premium times*, Aug. 24.

Onoja, E. E. & Ibrahim, A. S. (2021). Tax revenue and Nigeria economic growth. *European journal of economics and business studies*, 7(2), 60 – 80.

Oyadeyi, O (2022) Why Nigeria's Rising Debt And Falling Revenues Are A Challenge For Growth .
MPRA Paper No. 116765 .https://mpra.ub.uni-muenchen.de/116765/

Oti, P. A. & Odey, F. I. (2016). Nigeria's revenue profile and development mesh. *Research journal of finance and accounting*, 7(19).

Romer, C. D. and Romer, D. H. (2019). Fiscal Space and the Aftermath of Financial Crises: How it
Matters and Why. Technical report, National Bureau of Economic Research.

Uremadu, O. S., Nwaeze, C., & Duru-Uremadu, E. C. (2020). Impact of non-oil revenue on economic growth of Nigeria (1994–2017), an empirical analysis. *International journal of research and innovation in applied science*, 5(6), 46 – 64.

Wagner, A. (1883). *Finanzwissenschaft, Leipzig, partially translated in Musgrave and Peacock*.