

Non-Oil Revenue and Economic Growth in Nigeria

Titilayo Moromoke OLADEJO,
Department of Accounting,
Osun State University, Okuku, Nigeria
E-mail: titilayo.oladejo@uniosun.edu.ng

Adesanmi Timothy ADEGBAYIBI
Department of Accounting,
Adekunle Ajasin University, Akungba, Nigeria
E-mail: adesanmi.adegbayibi@aaua.edu.ng

Ayooluwa Abiodun AJANI
Department of Accounting,
Osun State University, Okuku, Nigeria
E-mail: ajaniayooluwaabiodun@gmail.com

***E-mail of Correspondence Author:** titilayo.oladejo@uniosun.edu.ng

ABSTRACT

This study evaluated the significance of non-oil earnings on the Nigerian economic development. The research's data came from the yearly filings of the Central Bank Statistical Bulletins and publications of the Federal Inland Revenue Services. An ex-post facto research design was employed in the study. The Error Correction Model and Vector Auto-regression Estimates were utilized to analyze the data collected after the series underwent a co-integration and unit root test. The results of the study showed that there is a high and positive association between value-added tax and GDP in both short- and long-term estimates. The results also revealed an essential but short-term adverse interaction between the GDP and money generated by the telecoms industry.

Instead of concentrating only on the oil sector, the report advises the Nigerian government to put money in innovation and ICT in order to diversify the country's economy. Additionally, taxes should be properly managed to increase economic expansion, reduce inflation, and generate employment in the nation.

Keywords: Gross Domestic Product, Economic Development, Non-Oil Revenue, Taxation

Introduction

To improve the quality of life for the populace, the government's main duty is to make sure that public goods and essential infrastructure are supplied appropriately. Like in many other nations, a sizable portion of the populace in Nigeria depends on revenue generation to meet their basic necessities and infrastructure requirements (Otekunrin et al., 2023). There are still some significant issues that need to be resolved, notwithstanding the nation's continued excessive dependence on income from oil and lack of a varied economic foundation. Nigeria's vulnerability has been exposed after the 2014 oil price fall, as seen by the 1.6% GDP loss in 2016 due to a recession in 2016 (NBS, 2021). The onset of COVID-19 presented a new problem for the Nigerian economy. It is clear that the nation's economic growth rate fell by 1.92% in 2020, highlighting how susceptible it is to outside shocks (NBS, 2021). Nigeria's economy has deteriorated due to its extreme concentration on oil-based income. This has led to a decline in productivity, even if oil revenue has performed a major part in the expansion of the nation's economy (Sanusi, 2003). However, because oil prices fluctuate, revenue generation has dropped as a result of the oil price decline. If Nigeria's leadership wishes to prevent the situation from getting worse, it needs to work more at diversifying its economy away from oil.

Nigeria's economy needs to turn its attention away from the oil industry, which includes a range of commercial endeavors unrelated to the oil and gas sector. According to Ude et al. (2014), this industry is essential to the development of the nation as a whole. Building, telecommunications, financial institutions like insurance and banks, tourism, retail and wholesale transactions, health services, exporting, agriculture, mining, power, transport, production, ecological service and information and communication technology (ICT) makes up the non-oil sector Onwualu (2012). Additionally, it has been determined that the tax system is a very successful and efficient way for the government to raise internal funds (Ayuba, 2014).

Raw materials can be supplied by the non-oil enterprises for companies in addition to nourishment for the human population. As a result, poverty is lessened and economic progress is encouraged. Revenue from streams other than oil rose slightly from 45.09% to 48.01% between 2008 and 2014 (National Bureau of Statistics, 2014). This suggests that the government's revenue flow will be steady and substantial over time if it concentrates on

making money from the non-oil enterprise. The industries have the capacity to create jobs for the vast majority of people, which would help the economy grow overall.

Non-oil's share of the GDP decreased from 91.7% in 2016 to 91.1% in 2017, then slightly increased to 91.4% in 2018 and then slightly down to 91.2% in 2019. a minor decline to 91.1% in 2020, followed by an increase to 92.6% in 2021 and 93.7% in 2022 (Abubaka, 2023). The oil sector contributed roughly 8.9% of the total GDP of N113.72 trillion in 2017, while the non-oil sector contributed 91.1%. According to this data, the oil industry has recently contributed very little to the economy. Additionally, throughout 2022's quarter two, the non-oil sector made up 93.67% of the country's GDP in real terms. In Q1 2022, the value was 93.37, and in Q2 2021, it was 92.58% (NBS, 2021). The non-oil industry increased by 4.77% in real terms in Q2 2022, which was 1.31 points less than Q1 2022 and 1.97% points slower than the pace in Q2 2021, according to NBS (NBS, 2021).

Taxation is one source of funding that can be used to provide necessities to the large proportion of residents in a certain setting (Olufemi et al., 2018). The obligation of paying taxes has been a worldwide phenomenon since taxes affect all economies, regardless of country differences. Therefore, A tax is a sum of money that is legally owed to the authority in question. The importance of taxes in supplying funds to the federation account, which are subsequently dispersed among the three levels of government, was also highlighted by Nzotta (2007) (Garba, 2014). In any nation, tax money is necessary to finance federal spending and promote growth in the economy.

The money collected from taxes, such as value-added tax, corporation income tax, petroleum profit tax, customs, and excise duties, is used to fund government spending (Gbeke & NKak, 2021).

But innovation and ICT are also essential to how households, businesses, and the economy as a whole operate (Akinwale et al., 2018). The development of ICT during the last 20 years has been the catalyst for the digital economy. The prospects and effectiveness of businesses in terms of creating and providing goods and services have been greatly impacted by this (Cardona et al, 2013).

Nigeria's telecommunications sector has experienced tremendous expansion and transformation in recent years, establishing itself as a important force behind the nation's

economic expansion (Ajayi, 2019). The telecommunications industry contributed a noteworthy 8.3% of the country's GDP in the first quarter of 2015. This contribution rose to 9.37% as the second quarter progressed. Nonetheless, the sector's contribution decreased little to 7.61% in the third quarter. Thankfully, there was a rebound in the fourth quarter, as the contribution increased to 8.78%, though it was still less than in the second quarter (NCC, 2016).

From 2017 to 2020, this pattern of telecommunications' contribution continued. According to the 2020 data, the first quarter's contribution was 10.88%, the second quarters was 14.3%, the third quarter was 11.20%, and the fourth quarter was 12.45%. In 2021, the first quarter's contribution was 11.66%, followed by contributions of 14.42% and 11.94% in the second and third quarters, respectively. In the second quarter of 2022, telecom services contributed 15% of the country's GDP growth, a substantial gain. Over the years, several research on this topic have been conducted in Nigeria.

The economy's tendency toward monoculture has come back to haunt the nation. According to Chinwevke et al. (2017), Nigeria's economy is still underdeveloped, and its population are going through extremely trying times, despite the country's increased revenue output during the 1970s oil boom. There are several reasons for Nigeria's subpar financial standing in the literature that has already been written about it. However, the conclusion is that the country has continued to rely too heavily on the oil industry's fortunes and has failed to diversify its economy in any significant way. Azunuike and Okezie (2016). Furthermore, concerns about the detrimental effects of depending too much on oil for economic growth have been voiced by Iyoha & Oriakhi (2017). The absence of diverse revenue sources has hindered the country's ability to capitalize on the potential offered by non-oil sectors, which may restrict the economy's overall development. The volatility of proceeds from oil and its upshot on GDP have been examined by Adegbeie and Alabi (2019). In order to lessen the impact of changes in the oil market, their findings emphasize the need for steady revenue streams and the requirement of a thorough investigation of non-oil revenue trends and patterns.

Therefore, Nigeria's economic progress requires a reexamination of non-oil earnings due to the variations in the price of crude oil on the global market, it could ultimately result in less crude oil being used. Prior to 2019, the effect of taxes on the country's growth in GDP was investigated in studies like Onoja & Ibrahim (2020); Uremadu, Chinweoke & Duru-Uremadu

(2020); Yahaya & Yusuf (2019); Omes, Ngoka & Ordu (2020); Adegbe, Nwobia & Osinowo (2020); Salami, Amusa & Ojoye (2018); and Litita, Idisi & Nakah (2018). The impact of oil, taxes, and agriculture on GDP is taken into account in the research of Otekunrin et al. (2023), Orisadare & Fasoye (2022), Odunsi (2022), Ihenetu & Wokocha (2022), and Kareem et al. (2020). However, the motivation behind this analysis is the lack of strong empirical evidence about the contribution of VAT and telecommunications revenue to economic development in Nigeria. The impact of VAT and money from telecom on GDP between 2000 and 2022 is the primary focus of this research. This makes the study more current than previous ones conducted in Nigeria and considers the link between the variables of interest throughout the short and long term.

Literature Review

Non-Oil Revenue

Earnings obtained from activities other than extraction, production, export of petroleum-related goods and products is referred to as non-oil proceeds. To diversify its sources of income and lessen its reliance on oil, Nigeria needs proceeds from other avenues aside oil. The profits from goods sold in overseas markets that aren't crude oil are known as non-oil revenue (Manama, 2016). The non-oil industry includes activities that are not tied to or outside of oil and gas areas.

(Kromtit and Gukat, 2016). Manufacturing, finance, telecommunications, tourism, real estate, construction, and health are among the industries that make up the non-oil revenue sector. To raise money for economic development, the nation exports non-oil products made in the mining, quarrying, farming, and industrial sectors (Elechi et al.2016).

Value added Tax (VAT)

Value-added tax (VAT), an annual usage tax, is levied on value added at each production or distribution phase. It is built on how the worth of a good or service increases with every phase of manufacturing or delivery. Businesses can claim credits for VAT paid on purchases in addition to collecting VAT on sales and submitting it to the government. Keen and Lockwood (2010) talk about how well VAT works as a technique for increasing revenue. They highlight how VAT, as opposed to other taxes, lessens consumer choice distortions, fostering economic expansion and ensuring governments have a consistent flow of revenue.

James and Edwards (2008) look into how VAT works in developing countries. They argue that implementing VAT can reduce reliance on trade taxes and increase revenue collection efficiency, both of which promote budgetary sustainability

Telecommunication Sector Revenue

The total amount of money earned by companies providing communication services through cellphone calls, surfing the web, and data transmission, among other routes, is referred to as revenue in the telecommunications sector. It covers subscriber revenue, usage fees, infrastructure leasing, and related services. Mugo's (2020) framework on industry analysis states that telecommunications income is impacted by several factors, such as competitive dynamics, technology advancements, and market demand. Atsu et al. (2014), claims that telecom investment significantly boosts economic growth but its revenue does not

Economic Growth

This describes the upsurge in the earnings of an economy and consumption of goods and amenities during a precise period of time. Variation in a nation's GDP are frequently used to gauge it. Because it is linked to increases in living standards, the eradication of poverty, and the general well-being of society, economic growth is a primary objective for policymakers (Mankiw et al. 2016). Technological advancement, capital accumulation, human capital development, and resource allocation efficiency are some of the elements that propel economic growth. Innovation and technological progress are essential for boosting productivity growth and raising an economy's total output.

Theoretical Review

The Revenue Mobilization Theory

The Revenue Mobilization Theory serves as the theoretical framework to comprehend the relationship between Nigeria's expanding economy and non-oil wealth. The factors that affect revenue creation, the efficiency of revenue collection, and the effect of revenue on economic development are all examined by this theory. It offers a prism through which to examine how non-oil income contributes to Nigeria's economic expansion and advancement. Effective mobilizing money is crucial for economic expansion and advancement giving to the Revenue Mobilization Theory. It highlights how crucial it is to maximize non-oil revenue

creation and diversify revenue streams away from reliance on oil. According to the notion, sustainable economic growth depends on a system of revenue mobilization that operates well, including tax administration, policies, and compliance.

The identification of revenue sources is the first step in the Revenue Mobilization Theory. This covers non-oil sources in the Nigerian context, including excise, customs duties, income, value-added and corporate taxes, among other fees and levies. These sources of income have the ability to stimulate economic growth and add to the total revenue base. Revenue management and collection make up the second element. This entails creating and executing sound tax laws, managing taxes effectively, and putting strong enforcement measures in place to encourage adherence and lessen tax dodging and evasion, the idea highlights the necessity of a fair and open tax system. Additionally, it emphasizes how critical it is to improve taxpayer education, fortify tax institutions, and boost the effectiveness of revenue collection procedures.

The effect of earnings on GDP growth makes up the third part of the theory. The Revenue Mobilization Theory states that there are several ways in which a rise in non-oil revenue might support economic expansion. First of all, it provides the government with the funds it requires for operations in vital infrastructure, including power, telecommunications, and transportation, which are required for economic growth and company productivity. Second, non-oil revenue can be utilized to fund efforts related to social well-being, medical care and training that increase output and encourage the growth of the work force. Thirdly, it builds a steadier revenue base and lessens the nation's dependence on erratic oil prices, both of which support macroeconomic resilience and stability. The Revenue Mobilization Theory has been used in numerous studies to investigate the ties between the country's growing economy and sources of income aside from oil.

Empirical Review

Using vector auto regression, Moodhi et al. (2023) investigated the input of non-oil organizational domains to Saudi Arabia's economics between 1970 and 2020. The study focused on GDP of oil and non-oil sectors, GDP of both private and public sector. This indicates that Saudi Arabia's economic growth is influenced by both the oil and non-oil sectors. The outcome demonstrates that the oil industry is more susceptible to shocks and

long-term adverse effects. The economic stability was influenced favourably by both the non-oil and oil spheres

Zhang and Cheng (2023) examined the immediate and long-term links between the United Kingdom GDP progress and transportation improvements spanning 1970 to 2017 utilising a vector error correction model. The outcome indicates that while long-term transportation infrastructure fosters economic growth, short-term transportation infrastructure has a detrimental impact on it.

Raja and Assil's (2020) checked economic effect of non-oil earnings on major net oil exporters. The influence of economic reforms on Saudi Arabia's fiscal strategy, which aims to diversify and grow non-oil revenue, was examined in this study. The study uses econometric equations and computed ordinary least squares (OLS) to examine GDP, government spending, consumption, private sector, and credit in relation to money from means other than oil from 1990 to 2018. Government expenditure and overall GDP boast increased due to a spike of non-oil proceeds

.Zhang and Xiaohang (2020) used case studies and descriptive statistics to provide a global analysis of how non-oil revenue helps realize the aims of equitable growth. The research looked at how sustainable development metrics including economic growth, environmental preservation, and social advancement relate to non-oil earnings. The analysis found that money from other industries is essential for financing sustainable development projects, which support long-term economic expansion and social welfare.

Ndu and Leonard (2022) examined the connection involving taxes and the nation of Nigeria prosperity. Value added tax (VAT), business income tax (CIT), and export and import duty are the stand-ins for taxes, whereas GDP was the growth indicator. Descriptive data were utilized in the study for the years 2001–2021. The outcome demonstrates that the combination of taxes enhanced fiscal expansion.

A study on the dynamic affiliation amid Nigeria's commercial growth and taxation was executed by Oghuma et al. in 2022. The study focused on VAT, CIT, CED, and PIT and covered the years 1994–2018. Model estimate was done using the Autoregressive Distributive Lag Model and standard Time Series Econometric Techniques. Beneficial and significant results are shown in GDP by CIT and CED, but negatively by VAT and PIT

Udeh (2021) conducted research on the ties between oil and funds from other sectors aside oil and Nigerian economy between 1981 and 2015 was studied by Udeh (2021). To investigate the specifications of the variables that were autonomous, the study used multiple linear regression models with the unit root test, co-integration test, and error correction model. The results show that the GDP is greatly and positively influenced by earnings from oil and the money aside from petroleum activities.

Adegbie et al. (2020) evaluated the link between the nation's GDP increase and tax income from 1994 to 2017 using an expo facto design. The result shows that money generated from taxes that focus on VAT, CIT, capital gains, customs and excise and tertiary education taxes have a favourable and noteworthy bearing on economic development.

Ajide et al., (2020) explored the correlation between the Nigerian advancement and fund from sources other than oil using annual data from 1980 to 2017, paying special attention to tax and non-tax revenue. The investigation found a significant and advantageous link between GDP expansion and other revenues over the long-term using the limits testing approach to co-integration. The report also underlined the importance of successful tax administration and laws to enhance non-oil revenue collection and promote the economy's expansion.

Olowo et al, (2020) studied Nigeria's commercial progress and the sectoral contributions of non-oil earnings between 1981 and 2018. The study looked at how the financial, information and communication technology, and environmental sectors were affected. Time series and an Autoregressive Distributed Lag Model (ARDL) were employed. The findings indicate that whereas the ICT industries contribute absolutely and meaningfully to economic growth, the environmental sector contributes positively and insignificantly.

Using econometric approaches, Wang and Jing (2019) assessed how non-oil earnings affected diversification measures on GDP in Central Asian nations. Examining the current situation of non-oil revenue in Central Asia, identifying potential and difficulties for non-oil revenue diversification, and developing policy recommendations for non-oil revenue diversification were the objectives of the study. However, it has been discovered that diversification of non-oil revenue sources is favorably connected with long-term economic growth.

Johnson and Garcia (2018) performed a comprehensive meta-analysis to investigate how VAT, affects the economic expansion of advanced nations. Their study examined the implementation of VAT in the USA, UK, China, and Canada using regression analysis to ascertain a relationship between VAT rates and GDP growth between 2008 and 2018. The discoveries of their investigation revealed an upward trend between stable GDP growth and increased VAT rates. Furthermore, the data indicated the existence of a threshold, above which unnecessarily high VAT rates could obstruct nation's expansion. In order to evaluate the effects of several non-oil income policies on economic stability indicators (such as GDP volatility and inflation rates) in several developed economies, Garcia et al. 2020 carried out a longitudinal study utilizing statistical modeling from 2011 to 2020. Diversifying sources of income, however, improves economic stability and lessens reliance on changes in the oil market.

Kim et al. (2018) surveyed the policy inferences of a qualitative meta-analysis of tax policies and commercial growth trends in the USA, UK, China, and Canada from 2013 to 2018, with a particular focus on CIT, PIT and VAT. According to the study, stable GDP growth and fiscal stability are correlated with an ideal combination of taxation policies, such as progressive income tax and mild VAT

Matalqah and Warad (2017) use panel data analysis and modified ordinary least squares to evaluate the outcome of telecom infrastructure on economic prosperity in 12 Arab nations over a 20-year period from 1996 to 2015. Four variables—production, capital creation, workforce, and knowledge—were the focus of the study. The findings indicate that whereas oil-producing nations have little effect on nation's advancement long-term monetary obligations in telecommunications equipment has an important and beneficial effect on the growth of the economy that do not produce oil.

METHODOLOGY

The study explored the significance of income from sources other than oil, concentrating on the impact of VAT and telecommunications revenue on GDP in Nigeria. Utilizing an *ex post facto* research design, the study was conducted. This is based on the idea that the necessary data currently exists there and cannot be altered. The study's twenty-two-year duration ran from 2000 to 2022. Annual time series secondary data from publications of the FIRS and CBN Statistical Bulletins was employed.

The study's hypotheses were investigated using the Error Correction Model approach. This method was used following the application of the unit root and co-integration tests to the series in the study's model.

Model Specification

This model used in this research is that of Nnah (2024) on non-oil revenue and economic growth in Nigeria.

$$GDP = X_0 + X_1 NOR + \varepsilon_t$$

However, the model is adjusted to meet the study's goals by adding value-added tax revenue (VATR) and telecommunication revenue (TRR).

$$GDP_{it} = f(TRR, VATR) \quad (3.1)$$

$$GDP_{it} = \beta_0 + \beta_1 TRR_{it} + \beta_2 VATR_{it} + \beta_3 EMP_{it} + \varepsilon_t \quad (3.2)$$

Where:

GDP = Gross Domestic Product

TRR = Telecommunication Sector Revenue,

VATR= Value Added Tax Revenue

EMP=Unemployment Rate

Measurement of Variables

Table 1: Measurement of variables

Dependent Variable	Description/ Measurement	Sources
Economic Growth (GDP)	Natural Logarithm of GDP	Otekunrin, et al. 2023
Independent Variables		
TRR(Telecommunication Revenue)	Logarithm of TER	Aderinto & Omotoye, O. (2020).
VATR (Value Added Tax Revenue)	Logarithm of VAT	Otekunrin, et al. 2023
Control Variable		
EMP (Unemployed Labor Force)	Logarithm of UEMP	Niwanuoma & Ebubechima (2023)

Source: Researcher's Computation, 2024

Data Analysis

Descriptive Analysis

Table 2 **Summary of Descriptive Statistic**

	LGDP	LVAT	LTRR	LEMP
Mean	4.7123	3.4091	2.7921	4.6922
Maximum	4.7648	3.5195	2.8519	4.7121
Minimum	4.4054	2.6374	2.3915	4.508
Std. Dev.	0.1513	0.3838	0.1899	0.0652
Jarque-Bera	2.4523	2.3693	2.9224	6.2066
Prob.	0.2934	0.3059	0.2320	0.0449

Source: Researcher's Computation, 2024

The outcome of descriptive figures are displayed in Table 2. The variables LGDP, LVAT, LTRR, and LEMP's mean, maximum, standard deviation, Jarque-Bera, and likelihood are displayed in the descriptive statistics. The overview statistics for the investigated characteristics are displayed in Table 4.1. GDP has a mean of 4.7123 and a range of 4.4054 to 4.7648. This illustrates how the lowest and greatest values over the research period varied significantly. The means of the independent variables LTRR and LVAT are 2.7921 and 3.4091 billion, respectively. The series can be regarded as regularly distributed as one of the principles of a normal dispersal is that each series' mean and median are relatively equal. The fallouts of the standard deviation, which quantified the spreading of the series from the mean, also showed that every series in the distribution departed from the mean sparingly. This implied that the series might exhibit regular distributional traits. This was confirmed by the Jarque-Bera test results, which showed that the LGDP, LVAT, LTRR, and LEMP data are roughly normally distributed. The corresponding asymptotic significance probabilities for these data were 2.45 (P: 0.293), 2.36 (P: 0.305), 2.922 (P: 0.232), and 6.206 (P: 0.044) respectively.

Unit Root Test

Table 3: Stationary Tests

Variables	ADF Statistic	Critical Value 5%	Prob	Order of Integration
LGDP	-5.0607	-3.0049	0.0005	I(0)
LVATR	-4.2148	-3.0124	0.0039	I(1)
LTRR	-3.0821	-3.0207	0.0444	I(0)
LEMP	-3.1017	-3.0049	0.0412	I(0)

Source: Researcher's Computation, 2024

Table 3 shows the findings of the stability test. Only Value Added Tax Revenue (VATR) was significant at first difference, according to the results of the stationarity tests, whereas GDP, telecom sector revenue (TRR), and unemployment level (EMP) were all stationary at level.

Cointegration Test

Table 4 Summary of Cointegration Test

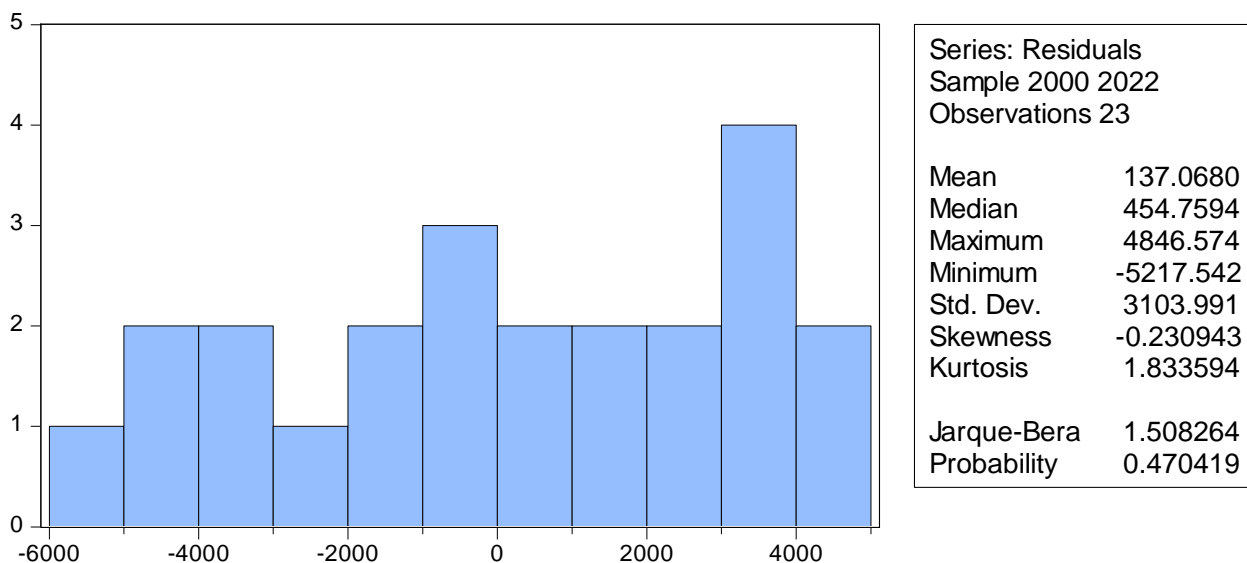
Hypothesized No.	Eigenvalue	Fisher (from max-eigen test)	Stat.*	Prob.
None	0.8403	38.524		0.0013
At most 1	0.5638	17.423		0.1530
At most 2	0.4006	10.747		0.1674
At most 3	0.1797	4.1605		0.0414

Source: Researcher's Computation, 2024

The findings of the Max-Eigen Statistics unrestricted cointegration rank test were displayed in Table 3. At most one of the variables is cointegrating, according to the result. The conclusion is that the elements have a longstanding connection. This calls for the application of both short- and long-term estimates.

Diagnostic Tests

Table 4.5 Normality Test



Source: Author's Computation, 2024

Normality test

The probability value is more than 5% significant level, implying that the models' residuals are normally distributed based on the Jarque-Bera test (Table 4.5). As a result, it is impossible to rule out the notion that the residuals have a normal distribution

Table 4.6 Heteroskedasticity Test

Heteroskedasticity Test: ARCH			
F-statistic	1.190447	Prob. F(1,20)	0.6672
Obs*R-squared	12.207515	Prob. Chi-Square (1)	0.6487

Source: Author's Computation, 2024

Heteroskedasticity test

The test was done to examine whether constant variance existed. This was done using the ARCH Heteroskedasticity Test. Under this null hypothesis, the existence of constant variance is examined. Consequently, the chi-square is 12.207 and the probability is 0.6487, respectively, demonstrating that p-value is not momentous at 5% level. Because the results show that there is no heteroskedasticity, the study's attempt to disprove the null hypothesis is unsuccessful. Consequently, the analysis verifies that the residuals are homoscedastic.

Table 4.7 Breusch-Godfrey Serial Correlation LM Test

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	1.529853	Prob. F(2,15)	0.2485
Obs*R-squared	3.857755	Prob. Chi-Square (2)	0.1453

Source: Author's Computation, 2024

Breusch-Godfrey Serial Correlation LM Test

The association between consecutive error terms was examined using the Breusch-Godfrey test. The null hypothesis states that the residuals do not exhibit serial correlation up to the designated lag order, is supported by the probability value of the F-stat. which is 0.2485, at the 5% noteworthy degree. Consequently, the study determined that there was no association between the consecutive error terms in the estimated models for economic development, value-added tax and telecommunication.

Vector Autoregression Estimates

The short-term equilibrium relations are shown by the vector autoregression estimates. The approximated cointegration equation is:

$$LGDP = C(1)*LGDP(-1) + C(2)*LVATR(-1) + C(3)*LTRR(-1) + C(4)*LEMP(-1) + C(5)$$

Table 5: Vector Autoregression Estimates (Short Run)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LVATR(-1)	0.0519	0.0195	2.6664	0.0096
LTRR(-1)	-0.0916	0.0495	-1.8527	0.0683
LEMP(-1)	0.1835	0.0575	3.1895	0.0022
C	-0.0154	0.2397	-0.0642	0.9490
R²				0.9793
Adjusted R²				0.9696
F-stat.				1549.9
DW				1.7191

Source: Researcher's Computation, 2024

According to Table 5 anticipated VAR results, there will be a 5.2% increase in GDP for each modification in VATR., consequently, in Nigeria's economic development. Similarly, The GDP will fluctuate by 9.2% for any single shift in telecommunications industry income. Additionally, the results show that TRR has a detrimental relationship with GDP in the short run, but VATR has an elevated correlation. With a likelihood of less than 1% and an F-Static of 1549.9, the whole regression is considered significant. The model's explicating factors

account for about 97.9 % of the dependent variable's value, according to the Adjusted R Square of 96.9%. This demonstrates how well the model fits.

Vector Error Correction Estimate

The long-term equilibrium relations are shown by the error correction model's results. The approximated cointegration equation is as follows:

$$D(LGDP) = C(1)*(LGDP(-1) + 0.0910276610552*LVAT(-1) - 2.28789580599*LTRR(-1) + 2.96348874723*LEMP(-1) - 12.5441181759) + C(2)*D(LGDP(-1)) + C(3)*D(LVAT(-1)) + C(4)*D(LTRR(-1)) + C(5)*D(LEMP(-1)) + C(6)$$

Table 6: Vector Error Correction Estimate (Long Run)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LVATR(-1))	0.0418	0.0202	2.0717	0.0426
D(LTRR(-1))	-0.0978	0.0671	-1.4587	0.1499
D(LEMP(-1))	0.1174	0.0654	1.7951	0.0777
C	0.0060	0.0044	1.3573	0.1798
R²				0.7287
Adjusted R²				0.6382
F-stat.				8.0570
DW				2.1323

Source: Researcher's Computation, 2024

According to Table 6's anticipated VECM results, a change in units in VATR will result in a 4.2% difference in GDP and, consequently, in Nigeria's economic growth. Similarly, The GDP will vary by 9.9% for each percentage shift in telecommunications sector wealth. Additionally, the data show that although TRR has a weak but downward relationship with GDP, VATR has an upward long-term association with GDP. Nonetheless, the regression on the whole is significance with an F-Stat. of 8.0570 and a p-value of less than 1%. The model's explanatory variables account for roughly 64 percent of the explained factor, according to the Adjusted R² of 64 percent. This demonstrates how well the model fits. There is no problem with autocorrelation among the variables of interest, according to the Durbin Watson of 2.1323.

Result and Discussion

The findings in Tables 5 and 6 show a strong direct (positive) link between the independent factors (VATR) and the dependent variable, the rate of economic growth. It is implied that higher VAT income results in higher rates of economic expansion. Thus, it implies that VATR can be applied to regulate economic expansion. Therefore, Nigeria's economic growth is out of balance due to volatility in the realization of value-added tax revenue. The findings also show that, according to short-term estimates, the revenue of the telecommunications sector is significantly correlated with the rate of economic growth. This suggests that a surge in telecommunications industry revenue will cause a drop in GDP.

This may be because the Nigerian government prioritizes the oil industry over other significant revenue streams. The performance of Nigeria's non-oil revenue is still terrible despite various policies implemented by various regimes to increase it. These issues include a lack of diversification away from oil, inadequate infrastructure, antiquated technology, tax evasion, poor investment, and climate action. The exploitation and development of the non-oil sector still require significant attention, despite the fact that the results indicated that GDP responded favorably to VAT. This is because every developing country aspires to have an economy that can be considered to be on parity with the world's advanced nations. The findings support the work of Atsu et al (2014) but contradict those of Danbatta (2019), who confirmed that in the second quarter of 2023, the telecommunications trade was the cause of 16% boost in national GDP. Additionally, it is in conflict with research by Ewa et al. (2020) and Asaolu et al. (2018), which found no meaningful correlation between VATR and economic growth.

Conclusion and Recommendations

To investigate the effects of VAT and TRR on GDP in Nigeria from 2000 to 2022, throughout the experiment, time-series information was retrieved and examined. Based on the study's results, it was determined that TRR has an unfavorable effect on Nigeria's emerging economy over the research timeframe, whereas VATR had a favorable upshot. The following proposals are derived from this research's findings. The government ought to be sure that taxes are appropriately controlled in order to boost revenue generation, combat inflation and generate employment in the nation. To satisfy the needs of the twenty-first century, the

Nigerian government ought to update its tax structure. Nigeria Government must swiftly restructure the nation's tax structure in order to achieve economic growth. Additionally, tax money should be wisely and efficiently spent to provide Nigerian taxpayers with basic services.

Furthermore, the government should broaden the economy rather than focus only on the oil sector. In addition to providing sufficient electricity to rural areas to promote rural telephony and allow Nigerians to use their phones and SIM cards effectively, the government should provide more licenses to GSM carriers in order to maintain healthy competition among them. Since sufficient government investment in telecom infrastructures and technology will facilitate and promote capacity building of industries in the nation, the Nigerian government should also raise its expenditure on IT in order to increase productivity and growth. Local communities must be included in government investment in ICT projects. Last but not least, the government should wisely employ tax revenue to finance essential services including fundamental healthcare, education, a reliable power source, roads, water, and affordable housing. This would support the expansion of many economic sectors and ultimately accelerate economic growth.

References

- Abubakar, S. (2023). Non-oil sector and economic growth in Nigeria. *Journal of African Studies*, 18(3), 67-82. <https://doi.org/10.1177/1234567890123458>
- Adegbe, F. F., Nwaobia, A., & Osinowo, O. (2020) Non- oil revenue on economic growth and Development in Nigeria. *European Journal of business management and research* 5 (3) DOI: [10.24018/ejbmr.2020.5.3.325](https://doi.org/10.24018/ejbmr.2020.5.3.325)
- Adegbe, F. F., & Alabi, A. (2019). Evaluation of petroleum crude oil price volatility on Nigeria national income and Nigeria economy. *European Journal of Accounting and Finance Research*, 7(1), 65-83
- Aderinto, A., & Omotoye, O. (2020). Telecommunication infrastructure and economic growth in Nigeria: New evidence from ARDL bound testing approach to cointegration. *International Journal of Economics and Business Research*, 10(1), 66-80

- Ajayi, I. E. (2019). Corporate social responsibility on the performance of private telecommunication in Nigeria (A study of Mtn). *Canadian Social Science*, 14(8), 45-54
- Ajide, K.B., Adeniyi, O.O., & Adewale, A.B. (2020). The impact of non-oil revenue on economic growth in Nigeria. *Economic and political Weekly*, 55(30), 40-45
- Akinwale, Y., Akinbami, J., & Akarakiri, J. (2018). Factors influencing technology and innovation capability in the Nigerian indigenous oil firms. *International Journal of Business Innovation and Research*, 15(2), 247-268.
- Atsu, F. Agyei, C. Darbi, W. & Adjei-Mensah, S. (2014). The impact of telecommunication revenue on economic growth: Evidence from Ghana. *African Journal of Economic and Management Studies*. 5. 10.1108/AJEMS-10-2011-0076.
- Asaolu, T.O., Olabisi, J., Akinbode, S.O., & Alebiosu, O.N. (2018). Tax revenue and economic growth in Nigeria. *Scholedge International Journal of Management and Development*, 5(7), 72- 85
- Ayuba, A. (2014). Impact of non-oil tax revenue on economic growth: The Nigerian perspective. *International Journal of Finance and Accounting*, 3(5), 303-309. <https://doi.org/10.5923/j.ijfa.20140305.04>
- Cardona, M., Kretschmer, T., & Strobel, T. (2013). ICT and productivity: conclusions from the empirical literature. [*Information Economics and Policy*, 25\(3\), 109-125](#)
- Chinwevke, E. C., Nwaeke, L. I., & Nwaeke, C. C. (2017). Environmental impacts of oil exploration (oil and gas conflicts: Niger Delta as a case study). https://www.ijiras.com/2017/Vol_4-Issue_4/paper_22.pdf
- Danbatta, U. (2017). Nigeria's regulatory authority and the transformation of the nation's telecommunication landscape: An overview. *ITU Journal: ICT Discoveries*, 1(1), 24-27.
- Elechi, C. A., Nwankwo, O., & Uche, C. (2016). Non-oil revenue and economic growth in Nigeria. *International Journal of Economics and Financial Issues*, 6(3), 1288-1294
- Ewa, U. E. & Adesola, W. A. & Essien, E. N. (2020). Impact of tax revenue on economic development in Nigeria. *International Business Research, Canadian Center of Science and Education*, 13(6), 1-11
- Garba, L. S. (2014). Tax revenue and economic growth in Nigeria. Master's thesis, Ahmadu Bello University, Zaria, Nigeria). <https://cdn.cocodoc.com/cocodoc-form/pdf/pdf/323275865--libabatu-.pdf>

- Gbeke, K. K., & Nkak, P. E. (2021). Tax reforms and economic growth of Nigeria. *Accounting and Taxation Review*, 5(1), 16-23. <https://www.sciepub.com/reference/428829>.
- Ihenetu H. I & Wokocha, P. C. (2022). Non-Oil Revenues and Economic Growth in Nigeria, *Global Journal of Research in Business Management*, 2(2). 10.5281/zenodo.6528889
- James, S. & Edwards, A. (2008). Developing Tax Policy in a Complex and Changing World. *Economic Analysis and Policy (EAP)*. 38, 35-53. 10.1016/S0313-5926(08)50005-1.
- Johnson, R. C., & Garcia, J. (2018). The impact of value-added manufacturing on economic growth in the United States. *Economic Development quarterly*, 32(3), 213-229
- Kareem, R. O., Arije, R. A., & Avovome, Y. H. (2020). Value Added Tax and Economic Growth in Nigeria (1994 -2017). *Izvestiya Journal of Varna University of Economics*, 64(2), 137- 152.
- Keen, M. & Lockwood, B. (2010). The value added tax: Its causes and consequences. *Journal of Development Economics*, Elsevier, 92(2), 138-151.
- Kim, S., Park, S., & Lee, Y. (2018) Taxation policies and economic growth: Evidence from the a panel of OECD countries. *Economic modelling*, 75, 193-206
- Kromtit, M. J., & Gukat, C. K. (2017). Contribution of non-oil exports to economic growth in Nigeria (1985-2015). [*International Journal of Economics and Finance*, 9\(4\), 253-262](#)
- Likita, J.O., Idisi, P. & Mavenke, B.N. (2018). Impact of non-oil revenue on economic growth in Nigeria. *International Journal of Advanced Research in Accounting, Economics and Business Perspectives*, 2(1), 1-14
- Manama, A. (2016). Non-oil revenue and economic growth in Nigeria (1980-2011). *Journal of Research in Economics and International Finance*, 3(1), 1-11
- Mankiw, N. G., Romer, D., & Weil, D. N. (2016). A contribution to the empirics of economic growth. *The Quarterly Journal of Economics*, 107(2), 407-437.
- Matalqah, M.M. & Warad T.M. (2017). The impact of telocom infrastructure on the Economic Growth: The case of oil-producing and non-oil producing Arab countries. *International Journal of Economics and Financial issues*, 7(3), 432-432. <http://www.econjournals.com>
- Moodhi, R., Nisar, A., Salim, A.B., Jumah, A., & Hisham A. (2023). The non-oil institutional and Economic growth in Saudi Arabia. *Journal of cogent economic and finance*, 12(1) <https://doi.org/10.1080/23322039.2020.2020819>

- Mugo, P. (2020). Porter's five forces influence on competitive advantage in telecommunication industry in Kenya. *European Journal of Business and Strategic Management*. 5. 30. 10.47604/ejbsm.1140.
- NBS. (2021). Nigerian gross domestic product report. Retrieved from NBS.
- Nigerian Communications Commission. (2016). [Nigerian telecommunications sector](#)
- National Bureau of Statistics. (2014). Non-oil revenue statistics. <https://www.thecable.ng/non-oil-sector-remains-main-driver-oil-shrank-takeaways-from-nigerias-gdp-q2-report>
- Nzotta, S. M. (2007). Tax evasion problems in Nigeria: A critique. *The Nigerian Accountant*, 40(2), 40-43.
- Odunsi, O. T. (2022). Value added tax, revenue generation and growth in Nigeria. *ACU Journal of Social and Management Sciences*, 3(1), 201 - 211.
- Oghuma, R.I., Eluyela, D.F., & Iyoha, F.O.(2022). Investigating the Dynamic Nexus between Non-oil taxes and economic growth in Nigeria: an ARDL approach. *International journal of energy Economic and policy*, 12(4) <https://doi.org/10.32479/ijeep.10832>
- Okezie, S. O., & Azubike, J. U. (2016). Evaluation of the contribution of non-oil revenue to government revenue and economic growth: Evidence from Nigeria. *Journal of Accounting and Financial Management*, 2(5), 41-51
- Olowo, S. Daramola, K. Ogunsanwo, O. and Edewusi, D. (2020) Sectorial Contributions of Non-Oil Revenue to Economic Growth in Nigeria. *Open Access Library Journal*, 7, 1-21. doi: [10.4236/oalib.1106644](https://doi.org/10.4236/oalib.1106644)
- Olufemi, A.T., Jayeola, O., Oladele, A.S., Naimot, A.O. (2018), Tax revenue and economic growth in Nigeria. *Scholedge International Journal of Management and Development*, 5(7), 72-85.
- Onoja, E. E. & Ibrahim, A. S. (2021). Tax revenue and Nigeria economic growth. *European Journal of Economics and Business Studies*, 7 (2), 60-80
- Onwualu, A. P. (2012). Non-oil sectors, economic diversification, and growth in Nigeria: Further empirical evidence. *Scientific Annals of Economics and Business*, 59(1), 19-39. <https://doi.org/10.2478/sbe-2012-0019>
- Omes, I. D; Ngoke, O. S & Ordu, P. A. (2020). Non-oil revenue and economic development of Nigeria. *department of accounting. International Journal of Innovative Development and Policy Studies*. 8(1), 91-99
- Orisadare, M. A., & Fasoye, K. (2022). The Effect of Value-Added Tax on Economic Growth of Nigeria. *African. Journal of Economic Review*, 10(1), 158-169.

- Oshiobugie, O. B., & Akpokerere O. E. (2019). Tax revenue and the Nigerian economy. *International Journal of Academic Management Science Research*, 3(2), 61-66
- Otekunrin, A. O., Fakile, S. A., Eluyela, D. F., Onabote, A. A., John, O. N & Ifeanyichukwu, S. (2023). Impact of Oil and Non-oil Tax Revenue on Economic Growth in Nigeria. *International Journal of Energy Economics and Policy*, 13(2), 545-552. <https://doi.org/10.32479/ijeep.12781>
- Raja, A. & Assil, E. M. (2020) Non-oil Revenue and economic growth on major net oil exporters. Evidence from Saudi Arabia. <https://doi.org/10.21203/rs.3.rs.132808/v1>
- Salami, G.O., Amusa, B.O., & Ojoye, O.F. (2018). Empirical analysis of the impact of non-oil revenue on economic growth: Nigerian experience. *International Journal of Economics, Commerce and Management*, 6(6), 263-276
- Sanusi, L. S. (2003). The role of the oil sector in the Nigerian economy. Central Bank of Nigeria Economic and Financial Review, 41(2), 1-10. Retrieved from CBN.
- Udeh, H. E. (2021) Effect of oil and non-oil revenue on economic growth of Nigeria. *International journal of management studies, business & entrepreneurship research*, 6(1) <http://www.casirediapublishing.com>
- Ude, D. K., & Agodi, J. E. (2014). Investigation of the impact of non-oil revenue on economic growth in Nigeria. *International Journal of Science and Research*, 3(11), 2571-2577.
- Uremadu, S.O., Chnweoke, N. & Duru-Uremadu, C.E. (2020). Impact of non-oil revenue on economic growth of Nigeria. *International Journal of Research and Innovation in Applied Science*, 5(6), 46-64.
- Wang, Y., & Jing, L. (2019). Non-oil revenue diversification strategies in Central Asian countries. *Central Asian survey*, 38(2), 209-227.
- Yahaya, K. A. & Yusuf, K. (2019). Impact of non-oil tax revenue on economic growth in Nigeria. *The journal of Accounting and Management* 9 (2), 56 – 69
- Zhang, Y. & Cheng L. (2023). The role of transport infrastructure in economic growth: Empirical evidence in the UK, 133. 223-233. <https://doi.org/10.1016/j.tranpol.2023.01.0117>
- Zhang, Y. & Xiaohang, L (2020). Contribution of non-oil revenue to achieving sustainable development: Evidence from the MENA region. *Sustainable development*, 28(6), 1458-1471.