The Effect of Oil Tax Revenue on Economic Growth in Nigeria

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ABSTRACT

Nigeria's fiscal policy faces challenges due to corruption, weak frameworks, and lack of fiscal discipline. The low tax-to-GDP ratio indicates untapped revenue potential. However, the country has considerable economic potential due to its population and natural resources. This study examined the effect of oil tax revenue on economic growth in Nigeria between 1986 to 2022. Autoregressive distributed lag modelling was used. The results indicate that oil tax revenue significantly drives economic growth in Nigeria, with a positive coefficient of *0.1966,* meaning that an increase in oil tax revenue leads to a proportional increase in the long-run real GDP. However, the debt service ratio negatively impacts economic growth, as its increase leads to a decrease in log of real GDP (LRGDP). Although labor force and investment growth show positive coefficients, their effects on economic growth are statistically insignificant. Based on the study's findings, the study recommended that the Nigerian government focus on enhancing the efficiency of oil tax revenue collection. This can be achieved by addressing challenges such as tax evasion, improving transparency, and ensuring that oil tax revenues are properly utilized for national development projects. An efficient oil tax revenue administration system would help boost the contributions of the oil sector to the national economy, which is crucial for sustained economic growth.

Keywords: Tax Revenue, Autoregressive Distributed Lag, Economic growth, Labour force, Oil tax revenue, Debt Service

INTRODUCTION

Developed economies boast tax systems with high compliance and robust enforcement, facilitating government revenue collection for public spending (Lee, 2022). Growth in these economies is typically moderate and consistent, propelled by technological innovation and established market dynamics (Ram, 2021). Fiscal policies that enlarge deficits may necessitate higher future taxes, but they can also enhance future living standards if they incentivize investment in human or physical capital. Such policies can simultaneously reduce government savings, reflected in larger budget deficits, while boosting overall savings through increased capital formation (Horton and El-Ganainy, 2009). Fiscal policy, as a macroeconomic management tool, entails deliberate government actions in revenue collection and expenditure to influence macroeconomic variables and achieve specific objectives. Tanzi and Zee (2017) identify government expenditure, taxes, and deficits as the three primary indicators of fiscal policy. Nigeria has experienced varying degrees of macroeconomic imbalances, with experts pointing to unsuitable public expenditure and revenue policies as culprits for macroeconomic disequilibrium (Ajisafe & Folorunso, 2015). Evidence indicates a marked increase in government spending, fiscal deficits, and debt in Nigeria between 1991 and 2005, largely due to oil windfalls and political pressures (CBN Statistical Bulletin, 2012). Although the democratically elected government in 1999 initiated policies to restore fiscal discipline, subsequent monetization of foreign exchange earnings and oil windfalls led to a surge in government spending.

The Nigerian economy's growth and development have been erratic, as evidenced by fluctuating GDP growth rates (World Development Banks, 2022). The economy has faced numerous internal and external shocks over the years, including unstable investment and consumption patterns, policy implementation issues, and external

factors such as terrorism, banditry, and population dynamics. Developing nations often struggle with budgetary challenges due to increased government expenditure without commensurate efforts to enhance tax revenue generation. The government has a range of tax instruments at its disposal, including corporate and personal income taxes, value-added taxes, customs duties, capital gains tax, and withholding tax. These tools can be leveraged to fund government projects (Edewusi & Ajayi, 2019; Nwachukwu et al., 2022).

Moreover, Nigeria's tax revenue has remained relatively low compared to its peers, reflecting challenges in tax administration, compliance, and enforcement (Mallik et al., 2017). The inefficiency and ineffectiveness of the tax system have resulted in substantial revenue leakage and tax evasion, further exacerbating the country's fiscal challenges. This low tax revenue not only constrains the government's fiscal capacity but also undermines its ability to provide essential public services and invest in key sectors necessary for economic growth (Kose et al., 2019). These issues collectively contribute to Nigeria's economic growth being below its potential, limiting the country's ability to achieve sustainable development and improve the living standards of its citizens. Addressing the challenges of fiscal instability, non-tax revenue generation, and tax revenue mobilization is critical for Nigeria to unlock its economic potential, stimulate private sector growth, and create jobs for its growing population (World Bank, 2021). Failure to address these challenges could lead to further economic stagnation and worsen social and political tensions in the country. Therefore, this study investigated the effect of oil tax revenue on economic growth in Nigeria.

LITERATURE REVIEW

Conceptual Review

Oil tax revenue refers to the income generated by governments from taxes imposed on oil-related activities, including exploration, production, refining, and distribution. This revenue is a significant source of income for many oil-producing countries, providing funds for government operations, infrastructure development, and social programs (Otekunrin, 2023). The taxation of oil revenue is a complex process that involves various types of taxes, such as royalties, income taxes, and production taxes, which are imposed at different stages of the oil production process (Ross, 2012). One key concept related to oil tax revenue is the concept of fiscal regimes, which refers to the legal and regulatory framework that governs the taxation of oil revenue in a particular country. Fiscal regimes can vary widely between countries and can have a significant impact on the amount of revenue generated from oil taxes (Humphreys et al., 2007). For example, some countries may have more favorable fiscal regimes that attract investment in the oil sector, while others may have less favorable regimes that discourage investment (Bhattacharyya & Hodler, 2010).

Economic growth is a sustained increase in per capita national output or net national product over a long period of time. It means that the rate of increase in total output must be greater than the rate of growth of the population. Godwin (2015) defines economic growth as an increase in real gross domestic product (GDP). That is, gross domestic product adjusted for inflation. The growth can either be positive or negative. Negative growth can be referred to by saying that the economy is shrinking. This is characterized with economic recession and economic depression. Ullah and Rauf (2013) noted that whenever there is increase in real GDP of a country it will boosts up the overall output and we called it economic growth. The economic growth is helpful to increase the incomes of the society, help the nation to bring the unemployment at low level and helpful in the deliveries of public services.

Theoretical Review: The Endogenous Growth Theory

Endogenous Growth Theory, developed in the 1980s and 1990s by economists like Paul Romer, Robert Lucas, and Robert Barro, emerged as a response to the limitations of Neo-Classical Growth Theory, particularly its reliance on exogenous technological progress (Romer, 1986). The theory posits that economic growth is driven by endogenous factors such as investment in human capital, innovation, and knowledge. Key assumptions include increasing returns to scale in technology-driven sectors, positive externalities from knowledge spillovers, and the significant role of government policies, such as subsidies for research and education, in influencing growth rates (Romer, 1986; Lucas, 1988). It provides a comprehensive framework for understanding long-term

economic growth, emphasizing the self-sustaining nature of growth through feedback loops created by innovation and knowledge diffusion (Romer, 1990).

While the theory advances our understanding of growth mechanisms, critics highlight its limitations, including its assumption of universal increasing returns to scale and potential overemphasis on innovation at the expense of other factors like natural resources and institutional frameworks (Solow, 1994). Despite these critiques, Endogenous Growth Theory remains highly relevant for addressing challenges like oil tax revenue, and economic growth in Nigeria. By emphasizing investments in human capital, innovation, and technology, the theory provides valuable insights for policymakers to design tax policies and fiscal strategies that foster innovation and productivity. Its focus on stable and supportive government policies offers a roadmap for leveraging endogenous growth mechanisms to enhance Nigeria's economic development (Romer, 1986).

Empirical Review

The relationship between oil tax revenue and economic growth has been explored extensively across different contexts, yielding varied findings. Michael and Ben (2016) provided a global perspective, highlighting that the effectiveness of VAT in enhancing economic growth is contingent on the institutional framework within countries. This aligns with studies like Yahaya and Yusuf (2019), who found a positive relationship between company income tax and Nigeria's GDP, suggesting that targeted tax structures can drive economic growth. Conversely, the findings of Oraka et al. (2017) and Yelwa et al. (2018) indicate that VAT's impact on GDP is not always significant, emphasizing the importance of contextual factors such as compliance levels and tax administration efficiency. Similarly, Akwe (2014) demonstrated the positive potential of non-oil tax revenue in Nigeria's economic growth, reinforcing the role of diversification in fiscal policy.

Several studies have linked deficit financing and taxation to economic stability and development, but the results reveal complex interdependencies. For instance, Nwanna and Umeh (2019) found that external debt negatively impacted Nigeria's economic growth, while domestic debt was more favorable, underscoring the importance of sustainable financing mechanisms. In Ghana, Nkrumah et al. (2016) identified a negative relationship between budget deficits and GDP, aligning with neoclassical theories of fiscal discipline. These findings contrast with Nwikina et al. (2021), who suggested that while deficit financing positively influences economic development, its effect is marginal and insufficient to drive significant growth. This complex interplay of fiscal variables is further evidenced in studies like Osemwengie and Shaibu (2018), who noted the bi-directional causality between oil price movements and GDP, emphasizing the dependency of fiscal outcomes on external economic factors. Akanni and Osinowo (2013) used the Hodrick-Prescott (HP) filter and correlation technique to measure the cyclical effect of fiscal spending components on output. The results indicated high volatility in real GDP and fiscal spending between 1970 and 1985, with fiscal spending appearing countercyclical until 1986. However, from 1987 to 2010, fiscal spending variation was relatively stable while real output remained unstable, highlighting the need for fiscal discipline for economic stability.

The role of taxation in fostering socio-economic development has also been a key area of focus. Amughoro (2021) and Ogbonna and Ebimobowei (2012) found that taxation positively influences economic growth, though Amughoro highlighted challenges with tax collection mechanisms. Similarly, Gwa and Kase (2018) observed significant contributions of company income tax and VAT to economic growth in Nigeria, complementing studies like Amos et al. (2017), who noted the positive effects of company income tax on GDP. However, Asaolu et al. (2018) presented contrasting findings, suggesting a negative impact of company income tax on growth, highlighting inefficiencies in tax policy implementation. Internationally, studies such as Taha et al. (2011) and Wu (2010) have demonstrated the critical role of tax revenue in financing public infrastructure, which in turn stimulates economic performance. These findings collectively underscore the nuanced and multifaceted influence of taxation and fiscal policies on economic growth across different regions and time periods.

METHODOLOGY

This research design is embedded in an ex post facto design. The data for this study are source from Central Bank of Nigeria Bulletin 2023, FIRS data base and world development indicators. The data were sources between 1986 to 2022 taking cognizance of post structural adjustment programmes, tax reforms of 1993, the

establishment of the Federal Inland Revenue Service (FIRS) as an autonomous body in 2007, and the enactment of the Finance Act (2019–present), which introduced annual updates to tax laws.

Model specification

To examine the effect of oil tax revenue on economic growth in Nigeria, the model was anchored on the endogenous theory of economic growth which emphasize that economic growth is primarily driven by internal factors, such as human capital, innovation, knowledge, and government policies, rather than external influences, and that investments in these areas lead to sustained long-term growth without diminishing returns. In addition, the work of Akanni and Osinowo (2013) which premised on the effect of fiscal instability on economic growth in Nigeria were adapted and modified to suit the objective of the study. Based on the nature of the study and data availability. The econometric model is given as:

$$RGDP_t = f(\,OIR_t, DSR_t, LABF_{it}, INVG_{it}) \ldots \ldots \ldots \ldots \ldots.. (3.1)$$

Where:

RGDP is real Gross Domestic Product

OIR is Oil tax Revenue

DSR is Debt Service Ratio

LABF is Labor Force,

INVG is Investment Growth

The econometric form is:

$$RGDP_t = \alpha_0 + \alpha_1 OIR_t + \alpha_2 DSR_t + \alpha_3 LABF_t + \alpha_4 INVG_t + \mu_{it} \ldots \ldots \ldots \ldots.. (3.2)$$

α_0 - Constant

α_{1-4} parameters to the estimates

μ= Stochastic

Some variables are rescaled by logging them because they are in absolute values, thus, transforming the model into a semi log-line function.

$$LogRGDP_t = \alpha_0 + \alpha_1 OIR_{it} + \alpha_2 DSR_t + \alpha_3 LABF_t + \alpha_4 INVG_t + \mu_{it} \ldots \ldots \ldots. (3.2)$$

Log is the logarithm

Estimation Techniques

The estimation techniques of this study followed an in-depth econometric analysis of Autoregressive Distributed Lag Modelling (ARDL). ARDL model estimates long- and short-run relationships between variables using the bounds testing approach to cointegration (Pesaran et al., 2001). The estimation process involves selecting an optimal lag length using criteria of AIC and BIC. The Error Correction Model (ECM) is derived from the ARDL framework to capture short-run dynamics while ensuring consistency with the long-run equilibrium. To ascertain the existence of long run effect, a bound testing cointegration was used with upper bound value set at 5% inferences.

RESULTS

Table 1: Descriptive Statistics

	DSR	INVG	LABF	LRGDP	OIR
Mean	2.192580	2.214561	59.46209	31.23866	1071.791

Median	1.676654	3.252904	60.12340	31.22645	939.4000
Maximum	6.422827	40.74386	60.53900	31.95871	3201.320
Minimum	0.047567	-22.79282	55.24000	30.47480	4.810000
Std. Dev.	2.150552	11.50918	1.393295	0.515676	1009.483
Skewness	0.585462	0.430879	-1.653730	0.072150	0.471777
Kurtosis	1.904640	5.534297	4.688022	1.409548	1.944093
Jarque-Bera	3.963435	11.04649	21.25761	3.931804	3.091402
Probability	0.137832	0.003993	0.000024	0.140029	0.213162
Sum	81.12545	81.93877	2200.097	1155.831	39656.26
Sum Sq. Dev.	166.4954	4768.603	69.88579	9.573170	36686032
Observations	37	37	37	37	37

Source: Author's Computation (2025); Where: Log of Real Gross Domestic Product is LRGDP

Oil tax Revenue is OIR, Debt Service Ratio is DSR, Labor Force is LABF, Investment Growth is INVG

Table 1 presents the descriptive statistics of the variables in the dataset. The mean of Debt Service Ratio (DSR) is 2.19, with a median of 1.68, indicating a slightly right-skewed distribution skewness = 0.59. The maximum value recorded is 6.42, while the minimum is 0.05, showing significant variation. The standard deviation of 2.15 further confirms moderate fluctuations in the debt service burden over the years. The Jarque-Bera probability 0.1378 suggests that DSR follows a normal distribution.

Investment Growth (INVG) has a mean of 2.21 and a median of 3.25, investment growth shows moderate fluctuations. The minimum value of -22.79 and maximum of 40.74 suggest periods of both contraction and expansion. The standard deviation of 11.51 further reflects this volatility. The kurtosis value 5.53 and Jarque-Bera probability 0.0039 indicate non-normality, suggesting extreme values have occurred frequently.

Labor Force (LABF) has a mean of 59.46 and a median of 60.12, indicating a relatively stable distribution over time. The standard deviation is low 1.39, confirming minimal variation, but the negative skewness -1.65 suggests that more observations are concentrated towards the higher end of the distribution. The Jarque-Bera probability 0.0000 confirms non-normality.

Log of Real GDP (LRGDP) has a mean value of LRGDP 31.24, with a small standard deviation of 0.52, suggesting stable economic output over time. The skewness 0.07 and kurtosis 1.41 indicate a near-normal distribution. The Jarque-Bera probability 0.1400 further supports the normality assumption.

Oil tax Revenue (OIR) has a mean value of 1071.79, with a maximum of 3201.32 and a minimum of 4.81, demonstrating significant fluctuations over time. The high standard deviation 1009.48 indicates volatility in oil tax earnings. The skewness 0.47 and kurtosis 1.94 suggest a slightly right skewed and relatively flat distribution. The Jarque-Bera probability 0.2131 suggests that oil tax revenue follows a normal distribution.

Table 2: Correlation Matrix

	LRGDP	OIR	DSR	INVG	LABF	VIF
LRGDP	1.0000					
OIR	0.8636	1.0000				2.553117
NNTR	0.9139	0.7247				3.168353

DSR	-0.8013	-0.6910	1.0000			2.490191
INVG	-0.0096	0.0482	0.1184	1.0000		1.063521
LABF	-0.6684	-0.5512	0.5517	-0.0418	1.0000	2.038052
				Mean		**2.119562**

Source: Author's Computation (2025); Where: Log of Real Gross Domestic Product is LRGDP

Oil tax Revenue is OIR, Debt Service Ratio is DSR, Labor Force is LABF, Investment Growth is INVG,

To determine whether multicollinearity exists among the independent variables, a correlation matrix was utilized. The analysis revealed that the highest correlation coefficient, which was 0.552, occurred between DSR and LABF. This suggests that multicollinearity among the variables is minimal, as the correlation coefficient is below the threshold of 0.90. Consequently, the study concluded that multicollinearity issues among the independent variables are not present.

In furtherance, the Variance Inflation Factor (VIF) values suggest that there are no concerns regarding multicollinearity in the dataset. Study, such as Gujarati (2003) suggests that VIFs between 1 and 5 typically do not pose significant multicollinearity concerns. In this case, with a mean VIF of 2.11956 reflects moderate relationship among independent variables, suggesting that multicollinearity is unlikely to significantly distort the regression outcomes (Hair et al., 2010). This VIF distribution implies the model is suitable for regression analysis without immediate adjustments for collinearity.

Table 3: Unit root Test

	Augmented Dickey-Fuller test			ADF
	Level	First Diff.	Critical	
LRGDP	-0.49897	-3.85160	-2.9484	I(1)
OIR	-2.61310	-4.44649	-2.9484	I(1)
DSR	-1.65039	-6.78267	-2.9484	I(1)
INVG	-9.88162	-	-2.9484	I(0)
LABF	-2.48570	-4.47241	-2.9484	I(1)

Source: Author's Computation (2025); Where: Log of Real Gross Domestic Product is LRGDP

Oil tax Revenue is OIR, Debt Service Ratio is DSR, Labor Force is LABF, Investment Growth is INVG,

The Augmented Dickey-Fuller (ADF) test results reveal the stationarity properties of the variables, essential for econometric modelling. LRGDP, OIR, DSR, and LABF are non-stationary at their levels as indicated in table 3, as their ADF test statistics are higher than the critical value of -2.9484. However, all these variables become stationary after first differencing, indicating they are integrated of order one, I(1). In contrast, INVG is stationary at the level, meaning the series was integrated of order zero, I(0). The mix of I(0) and I(1) variables makes the Autoregressive Distributed Lag (ARDL) model a suitable choice for further analysis. The ARDL approach, as proposed by Pesaran, Shin, and Smith (2001), accommodates variables with different integration orders without requiring all variables to be integrated at the same level.

Research Hypothesis

H_0: Oil tax revenue has no significant effect on economic growth in Nigeria.

Table 4 : Bound Test Cointegration of oil tax revenue and economic growth in Nigeria

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	14.52989	10%	2.2	3.09
K	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

Source: Author's Computation (2025); Where: Log of Real Gross Domestic Product is LRGDP

Oil tax Revenue is OIR, Debt Service Ratio is DSR, Labor Force is LABF, Investment Growth is INVG,

Table 4 presents the bound test cointegration of oil tax revenue and economic growth in Nigeria. The Bound Test results indicate a strong rejection of the null hypothesis, which states that there is no cointegration of oil tax revenue and economic growth in Nigeria. The calculated F-statistic of 14.52989 is significantly higher than the upper critical bound (I(1)) at 5% significance level 3.49. This result confirms the existence of a cointegrating relationship between the oil tax revenue and economic growth in Nigeria. This implies that oil tax revenue has a long-term association with economic growth in Nigeria. The result of the Bound Test validates the application of the ARDL model, which is specifically designed to analyze the short- and long-run dynamics of cointegrated variables. The findings align with assumptions of Pesaran et al. (2001), which emphasized the effectiveness of the Bound Test in detecting long-run relationships among variables. These results are also consistent with economic growth theories, which highlight the role of resource-based revenues in shaping long-term economic trajectories.

Table 5: Autoregressive Distributed Lag Modelling for oil tax revenue and economic growth in Nigeria

Panel A: Long Run Estimates				
Dependent Variable: D(LRGDP)				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob**
LOIR	0.196594	0.033487	5.870823	0.0000
DSR	-0.092097	0.031020	-2.968918	0.0063
LABF	0.002349	0.040429	0.058099	0.9541
INVG	0.004547	0.005700	0.797662	0.4323
C	30.40025	2.372214	12.81514	0.0000
Panel B: Short Run Estimates				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob**

D(LOIR)	0.002676	0.010005	0.267481	0.7912
D(DSR)	-0.003956	0.003807	-1.039200	0.3083
D(LABF)	0.006698	0.006541	1.024054	0.3152
D(INVG)	0.000748	0.000245	3.055967	0.0051
ECT(-1)*	-0.140222	0.013754	-10.19532	0.0000
Panel C: Diagnostic Tests		Statistics	Prob.	
R-squared		0.535527	-	
Adjusted R-squared		0.475595	-	
F-statistic		815.184	0.00011	

Source: Author's Computation (2025); Where: Log of Real Gross Domestic Product is LRGDP

Oil tax Revenue is OIR, Debt Service Ratio is DSR, Labor Force is LABF, Investment Growth is INVG, ,

Long-Run Effect:

Table 5 presents the Autoregressive Distributed Lag Modelling for oil tax revenue and economic growth in Nigeria. The long-run results indicated that Oil tax revenue (LOIR) has a positive coefficient of *0.196594*, with a significant probability of *0.0000*. This means that a one-unit increase in oil tax revenue leads to a 0.1966 unit increase in LRGDP in the long run. The significant positive coefficient suggests that oil tax revenue is an important driver of economic growth in Nigeria. On the other hand, the debt service ratio (DSR) has a negative coefficient of *-0.092097*, with a statistically significant probability of 0.0063. This implies that a one-unit increase in the debt service ratio results in a *0.0921* unit decrease in LRGDP in the long run. The negative sign indicates that higher debt servicing costs constrain economic growth by diverting resources from productive investments to debt repayment, which can hamper overall economic performance. More so, the labor force (LABF) has a positive coefficient of 0.002349, but with a probability of *0.9541*, suggesting that its effect on economic growth is statistically insignificant. Also, investment growth (INVG) also shows a positive coefficient of *0.004547,* but with a probability of *0.4323*, indicating that its effect on LRGDP is statistically insignificant. Finally, the constant term (C) has a value of *30.40025*, with a highly significant probability of *0.0000*, representing the baseline level of LRGDP when all explanatory variables are zero.

Short Run and Error Correction Term

In the short run, oil tax revenue (D(LOIR)) does not have a significant impact on economic growth, as indicated by its probability value (0.0027, p = 0.7912). This suggests that while oil tax revenue plays a crucial role in the long-term development of Nigeria's economy, its immediate effects are minimal. The delayed impact is due to inefficiencies in revenue collection, allocation delays, and fiscal leakages that prevent the funds from being effectively utilized in productive sectors.

Debt servicing (D(DSR)) also shows an insignificant short-run effect on economic growth, as evidenced by its negative coefficient (-0.0039, p = 0.3083). While excessive debt repayment obligations can burden long-term growth by diverting resources away from productive investments, the short-run impact appears minimal. This is due to Nigeria's ability to finance debt through new borrowings or short-term budget adjustments, preventing an immediate economic downturn. However, if debt accumulation continues unchecked, the long-term economic consequences could be severe, leading to financial instability and reduced fiscal space for critical development programs.

Government investment (D(INVG)) is statistically significant in the short-run effect on economic growth (0.0007, p = 0.0051). This highlights the role of government spending in driving immediate economic activities, particularly in infrastructure development, public services, and social welfare programs. When the government increases investment, it stimulates demand, creates jobs, and encourages private sector participation, leading to short-term economic expansion. However, the long-term effectiveness of this investment depends on its efficiency, as poorly planned or misallocated expenditures may not translate into sustained economic growth.

The labor force (D(LABF)) shows no significant short-run contribution to economic growth (0.0067, p = 0.3152), suggesting that labor market dynamics alone are insufficient to drive short-term economic performance. This could be due to high unemployment, skill mismatches, or underemployment, where the available workforce is not effectively utilized in productive activities. Addressing these issues requires structural labor market reforms, including investment in education, vocational training, and job creation initiatives to enhance productivity and economic impact.

Finally, the Error Correction Term (ECT(-1)) has a coefficient of *-0.140222,* with a highly significant probability of *0.0000.* this is in tandem with theoretical assumption of negative and significance. This indicated that any short-run disequilibrium will be corrected toward the long-run equilibrium at a rate of *14.02%* per period. This result confirms the presence of a stable long-run relationship between the variables, with the system adjusting to maintain long-run balance.

Test of hypothesis

The Adjusted R-squared value is 0.475595, which suggests that approximately 47.56% of the variation in economic growth (LRGDP) is explained by the independent variables in the model. This indicates a moderate fit, meaning that the model captures a substantial portion of the factors influencing economic growth. The F-statistic of 815.184, with a probability value of 0.0001, which is highly significant. This result strongly suggests that the variables included in the model collectively explain changes in economic growth in Nigeria. Therefore, the result rejects the null hypothesis which says oil tax revenue does not significantly have effect on economic growth in Nigeria. This study concluded that oil tax revenue has a significant effect on economic growth in Nigeria.

Table 6: Diagnostics Test for oil tax revenue and economic growth in Nigeria

Serial Correlation LM Test	0.73303	0.4950
Heteroskedasticity Test:	0.56824	0.8467
Normality Test	0.17780	0.4111
	CUSUM	CUSUMSQ
Stability Test	Stable	Stable

Source: Author's Computation (2025); Where: Log of Real Gross Domestic Product is LRGDP

Oil tax Revenue is OIR, Debt Service Ratio is DSR, Labor Force is LABF, Investment Growth is INVG,

The diagnostic tests for the ARDL model assessing the relationship between oil tax revenue and economic growth in Nigeria was presented in Table .6. The Serial Correlation LM Test value is 0.73303 with a probability of 0.4950, indicating no significant serial correlation, suggesting that the residuals are not autocorrelated. The Heteroskedasticity Test value is 0.56824 with a probability of 0.8467, showing no evidence of heteroskedasticity, meaning the variance of the residuals is constant across observations. The Normality Test value is 0.17780 with a probability of 0.4111, indicating that the residuals are normally distributed, which is essential for the validity of statistical inferences. Furthermore, the CUSUM and CUSUMSQ tests show that the model is Stable,

indicating that the parameter estimates remain stable over time. These results suggest that the model is well-specified and reliable for analyzing the impact of oil tax revenue on economic growth in Nigeria.
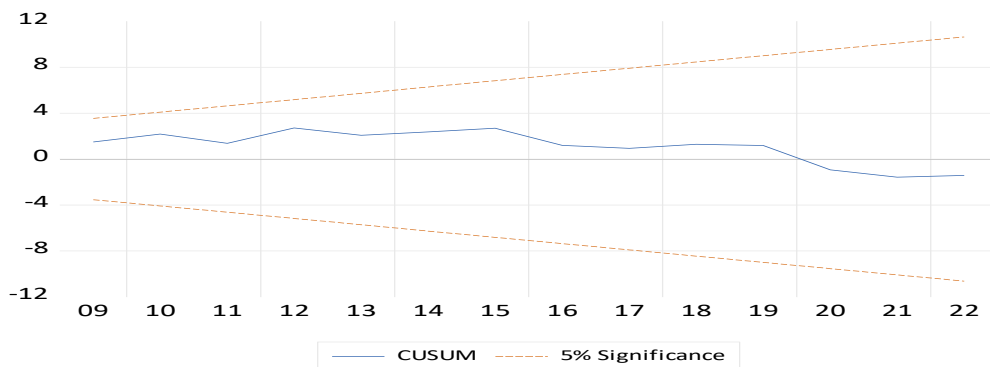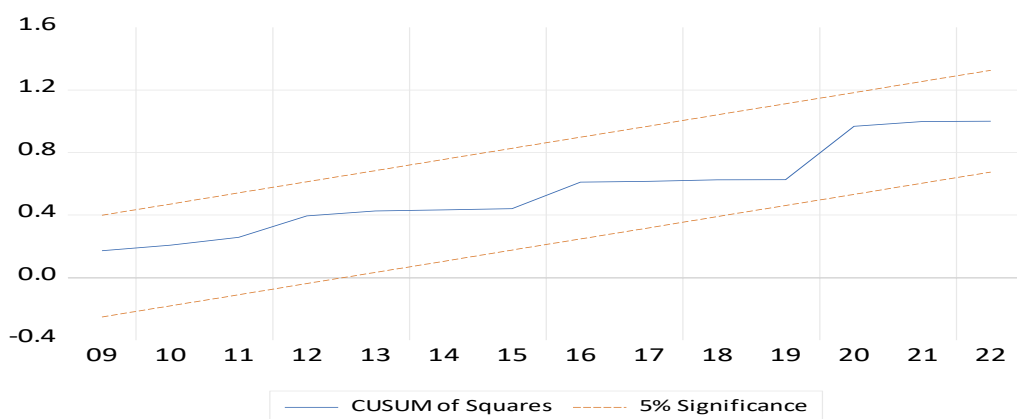

Figure 4.1: CUSUM Squares for

Figure 4.2: CUSUM Test for

DISCUSSION OF FINDINGS

In examining the effect of Oil Tax Revenue on Economic Growth in Nigeria, the result findings showed that oil tax revenue (LOIR) plays a crucial role in driving economic growth in Nigeria, Conversely, the debt service ratio (DSR) has a negative and significant effect on economic growth, suggesting that higher debt servicing costs constrain economic growth by reducing resources available for productive investments. While labor force size (LABF) and investment growth (INVG) have positive effect, however, they are statistically insignificant to influence economic growth, pointing to structural issues in the labor market and inefficiencies in investment. In the short run, oil tax revenue and debt service ratio have insignificant effects on economic growth, whereas investment growth has a significant positive impact on economic growth.

The result of this study aligns with Gwa and Kase (2018), who found that tax revenues, particularly Petroleum Profit Tax (PPT), contribute significantly to economic growth in Nigeria. Similarly, Asaolu et al. (2018) identified PPT as having a positive impact on Real Gross Domestic Product (RGDP). This corroborates the finding in this study that oil tax revenue (LOIR) significantly drives economic growth in Nigeria, with a coefficient of 0.196594. These studies highlight the importance of resource-based tax revenues in financing economic activities and promoting development, aligning with the role of oil tax revenue in Nigeria's growth trajectory as indicated in this research. Conversely, the negative impact of the debt service ratio (DSR) on economic growth found in this study does not align with Asaolu et al. (2018), where other tax variables like CIT and VAT significantly influenced growth. The high cost of debt servicing identified here highlights a unique challenge for Nigeria, where fiscal pressures from borrowing reduce available resources for productive investments. Studies like Taha et al. (2011) in Malaysia, which emphasized dynamic taxation policies, also differ as they focused on the reciprocal relationship between tax revenue and economic growth rather than the adverse implications of debt servicing.

Regarding the short-run findings, the significant positive impact of investment growth (D(INVG)) resonates with studies such as Wu (2010), which linked tax revenue to infrastructure investment and economic performance in China. Similarly, Yoshino and Abidhadjaev (2017) in Japan demonstrated the positive role of investments funded by tax revenue in driving economic outcomes. However, the insignificance of LOIR and DSR in the short run contrasts with the findings of Ibanichuka et al. (2016), who argued that tax revenues like VAT and CIT have immediate developmental impacts. This difference could stem from the unique economic and structural constraints in Nigeria, which limit the short-term efficacy of oil tax revenue despite its long-term significance.

CONCLUSION AND RECOMMENDATIONS

The study examined the effect of oil tax revenue on economic growth in Nigeria between 1986 to 2022. Autoregressive distributed lag modelling was used. The results indicate that oil tax revenue significantly drives economic growth in Nigeria, with a positive coefficient of 0.1966, meaning that an increase in oil tax revenue leads to a proportional increase in the long-run real GDP. However, the debt service ratio negatively impacts economic growth, as its increase leads to a decrease in LRGDP. Although labor force and investment growth show positive coefficients, their effects on economic growth are statistically insignificant. These findings suggest that oil tax revenue plays a crucial role in fostering long-term economic growth, while high debt servicing costs constrain it.

This study contributes to Endogenous Growth Theory by highlighting the role of government policies, investment, and taxation in driving long-term economic growth through internal mechanisms rather than external factors. Endogenous Growth Theory emphasizes that economic growth results from factors such as human capital development, technological innovation, and productive public investment, all of which are influenced by policy decisions. The study's findings show that oil tax revenue significantly impacts long-run growth, supporting the argument that internally generated resources, when efficiently allocated, can enhance productivity and economic expansion. Additionally, the positive short-run effect of government investment aligns with the theory's assertion that public spending on infrastructure and capital accumulation fosters innovation, private sector growth, and sustained development. However, the insignificance of labor force participation suggests that simply increasing labor supply is not enough there must be deliberate policies to enhance human capital through education, skills training, and innovation-driven economic strategies. The study, therefore, reinforces Endogenous Growth Theory's central idea that government intervention, resource allocation, and investment in productive sectors are key drivers of long-term economic progress.

Based on the study's findings, the following recommendations are proposed:

i. Given the positive impact of oil tax revenue on economic growth in Nigeria, it is recommended that the Nigerian government focus on enhancing the efficiency of oil tax revenue collection. This can be achieved by addressing challenges such as tax evasion, improving transparency, and ensuring that oil tax revenues are properly utilized for national development projects. An efficient oil tax revenue administration system would help boost the contributions of the oil sector to the national economy, which is crucial for sustained economic growth.

ii. Modernize tax collection systems, enforce compliance measures, and reduce leakages to enhance revenue mobilization. Digital platforms should be leveraged for efficiency and transparency.

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