UMARU MUSA YAR'ADUA UNIVERSITY, KATSINA (UMYUK)
Journal of Economics and Development (UJED)

EXAMINING THE IMPACT OF OIL REVENUE, PUBLIC DEBT, INSECURITY, EXTERNAL RESERVES ON NIGERIA'S ECONOMIC GROWTH

[1] Baba Ali ASHEMI *, [2] Mohammed Lawal IBRAHIM, & [3] YAMTA, Aliyu Hauwa
[1 - 2] Department of Economics, Faculty of Social Sciences, University of Maiduguri – Nigeria
[3] Department of Banking & Finance, Faculty of Management Sciences, University of Maiduguri – Nigeria
***Corresponding authors' email**: ashemites@yahoo.com

Journal Info:
ISSN (e): 3026-8028
(p): 3027-0928
Vol: 01
Issue: 02
December 2024

Pages: 137 – 152

Keywords:
Oil Revenue, Insecurity, Public Debt, External Reserves, Gross Domestic Product

ABSTRACT

The Nigerian economy has relied heavily on oil over the years, and within this sector, certain forms of insecurity such as militancy activities have emerged. Additionally, other forms of insecurity are spread across the regions of the country which has invariably affected the revenue of the government. This has led to increased borrowing and gradually recording depleting of the nation's reserve. These challenges created the need to examine the impact of oil revenue, public debt, insecurity and external reserve on Nigeria's economic growth. Using time series data from 1990 to 2023 and employing econometric techniques such as Autoregressive Distributive Lag (ARDL) model and Granger causality test. The study reveals that in the short run, oil revenue has positively affected GDP whereas insecurity, public debt and external reserves negatively affect GDP, and are all statistically significant. Further findings show that in the long run, all the variables maintained same sign as obtained in the short run but are statistically insignificant. Additionally, oil revenue, insecurity and public debt exhibits a uni-directional relationship with GDP. Consequently, the study recommends need for diversified economic strategies and prudent debt management to foster sustainable economic growth.

1.0 Introduction

Crude oil in Nigeria was discovered in the early 1950s. Prior to this discovery, agriculture was the mainstay of the economy, providing 95 per cent of Nigerians food needs, employ over 70 per cents of the Nigerian populace, boosting foreign exchange earnings, and supplying agro-allied industries with raw materials which on the sum the sector contributes about 64.1 per cent to the country's GDP (Paul, 2015; Okotie, 2018). The discovery of oil often referred the black diamond, redirected the focus of government and other stakeholders to this new economic driver.

The discovery of crude oil attracted investors across the globe especially the international oil companies (IOCs) such as Shell. BP, AGIP, as well as indigenous oil companies like the Nigeria National Petroleum Corporation (NNPC). These companies engaged in the exploration of crude oil, exportation, and refining purposes. As a result, oil sector became the major source of government revenue which account for 90%of the total revenue and contributing significantly to gross domestic product (GDP).

However, this economic shift posed a threat to national food security as little or no

emphasis are placed on the agricultural sector due surplus windfall from oil proceeds. This led to increased importation of goods to satisfy local demands as against local production and by extension constitute a challenge to external reserve because of trade deficit. For instance, the country recorded a trade deficit as thus, N178,259.36 million (2020), N1,936, 176.24 (2021) but improvement of trade surplus was witnessed in 2023 and Q2:2024 with about N5,099,326.91 million and N12,142,705.42 million respectively (National Bureau of Statistics, 2024).

With this situation of having an oscillating trade gap on year-on-year end basis tends to have implications on the country's exchange rate because less foreign exchange is earned from export activities. Owing to the fact that the country is import dependent, there exist a huge demand for foreign exchange by market player to facilitate export activities. Since, the demand for the foreign exchange is more than its supply, it creates a pressure on exchange rate and to douse this pressure the government deeps through its external reserves to support it.

In addition, the fact that the country heavily relies on oil, its oil exploration activities by IOCs and other related industries, has caused environmental damages and increased carbon dioxide emission particularly to the locals of these areas where crude oil is explored because they no longer engage in their economic activities for survival. This, spring out the militancy activities across these areas such as Movement for the Emancipation of Niger Delta (MEND), Niger Delta Avengers (NDA) [European Union Agency for Asylum, 2019].This situation created a level of insecurity which has negatively affected oil activities because investors and other stakeholders' confidence has declined.

This further affected output; for instance, it reduced from 1.5bpd in 2021to 1.2bpd in 2022, with a slight increase recorded in 2023 to 1.4bpd. This poses a threat to government revenue particularly oil revenue which stood at N5,105.15 billion (2019) and declines to N4,155.75 billion (2020), N4,146.57 (2021). Though, turnaround position was recorded in 2022 and 2023 which stood at N4,665.25 billion and N5,663.59 billion (Central Bank of Nigeria, 2023) respectively. Invariably, this tends to have implication of the country's external reserves as it has shrunk from N40,230.8 billion (2021) to N33,217 billion in 2023 while gross domestic product recorded a contraction from USD472 billion in 2022 to USD 362.81 billion in 2023 [CBN, 2023].

More so, with the level of insecurity spread across other regions like the North East where the like of Boko Haram insurgency; North Central- farmer herders' crises, North West-Banditry and kidnapping activities while in the South East-Indigenous People of Biafra (IPOB) among others. This level of insecurity across the country do not only affect the oil sector but the non-oil sector because economic and agricultural activities is at stand still. This tends to have a spill over effect on the country's trade balance. This tends mount pressure on external reserves the country reserves because it has been recording decline as it stood from USD 40,230 million in 2021 to USD36,608 million in 2022 while it further drops to USD 33,217.57 in 2023 (Central Bank of Nigeria, 2023) as well as GDP growth.

With the shrinking revenue from oil arising due to insecurity, meeting government obligation became a challenge, thus, resulted to the increased level of borrowings from local and international institutions by the Nigerian government. This public debt has risen from N39 trillion in 2021to N46 trillion in 2022 whereas a 100 percent increase was recorded in 2023 which stood at N97 Trillion (Central Bank, 2023) with a debt servicing of N1.4 trillion and USD1.3 billion for domestic and external debt servicing for Q3:2024 respectively (Debt Management Office, 2024). This causes for huge concern particularly when link to the revenue and the infrastructural gap to fill in order to support growth.

However, several studies have been conducted on this theme, including those by Adofu and Alhassan (2018), Onah, Ihegboro and Ojiakor (2022), Nwamuo (2023), Awosusi (2022), Ezeala and Nzewi (2022),Opara, Iredia and Wayas (2022), Akanbi, Uwaleke and Ibrahim (2022),Olujede and Micheal (2022) and among others. Nevertheless, these previous studies failed to assess combined impact of these key variables (i.e., oil revenue, external reserves, public debt and insecurity) on economic growth in particularly in the context of Nigeria. Additionally, data gap was identified as most of these studies relied on data ending 2022, which fails to capture recent trends in these indicators and their influence growth. It is in light of these gaps of these gap that necessitate the need for this study to examine the impact of oil revenue, public debt, insecurity, external reserves on Nigeria's economic growth.

2.0 Literature review

Several studies have been conducted on the theme locally and internationally. In examining the nexus between oil revenue and economic growth, Olujede and Micheal (2020) in a study conducted in Nigeria on oil revenue and Nigeria economic growth, a Resource Curse? using time series from 1981 to 2018, employed OLS regression and Granger causality, discovered that there is a negative but statistically significant probability values. By so doing concluded that oil revenue is a curse for the country, judging from the dependency of the country on oil revenue, and that its negative effect which hinder other sector from growing and can't curb the economic volatility in the country.

Also, Ezeobele and Uchime (2024) assess the impact of oil revenue on economic growth Nigeria using multiple regression approach. Findings revealed that oil revenue and petroleum profit tax have a significant positive influence on the growth of Nigeria. Abdelmoula and Abdelsalam (2023) investigated oil price fluctuations and economic Growth with emphasis on MENA Countries while employing panel quartile regression approach indicated that change in the oil prices and its volatility has an opposite effect for each oil export and oil import countries. In other words, for exporting countries change in oil prices have a positive impact, but the volatility has a negative effect and the reverse is the case with the oil importing countries.

In Nigeria, Akinleye, Olowookere and Fajuyagbe (2021) assessed the impact of oil revenue on economic growth in Nigeria. 1981 to 2018, employing autoregressive distribution lag (ARDL) model. Findings revealed that the past values of the economic growth and oil revenue were positively related to economic growth (RGDP) in Nigeria. However, petroleum profit tax (PPT), inflation rate (INF) and exchange rate (EXCR) were negatively related to economic growth (RGDP) in both the short and long run. In terms of significance, PPT and INF are significance in the short run but not in the long run. Conversely oil revenue which was not significant in either the short and long run.

In a similar study, Ebimobowei (2022) on the same theme conducted in Nigeria employed datafrom1990 to 2019 while employing descriptive statistics, Pearson moment, correlation coefficient, and ordinary least square multiple regression revealed that there is a significant negative relationship between crude oil and real gross domestic product in Nigeria. Likewise, Amade, Atabo and Joshua (2021) using ARDL model on the same theme concluded oil revenue impacted positively and significantly on the economic growth of Nigeria under the review period.

On the other hand, studies were conducted on public debt and economic growth which Hilton (2021) conducted a similar study in Ghana, while employing data from 1978 to 2018 and dynamic multivariate autoregressive distributed lag ARDL and the Granger Causality model to test the causal relationship revealed that public debt has no

causal relationship between GDP in the short run, but there is unidirectional causal relationship in the long run. Invariably, implying that government must ensure high fiscal discipline and channel borrows funds to highly prioritized projects that are evaluated and self-sustained to add positively to the GDP.

Gomez-ping, Sosvilla-Rivero and Martínez-Zarzoso (2022) examine the heterogeneous link between public debt and economic growth on 115 countries spanning from 1995 to 2016 while using Grouped fixed effect (GFE) estimator and the multinomial logit model shows a strong impact which is further moderated by the quality of the institution and the proportion of productive expenditure but intensified by the level of indepthness and the maturity of debt.

Akanbi, Uwaleke and Ibrahim (2022) conducted qualitative research investigating the relationship between external debt service and economic growth from 1981 to 2020 using Autoregressive Distributed Loan (ARDL) model. Findings shows that there was a co-integrating equation and evidence of negative relationship between external debt and economic growth, although not statistically significant. Conversely, further findings shows that resources depletion effect on external debt service on growth and that external debt shocks has a positive but not significant relationship with growth. Additionally, Heimberger (2021) in another study on whether or not Higher Public Debt Levels Reduce Economic Growth, while using meta-regression analysis showed that tackling endogeneity between public debt and growth makes estimates lean less towards a negative side and thus, concluded that public debt does not necessarily hinder economic growth holistically. In a similar study conducted in Finland, Puonti (2022) investigated the implications of public debt management adopted a cross-country heterogeneity and time-varying relationship using economic models and historical data which revealed that high and increasing public debt may negatively impact long-term economic growth, and as a result concluded that public debt can help stabilize and stimulate economy in the short run, but long-run sustainability requires prudent debt management.

Furthermore, the nexus between insecurity and economic growth was also reviewed which Adofu and Alhassan (2018) examined the implication of insecurity on economic development in Nigeria from 2005 to 2016 while employing trend analysis, descriptive statistics, and pearson correlation revealed a negative correlation between insecurity and economic development. Has insecurity increased Nigeria human development index and prosperity index declined, which indicates a worsening state of the economic condition. As a result, the study concluded that insecurity has caused a significant threat to Nigeria's economic progress or its developments.

Agogbua, Mgbotogu and Ugochukwu (2022) investigated the impact of insecurity on Nigerian economic growth and development while focusing on pre and post insecurity period using desk survey approach while employing F and Cho-test. Findings reveals that insecurity hinders business activities but does not have any important influence on economic growth and development.

Region specific study was carried out by Garga (2015) in Northern Nigeria on the effect of Insecurity and Human Development while using quantitative and analytical approaches depicts that there is a negative correlation between poverty and insecurity and has negatively impacted human development index. This invariably results to as low economic growth, corruption, poor governance which further spur poverty level.

In a similar study by Ezeala and Nzewi (2022) on the impact of insecurity on economic growth while employing primary data obtained through questionnaire and was analyzed using Z-Score. Revealed that

insecurity has made some significant negative effects on the short economic lives of the citizens living in Nigeria. Opara, Iredia and Wayas (2022) examined the effect of insecurity on sustainable national economic development of Nigeria. Adopting a qualitative approach, revealed that insecurity has significantly impeded Nigeria's economic development by discouraging foreign investment, increasing crime rate, reducing productivity, loss of lives and destruction of infrastructure which further worsening economic instability.

Also, on the nexus between external reserve and economic growth, Matsumoto (2019) assess the optimal pace of foreign reserve accumulation in emerging and developing countries which findings shows that foreign reserve accumulation depreciates the real exchange rate, attracts foreign direct investment, and enhances productive growth. However, the effectiveness of reserve accumulation varies across countries due to differences in foreign borrowing constraints and FDI entering costs. As a result, the study concludes that foreign reserve accumulation can be beneficial for growth and economic stability.

In Ethiopia, Hordofa (2023) carried out a study on the impact of external factors on Ethiopia economy growth by employing autoregressive distributed lag model using an annual time series data spanning from 1982 to 2021 study found that exchange rate effects were complex and non-linear, challenging conventional economic assumptions. And it also reveals that FDI consistently emerged a significant driver of economy growth over time, while remittance had only a transient significance, suggesting the need for caution policy consideration.

Awosusi (2022) using data from 1986 to 2019 while employing Autoregressive Distributed Lag (ARDL) and Pairwise Granger Causality techniques discovered that external reserve positively and contributes significantly to economic growth of Nigeria. This study concluded that, the accumulation of external reserves is growth inducing in Nigeria. Similarly, Nwamuo (2023) in another study using same model, revealed that in the short run the current period of external reserves is significant and possess a negative impact on economic growth where as in the long run external reserves have a positive and insignificant impact on economic growth

In addition, Onah, Ihegboro and Ojiakor (2022) examined the correlation between external reserves and economic growth in Nigeria, reveals that external reserve has positive and significant effect on the Gross Domestic Product of Nigeria and conversely shows a negative and insignificant effect on the Nigerian net national income. Consequently, from the review studies large proportion of were conducted in Nigeria (i.e., Adofu and Alhassan ,2018; Onah, Ihegboro and Ojiakor, 2022; Nwamuo ,2023; Awosusi, 2022; Ezeala and Nzewi,2022; Opara, Iredia and Wayas, 2022; Akanbi, Uwaleke and Ibrahim, 2022; Olujede and Micheal, 2022) as only few whether carried out in Ethiopia, Ghana and other emerging economies.

As a result, the following gaps were identified; firstly, the previous studies are tailored on the individual relationship between economic growth and oil revenue, public debt, insecurity and external reserve as there is lack of studies that simultaneously examined the impact of these variables on economic growth particularly in Nigeria. Secondly, data gap was discovered as most of the studies employs data that ended in 2021, thus not updated to capture the recent trends on these indicators on growth. Thirdly, the existing studies (i.e., Adofu and Alhassan, 2018; Opara, Iredia & Wayas, 2022) that have examined the impact of insecurity on economic growth, there is lack of consensus on the magnitude and significance as some have shown a significant negative impact while other suggested a marginal impact on economic growth. Therefore, it is in lieu of these gaps that necessitate the need for this study to

examine the impact of oil revenue, public debt, insecurity, external reserves on economic growth of Nigeria.

3.0 Methodology

Quantitative research design was utilized, through a time series data from 1990– 2023 which were obtained from World Bank, Central Bank of Nigeria, National Bureau of Statistics and Statistica databases. Key variables include Economic growth proxied by Gross Domestic Product (GDP) which serves as the dependable variable whereas the independent variables include oil revenue, Insecurity proxied by defense expenditure, public debt and external reserves. Econometric techniques such as the unit root, ARDL, and granger causality test were used for the analysis.

Following the work of Olujede and Micheal (2020) on oil revenue and Nigerian economic growth from 1981-2018. The adapted form of the model is presented as thus:

$$LGDP = f\left(LOILR, AGRIC, MANF, BCON\right) \quad (1)$$

Where; LGDP = Real Gross Domestic Product
LOILR= Log of Oil Revenue
AGRIC = Agriculture Revenue
MANF= Manufacturing Revenue
BCON = Building and Construction Revenue

Modifying equ. (1), this study adopted the model as expressed in equ. (2).

Following the work of Olujede and Micheal (2020) on oil revenue and Nigerian economic growth from 1981-2018. The adapted form of the model is presented as thus:

$$GDP = f\left(OIREV, FDEPT, UNSEC, EXRES\right) \quad (2)$$

$$EG = \beta_0 + \beta_1 OIREV + \beta_2 FDEBT + \beta_3 INSEC + \beta_4 EXRES + \mu \quad (3)$$

Where:
EG: Economic growth (Proxied by Gross Domestic Product)
OIREV: Oil Revenue
FDEBT: Public Debt
INSEC: Insecurity (Proxied by defense expenditure)
EXRESS: External Reserve

Taking the logarithms of all the variables due to the nature of the data, the equa. (3) is written as shown in (4) along with its proxy.

$$\log GDP = \beta_0 + \beta_1 \log OIREV + \beta_2 \log FDEBT + \beta_3 \log INSEC + \beta_4 \log EXRES + \mu \quad (4)$$

Therefore, deducing from equ. (2), the ARDL Model is specify in equ. (4). The application of the ARDL model was hinged on the outcome of the Unit root test conducted which shows a mixture of different order of integration as supported by Pesaran, Shin and Smith (2001).

Thus, the generalised ARDL model can be specified as thus;

$$\Delta Y_t = \beta_0 + \sum_{i=1}^{n} \Delta Y_{t-1} + \sum_{i=0}^{n} \lambda_i \Delta X_{t-1} + \theta_1 Y_{t-1} + \theta_1 X_{t-1} + \mu_t \quad (5)$$

This can be re-written as thus::

$$\Delta logGDP_t = \beta_0 + \sum_{i=1}^{n} \beta_1 \Delta \log GDP_{t-1} + \sum_{i=0}^{n} \lambda_{1i} \Delta \log OIREV_{t-1} + \sum_{i=0}^{n} \lambda_{2i} \Delta \log FDEBT_{t-1} + \sum_{i=0}^{n} \lambda_{3i} \Delta \log DEFEX_{t-1} + \sum_{i=0}^{n} \lambda_{4i} \Delta \log EXRES_{t-1} + \theta_1 \log OIREV_{t-1} + \theta_2 \log FDEBT_{t-1} + \theta_3 \log DEFEX_{t-1} + \theta_4 \log EXRES_{t-1} + \mu_t \quad (6)$$

Where:
ΔlogGDPt: The dependent variable representing GDP at time t
β_(0): Intercept term
β_i: Coefficients for the lagged differences of logGDP
λ_1i λ_2i λ_3i λ_4i: Coefficient for the lagged differences for the independent variables,
θ 1, θ2 θ_3 θ_4: Coefficient for the lagged levels of the independent variables;
μ_t: Error term at time t.

The long run coefficient of the ARDL model is specify as follows:

$$\log GDP_t = \theta_0 + \theta_1 \log OIREV_t + \theta_2 \log FDEBT_t + \theta_3 \log INSEC_t + \theta_4 \log EXRES + \varepsilon_t \quad (7)$$

Where:
θ_(0): Intercept Term
θ_1,θ_(2,),θ_3,θ_4: Long run coefficients for logOIREV, logFDEBT, LogDEFEX and LogEXRES
ε_t: Residual term representing deviations from the long run equilibrium.

Subsequently, after obtaining the long run coefficient of the parameters, the short run coefficient was estimated by adopting the ECM-ARDL short run approach which is given as:

$$\Delta logGDP_t = \beta_0 + \sum_{i=1}^{n} \beta_1 \Delta \log GDP_{t-1} + \sum_{i=0}^{n} \lambda_{1i} \Delta \log OIREV_{t-1} + \sum_{i=0}^{n} \lambda_{2i} \Delta \log FDEBT_{t-1} + \sum_{i=0}^{n} \lambda_{3i} \Delta \log DEFEX_{t-1} + \sum_{i=0}^{n} \lambda_{4i} \Delta \log EXRES_{t-1} + \gamma ECT_{t-1} + \varepsilon_t \quad (8)$$

Where:
〖ECT〗_(t-1): Error correction term
γ: The speed of adjustment

Consequently, the variables employed for the study is defined and measured as shown in Table 4.1.

Table 4.1: Variable Description and Measurement

SN	Variable	Definition	Description/Measurement	Source

1	GDP	Economic Growth	Economic growth is the process by which an economy increases its capacity to produce goods and services, often driven by technological innovation and increasing returns to scale. Real Gross Domestic Product serves as a proxy to economic growth which was measured in Monetary units-US Dollars ($)	Romer,2006; Agogbua, Mgbotogu and Ugochukwu ;2022; Ezeobele &Uchime, 2024
2	OILREV	Oil Revenue	Oil revenue is the total revenues collected by governments as a result of licensing agreements with multinational corporations engaged in oil extraction activities. The variable was measured in Monetary Units-Naira (NGN)	Scott, 2024; Central Bank of Nigeria, 2023
3	FDEBT	Public Debt	Public Debt refers to it as all outstanding borrowings by national governments that are expected to be repaid over time with interest. Total Federal holding debt was used and it was measured in Monetary Units-Naira (NGN)	Roubini, 2018, Debt Management Office, 2023
4	DEFEX	Insecurity	Insecurity is a situation which manifest when institutionalized norms are challenged or undermined (John and Brian, 1977). Security or defense expenditure serves as a proxy to insecurity as against the use of dummy as obtained in previous studies. The variable serves as an independent variable measured in Monetary Units-Naira (NGN)	Maduka, Alumona & Chukwuma, 2014; Agogbua, Mgbotogu and Ugochukwu ;2022
5	EXRES	External Reserve	External reserves are portion of a country's total official reserves that can be readily accessed for international transactions. It was measured in Monetary Units-Naira (US Dollars)	International Monetary Fund ,2016); Awosusi (2022)

Source: Authors Compilation, 2024

4.0 Results and Discussion

4.1 Unit Root Test

To determine the level of stationarity of the variables under study, the unit root specifically the Augmented Dicker Fuller (ADF) test was conducted as shown in Table 4.1

Table 4.2: Unit Root Test

Variable (s)	ADF

	Level	First Difference	Order of Integration
LogGDP	-1.613	-4.890	I(I)
	(0.464)	(0.000)	
LogOIREV	-2.306	-5.319	I(I)
	(0.175)	(0.000)	
LogFDEBT	-2.399	-11.376	I(1)
	(0.924)	(0.000)	
LogDEFEX	-3.152	-6.601	1(0)
	(0.003)	(0.000)	
LogEXRES	-3.209	-1.972	1(0)
	(0.030)	(0.296)	

Source: EViews 10 Significance at 5% level.

Table 4.2 reveals that LogGDP, LogOIREV and LogFDEBT are stationary at their first difference I(1) whereas LogDEFEX and LogEXRES are stationary at level I(0) at 5.0 per cent level of significance. This further indicates a mixture of order of integration, thus qualifies the need for the application of the Autoregressive Distributive Lag (ARDL) model.

Table 4.3: Lag Order Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-145.043	NA	0.008135	9.377658	9.606679	9.453572
1	1.381417	237.9389*	4.21e-06*	1.788661*	3.162789*	2.244146*
2	18.05613	21.88556	8.01E-06	2.308992	4.828226	3.144047

Source: *Eviews 10*

Table 4.3, depicts lag selection criteria at the 5.0 percent level of significance and based on the rule of thumb which states that, the criteria with the lowest minimum value is adequate (Asteriou & Hall, 2011). In lieu of this, all study opted for the AIC criterion with lag 1 as it has the lowest value.

4.2 ARDL Bound Test for Co-integration

This test was conducted to determine whether or not there is cointegration relationship among the series or variables and the result is presented in Table 4.3.

Table 4.4: ARDL Bound Test for Cointegration Test Results

Test Statistic	Value	Signif	I(0)	I(1)
F-statistic	4.133	10%	2.46	3.46
K	4	5%	2.947	4.088
		1%	4.093	5.532

Source: *EViews 10*

Table 4.4 shows the ARDL bounds test. The result depicts that that there is cointegration or long relationship between the series. This is against the backdrop that the F-statistic of 4.133 is greater than the lower and upper critical bounds limits of 2.947 and 4.088 respectively at 5% significance level

4.3 ARDL Estimates

Since long run relationship between the variables does not exist, it is necessary to only conduct the ARDL short run estimates as shown in Table 4.4.

Table 4.5: ARDL Short run Estimates

Variable	Short Run Estimates		
	Coefficient	t-Statistic	Prob.
D(LogOIREV)	0.211327	2.406075	0.0246
D(LogDEFEX)	-0.649849	-5.67388	0.0000
D(LogFDEBT)	-0.24475	-3.9568	0.0006
D(LogEXRES)	-0.227479	-3.03871	0.0058
CointEq(-1)*	-0.053725	-5.49456	0.0000
R-squared	0.651615		
Adjusted R-squared	0.601846		
Durbin-Watson stat	1.547469		

Source: *Eviews 10*

Table 4.5 presents the short-run coefficients estimates. Oil revenue (LogOIREV), has a coefficient of 0.2113 and a p-value of 0.024, indicating that it is statistically significant. This implies that a percentage increase in LogOIREV leads to a 0.21% increase in GDP, and vice versa. This demonstrates a positive relationship, suggesting that as oil revenue increases, gross domestic product also increases and vice versa. By extension, this means that during the review period, the revenue realized were invested in critical areas which could yield quick win, thereby positively impacting economic growth. This finding aligns with the works of Amade, Atabo and Joshua (2021) and Ezeobele and Uchime (2024) that concluded that oil revenue has a positive influence on the level of economic growth of Nigeria.

The coefficient of insecurity proxied by defense expenditure (LogDEFEX) is -0.6498, exhibiting a negative relationship with GDP in the short run. This result is statistically significant (P-value=0.000), implying that a percentage increase on defense expenditure could result to 64% decline in the GDP. This suggests that increased spending on insecurity does not stimulate economic growth, as it does not constitute productive investment in the real sectors (i.e., manufacturing, service and agriculture) of the economy and as a result, it hinders growth. This outcome is consistent with the findings of Adofu and Alhassan (2018), Ezeala and Nzewi (2022) as well as Opara, Iredia and Wayas (2022).

Additionally, public debt (LogFDEBT) coefficient is -0.2447, with a p-value of 0.0006, indicating a statistically significant negative relationship. This suggest that a percentage increased in public debt leads to a 24% reduction in GDP. This implies that increasing public debts without proper management particularly when such debt does not generate sufficient cashflow to fund itself. It can cause harm to the GDP growth. This is because it diverts the present and future revenue away from critical sectors that could otherwise trigger economic growth. This finding is supported by the works of Heimberger (2021) and Puonti (2022).

Also, the external reserve (LogEXRES) has -0.053 and 0.0000 as its coefficient and p-value respectively. Thus, revealing a negative and statistically significant relationship with GDP. This imply that a percentage increase in external reserve, results in a 5.3% reduction in the GDP. This outcome can be attributed to poor management of the reserve, particularly if they are not utilized to support domestic production. In such cases, an increase in it can cause harm to economic growth. This outcome is in consistent with the work of Nwamuo (2023).

More so, ECM is significant is confirms a long run equilibrium relationship between the series but the lack of significant long run coefficient indicates that the adjustment process is slow and the long run equilibrium is not strongly influenced by the factored variables. Furthermore, the adjusted R-

squared is 0.60 which implies that 60 per cent variation in the GDP is accounted by the oil revenue, public debt, insecurity and external reserves, thereby depicting a good fit of the model. The DW-statistic is 1.5 which is close to 2 which according to rule of thumb that DW statistic ranges between 1.5 and 2.5 are relatively normal and Field (2009) stress that values under 1 or more than 3 are a definite cause for concern. Therefore, based on this, that there is no significant autocorrelation and thus, the model is well specified.

Table 4.6: ARDL Long-run Estimates

Variable	Long Run Estimates		
	Coefficient	t-Statistic	Prob.
LogOIREV	6.164709	0.511085	0.6142
LogDEFEX	-2.067033	-0.462278	0.6482
LogFDEBT	-0.370187	-0.22115	0.8269
LogEXRES	-3.875313	-0.439141	0.6647

Source: *Eviews 10*

From Table 4.6, oil revenue (LogOIREV) in long run has a positive coefficient of 6.164, which aligns with a priori expectation, but the relationship is not statistically significant. This can be attributed to factors such as mismanagement of oil revenue, overdependence on oil exports or insufficient economic diversification. Despite lack of significance, this finding is consistent with previous studies, particularly the work of Akinleye, Olowookere and Fajuyagbe (2021).

Insecurity which was proxied by defense expenditure (LogDEFEX), has a negative coefficient of -2.067, consistent with economic theory (i.e., endogenous growth theory). However, the relationship is not statistically significant as indicated by a high p-value of 0.6482. This is because high government spending on security, in response to the widespread of insecurity across Nigeria. Such spending has succeeded in crowding out private investment and diverting resources meant for developmental projects that could spur economic growth. Also, owing to the large informal sector, it has facilitated in making the Nigerian economy more resilient to insecurity and related other shocks, thereby making the relationship between insecurity and GDP to be non-significance in the long run. In lieu this, the outcome is consistent with the work of Agogbua, Mgbotogu and Ugochukwu (2022).

Public debt (LogFDEBT) in the long run, has a negative coefficient of -0.3701 which is aligns with economic theory (i.e., Ricardian Equivalence and Crowding out theory). However, the relationship but it is not statistically significant. This is because the upward trajectory of debt incurred by the Nigerian government has not been properly managed to support productive investment that could spur economic growth. Furthermore, since growth of the Nigerian economy is primarily driven by the private sector, the impact of public debt on growth is reduced in the long run. This outcome aligns with the previous studies such as Puonti (2022) and Akanbi, Uwaleke and Ibrahim (2022).

External reserves (LogEXRES) have a negative coefficient of -3.875 implying that in the long run which contradicts a priori expectations, but it is non-significant. This is because of poor management of the reserves, increased capital flight, inflationary pressure or exchange rate misalignments which has a linked to limited monetary policy effectiveness. Thereby resulting to its non-significance to economic growth in the long run. This finding is supported by the work of Nwamuo (2023) which concluded that the

nexus been external reserve and economic growth is insignificant in the long run.

4.4 Granger Causality Test

This test was done to reveal the complex relationship between the dependent (GDP) and independent variables (Oil revenue, Insecurity, External Reserves and Public debt)

Table 4.7 Granger Causality Test

Null Hypothesis:	Obs	F-Statistic	Prob.
LogOIREV does not Granger Cause LogGDP	33	5.48877	0.026
LogGDP does not Granger Cause LogOIREV		0.37393	0.5455
LogDEFEX does not Granger Cause LogGGDP	33	2.70813	0.1103
LogGDP does not Granger Cause LogDEFEX		4.51523	0.0419
LogFDEBT does not Granger Cause LogGDP	33	0.90464	0.3491
LogGDP does not Granger Cause LogFDEBT		7.78144	0.0091
LogFDEBT does not Granger Cause LogOIREV	33	0.19024	0.6658
LogOIREV does not Granger Cause LogFDEBT		5.88583	0.0215
LogFDEBT does not Granger Cause LogDEFEX	33	0.57262	0.4551
LogDEFEX does not Granger Cause LogFDEBT		8.92983	0.0056
LogEXRES does not Granger Cause LogDEFEX	33	5.34253	0.0279
LogDEFEX does not Granger Cause LogEXRES		11.1725	0.0022

Source: Eviews 10

Table 4.7 depicts the granger causality on the series. LogOIREV granger cause LogGDP because it possessed a p-value of 0.026 but LogGDP does not granger cause LogOIREV. This implies that there exists a uni-directional relationship between oil revenue and GDP which in other words, means that past values of oil revenue have predictive power for GDP.

LogDEFEX and LogGDP also exhibits a uni-directional relationship because LogGDP granger cause LogDEFEX because its p-value is less than 5 per cent. This implies that changes in GDP can predicts the level of insecurity. This further means that an increase in the GDP which translates to better wellbeing could reduce the level of insecurity in an economy and vice versa.

Likewise, LogDEBT and LogGDP possess a unidirectional relationship because LogGDP granger cause LogDEBT under the period review. This suggests that changes in GDP can influence the levels of public debt. This is because a country with low GDP opts for debt to finance its activities.

More so, LogOIREV granger cause LogFDEBT, thus revealing a unidirectional relationship which by extension means that past values of oil revenue can predict or influence the level of a country's public debt whereas LogDEFEX granger cause LogFDEBT meaning that insecurity granger causes public debt. Thus, implying that the level of insecurity can predict the level of a public debt. Conversely, LogEXRES and LogDEFEX has a bi-directional relationship as their respective p-values is less than 5 per cent. This implies that they can influence each other. In other words, means that a reduction in the level of insecurity could assist in stabilizing reserves.

4.5 Diagnostic Testing

Diagnostic Test was carried out to ascertain whether or not the model is well specified and stable couple with its validity and reliability.

4.5.1 *Residual Test*: These tests include Jacque-Bera Test (Normality test), the Breusch-Pagan Test (Heteroscedasticity test), the Lagranger Multiplier (LM) Test, also known as the Test for Serial Correlation

Table 4.8: Diagnostic Results

Test Statistic	Result
Normality (Jarque-Bera)	0.125 [0.939]
Heteroscedasticity$\chi 2(2)$	0.885 [0.485]
Serial Correlation$\chi 2(2)$:	1.209 [0.283]

Source: EViews 10 Output

Table 4.8 shows the results of the model's diagnostic test, which confirms that it is normal, homoscedastic, free from serial-correlation, and misspecification because their respective p-values are greater than 5 per cent.

4.5.2 *Model Stability Test*: The cumulative sum of recursive residuals (CUSUM) and CUSUM sum of Squares tests were conducted to check for the stability of the model.

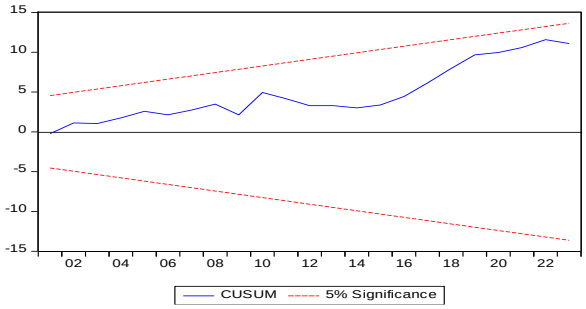

Figure 4.1: CUSUM Test

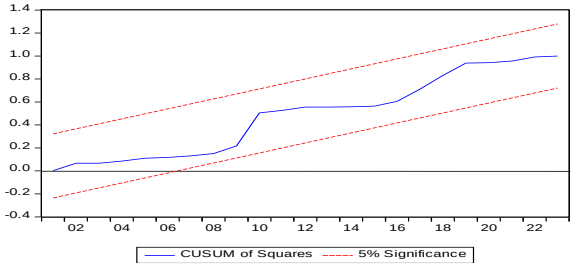

Figure 4.2: CUSUM of Square Test

From figure 4.1 and 4.2 which represents the CUSUM and CUSUM of Squares shows that the model is stable because the plots indicated by the blue lines are within the lower and upper bounds as buttressed by the works of Tang and Lean (2007).

5.0 Conclusion and Recommendations

The impact of oil revenue, public debt, insecurity, external reserves on economic growth cannot be overemphasized particularly in the context of the Nigerian economy. The study concludes that while oil revenue has a short-term impact on Nigeria's economic growth, its long-term impact is insignificant, indicating that reliance on oil revenue is not sufficient for a sustainable growth. Insecurity and public debt negatively impact on economic growth in the short run while external reserves also hinder growth, likely due to their inefficient utilization and a focus on financing imports rather than domestic production. Therefore, based on this outcome, the study offered the following recommendations which include:

i. The Nigeria Government should reduce its dependence on oil revenue by investing in other critical sectors such as agriculture, manufacturing and technology to create a more and resilient diversified economy.

ii. There is need for the Government to ensure that borrowed funds are deployed to productive and self-sustaining projects that contributes to the economic growth instead of accumulating debt without reflecting on growth.

iii. Government at all levels should implement effective security strategies to reduce the negative impact of insecurity on economic activities and investor confidence.

iv. External reserves should be strategically deployed to support domestic production and mitigate

against external shocks rather than being used for import financing.

v. There is need for government and relevant stakeholders to build strong institutions and social structures which can help to absorb shocks and ensure long-term stability, particularly in the face of insecurity and fluctuating oil reserves.

References

Abdelsalam, M. A. M. (2023). Oil price fluctuations and economic growth: The case of MENA countries. *Review of Economics and Political Science, 8*(5), 353-379. https://doi.org/10.1108/REPS-12-2019-0162

Adofu, I., & Alhassan, M. (2018). The implication of insecurity on economic development in Nigeria. *Journal of Economics and Sustainable Development, 9*(18), 101-111.

Akanbi, A., Uwaleke, U. J., & Ibrahim, U. A. (2022). Effect of external debt service on economic growth in Nigeria. *Journal of Service Science and Management, 15*, 437-451. https://doi.org/10.4236/jssm.2022.154026

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

Amade, A. M., Atabo, F. O., & Joshua, U. (2021). Oil revenue and economic growth in Nigeria: An empirical analysis. *Journal of Economics and Allied Research, 6*(1), 248-263.

Awosusi, C. T. (2022). An assessment on the linkage between external reserves and economic performance in Nigeria. *FUOYE Journal of Finance and Contemporary Issues, 2*(1), 12-20.

Agogbua, S. N., Mgbotogu, C. D., & Ugochukwu, C. (2022). Impact of insecurity on Nigerian economic growth and development. *International Journal of Development and Economic Sustainability, 10*(5), 1-13.

Central Bank of Nigeria. (2023). *Statistical bulletin*. Central Bank of Nigeria.

Debt Management Office. (2024). *Quarterly debt report*. Debt Management Office.

Ebimobowei, A. (2022). Oil revenue and economic growth of Nigeria (1990–2019). *African Journal of Economics and Sustainable Development, 5*(1), 17-46. https://doi.org/10.52589/AJESD-JWZXIFNW

Ezeala, G., & Nzewi, U. C. (2022). Insecurity and economic growth in Nigeria. *International Journal of Research Publication and Reviews, 3*(5), 3399-3408. https://www.ijrpr.com

Ezeobele, I., & Uchime, U. A. (2024). The impact of oil revenue on economic growth of Nigeria. *Top Journal of Economics and Finance, 9*(5), 96-110.

Field, A. P. (2009). *Discovering statistics using IBM SPSS statistics* (5th ed.). Sage Publications.

Garga, A. (2015). The effect of insecurity and poverty on human development at the municipal level in Northern Nigeria. *Journal of Emerging Trends in Economics and Management Sciences, 6*(7), 268-276.

Gómez-Puig, M., Sosvilla-Rivero, S., & Martínez-Zarzoso, I. (2022). On the heterogeneous link between public debt and economic growth. *Journal of International Financial Markets, Institutions & Money, 77*. https://doi.org/10.1016/j.intfin.2022.101528

Heimberger, P. (2021). Do higher public debt levels reduce economic growth? *Working Paper 211.* The Vienna Institute for International Economic Studies.

Hilton, S. K. (2021). Public debt and economic growth: Contemporary evidence from a developing economy. *Asian Journal of Economics and Banking, 5*(2), 173-193. https://doi.org/10.1108/AJEB-11-2020-0096

Hordofa, D. F. (2023). Impacts of external factors on Ethiopia's economic growth: Insights on foreign direct investment, remittances, exchange rates, and imports. *Heliyon, 9.* https://doi.org/10.1016/j.heliyon.2023.e22847

Maduka, A. C., Alumona, I. M., & Chukwuma, O. T. (2014). Impact of insecurity on foreign direct investment in Nigeria: An empirical analysis. *Nnamdi Azikiwe Journal of Political Science, 4*(2), 54-65.

Matsumoto, T. (2019). The optimal pace of foreign reserve accumulation in emerging and developing countries. *IMES Discussion Paper Series 19-E-04, Institute for Monetary and Economic Studies, Bank of Japan.*

National Bureau of Statistics. (2024). *Trade statistics report.* National Bureau of Statistics.

Nwamuo, C. (2023). External reserves and economic growth in Nigeria: An empirical analysis. *Greener Journal of Economics and Accountancy, 10*(1), 1-8.

Olujede, T., & Micheal, O. (2022). Oil revenue and Nigeria's economic growth: A resource curse? *International Journal of Management Studies and Social Science Research, 2*, 291-296.

Onah, V. C., Ihegboro, I. M., & Ojiakor, I. (2022). External reserves and economic growth in Nigeria. *World Journal of Innovative Research, 12*(2), 10-20.

Opara, E. O., Iredia, D. O., & Wayas, M. M. (2022). The effect of insecurity on sustainable national economic development of Nigeria. *The Nigerian Journal of Research and Production, 25*(1), 1-9.

Paul, O. (2015). The role of agriculture in Nigeria's economic development. *Journal of Agricultural Economics, 7*(1), 23-34.

Puonti, P. (2022). Public debt and economic growth. *ETLA Report, 127.* The Research Institute of the Finnish Economy.

Romer, P. M. (2006). Increasing returns and long-run growth. *Journal of Political Economy, 94*(5), 1002-1037.

Tang, C. F., & Lean, H. H. (2007). The stability of money demand in China: Evidence from the ARDL model. *Economics Bulletin, 6*(9), 1-10