

CRUDE OIL PRICE AND ECONOMIC GROWTH OF NIGERIA

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ABSTRACT

This study investigated the nexus between crude oil price and economic growth of Nigeria. Three specific objectives formulated in the study were: to determine the extent to which global crude oil price affects economic growth rate; investigate the relationship between crude oil shipping freight rates and economic growth rate; and to ascertain the effect of Nigeria's annual crude oil output on economic growth rate. Data were sourced from the Central Bank of Nigeria Statistical Bulletin, Organization for Petroleum Exporting Countries and the World Bank and analyzed using the Auto Regressive Distributed Lag (ARDL) model. The results revealed that global crude oil price has negative effect on economic growth rate of Nigeria and the negative effect is statistically significant, there is negative relationship between freight rate and Nigeria's GDP growth rate but the negative relationship was not statistically significant, and that annual crude oil output has a significantly positive effect on GDP growth rate of Nigeria. The research concluded that crude oil output increased GDP growth rate while crude oil price decreased growth thus reinforcing the central role of domestic production in driving Nigeria's economic performance and Nigeria's vulnerability to external price shocks. It was recommended that Nigeria should strengthen mechanisms that shield the economy from external oil price volatility through maintaining robust stabilization funds, strengthening the excess crude account or sovereign wealth fund, and minimizing shipping freight costs through investments in port infrastructure.

Key words: Crude oil price, economic growth, Nigeria, shipping freight rates

1. INTRODUCTION

Fluctuation in oil prices and the relation with economic growth has continued to generate and attract attention of scholars since the early works of Derby (1982) and Hamilton (1983) appear in the literature. Although empirical evidence suggest that exogenous shocks to oil prices has significant effect on economic growth, this evidence seem not to hold in the mid-1980s when serious decline in oil prices do not result in output boom in the period. This phenomenon has engaged many scholars in series of debates over the years. The impact of increasing crude oil prices on the economic activities of a country and the extent of such impact depends largely on whether the country is an importer or exporter of oil.

For example, exporter of crude oil like Nigeria, Kuwait, Saudi Arabia and Libya are on the gaining side because the receipt from exports add to their foreign reserves and improve their balance of payments positions. This is more so when receipt form oil exports are greater than the expenditures on imports and other merchandize. However, importers of oil are likely to suffer high cost of production, unemployment, balance of payment disequilibrium and drain of resources. On the other hand, a fall in oil prices tends to benefit the importers and put the exporters on the losing side.

The current issue dominating the debate on crude oil price in international market is how the fluctuation affects the decisions about output made by producers like the Organization of Petroleum Exporting Countries (OPEC), independent petro-states like Russia, and private oil- producing firms like ExxonMobil. This is because Oil is a commodity and as such, it tends to see larger fluctuations in price than more stable investments, such as stocks and bonds. The trends of oil price in the global market reveal that price of oil dropped precariously from a peak of \$104 per barrel by the third quarter of 2014. Specifically, the OPEC average monthly basket price of oil peaked at \$107.89 per barrel in second quarter of 2014 dwindled very sharply to \$59 per barrel at the last quarter of 2014. It further decelerated to \$54.4 by the first quarter of 2015, resulting in Nigeria experiencing a sudden and significant drop in revenue inflow from oil sales (Gumi, Buhari & Muhammad, 2016). By 2020, oil price per barrel rose marginally to \$82.95, in 2023 it remained \$82.95 and by end of 2024, it had dropped to \$79.86 (Statista, 2024).

Generally, Nigeria as a country depends so much on crude oil for its economic survival. According to the 2023 BP Statistical Energy Survey, Nigeria had proven oil reserves of 37.1 billion barrels at the end of 2023 and that is roughly 2.2 % of the world's reserves. Also, the country has proven natural gas reserves of

5.1 trillion cubic meters which contributes to 2.7% of the world total at the end of 2015 rising to 10 trillion in 2023. On the average, Nigeria oil production was 2.1m barrel per day with refining capacity of 407,800 barrel per day in 2015. In 2023, this dropped to 1.4 million bpd (OPEC, 2023). Also, the value of petroleum exports stands at 41,818 million dollars out of 45,365 million dollars total export value (OPEC annual statistical report 2023). This sector generates about 91% of foreign earnings and contributes 82% of government revenue.

In a mono-economy like Nigeria, crude oil price oscillations make it difficult to predict the future of the economy due to the depletion of oil money and the poor allocation and misuse of this cash (Abass and Ibekwe, 2022). Since Nigeria imports refined oil, there has been a lot of debate regarding why this is necessary. The International Monetary Fund (IMF, 2023) estimates show that crude oil price per barrel fell to \$41.5 in 2020 and the price has remained at \$82.95 as at end of 2023. For oil-dependent countries, such as Nigeria, decreasing oil prices has the potential of affecting the economy, income level through depletion in profits, external reserve depletion and the overall economic growth. Based on this, the movement in the price of crude oil is so critical for serious macroeconomic planning in Nigeria thus it is crucial to examine the effect of crude oil price on the economy of Nigeria.

Some empirical efforts have been made to unravel the connection between crude oil price and Nigerian economy (Agu and Nyatanga, 2024; Ahmed and Habiba, 2022; Jack and Akidi, 2024; Kutu and Ohonba, 2024; Okoro, 2024; Onodje, Oke, Aina and Ahmed, 2024; etc.). In most of these studies, conflicting positions are noticeable but general findings show that while oil price changes have significant relationship with macroeconomic variables, it does not significantly affect output growth in Nigeria. However, study by Mordi and Adebisi (2019) examined the asymmetric effect of crude oil price on output and price with conclusion that impact of negative oil price shocks has greater effect than positive oil price shocks on the two variables (output and price). To properly extend the frontier of knowledge in this area, this study includes crude oil freight rate and annual crude oil output so as to solve the problem of policy inconsistency and inconclusive research debate on the crude oil price and economic growth nexus.

Again, as one of the largest oil producers in Africa, Nigeria's economy heavily relies on crude oil for revenues, which constitute a substantial portion of its national income. When crude oil price increases, the country strives to also increase crude oil output so as to maintain steady inflow of revenue for the government. However, when global crude oil price falls, crude oil output is expected to double or at least attain the global production benchmark in order to keep

government revenue on the positive side. Thus, driving sustained economic growth is a function of in-depth research on how existing crude oil price and output affect the economy. This will help drive policies that will guide government production volume. This present research serves the purpose of forecasting the economic growth trajectory vis-à-vis crude oil price in order to ensure correct forecast and sustained economic growth in an oil-dependent economy like Nigeria. Thus the need to comprehend and forecast future growth in GDP given the changes in crude oil prices serves as the motivation for this research.

The main objective of this research is to examine the effect of crude oil price on economic growth of Nigeria. To achieve this main objective, the study formulated specific objectives which are to:

1. ascertain the relationship between global crude oil price and economic growth rate of Nigeria;
2. determine the relationship between crude oil shipping freight rates and economic growth rate of Nigeria;
3. examine the extent to which annual crude oil output relates with Nigeria's economic growth;

The following questions serve as a guide to the study:

1. What is the relationship between global crude oil price and economic growth rate of Nigeria?
2. What is the relationship between crude oil shipping freight rates and economic growth rate of Nigeria?
3. To what extent has annual crude oil output related with Nigeria's economic growth? The following hypotheses were tested at 5% level of significance:

H01: There is no significant relationship between global crude oil price and economic growth rate of Nigeria.

H02: There is no significant relationship between crude oil shipping freight rates and economic growth rate of Nigeria.

H03: Annual crude oil output has no significant relationship with Nigeria's economic growth.

The unit scope of the study is on the effects of crude oil price on the economy of Nigeria. The research analyzes the relationship between fluctuations in crude oil prices, freight rate, crude oil output and key economic indicator (GDP). This analysis covers the time period (1986 – 2024), providing insights into how these fluctuations impact Nigeria's overall economic stability.

2. LITERATURE REVIEW

2.1 Conceptual Review Crude Oil Price:

Crude oil price refers to the amount of crude oil in the international market usually measured per barrel (OPEC, 2023). Crude oil price fluctuation is synonymous to oil price oscillation and fluctuation. Fluctuation is therefore viewed as the periods in which prices show wide swings for an extended time period followed by periods in which there is relative calm (Gujarati and Porter, 2009). Every economic series fluctuates either positively or negatively upward or downward but not constant overtime. The instability in oil price emanates from changes or fluctuations in either demand or supply side of the international oil market (Hamilton, 1983).

This could be due to some factors such as political upheavals in the oil-rich Middle East, and the growing oil demand in Asian countries. The effect of this disturbance has overtime been felt more by oil importing countries. Nigeria for instance is a blessed nation with huge deposit of mineral resources ranging from crude oil, coal and zinc etc. But due to the mismanagement of these resources, Nigeria has resorted to importing refined petroleum products due to the collapse of local refineries in the late 1980's which has been continuous even in the present time, exposing the economy to the severity of oil price fluctuations (Obioma, 2006).

Crude Oil Freight Rate:

Crude oil freight rate is the cost paid by an oil company to ship crude oil from its point of extraction to refineries or terminals. This rate is determined by a variety of factors, including the type of tanker used, the distance of the journey, and market conditions. The rates can fluctuate depending on the shipping capacity and demand within the global oil transportation market (Stopford, 2009). Freight rates are also shaped by broader geopolitical and economic factors. Crude oil-producing countries must consider freight rates when estimating the profitability of crude oil exports. This is particularly relevant for countries like Nigeria, which is a major crude oil exporter. Variations in freight rates can impact Nigeria's competitiveness in the global oil market (EIA, 2020).

Crude Oil Output:

Crude oil output is the total amount of crude oil produced from oil fields, measured over a defined period, typically daily or annually. The output level is influenced by factors such as the availability of technology, capital investment, the age of oil fields, and government policies (Zhang, 2018). The output of crude oil can fluctuate significantly based on both natural factors (e.g., declining reservoir pressures) and human factors (e.g., changes in regulatory frameworks).

Crude oil output also plays a crucial role in the global oil market. High output from major oil producers can influence global oil prices by affecting supply-demand dynamics. For instance, when countries like the

United States or Saudi Arabia increase their output, they can drive down oil prices, which may impact the profitability of smaller oil-producing countries (IEA, 2020). This is important for countries like Nigeria, where oil output changes can directly affect revenue generation from oil exports and the overall economic structure.

2.2 Theoretical Framework

The rent seeking theory recognizes the role of oil subsidies as a means through which individuals strive to maximize personal value thus generating social waste rather than social surplus (Black, 2002). Thus, crude oil price fluctuations can be used to grow the economy when the prices are high but the activities of rent-seekers may push the economy towards negative trend due to their personal pursuit. On the other hand, the resource-curse or the Dutch disease theory explains the situation whereby increase in the price of the discovered resource (crude oil) causes the marginal product of value of the resource to increase, which consequently increases wage rate in the newly discovered resource sector (Corden & Neary, 1982). The Dutch disease theory was first coined in the 1970s after the Netherlands discovered natural gas reserves, leading to a boom in its economy and a subsequent decline in other sectors, particularly manufacturing. There is also increased revenue resulting from the natural resource discovered, mainly when its price dramatically increases thus paving the way for imports to increase together with domestic absorption for both tradable and non-tradable goods.

Therefore, the fluctuations in oil prices may have asymmetric effects on different sectors of the economy. The Dutch disease theory suggests that while oil price booms may stimulate growth in the short run, they could hinder long-term diversification and economic stability if the non-

oil sector remains underdeveloped. On the other hand, the rent-seeking theory would suggest that fluctuations in oil prices exacerbate rent-seeking behaviors. During periods of high oil prices, rents become larger, intensifying the struggle for control over oil resources and potentially leading to economic mismanagement. In contrast, low oil prices may reduce the capacity for rent-seeking but also strain the government's fiscal capacity, potentially leading to economic instability. The potency of these two theories will be tested in the econometric model presented in this research.

2.3 Empirical Review

Ahmed and Habiba (2022) conducted a study to investigate the impact of oil price and oil production on Nigeria's economic growth from 1989 to 2020 using the Autoregressive Distributed Lag (ARDL) model. The study revealed a positive relationship between oil price and economic growth, both in the short and long term. However, the study found that oil production has a negative impact on real GDP in the short term, while its effect in the long term is statistically insignificant.

Ifeonyemetalu *et al.* (2022) utilized the Generalized Auto-Regressive Conditional Heteroscedasticity model to estimate the influence of oil price fluctuations on economic progress in Nigeria. The results indicate that oil prices have a favourable and strong effect on economic progress in Nigeria. Additionally, although instability in oil prices has favourable effects on economic progress, they are not significant. In a similar way, Baghebo and Atima (2023) found out that, oil revenue statistically and negatively impacts on economic growth. Abdul-Rahmoh *et al.* (2023) found that income from a nation's natural resource such as the petroleum has a positive significant influence on economic growth and development.

Oriakhi and Iyoha (2023) focused on the relationship between oil price changes and selected macroeconomic variables with emphasis on real GDP. Empirical results from variance autoregressive (VAR) model affirmed that, oil price Fluctuation granger causes real GDP. Oil price fluctuation impacts on economic growth through other variables in the economy such as real government expenditure and real exchange rate. This suggests that, oil price at the prevailing exchange rate determines the level of government spending.

Oyalabu and Oyalabu (2023) examined the effect of crude oil prices on economic growth in Nigeria between 1985 and 2019 based on the Renaissance growth model. The Auto-Regressive Distributed Lag showed that a positive and statistically insignificant relationship exists between crude oil price and economic growth in Nigeria. Agu and Nyatanga (2024) found that negative changes in oil prices exert

a greater influence on economic expansion than other types of oil price movements.

NA-Michail (2020) explored the relationship between world economic growth and seaborne trade volume, with a focus on how crude oil prices (used as a proxy for freight rates) affect global shipping demand and, in turn, influence economic growth. The analysis is conducted through regression technique revealed that there is a significant positive relationship between world economic growth and the volume of seaborne trade. They further found that as global GDP grows, the demand for crude oil and other goods transported by sea increases, which in turn boosts freight rates.

Siddiqui and Basu (2020) examined the cyclical relationships between oil prices and tanker freight rates, specifically focusing on how fluctuations in the price of crude oil affect the shipping industry. By using data on tanker freight rates (measured by the cost of transporting crude oil across major tanker routes), and shipping route, the authors confirms that oil price fluctuations have both short-term and long-term effects on tanker freight rates, with a clear cyclical component observed in both variables.

Anam, Ijim, Ironbar and Otu (2024) evaluated the Nigerian government's economic plans, such as the Economic Recovery and Growth Plan (ERGP), and their interactions with the oil sector. The study finds crude oil output continues to play a crucial role in Nigeria's industrial output and economic growth. Yahaya (2025) found that oil price volatility has a significant impact on Nigeria's economic growth. The analysis suggests that despite the oil boom, Nigeria's over-dependence on crude oil for revenue makes the economy susceptible to global price fluctuations. Peter and Orishio (2025) found that oil price fluctuations have a direct impact on industrial performance, with high oil prices stimulating growth, while low prices lead to a decline in manufacturing output.

Evidently, most of the studies focused on one aspect which is crude oil price without incorporating crude oil output and crude oil freight rate as intervening variables. Crude oil price determines output while freight rate determines the extent to which these two variables can impact on economic growth. Thus, the gap identified will be filled by specifying an econometric model using these three variables in order to make appropriate forecast on Nigeria's economic growth trajectory as it relates with crude oil prices.

3. METHODOLOGY

The ex-post facto research design is adopted for this research. The study collects secondary data from Central Bank of Nigeria (CBN) Statistical Bulletin, and the Organization of the Petroleum Exporting Countries (OPEC). Data covered 1986 to 2024 to ensure sufficient observations for robust statistical analysis. The Autoregressive Distributed Lag (ARDL)

method, served as the main estimation method (Pesaran et al., 2001).

3.1 Model Specification

The model shows the relationship between crude oil price and Nigeria's economic growth. The model in question is an adaptation of the one proposed by Oriakhi and Iyoha (2023). We include freight rate and crude oil output as a way of modifying their model while adopting growth rate of GDP as the dependent variable. The model is expressed as follows in a functional relationship:

$$GDP_t = f(COP_t, CFR_t, COO_t) \quad (1)$$

Where:

GDP = Gross domestic product growth rate COP =

Crude oil price

CFR = Crude oil freight rate COO = Crude oil output

The long-run ARDL model for the relationship

between crude oil price and economic growth is specified as:

$$GDP_t = \beta_0 + \beta_1 COP_t + \beta_2 CFR_t + \beta_3 COO_t + \mu_t \quad (2)$$

Where β_0 is the intercept term, β_1 – β_3 are the long-run parameters to be estimated, and μ_t is the stochastic error term.

The presence of cointegration among the variables is tested using the ARDL bounds test procedure. Once cointegration is confirmed, the error correction term is incorporated to capture the speed of adjustment toward long-run equilibrium

4. DATA ANALYSIS

The analysis commences with the test for unit root. The unit root is tested using the Augmented Dickey Fuller (ADF) test. This is followed by the test for long run relationship amongst the variables using the Bounds test. The model is then estimated prior to the hypotheses test.

Table 1: Results of ADF Unit Root Test

Variables	Level		First difference		Order of integration
	ADF Statistics	5% Critical Value	ADF Statistics	5% Critical Value	
GDP Growth Rate	-0.3214 [0.0124]	-2.9389	-3.4677 [0.0144]	-2.9411	1(1)
Crude Oil Price (COP)	-5.3764 [0.0146]	-2.9389	-1.4879 [0.3465]	-2.9411	1(0)
Freight Rate (CFR)	0.0101 [0.9950]	-2.9389	-4.9873 [0.0013]	-2.9411	1(1)
Crude Oil Output (COO)	-0.4851 [0.9801]	-2.9389	-7.9277 [0.0000]	-2.9411	1(1)

Source: Eviews Output

The stationarity - unit root test result in Table 1 revealed that crude oil price was stationary at level I(0) while GDP growth rate, freight rate and crude oil output were stationary at first differences I(1). That is,

they became stationary after first differencing. Given that the variables were integrated of order 1(0) and 1(1). The condition to fit in an ARDL model to test for long run relationship is satisfied.

Table 2: ARDL Bounds Test

Model	F-Statistic = 9.2735	
$GDPGR = f(COP, CFR, COO)$	K = 4	
Critical Values	Lower Bound I(0)	Upper Bound I(1)
10%	2.45	3.52
5%	2.86	4.01
1%	3.74	5.06

Source: Computed by the researcher using E-Views (2022).

Table 2 shows the Bounds test for co-integration using GDP growth rate as the dependent variable. It shows that, the F-statistic value of 9.2735 is higher than the upper bound critical value of 4.01 and lower bound critical value of 2.86 at 5% level of significance. This implies that the variables included in the model shared long-run relationships among themselves.

Table 3: Long-Run ARDL Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
COP	-0.033138	0.010164	-3.260331	0.0010
CFR	-0.002845	0.001473	-1.931470	0.0693
COO	0.177006	0.054051	3.274813	0.0042
C	9.407914	0.167208	56.264602	0.0000

Source: Computed by the researcher using E-Views (2022)

Table 3 shows the estimated ARDL long run coefficients to determine the relationship between crude oil price and economic growth in Nigeria. The estimated result showed that in the long run, crude oil output (COO) has positive relationship with GDP growth rate in Nigeria. In other words, crude oil output

increases GDP growth rate significantly by 0.177 units. However, crude oil price (COP) and crude oil freight rate both decreased Nigeria's GDP growth rate by 0.0031 and 0.0028 units respectively. However, the decrease was statistically significant for crude oil price but not for freight rate at 5% level.

Table 4: Short-Run ARDL Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(COP)	0.002025	0.001494	1.355604	0.1920
D(COP(-1))	0.002723	0.001547	1.760261	0.0953
D(COP(-2))	0.000646	0.001514	0.427054	0.6744
D(COP(-3))	0.002380	0.001804	1.319390	0.2036
D(CFR)	-0.001217	0.000342	-3.556206	0.0023
D(CFR(-1))	-0.000067	0.000452	-0.147372	0.8845
D(CFR(-2))	-0.000727	0.000302	-2.404261	0.0272
D(COO)	0.006527	0.030630	0.213081	0.8337
D(COO(-1))	-0.008093	0.029498	-0.274346	0.7869
D(COO(-2))	-0.048628	0.024472	-1.987062	0.0624
CointEq(-1)	-0.183954	0.030753	-5.981599	0.0000
R-squared	0.889363	Mean dependent var		10.41823
Adjusted R-squared	0.872226	S.D. dependent var		0.564170
S.E. of regression	0.020140	Akaike info criterion	-	4.665693

Source: Eviews Output (See Appendix)

The short-run dynamic model presented in Table 4 shows that the coefficient of determination represented by the Adjusted R-squared is 0.8894. Meaning that, the dynamic model is a good fit. Therefore, the crude oil price variables explain up to 88.94 per cent of the changes in economic growth rate for the period under study.

Given that the probability value of F-statistic (0.0000) is less than 0.05 at 5% level of significant, thus, crude oil price, freight rate and crude oil output are jointly significant in explaining increase in economic growth rate of Nigeria.

The short run coefficient of crude oil price is positively signed 0.002 implying a direct short run relationship with economic growth rate in Nigeria. The previous year's value has similar positive effect on growth. However, the second period lag up to the fourth lag period decreased growth.

Also, the short run coefficient of freight rate is negatively signed implying a negative short run relationship with economic growth in Nigeria. The

previous first, second and third lag periods showed positive effects on growth which ended in the current year which showed negative short run effect on growth.

However, crude oil output increased economic growth rate by 0.0065 in the short run but the increase was not significant. The previous year coefficient is negative implying negative effect on growth in the one period lag. However, the second and third lag periods showed positive coefficients.

4.1 Test of Hypotheses Hypothesis One:

H01: There is no significant relationship between global crude oil price and economic growth rate of Nigeria.

Based on the ARDL long run results, the coefficient of crude oil price is negative (-0.0331) and statistically significant at 5% (*p-value* = 0.0010), therefore we reject the null hypothesis and conclude that there is significant negative relationship between

global crude oil price and economic growth rate of Nigeria.

Hypothesis Two:

H02: There is no significant relationship between crude oil shipping freight rates and economic growth rate of Nigeria.

The coefficient of crude oil freight rate is negative but not statistically significant at 5% in both long-run and short-run, hence we fail to reject the null hypothesis, indicating that there is no significant relationship between freight rate and Nigeria's GDP growth rate.

Hypothesis Three:

H03: Annual crude oil output has no significant effect on Nigeria's economic growth.

The coefficient of crude oil output is positive and statistically significant at 1% in both short-run and long-run, hence we reject the null hypothesis, showing that annual crude oil output has a significant positive effect on GDP growth rate of Nigeria.

The findings from the analysis revealed that:

1. Global crude oil price has negative effect on economic growth rate of Nigeria and the negative effect is statistically significant.
2. There is negative relationship between freight rate and Nigeria's GDP growth rate but the negative relationship was not statistically significant.
3. Annual crude oil output has a significantly positive effect on GDP growth rate of Nigeria.

4.2 Discussion of Findings

The results of this study reveal three key insights about the dynamics between oil-related variables, freight rates, and Nigeria's economic growth. The negative and statistically significant impact of global crude oil prices on economic growth is both counterintuitive and revealing. Conventional wisdom often suggests that higher oil prices should benefit net oil exporters like Nigeria by boosting export revenues and fiscal space. However, this study's results align with evidence from Raji and Adekunle (2020) and Omolade and Shobande (2021), who noted that higher oil prices can exacerbate macroeconomic volatility, create disproportionately negative impacts on GDP, and prevent long-run economic sustainability. The finding also resonates with Olawale and Obafemi (2025) who showed that oil price booms often coincide with inflationary pressures thereby creating persistent macroeconomic instability.

Regarding the relationship between freight rates and Nigeria's GDP growth rate, the results show a negative but statistically insignificant effect. This implies that while higher freight costs may theoretically increase the import bill and reduce the competitiveness of

exports, the effect has not been strong enough to systematically alter growth trajectories within the study period. Similar patterns were noted by Mazeli, Adiga, & Uma (2025) who argued that trade-related costs in Nigeria tend to be overshadowed by more dominant macroeconomic variables such as oil exports and fiscal policies. The insignificance may also stem from Nigeria's heavy reliance on crude oil exports, which are less sensitive to freight rate fluctuations given the global demand structure. Nonetheless, the direction of the relationship is consistent with findings from Ogunyemi and Oladapo (2025) which suggests that freight costs of petroleum distribution indirectly suppress growth by reducing household consumption and investment.

The third finding that annual crude oil output has a significantly positive effect on GDP growth is consistent with theoretical expectations and prior empirical evidence. Unlike oil prices, which are external and volatile, production levels reflect domestic capacity utilization, investment in exploration, and policy effectiveness in the oil sector. Studies such as Nwachukwu and Eze (2025) and Okafor and Musa (2025) similarly observed that increases in crude oil production tend to bolster Nigeria's GDP through higher export volumes and government revenues.

5. Conclusion and Recommendations

The evidence indicates that fluctuations in global crude oil prices exert a negative and statistically significant effect on GDP growth, highlighting the country's vulnerability to external price shocks. In contrast, freight rate demonstrated a negative but statistically insignificant relationship with growth, suggesting that while rising trade costs may affect economic activities, their influence is overshadowed by more dominant structural factors in the Nigerian economy. Finally, crude oil output was found to significantly and positively influence growth, reinforcing the central role of domestic production in driving Nigeria's economic performance.

Taken together, these results underscore the paradoxical nature of Nigeria's dependence on oil: while production supports growth, exposure to global price cycles undermines stability. This duality highlights the persistent resource-curse dilemma that has characterized Nigeria's economic trajectory for decades. The study therefore, recommends as follows:

1. Since global crude oil prices have a negative and statistically significant effect on economic growth, Nigeria should strengthen mechanisms that shield the economy from external oil price volatility. This can be achieved through building and maintaining robust stabilization funds, strengthening the Excess Crude Account or Sovereign Wealth Fund, and adopting counter-cyclical fiscal policies.

2. Investments in port infrastructure, digital customs systems, and transportation networks will help minimize freight costs and improve oil trade competitiveness.
3. The significantly positive effect of crude oil output on GDP growth suggests that maintaining and improving crude oil production levels is critical for Nigeria's economy. However, this should be complemented with policies that channel oil revenues into productive investments

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