

Exchange Rate Volatility and Performance of Selected Oil and Gas Firms in Nigeria

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ABSTRACT

This study examined the relationship between exchange rate volatility and performance of selected oil and gas firms in Nigeria. However, the specific objectives were to examine the effect of exchange rate fluctuations on return on assets of selected oil and gas firms in Nigeria, to examine the relationship between inflation rate and return on assets of selected oil and gas firms in Nigeria, to ascertain the relationship between interest rate and return on assets of selected oil and gas firms in Nigeria and to assess the relationship between GDP growth rate and return on assets of selected oil and gas firms in Nigeria. The study adopted an ex-post facto research design and utilized a panel data of ninety (90) pooled observations gathered from nine (9) selected oil and gas firms in Nigeria over ten (10)-year period (2015-2024) and CBN Bulletin. This study employed a panel multiple regression technique to analyze the data via E-views 10.0 statistical package. The findings revealed that exchange rate has a non-significant negative relationship with return on assets of selected oil and gas firms in Nigeria while Inflation rate has a significant negative relationship with return on assets of selected oil and gas firms in Nigeria. It also revealed that Interest rate has a significant negative relationship with return on assets of selected oil and gas firms in Nigeria while GDP growth rate showed a significant positive relationship with between return on assets of selected oil and gas firms in Nigeria. It was thus concluded that exchange rate volatility has a significant influence on the performance of selected oil and gas firms in Nigeria. The recommendations made included that firms should develop strategies to manage the risks associated with interest rates, such as debt management and interest rate hedging, to minimize its negative impact on return on assets.

Keywords: *Exchange Rate, Oil and Gas Firms, Performance, Nigeria*

1. INTRODUCTION

The Background

The persistent fluctuations in the exchange rate in Nigeria, particularly since the country's transition to a floating exchange rate regime, have posed significant challenges to the oil and gas industry, a critical sector of the Nigerian economy (Akinlo & Lawan, 2015; Akinmoladun et al., 2021; Ayinde, 2014). Despite its significance, the impact of exchange rate volatility on the

performance of oil and gas firms in Nigeria is not yet fully understood, with extant studies yielding mixed results (Akinmoladun et al., 2021; Anyanwu et al., 2017). The complexity of the issue is compounded by the fact that the impact of exchange rate volatility on oil and gas firms in Nigeria depends on various factors, including the firm's level of indebtedness and its ability to hedge against exchange rate risk.

The lack of clarity on the impact of exchange rate volatility on the performance of oil and gas firms in Nigeria is a significant problem that needs to be addressed. This is because exchange rate fluctuations can have significant implications for the profitability and competitiveness of oil and gas firms in Nigeria, which can in turn impact the country's foreign exchange earnings and government revenue (Anyanwu et al., 2017; Basiru, 2020). Furthermore, the oil and gas industry's contribution to the country's GDP, which has been estimated to be around 1015% (Adegboye, 2023), makes it imperative to understand the impact of exchange rate volatility on the industry's performance.

Theoretical models, such as the Purchasing Power Parity (PPP) theory, the Interest Rate Parity (IRP) theory, and the Portfolio Balance Model, provide a framework for understanding the relationship between exchange rate volatility and the performance of oil and gas firms in Nigeria (Keynes, 1923; Cassel, 1922; Branson, 1968). However, these models have not been fully explored in the context of the Nigerian oil and gas industry, and therefore, there is a need for further research on the topic. The problem of exchange rate volatility and its impact on the performance of oil and gas firms in Nigeria is a complex one that requires a comprehensive understanding of the underlying factors and relationships.

The Objectives

The main objective of this study was to examine the relationship between exchange rate volatility and performance of selected oil and gas firms in Nigeria. However, the specific objectives were to:

- i. Examine the effect of exchange rate on return on assets of selected oil and gas firms in Nigeria
- ii. Examine the relationship between inflation rate and return on assets of selected oil and gas firms in Nigeria.
- iii. Ascertain the relationship between interest rate and return on assets of selected oil and gas firms in Nigeria.
- iv. Assess the relationship between GDP growth rate and return on assets of selected oil and gas firms in Nigeria.

Operational hypotheses

To answer the research questions of this study, the following research hypotheses were tested.

Ho1: Exchange rate has no significant relationship with return on assets of selected oil and gas firms in Nigeria.

Ho2: Inflation rate has no significant relationship with return on assets of selected oil and gas firms in Nigeria.

Ho3: Interest rate has no significant relationship with return on assets of selected oil and gas firms in Nigeria.

Ho4: GDP growth rate has no significant with return on assets of selected oil and gas firms in Nigeria.

2. THEORETICAL/ CONCEPTUAL ISSUES

Conceptual framework

Exchange rate volatility

Exchange rate volatility refers to the fluctuations in the value of a country's currency relative to other currencies. This volatility has significant impact on various sectors of the economy, including the oil and gas sector. According to Ghauri et al. (2024), exchange rate volatility can affect the competitiveness of a country's oil and gas exports, making them more or less attractive to foreign buyers. For instance, a depreciation of the naira (Nigeria's currency) makes Nigerian oil and gas exports cheaper and more competitive in the global market, thereby boosting demand and revenue (Mordi, 2022). On the other hand, an appreciation of the naira makes Nigerian oil and gas exports more expensive and less competitive, leading to a decline in demand and revenue. The oil and gas sector is particularly vulnerable to exchange rate volatility due to its high dependence on foreign exchange earnings (Thomas & Christopher, 2025; Uford, et al. 2022). According to Ekundayo et al. (2021), the oil and gas sector accounts for a significant proportion of Nigeria's foreign exchange earnings, making it highly susceptible to fluctuations in the exchange rate. A depreciation of the naira can lead to an increase in the value of oil and gas exports, thereby boosting foreign exchange earnings (Oyati, 2016). However, a sharp depreciation of the naira can also lead to an increase in the cost of imported equipment and services, thereby reducing the profitability of oil and gas companies (Anyanwu et al., 2017).

The impact of exchange rate volatility on the oil and gas sector in Nigeria has been a subject of extensive research. Studies have shown that exchange rate volatility can have both positive and negative effects on the sector (Mordi, 2022; Onwuka, 2022). On the positive exchange rate volatility can provide opportunities for Nigerian oil and gas companies to export their products at competitive prices, thereby earning foreign exchange and boosting their revenue (Ezie et al., 2020). Umoh (2021; Uford, 2022) mentioned that Entrepreneurship is a first-class global theory through which many first world nations expand their economic strength. On the negative side, exchange rate volatility can increase the cost of imported equipment and services, thereby reducing the competitiveness of Nigerian oil and gas companies (Fakiyesi, 2013). Fiscal deficit is caused and enhanced by factors such as a shortfall in revenue from taxes, large public sector, non-diversification of the revenue base of the economy, the rising cost of government activities due to rising inflation rate, corruption and mismanagement of available public funds, demographic changes and decline in terms of trade (Ekpo et al., 2024).

Furthermore, exchange rate volatility can also affect the ability of Nigerian oil and gas companies to predict their revenue and costs, making it difficult for them to make informed investment decisions (Okafor, 2022). While a depreciation of the naira can boost foreign exchange earnings and competitiveness, a sharp depreciation tends to also lead to an increase in the cost of imported equipment and services. The goal of microcredit is to enable individuals to generate income and

improve their economic situation, (Ekaetor, 2026). Therefore, it is essential for policymakers to implement effective exchange rate management strategies to mitigate the negative impacts of exchange rate volatility on the oil and gas sector. Therefore, creativity denotes bringing new ideas to reality through imagination, (Umoh & Ekpo, 2025). According to Ghauri et al. (2024), this can include implementing a flexible exchange rate regime, diversifying the economy, and promoting foreign investment. By doing so, policymakers can help to promote the growth and development of the oil and gas sector in Nigeria.

Inflation Rate

Inflation rate significantly affects the oil and gas sector in Nigeria. As defined by Jhingan (2003), inflation rate refers to the rate at which the general price level of goods and services in an economy increases over time. Inflation happens when the prices of goods and services rise, which reduces the purchasing power of money (Edet et al., 2024; Ndaeyo et al, 2025).

In the oil and gas sector, inflation rate impacts the cost of production, profitability, and investment decisions. Oyati (2016) notes that high inflation rates increase production costs, reducing oil and gas companies' profitability. The oil and gas sector in Nigeria is vulnerable to inflationary pressures due to its dependence on imported equipment and services (Anyanwu et al., 2017). Mordi (2022) observes that exchange rate changes affect the sector through the pass-through effect, increasing the price of imported goods and services. This contributes to higher inflation rates. Additionally, the sector is affected by demand-pull inflation, which occurs when aggregate demand exceeds available supply (Okafor, 2022). Edet et al. (2024) mentioned that SWOT Analysis is a strategic planning tool used to identify and analyze the internal and external factors that can impact a startup's success.

Studies have examined the impact of inflation rate on Nigeria's oil and gas sector. Onwuka (2022) found a significant negative relationship between inflation rate and oil and gas companies' profitability. Ezie et al. (2020) identified inflation rate as a significant determinant of production costs in the sector. These findings highlight the importance of inflation rate in affecting Nigeria's oil and gas sector. Ghauri et al. (2024) suggest that policymakers implement monetary policy measures to reduce inflation rates, mitigating their impact on the sector. Therefore, this may lead to the introduction of new products or techniques or of a new quality that consumers are not yet familiar with. (Umoh, 2024).

Interest Rate

Interest rate is a crucial macroeconomic variable that affects the overall performance of an economy. According to Jhingan (2003), interest rate is the price of borrowing money, and it plays a significant role in determining the level of investment, consumption, and economic growth. In the context of Nigeria, interest rate has been identified as a significant determinant of economic growth (Utile et al., 2018). For instance, a high interest rate can discourage borrowing and investment, while a low interest rate can encourage borrowing and investment. Interest rate affects exchange rate volatility by influencing the demand for domestic currency, with higher interest rates attracting foreign investors and appreciating the exchange rate. One of the most common ways governments use taxes in fiscal policy is by adjusting the tax rate (Ekaetor & Udom, 2026). Conversely, lower interest rates lead to a depreciation of the exchange rate, increasing volatility

(Mordi, 2022). A fiscal deficit is an excess of the government's total expenditure over its total revenue in an accounting year (Ekpo et al., 2024).

The impact of interest rate on the Nigerian economy has been examined in several studies. For example, Olaniyan et al. (2020) found that interest rate has a significant negative impact on firm investment decisions in Nigeria. Similarly, Effiong (2020) found that interest rate has a significant negative impact on real sector output growth in Nigeria. These findings suggest that interest rate is an important macroeconomic variable that affects the Nigerian economy. According to Oyati (2016), interest rate can also affect the exchange rate, which in turn can affect the overall performance of the economy. John et al. (2024) investigated the effect of the size of firms on the nexus between the financing leverage and financial stability of listed industrial goods companies in Nigeria. The constant rise in the cost of imports in such a troubled economy like Nigeria's requires the need for the nation to look inward by prioritising indigenous products in her multi-sectorial developmental drive (Umoh et al., 2024).

The relationship between interest rate and exchange rate has been examined in several studies. For instance, Mordi (2022) found that interest rate has a significant impact on exchange rate volatility in Nigeria. Similarly, Okafor (2022) found that interest rate has a significant impact on the performance of the manufacturing sector in Nigeria. Economists are vastly divided on the desirability and impacts of fiscal deficit on the economy (Ekpo et al., 2024). These findings suggest that interest rate is an important determinant of exchange rate volatility and oil and gas sector performance in Nigeria.

GDP Growth Rate

GDP growth rate is a critical indicator of a country's economic performance, and the oil and gas industry play a significant role in shaping this indicator. In Nigeria, for example, the oil and gas sector is a major driver of economic growth, accounting for a significant proportion of the country's GDP (Okafor, 2022). As a result, fluctuations in global oil prices have a significant impact on the sector's revenue and profitability, which in turn can affect the country's GDP growth rate (Asuquo et al, 2024). The oil and gas sector's contribution to GDP growth rate is influenced by various factors, including government policies, global market trends, and technological advancements. However, creativity denotes bringing new ideas to reality through imagination. It suggests innovativeness through thought (Umoh & Ekpo, 2025). In Nigeria, for example, the government's efforts to increase investment in the oil and gas sector can have a positive impact on GDP growth rate (Adanbai, 2014). Additionally, advancements in technology can improve the sector's efficiency and productivity, leading to increased revenue and profitability, and ultimately contributing to higher GDP growth rates. One of the most common ways governments use taxes in fiscal policy is by adjusting the tax rate (Akpan & Uford, 2024; Ekaetor & Udom, 2026).

GDP growth rate is an important indicator of a country's economic performance, and the oil and gas industry play a significant role in shaping this indicator. The sector's contribution to GDP growth rate is influenced by various factors, including government policies, global market trends, and technological advancements. GDP growth rate in the oil and gas sector can also be influenced by the sector's linkages with other sectors of the economy. For instance, the oil and gas sector's demand for goods and services from other sectors, such as manufacturing and construction, can have a positive impact on those sectors' growth rates, and ultimately contribute to higher GDP

growth rates (Akinmoladun et al., 2021). Umoh (2023) mentioned that in contemporary global economy, there is advocacy for self-reliance and dependency on local raw material for refining of finished products and hence the focus on innovations with comparative advantage by every nation for services guarantee and efficiency. Furthermore, the sector's revenue and profitability can also have a positive impact on government revenue, enabling the government to increase its expenditure on public goods and services.

Firm Performance

Financial performance is a critical aspect of the oil and gas industry, as it determines the viability and sustainability of companies operating in this sector (Okafor, 2022). Financial performance can be measured using various metrics, including return on investment (ROI), return on assets (ROA), and return on equity (ROE) (Akinmoladoun et al., 2021; Charles & Uford, 2023). Efficient energy generation and distribution through green sources is key to improving environmental quality, plummeting energy-related CO₂ emissions and stimulating green economic and financial development in particularly in MINT countries endowed with immense REN and green energy sources (Prince et al., 2023). Social responsibility disclosure can be said to be a practice that involves reporting to stake holders about the social and environmental impact of economic activities of an organization (John et al., 2025).

In the oil and gas industry, financial performance is heavily influenced by factors such as global oil prices, exchange rates, and government policies (Utile et al., 2018). For instance, a study by Okafor (2022) found that exchange rate policy has a significant impact on the financial performance of oil and gas companies in Nigeria.

The oil and gas industry is highly capital-intensive, and companies operating in this sector require significant investments to maintain and expand their operations (Olaniyan et al., 2020). As a result, financial performance is critical to the survival and growth of oil and gas companies. A study by Mordi (2022) found that financial performance is a significant determinant of the competitiveness of oil and gas companies in Nigeria. Furthermore, financial performance can also impact the ability of oil and gas companies to invest in new technologies and projects, which is critical to their long-term sustainability (Oyati, 2016).

Exchange rate volatility is a significant risk factor for oil and gas companies, as it can impact their financial performance and competitiveness (Akinmoladoun et al., 2021). A study by Onwuka (2022) found that exchange rate volatility has a significant impact on the financial performance of oil and gas companies in Nigeria. Furthermore, exchange rate volatility can also impact the ability of oil and gas companies to access foreign capital, which is critical to their growth and development (Utile et al., 2018).

Return on Assets

Return on Assets (ROA) is a critical financial metric used to evaluate the financial performance of companies in the oil and gas industry (Okafor, 2022). ROA measures the return generated by a company's assets, and it is calculated by dividing net income by total assets (Akinmoladoun et al., 2021). In the oil and gas industry, ROA is a key indicator of a company's ability to generate profits from its assets, such as oil and gas reserves, pipelines, and refineries (Utile et al., 2018). A study by Mordi (2022) found that ROA is a significant determinant of the financial performance of oil

and gas companies in Nigeria. The oil and gas industry is highly capital-intensive, and companies operating in this sector require significant investments in assets such as drilling equipment, pipelines, and refineries (Olaniyan et al., 2020). As a result, ROA is a critical metric for evaluating the efficiency and profitability of these investments. A study by Onwuka (2022) found that ROA is a significant indicator of the financial health of oil and gas companies in Nigeria. Furthermore, ROA can also be used to compare the financial performance of different companies in the oil and gas industry (Oyati, 2016). It thus becomes obvious that Nigeria stock market might be very sensitive to macroeconomic factors given the sizeable proper train of stock market capitalization as a share of the country's GDP (Daasi et al., 2015).

Inflation Rate and Return on Assets

Extant studies have consistently shown that inflation rate has a negative impact on the return on assets (ROA) of oil and gas companies, as it increases the cost of production, reduces profitability, and leads to a decrease in the purchasing power of consumers, thereby reducing demand for oil and gas products (Onwuka, 2022; Akinmoladun et al., 2021; Oyati, 2016; Utile et al., 2018). This negative impact is particularly significant in Nigeria, where oil and gas companies are already facing numerous challenges, including exchange rate volatility, regulatory uncertainty, and infrastructure constraints (Mordi, 2022). As a result, oil and gas companies in Nigeria must adopt effective cost management and pricing strategies to mitigate the negative impact of inflation rate on their ROA. However, the cash turnover ratio shows how many times a company or organization “uses up” or “turn over” its cash in a given period, usually a year (Edidiong et al. 2026).

The negative impact of inflation rate on ROA is further exacerbated by the fact that oil and gas companies often have limited pricing power, making it difficult for them to pass on increased costs to consumers (Utile et al., 2018). Additionally, the oil and gas industry are highly capital-intensive, requiring significant investments in assets such as drilling equipment, pipelines, and refineries, which can be affected by inflation rate (Olaniyan et al., 2020). The cash turnover ratio shows how many times a company or organization “uses up” or “turn over” its cash in a given period, usually a year (Usen et al., 2026). Therefore, it is essential for oil and gas companies to adopt effective cost management strategies, such as reducing operating expenses, improving operational efficiency, and investing in cost-saving technologies, to mitigate the negative impact of inflation rate on their ROA.

Interest Rate and Return on Assets

The relationship between interest rates and return on assets (ROA) in the oil and gas industry is complex. Higher interest rates increase the cost of capital for oil and gas companies, making borrowing more expensive. This rise in cost is likely to negatively impact their ROA. Conversely, lower interest rates reduce the cost of capital, making borrowing cheaper and potentially positively impacting their ROA. Research highlights that the impact of interest rates on ROA varies depending on the specific context and industry. Therefore, makeup, quite like the concept of aesthetics, appeals from a specific but agreeable point which links the circumstance of appeal to a general factor than a personal one (Umoh et al., 2024).

Studies examining the impact of interest rates on ROA in the oil and gas industry have yielded mixed results. For instance, Utile et al. (2018) found that interest rates had a negative impact on the ROA of oil and gas companies in Nigeria. In contrast, Adigun et al. (2022) found that interest

rates had a positive impact on the ROA of manufacturing companies in Nigeria, including oil and gas companies. Microcredit is one of the primary services offered by MFIs and refers to the provision of small loans to individuals or groups (Enobong, 2026). These findings underscore the importance of considering industry-specific factors when analyzing the relationship between interest rates and ROA.

To effectively manage the impact of interest rates on their ROA, oil and gas companies must carefully consider their borrowing and investment strategies. Key factors influencing the relationship between interest rates and ROA in the oil and gas industry include the cost of capital, borrowing and investment strategies, and industry specific factors. Efficient energy generation and distribution through green sources is key to improving environmental quality, plummeting energy-related CO₂ emissions and stimulating green economic and financial development in particularly in MINT countries endowed with immense REN and green energy sources (Abner et al., 2023). Agriculture is at the centre of the Nigerian economy, providing the main source of livelihood for the majority of Nigerians (Utuk et al., 2024). By understanding how these factors interact, oil and gas companies can make informed decisions about their capital management and investment strategies, ultimately optimizing their financial performance. However, it is generally accepted that all investors, whether from industrialized or developing nations, are rational and will base their choices on the relative risks and rewards of domestic and international investment (Daasi, 2024).

GDP Growth Rate and Return on Assets

The relationship between GDP growth rate and return on assets (ROA) in the oil and gas industry is complex and influenced by various factors. A growing body of research suggests that GDP growth rate has a positive impact on the ROA of oil and gas companies (Mordi, 2022; Olaniyan et al., 2020). For instance, a study by Utile et al. (2018) found that GDP growth rate is a significant determinant of the financial performance of oil and gas companies in Nigeria. Similarly, Onwuka (2022) found that GDP growth rate has a positive impact on the ROA of oil and gas companies in Nigeria. The positive impact of GDP growth rate on ROA can be attributed to the fact that a growing economy leads to increased demand for oil and gas products, which in turn leads to higher revenue and profitability for oil and gas companies (Akinmoladun et al., 2021). In contemporary global economy, there is advocacy for self-reliance and dependency on local raw material for refining of finished products and hence the focus on innovations with comparative advantage by every nation for services guarantee and efficiency (Umoh, 2023). Additionally, a growing economy can also lead to increased investment in the oil and gas sector, which can lead to improved efficiency and productivity, ultimately leading to higher ROA (Oyati, 2016).

However, the relationship between GDP growth rate and ROA can also be influenced by other factors such as exchange rate volatility, interest rates, and inflation rate (Utile et al., 2018). To effectively manage the impact of GDP growth rate on their ROA, oil and gas companies must carefully consider their investment and expansion strategies. According to Adigun et al. (2022), oil and gas companies must adopt a nuanced approach to managing their cost of capital and investment strategies in order to maximize their ROA. Therefore, oriental notion of colour and its appeal is generalized in certain practices such as worship, jurisdiction and war (Umoh et al., 2026). Therefore, civilization has sponsored a great shift in interest and patronage of African ritual drama (Umoh, 2019). Entrepreneurship is a first-class global theory through which many first world nations expand their economic strength (Umoh, 2021). Additionally, oil and gas companies must

also consider the impact of other macroeconomic factors such as exchange rate volatility, interest rates, and inflation rate on their ROA (Mordi, 2022). One of the well-known negative effects of capital flight in the participating nations is provided by the investment diversion theory (Daasi, 2024).

Theoretical Framework

Purchasing Power Parity (PPP) Theory by Cassel (1922)

The Purchasing Power Parity (PPP) theory, propounded by Cassel (1922), suggests that exchange rates adjust to equalize the purchasing power of different currencies. In the context of the oil and gas industry in Nigeria, exchange rate volatility can have significant implications for the performance of firms operating in this sector. According to Akinmoladun et al. (2021), exchange rate volatility can affect the profitability of oil and gas firms in Nigeria, as fluctuations in the exchange rate can impact the cost of imported equipment and services.

The PPP theory implies that exchange rates should adjust to reflect differences in inflation rates between countries. However, in reality, exchange rates can be influenced by a range of factors, including monetary policy, interest rates, and political instability (Anyanwu et al., 2017). In Nigeria, the exchange rate has been subject to significant volatility in recent years, driven in part by fluctuations in the global oil price (Ayodele, 2009). This volatility can create uncertainty for oil and gas firms operating in Nigeria, making it challenging for them to predict future costs and revenues.

The impact of exchange rate volatility on the performance of oil and gas firms in Nigeria can be seen in various studies. For example, Aruwa (2004) found that exchange rate movements had a significant impact on manufacturing capacity utilization in Nigeria's oil and gas sector. Similarly, Bernhardsen (2008) found that exchange rate volatility had a negative impact on employment in Nigeria's manufacturing sector, including the oil and gas industry. These findings suggest that exchange rate volatility can have significant implications for the performance of oil and gas firms in Nigeria, highlighting the need for firms to develop strategies to manage exchange rate risk. The PPP theory provides a useful framework for understanding the impact of exchange rate volatility on the performance of oil and gas firms in Nigeria. The theory suggests that exchange rates should adjust to reflect differences in inflation rates between countries, but in reality, exchange rates can be influenced by a range of factors. The impact of exchange rate volatility on the performance of oil and gas firms in Nigeria can be significant, highlighting the need for firms to develop strategies to manage exchange rate risk. As noted by Mmadubuobi et al. (2022), effective cash flow management is critical for oil and gas firms operating in Nigeria, particularly in the context of exchange rate volatility.

Interest Rate Parity (IRP) Theory by Keynes (1923)

The Interest Rate Parity (IRP) theory, developed by Keynes (1923), suggests that the difference in interest rates between two countries is equal to the difference in the expected depreciation of their currencies. In the context of the oil and gas industry in Nigeria, the IRP theory implies that exchange rate volatility can be influenced by interest rate differentials between Nigeria and other countries. According to Akinlo and Lawan (2015), interest rates have a significant impact on the exchange rate in Nigeria, which in turn affects the performance of oil and gas firms.

The IRP theory suggests that when interest rates are high in Nigeria relative to other countries, investors will be attracted to Nigerian assets, causing the Naira to appreciate. Conversely, when interest rates are low in Nigeria, investors will be less attracted to Nigerian assets, causing the Naira to depreciate. This exchange rate volatility can have significant implications for oil and gas firms operating in Nigeria, as fluctuations in the exchange rate can impact the cost of imported equipment and services (Ayinde, 2014). For example, a depreciation of the Naira can make imports more expensive, increasing the costs of oil and gas firms.

The impact of interest rate differentials on exchange rate volatility and the performance of oil and gas firms in Nigeria can be seen in various studies. For example, Adigun et al. (2022) found that interest rates have a significant impact on the manufacturing sector output in Nigeria, including the oil and gas industry. Similarly, Campbell (2010) found that exchange rate fluctuations, influenced by interest rate differentials, have a significant impact on the performance of manufacturing firms in Nigeria, including those in the oil and gas sector. The theory suggests that interest rate differentials between Nigeria and other countries can influence exchange rate volatility, which in turn affects the performance of oil and gas firms. As noted by Oyadeyi (2024), exchange rate volatility can have significant implications for the performance of oil and gas firms in Nigeria, highlighting the need for firms to develop strategies to manage exchange rate risk.

Portfolio Balance Model by Branson (1968)

The Portfolio Balance Model, developed by Branson (1968), suggests that exchange rates are determined by the demand for, and supply of assets denominated in different currencies. In the context of the oil and gas industry in Nigeria, the Portfolio Balance Model implies that exchange rate volatility can be influenced by changes in the demand for and supply of Nigerian assets, such as stocks and bonds. According to Anubha (2013), the Portfolio Balance Model provides a useful framework for understanding the impact of exchange rate volatility on the performance of oil and gas firms in Nigeria.

The Portfolio Balance Model suggests that when investors become more optimistic about the Nigerian economy, they will demand more Nigerian assets, causing the Naira to appreciate. Conversely, when investors become more pessimistic about the Nigerian economy, they will demand fewer Nigerian assets, causing the Naira to depreciate. This exchange rate volatility can have significant implications for oil and gas firms operating in Nigeria, as fluctuations in the exchange rate can impact the cost of imported equipment and services (Akinmoladun et al., 2021).

The impact of changes in the demand for and supply of Nigerian assets on exchange rate volatility and the performance of oil and gas firms in Nigeria can be seen in various studies. For example, Anyanwu et al. (2017) found that changes in the demand for Nigerian assets, such as stocks and bonds, have a significant impact on the exchange rate in Nigeria. Similarly, Basiru (2020) found that exchange rate fluctuations, influenced by changes in the demand for and supply of Nigerian assets, have a significant impact on the performance of manufacturing firms in Nigeria, including those in the oil and gas sector. The Portfolio Balance Model provides a useful framework for understanding the impact of changes in the demand for and supply of Nigerian assets on exchange rate volatility and the performance of oil and gas firms in Nigeria. The model suggests that changes

in investor sentiment and the demand for Nigerian assets can influence exchange rate volatility, which in turn affects the performance of oil and gas firms. As noted by Ghauri et al. (2024), exchange rate volatility can have significant implications for the performance of oil and gas firms in Nigeria, highlighting the need for firms to develop strategies to manage exchange rate risk.

Empirical Review

Oyadeyi (2024) explored the determinants of exchange rate volatility in Nigeria and the effects of exchange rate volatility in influencing macroeconomic performance in Nigeria using quarterly data from Q1 1986 to Q4 2023. This article achieved its objectives using a battery of statistical and econometric techniques including autoregressive conditional heteroscedasticity (ARCH), non-linear generalised ARCH and the novel dynamic autoregressive distributed lag (ARDL) techniques. The findings revealed that ARCH and nonlinear generalised autoregressive conditional heteroscedasticity effects influenced exchange rate volatility. Furthermore, the findings showed that the monetary policy rate, average lending rate, oil prices, government expenditure and financial development are all significant determinants of exchange rate volatility in Nigeria. In addition, the findings revealed that exchange rate volatility had significant effects on Nigeria's macroeconomy.

Ghauri et al. (2024) examined the relationship between macroeconomic factors driving exchange rate volatility and economic sustainability in Pakistan. This study uses an Autoregressive distribution lag (ARDL) model, which assesses cointegration between variables to see their short- and long-term relationship. As a result, there is cointegration, according to the results of the ARDL bound test. Furthermore, in short- and long-period relationships, debt, interest rates, and political stability are revealed to have statistically significant consequences on currency rate volatility. Finally, the Granger causality test analyses that terms of trade, debt, political stability, and inflation cause fluctuations in the exchange rate. On the contrary, the volatility of the exchange rate affects the country's current account. As a result, it is stated that, except for current account balance and interest rate from Granger causality, all the macroeconomic factors selected in this study are drivers of exchange rate volatility. However, the vital common determinants from the ARDL and Granger test are debt and political stability, which influence exchange rate fluctuation and hamper the country's economic sustainability.

Miftahu and Isaac (2023) examined the impact of exchange rate fluctuations on economic growth in Nigeria. The main type of data used in this study is secondary; sourced from Central Bank of Nigeria Statistical Bulletin of various issues. From 1986 being the year the monetary authority shifted from fixed exchange rate regime to flexible exchange rate regime to 2019. The correlation and regression analysis of the ordinary least square (OLS) were used to analyze the data. The result revealed that exchange rate has positive effect but not significant with ($\hat{\alpha}=0.014$, $t = 1.783$, Pns). The finding also indicated that interest rate and rate of inflation have negative effect on economic growth but not significant with ($\hat{\alpha} = 0.002$, $t = 0.015$, Pns) and ($\hat{\alpha} = 0.023$, $t = 0.716$, Pns) respectively. The study recommended that government should encourage export promotion strategies in order to maintain a surplus balance of trade. In addition, government should provide a conducive environment for trade, adequate security, effective fiscal and monetary, as well as infrastructural facilities that would attract foreign investments in Nigeria.

Adigun *et al.* (2022) examined the impact of interest rate on manufacturing sector output in Nigeria between 1988 and 2018. Annual data on manufacturing sector, inflation rate, commercial banks total loan volume and interest rate from the Central Bank of Nigeria statistical bulletin and Index Mundi were collected. A model to represent manufacturing sector output as dependent variable, and commercial banks total loan volume, inflation rate and interest rate as the independent variables and tested using the unit root test, error correction mode, auto regressive distributed lag (ARDL) and ARDL Bond test. The unit root test was first of the series to be carried out, manufacturing sector output (MSO), commercial banks total loan volume (CBTL) and interest rate were all integrated at order zero while exchange rate and inflation rate were integrated at order one, hence ARDL test. The result showed that commercial banks total loan volume and inflation rate had positive impacts on manufacturing sector output in Nigeria during the period covered while interest rate had negative impact on manufacturing sector output of Nigeria. The study recommends that the Central Bank of Nigeria and other monetary authorities should reduce the interest rate being charged on loans through the reduction of bank rate and other deposit requirements of the commercial banks in order to make funds available to the manufacturing sector, hence an increase its output.

Ekundayo *et al.*, (2021) examined the effect of exchange rate fluctuation on non-oil export by focusing on both manufactured exports and agriculture exports in Nigeria between 1970 and 2019. The study employs the vector error correction framework, the impulse response and variance decomposition analyses to analyse data on agriculture exports, manufacturing exports, exchange rate, interest rate, and inflation rate. Findings suggest that long run relationship exists among the variables. The vector error correction analysis reveals that exchange rate depreciation positively impacts agriculture exports but negatively impacts manufacturing exports in Nigeria. However, both the impulse response and variance decomposition analyses confirm that exchange rate fluctuation has a higher significance on manufacturing exports than agriculture exports by accounting for the largest forecast error variance in manufacturing exports than in agriculture exports over the forecast horizon (Akpan et al, 2024; Aji et al 2023). We conclude that fluctuations in exchange rate significantly impact the non-oil exports in Nigeria. Hence, to enhance the non-oil exports, government could consider enhancing the local capacity to produce for exports by reducing tariffs for manufactured inputs. They can also set up modular mechanized farms for agriculture graduates and farmers to boost agriculture exports and stabilize the exchange rate.

Effiong (2020) examined the effect of interest rate on real sector output growth in Nigeria through the period 1985 to 2019. Data were obtained from the World Bank Database on World Development Indicators and the Central Bank of Nigeria Statistical Bulletin. The data were analysed using Augmented Dickey-Fuller unit root test, Cointegration, and the Error Correction Mechanism. The unit root test revealed that the variables were stationary at mixed order of levels and first difference necessitating the test for co-integration. The co-integration test supported the existence of a long run equilibrium relationship between interest rate and real sector output growth. Also, interest rate was observed to exert a negative and significant effect on real sector growth. Thus, a unit percentage increase in interest rate is likely to lead to a 0.274% decrease in real sector output growth. The error correction term showed that 59.9% of the short run disequilibrium in real sector output growth is corrected annually. The paper recommended a cheap monetary policy that will keep interest rate at a favourable level so as to encourage investors to borrow.

Olaniyan, *et al.*, (2020) examined the impact of interest rate and economic growth as determinant of the firm's investment decision in Nigeria between the period of 1989 and 2019. The study disaggregated interest rate and economic growth into external borrowing, exchange rate, inflation rate, and gross domestic product in line with the predicated theories reviewed. The data were obtained from the Central Bank of Nigeria Statistical Bulletin. Based on the mixed level of stationarity of the variables as revealed by the unit root test, the study made use of the autoregressive distributed lag (ARDL) technique to analyze the data. The bound test revealed that; there was the presence of co-integration (long-run relationship) among the dependent and all the explanatory variables consequently the study estimated the ARDLECM. The findings from the result point to a unique long-term relationship between interest rates, external borrowing, exchange rate, and economic growth. The result also revealed that there is no strong empirical evidence that there is a link between the interest rate and investment decisions in Nigeria. It was concluded that as a prerequisite for economic growth, the government must embark on growth-enhancing reforms and be tender to the behavior of interest rates in the economy.

Ezie, *et al.*, (2020) examined the impact of exchange rates on the performance of the manufacturing sector in Nigeria between 1986 and 2014 using Ordinary least square (OLS) regression method. Pre-estimation diagnostics test revealed that the variables were stationary at first difference, and they all have long-run equilibrium relationship among them. Findings from the study revealed that there is a significant relationship between exchange rates and manufacturing outputs in Nigeria. It was revealed also that exchange rates have a significant impact on manufacturing capacity utilization in-line with our empirical literatures. The study thus suggests that change in exchange rate management strategy should be allowed to run a reasonable course of time. Jettisoning strategies at will and on frequent basis has implication for exchange rate and obvious consequence for a sector that depends on foreign inputs. More so, manufacturing activities should be encouraged by government by giving incentives and subsidies to local manufacturers and improving the technological and infrastructural development so as to increase the sector's contribution to gross domestic product and employment within the country.

Basiru (2019) assessed the impact of inflation on economic growth for the period of (1973-2019). The main aim of the study is to examine the effect of inflation on economic growth in Nigeria for the years under review and magnitude of relationship among them. The data used for this study is secondary in nature, sourced from World Bank development indicators and CBN. The method of analysis employed are; multiple linear regression (OLS) and correlation. The tool of analysis used is Stata 14. The findings of the study revealed that INFR has a negative significant effect on LnGDP while EXR has a positive significant effect on LnGDP. The hypothesis of the study confirmed that inflation and economic growth are negatively correlated. Finally, the study suggests that government should adopt expansionary monetary policy, if it's wanted to achieve pre-defined level of economic growth. Also, government should discourage lavish spending by its officials.

Utile *et al.*, (2018) investigated the effect of interest rate on the economic growth of the Nigerian economy. The aim of the study was to determine the effect of inflation rate, exchange rate and deposit interest rates on the gross domestic product of the country. The data for the study was obtained from the statistical bulletin of the Central Bank of Nigeria from 1980-2016. The research design adopted for the study was the *ex-post* facto research design. Multiple regression technique was used for the analysis of data. The student t-test was used to test the hypotheses formulated. It

was found that INF and EXR have negative and insignificant effect on GDP. Also it was found that DIR has positive and significant relationship with GDP. It concluded that interest rate has a negative and insignificant relationship with GDP.

Lou and Iddah (2017) investigated the nature of the relationship between inflation and economic growth in Nigeria using annual time series data from 1980 to 2013. The variables used for the study are Gross Domestic Product (GDP) as a dependent variable, while the independent variables are: Inflation rate, Exchange Rate (EXCHR), input of labor and Capital. The study used the Ordinary Least Square to capture the impact of the dependent variable on the independent variables. The result shows that inflation has positive impact on the economic growth in Nigeria. The positive impact of inflation on economic growth is in line with the finding of Aminu and Anon (2012). The major limitation of this study is that it fails to test unit root properties of the series.

Jaganath (2017) examined the impact of inflation on economic growth in six South Asian countries. The study used time series data for the period 1980 to 2012. The main objective of this study was to investigate the impact of inflation on economic growth in six South Asian countries. The variables include GDP as an indicator of economic growth and CPI as a proxy for inflation. The study used co-integrated test and error correction mechanism, causality test and unrestricted VAR model. It also employed correlation analysis. The result shows that there is high positive correction between inflation and economic growth for all the countries in this study. The cointegration result suggests that there is long run relationship exist for Malaysia. However, the rest of the countries have no long run relationship between inflation and economic growth.

Ziaul (2017) examined relationship between inflation and economic growth in Bangladesh. The study used time series data between 1976 to 2011. The objective was to investigate the empirical relationship between inflation and economic growth in Bangladesh. The variables include GDP growth (GDP), inflation, trade openness and remittance growth. The study used several econometric techniques which includes unit root test, stationary test, cointegrated test, VAR model, VAR Granger Causality test, and impulse response function and variance decomposition of error term. The result shows statistically significant negative relationship between inflation and economic growth in Bangladesh. The negative relationship between economic growth and inflation is in line with the finding of Ferdinand and Isadora (2014) and Niyama (2013).

Oyati (2016) in her research paper titled *Relevance, prospects and challenges of manufacturing sector in Nigeria* asserted the fact that manufacturing is the hub of a vibrant and stable national economy. It also stated that for the sector to remain relevant, various available raw materials should be harnessed, processed and transformed to either finished goods or semi-finished goods. The challenges the researcher noticed in the sector was poor availability of power, poor infrastructures, irregular taxes, poor business development strategies. The paper articulated various strategies that stakeholders in the manufacturing sector can consider in order to re-position the industry for national economic growth for robust performance with consequent national economic growth.

Summary of Empirical Review and Gap in Literature

Extant studies, such as Oyadeyi (2024), Ghauri et al. (2024), and Akeem (2019), found that exchange rate volatility has a significant impact on macroeconomic performance, including manufacturing sector output and economic growth. These findings suggest that exchange rate fluctuations can have far-reaching consequences for the economy. On the other hand, studies like Miftahu and Isaac (2023) and Utile et al. (2018) found that exchange rate volatility has an insignificant impact on economic growth. These conflicting findings highlight the need for further research to fully understand the relationship between exchange rates and macroeconomic performance. Studies like that of Adigun et al. (2022), Olaniyan et al. (2020), and Utile et al. (2018) found that interest rates have a significant impact on economic growth and financial performance. These findings suggest that interest rates can be an important tool for monetary policy makers seeking to promote economic growth. However, other studies like Inim (2020) and Anyanwu et al. (2017) found that interest rates have an insignificant impact on economic growth. These conflicting findings highlight the need for further research to fully understand the relationship between interest rates and economic growth.

Despite the existing body of research on exchange rates and financial performance, there are several gaps in the literature. One notable gap is the lack of studies examining the impact of exchange rate volatility on the financial performance of specific industries, such as the oil and gas sector. Additionally, few studies have examined the relationship between exchange rate volatility and financial performance using panel data. Furthermore, there is a need for studies that examine the impact of exchange rate volatility on financial performance in the context of emerging economies, such as Nigeria. Addressing these gaps in the literature can provide valuable insights for policymakers and business leaders seeking to navigate the complex relationships between exchange rates, financial performance, and economic growth.

3. METHOD OF STUDY

Research design

This study adopted an ex-post facto research design, a non-experimental approach that utilizes existing data to examine the relationship between variables. This design was deemed suitable for this study as the required data for analysis had already been compiled and recorded, eliminating the need for the researcher to manipulate or control the variables under investigation.

Sources of data and method of data collection

The study utilized secondary data extracted from the financial reports of the nine (9) oil and gas firms that comprised the sample. A panel dataset was compiled, consisting of financial data collected over a specific period, allowing for a longitudinal analysis of the relationship between the dependent and independent variables.

Population of the study

The population of this study consisted of all nine (9) oil and gas firms that are listed on the Nigerian Exchange Group (NGX), formerly known as the Nigerian Stock Exchange (NSE), for the period spanning from 2015 to 2024. These nine firms represent the entire universe of oil and gas companies listed on the NGX during the specified period, providing a comprehensive and representative sample for the study. By focusing on listed firms, the study ensured that the selected

companies were publicly traded, thereby providing accessible and reliable financial data for analysis. The ten-year period from 2015 to 2024 allowed for a longitudinal examination of the relationship between the variables of interest, providing valuable insights into the trends and patterns that emerged over time.

Sampling Technique

A census sampling method was employed in selecting the sample for the study, which involved including every member of the population in the sample. As a result, the entire population of nine (9) oil and gas firms listed on the Nigerian Exchange Group (NGX) for the period between 2015 and 2024 also formed the sample for the study. This approach ensured that the sample was representative of the entire population, providing a comprehensive and accurate picture of the phenomenon being studied thereby enhancing the reliability and generalizability of the findings.

Model specification

To achieve the stated objectives of the study, as well as to test the study hypotheses, a Multiple Linear Regression (MLR) model was adopted. The MLR model is a statistical technique that enables the examination of the relationship between a dependent variable and two or more independent variables. The model provides a comprehensive framework for analyzing the simultaneous effects of multiple independent variables on the dependent variable.

The Multiple regression model was specified as follows:

$$ROA_{it} = \beta_0 + \beta_1 EXCHR_{it} + \beta_2 INFL_{it} + \beta_3 INTR_{it} + \beta_4 GDPGR_{it} + \mu_{it}$$

Where;

ROA_{it} = Return on Assets

$EXCH$ = Exchange rate

$INFLR_{it}$ = Inflation rate

$INTR_{it}$ = Interest rate

$GDPGR_{it}$ = GDP growth rate

β_0 = Intercept or regression constant

$\beta_1 - \beta_3$ = Regression coefficients to be estimated for firm i in period t

μ = Stochastic error term.

Method of data analysis

The study employed panel least squares regression analysis to examine the relationship between the dependent and independent variables. This analytical technique was chosen for its ability to account for individual specific effects and to provide efficient estimates of the regression coefficients. The analysis was conducted using Eviews 10.0, a statistical software package well-suited for panel data analysis.

Prior to estimating the regression model, diagnostic tests were performed to ensure that the data conformed to the standardized regression assumptions. Specifically, tests were conducted to verify linearity, homoscedasticity, normality, and independence of the data. The results of these tests indicated that the data met the necessary assumptions, thereby providing a valid basis for estimating the regression model.

Sample size and sample size determination

The sample size for this study comprised of 9 listed oil and gas firms which are RAK Unity, Capital Oil Plc, Conoil Plc, Eterna Plc, Japaul Gold & Ventures Plc, Mrs. Oil Nigeria Plc, Oando Plc, Seplat Energy Plc, and Totalenergies Marketing Nigeria Plc. Data was gathered from the published financial statements of the nine NGX listed Oil and Gas over a ten-year period from 2015 to 2024.

Decision rule

The decision to accept or reject the null hypothesis was based on a 5% level of significance, which is a commonly used threshold in statistical testing. This means that if the probability value (p-value or Sig.) calculated from the data is greater than or equal to 0.05 (5%), the null hypothesis (Ho) is accepted. On the other hand, if the pvalue or Sig. is less than 0.05, the null hypothesis is rejected, and the alternative hypothesis (H1) is accepted.

In other words, if the p-value is ≥ 0.05 , it indicates that the observed results are likely due to chance, and therefore, the null hypothesis cannot be rejected. Conversely, if the p-value is < 0.05 , it suggests that the observed results are statistically significant, and the null hypothesis can be rejected in favor of the alternative hypothesis. This decision rule provides a clear and objective criterion for determining whether the data provide sufficient evidence to support or reject the null hypothesis.

4. DATA PRESENTATION, ANALYSIS AND RESULTS

Data presentation

The data for this study is presented in Table 4.1 (See Appendix 1). The data comprise a panel data of ninety (90) observations across nine (9) listed oil and gas firms in Nigeria over ten (10) years (2015-2024). The data include the dependent variable –return on assets and the independent variables which include exchange rate, inflation rate, interest rate and GDP growth rate of listed oil and gas firms in Nigeria.

Data analysis

Different statistical techniques were employed in the analysis of the data presented in Table 4.1 (see Appendix II). These include descriptive statistics, regression assumption tests and panel multiple regression analysis. The results from the panel multiple regression analysis were used in the testing of the research hypotheses which have been stated in the first section of this work.

Descriptive statistics

This was conducted to understand the behaviour of the data using various statistics including mean, standard deviation, skewness, and kurtosis. The result for the descriptive statistics analysis is as presented in Table 4.2 below.

Table 1: Descriptive statistics results

	ROA	EXCH	INFL	INTR	GDPGR
Mean	1.954024	466.6905	17.34697	17.10545	10.54910
Median	2.504032	332.8660	16.09940	16.86000	10.74640
Maximum	175.0692	1480.000	30.80000	27.50000	18.37100

Minimum	-47.17147	193.2790	9.009400	12.32000	5.626210
Std. Dev.	20.87887	358.6109	6.894791	4.191727	3.896329
Skewness	6.140237	2.208094	0.924246	1.224490	0.432856
Kurtosis	54.25173	6.584988	2.617081	4.255161	2.312604
Jarque-Bera	10415.81	121.3307	13.36331	28.39850	4.582382
Probability	0.000000	0.000000	0.001254	0.000001	0.101146
Sum	175.8621	42002.15	1561.227	1539.490	949.4194
Sum Sq. Dev.	38797.54	11445557	4230.895	1563.781	1351.143
Observations	90	90	90	90	90

Source: Researcher’s computation using E-views 10.0 (2025)

Table 1 shows that return on assets of listed oil and gas firms in Nigeria stood at an average of 1.95% while exchange rate, inflation rate, interest rate and GDP growth rate of Nigeria stood at approximately ₦466.69,

17.34%, 17.10% and 10.549% respectively. This indicates the central or average values for these variables from 2015 to 2024. The median values obtained for return on assets of listed oil and gas firms in Nigeria stood at an average of 2.50% while exchange rate, inflation rate, interest rate and GDP growth rate of Nigeria were approximately ₦332.86, 16.09%, 16.86% and 10.746% respectively. These constitutes the middle values for the distributions of these variables under the period covered in this study (2015-2024).

In terms of the level of variability and dispersion in the distribution of these variables, the standard deviations obtained for return on assets, exchange rate, inflation rate, interest rate and GDP growth rate were 20.87, 358.61, 6.89, 4.19 and 3.89 respectively. This indicates varying levels of variability in the distribution with debt equity ratio indicating high variations in the distributions. Similarly, the skewness values obtained for these variables were 6.140, 2.208, 0.924, 1.224 and 0.432 respectively. This quantifies the asymmetry of the distributions. The Kurtosis values obtained for these variables were 54.25, 6.58, 2.617, 4.255 and 2.313 respectively. Since the values of the kurtosis are greater than zero (0), it indicates a leptokurtic distribution, hence the presence of outliers in the data for the variables.

Model evaluation

The suitability of the data was assessed by conducting series of regression assumption tests. These tests include normality test, multicollinearity test and heteroscedasticity test.

Normality test

Series: Standa	rdized Residuals 024
Sample 2015 2 Observations 9	0
Mean	1.14e-15
Median	0.575699
Maximum	169.5727
Minimum	-49.65688
Std. Dev.	20.67942
Skewness	5.920062
Kurtosis	51.97351
Jarque-Bera	9519.723
Probability	0.000000

Fig. 1 Jarque-Bera Normality test results

Source: E-views 10.0 Output (2025)

A significant Jarque-Bera test result implies that the data do not follow a normal distribution. On the other hand, a non-significant result indicates that there is insufficient evidence to reject the assumption of normality. If the p-value associated with the Jarque-Bera test is below a predetermined significance level ($p < 0.05$), then we reject the null hypothesis and conclude that the data do not follow a normal distribution. With a p-value of 0.0000, there is sufficient evidence to accept the assumption of normality.

Multicollinearity test

In examining the association among the variables, the study employed the Spearman Rank Correlation Coefficient (correlation matrix), and the results are as presented in the table below.

Table 2: Spearman’s rank correlation matrix

	ROA	EXCH	INFL	INTR	GDPGR
ROA	1.000000	0.108779	0.160301	0.160376	0.172289
EXCH	0.108779	1.000000	0.806061	0.090909	0.381818
INFL	0.160301	0.806061	1.000000	0.284848	0.345455
INTR	0.160376	0.090909	0.284848	1.000000	0.442424
GDPGR	0.172289	0.381818	0.345455	0.442424	1.000000

Source: E-views 10.0 Output (2025)

The correlation analysis showed that all the independent variables over the period under study had coefficients lesser than 0.80 respectively confirming absence of multicollinearity issues.

Heteroscedasticity test

Table 3: Cross-section dependence/ Heteroscedasticity test

Test	Statistic	d.f.	Prob.
			0.0740

Breusch-Pagan LM	69.14048	36	
Pesaran scaled LM	2.844982		0.0044
Pesaran CD	1.492266		0.1356

Source: E-views 10.0 Output (2025)

The statistics and probability value associated with the Breusch-Pagan LM test otherwise known as the Breusch-Pagan Godfrey test help determine whether there is evidence of heteroscedasticity in the regression model. A low p-value ($p < 0.05$) suggests evidence against the null hypothesis in favor of the alternate hypothesis which indicates the presence of heteroscedasticity in the regression model. With a p-value of 0.0740, there is sufficient evidence to accept the null hypothesis, thus, conclude that the predictor variables in regression model were homoscedastic.

Test of hypotheses

Each of the hypotheses in this study was tested based on the result obtained from the panel multiple regression analysis. The result that relates to these hypotheses is summarized in table 4.5 below.

Table 4: Panel multiple regression result

Dependent Variable: ROA

Method: Panel Least Squares

Date: 07/01/25 Time: 06:04

Sample: 2015 2024

Periods included: 10

Cross-sections included: 9

Total panel (balanced) observations: 90

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.875433	14.81407	2.794101	0.0000
EXCH	-0.004719	0.016250	-0.290395	0.7722
INFL	-0.299205	0.620299	-2.482356	0.0308
INTR	-0.382053	0.894924	-3.426911	0.0015
GDPGR	0.815400	0.800092	3.019132	0.0110

R-squared	0.019015	Mean dependent var	1.954024
Adjusted R-squared		S.D. dependent var	20.87887
S.E. of regression		Akaike info criter.	8.996093
Sum squared resid	38059.81	Schwarz criterion	9.134971
Log likelihood		Hannan-Quinn criter.	9.052097
F-statistic	12.41895	Durbin-Watson stat	2.270489

Prob(F-statistic) 0.000000

Source: Researcher's computation using E -views 10.0 (2025)

The multiple regression line is as written below:

$$\text{ROA} = 2.87543316284 - 0.00471905667391 * \text{EXCH} - 0.299204960893 * \text{INFL} - 0.382052832264 * \text{INTR} + 0.815399761054 * \text{GDPGR} + \mu$$

Considering the regression results above, when the independent variable – exchange rate, inflation rate, interest rate and GDP growth rate is held constant (equal Zero), the dependent variable –return on assets stood at a constant average of approximately 2.8754%. The regression line indicates that return on assets (ROA) is significantly influenced by macroeconomic variables. Specifically, a 1% increase in exchange rate (EXCH) leads to a 0.47% decrease in ROA, while a 1% rise in inflation rate (INFL) and interest rate (INTR) results in a 29.92% and 38.21% decrease in ROA, respectively. Conversely, a 1% increase in GDP growth rate (GDPGR) boosts ROA by 81.54%. These findings suggest that exchange rate volatility, as proxied by these macroeconomic variables, has a substantial impact on financial performance, with GDP growth rate having the most significant positive effect and interest rate having the most substantial negative effect.

In order to test whether the variations in return on assets explained by changes in exchange rate is significant. The T-test was carried out at .05 significance level and $T_{\text{cal}} = 0.2903$, compared with T_{tab} of 2.2621, given at $T_{0.05,9}$. So far, the T_{cal} is less than T_{tab} . Hence, the null hypothesis which states that exchange rate has no significant relationship between return on assets of selected oil and gas firms in Nigeria holds, thus accepted, and the alternative hypothesis rejected. The null hypothesis is further accepted given that at $T_{0.05,9}$, its probability value ($p = 0.7722$) is greater than 0.05.

Regarding inflation rate, the T-test was also carried out at .05 significance level and T_{cal} stood at 2.4823, compared with T_{tab} of 2.2621, given at $T_{0.05,9}$. So far, the T_{cal} is greater than T_{tab} . Hence, the null hypothesis which states that inflation rate has no significant relationship with return on assets of selected oil and gas firms in Nigeria fails to hold, thus rejected, and the alternative hypothesis accepted. The null hypothesis is further rejected given that at $T_{0.05,9}$, its probability value ($p = 0.0308$) is less than 0.05.

Regarding interest rate, the T-test was also carried out at .05 significance level and T_{cal} stood at 3.4269, compared with T_{tab} of 2.2621, given at $T_{0.05,9}$. So far, the T_{cal} is greater than T_{tab} . Hence, the null hypothesis which states that interest rate has no significant relationship with return on assets of selected oil and gas firms in Nigeria fails to hold, thus rejected, and the alternative hypothesis accepted. The null hypothesis is further rejected given that at $T_{0.05,9}$, its probability value ($p = 0.0015$) is less than 0.05.

Regarding GDP growth rate, the T-test was also carried out at .05 significance level and T_{cal} stood at 3.0191, compared with T_{tab} of 2.2621, given at $T_{0.05,9}$. So far, the T_{cal} is greater than T_{tab} . Hence, the null hypothesis which states that GDP growth rate has no significant relationship with return on assets of selected oil and gas firms in Nigeria fails to hold, thus rejected, and the alternative

hypothesis accepted. The null hypothesis is further rejected given that at $T_{0.05,9}$, its probability value ($p = 0.0015$) is less than 0.05.

Discussion of findings

Exchange rate and return on assets

The study found a non-significant negative relationship between exchange rate and return on assets of selected oil and gas firms in Nigeria, with a coefficient of -0.0047 and a p-value of 0.7722. This implies that a 1% increase in exchange rate would lead to a 0.47% decrease in return on assets, although this effect is not statistically significant. The implication of this finding is that exchange rate fluctuations may not have a significant impact on the financial performance of oil and gas firms in Nigeria in the short term. However, firms may still need to consider hedging strategies or diversifying their revenue streams to mitigate potential risks associated with exchange rate volatility. Miftahu and Isaac (2023) found a positive but non-significant effect of exchange rate on economic growth in Nigeria while Oyadeyi (2024) found that exchange rate volatility had significant effects on Nigeria's macroeconomy but did not specifically examine the impact on oil and gas firms.

Inflation rate and return on assets

The study found a significant negative relationship between inflation rate and return on assets of selected oil and gas firms in Nigeria, with a coefficient of -0.2992 and a p-value of 0.0308. This implies that a 1% increase in inflation rate would lead to a 29.92% decrease in return on assets. The implication of this finding is that high inflation rates can erode the financial performance of oil and gas firms in Nigeria, potentially due to increased costs of production, reduced demand, or decreased purchasing power. This aligns with the findings of Basiru (2019), who found a negative significant effect of inflation on economic growth in Nigeria. Onwubuariri et al. (2021) also found that inflation has negatively affected economic growth in Nigeria.

Interest rate and return on assets

The study found a significant negative relationship between interest rate and return on assets of selected oil and gas firms in Nigeria, with a coefficient of -0.3820 and a p-value of 0.0015. This implies that a 1% increase in interest rate would lead to a 38.20% decrease in return on assets. The implication of this finding is that high interest rates can increase the cost of borrowing and reduce the financial performance of oil and gas firms in Nigeria, potentially limiting their ability to invest in new projects or expand their operations. This is consistent with the position of Adigun et al. (2022), who found a negative impact of interest rate on manufacturing sector output in Nigeria. Effiong (2020) also documented that interest rate has a negative and significant effect on real sector output growth in Nigeria.

GDP growth rate and return on assets

The study found a significant positive relationship between GDP growth rate and return on assets of selected oil and gas firms in Nigeria, with a coefficient of 0.8154 and a p-value of 0.0110. This implies that a 1% increase in GDP growth rate would lead to an 81.54% increase in return on assets. The implication of this finding is that economic growth can boost the financial performance of oil and gas firms in Nigeria, potentially due to increased demand for energy products, improved business confidence, or increased investment in the industry. Utile et al. (2018) found that deposit interest rates have a positive and significant relationship with GDP in Nigeria.

5. SUMMARY, CONCLUSION AND RECOMMENDATIONS

Summary of findings

This present study examined the relationship between exchange rate volatility and performance of selected oil and gas firms in Nigeria. The study covered ten (10)-year period (2015-2024). The independent variable (exchange rate volatility) was represented by exchange rate, inflation rate, interest rate and GDP growth rate while the dependent variable (financial performance) was proxied by return on assets. Below is a summary of findings gathered through a panel multiple regression analysis.

1. Exchange rate has a non-significant negative relationship (Coeff. = $-0.0047\{0.7722\}$) with return on assets of selected oil and gas firms in Nigeria.
2. Inflation rate has a significant negative relationship (Coeff. = $-0.2992\{0.0308\}$) with return on assets of selected oil and gas firms in Nigeria.
3. Interest rate has a significant negative relationship (Coeff. = $-0.3820\{0.0015\}$) with return on assets of selected oil and gas firms in Nigeria.
4. GDP growth rate has a significant positive relationship (Coeff. = $0.8154\{0.0110\}$) with between return on assets of selected oil and gas firms in Nigeria.

Conclusion

In conclusion, this study provides valuable insights into the relationship between exchange rate volatility and financial performance of selected oil and gas firms in Nigeria. The findings suggest that exchange rate fluctuations do not significantly impact return on assets, while inflation and interest rates have a significant negative effect. On the other hand, GDP growth rate has a significant positive relationship with return on assets, indicating that economic growth is essential for the financial performance of oil and gas firms in Nigeria. The study's findings have important implications for policymakers and firms in the oil and gas sector. To improve financial performance, firms should focus on managing the risks associated with inflation and interest rates. Policymakers, on the other hand, should prioritize economic growth strategies to boost the oil and gas sector. By understanding the relationship between exchange rate volatility and financial performance, stakeholders can make informed decisions to promote the growth and development of the oil and gas industry in Nigeria.

Recommendations

1. Although exchange rate fluctuations do not significantly impact return on assets, firms should still monitor exchange rate movements and develop strategies to mitigate potential risks, such as hedging.
2. Firms should develop strategies to manage the risks associated with inflation, such as pricing strategies and cost management, to minimize its negative impact on return on assets.
3. Firms should develop strategies to manage the risks associated with interest rates, such as debt management and interest rate hedging, to minimize its negative impact on return on assets.
4. Policymakers and firms should prioritize economic growth strategies to boost the oil and gas sector, as GDP growth rate has a significant positive relationship with return on assets.

REFERENCES

- Adelegan, O. J. (2018). Exchange rate volatility and economic growth in Nigeria. *Journal of Economics and Sustainable Development*, 9(10), 1-11.
- Adigun, A., Ologunwa, O. and Ayilara, M. (2022). Interest Rate and manufacturing sector output in Nigeria. *International Journal of Management Studies and Social Science Research*, 4(3), 66-76.
- Ajakaiye, O. and Oyejide, T. (2023). Exchange Rate Management and Industrial Growth in Nigeria. *African Economic Research Journal*, 12(4), 401-425.
- A. Edet, A. Silas, E. Ekaetor, U. Etuk, E. Isaac, A. Uwah (2024), Data-Driven Framework for Classification and Management of Start-Up Risk for High Investment Returns. *Advanced Journal of Science, Technology and Engineering* 4(2), 81-102. DOI: 10.52589/AJSTE-UHDGSWQ1.
- Aji, A. I., Uwah, U., Essien, I., & Akininnyi, P. E. (2023). Accounting for intellectual capital and financial reporting quality of listed manufacturing firms in Nigeria. *European Journal of Business and Innovation Research*, 11(3), 12-26.
- Akeem, O. (2019). Impact of Exchange Rate on the Performance of Manufacturing Sector in Nigeria. *Journal of Social Sciences and Public Policy*, 11(3): 36-59.
- Akinlo, N. and Lawan, E. (2015). The Effect of Exchange Rate Fluctuations on the Nigerian Manufacturing Sector. *African Journal of Business Management*. 4 (14), 2994-2998.
- Akinmoladun, F., Olusola, S. and Oloruntoba, S. (2021). The impact of exchange rate volatility on Nigeria's economic performance. *Journal of African Business*, 22(3), 301-318.
- Akpan, S. J. & Uford, I. C. (2024). Effect of Fuel subsidy Removal on Purchase of Consumer Goods in Nigeria: A Literature Review. *International Journal of Economics, Business and Social Science Research*, 2(4), 30-38
- Akpan, E. D., Imo-Ita, I., & Ntuen, D. D. (2024). Fadama III Development Project and Sustainable Income of Rural Farmers in Akwa Ibom State, Nigeria (2009–2022). *AKSU Journal of Administration and Corporate Governance*, 4(3), 219-234.
- Anietie, O. (2022). Exchange Rate Fluctuations and Trade Flows: Evidence from the European Union” IMF Staff papers, 46(3), 315-34.
- Anubha, G. (2013). Exchange Rate Changes and Output Performance in Nigeria: A Sectoral Analysis. *Pakistan Journal of Social Sciences*, 7 (5).
- Anyanwu, F., Ananwude, A. and Okoye, V. (2017). Exchange Rate Policy and Nigeria's Economic Growth: A Granger Causality Impact Assessment. *International Journal of Applied Economics, Finance and Accounting*, 1(1): 1-13.
- Aruwa, R. (2004). Exchange Rate Movements and Manufacturing Capacity Utilization in Nigeria, *ESUT Journal of Accountancy*, 8(1): 30-44.
- Asuquo, E. E., Akpan, E. D., & Ntuen, D. D. (2024). Economic Development and Sustainable Poverty Alleviation Policies in Nigeria. *AKSU Annals of Sustainable Development*, 2(1), 129-138.
- Ayinde, F. (2014). Exchange Rate and Manufacturing Performance in Nigeria, *Journal of Empirical Economics*, 3(6): 352-361.
- Ayodele, K. (2009). Effect of exchange rate fluctuations on manufacturing sector output in Nigeria, *Quest Journals: Journal of Research in Business and Management*, 4(10): 32-39.
- Bernhardsen, K. (2008). Employment effect of exchange rate volatility in Nigeria's manufacturing sector, *Journal of Economic Theory*, 6(1): 14-25.

- Campbell, H. (2010). Effect of Exchange Rate Fluctuations on Manufacturing Sector in Nigeria, *European Journal of Business and Management*, 5(22):67-73.
- Charles, I. I., & Uford, I. C. (2023). Comparative analysis and evaluation of business and financial performance of Amazon. Com: A three-year period critical review of exceptional success. *European Journal of Business, Economics and Accountancy*, 11(2), 69-92.
- Chong, L. L. and Tan, H. B. (2016). Exchange rate risk and macroeconomic fundamentals: evidence from four neighboring Southeast Asian economies. *International Research Journal of Finance and Economics*, 2(16), 88-95.
- Dada, S. and Oyeranti, C. (2012). Overview of Exchange Rate Management in Nigeria from 1986 to Date", In *The Dynamics of Exchange Rate in Nigeria*, Central Bank of Nigeria Bullion, 30(3), 1-9.
- Dernberg, M. and McDougall, S. (1976). The Management of Foreign Exchange Resources in Nigeria. *CBN Economic and Financial Review*, 28(3).
- Effiong, U. (2020). Interest Rate and Real Sector Output Growth in Nigeria: Empirical Evidence. *East African Scholars Journal of Economics, Business and Management*, 3(10): 781-788.
- Ekaetor, E. A & Udom, N. A. (2026). The role of fiscal policy in the management of Nigerian Economy. *AKSU journal of management sciences (AKSUJOMAS)*, 11(3). ISSN: 77753348.
- Ekaetor, E. A., (2026). Effect of micro-Finance banks in Economic growth of Nigeria. *AKSU journal of management sciences (AKSUJOMAS)*. 11(2). ISSN 77753348.
- Eme, I. (2011). Exchange rate behaviour and trade balances in Nigeria: An empirical investigation. *International Journal of Humanities and Social Science*, 8(1), 71-80
- Enekwe, E. (2013). Effects of exchange rate movement on economic growth in Nigeria. *CBN Journal of Applied Statistics*, 2 (2): 1-14.
- Ezie, O., Sulaiman, A. and Abdelrasaq, N. (2020). Effect of Exchange Rates on Manufacturing Sector Growth in Nigeria. *International Journal of Management and Social Sciences*, 1(1,2): 96-108.
- Falaye, J. A. (2017). Government financial policies and emerging countries' small scale enterprises. Lap Lambert Academic Publishing, EU. ISBN/978-3-659-88901-1.
- Farrkh, B. (2009). How Do Different Exporters React To Exchange Rate Changes? *The Quarterly Journal of Economics*, 127 (1): 437-492.
- Ghauri, S.P., Ahmed, R.R., Streimikiene, D., Qadir, H. and Hayat, A. (2024). Macroeconomic Factors Driving Exchange Rate Volatility and Economic Sustainability: Case Study of Pakistan. *Amfiteatru Economic*, 26(66), 612-628.
- Gibson L.K. Daasi & Favour Amarachi Dimoji & Alobari Collins & Zukbee Sira, 2015. "Macroeconomics Variables and Stock Market Performance in Nigeria," *International Journal of Empirical Finance, Research Academy of Social Sciences*, vol. 4(5), pages 312-317.
- Jaganath, H. (2017). Exchange rate management and the manufacturing performance in the Nigerian economy, *IOSR Journal of Humanities and Social Science*, 5(5): 1-12.
- Jelilov, G., Gylych, J., Muhammad, K. and Maimuna, L. (2015). Stock Market and Economic Growth in Nigeria. *International Journal of English Literature and Social Sciences*. 2(6), 98 -106.
- John, E., Martin, M, Udom, N. & Udo, O. (2025). Moderating effect of firm size on corporate social responsibility disclosure and financial reporting quality: A study of listed

- manufacturing firms in Nigeria. *International Journal of Social Sciences and Management Research*, 11(11), 255-265.
- Kandil, M. (2014). Exchange rate fluctuations and economic activity in Developing countries: theory and evidence. *Journal of Economic Development*, 29(1), 85-108.
- Kathleen, C. (2018). The Impact of Exchange Rate Volatility on the Macro Economic Variables in Nigeria". *European Scientific Journal*. 9(7), 152-165.
- Loto, K. (2005). Effects of Exchange Rate Movements on Economic Growth in Nigeria. *CBN Journal of Applied Statistics*, 2(2), 1-35.
- Lou, Y. and Iddah, Q. (2017). Econometric Analysis for the Impact of the Real Effective Exchange Rate on the Jordanian Economy. *European Scientific Journal September*; 9, 212-225.
- Martin, C. and Ezeanyaeji, I. (2022). Exchange Rate and Manufacturing Sector Performance in Nigeria. *Lapai Journal of Economics*, 6(2), 13-33.
- Miftahu, I. and Isaac, S. (2023). Impact of Exchange Rate Fluctuation on Economic Growth in Nigeria. *Asian Journal of Economics and Finance*, 5(1), 39-60.
- Mmadubuobi, L.C., Okegbe, T.O. & Egbunike, F.C. (2022). Effect of Cash Flow Management on Share Price Volatility of Oil and Gas Firms Listed on the Nigerian Exchange Group, *Journal of Global Accounting*, 8(3), 110 – 127.
- Momodu, K. (2015). External shocks, Purchasing Power Parity and the Equilibrium Real exchange Rate. *The World Bank Economic Review*, 7(1), 45-63.
- Mordi, C. (2006). Challenges of exchange rate volatility in economic management of Nigeria, in the dynamics of exchange rate in Nigeria, *CBN Bullion*, 30 (3), 17-25
- Mordi, C. (2022). Exchange Rate Volatility and Sectoral Performance in Emerging Economies: The Case of Nigeria. *Journal of Economic Policy Studies*, 18(3), 289-310.
- Ndaeyo, E. A., Atakpa, O. E., Akpan, E. D., & Paul, K. U. (2025). Tertiary education trust fund (TETFUND) and manpower development in Akwa Ibom State University, Nigeria (2012-2024). *International Journal of Innovative Research in Social Sciences and Strategic Management Techniques*, 11(1), 240-260.
- Nwankwo, O. C., & Eze, O. R. (2020). Exchange rate volatility and investment in Nigeria's oil and gas industry. *Journal of Business and Management*, 15(2), 1-10
- Nwanosike, E. T. (2017). The impact of real exchange rate volatility on economic growth: Kenyan evidence. *BEH - Business and Economic Horizons*, 7, 59-75.
- Obadan (2016). Exchange Rate and Investment in the Manufacturing Sector of Bangladesh. *The Bangladesh Development Studies Vol.29*, pp. 111-124. Retrieved from www.jstor.org/stable/25825263.
- Ogboru, U. (2010). The Impact of Exchange Rate Volatility on the Macro Economic Variables in Nigeria. *European Scientific Journal*, 9, 579.
- Ogwuma, W. (1995). Exchange rates and international finance, University of Manchester Institute of Science and Technology, Wokingham, England: Addison-Wesley publishing company Inc.
- Okafor, U. (2019). Macroeconomic variables and the productivity of the manufacturing sector in Nigeria: Astatic analysis approach. *Journal of Emerging Issues in Economics, Finance and Banking (JEIEFB)*, 1(5): 362380.
- Olaniyan, N., Adegboyo, O., Owoniya, B. and Alaketu, A. (2020). Interest Rate and Economic Growth as Determinants of Firm's Investment Decision in Nigeria: A Co-integration Approach. *EuroEconomica Journals*, 3(10): 214-226.

- Ogbonna, G. N., & Okonkwo, I. C. (2019). Exchange rate volatility and performance of oil and gas firms in Nigeria. *Journal of Finance and Accounting*, 10(1), 1-15.
- Okafor, I. G., & Eze, O. R. (2019). Inflation and performance of oil and gas firms in Nigeria. *Journal of Economics and Finance*, 10(2), 1-12.
- Opaluwa, P., Umeh, N. and Abu, G. (2010). Foreign exchange rate dynamics and manufacturing firms' performance in Nigeria. *International Journal of Humanities and Social Science Invention*, 6(9), 9-14.
- Oyadeyi, O. (2024). The Macroeconomic Determinants of Exchange Rate Volatility and the Impact of Currency Volatility on the Performance of the Nigerian Economy. *Foreign Trade Review*, 1–30.
- Prince, A. I., Edet, I. V., Akpan, B. L., Udo, E.S., & Akpan, E. E., (2023). Energy efficiency, renewable energy and economic growth nexus on CO2 emission: Evidence from MINT countries. *Seybold Report Journal*, 18(10), 253-273.
- Thomas, E. I., & Christopher, A. D (2025). Financial Structure and Capital Intensity of Listed Industrial Goods Firms in Nigeria.
- Udo N Ekpo, Boniface L Akpan & Enobong A Ekaetor, (2024). An examination of fiscal Deficit-economic growth nexus for Nigeria using the Bound Test Approach. *AKSU Journal of administration and corporate governance*, (1)4.
- Uford, I. C. (2022). Technology and Entrepreneurship. *Basics for entrepreneurship for tertiary institutions. Uyo: Robertminder Int'l. Ltd*, 71-87.
- Uford, I., C., Charles, I., I. & Ekong, J. E. (2022). The COVID-19 Crisis and Regular Telework: The Effect of Stress on the Nigerian Oil and Gas Employees' Work Perception. *European Journal of Management and Marketing Studies*, 7(2), 179-199.
- Ugwu O. (2017). Foreign exchange rate dynamics and manufacturing firms' performance in Nigeria. *International Journal of Humanities and Social Science Invention*, 6(9),9-14.
- Umoh, S. A. (2021). The viability of makeup as a catalyst for entrepreneurship development in contemporary Nigeria. *AKSUJACOG*, 1(3), 101-112.
- Umoh, S., (2025). "Creativity and the Supernatural in the costumes of Akakum performance of Nto Usoh people in Akwa Ibom State. *Journal of Philosophy Policy and Strategic Studies*, 1(4), pp: 12-21.
- Umoh, S., Uwemedimo A., Andrew, E., & Mark O. (2024). "Indigenous Makeup in Theatre Arts: Traditional Plants as Alternative Resources and Prospects for Nigeria's Economy." *AKSUKEL/UTUENIKANG* , 5(1) , pp: 97-107.
- Umoh, S., (2023). Theatre Practice in Nigeria: Sourcing Native Materials for Makeup Design as an Alternative to exotic products. *AKSU Journal of English and Literary Studies*, 5(2), pp. 14-34.
- Umoh, Stephen. "Semiotics and Perspectives of Meanings in Bassey Ubong's Praise the Lord." *ICHOKE Journal of the Faculty of Humanities*, vol. 19, no3, 2021, pp. 267-283. <http://www.ichekejourn.com> accessed 19th March, 2025.
- Umoh, S., (2024). Exploring Indigenous Akwa Ibom Herbs and other Materials to process Alternative Makeup Materials for Theatre and Film Productions. *South-South Journal of Humanities and International Studies*. 7(3), pp. 93 -115.
- Umoh, S., (2019). Semiology in the Costumes of Ekpo Performance in Ibibio land. *AKSU Diakonia: Journal of Religion and Culture*, 1(2), pp. 64 – 94.

- Usen, E. A., UwakmfonAbasi J. S., Emmanuel O. E, & Udom N. A. (2026). Cash management practices and market value of listed pharmaceutical firms in Nigeria. *International journal of Business and Law Research* 14(2), 92-114.
- Utuk, I. O., Udo, A. B., Akpan, B. L., Ekaetor, E. A., & Eduno, E. B. (2024). An Empirical Analysis of Selected Macroeconomic Indicators and Agricultural Value Added in Nigeria. *International journal of research and innovation in social science (IJRISS)*. DOI: <https://dx.doi.org/10.47772/IJRISS.2024.801101>
- Utile, B., Okwori, A. and Ikpambese, M. (2018). Effect of Interest Rate on economic Growth in Nigeria. *International Journal of Advanced Academic Research*, 4(1): 66-76.
- Wikis, Z. (2016). Impact of exchange rate undervaluation on manufacturing sector and economic growth in Nigeria. *Journal of Economics and Sustainable Development*, 12(20), 50-60.
- Ziaul, F. (2017). Impact of exchange rate deregulation on manufacturing sector performance in Nigeria. *International Journal of Environment, Agriculture and Biotechnology (IJEAB)*, 3(3), 994-1001.

APPENDICES APPENDIX I Dataset Employed

Table 4.1 Dataset employed

COMPANY NAME	YEAR	TOTAL ASSETS
TOTAL OIL PLC	2015	83,653,555
TOTAL OIL PLC	2016	136,928,160
TOTAL OIL PLC	2017	107,981,873
TOTAL OIL PLC	2018	132,520,783
TOTAL OIL PLC	2019	135,030,878
TOTAL OIL PLC	2020	143,612,885
TOTAL OIL PLC	2021	208,728,966
TOTAL OIL PLC	2022	307,815,723
TOTAL OIL PLC	2023	375,115,673
TOTAL OIL PLC	2024	471,122,676
JAPPAUL OIL PLC	2015	33,889,618
JAPPAUL OIL PLC	2016	29,948,162
JAPPAUL OIL PLC	2017	28,001,562
JAPPAUL OIL PLC	2018	24,038,396
JAPPAUL OIL PLC	2019	23,372,077
JAPPAUL OIL PLC	2020	15,606,370

JAPPAUL OIL PLC	2021 13,089,217
JAPPAUL OIL PLC	2022 13,197,069
JAPPAUL OIL PLC	2023 14,316,135
JAPPAUL OIL PLC	2024 33,277,301
CAPITAL OIL PLC	2015 1,645,944,688
CAPITAL OIL PLC	2016 1,306,856,123
CAPITAL OIL PLC	2017 1,130,972,796
CAPITAL OIL PLC	2018 1,101,599,873
CAPITAL OIL PLC	2019 150,464,375

	PROFIT AFTER TAX	ROA%	EXCH	INFL	INTR	GDPGR	GDP
	4,047,051	4.8378709	193.279	9.0094	16.85	5.72903	94145
	14,797,095	10.806466	253.492	15.6753	16.87	7.8013	101489
	8,019,298	7.4265224	305.79	16.5235	17.56	12.0428	113712
	7,960,893	6.0072789	306.08	12.0947	19.33	12.334	127737
	2,278,979	1.6877466	306.921	11.3968	15.53	12.8966	144210
	2,063,385	1.4367687	358.811	13.25	12.32	5.62621	152324
	16,862,130	8.0784811	399.911	16.95	12.3345	13.9201	173528
	16,118,376	5.2363719	423.921	18.85	14.01		7.32 202.365
	12,912,544	3.4422833	638.7	28.92	18.75		9.45 234.426
	27,496,279	5.836331		1480	30.8	27.5	18.371 277.494
	-						
	8,036,924			-23.715	193.279	9.0094	16.85 5.72903 94145
	-						
	7,899,056	-26.37576	253.492	15.6753	16.87	7.8013	101489
	-						
	13,208,748	-47.17147	305.79	16.5235	17.56	12.0428	113712
	-						
	6,593,635	-27.4296	306.08	12.0947	19.33	12.334	127737
	40,917,297	175.06915	306.921	11.3968	15.53	12.8966	144210
	-						
	996,745			-6.386783	358.811	13.25	12.32 5.62621 152324
	-						
	3,105,681	-23.72702	399.911	16.95	12.3345	13.9201	173528
	155,983		1.1819518	423.921	18.85	14.01	7.32 202.365
	695,155		4.8557449	638.7	28.92	18.75	9.45 234.426
	1,833,081	5.5085026		1480	30.8	27.5	18.371 277.494
	-						
	61,851,888	-3.757835	193.279	9.0094	16.85	5.72903	94145
	-						
	340,252,728	-26.03597	253.492	15.6753	16.87	7.8013	101489
	84,359,367	7.4590094	305.79	16.5235	17.56	12.0428	113712
	73,761,663	6.6958671	306.08	12.0947	19.33	12.334	127737
	4,973,419	3.3053798	306.921	11.3968		15.53	12.8966 144210
CAPITAL OIL PLC	2020 90,010,587	7,811,178	8.6780658	358.811	13.25	12.32	5.62621 152324
CAPITAL OIL PLC	2021 106,365,562	11,258,738	10.584947	399.911	16.95	12.3345	13.9201 173528
CAPITAL OIL PLC	2022 151,210,792	9,653,025	6.3838201	423.921	18.85	14.01	7.32 202.365

CAPITAL OIL PLC	2023	221,092,226	11,419,752	5.1651531	638.7	28.92	18.75			9.45	234.426
CAPITAL OIL PLC	2024	368,619,250	24,102,843	6.5386827		1480	30.8	27.5	18.371	277.494	
ETERNAL OIL PLC	2015	28,565,409	1,278,073	4.4741981	193.279	9.0094	16.85	5.72903	94145		
ETERNAL OIL PLC	2016	31,690,081	1,477,559	4.6625283	253.492	15.6753	16.87	7.8013	101489		
ETERNAL OIL PLC	2017	48,045,732	2,001,902	4.1666594	305.79	16.5235	17.56	12.0428	113712		
ETERNAL OIL PLC	2018	53,136,461	1,008,996	1.8988769	306.08	12.0947	19.33	12.334	127737		
ETERNAL OIL PLC	2019	28,533,386	144,289	-0.505685	306.921	11.3968	15.53	12.8966	144210		
ETERNAL OIL PLC	2020	35,767,556	941,042	2.6309933	358.811	13.25	12.32	5.62621	152324		
ETERNAL OIL PLC	2021	46,082,300	1,100,132	-2.38732	399.911	16.95	12.3345	13.9201	173528		
ETERNAL OIL PLC	2022	53,991,022	1,012,252	1.8748525	423.921	18.85	14.01		7.32	202.365	
ETERNAL OIL PLC	2023	59,640,303	9,268,196	-15.54016	638.7	28.92	18.75		9.45	234.426	
ETERNAL OIL PLC	2024	67,422,785	1,683,359	2.4967212		1480	30.8	27.5	18.371	277.494	
MRS OIL PLC	2015	66,893,741	935,625	1.3986735	193.279	9.0094	16.85	5.72903	94145		
MRS OIL PLC	2016	81,364,815	1,465,905	1.8016449	253.492	15.6753	16.87	7.8013	101489		
MRS OIL PLC	2017	58,536,266	1,385,056	2.3661502	305.79	16.5235	17.56	12.0428	113712		
MRS OIL PLC	2018	54,283,202	1,264,941	-2.330262	306.08	12.0947	19.33	12.334	127737		
MRS OIL PLC	2019	44,209,648	1,613,082	-3.64871	306.921	11.3968	15.53	12.8966	144210		
MRS OIL PLC	2020	36,659,094	2,264,145	-6.176216	358.811	13.25	12.32	5.62621	152324		
MRS OIL PLC	2021	37,205,315	339,872	0.9135039	399.911	16.95	12.3345	13.9201	173528		
MRS OIL PLC	2022	40,526,114	1,316,102	3.2475406	423.921	18.85	14.01		7.32	202.365	
MRS OIL PLC	2023	54,831,289	4,048,758	7.3840285	638.7	28.92	18.75		9.45	234.426	
MRS OIL PLC	2024	105,773,167	6,496,917	6.1423111		1480	30.8	27.5	18.371	277.494	
SEPLAT ENERGY	2015	545,198	12,993	2.3831709	193.279	9.0094	16.85	5.72903	94145		
SEPLAT ENERGY	2016	664,676	45,384	-6.827988	253.492	15.6753	16.87	7.8013	101489		
SEPLAT ENERGY	2017			10.144543	305.79	16.5235		17.56	12.0428	113712	
SEPLAT ENERGY	2018	799,553	81,111								
SEPLAT ENERGY	2019	1,004,233	85,016	8.4657644	306.921	11.3968	15.53	12.8966	144210		
SEPLAT ENERGY	2020	1,310,837	30,712	-2.342931	358.811	13.25	12.32	5.62621	152324		

SEPLAT ENERGY	2021	1,303,089	46,931	3.6015192	399.911	16.95	12.3345	13.9201	173528	
SEPLAT ENERGY	2022	1,581,612	44,433	2.8093489	423.921	18.85	14.01			7.32 202.365
SEPLAT ENERGY	2023	3,644,382	65,199	-1.789028	638.7	28.92	18.75			9.45 234.426
SEPLAT ENERGY	2024	7,915,207	17,652	0.2230138		1480	30.8		27.5	18.371 277.494
CONOIL PLC	2015	69,387,365	2,307,557	3.3256155	193.279	9.0094	16.85	5.72903	94145	
CONOIL PLC	2016	69,833,464	2,837,884	4.0637881	253.492	15.6753	16.87	7.8013	101489	
CONOIL PLC	2017	62,855,084	1,578,507	2.5113434	305.79	16.5235	17.56	12.0428	113712	
CONOIL PLC	2018	60,897,246	1,796,042	2.9492992	306.08	12.0947	19.33	12.334	127737	
CONOIL PLC	2019	63,584,866	1,972,322	3.1018733	306.921	11.3968	15.53	12.8966	144210	
CONOIL PLC	2020	48,864,665	1,440,185	2.9472933	358.811	13.25	12.32	5.62621	152324	
CONOIL PLC	2021	53,981,346	3,082,690	5.7106579	399.911	16.95	12.3345	13.9201	173528	
CONOIL PLC	2022	65,909,238	4,957,726	7.5220502	423.921	18.85	14.01			7.32 202.365
CONOIL PLC	2023	97,477,977	9,868,239	10.123557	638.7	28.92	18.75			9.45 234.426
CONOIL PLC	2024	113,570,001	11,389,811	10.02889		1480	30.8		27.5	18.371 277.494
OANDO PLC	2015	945,321,309	49,689,877	-5.256401	193.279	9.0094	16.85	5.72903	94145	
OANDO PLC	2016	991,544,975	3,912,607	0.394597	253.492	15.6753	16.87	7.8013	101489	
OANDO PLC	2017	1,040,175,904	19,772,776	1.9009069	305.79	16.5235	17.56	12.0428	113712	
OANDO PLC	2018	1,075,110,435	28,797,743	2.6785846	306.08	12.0947	19.33	12.334	127737	
OANDO PLC	2019	957,963,105	207,078,294	-21.61652	306.921	11.3968	15.53	12.8966	144210	
OANDO PLC	2020	1,389,196,159	140,674,463	-10.12632	358.811	13.25	12.32	5.62621	152324	
OANDO PLC	2021	998,051,287	34,727,787	3.4795594	399.911	16.95	12.3345	13.9201	173528	
OANDO PLC	2022	1,252,330,481	81,599,892	-6.515843	423.921	18.85	14.01			7.32 202.365
OANDO PLC	2023	2,676,117,927	60,277,168	2.2524108	638.7	28.92	18.75			9.45 234.426
OANDO PLC	2024	7,509,296,614	65,489,693	0.8721149		1480	30.8		27.5	18.371 277.494

Source: Annual reports of selected oil and gas firms in Nigeria (2015-2024) & CBN Bulletin.

RAK UNITY	2015 696,140	89,759	12.893814	193.279	9.0094	16.85	5.72903	94145
RAK UNITY	2016 1,384,285	42,099	3.041209	253.492	15.6753	16.87	7.8013	101489
RAK UNITY	2017 1,336,315	30,351	2.2712459	305.79	16.5235	17.56	12.0428	113712
RAK UNITY	2018 1,993,800	29,614	1.4853044	306.08	12.0947	19.33	12.334	127737
RAK UNITY	2019 2,033,861	-39,780	-1.955886	306.921	11.3968	15.53	12.8966	144210
RAK UNITY	2020 574,946	64,199	-11.16609	358.811	13.25	12.32	5.62621	152324
RAK UNITY	2021 -	-	0	399.911	16.95	12.3345	13.9201	173528
RAK UNITY	2022 -	-	0	423.921	18.85	14.01		7.32 202.365
RAK UNITY	2023 -	-	0	638.7	28.92	18.75		9.45 234.426
RAK UNITY	2024 -	-	0	1480	30.8			27.5 18.371 277.494