

EXCHANGE RATE CHANGES AND FINANCIAL PERFORMANCE OF OIL AND GAS COMPANIES IN NIGERIA (1994 – 2023)

Kolawole, Olalekan Adebola (Ph.D)

Department of Management Sciences, School of Social and Management Science,
Bamidele Olumilua University of Education, Science and Technology, Ikere Ekiti. Ekiti State.

Abstract

This study examined the implication of exchange rate changes on the financial performance of oil and gas companies in Nigeria captured with return on asset and investment. The study adopted an expo facto research design and a positivist research approach. Correspondingly, the study adopted quantitative research approaches covering time series data spanning from 1994 to 2023. The sample size of the study covered 5 oil and gas firms using a random sampling method. Both descriptive and inferential statistical analyses covering auto-regression distribution lag (ARDL) and error correction estimation were conducted. The analysis result showed that exchange rate Volatility hurts the performance of oil and gas firms in Nigeria captured with return on equity and return on investment with the coefficient values of -0.19373 and -3.1294 respectively. However, the negative effect was significant for return on investment with the probability value of $0.023 < 0.05$ against the insignificant negative effect on return on equity with the p-value of $0.0644 > 0.05$. This study, therefore, established that exchange rate changes have a statistically negative effect on the financial performance of oil and gas firms in Nigeria. Hence it is recommended that the management team in the oil and gas industry should minimize their dependence on foreign currency earnings. This could be achieved by diversifying their operations into sub-sectors with lesser implications during exchange rate changes.

Keywords: Exchange Rate, exchange rate Changes, Oil and Gas Sector, Return on Asset, and Return on Investments

INTRODUCTION

It is impossible to undervalue the importance of Nigeria's oil and gas sector. This is due to the fact that this industry drives Nigeria's economy, with oil and gas exports providing the government with its primary source of income. Abubakar (2020) asserts that Nigeria's oil and gas sector provides the energy necessary for other industries to operate. All other industries in Nigeria, such as banking, manufacturing, healthcare, and transportation, are entirely dependent on the products of the oil and gas sector to function. According to Fapetu, Daramola, Adewumi, and Monigah (2023), this industry is essential to the survival of the government as well as a large number of Nigerian households. Hence, attracts the attention of every stakeholder within and outside Nigeria to monitor its financial performance to ascertain its sustainability.

According to Owoeye and Ogunmakin (2013), financial performance is the capability of the oil and gas firm to achieve its long term goals and objectives using the available limited resources.

Several key financial metrics have been introduced to provide details insights in the profitability, efficiency, solvency, liquidity and the overall financial strength of the oil and gas firms. Some of these metrics include return on equity and investment. Over the years, the financial performance of the oil and gas industry is characterized with significant milestones not limited to the exchange rate changes which highly serves as a great challenge for the industry survival.

Qing and Kusairi (2019) asserted that oil and gas products such as the gasoline, jet fuel, diesel, liquefied natural gas and many other energy related products are predominantly traded on foreign currencies most especially in US Dollars on the global market. Hence, the foreign currency especially USD serves as a benchmark for pricing many oil products. This calls for the foreign exchange practices as many nations marketing oil and gas products have their unique currency. According to Mechri, Ben Hamed, Peretti and Charfi (2018), the exchange rate is the price at which one local currency is traded for a foreign currency. This rate has varied under many governments since Nigeria attained independence.

The Nigerian currency, the Naira, has been steadily losing value in the exchange market. From 1997 to 2000, the US dollar to naira exchange rate was set at ₦21.8861. In 2001, it climbed to ₦92.6934. In 2006, the rate decreased to ₦133.504, but it returned to 121.21 in 2008. The currency rate rose to ₦127.7880 in 2009, but fell to ₦118.5669 in 2011, and then increased to ₦148.9017 and ₦150.2980 in 2012 and 2013, respectively (CBN, 2013). It also increased to ₦170.34 in 2014 and stayed up until 2023, when it was ₦460.70. In 2024, there was a noticeable rise from January to March. Currently, ₦1,223.50 is the exchange rate (CBN, 2024). Yakun, Sani, Obiezue, and Aliyu (2019) suggest that fluctuations in exchange rates can either positively impact an oil and gas company's profitability or negatively impact it, severely undermining profit margins or even resulting in a loss.

Nonetheless, it was noted that whenever there is an increase in the exchange rate, the financial performance of oil and gas companies suffers more. This is because a large portion of the supplies, parts, machinery, and services needed in this sector are purchased with foreign money, particularly US dollars. The cost of production therefore rises as a result. On the other hand, the value of oil exports in Naira rises when the Naira (NGN) falls compared to the USD. Because they would get more Naira for every dollar earned from exports, Nigerian oil and gas companies stand to benefit financially from this. On the other hand, a higher Naira lowers the Naira value of exports, which might have an effect on earnings. According to Isaac (2015), fluctuations in exchange rates have a major impact on wages, operational expenses, and the general business climate for oil and gas companies. They also increase inflationary pressures in the economy. Consumer demand, pricing policies, and profitability can all be impacted by inflationary tendencies, which can also have an effect on the financial success of businesses in the industry.

The impact of exchange rate fluctuations on the financial performance of multinational corporations has been the subject of several studies. The results, however, were not entirely definitive because some research found a favourable link and others found a negative one. This provided the researcher with motivation to conduct this investigation. Furthermore, a large number of the examined papers were banking-related. Therefore, it may be concluded that little attention has been paid to the impact that exchange rate volatility has on the long-term viability of Nigeria's oil and gas industry. Financial performance was not reflected by any of the assessed studies' variables for return on investment or equity. Furthermore, conclusions drawn from the evaluated

research may not hold water since a large number of them employed time series data that did not adequately represent current exchange rate swings. To bridge this gap, this study is established to examine the effect of exchange rate changes on the financial performance of oil and gas firms in Nigeria using a time series data spanning from 1994 to 2023. Specially, the study:

- i. examine the influence of exchange rate changes on the financial performance of oil and gas companies in Nigeria
- ii. investigate the implication of exchange rate changes on the financial performance of oil and gas companies in Nigeria

2.0 LITERATURE ISSUES

2.1 Conceptual Review

2.1.1 Exchange Rate Changes in Nigeria

The price of one currency represented in terms of another is known as the exchange rate. It continues to be one of the most significant prices in any economy and is a crucial macroeconomic indicator used to assess the general health of economies. The units of foreign currency required to buy one unit of domestic currency or the units of domestic currency required to buy one unit of foreign currency are the standard ways to express it. Exchange rate regimes are the mechanisms used to determine exchange rates.

The exchange rate is the price at which one local currency is traded for a foreign currency. This rate has varied under many governments since Nigeria attained independence. The age of fixed rate of exchange has given way to one of variable rate of exchange. The regulatory bodies instituted many exchange rate policies with the objective of fostering a favourable balance of payments, a robust and stable banking industry, a steady economy, and public confidence. An unstable exchange rate has a detrimental effect on a nation's economy, which includes the stock market; on the other hand, a well-structured exchange rate is a sign of a sustainable economy (Yakun et al. 2019). The exchange rate of the Nigerian Naira had several fluctuations in the past, ranging from 1994 to 2023.

Abubakar (2020) acknowledged that in 1994, the Nigerian government adopted a fixed exchange rate system when the Naira was pegged to US Dollar at 22 Naira. However, it was made known that this strategic financial decision was part of the structural adjustment program reforms. However, the fixed exchange rate regime was without a series of challenges as a result of the dwindling foreign reserves and external shocks. Between 2004 and 2014, a stable exchange rate environment was experienced as the Naira was traded within a narrow band against the major currencies. The high oil prices during these periods supported adequate foreign reserves that helped to stabilize the exchange rate value.

However, as oil exports were Nigeria's main source of foreign cash, the value of the exchange rate fell precipitously between 2014 and 2016. In response, the Central Bank of Nigeria implemented several policies to preserve foreign reserves, such as limiting access to foreign currency and implementing many exchange rate schemes. Nigeria used a floating exchange rate system in 2017 to achieve a favourable exchange rate value, allowing market forces to set the value of the Naira. The market dynamics, economic policies, and oil prices all had a major role in the movements of the currencies during this time, which increased exchange rate volatility. Additionally, there was

a noticeable increase in the exchange rate between 2020 and 2023. This was explained by the impact of the global COVID-19 outbreak on Nigeria's profits and foreign exchange reserves. This suggests that there have been several currency changes in Nigeria throughout time, which harms the ability of businesses to survive most especially in the oil and gas industry.

2.1.2 Performance of the Oil and Gas Sector

According to Isaac (2015), performance is the ability of corporate firms to adequately utilize the limited available resources to achieve the long-term stated objectives. Correspondingly, Mrona and Trebelsi (2020) explained the performance of the actual capability of oil and gas firms to achieve its sustainable relevance in the industry. At the beginning of a start of business, a desired strategic objective is established which corresponds with the goal of the business to be achieved in the long run. During operation, the actual operations of the business to achieve its stipulated objective and goals are known as performance. The performance of every corporate firm is perceived as a control metrics which guilds the corporate firms to take necessary measures towards achieving the desire objectives in case of deviation.

There are basic two metrics to measure the performance of oil and gas firms which are financial and non-financial performance metrics. The financial performance metrics relate to the use of ratios to usage the financial strength of the oil and gas firms. Some of these metrics are not limited to the return on asset, return on equity, return on investment, Tobin's q, earnings per share, and more. On the contrary, the non-financial performance metrics relate to the use of strategic measures to measure the actual capability of the oil and gas firms to achieve sustainability. This includes customer satisfaction, market share, business expansion, increase in assets, sales turnover, and more. However, this study is delimited to the financial performance metrics of return on equity and investment as explained below:

2.1.2.1 Return on Equity (ROE)

This is a financial metric commonly used to measure the level of profitability level a company to its shareholder's equity. It explores how a company effectively utilizes shareholder's equity towards maximizing earnings at a given financial period. It is calculated by dividing the net income by the shareholders' equity.

2.1.2.2 Return on Investment (ROI)

This is financial performance metrics used to ascertain the efficiency of an investmenet made. It is commonly used to measure the returns made from an investment relative to its cost. It is expressed as a percentage of the division of net profit gain from investment by cost of investment.

2.2 Theoretical Review

2.2.1 Purchasing Power Parity Theory (Gustav Cassel, 2004)

According to the CBN Monetary Policy Series (2018), this economic theory is used to calculate the relative values of currencies and estimate the amount of adjustment required in the exchange rates between nations in order for the exchange to be equal to the buying power of each currency.

Lagat and Nyandema (2016) state that the Swedish economist Cassel created the Purchasing Power Parity (PPP) in 1920 to investigate the relationship between the exchange rates of various nations. The theory aims to clarify the relationship between relative prices of items and their exchange rates. According to the PPP theorem, any adjustment to purchasing power parity for two currencies determined as a ratio of the prices of goods traded would tend to approximate an equivalent but contrasting equilibrium change in the exchange rates of these two currencies, which would move to offset the differences in inflation rates during a regime of floating exchange rates.

According to the PPP, the price level ratio of comparable products and services in these nations must be comparable to the exchange rate between two currencies. Generally speaking, Absolute PPP operates under the implicit presumption of a risk-neutral world in which trade of commodities may occur on its own without the need for export limits, tariffs, transportation expenses, or other restrictions (Pitia & Lado, 2015). However, assuming that there is no need for items to be transported in order to promote mobility is not realistic in real life. In the actual world, every economy produces and consumes thousands of goods and services in tens, many of which have differing pricing from nation to nation due to trade barriers, tariffs, and transportation expenses (Fapetu, Adeyeye, Syngbo & Owoeye, 2017).

This theory becomes pertinent to the research because it clarifies how major fluctuations in exchange rates might impact the import costs of supplies, parts, machinery, and services used in the oil and gas sector. The total cost structure of the oil and gas activities is subsequently altered as a result of this. Furthermore, according to PPP theory, changes in exchange rates need to correspond with shifts in the relative prices of various nations. Theoretically, Nigerian oil and gas products might become more competitive in overseas markets if the Naira weakens compared to other major currencies since their pricing in other currencies would drop. On the other hand, a higher Naira may make international markets less competitive.

2.3 Empirical Review

Currency has been acknowledged as a means of identification in every economy across the globe. However, to promote globalization and international trade among nations, an exchange rate was introduced. This practice has yielded several implications on the performance of several organizations in different industries across the globe as there have been constant changes in the exchange rates of different economies. This assertion, therefore, motivates several scholars and researchers to conduct studies on the implication of exchange rate changes on the financial performance of corporate firms. For instance, Isaac (2015) investigated the existing relationship between the exchange rate volatility and the performance of operating banks in Nigeria using a time series of data spanning from 2002 to 2014. The ANOVA analysis technique result unveiled that a positive relationship exists between the exchange rate volatility and banks' performance for the period covered.

Using the Granger causality estimation technique, Pitia and Lado (2015) established that a unidirectional causal relationship between exchange rate volatility and the performance of corporate firms in South Sudan from 2011 to 2014. The connectivity between the constant changes in the exchange rate of Kenya and banks' performance was examined by Kairu (2016) using unbalanced panel data covering a period of 10 years (2001-2010) across 5 selected banks. The random effect estimation result showed that a weak relationship exists between the exchange rate

volatility and banks' performance. A similar result was established by Lagat and Nyandema (2016) that exchange rate volatility engenders a decline in the financial strength of corporate firms in Kenya. Similarly, Owoeye and Ogunmakin (2018) concluded in their study that exchange rate volatility in Nigeria causes a great fall in the financial performance of operating banks. Yakubu, Sani, Obiezue, and Alityu (2019) empirically investigated how the exchange rate volatility influenced the trade flow practices in Nigeria from 1997 to 2016 using a GARCH model. It was concluded that the volatility of the exchange rate harms the flow of trade in the Nigerian economy for the period covered.

In 2020, Keshtgar, Pahlavani, and Mirjalili investigated the contribution of the frequent changes in exchange rates on the sustainability of commercial banks across 14 Iranian banks covering a period of 11 years (2007 to 2017). It was established through the GARCH family model technique that frequent changes have a detrimental impact on the capital return ratio across the sampled banks in Iran. Contrarily, Abubakar (2020) reported that a positive but insignificant effect exists between the exchange rate volatility of Nigerian currency and the performance of the banking industry. Njagi and Nzai (2022) explored the influence of exchange rate volatility on the financial sustainability of commercial banks in East Africa covering the period of 21 years (2000-2020). The OLS analysis result indicated that the frequent changes in exchange rates caused more harm to the sustainability of the banking firms in the East African community including Tanzania and Kenya.

Several studies have been conducted on the implication of exchange rate changes on the financial performance of corporate firms across the globe. However, the findings made were inconclusive as some studies reported a positive relationship while others reported a negative implication. This gave an impetus to the researcher to carry out this study. Also, many of the reviewed studies focused on the banking industry. Hence, it can be deduced that the implication of exchange rate volatility on the sustainability of the oil and gas sector in Nigeria has been neglected. Variable-wise, none of the reviewed studies captured financial performance with return on equity and return on investment. In addition, findings made from the reviewed studies might not be tenable as many of the studies failed to capture the recent happenings as regards exchange rate fluctuations through the time series data used. To bridge this gap, this study is established to examine the effect of exchange rate changes on the financial performance of oil and gas firms in Nigeria using a time series data spanning from 1994 to 2023. Hence, the following null hypotheses were formulated:

Hoi: Exchange Rate Volatility has no significant impact on the return on equity of oil and gas firms in Nigeria;

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3.0 METHODOLOGY

Expo-facto research design is considered appropriate for this study as the study corresponds with the structure of the secondary research approach. The availability of secondary data on exchange rate changes and the proxies for the performance of oil and gas firms (return on equity and investment) from 1994 to 2023 justifies the researcher's decision on expo-facto design as used by Pitia and Lado (2015), Kairu (2016), Lagat and Nyandema (2016), and Njagi and Nzai (2022). Correspondingly, the study adopts a positivism and quantitative research approach as the study intends to use time series data spanning from 1994 to 2023. The population of the study covers all

the listed oil and gas firms in Nigeria. As of the year ended 31st December 2023, there is a total of fifteen listed oil and gas firms in the Nigeria Stock Exchange (NSE). The sample size of the study covers five listed oil and gas firms using a random sampling method. The sampled oil and gas firms are presented in Table 3.1 below:

Table 3.1: Sampled Oil and Gas Firms

s/n	Sampled Oil and Gas Firms
1	Conoil Plc
2	Forte Oil Plc
3	Mobil Oil Nigeria
4	Oando Plc
5	Total Nigeria Plc

Source: Nigeria Stock Exchange, 2023.

Also, this study adapted the model used by Abubakar (2020) who investigated the implication of exchange rate volatility on the financial performance of banks in Nigeria. The functional and linear representation of the model is stated below:

$$ROCE = f(EXV, INF, INT) \dots \dots \dots (3.1)$$

$$ROCE = \beta_0 + \beta_1 EXV + \beta_2 INF + \beta_3 INT \dots \dots \dots (3.2)$$

Where:

ROCE is Return on Capital Employed, EXV is Exchange Rate Volatility, INF is Inflation and INT is Interest Rate.

However, this model was modified to achieve the stipulated objectives of the study. The outcome variables were replaced with return on equity (ROE) and return on Investment (ROI) while other variables remained intact. Based on this modification, the new functional and linear models are presented thus:

Model I:

Functional Representation

$$ROE = f(EXV, INF, INT) \dots \dots \dots (3.3)$$

Linear Representation

$$ROE = \beta_0 + \beta_1 EXV + \beta_2 INF + \beta_3 INT + \mu_t \dots \dots \dots (3.4),$$

Model II:

Functional Representation

$$ROI = f(EXV, INF, INT) \dots \dots \dots (3.5)$$

Linear Representation

$$ROI = \beta_0 + \beta_1 EXV + \beta_2 INF + \beta_3 INT + \mu_t \dots \dots \dots (3.6)$$

Where:

ROE = Return on Equity, ROI = Return on Investment, EXV = Exchange Rate Volatility, INF = Inflation, INT = Interest Rate, *f* is functional relation

The secondary data on exchange rate volatility, inflation, and interest rates were sourced from the Central Bank of Nigeria Statistical Bulletin (CBN, 2023) while the data on the financial performance of oil and gas firms were gathered from the financial reports of the firms under consideration. The data comprised an annual time series spanning 1994 through 2023. Finally, the study made use of descriptive statistics to show the mean, standard deviation, minimum, and maximum values of the variables used in the study. This was followed by correlation analysis, unit root analysis, co-integration analysis, and error correction model estimation. Notably Unit root test was important as it shows the number of times the variables have to be differentiated to clear the unit root and make the data stationary. Thus, the standard augmented Dickey-Fuller test (Dickey and Fuller, 1979) was performed to determine the presence of unit roots in the data and to establish the properties of individual series. After performing the ADF test. A co-integration test was conducted to know the nature of the relationship between the variables in the long run. And thereafter the Error Correction Model (ECM) was developed to know the rate of adjustment of short-run disequilibrium and how the short-run inconsistencies were incorporated into the long equilibrium dynamics over time.

4.0 RESULTS AND DISCUSSION

4.1 Descriptive Statistics

Table 4.1: Descriptive Statistics

Variables	Means	St. Dev.	Obs.	Minimum	Maximum
ROE	0.294753	0.01937	150	0.44	0.66
ROI	2.245417	1.542221	150	-4.16	12.28
EXV	1.622500	2.469692	150	2.90	4.30
INT	7.625000	1.647879	150	3.27	11.06
INF	12.37625	3.920911	150	5.39	18.87

Source: Author's Computation (2024).

4.1.1 Outcome Variables

Return on Equity (EOQ)

One of the common metrics to measure the financial stability of oil and gas firms is return on equity which relates to the earnings made on the equity funds invested over a financial period. The reported mean value implies that there are moderate variables in the return on equity across the sampled oil and gas firms in Nigeria. So far, these firms made a minimum return of 0.44 and a maximum return of 0.66 across the period covered. This implies that the oil and gas industry is productive in Nigeria.

Return on Investment (ROI)

This is another financial metric commonly used to ascertain the actual performance of oil and gas firms at a given period. The average value of 2.24 with a standard deviation value of 1.54 indicated that there is a close difference in the reported return on investment across the sampled firms for the period covered in this study. Also, the reported minimum and maximum return on investment stood at -4.165 and 12.28.

4.1.2 Predictor

Exchange Rate Volatility

This is commonly referred to as the frequent changes in the exchange rate value of a given currency to another currency in different economies. From the descriptive result, the mean value which stood at 1.623, and the standard deviation value which stood at 2.469 indicated that there is a wide gap in the constant changes in Nigerian currency across the period covered.

4.1.4 Control Variables

Interest Rate (INT)

The mean and standard values of interest rate for the period covered stood at 7.63 and 1.64 respectively. This implies that there is a wide difference in the interest rate of Nigeria for the period covered. also, the minimum and maximum values stood at 3.27 and 11.06 respectively.

Inflation (INF)

As the standard deviation (3.92) is less than the average value of 12.37, there are wide gaps in the inflation rate in Nigeria across the covered periods. The minimum and maximum values are 5.39 and 18.87 respectively.

4.2 Correlation Analysis.

Table 4.2: Pearson Correlation Matrix

Var.	ROE	ROI	EXV	INT	INF
ROE	1.000				
ROI	0.43	1.000			
EXV	-0.86	-0.55	1.000		
INT	-0.04	-0.18	-0.125	1.000	
INF	-0.36	-0.042	-0.237	-0.034	1.000

Source: Author's Computation (2024).

The person correlation matrix result presented in Table 4.2 indicated that a positive relationship exists between return on equity and return on investment. However, a negative relationship was reported between return on equity and exchange rate volatility. A similar relationship exists between the return on investment and exchange rate volatility.

4.3 Unit Root Test

Table 4.3: ADF Unit Root Test

Variable	Level		First difference		Order of Integration
	Test statistic	p-value	Test statistic	p-value	
ROE	-0.94364	0.1837	-2.49373	0.0274**	I(1)
ROI	-2.29474	0.0173**	-----	-----	I(0)
EXV	-1.19374	0.0289**	-----	-----	I(0)
INT	-4.29474	0.0193**	-----	-----	I(0)
INF	-1.89748	0.0372**	-----	-----	I(0)

Source: Data Analysis (2024) Note: *, **, and *** indicate rejection of null hypothesis at 1%, 5%, and 10% significance level respectively.

Table 4.3 shows that only ROI, EXV, INT, and INF are stationary at a level while ROE becomes stationary after the first difference. The test, therefore, confirms that the variables are a mix of I(0) and I(1) series indicating that bounds test will be carried out to determine the long-run relationship.

4.4 Analyzing the Estimated Models

Table 4.4 Results of Cointegration Estimate and Diagnostic Tests of Model I and II

Dependent Variable: ROE $ROE = \beta_0 + \beta_1 EXV + \beta_2 INF + \beta_3 INT + \mu_t$				Dependent Variable: ROI $ROI = \beta_0 + \beta_1 EXV + \beta_2 INF + \beta_3 INT + \mu_t$			
Bounds Test Result				Bounds Test Result			
F-stat.	Sig. level	Critical value bounds		F-stat.	Sig. level	Critical value bounds	
		Lower bound	Upper bound			Lower bound	Upper bound
8.400542	1%	3.65	4.66	8.852663	1%	3.65	4.66
	5%	2.79	3.67		5%	2.79	3.67
	10%	2.37	3.2		10%	2.37	3.2
Short run Estimation Result			Short run Estimation Result				
Var.	Coe.	Prob.	Var.	Coe.	Prob.		
D(EXV)	0.19274	0.0003***	D(EXV)	1.39264	0.0276**		
D(INF)	0.00154	0.1936	D(INF)	-0.10854	0.3827		
D(INT)	-0.0026	0.1527	D(INT)	-1.15652	0.0284**		
CointEq(-1)*	0.004865	0.0008***	CointEq(-1)*	-0.88316	0.0492**		
Long run Estimation Result			Long run Estimation Result				
C	11.3847	0.0023**	C	4.2948	0.001***		
EXV	-0.19373	0.0644	EXV	-3.1294	0.023***		
INF	1.39485	0.2846	INF	-1.33937	0.294		
INT	-1.3941	0.3846	INT	-2.4374	0.283		
Diagnostic Tests			Diagnostic Tests				
Normality Test (Jarque-Bera)	1.42401	0.4966	Normality Test (Jarque-Bera)	1.2921	0.5241		
Serial Correlation LM Test (Breusch-Godfrey)	1.553043	0.2766	Serial Correlation LM Test (Breusch-Godfrey)	3.437122	0.2254		
Heteroskedasticity Test (Breusch-Godfrey Pagan)	0.771150	0.6560	Heteroskedasticity Test (Breusch-Godfrey Pagan)	0.337384	0.9454		

Source: Author's Compilation (2024).

The diagnostic tests conducted on the two models indicated that the models fit as there is enough evidence for the absence of multicollinearity and heteroskedasticity in the dataset. Also, it was evidence that there is a normal distribution in the models, this implies that the models considered the assumptions of linear regression. Table 4.4 estimation result indicated that in the short run, exchange rate volatility has a contemporary positive effect on the financial performance of oil and gas firms captured with return on equity and investment. The lag error correction term $CointEq(-1)$, which measures the speed of adjustment to restore long-run equilibrium in the dynamic model has the expected negative sign and is statistically significant at a 1% significance level. This further validates the long-run relationship among the variables. Thereafter, a bound test was conducted for both models, which indicated that there is a long-run relationship among the variables in the model as the F-statistic is greater than the upper bound critical values at a 5% significance level, for the two models. This justifies the long-run effect as the most appropriate estimate for this study. Thus, it was discovered that: Exchange rate Volatility hurts the performance of oil and gas firms in Nigeria captured with return on equity and return on investment with the coefficient values of -0.19373 and -3.1294 respectively. However, the negative effect was significant for return on investment with the probability value of $0.023 < 0.05$ against the insignificant negative effect on return on equity with the p-value of $0.0644 > 0.05$.

4.5 Discussion of Findings

The study examines the implication of the frequent changes in the Nigerian exchange rate on the financial performance of listed oil and gas firms in Nigeria covering a period of 30 years (1994 to 2023). The long-run estimation result serves as the basis of this discussion. It was reported that exchange rate changes have a negative impact on the financial performance of listed oil and gas firms in Nigeria captured with return on equity and return on investment with the coefficient values of -0.19373 and -3.1294 respectively. By implication, a 1% increase in the changes of exchange rate would cause a significant decrease in the performance metrics of oil and gas firms in Nigeria. The corollary of this discovery is that the changes in exchange rates would jeopardize a significant decline in the financial strength of oil and gas firms in Nigeria.

This could be attributed to the fact that the oil and gas industry in Nigeria often makes its earnings in foreign currency (such as US dollars) from exports. When the local currency (Nigerian Naira) depreciates against the foreign currency, the revenue earned in Naira terms decreases. This can lead to lower reported revenues and profits in the firm's financial statements. Also, many inputs in the oil and gas industry, such as equipment, technology, and sometimes labour, are imported into foreign currency. A weaker local currency increases the cost of importing these inputs, leading to higher operating costs for oil and gas firms. This can reduce profit margins and overall financial performance.

However, this negative effect was significant for return on equity with the probability of $0.023 < 0.05$ against the insignificant effect on return on investment. This might be attributed to the fact that the burden of the changes in the exchange rate is often shouldered by the customers of the oil and gas industry. This finding corresponds with the discovery of Pitia and Lado (2015), Kairu (2016), Lagat and Nyandema (2016), and Njagi and Nzai (2022) that exchange rate volatility engenders a decline in the financial strength of corporate firms. Similarly, Owoeye and Ogunmakin

(2018) concluded in their study that exchange rate volatility in Nigeria causes a great fall in the financial performance of operating banks. Contrarily, Isaac (2015) and Abubakar (2020) reported that a positive but insignificant effect exists between the exchange rate volatility of Nigerian currency and the performance of the banking industry.

5.0 CONCLUSION

In line with the earlier stated objectives, thus, conclusions were drawn from the study that exchange rate changes displayed a significantly negative effect on the return on investment of oil and gas firms in Nigeria. Also, exchange rate changes displayed an insignificantly negative effect on the return on equity of oil and gas firms in Nigeria. This study, therefore, established that exchange rate changes have a statistically negative effect on the financial performance of oil and gas firms in Nigeria.

5.3 RECOMMENDATIONS

The following recommendations were made in line with the specific findings of this study:

- i. To curb the adverse implication of exchange rate changes on the financial performance of oil and gas firms, the management team in the oil and gas industry should minimize their dependence on foreign currency earnings. This could be achieved by diversifying their operations into sub-sectors with lesser implications during exchange rate changes.
- ii. The oil and gas industry should embrace local sourcing of materials, components, equipment, and services to minimize over-reliance on importations. This practice would significantly reduce the harmful impact of exchange rate changes on its sustainability and relevance in Nigeria's economy.

References

- Abubakar, U. Y. (2020). Effects of exchange rate volatility on the financial performance of deposit money banks in Nigeria. *Edo Journal of Arts, Management and Social Sciences*, 2(1), 121 – 139.
- Fapetu, O., Adeyeye, P. O., Seyingbo, O. A., & Owoeye, S. D. (2017). Exchange Rate Volatility and Stock Market Performance in Nigeria. *Nigerian Journal of Management Sciences* 6 (1): 308 – 31
- Fapetu, O., Daramola, K. O., Adewumi, P. A. & Monigah, P. O. (2023). Effect of exchange rate on stock market performance in Nigeria. *Fuoye Journal of Management, Innovation and Entrepreneurship*, 2(1), 1-12.
- Isaac, L. (2015). Assessing the impact of exchange rate risk on banks performance in Nigeria. *Journal of Economics and Sustainable Development*, 6(6), 1-13.
- Keshtgar, N., Pahlavani, M., & Mirjalili, S. H. (2020). The impact of exchange rate volatility on banking performance (case of Iran). *International Journal of Business and Development Studies*, 12(1), 39-56.

- Lagat, C. C., & Nyandema, D. M. (2016). The influence of foreign exchange rate fluctuations on the financial performance of commercial banks listed at the Nairobi Securities Exchange. *British Journal of Marketing Studies*, 2(3), 1-11.
- Mechri, N, Ben Hamed, S., Peretti, C., & Charfi, S. (2018). The Impact of the Exchange Rate Volatilities on Stock Market Returns Dynamic. *hal- 01766742v2f*
- Mroua, M. & Trebelsi, L. (2020). Causality and dynamic relationships between exchange rate and stock market indices in BRICS countries. *Journal of Economics, Finance and Administrative Science* 25(50): 395-412
- Njagi, M. M., & Nzai, C. (2022). Effect of Exchange Rate Volatility on Performance of Commercial Banks in East Africa Community. *Journal of Economics*, 2(2), 1-13.
- Olabode, A. E. (2018). *Impact of foreign exchange rate on performance of manufacturing sector on Nigeria*. A thesis submitted to the Delta State University, 1-120.
- Owoeye, T. & Ogunmakin, A. A. (2013). Exchange rate volatility and bank performance in Nigeria. *Asian Economic and Financial Review*, 2(1), 1-18.
- Pitia, S. & Lado, A. (2015). Relationship between exchange rate and inflation in South Sudan. *AERC Research Paper*, 3(1), 58-66
- Qing, Y. K. & Kusairi, S. (2019). The Effect of Money Supply, Exchange Rate, and Interest Spread. *Widyakala Journal* 6 (2): 142-149
- Yakub, M. U., Sani, Z., Obiezue, T. O. & Aliyu, V. O. (2019). Empirical investigation on exchange rate volatility and trade flows in Nigeria. *Economic and Financial Review*, 57(1), 29-57.