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EXCHANGE DIFFERENCE (IAS 21) AND FINANCIAL PERFORMANCE OF OIL AND GAS FIRMS LISTED ON NIGERIAN EXCHANGE GROUP

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Correspondence:
gu.obasi@unizik.edu.ng

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Grace U. Obasi[1] Theophilus O. Okegbe[2]
[1]Postgraduate Research Student [2]Associate Pofessor, Department of Accountancy, Nnamdi Azikiwe University, Awka, Nigeria
1. Email: gu.obasi@unizik.edu.ng
2. Email: to.okegbe@unizik.edu.ng

ABSTRACT

Extremely high exchange rate fluctuations will disrupt economic activity from both the real sector and the monetary sector. The study determines the relationship between exchange rate and the financial performance of oil and gas firms listed in Nigerian Exchange Group, over a period of ten (10) years spanning from 2012 to 2021. Specifically, the study intends to ascertain the extent to which exchange gain (loss) relates to return on capital employed, return on assets and net profit margin. Ex-post facto research design was deployed in the study. Relevant data for the study were obtained from the published financial statements of six (6) sampled listed oil and gas firms on the Nigerian Exchange Group. Ordinary least square regression and robust least square regression analyses were used to test the relevant hypotheses. The findings indicated that: there is a significant and positive relationship between exchange gain (loss) and Returns on Capital Employed of listed oil and gas firms in Nigeria at 5% level of significance; there is a significant and positive relationship between exchange gain (loss) and Return on Asset of listed oil and gas firms in Nigeria at 5% level of significance; there is a significant and positive relationship between exchange gain (loss) and net profit margin of listed oil and gas firms in Nigeria at 5% level of significance. The study concludes that loss of earnings occurs due to a mismatch between the value of assets and that of capital and liabilities denominated in foreign currencies or a mismatch between foreign receivables and foreign payables that are expressed in domestic currency. It was therefore recommended that the government should consider using more resourceful information technology infrastructure to provide information on exchange rates to the wider public in order to improve the information efficiency in the foreign exchange market.

1. INTRODUCTION

Exchange rate and its fluctuations are key factors that influence economic activities in a country (Dahiru & Joseph, 2013). The effect of exchange rate fluctuations on economic activities has been of concern to many countries especially the developing nations, even the developed nations had some time been faced with adverse exchange rate fluctuation. This implies that the effect of exchange rate fluctuations is of concern to both the developed and developing nations. Exchange rate fluctuations can also have an effect, either positive or adverse, on the performance of firms in a country as it determines to a large extent their profitability. Exchange rate is the price of one currency in terms of another currency. It can be either fixed or floating. Felix, O.M, Lidya, P.B, Enoch, N.B, Emmanuel, K.A., Issah (2022) defined exchange rate as the price of foreign currency in domestic currency, so that an increase in the exchange rate means higher price of foreign exchange causing domestic currency to be relatively cheap and depreciated, Also, if there is a decrease in the number of unit of domestic currency needed to buy one unit foreign exchange, there is a relative increase in the value of domestic currency or appreciation has occurred, (Mishkin, 2006). The exchange rate is used by countries to carry out economic transactions with other countries because two different currencies are involved. For example, Nigeria and the United States, the United States should buy Naira to buy goods or conduct economic activities in Nigeria, and vice versa.

Fluctuations in exchange rate can be described as periods of domestic currency appreciation or depreciation (Udeme & Gideon, 2020). These fluctuations give rise to what is referred to as exchange difference in firms financial statements. In addition, for multinational firms, fluctuations in different exchange rates may have offsetting effects on their profitability (Carrera & Vuletin, 2003). As the exchange rate continues to fluctuate, foreign exchange market is characterized by uncertainty which makes it difficult to predict prices, (Adeoye & Atanda 2011). The fluctuations in the foreign exchange market pose a threat to importers and exporters engaging in international business because they are naturally exposed to currency risks, these price shifts result in potential gains or losses, (Babatunde & Akinwande, 2011). IAS 21- Effects of Changes in Foreign Exchange Rate is the accounting standard that covers accounting for the transactions that are carried out by a business in different currencies other than the functional currency, it was re-issued in December 2003. Functional currency is the currency of the primary economic environment in which the entity operates. An exchange difference results when there is a change in the exchange rate between the transaction date and the date of settlement of any monetary items arising from a foreign currency transaction; Transaction date is the date in which the transaction first qualifies for recognition, (IAS 21.22). Purchase or sale is recorded in the books of account at the exchange rate prevailing at the

date of transaction and adjustments are not made for any change in exchange rate. These changes in exchange rates on different dates are treated as expenses and charged to loss on foreign exchange account, (Deloitt, 2021). Thus, exporting and importing from abroad expose oil and gas companies to foreign exchange risks which affects the level of their profitability and financial performance. Exchange rate is important because it is a useful instrument to measure the economic condition of a country. A country that has a stable currency value indicates that the country has stable economic conditions (Salvatore, 1997). Extremely high exchange rate fluctuations will disrupt economic activity from both the real sector and the monetary sector. Therefore, good exchange rate management is required in addressing the changes in the dynamic foreign exchange market to achieving competitive advantage and survival since Oil and gas companies are major players in the generation of revenue for Nigerian government.

Previous studies have conducted research on effect of exchange rate on economic growth (Akpan, 2009; Aloku, 2009; Adeniran, 2012; Dada & Oyeranti, 2012), multinational firms (Udeme & Gideon, 2020) and conglomerates (Iliemena & Good luck, 2020). Very little amount of studies have been done in respect of Oil and Gas companies in Nigeria (Ogundipe, Ojeagaa & Ogundipe, 2014); though, Farah (2014) carried out a research on effects of exchange rate on the financial performance of local oil marketing companies; but the study was conducted in Kenya leaving Nigerian environmental data unexplored. More also, the empirical studies carried out by other studies such as Ibekwe (2021); Moyo and Tursoy (2020); Iliemena, Egolum and Good luck (2020); Udeme and Gideon (2020); Yakub, Sani and Aliyu (2019); Goodluck and Iliemena (2019); Fapetu, Adeyeye, Seyingbo and Owoeye (2017); Osundina, Jayeoba and Olayinka (2016); Amassoma, and Odeniyi, 2016); Ismaila, (2016) and others did not use exchange gain (loss) to measure exchange rate volatility as was used by Takon, Nsofor and Ugwuegbe (2016) in Nigerian banks. This study is, to the best of the researcher's knowledge, the first to use exchange gain (loss) as a proxy for exchange difference in listed oil and gas firms in Nigeria. It is against this backdrop that this study ascertained the relationship between exchange difference and financial performance of listed oil and gas companies in Nigeria.

1.1 Objectives of the Study

The main objective of the study is to determine the relationship between exchange difference and performance of listed oil and gas firms in Nigeria. The specific objectives include to:

1. Ascertain the relationship between exchange gain (loss) and Returns on Capital Employed of listed oil and gas companies in Nigeria

2. Examine the relationship between exchange gain (loss) and Return on Asset of listed oil and gas companies in Nigeria
3. Evaluate the relationship between exchange gain (loss) and Net Profit Margin of listed oil and gas companies in Nigeria.

1.2 Hypotheses

i. Ho_1: There is no significant relationship between exchange gain (loss) and Returns on Capital Employed.
ii. Ho_2: There is no significant relationship between exchange gain (loss) and Returns on Assets.
iii. Ho_3: Exchange gain (loss) has no significant relationship with Net Profit Margin.

2. LITERATURE REVIEW

2.1 Conceptual review

2.1.1 Exchange Difference

Exchange difference is the difference resulting from translating a given number of units of one currency into another currency at different exchange rates. It arises on the settlement of monetary items or on translating monetary items at rates different from those at which they were translated on initial recognition during the period or in previous financial statements and shall be recognized in profit or loss in the period in which they arise.(IAS 21). Exchange rate is the ratio of exchange for two currencies. It is the price of one country's currency expressed in terms of some other currencies. It determines the relative prices of domestic and foreign goods, as well as the strength of external sector participation in international trade. Exchange rate is generally regarded as reflecting the worth of an economy in terms of another economy. Foreign exchange is the means of payment for international transactions. It is made up of convertible currencies that are generally accepted for the settlement of international trade and other external obligations. The more the exchange rate depreciates, the lower the value (in real terms) of the goods and services (including salaries and wages of workers) produced in a country vis-a-vis its trading partners.

In economics, the exchange rate of a country's currency can be divided into two, namely the real exchange rate and nominal exchange rate (Mankiw, 2006). The nominal exchange rate is the value that is used when exchanging the currency of a country with the currency of another country. Thus, the Naira of exchange rate is the value of a Naira currency that is exchanged into other countries' currencies. For example, the Naira exchange rate against the US dollar, the Naira exchange rate

against the yen and others. While the real exchange rate states the rate at which someone can trade goods or services from a country with goods or services from other countries. There are three basic types of exchange regimes: floating exchange, fixed exchange, and pegged float exchange. Floating exchange rate is a regime where the currency price of a nation is set by the foreign exchange market based on supply and demand relative to other currencies. This is in contrast to a fixed exchange rate, in which the government entirely or predominantly determines the rate while a pegged float exchange is a currency system that fixes an exchange rate around a certain value, but still allows fluctuations, usually within certain values, to occur.

2.1.2 Exchange Gain (Loss) Resulting from Exchange Difference

A foreign exchange gain/loss occurs when a company buys and/or sells goods and services in a foreign currency, and that currency fluctuates relative to their home currency. It can create differences in value in the monetary assets and liabilities, which must be recognized periodically until they are ultimately settled. Exchange rate difference refers to exchange rate movements that results from currency fluctuations. Such difference affects both the cash flow of a firms operations and the value of the firm. It is generally held that exchange rate fluctuations are an important source of macroeconomic uncertainty. Exchange rate movements affect both the prices of imported finished goods and the costs of imported inputs, thus indirectly influencing those companies that compete with such firms (Grambovas & McLeay, 2006). They should thus have a significant effect on companies profitability, regardless of whether the firm is domestically or internationally oriented. Foreign exchange rate in Nigeria over the last two decades has been characterized by fluctuations which creates uncertainty in the investment market.

The effect of exchange rate fluctuations is generally deep on firms and there should be good methods of mitigation. Hence, an organization needs to do careful analysis of these effects on its operations before making a decision on how to deal with it. Empirical evidences have shown that exchange rate volatility in turn is caused by both real and financial aggregate shocks (Calvo & Reinhart, 2002).

The fluctuating degree of exchange rate of naira to U.S dollar brought about Structural Adjustment Program (SAP) of 1986. SAP was designed to pay more attention to exports, especially in the agricultural sector, which witnessed the worst neglect. Emphasis was more on maintaining macroeconomic stability and avoiding overvalued exchange rates (Obansa, 2004).

2.1.3 Financial Performance and Measurements

Profitability measures the extent to which a business generates profits from the use of its factors of production. Harward and Upton (1991) opined that though, profitability is an important yardstick for measuring the efficiency, the extent of profitability cannot be taken as the final yard stick for efficiency. Profitability is measured by Net Income from Operations (NIFO), Rate of Return on Firm Assets (ROA), Rate of Return on Firm Equity (ROE), operating profit margin and Rate on Returns on Capital Employed (ROCE).

2.1.3.1 Returns on Capital Employed

Return on capital employed is an accounting ratio used in finance, valuation, and accounting. It is a profitability ratio that measures how efficiently a company is using its capital to generate profit. (CFI,2023). It is a useful measure for comparing the relative profitability of companies after taking into account the amount of capital used. It is calculated by dividing net operating profit, or earnings before interest and taxes (EBIT), by capital employed. Another way to calculate it is by dividing earnings before interest and taxes by the difference between total assets and current liabilities.

2.1.3.2 Returns on Asset (ROA).

The return on assets shows the percentage of how profitable a company's assets are in generating revenue. Guru et al (1999) defined ROA as the ratio of net income to total assets, measures how profitable and efficient a company's management is, based on total assets. ROA tells you what earnings were generated from invested capital (assets). ROA for companies can vary substantially and will be highly dependent on the industry. This is why when using ROA as a comparative measure, it is best to compare it against a company's previous ROA number or the ROA of a similar company. The assets of the company are comprised of both debt and equity. Both of these types of financing are used to fund the operations of the company. The ROA figure gives investors an idea of how effectively the company is converting the money it has to invest into net income (Nworie & Mba, 2022). The higher the ROA number, the better, because the company is earning more money on less investment. It tells what the company can do with what it has, i.e. how many dollars of earning they derive from each dollar of assets they control. It's a useful number for comparing competing companies in the same industry. ROA is calculated by dividing a firm's net income by total average assets. It is then expressed as a percentage.

2.1.3.3 Net Profit Margin (NPM)

Net profit margin or net profit ratio is a measure of profitability. It is a ratio that shows the company's net income from sales (Novia & Sriahdi, 2020). It includes all the factors that influence profitability whether under management control or not. Compared with industry average, it tells investors how well the management and operations of a company are performing against its competitors. Compared with different industries, it tells investors which industries are relatively more profitable than others. NPM analysis is also used among many common methods of business valuation.

NPM provides information to the firms pricing policy and production efficiency, it indicates how efficient a firm is and how well it controls its cost. The larger the margin, the more effective the firm is in converting income into actual earnings. It is usually used by firms to compare expenses over time. It is calculated by finding the net profit as a percentage of the revenue or sales.

2.2 Theoretical Review

2.2.1 Monetarist Theory

Milton Friedman was one of the leading economic voices of the latter half of the 20th century and popularized many economic ideas that are still important today. Friedman's economic theories became what is known as monetarism, which refuted important parts of Keynesian economics. Monetarism is a school of thought in monetary economics that emphasizes the role of governments in controlling the amount of money in circulation. Monetarist theory asserts that variations in the money supply have major influences on national output in the short run and on price levels over longer periods. Monetarists assert that the objectives of monetary policy are best met by targeting the growth rate of the money supply rather than by engaging in discretionary monetary policy (Phillip Cagan, 1987).It is an economic concept that contends that changes in money supply are the most significant determinants of the rate of economic growth and the behavior of the business cycle. Monetarism is a macroeconomic theory which states that governments can foster economic stability by targeting the growth rate of the money supply. Essentially, it is a set of views based on the belief that the total amount of money in an economy is the primary determinant of economic growth.

The basic idea behind monetarist thinking is that the size of the money supply is more important than any other factor affecting the economy. In the 1970s governments guided by the then-dominant school of economic thought, Keynesian economics (based on the writings of British economist John Maynard Keynes), were battling high inflation (the rising of prices across the economy that causes money to lose value) and conditions of economic stagnation. Monetarists, led by American

economist Milton Friedman, maintained that the Keynesian approach was flawed and that inflation could be brought under control by restraining the growth of the money supply.

2.2.2 Purchasing Power Parity Theory

The purchasing power parity theory was propounded by Professor Gustav Cassel of Sweden in the year 1920. According to this theory, rate of exchange between two countries depends upon the relative purchasing power of their respective currencies. Such will be the rate which equates the two purchasing powers. The theory describes that similar goods in different countries have similar value when measured in the same currency. It says that when the purchasing power is the same in different countries, the rate of exchange between the currency of those countries will be at equilibrium. It is the measurement of prices in different countries that uses the prices of specific goods to compare the absolute purchasing power of the countries' currencies. It is an economic term for measuring prices at different locations and is based on the law of one price, which says that, if there are no transaction costs or trade barriers for a particular good, then the price for that good should be the same at every location.

The theory aims to determine the adjustments needed to be made in the exchange rates of two currencies to make them at par with the purchasing power of each other. In other words, the expenditure on a similar commodity must be the same in both currencies when accounted for by the exchange rate. The purchasing power of each currency is determined in the process. The equilibrium exchange rate is one that ensures that the value exchanged can purchase the same basket of goods and services from either of the countries involved. Thus, this study is anchored on purchasing Power Parity theory because it explains a country's currency value over another country's currency.

2.3 Empirical Review

Aloku (2009) analyzed the effect of interest rate, exchange rate on the Nigerian economic growth using the annual data between 1975 and 2008. Using Ordinary Least Square technique, the result revealed that interest rate and exchange rate exerted a negative impact on economic growth in Nigeria.

Akpan (2009) studied the relationship between exchange rate and economic growth in an emerging petroleum based economy using the annual data for the period of 1970 to 2007. Using Ordinary Least Square (OLS) technique, the result revealed that there is a positive relationship between exchange rate and economic growth in Nigeria.

Opaluwa, Umeh and Ameh (2010) examined the effect of exchange rate fluctuations on the Nigerian manufacturing sector during a twenty (20) year period (1986 - 2005). The argument was that fluctuations in the exchange rate adversely affected output of the manufacturing sector. This was because Nigerian manufacturing was highly dependent on import of inputs and capital goods paid for in foreign exchange whose rate of exchange was unstable. The methodology adopted for the study was empirical. The econometric tool of regression was used for the analysis. In the model that was used, manufacturing output employment rate and foreign private investment were used as the explanatory variables. The result of the regression analysis shows that coefficients of the variables carried both positive and negative signs. The study shows adverse effect and is all statistically significant in the final analysis.

Joseph (2011) used the GARCH model on annual time series data of trade flows in Nigeria from the year 1970 to 2009. This study indicated that a negative and statistically insignificant transmission existed between exchange rate volatility and aggregate trade.

Shehu (2012) examined the relationship between exchange rate volatility, trade flows and economic growth in Nigeria using the annual data for the period of 1970 to 2009. Using a Vector Auto-regression (VAR) technique, the result revealed that exchange rate volatility has positive effects on the economic growth in Nigeria.

Adeniran (2012) studied the impact of exchange rate fluctuation on the Nigerian economic growth using annual data for the period of 1980 to 2010. Using ordinary least squares (OLS) technique, the study revealed that exchange rate has a positive impact on economic growth in Nigeria.

Dada and Oyeranti (2012) examined the effect of exchange rate volatility on economic growth in Nigeria using the annual data for the period of 1970 to 2009. Using Vector Auto-regression (VAR) technique, the study revealed that economic growth is negatively related to exchange rate in the long run while in the short run, a positive relationship exist between the two variables in Nigeria.

Asher (2012) examined the impact of exchange rate fluctuation on the Nigerian economic growth using annual data for the period of 1980 to 2010. Using Ordinary Least Square (OLS) technique, the study revealed that exchange rate has a positive effect on the GDP.

Obansa (2012) investigated the relationship between exchange rate, interest rate and economic growth in Nigeria using annual data for the period of 1970 to 2010. Using Vector Auto-regression (VRR) technique, the study revealed that exchange rate has a significant impact on economic growth in Nigeria.

Olugbenga (2012) considered the effects of exchange rate on stock market development in Nigeria both in the long-run and short-run from 1985 to 2009. The specified bi-variate model and subsequent empirical results revealed a positive and significant short-run stock market performance to exchange rate but a negative and significant long-run stock market performance to exchange rate. In addition, the results of the Granger causality test strongly suggest that the causation runs from exchange rate to stock market performance; implying that exchange rate volatility effectively explained variations in the Nigerian stock market.

Dickson and Ukavwe (2013) also applied the error correction and GARCH model to investigate the impact of exchange rate fluctuations on trade variations in Nigeria using annual time series data from 1970 to 2010. The results of the study showed that exchange rate volatility is not significant in explaining variations in import, but was found to be statistically significant and positive in accounting for variations in export.

Subair and Salihu (2013) used error-correction model (ECM) to examine the impact of exchange rate volatility on the Nigerian stock market. The study generated exchange rate volatility via GARCH process and found that it exerts a strong negative effect on the Nigeria stock markets. However, it was discovered that inflation rate and interest rate respectively failed to show any long-run relationship with stock market capitalization largely due to the fact that the government was the major participant in the market.

Fapetu (2013) investigated the relationship between foreign exchange and the Nigerian economic growth using the annual data for the period of 1960 to 2012. Using Ordinary Least Square (OLS) technique, the result revealed that exchange rate explained and accounted for about 99% variation in economic growth.

Ani, Ugwunta and Okanya (2013) examined the impact of reforms on foreign exchange on the financial deepening, a case study of Nigeria. The nation of Nigeria witnessed at least fifteen

different reforms on foreign exchange from the year 1962 with mixed results on the economy in financial depth. The ordinary least square regression was used in the data to ascertain the overall impact of reforms on foreign exchange on the financial depth of the Nigerian economy. They discovered that reforms of foreign exchange do not have the required positive impact on the depth of the financial sector in Nigeria. The authors argued that financial deregulation can have a very strong positive impact on economic performance. This indicated that after the required reforms in foreign exchange, the country's economy failed to encounter the impressive performance like a stable rate of exchange competent to attract foreign investment.

Owoeye and Ogunmakin (2013) examined exchange rate volatility and bank performance in Nigeria. This study investigated the impact of unstable exchange rate on bank performance in Nigeria using two proxies for bank performance, namely loan loss to total advances ratio and capital deposit ratio. Government expenditure, interest rate, and real gross domestic product were added to the exchange rate as independent variables. The two models specified show that the impact of exchange rate on bank performance is sensitive to the type of proxy used for bank performance. Loan loss to total advance ratio shows that fluctuating exchange rate may affect the ability of lenders to manage loans resulting in high levels of bad loans while capital deposit ratio does not have a significant relationship with exchange rate. A core recommendation of this study is that a stable exchange rate is needed to improve the ability of the banking sector to channel credit to the economy.

Adetayo (2013) examined management of foreign exchange risks in a selected commercial bank in Nigeria. The study sought to determine how the risk involved in foreign exchange can be effectively managed, by determining the following specific objectives: to determine the various exchange risks which the treasurer of the selected bank is exposed to in its foreign exchange transaction; to investigate how these risks can be effectively managed and to identify risk and exposure management techniques required for treasury management. The selected firm used for this study was a Commercial Bank of International Standard, located in Lagos, the business center of Nigeria. The study exploited both the primary and secondary sources of information. The primary source consisted of structured questionnaires, to elicit pertinent responses from the respondents. A non-parametric measure based on chi-square statistics was employed to test the hypothesis and determine if there is any association between foreign exchange trading and risk management issues. Spot transaction technique was found to be effective in minimizing foreign exchange risk.

Ayodele (2014) evaluated empirically the impact of exchange rate on the Nigerian economy. The study investigated how economic induces such as exchange rate and inflation rate affects changes in Gross Domestic Product (GDP) in Nigeria. The study used Secondary data collected from Annual Reports of Central Bank of Nigeria (CBN), Nigerian Stock Exchange (NSE), and Nigeria Securities and Exchange Commission (SEC) which were analyzed through the multiple regression analysis using the Ordinary Least Squares (OLS) method. The result showed that the two factors –exchange rate and inflation rate- impact significantly on the Gross Domestic Product and economic growth of Nigeria. Exchange rate has a negative impact on the GDP because as it increases, the economic growth is negatively affected, while inflation rate exerts a positive impact on GDP, indicating that firms are more willing to produce when inflation rate is high and vice versa. The outcome of the research was that the government should make Nigerian economic climate investment friendly by restoring security of lives and property, infrastructural development and improvement of local production in order to reduce the pressure on the dollar.

Ogundipe, Ojeaga and Ogundipe (2014). The study examined the effects of oil price, external reserves and interest rate on exchange rate volatility in Nigeria using annual data covering the period 1970 to 2011. The long run relationship among the variables was determined using the Johansen Cointegration technique while the vector correction mechanism was used to examine the speed of adjustment of the variables from the short run dynamics to the long run equilibrium. It was observed that a proportionate change in oil price leads to a more than proportionate change in exchange rate volatility in Nigeria; which implies that exchange rate is susceptible to changes in oil price. The study therefore recommends that the Nigeria government should diversify from the oil sector to other sectors of the economy hereby dwindling the impact of crude oil as the mainstay of the economy and overcome the effect of incessant changes in crude oil prices which often culminate into macroeconomic instability.

Fara (2014) established the effect of foreign exchange rate volatility on financial performance of local oil marketing companies in Kenya. The population under study was 55 oil marketing companies. The collection of the primary data was done using structured questionnaires that were pilot tested in order to ensure that there was reliability as well as validity. Secondary data was also used in the study and was obtained from the Petroleum Institute of East Africa, Central Bank of Kenya and Kenya National Bureau of Statistics respectively. The data was analyzed with the use of Microsoft Excel as well as SPSS in order to generate the descriptive statistics for instance

frequencies and percentages. The presentation of the results was in form of figures, tables as well as cross tabulations. The findings on the background information revealed that the majority of the respondents were of male while females were the minority. The results indicated that there exists no significant relationship between inflation and financial performance with a p value of .392. In the same regard, the study revealed that there was no significant relationship between performance and interest rates with a p-value of (.497). Further the study showed no significant relationship between foreign exchange volatility and performance with a p-value of (.306). This paper gives a recommendation that oil marketing companies should consider adopting Domestic or Multi-domestic strategies which are suitable for local economic environment other than applying global strategies that may be affected by forex volatility. The study further observes and recommends blending of foreign exchange rate risk management strategies that are best suited for the oil marketing companies**.**

Uduakobong and Enobong (2015) conducted an empirical analysis on the relationship between exchange rate movements and economic growth in Nigeria using annual data spanning 1970-2011. Specifically, the study sought to: examine the relationship between exchange rate and economic growth; and also to determine the nature and the direction of causality between exchange rate and economic growth in Nigeria. Employing the Ordinary Least Square (OLS) technique and the Granger Causality Test, the study revealed the existence of a positive and insignificant relationship between exchange rate and economic growth in Nigeria. The results also indicate that there is no causality between exchange rate and economic growth in Nigeria.

Osigwe (2015) evaluated the effects of exchange rate fluctuations on crude oil price as well as on economic performance, simultaneously. The ordinary least square and the two stage least squares estimation techniques were employed. The study found that the real exchange rate has a positive effect (1.2%) on Nigeria's economic performance. We also found that a 1% increase in the price of oil would positively influence the economic performance of Nigeria by the magnitude of 4%. The R2 shows that 82% deviation in the gross domestic product was captured by the explanatory variables whereas the J-statistics of the model is insignificant, thus, confirming the relevance and validity of the instruments used.

Takon, Nsofor and Ugwuegbe (2016) investigated the effect of foreign exchange transactions on the profitability of Nigerian banks for the period of 2010 to 2014. The study employed annual data generated from the annual report of ten publicly quoted banks in Nigeria. The result of Kao panel

cointegration test indicates that there exists a long run relationship between the variables under study. The result of the DOLS revealed that foreign exchange income has a negative and insignificant effect on the profitability of Nigerian banks for the period. Total asset which was used as a control variable was shown to exert a positive impact on the profitability of Nigerian banks, while total equity has a negative effect on profitability of banks in Nigeria for the same period under study.

Agbeja, Adelakun, and Udi (2016) investigated the effect of counterparty risk and exchange rate risk on the profitability of deposit money banks in Nigeria. Profit before tax was measured as a function of non-performing loans; seven banks were selected on a cross-sectional basis for five years. Secondary data were used and an auto-regression conditional model was used to measure risk. The result revealed that counterparty risk and exchange rate risk have significant effects on bank performance- profitability. Accordingly, stringent but non-static credit policy and prudent exchange rate management to enhance the economy were suggested.

Carolyn and Daniel (2016) examined foreign exchange rate fluctuations on the financial performance of commercial banks listed at the Nairobi securities exchange. The study used a time series correlation research design with the target population being all commercial banks that are listed in the Nairobi Securities Exchange between 2006 and 2013. Data was sourced from the Central Bank of Kenya and published yearly accounts of listed banks. The study used multivariate Linear Regressions to establish the relationship between foreign exchange rate fluctuations, inflation rates, interest rates and bank performance indicators. Pearson product moment correlation (r) was applied to establish the relationship between the variables. The study found a strong positive relationship between foreign exchange rates and financial performance indicators.

Diala and Igwe-Kalu (2016) examined the relationship between commercial property market and foreign exchange markets in Nigeria from 2000 to 2010 with the aim of determining the effects of Naira/US Dollar exchange rate volatility on commercial property returns in Nigeria. This study was motivated by the progressive Naira/Dollar exchange rate regime and its potential consequences on real estate investment decision making. The Exponential Generalized Auto-Regressive Conditional Heteroskedasticity (EGARCH) was used in establishing the relationship between exchange rate volatility and property investment returns volatility in Nigeria. It was found that there exists a positive insignificant relationship between commercial property returns and Naira/US Dollar exchange rate movement in Nigeria. It was also discovered that there is volatility persistence of

exchange rate on commercial property returns which implies that current period rate has an effect on the forecast variance of future rate. Leverage effect was not sufficiently significant within the study period.

Ismaila (2016) examined exchange rate depreciation and Nigeria economic growth during the SAP and post SAP period. The study covers the period of 1986–2012, using the Johansen cointegration test and error correction model analyses after conducting the stationary test, the results show that broad money supply, net export and total government expenditure have significant impact on real output performance in the long run while exchange rate has direct and insignificant effect on Nigeria economic growth in both short and long run this implies that exchange rate depreciation during the SAP period has no robust effect on Nigeria economic performance.

Amassoma and Odeniyi (2016) Examined the impact of exchange rate fluctuation on the Nigerian economic growth using an annual data of forty-three (43) years covering the period (1970 – 2013). The standard deviation method was employed to capture and estimate the fluctuation inherent in the model as regards the research's objective. The study employed econometric techniques such as; Multiple Regression Model, Augmented Dickey Fuller (ADF) test, Johansen Cointegration Test and the Error Correction Model (ECM). Evidence from this study exhibited that there exists a positive but insignificant impact of exchange rate fluctuation on Nigerian economic growth in both the long run and short run. This result is attributed to the ability of the Nigerian government to effectively regulate some other important macroeconomic variables which can infuriate exchange rate which has thereby helped curtail the effects of exchange rate fluctuation during the study period. This is an indication that monetary authorities might have initiated policies that helped absorb the influence of exchange rate fluctuation on economic growth in Nigeria.

Osundina, Jayeoba and Olayinka (2016) examined the effect of exchange rate fluctuation on banks performance in Nigeria covering the period of ten years between 2005 and 2014. We measured exchange rate fluctuation by return average annual values of US dollar to Naira for the ten-year period. We tested our exchange rate for volatility (ARCH LM test) proving its fluctuating nature. Hausman Test was conducted for fixed and random effect preferred option. We found that exchange rates fluctuation had an insignificant effect on banks profitability using ROA as a measure while exchange rates fluctuation had a significant negative effect on banks liquidity using LDR as a measure. Therefore, we concluded that the effect of exchange rates fluctuation on banks performance is subjective on the specific measure of performance used in the research. However,

our results suggest that further depreciation in the value of naira will lead to a fall in the liquidity position of the banks. As such we recommend that adequate care must be taken in establishing policies within the bank to hedge against foreign exchange risk. Furthermore, the banking sector is a vital part of the Nigerian economy and has contributed immensely to the overall GDP; we therefore suggest that the monetary authorities of Nigeria should re-assess its trade policies to incorporate strategies (high import duties, Pioneer Status, Preservation of the value of the domestic currency, maintenance of favourable external reserves position and ensuring external balance without compromising the need for internal balance)with the sole aim of enhancing naira value.

Fapetu, Adeyeye, Seyingbo and Owoeye (2017) examined the impact of exchange rate on stock market performance using monthly data of MCAP as indicators for stock performance using monthly data of MCAP as indicators for stock Market performance and monthly data on exchange rate as the parameter for measuring exchange rate volatility. Four different estimation techniques [Autoregressive Conditional Heteroscedasticity (ARCH), Generalised Autoregressive Conditional Heteroscedasticity (GARCH),Exponential Generalised Autoregressive Conditional Heteroscedasticity (E-GARCH) and Threshold Autoregressive Conditional Heteroscedasticity (TARCH)] were used. The results revealed that exchange rate has a positive relationship with market capitalization rate in Nigeria in all the four models examined in the study. However, the study showed that the volatility of variance of the residual among the four models differs from each other. It was discovered that there is no ARCH effect in the ARCH model, while there is ARCH and GARCH effect in the GARCH model. The study recommended that government should enforce policy to discourage importation of non-essential, less-productive goods and services and also create the enabling and favourable environment to encourage production and exportation of goods and services.

Goodluck and Iliemena (2019) investigated the effect of financial crises which include exchange rate fluctuation on corporate survival using a sample of 69 staff of selected manufacturing firms in Nigeria. The methodology adopted was Pearson product moment correlation. Analyses reveal financial crises have a significant negative effect on corporate survival.

Yakub, Sani and Aliyu (2019) investigated the impact of exchange rate volatility on trade flows in Nigeria using monthly data for the period 1997 – 2016. A GARCH model was used to generate the nominal exchange rate volatility series. To detect the long-run relationship among variables, the ARDL bounds testing approach was employed. Also, the Granger causality test was applied to

ascertain the direction of causality among the variables. The study found that exchange rate volatility affected Nigeria's trade flows negatively, in the short-run but does not in the long-run. As such the Central Bank of Nigeria would find some trade benefits from intervening immediately to stabilize the foreign exchange market in the face of volatility. Also, the study showed that ignoring exchange rate volatility could negatively impact Nigeria's trade flows especially in the short-run.

Udeme and Gideon (2020) investigated the effect of exchange rate volatility on the performance of multinational firms in Nigeria. It also tried to find out the nature of the relationships between exchange rate volatility and profitability (proxied by gross profit) and inflation rate. The study employed secondary data collated from the Central bank statistical bulletin and Security and exchange commission. These were analyzed using the Auto regressive distributed lag ARDL model. Results indicated a strong negative relationship between exchange rate and profitability of corporate firms operating in Nigeria, and a negative relationship between inflation rate and gross profit of corporate firms in Nigeria. This study recommended that firms should use hedging to guard against exchange rate volatility since this can affect a firm negatively and reduce a firm's productivity.

Iliemena, Egolum and Good luck (2020) examined the effect of exchange rate fluctuation on the financial performance of quoted conglomerates in Nigeria. In pursuit of the objectives of this study, three hypotheses were formulated and tested using secondary data obtained from annual reports of the 8 quoted conglomerates in Nigeria and CBN annual statistical bulletin. The study covered a period of 12years ranging from 2007-2018. Data were analyzed using multiple regression analytical estimation techniques with the aid of SPSSv21. Findings reveal that exchange rate fluctuations have significant negative effects on ROCE and ROE while a positive but insignificant effect on ROA. The conclusion drawn from this study is that foreign exchange fluctuations have a significant negative effect on the financial performance of quoted conglomerates. The researchers recommend that the Government should uphold the restriction policy on the importation of similar products manufactured in Nigeria. If this is religiously pursued, it will create and open more markets for the locally manufactured goods to thrive. Also the Government should make a policy that aims at Naira appreciation against foreign exchange rates which will greatly help reduce the cost of production in the manufacturing sector and that this would go a long way to boost the exchange rate in favour of the naira and hence improve the Gross Domestic Product.

Moyo and Tursoy (2020) examined the impact of inflation and exchange rate on the financial performance of commercial banks in South Africa. The study covers four largest commercial banks

in South Africa, namely; Standard bank, Nedbank, Capitec bank and Firstrand bank for the period 2003-2019. To measure the financial performance return on equity was used as the dependent variable and inflation and exchange rate as the independent variables. To achieve the objective of the study, the ARDL, FMOLS and DOLS models are used. The findings illustrated that there is a significant inverse relationship between inflation and the return on equity and there is a weak relationship between exchange rate and the return on equity.

Ibekwe (2021) investigated the effect of exchange rate on the performance of deposit money banks in Nigeria. Other specific objectives include to: Determine the effect of nominal exchange rate on the performance of deposit money banks in Nigeria, examine the effect of real exchange rate on the performance deposit money banks in Nigeria, investigate the effect of interest rate on the performance of deposit money banks in Nigeria and analyze the effect of exchange rate fluctuations on the performance of deposit money banks in Nigeria. The data was analyzed with econometric techniques involving Augmented Dickey Fuller tests for Unit Roots, Granger Cointegration Analyses and the Vector Autoregression Estimates was used. The result of the unit root indicates that return on asset, nominal effective exchange rate, real effective exchange rate and exchange rate fluctuation were different once to assume stationarity. Again, the interest rate was different twice to assume stationary. The findings of the Vector Autoregression Estimates revealed that nominal effective exchange and real effective exchange rate, had positive and significant effect on return on asset while interest rate and exchange rate fluctuation had negative and insignificant effect on return on assets within the period under study.

3. MATERIAL AND METHOD

The study applied *ex-post facto* research design. This design is suitable for this study since it dealt with facts and matter that has already taken place and the data were readily available for used. An *ex-post facto* research design was adopted for this study because the data are cross-sectional and time series data that already exist in various financial publications and reports of various issues. The Population of this study consists of ten oil and gas companies quoted on the Nigeria Stock Exchange, as enumerated below.

1 Ardova Plc
2 Capital Oil
3 Conoil Plc
4 Eterna Plc.
5 Japaul Gold & Ventures Plc

6 Mrs Oil Nigeria Plc.
7 Oando Plc
8 Rak Unity Pet. Comp. Plc.
9 Seplat Energy Plc
10 Total Energies Marketing Nigeria Plc

The study adopted a purposive (non-probability) sampling technique as only firms that were present on the NSE throughout the study period and have available data were selected. Thus a total number of six (6) firms were purposively sampled, which include:

1. Ardova Plc.
2. Conoil Plc.
3. Eterna Plc.
4. Japaul Gold & Ventures Plc.
5. Mrs Oil Nigeria Plc.
6. Total Energies Marketing Nigeria Plc.

To ensure effectiveness of the study, data were collected from only secondary sources. Specifically, data were obtained from the annual reports of selected oil and gas companies in Nigeria. Statement of financial position and statement of comprehensive income of six (6) purposively chosen oil and gas companies. From those reports, 10 consecutive years' (that is, from 2012-2021) statement of financial position and statement of comprehensive income reports have been used for the study. Data from statement of financial position and income statements were used for this research and to run the model. The data collected for this study were analyzed to obtain financial ratios and the data were analysed using Pearson Correlation matrix and panel regression analysis to ascertain the effect of those independent variable(s) on the dependent variable. The data analysis method used was based on Pearson correlation analyses and a simple linear regression model in the form of:

$Y = \beta_0 + \beta_1 X_1 + €i$

Where: Y = Financial performance

X_1 = independent variable(s)

B_1 = regression parameter

β_0 = constant

€ = Error term

NOTE: -Financial performance is the dependent variable while exchange rate is the independent variable. Foreign exchange impact is described as the loss or gain accruing to the firm at the end of an accounting period as a result of changes in foreign exchange rates.

Therefore, when researchers convert the above general least squares model into our specified variables in addition to two control variable (firm size), it becomes:

$ROCE = \beta o + \beta_1 EGL + \beta_2 FSZ + \mu$ …….. (I)

$ROA = \beta o + \beta_1 EGL + \beta_2 FSZ + \mu$ …… (II)

$NPM = \beta o + \beta_1 EGL + \beta_2 FSZ + \mu$ …… (III)

Table 1 Variable Description/Operationalization of Variables

Variables (code)	**Proxies (operational definitions)**
Return on Assets (ROA)	Profit Before Taxes/Total Asset
Net Profit Margin (NPM)	Net Profit After Tax/Sales Revenue
Return on Capital Employed	Profit Before Interest and Taxes/Capital Employed
Exchange gain (loss)	Gain or loss attributed to changes in foreign exchange rates
Firm Size	Natural logarithm of total assets

4. RESULT AND DISCUSSIONS

4.1 Data Analysis

4.1.1 Descriptive Analysis of Data

Table 2 Descriptive Analysis of Data

	EGL	ROCE	ROA	NPM	FSZ
Mean	-374210.5	0.202654	0.040739	6.398932	7.732809
Maximum	2533281.	2.737083	1.513072	473.9249	8.319583
Minimum	-14996680	-0.842402	-0.557343	-55.61977	7.233574
Std. Dev.	2114717.	0.415862	0.224271	62.00281	0.238328
Observations	60	60	60	60	60

Source: Analysis Output (2022) Using Eviews Version 12

The descriptive statistical analysis in Table 2 above reveals that between 2012 and 2021 the sampled firms lost an average of N374,210,500 as a result of fluctuations in exchange rate. The standard deviation of 2114717 shows that this loss caused by exchange rate fluctuations was not similarly felt by all the sampled firms. The reason for this assertion is that while the highest value of exchange gain (loss) is 2533281, its minimum value is -14996680, indicating a huge amount of variation among the Exchange gain (loss) realised by the firms under study. Secondly, the firms on average realised N0.20 profit before interest for every N1 capital employed by the firms from 2012 to 2021. The standard deviation of 0.415862 for ROCE shows that the data on ROCE contain extreme values. The firm with the highest ROCE earned 273.71% return on capital employed while the firm with the least ROCE lost 84.24% of its capital employed even before interest charges were paid. The average value of ROA (0.040739) shows that the sampled firms earned N0.04 profit before tax for every N1 asset used by the firms from 2012 to 2021. The standard deviation for ROA is 0.224271, indicating lack of homogeneity in the ROA of the selected firms. ROA ranged from -0.557343 to 1.513072.

The average value of Net Profit Margin is 6.398932 with a standard deviation of 62.00281, which shows that the net profit margins of the sampled firms from 2012 to 2021 are highly different. The maximum value of ROA is 473.9249 while its minimum is -55.61977. Finally, firm size averaged 7.732809 with a standard deviation of 0.238328. The highest firm size is 8.319583 while the lowest firm size is 7.233574.

4.2 Correlational Analysis

The study deploys Pearson Product Moment Correlation Coefficient to evaluate the association between exchange rate and financial performance at 5% level of significance. The result of the test is as shown below in Table 3

Table 3 Result of the Pearson Product Moment Correlation Coefficient

	ROCE	ROA	NPM	FEGL	FSZ
ROCE	1.0000				
ROA	0.9221*	1.0000			
	0.0000				
NPM	0.8321*	0.9105*	1.0000		
	0.0000	0.0000			
FEGL	0.3772*	0.4004*	0.1071	1.0000	
	0.0030	0.0015	0.4154		
FSZ	0.1716	0.0215	-0.1386	0.0945	1.0000
	0.1898	0.8703	0.2911	0.4725	

Source: Analysis Output (2022) Using Stata Version 14

The variables of interest are ROCE, ROA, NPM and EGL. The relationship between EGL and ROCE is positive and significant (r = 0.3773, *p*-value = 0.0030). In the same vein, the relationship between EGL and ROA is positive and significant (r = 0.4004, *p*-value = 0.0015). However, the positive relationship between EGL and NPM is not significant (r = 0.1071, *p*-value = 4154). Further analyses are required in order to estimate regression coefficients with which to validate the hypotheses raised in the study.

4.2.1 Model Diagnostics

The present study analyses three regression models. Reliability and validity of regression results depends on a number of assumptions which should be met before the test results will be considered valid. Heteroskedasticity test was carried out using Breusch-Pagan / Cook-Weisberg test; Linearity test was conducted using Ramsey Reset; and Multicollinearity test was carried out using Variance Inflation Factors.

4.2.1.1 Heteroskedasticity Test

Heteroskedasticity is a condition whereby the variance of the residuals is not constant across a range of measured values. The preferred condition is homoscedasticity. Test of heteroskedasticity for the three models is shown in Table 4 below.

Table 4 Heteroskedasticity Test

Model/Statistic	**Model A (ROCE)**	**Model B (ROA)**	**Model C (NPM)**
$Chi^2(1)$	1.04	0.81	38.40
$Pr>Chi^2$	0.3079	0.3684	0.000

Source: Analysis Output (2022) Using Stata Version 14

The result of the Breusch-Pagan / Cook-Weisberg test examining the heteroskedasticity of the residuals shows that model A and model B have homoscedastic residuals while the residual in model C are not homoscedastic at 5% level of significance. Thus, to address the lack of homoscedasticity in model C, Robust Least Square regression was used to estimate the test result examining the effect of exchange rate on net profit margin. The OLS result for this test is presented in Appendix IV while the results of the Robust Least Square regression is interpreted.

4.2.1.2 Linearity Test

Least square regression assumes that both the dependent and independent variables can be estimated using a linear function. This assumption was tested using Ramse Reset as shown in **Table 5** below.

Table 5 Linearity Test

Model/Statistic	**Model A (ROCE)**	**Model B (ROA)**	**Model C (NPM)**
F(3, 54)	0.13	0.65	0.58
Prob>F	0.9434	0.5862	0.628

Source: Analysis Output (2022) Using Stata Version 14

The null hypothesis that omitted variables are not causing model misspecification was accepted in each of three models. Thus, the use of linear regression approach is valid.

4.2.1.3 Multicollinearity Test

It is assumed in linear regression that there should be a weak correlation between or among the explanatory variables. The presence of multicollinearity constitutes a problem in a regression model as it will lead to less reliable statistical inferences. Thus, multicollinearity test was conducted using VIF as shown below.

Table 6 Multicollinearity Test

Variable	VIF	1/VIF
FEGL	1.01	0.991063
FSZ	1.01	0.991063
Mean VIF	1.01	

Source: Analysis Output (2022) Using Stata Version 14

The result of the multicollinearity test carried out in **Table 6** shows that the explanatory variables are not correlated to a large extent. This was deduced from the fact that the Centred VIF are all less than 5.

4.2.1.4 Hausman Specification Test

The structure of the data used in the study is panel structure. Thus, better regression results are obtained when panel regression techniques are applied. However, panel regression cannot be applied until Hausman Specification Test and Lagrange Multiplier Test for Random Effect are carried out. The former is used to choose between Fixed Effect Model and Random Effect Model while the latter is used to choose between Common Effect Model and Random Effect Model. The result of the Hausman Specification Test is shown below.

Table 7 Hausman Specification Test

Model/Statistic	**Model A (ROCE)**	**Model B (ROA)**	**Model C (NPM)**
$Chi^2(1)$	0.06	0.10	0.65
$Pr>Chi^2$	0.8121	0.7506	0.4206

Source: Analysis Output (2022) Using Stata Version 14

The null hypotheses were accepted in each of the Hausman Specification Tests and therefore implies that Random Effect Regression will be used to evaluate model A, Model B and Model C.

4.2.1.5 Lagrange Multiplier Test for Random Effect

The result of the Lagrange Multiplier Test for Random Effect is shown below.

Table 8 Lagrange Multiplier Test for Random Effect

Model/Statistic	**Model A (ROCE)**	**Model B (ROA)**	**Model C (NPM)**
$Chi^2(1)$	0.13	0.00	0.00
$Pr>Chi^2$	0.3598	1	1

Source: Analysis Output (2022) Using Stata Version 14

Aside choosing Random effect approach, the researcher deployed the tool of Lagrange Multiplier Test for Random Effect in order to test for random effect. The null hypothesis was accepted and the findings showed that pooled least square regression is preferred to random effect regression model.

4.2. Test of Hypotheses

4.2.1 4.3.1 Hypothesis I

Ho_1: There is no significant relationship between exchange gain (loss) and Returns Capital Employed of listed oil and gas firms in Nigeria.

Restatement of regression model: $ROCE = \beta o + \beta_1 EGL_{it} + \beta_2 FSZ_{it} + \mu_{it}$

The test result are presented in Table 9.

Table 9 OLS Result for Test of Hypothesis I

Source	SS	df	MS	Number of obs	=	60
				F(2, 57)	=	5.47
Model	1.64201969	2	.821009843	Prob > F	=	0.0067
Residual	8.56152612	57	.150202213	R-squared	=	0.1609
				Adj R-squared	=	0.1315
Total	10.2035458	59	.172941454	Root MSE	=	.38756

ROCE	Coef.	Std. Err.	t	P>|t|	Beta
FEGL	7.16e-08	2.40e-08	2.99	0.004	.3642227
FSZ	.2393825	.2126607	1.13	0.265	.1371883
_cons	-1.621641	1.646097	-0.99	0.329	.

Source: Analysis Output (2022) Using Stata Version 14

The regression results in Table 9 shows the relationship between exchange rate and the return on capital employed of listed oil and gas firms in Nigeria. The R^2 = 16.09, meaning that systematic changes in Exchange gain (loss) and Firm Size explained about 16.09% of the variance in Return on Capital Employed. The Adjusted R^2 = 13.15% adds more precision to this explanatory power after penalizing for the addition of irrelevant predictor in the model.

The F-statistics of overall significance has a value of 5.47 (Prob>F = 0.0067), indicating that the regression model provides a better fit than a model that contains no explanatory variable. The standardized coefficient of EGL is 0.3642, which suggests that there is a positive relationship between exchange gain (loss) and the return on capital employed. In other words, a marginal increase in EGL will result in an increase in ROCE by 0.3642. This direct relationship is shown to be significant judging from the Prob>t = 0.004.

4.3.1.1 Decision: The alternate hypothesis is therefore accepted that there is a significant positive relationship between exchange gain (loss) and Returns Capital Employed of listed oil and gas firms in Nigeria at 5% level of significance. In other words, listed oil and gas firms earn more ROCE when exchange rate appreciates. A corollary of this direct relationship is that a downward movement in exchange rate will also reduce ROCE significantly. However, the findings of the present study negate those of Osundina, Jayeoba and Olayinka (2016); Iliemena, Egolum and Good luck (2020).

4.3.2 Test of Hypothesis II

Ho_2: There is no significant relationship between exchange gain (loss) and Returns on assets of listed oil and gas firms in Nigeria.

Restatement of regression model: $ROA = \beta o + \beta_1 EGL_{it} + \beta_2 FSZ_{it} + \mu_{it}$

The test result are presented in Table 10

Table 10 OLS Result for Test of Hypothesis II

Source	SS	df	MS	Number of obs	=	60
				F(2, 57)	=	5.45
Model	.476606046	2	.238303023	Prob > F	=	0.0068
Residual	2.49095628	57	.043700987	R-squared	=	0.1606
				Adj R-squared	=	0.1312
Total	2.96756233	59	.050297667	Root MSE	=	.20905

ROA	Coef.	Std. Err.	t	P>|t|	Beta
FEGL	4.26e-08	1.29e-08	3.30	0.002	.4019778
FSZ	-.0155072	.1147083	-0.14	0.893	-.0164791
_cons	.1766063	.8878977	0.20	0.843	.

Source: Analysis Output (2022) Using Stata Version 14

The regression results in Table 10 shows the relationship between exchange rate and the return on assets of listed oil and gas firms in Nigeria. The R^2 = 16.06, shows that the systematic changes in Exchange gain (loss) and Firm Size explained about 16.06% of the variance in Return on asset. The Adjusted R^2 = 13.12% adds more precision to this explanatory power after penalizing for the addition of irrelevant predictor in the model. The F-statistics of overall significance has a value of 5.45 (Prob>F = 0.0068), indicating that the regression model provides a better fit than a model that contains no explanatory variable. The standardized coefficient of EGL is 0.4019, which suggests that there is a positive relationship between exchange gain (loss) and the return on asset. In other words, a marginal increase in EGL will result in an increase in ROA by 0.4019. This direct relationship is shown to be significant judging from the Prob>t = 0.002.

4.3.2.1 Decision: The alternate hypothesis is therefore accepted that there is a significant positive relationship between exchange gain (loss) and Return on Asset of listed oil and gas firms in Nigeria at 5% level of significance. As was applied in the case of effect of exchange gain (loss) on the return on capital employed, an increase or decrease in exchange gain (loss) leads to an increase or decrease in return on assets of the firms. Ibekwe (2021); Iliemena, Egolum and Good luck (2020); Osundina, Jayeoba and Olayinka (2016).

4.3.3 Test of Hypotheses III

Ho_3: Exchange gain (loss) has no significant relationship with profit margin of listed oil and gas firms in Nigeria.

Restatement of regression model: $NPM = \beta o + \beta_1 EGL_{it} + \beta_2 FSZ_{it} + \mu_{it}$

The test result are presented in Table 11

Table 11 Robust Least Square Regression Result for Test of Hypothesis III

Linear regression	Number of obs	=	60
	F(2, 57)	=	4.71
	Prob > F	=	0.0128
	R-squared	=	0.0338
	Root MSE	=	62.007

NPM	Coef.	Robust Std. Err.	t	P>|t|	Beta
FEGL	3.56e-06	1.40e-06	2.54	0.014	.1212818
FSZ	-39.02952	44.66805	-0.87	0.386	-.1500224
_cons	309.5374	353.6544	0.88	0.385	.

Source: Analysis Output (2022) Using Stata Version 14

The robust least square regression results in Table 11 shows the relationship between exchange rate and the net profit margin of listed oil and gas firms in Nigeria. The R^2 = 0.0338, shows that the systematic changes in Exchange gain (loss) and Firm Size explained about 3.38% of the variance in net profit margin. The F-statistics of overall significance has a value of 4.71 (Prob>F = 0.0128), indicating that the regression model provides a better fit than a model that contains no explanatory variable. The standardized coefficient of EGL is 0.1213, which suggests that there is a positive relationship between exchange gain (loss) and the net profit margin. In other words, a marginal increase in EGL will result in an increase in NPM by 0.1213. This direct relationship is shown to be significant judging from the Prob>t = 0.014.

4.3.3.1 Decision: The alternate hypothesis is therefore accepted that there is a significant positive relationship between exchange gain (loss) and net profit margin of listed oil and gas firms in Nigeria at 5% level of significance. In other words, listed oil and gas firms earn more net profit margin when exchange rate appreciates. A corollary of this direct relationship is that a downward movement in exchange rate will also reduce NPM significantly. The results of the study negated those of Udeme and Gideon (2020); Carolyn and Daniel (2016). The reason for the disparity between the findings of extant literature and the findings of the present study is not farfetched. This is because the present study of which evidence were sourced from listed oil and gas firms 2012 to 2022.

CONCLUSION AND RECOMMENDATIONS

Oil and gas firms that carryout foreign exchange operations are exposed to the risk of foreign exchange loss as much as they are prone to foreign exchange gain. Fluctuations in exchange rate lead to either gain or loss on the part of the firms. Thus, this study examined the extent to which exchange gain or loss affects the return on capital employed, return on assets and net profit margin of listed oil and gas firms in Nigeria. The loss of earnings may occur due to a mismatch between the value of assets and that of capital and liabilities denominated in foreign currencies or a mismatch between foreign receivables and foreign payables that are expressed in domestic currency. The results of the study showed that listed oil and gas firms earn more ROCE when exchange rate appreciates. A corollary of this direct relationship is that a downward movement in exchange rate will also reduce ROCE significantly. As in the case of effect of exchange gain (loss) on the return on capital employed, an increase or decrease in exchange gain (loss) leads to an increase or decrease in return on assets of the firms. Listed oil and gas firms earn more net profit margin when exchange rate appreciates. A corollary of this direct relationship is that a downward movement in exchange rate will also reduce NPM significantly. The above are empirical evidence that the financial performance of listed oil and gas firms in Nigeria is driven by changes in exchange rate which increase or decrease the firms' exchange gain (loss). In line with the findings of the study, the researcher recommends that:

1. The government should consider using more resourceful information technology infrastructure to provide information on exchange rates to the wider public in order to improve the information efficiency in the foreign exchange market.
2. The Central Bank of Nigeria should adequately intervene in the market to reduce information asymmetry and speculation in order to address the persistence in exchange rate fluctuation in Nigeria.

3. Listed oil and firms should carry out more regular foreign exchange exposure projections in order to minimize some of the risks associated with foreign exchange risks and so as to utilize their financial instruments in a way that better hedges against foreign exchange risk.

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