

MARKET RISK AND FINANCIAL PERFORMANCE OF OIL AND GAS FIRMS LISTED ON NIGERIA EXCHANGE GROUP PLC.

AGBASI EVELYN

Department of Accounting, Tansian University, Umunya, Anambra State, Nigeria

agbasievelyn@gmail.com, 08033912788

DR. EJIOFOR EMMANUEL ONYEKA

emmaejiofor7@gmail.com Phone: 08033764127

PROF. JOSEPH UCHE AZUBUIKE

jubelazubuike@yahoo.com, 08033503747

ASSOCIATE PROF. LAWRENCE EDEH

lawrenceedeh@gmail.com, 08033912788

&

DR. UBOGU FESTUS

Department of Accountancy, Madonna University, Okija Campus, Anambra State, Nigeria

drubogufestus@gmail.com phone: 08149030383, 08034118404

ABSTRACT

This study examined the effect of market risk on financial performance of oil and gas firms listed on Nigeria exchange limited from 2018 to 2023. Four objectives were set to guide the study which included investigating the effect of exchange rate risk, commodity price, equity price risk and interest rate risk on the financial performance of firms sampled. Six oil and gas firm were sampled from the total of eight of them listed on the stock exchange as at 31st December 2023. Secondary data were collected from Central Bank of Nigeria's Statistical Bulletin and the financial statements of the firms which for the periods under review. The data were analysed with descriptive statistics, correlation and ordinary least square regression analysis. The results there from indicate that exchange rate risk has significant effect on financial performance of Oil and Gas firms. Moreover, interest rate risk has insignificant effect on financial performance. Again, results show that commodity price risk has no significant effect on financial performance. Equity price risk has no significant effect on financial performance of firms in Oil and Gas sector listed on Nigeria stock market. The study recommends among other things that the firms should engage hedging to control exchange rate risks.

Keywords: Market risk, financial performance, foreign exchange.

Background to the study

Business organisations all over the world and Nigeria in particular, face a wide variety of risks that are influenced by uncertainties in their operations. These risks must be conquered in order for them to be able to achieve their economic goals (Odubuasi et al., 2020). In the

meantime, risk is an inherent uncertainty that is continually embedded in any transitions that are orientated towards making a profit (Agbana et al., 2024). To a significant extent, risk manifests itself as anything that impedes the attainment of a particular category of predetermined financial goals (Kanchu & Kumar, 2013). Market risk, which is the focus of this investigation, is the risk of an entity not meeting its financial expectations as a result of fluctuations in market prices, which include changes in interest rates, foreign exchange rates, equity and commodity prices (Muriithi et al., 2016; Ekinci, 2016). In essence, risks can be broken down into three categories: financial risks, operating risks, and market risks (Odubuasi et al., 2020). Market risk is the risk that poses the greatest concern to this investigation. Concerning the extent to which market risk has an impact on the performance of business organisations, a rhetorical question was posed regarding the manner in which the risk is carried out. In conditions of a volatile market, the risk has the potential to cause losses to occur rapidly.

Oil and gas industry operations in Nigeria are not immune to market risk; rather, they are not isolated from it. It was reported that the net profit of the Nigerian oil and gas industry during the second quarter of the fiscal year 2023 dropped by 27.08% (The Cable, 2023). This was the case despite the fact that a comprehensive study was conducted on the impact of market risk on the financial performance of oil and gas firms that are listed on the Nigeria exchange group, and the subsequent recommendation was made regarding this matter. According to the report, Seplat oil Plc. had a decrease in profit after tax of 42.53 percent, which amounted to 11.54 billion Nigeria Naira on the whole. It is even more concerning because Eterna oil Plc. reported a net loss of N7.02 billion during the same time period. The operations of the oil and gas business should be harnessed in order to increase Nigeria's profits for fiscal function. This should be done in a frenetic manner until Nigeria is able to successfully diversify its alternative sources of revenue. As a result, these performance shortfalls emphasize the importance of conducting an adequate analysis of specific market risks in order to ensure that the oil and gas industry continues to be viable and sustainable for the Nigerian state and other stakeholders.

Statement of the Problem

As a systemic risk component, market risk consequences on Nigeria oil and gas firms are inimical to growth of the nation being the major revenue drive. Understanding the direction and magnitude of impact by the market risk would help operators know beforehand the approach to apply in order to reduce or eliminate the effect of their occurrence. Adequate study on these associated market risks is lacking for reliance on policy formulation and guide to action especially from Nigeria perspective. Mudanya and Muturi (2018), Ekinci (2016), and Muriithi et al. (2016) were among the studies that indicated that the majority of the research on market risk and financial performance came from the economies of foreign countries. The few studies on this topic that were carried out in Nigeria at the present time focused on the financial service sector, specifically on deposit money banks (Onyegiri et al., 2024). On the other hand, the studies that were specifically anchored on the oil and gas sector needed to be updated considering that the data that was used on them were from the 2018 fiscal year (Abubakar et al., 2021; Odubuasi et al., 2020). Given that a great number of economic indices have undergone major shifts within the time span of 2018 to 2023, it is imperative that the

study be conducted using data that is now available. There is therefore a periodic or time gap in the existing body of literature, and the purpose of this current study is to fill it by straying the effect of market risk on the oil and gas sector of the Nigerian exchange group using data that are extended to the 2023 financial year.

Objectives of the Study

The broad objective of this study is to investigate the effect of market risks on the performance of Oil and Gas firm in the Nigeria. The study is set to achieve the following specific objectives:

1. To ascertain the effect of interest rate risk on the financial performance Oil and Gas industry in Nigeria,
2. To determine the effect of foreign exchange rate risk on the oil and Gas industry financial performance in Nigeria,
3. To ascertain the effect of commodity prices risk on the financial performance of Oil and Gas industry in Nigeria.
4. To investigate the effect of equity price risk on the financial performance of Oil and Gas firms in Nigeria.

Research Questions

The study has formulated the questions in synchronization with the objectives;

1. How does interest rate risk affect financial performance of firms listed on oil and gas sector of Nigeria?
2. To what level does foreign risk rate influence financial performance of oil and gas firms in Nigeria?
3. To what extent does commodity price risk affect the financial performance of oil and gas firms in Nigeria?
4. What is the effect of equity price risk on the financial performance of oil and gas firms in Nigeria exchange group Plc?

Hypotheses

The study tested the following hypotheses, formulated in line with the objectives, which are stated in their null forms as follows;

Ho1: interest rate risk does not have significant effect on the financial performance of oil and gas firms listed on Nigeria exchange group plc.

Ho2 : Foreign exchange rate risk does not have significant effect on the financial performance of oil and gas firms listed on Nigeria exchange group plc.

Ho3 : Commodity price risk has no significant effect on the financial performance of oil and gas firms listed on Nigeria exchange group plc.

Ho4 : Equity price risk does not have significant effect on the financial performance of oil and gas firms listed on Nigeria exchange group plc

Scope of the Study

The study dwells on the relationship between market risk and financial performance of firms listed on Nigeria exchange group which is meant to cover oil and gas firms alone. The study is skewed to cover the financial years from 2014 to 2023 and used interest rate risk, commodity

price risk, exchange rate risk and equity price risk to represent market risk while return on assets measured financial performance of firms.

Significance of the Study

The study result will be useful to the following stakeholders;

Management – the result would help them get better understanding on the economic variables that deplete more the financial activities of the firms and be proactive in fending for it.

Oil and gas industry – this sector would gain deeper insight on the indices that contributed to the poor performance recorded in 2022 fiscal year and as well plan to prevent its adverse reoccurrence effect.

Researchers – the result of this study will add to the existing literature on providing reference materials to potential scholars in this area and more importantly making available current information on the area.

Limitations of the Study

The study was shrouded with the challenges of getting data for the eight oil and gas companies on the floor of Nigeria exchange group. Only six of the company did we succeed to get their completed data for the periods studies and that we should know may have caused a deviation from the result that would be obtained supposing the entire eight companies data were got. However, the result is still good for making generalization since the studied elements were 75% of the population.

REVIEW OF RELATED LITERATURE

Conceptual review

Market risk

Market risk refers to the potential for a company to experience financial losses due to fluctuations in the value of its assets caused by changes in interest rates, securities, commodity prices, foreign exchange rates, and other factors related to market risk (Odubuasi et al., 2020). In their study, Yousef et al. (2023) found that beta may indicate this particular risk. Beta measures the extent of systematic risk linked to an investment in the overall market. Portfolio diversification is not successful in reducing market risk; nonetheless, an investor can protect themselves against systematic risk by hedging. According to Ekinci (2016), market risk refers to the potential for financial losses in a liquid investment portfolio due to fluctuations in market prices. This risk encompasses various factors such as interest rates, foreign currency exchange rates, equities prices, and commodity prices. Market risks refer to the potential negative impact on the value or future cash flows of a financial instrument due to fluctuations in market prices, including interest rates, foreign exchange rates, equities prices, and commodity prices. This study employed degree of financial leverage, interest rate risk, and foreign exchange rate exposure as proxies for market risk, consistent with previous research conducted by Kelvin (2016) and Muriithi et al. (2016).

Interest rate risk

The risk of interest rates refers to the possibility of a decline in the economic worth of equity or the income generated by equity as a consequence of a negative movement in interest rates. According to Opoku-Adarkwa (2011), interest rate risks are elements that have the potential

to have a negative impact on that of a company's earnings and its economic position. According to Muriithi et al. (2016), interest rate risk exposures include the management of the net interest margin, which is represented by the difference between interest revenue and interest expense, as well as the control of the risk that is posed by fluctuating interest rates while simultaneously attempting to capitalise on the fluctuating interest rates.

Commodity price risk

Shift in Agricultural products, fuels, and metals that are traded in bulk on a commodity exchange or spot market are examples of commodities (Odubuasi et al, 2020). Commodities are things or resources that are reasonably interchangeable and can be purchased and sold freely as an object of commerce. According to Ildirar and Iscan (2015), commodities are the fundamental materials and natural resources that are utilised in almost all items and the manufacturing process. One of the most notable examples of commodities is oil, wheat, iron, and robber, which are the primary components of a variety of everyday things that we encounter in our daily lives. As a classification system, Farooki and Kaplinsky (2012) divided commodities into the following categories: industrial crops (timber), fisheries, cereals, beverages, livestock, precious metals, coal, and petroleum products. According to Algita and Indre (2014), the price of locally produced goods or imported goods is affected by the fluctuations in the prices of the most essential commodities that are traded on marketplaces for commodity exchanges around the world.

Foreign exchange risk

The price of one country's currency represented in terms of the currency of another country is referred to as the exchange rate from that country. According to Oladipupo and Onotaniyohuwo (2011), fluctuations in currency rates have a domino effect on the economic activities of a nation. It has been observed that the exchange rate is the result of the interplay between the demand for foreign exchange and the supply of foreign exchange (Ezejelue, 2008; Enekwe et al., 2013). Inevitably, the exchange rate acts as the lubricating oil in international transactions. As a result, businesses and nations alike are impacted, either positively or negatively, by swings or variations in the exchange rate (Enekwe et al., 2013). This is because the exchange rate acts as a lubricant. An investigation conducted by Agubata and Odubuasi (2018) discovered that the exchange rate had a beneficial impact on the performance of manufacturing enterprises in Nigeria.

Equity share price risk

A share of common stock can be purchased or sold on the stock market for a certain amount of money, which is referred to as the equity price. As a result, the variations that take place on the price of shares during the day, particularly when demand and supply are moving in different directions, are referred to as changes in stock price. According to the theory put forth by Mustafa and Nishat (2006), the market equity price is both volatile and sensitive in the sense that it undergoes quick changes as a result of political events. It was pointed out by Musyoki (2011) that in addition to profitability indices, other factors that influence share price include interest rates, inflation rate, government regulation, and the attitude of investors.

Financial performance

The financial performance of a business is an action that is performed after the business has been operating in order to establish how economically successful or lucrative the business has been over a specific time period. To put it another way, financial performance refers to the degree to which a company is able to fulfil its financial obligations or goals. According to Irungu (2013), the purpose of doing a financial performance analysis is to ascertain the financial position of a company for the purpose of identifying the financial strengths and weaknesses of the company. This is accomplished by utilising and building a relationship between the components that make up the financial position and the income statement. Return on equity, return on assets, return on capital, return on sale, and operating margin are some of the ratios that are typically used to evaluate a company's financial performance (Gilchris, 2013). Return on assets (ROA) and return on equity (ROE) ratios are the two important financial performance indicators that are often used to measure the performance of companies relatively successfully (Price Waterhouse Coopers, 2008; Zaman et al., 2014). In addition, ROA and ROE ratios are the ratios that are used to determine profits.

Theoretical review

The foundation of this book is the theory that governs the determination of exchange rates. In the theory of exchange rate determination, the concept of purchasing power parity, sometimes known as PPP, is the source of inspiration. According to Odubuasi (2016), the PPP serves as the foundation for the modern explanation of trends and movements in the fluctuations of the long-term exchange rate levels. According to Salas and Gomez (2015), the validity of this theory, which is based on the works of the British economist David Ricardo, is derived from the assumption that the law of single price is in effect. The legislation stipulates that if there are circumstances of open competition, there should be no transportation expenses, and there should be no trade obstacles, then similar commodities should have the same price in any country. In addition, the theory emphasized that in order to ensure that the law of one price is adhered to for all things, it must be constructed with the help of a price index that is comprised of a basket of goods and services.

Empirical review

Onyegiri et al. (2024) investigated the impact that market risk had on the financial performance of deposit money banks in Nigeria from the years 1994 to 2022, which took place during the financial years. The foreign exchange risk, inflation, interest rate, and total assets of banks on return on assets, return on equity, and yield on earning assets of deposit money banks in Nigeria are the components of market risk that were investigated and formed the objectives of the study. Secondary data were obtained from the Banking Supervision Reports of the Central Bank of Nigeria and the Annual Reports of the Nigeria Deposit Insurance Corporation (NDIC). The technique that was utilised in the process of estimating the models was known as the Autoregressive Distributive Lag (ARDL) model. According to the findings of the study, market risk has not had a major impact on the changes in return on assets and return on equity of deposit money banks in Nigeria. On the other hand, market risk has had a substantial impact on the changes in yield on earning assets of deposit money banks in Nigeria. For the purpose of mitigating the risks of loss that are brought about by exchange rate conditions in Nigeria's banking industry, the study suggests that banks should manage

their operations in a manner that maximises their earnings and profits. Additionally, in order to make the most of the exchange rate system in Nigeria, the banking system needs to be reengineered. This is a need.

The authors Agbana et al. (2024) investigate the influence that market and operational risk have on the performance of DMBs in Nigeria between the years 2015 and 2023. The published annual reports of thirteen (13) DMBs were combed through to obtain secondary data, which was then examined using descriptive statistics, as well as inferential statistics such as correlation and panel regression. The findings indicate that MRSK and OPSK have an impact on ROA of approximately 66%, 61%, and 65% for the pooled effect model, fixed effect model, and random effect model, respectively. On the other hand, their impact on EPS is 70%, 74%, and 73% respectively for all of the scenarios that were applied, indicating that MRSK and OPSK are positive and negative predictors, respectively. According to the findings of this study, management should make it a top priority to implement cost management methods in order to lower the ratio of operational expenditures, which would ultimately lead to increased profit margins.

Abubakar et al. (2021) used panel data from the annual reports of listed oil and gas companies in Nigeria to estimate the impact of market risk on the financial performance of companies from 2008 to 2018. The time period covered by their study was from 2008 to 2018. It was decided to use an ex post facto study design, and the independent variable was represented by financial leverage, interest rate risk, and foreign exchange exposure. The dependent variable was represented by return on assets, and the independent variable was a proxy for the latter. The descriptive statistics were used for the analysis, and the fixed effect model was employed for the purpose of drawing conclusions. Based on the findings, it was discovered that financial leverage has a positive and significant impact on the financial performance of the organisation, however interest rate risk and foreign exchange exposure do not have a significant impact on the financial performance of the organisation. According to the findings of the study, companies operating in the oil and gas industry should exercise extreme caution when contemplating investments in fixed income instruments because of the expensive interest rates involved.

In their study, Odubuasi et al. (2020) looked into the impact that market risk had on the financial performance of companies in Nigeria between the years of 2014 and 2018. The study was led by four objectives: to explore the influence of changes in interest rates, changes in foreign currency rates, changes in commodity prices, and changes in equity prices on the financial performance of oil and gas companies in Nigeria. An approach of research known as causal research was chosen, and secondary data was collected from the Statistical Bulletin of the Central Bank of Nigeria as well as the financial statements of companies operating in the oil and gas sector that are listed on the Nigerian Stock Exchange. In order to examine the data, descriptive statistics, correlation analysis, and multiple regression analysis were also utilised. According to the findings, the exchange rate has a considerable impact on both the return on assets and the return on equity of oil and gas companies. The interest rate has a considerable impact on return on equity, but almost little impact on return on assets. The change in the price of commodities does not have a substantial impact on either return on

assets or return on equity. Similarly, the change in the price of equities does not have a significant impact on the return on assets and return on equity of companies operating in the oil and gas sector in Nigeria.

An investigation was conducted by Agubata and Odubuasi (2018) to determine the impact that fluctuations in the exchange rate have on the financial performance of manufacturing companies in Nigeria. The researchers chose eight companies from the food, beverage, and tobacco sector of the economy to make their sample. The ex post facto research strategy was utilised, and time series data of the samples were gathered from the Statistical Bulletin of the Central Bank of Nigeria as well as the financial statements of the companies that covered the period from 2005 to 2014. The Ordinary Least Square (OLS) multiple regression estimators were utilised, and the findings reveal that the exchange rate and inflation rate have a positive impact on the financial performance of the sector. On the other hand, the interest rate has a negative impact on the food, beverage, and tobacco sectors.

Using a random effect model (REM) panel estimator, Abubakar (2020) investigates the influence of market risk on the market value of eight listed DMBs in Nigeria over a period of ten years, beginning in 2010 and ending in 2019. According to the findings, the degree of financial leverage (DFL) has a positive and significant impact on the market value, however the interest rate risk (IRR) and foreign exchange exposure (FEE) do not have a significant impact on the market value. using Tobin's Q as a proxy.

The OLS regression technique is utilised by Harley (2018) in order to assess the impact that fluctuations in the currency rate had on the performance of listed companies in Nigeria between the years 2012 and 2016. The findings indicate that fluctuations in the exchange rate have a considerable and significant beneficial impact on the return on investment. Ordinary least square (OLS) is the method that Mudanya and Muturi (2018) use to analyse the impact of interest rates on the profitability of eleven commercial banks in Kenya starting in 2007 and continuing through 2016. IRR and ROA are found to have a substantial negative correlation, according to the findings. Using data collected from 30 commercial banks in Kenya over the course of the period from 2006.

In their study, Muriithi et al. (2016) investigated the impact that market risks had on the financial performance of commercial banks in Kenya over the course of 15 years, beginning with the 2005 fiscal year and ending with the 2014 fiscal year. For the purpose of measuring the exogenous variable, they utilised financial leverage, interest rate risk, and exposure to foreign exchange as the parameters. For the purpose of data analysis, descriptive statistics, correlation analysis, and regression approach were utilised. The study design utilised was a time series cross sectional research design, and the secondary data contained information for forty-three commercial banks that are registered in Kenya. This finding demonstrates that financial leverage, interest rate exposure, and foreign exchange exposure all have a substantial link with bank profitability that is in the opposite direction.

Through the use of weekly data, Ubogu (2016) conducted an investigation on the impact that credit and market risk had on the performance of Turkish banks over a period of fourteen

years. In their research, they utilised time series data and utilised a generalised autoregressive conditional heteroscedasticity technique. This was done with the intention of gaining a better knowledge of the factors that influence bank performance, including interest rate, foreign exchange rate, and credit risk. The findings suggest that credit risk and the foreign exchange rate have a positive and significant impact on the performance of the banking sector in Turkey, but the interest rate has a positive impact but does not have a major impact. Furthermore, the researchers discovered that credit risk, foreign exchange rate, and interest rate hazards all had a positive and significant impact on the conditional bank stock return volatility.

Odubuasi (2016) conducted research that covered the period of time from 2005 to 2014 and looked into how fluctuations in the currency rate affected the performance of manufacturing companies in Nigeria. As a means of contributing to the accomplishment of the study's goal, he proposed four hypotheses. In this study, an ex post facto research approach was utilised, and secondary data was collected from the annual reports of the companies as well as the CBN statistical bulletin. The multiple regression analytical technique was utilised. According to the findings, the exchange rate does not have a substantial impact on any of the dependent variables; however, it does have a favourable impact on the net profit margin, return on assets, and return on equity, but it has a negative impact on profits per share.

Literature gap

Extant literature showed that the study on market risk and financial performance were mostly from foreign nations economy (Mudanya & Muturi, 2018; Ekinci, 2016; Muriithi et al., 2016). The few of the study on this title conducted in Nigeria at current period was on financial service sector precisely deposit money banks (Onyegiri et al., 2024), while the ones precisely anchored on oil and gas sector needed to be updated since the data used on them were 2018 financial year data (Abubakar et al., 2021; Odubuasi et al., 2020). Therefore, there is need to use current data to explore the study knowing that many economic indices have changed significantly within the gap period of 2018 to 2023. Hence a periodic or time gap exists in literature and this current study is set to fill it by straying the effect of market risk on oil and gas sector of Nigerian exchange group using data extended to 2023 financial year.

METHODOLOGY

Research design

The study used ex post facto research design. This method is adopted because the study anchored on utilizing existing data to determine the cause and effect relationship between the dependent and independent variables.

Population of the study

The study covered all the eight Oil and Gas firms listed on Nigeria exchange group for ten years which span from 2014 to 2023.

Sample size and sampling technique

Six of the firms were selected a sample size, chosen on the basis of elimination method subject to availability of financial statements. The firms that were not in operation for the ten year period of the study were removed. The one firm whose financial statement could not be easily

obtained was also removed. At the end, we were left with six oil and gas firms. That is to say that two of the firms whose financial statements were not complete for the periods of the study were excluded from the study leaving out six firms for the study.

Nature and Source of data

The study used secondary data. The economic data for the study were obtained from the Central Bank of Nigeria (CBN) Statistical Bulletin and National Bureau of Statistics data base; while the financial data were collected from the annual reports and accounts of the sampled firms.

Method of data analysis

The study used descriptive statistics, Pearson correlation and regression estimation technique for data analysis, again, Durbin Waston test was used to test for autocorrelation. Hypotheses of the study were tested at 5% error margin.

Model Specification

We adopted the model of Odubuasi et al. (2020) for this study as presented below;

$$ROA_{it} = \theta_0 + \beta_1 FXR_{it} + \beta_2 COMPR_{it} + \beta_3 INTR_{it} + \beta_4 EQPR_{it} + \mu_{it} \dots (1)$$

Where;

ROA= Return on assets

FXR= Foreign exchange risk

COMPR= Commodity price risk

EQPR = Equity price risk

INTR = Interest rate

μ = Error margin

β_1 - β_4 = Coefficient of determination

θ_0 = Constant

DATA ANALYSIS AND INTERPRETATION

Descriptive analysis

The study applied descriptive statistics to determine the distribution pattern of the data set generated and the result is presented in the table below.

Table 4.1: Descriptive Statistics

	<i>ROA</i>	<i>FXR</i>	<i>INTR</i>	<i>EQPR</i>	<i>COMPR</i>
<i>Mean</i>	0.318667	0.234000	0.096000	0.373333	0.726000
<i>Median</i>	0.205000	0.200000	0.090000	0.360000	0.550000
<i>Maximum</i>	1.230000	0.450000	0.130000	0.910000	1.230000
<i>Minimum</i>	0.040000	0.050000	0.070000	0.090000	0.380000
<i>Std. Dev.</i>	0.284828	0.158630	0.021722	0.136141	0.339687
<i>Skewness</i>	1.653484	0.202197	0.403407	1.376126	0.447613
<i>Kurtosis</i>	5.152803	1.374796	1.763674	6.230398	1.446154

Jarque-Bera	38.92650	7.012056	5.448627	45.02590	8.039666
Probability	0.000000	0.030016	0.065591	0.000000	0.017956
Sum	19.12000	14.04000	5.760000	22.40000	43.56000
Sum Sq. Dev.	4.786493	1.484640	0.027840	1.093533	6.807840
Observations	60	60	60	60	60

Source: researcher computation (2024)

The descriptive statistics showed that the selected enterprises had an average Return on Assets of 0.318. Max and min are 1.23, 0.2.78, and 0.04, 0.180. Over the research period, the Oil and Gas companies performed well. Exchange rate fluctuations average 0.234, peak 0.450, and dip 0.050. The discrepancy between the mean, maximum, and minimum values illustrates that exchange rates fluctuated substantially over the research. Oil and gas companies that export and import will be severely impacted by this change.

The interest rate change exhibits little variance over time. The study also found that interest rate changes are regularly distributed at 5%. The mean value of the stock price change result demonstrates that Oil and Gas firm equity prices varied substantially during the investigation. The maximum value and minimum value show that Oil and Gas firm share values vary widely. There was little change in crude oil prices over the study period, according to the rate change. All variables are regularly distributed and significant. Since all explanatory variables are regularly distributed, there are no outliers.

Correlation analysis

The use of correlation analysis was implemented to establish the relationship between market risks components and financial performance indicator of the chosen oil and gas sector. The analysed result is presented in the table below.

Table 4.2 - Correlation analysis

	ROA	FXR	INTR	EQPR	COMPR
ROA	1.000000	0.056690	-0.037311	0.080105	0.097677
FXR	0.056690	1.000000	-0.756701	-0.145114	-0.067263
INTR	-0.037311	-0.756701	1.000000	0.042984	0.350614
EQPR	0.080105	-0.145114	0.042984	1.000000	-0.265459
COMPR	0.097677	-0.067263	0.350614	-0.265459	1.000000

Source: researcher computation (2024)

The return on assets exhibits a negative correlation with changes in interest rates, and a positive correlation with changes in exchange rates, interest rates, and crude oil prices. This

indicates that an increase in the interest rate will result in a decrease in performance, as assessed by Return on Assets. The Return on Equity is inversely correlated with changes in equity price, interest rates, and crude oil prices. The inverse correlation indicates that as the equity price change, interest rate change, and crude oil price change increase, the firm performance of Oil and Gas enterprises tends to decrease. The correlation between company performance and exchange rate change suggests that as the exchange rate increases, the performance of Oil and Gas enterprises also tends to increase. The outcome indicates that there was no perfect correlation between any two explanatory variables. This suggests that there is no issue of multicollinearity in the model utilised for the investigation.

Regression analysis

This tool was used to test the effect of independent variable components interest rate, foreign exchange rate, commodity price and equity price risk on the dependent variable financial performance return on assets. More so, this tool will be applied to test the hypotheses of the study and the acceptance or rejection of the hypotheses follow suit.

Table 4.3: Regression analysis table

Dependent Variable: ROA

Method: Panel Least Squares

Cross-sections included: 6

<i>Variable</i>	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-Statistic</i>	<i>Prob.</i>
C	0.208349	0.360090	0.578603	0.5652
FXR	0.846286	0.386668	2.188664	0.0152
INTR	-1.052378	2.998994	-0.350910	0.7270
EQPR	0.272691	0.292421	0.932530	0.3551
COMPR	0.135964	0.130152	1.044659	0.3008
<i>R-squared</i>	0.430735	<i>Mean dependent var</i>		0.318667
<i>Adjusted R-squared</i>	0.389757	<i>S.D. dependent var</i>		0.284828
<i>S.E. of regression</i>	0.290435	<i>Akaike info criterion</i>		0.444780
<i>Sum squared resid</i>	4.639379	<i>Schwarz criterion</i>		0.619308
<i>Log likelihood</i>	118.3492	<i>Hannan-Quinn criter.</i>		
		0.513048		
<i>F-statistic</i>	8.436011	<i>Durbin-Watson stat</i>		1.968442
<i>Prob(F-statistic)</i>	0.000014			

Source: Researcher computation (2024)

From the data shown in Table 4.3, it can be observed that the regression determination coefficient is 0.43. The score signifies that 43% of the variations in the performance of the Oil and Gas firm employed in the study can be accounted for by market risk variables. The F-statistics value of 8.43, along with its probability value of 0.000, indicates that the regression model is very suitable for forming inferences and is statistically significant at the 1% level. The

Durbin Watson value, which is roughly 2.0, indicates that there is no autocorrelation present in our model.

Test of hypotheses

Hypotheses one - Exchange rate risk has no significant effect on firm performance

A coefficient value of 0.846 was found to be associated with Return on Assets, as indicated by the analysis. The fact that this is the case demonstrates that the exchange rate has a favourable impact on the financial performance of listed oil and gas companies, as measured by their Return on Activity. In addition, this suggests that a higher exchange rate may result in a larger return on asset acquisition. The probability value, on the other hand, demonstrates that the impact of the exchange rate on the performance (Return on Assets) of oil and gas companies in Nigeria is statistically significant. According to the findings of the analysis, the study indicates that the exchange rate has a considerable impact on the performance of oil and gas companies that are listed on Nigeria exchange group plc. This conclusion is reached because the study rejects the null hypothesis and accepts the alternative hypothesis. These studies, which demonstrated that variations in foreign currency rates have a considerable and positive effect on the financial performance of enterprises, (Odubuasi et al. 2020; Harley, 2018; Ekinici 2016), lend credence to the conclusion that this result is correct.

Hypothesis two - commodity price risk has no significant effect on firm performance

The table displayed a coefficient value of 0.136. The coefficient value indicates that there is a positive relationship between commodity price risk and Return on Assets for oil and gas enterprises listed on the Nigeria exchange group plc. This suggests that increased volatility in commodity prices results in higher returns on assets for Oil and Gas companies. The probability value of Return on Assets indicates that the impact of fluctuations in crude oil prices on the performance of Oil and Gas companies in Nigeria is not statistically significant. According to the analysis, the study rejects the alternative hypothesis and accepts the null hypothesis, concluding that commodity price risk does not have a substantial impact on the performance of Oil and Gas firms in Nigeria. The findings align with the previous literature, which asserts that commodity price risk does not have a substantial impact on the financial performance of oil and gas companies (Odubuasi et al., 2020; Norhafiza et al., 2014).

Hypothesis three - Equity price risk has no significant effect on firm performance

A value of 0.273 is identified as the coefficient in the analysis's findings. It may be deduced from the fact that the coefficient value is positive that the return on assets of oil and gas companies that are listed on Nigeria exchange group Plc is positively impacted by equity price risk. The probability value, on the other hand, demonstrates that the impact of equity price risk on return on assets is not statistically significant with regard to the return assets of oil and gas companies and companies in Nigeria. The alternative hypothesis is rejected by the study, and the null hypothesis, which states that changes in equity prices do not have a substantial impact on the financial performance of oil and gas companies that are listed on Nigeria exchange group plc, is accepted. This conclusion is reached on the basis of the investigation's empirical findings. The results of this empirical investigation provide credence to the findings of the research conducted by Odubuasi et al. (2020).

Hypothesis 4: Interest rate risk has no significant effect on firm performance

A coefficient value of -1.052 and a P-value of 0.727 were found to be associated with the analysis's findings. Because of the magnitude of the coefficient, it can be seen that changes in interest rates have a detrimental impact on the Return on Assets of oil and gas companies. Among the oil and gas companies that are part of the Nigeria exchange group, the value demonstrates that an increase in the change in interest rates might have the effect of lowering the level of firm Return on Assets. According to the likelihood value, the impact of a change in interest rates on the return on assets of the oil and gas business in Nigeria is not substantial. The study comes to the conclusion that interest rate risk does not have a substantial impact on the firm performance of the Oil and Gas sector in Nigeria. This conclusion is based on the findings of the investigation, after which the alternative hypothesis is rejected. According to the findings of certain studies (Muriithi et al. 2016; Khan & Sattar 2014), the interest rate does not have a major impact on the financial performance of a company. This conclusion is strengthened by these findings.

Conclusion

Market risk is a significant obstacle that businesses in Nigeria must overcome in order to continue existing. This study was commissioned as a result of the market risks' inherent unpredictability and inability to be divided into distinct categories. In essence, the purpose of this study was to analyse how the oil and gas industry has fared in Nigeria despite the turbulent economic situation. Interest rate risk, currency rate risk, commodity price risk, and equity price risk were the independent variables that were used to indicate market risk. Return on assets, on the other hand, was used to reflect financial performance. In light of the fact that the research project intended to collect secondary data from the published financial statements of the companies that were sampled and the statistics bulletins of CBN, the researchers ultimately chose to use an ex post facto research design. An ordinary least squares estimation was used to conduct the analysis of the empirical data that was gathered. The findings of the empirical investigation led the researchers to the conclusion that anytime there is a plan to raise the interest rate, the performance of oil and gas companies would decrease. This is due to the fact that the interest rates on the money that was borrowed will be significantly higher. To add insult to injury, the price of shares on the market should not be considered a component that defines the profitability of the oil and gas business. When it comes to evaluating the financial performance of the oil and gas business in Nigeria, the significant role that market risks play is truly overwhelming.

Recommendations

The following recommendations were made in line with the findings made as follows;

1. Hedging is a method that companies can employ to protect themselves from the impact that fluctuations in exchange rates have on the performance of the oil and gas industry. This is so that they can exert control over the volatility of the exchange rate.
2. The price of crude oil should receive less attention because changes in its price do not have a substantial impact on the performance of the company. However, oil and gas companies would be able to establish a policy that allows them to maintain an appropriate profit margin for their sales. They are able to respond appropriately to variations in the price of crude oil as a result of this.

3. The companies ought to move their focus away from the equity price and instead concentrate more on increasing their profit position in order to enable them to pay dividends, given that the equity price is more responsive to market information.
4. Because an increase in interest rates reduces the profitability of oil and gas companies, the government ought to ensure that legislation is enacted to cut interest rates. This will allow businesses within the economy to flourish, which will ultimately lead to the expansion of the economy.

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