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ASSET MANAGEMENT AND FIRM VALUE OF LISTED OIL AND GAS FIRMS IN NIGERIA

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ABSTRACT

The study examined the effect of asset management on the firm value of listed oil and gas firms in Nigeria. The specific objectives are to: examine the extent to which current asset turnover ratio affects the Tobin's Q of listed oil and gas firms in Nigeria; determine the extent to which fixed asset turnover ratio affects the Tobin's Q of listed oil and gas firms in Nigeria, and ascertain the extent to which total asset turnover ratio affects the Tobin's Q of listed oil and gas firms in Nigeria. Research questions and hypotheses were formulated in line with the objectives of the study. Ex-Post Facto research design was adopted. The sample of the study consists of nine listed Oil and Gas firms on the Nigerian Exchange Group (NGX). Data were extracted from the companies of the study annual reports and accounts from 2014 to 2023. Analysis was carried out with regression analysis. The study revealed that Current Asset Turnover Ratio has a positive but non-significant effect on Tobin's Q of listed oil and gas firms in Nigeria (Beta: 0.091155, p = 0.5286); Fixed Asset Turnover Ratio has a positive but non-significant effect on Tobin's Q of listed oil and gas firms in Nigeria (Beta: 0.000762, p = 0.8140), and that Total Asset Turnover Ratio has a negative but non-significant effect on Tobin's Q of listed oil and gas firms in Nigeria (Beta: -0.222383, p = 0.3378). The study recommended among others that management teams of listed oil and gas firms enhance their current asset management practices to improve efficiency by adopting more sophisticated inventory management systems and optimizing working capital, thereby driving higher revenue generation from current assets..

Key words: *Asset management, Current asset turnover, Fixed asset turnover, Tobin's Q.*

1. INTRODUCTION

Asset management encompasses the strategic deployment, maintenance, and utilization of both physical and intangible assets in order to optimize operational performance and achieve long-term business goals (Joseph, Isah & Abe, 2023). As the industry faces increasing pressure from stakeholders, (including governments, investors, and environmental groups), the need for robust asset management practices has become more pronounced. Firms that can

effectively manage their assets appear better positioned to navigate the complexities of the industry, mitigate risks, and capitalize on opportunities, thereby enhancing their value and ensuring their competitiveness in the global market (Achori, Dada & Ogundajo, 2023). In today's fast-paced and ever-evolving business environment, effective asset management is critical to the success and sustainability of organizations across various industries (Rahima, 2023). For firms in the oil and gas sector, where assets such as exploration equipment, production facilities, pipelines, and intellectual property are highly capital-intensive, the importance of managing these assets efficiently cannot be overstated. Effective asset management helps organizations maximize the value derived from their assets by ensuring that they are utilized optimally, maintained regularly, and upgraded as needed to meet changing operational demands.

Asset management involves a comprehensive approach to managing an organization's assets throughout their lifecycle—from acquisition and operation to maintenance and eventual disposal (Achori, Dada & Ogundajo, 2023). Ensuring asset integrity is crucial in the oil and gas industry, where the failure of critical assets can have catastrophic consequences, including environmental disasters, financial losses, and damage to a company's reputation. Value optimization, the ultimate goal of asset management, involves maximizing the return on investment from assets while minimizing costs and risks. This requires a strategic approach to asset management, where decisions are based on a thorough understanding of the asset's value, its contribution to the organization's objectives, and the trade-offs between cost, risk, and performance. In the oil and gas industry, effective asset management is critical to achieving long-term business success because asset management plays a pivotal role in influencing the value of firms, particularly in capital-intensive industries like oil and gas. The value of a firm is often measured by its market capitalization, which reflects the collective perception of investors regarding the firm's future profitability and growth potential (Igwe, 2024). Effective asset management can enhance firm value by improving operational efficiency, reducing costs, and mitigating risks, all of which contribute to stronger financial performance and higher investor confidence.

One of the primary ways in which asset management influences firm value is through the optimization of operational performance. By ensuring that assets are operating at peak efficiency, firms can increase production output, reduce waste, and lower operating costs. This, in turn, leads to higher profit margins and improved financial results, which are key

drivers of firm value. Moreover, by maintaining assets in good condition and ensuring their reliability, firms can avoid costly breakdowns and production delays that could negatively impact their financial performance and reputation. In addition to improving operational efficiency, effective asset management also plays a crucial role in risk management. The oil and gas industry is fraught with risks, including equipment failures, regulatory compliance issues, and environmental hazards. By implementing robust asset management practices, firms can identify and mitigate these risks, thereby protecting their assets, minimizing potential losses, and enhancing their overall value. By optimizing the use of assets, managing risks, and aligning asset management practices with stakeholder expectations, firms can enhance their operational performance, reduce costs, and improve their overall market value. The oil and gas industry is the bane of the Nigerian economy (Ogunjumo, Musa, Adama, Abu, Inedu, Hamzat & Ibitowa, 2024), playing a crucial role in the energy supply chain and influencing numerous sectors worldwide. In Nigeria, this industry is particularly significant, as it is a major contributor to the country's Gross Domestic Product (GDP) and a primary source of government revenue (Manasseh, Nwakoby, Okanya, Ifediora & Nzidee, 2023). The fluctuating nature of oil prices, regulatory changes, and geopolitical factors all contribute to the volatility and risk associated with this sector. Given the high stakes involved, firms operating within the oil and gas industry must manage their resources effectively to ensure sustainability and profitability. Asset management, therefore, becomes a critical function within organizations, as it directly impacts their operational efficiency, risk management, and ultimately, their value in the marketplace (Nkwo, 2023). As the oil and gas industry continues to evolve, the importance of effective asset management will only increase, making it a key driver of firm value and long-term business success.

Asset management practices are often suboptimal, characterized by inadequate maintenance, poor planning, and insufficient investment in new technologies (Campbell, Jardine, McGlynn & Barry, 2024). Many firms struggle to maintain the integrity and reliability of their critical assets, leading to frequent breakdowns, production disruptions, and increased operational costs. Additionally, the risk management strategies employed by these firms are often reactive rather than proactive, with firms responding to asset failures and regulatory issues only after they have occurred. This approach not only increases the likelihood of operational disruptions but also exposes firms to significant financial risks (Joseph, Isah & Abe, 2023).

As a result, ineffective asset management leads to higher operational costs, reduced production efficiency, and increased downtime, all of which negatively impact the firm's

financial performance. As a result, investor confidence is eroded, leading to a decline in the firm's market value. Moreover, the inability to manage risks effectively exposes firms to regulatory penalties, environmental liabilities, and reputational damage, further diminishing their value in the eyes of stakeholders. In the long term, firms that fail to address these issues may struggle to remain competitive in the global oil and gas industry, ultimately risking their survival.

The existing literature reveals a significant gap in understanding the effect of asset management on firm value, specifically within the context of listed oil and gas firms in Nigeria. Previous studies, such as those by Rachman, Karyatun, and Digdowiseiso (2023), and Basri (2023), focused on total asset turnover and asset structure but did not address the industry-specific dynamics of the oil and gas sector. While Abebe (2022) and Wokeh (2022) explored asset-liability management and non-current assets, their research did not examine the impact on Tobin's Q, a key measure of firm value. Further, Banamtuan, Zuhroh, and Sihwahjoeni (2020) and Charlie and Akpan (2020) assessed asset management's effect on performance metrics like ROI but overlooked Tobin's Q in the context of Nigerian oil and gas firms. Studies by Purba and Bimantara (2020) and Sarafa and Joshua (2020) investigated asset management effects on financial performance indicators, yet did not address its specific impact on Tobin's Q. Kadioglu and Ocal (2017) and Mwaniki and Omagwa (2017) also failed to explore this relationship within the oil and gas sector. Addressing this gap could provide crucial hints on how asset management strategies influence firm value in this critical industry.

1.1 Objectives

The main objective of this study is to examine the effect of asset management on the firm value of listed oil and gas firms in Nigeria. The specific objectives are to:

1. ascertain the extent to which current asset turnover ratio affects the Tobin's Q of listed oil and gas firms in Nigeria.
2. determine the extent to which fixed asset turnover ratio affects the Tobin's Q of listed oil and gas firms in Nigeria.

1.2 Research Questions

1. To what extent does current asset turnover ratio affect the Tobin's Q of listed oil and gas firms in Nigeria?

2. To what extent does fixed asset turnover ratio affect the Tobin's Q of listed oil and gas firms in Nigeria?

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1.3 Hypotheses

H_{01}: Current asset turnover ratio does not significantly affect the Tobin's Q of listed oil and gas firms in Nigeria.

H_{02}: Fixed asset turnover ratio does not significantly affect the Tobin's Q of listed oil and gas firms in Nigeria.

2. LITERATURE REVIEW

2.1 Conceptual Review

2.1.1 Asset Management

Asset management is a systematic approach to overseeing a company's assets with the aim of enhancing their value and optimizing their use while mitigating associated risks (Joseph, Isah & Abe, 2023). This process involves the strategic organization, monitoring, and administration of both physical and financial assets to ensure they contribute effectively to achieving the company's goals and maximizing returns on investment. At its core, asset management seeks to balance the cost of owning and maintaining assets against the benefits they deliver (Purba & Bimantara, 2020). Effective asset management encompasses a range of activities including inventory management, maintenance scheduling, and asset tracking. It requires the careful planning and execution of strategies for acquiring, utilizing, and disposing of assets in a manner that aligns with the organization's strategic objectives (Oghenekohwo, Anastesia & Moses, 2019). This practice involves managing both tangible assets, such as machinery, real estate, and infrastructure, and intangible assets like financial investments and intellectual property (Olaoye & Ayodele, 2019). A key aspect of asset management is optimizing the return on assets while controlling costs and risks. For instance, investing in high-cost equipment may enhance operational efficiency, but organizations must also weigh the costs of maintenance and potential repairs throughout the equipment's lifecycle (Kadioglu & Ocal, 2017). Effective asset management thus requires a careful evaluation of whether the long-term benefits outweigh the associated expenses and risks. Risk management is another crucial element of asset management. This involves identifying and addressing potential risks related to asset ownership, such as equipment failures, accidents, and technological obsolescence. By implementing robust risk management strategies, organizations can reduce the likelihood and impact of such risks, thereby protecting their investments and ensuring continuous operational stability (Purba & Bimantara, 2020).

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2.1.2 Current Asset Turnover Ratio

The current asset turnover ratio is a financial metric used to evaluate how effectively a company utilizes its current assets to generate sales. Current assets are those expected to be converted into cash within a year, including items like inventory, accounts receivable, and cash equivalents (Olaoye & Ayodele, 2019). This ratio is crucial for understanding a company's operational efficiency, as it indicates how well these assets are employed to produce revenue. To determine the current asset turnover ratio, one divides the net sales of a company over a specific period—usually a year—by the average amount of current assets held during that same period. This ratio reveals how much revenue is generated for each dollar of current assets. A higher ratio suggests that a company is effectively managing its current assets to produce substantial sales, reflecting strong operational efficiency and effective inventory and receivables management (Mawih, 2013). Conversely, a lower ratio may signal inefficiencies, such as poor inventory control or slow collection of receivables, indicating that the company is not fully capitalizing on its current assets to drive revenue.

Investors and analysts commonly use the current asset turnover ratio to assess a company's financial health and operational performance. By comparing this ratio to those of other companies within the same industry, they can understand the company's relative efficiency and effectiveness. Additionally, tracking changes in the ratio over time can help in evaluating the success of strategic initiatives and identifying areas where improvements may be needed. A robust current asset turnover ratio not only reflects a company’s capability to efficiently utilize its assets but also suggests that the company has effective sales strategies and robust asset management practices. Conversely, a declining ratio could indicate underlying issues in asset management or operational processes, warranting a closer examination of the company's operational strategies and asset utilization practices. Thus, the current asset turnover ratio serves as a valuable tool for assessing and benchmarking a company’s performance in managing its current assets to generate sales.

2.1.3 Fixed Asset Turnover Ratio

The fixed asset turnover ratio is a key financial metric that assesses how efficiently a company utilizes its fixed assets to generate revenue. Fixed assets, which include long-term investments such as property, plant, and equipment, are not expected to be converted into cash within a year (Olaoye & Ayodele, 2019). This ratio helps evaluate how effectively these assets are leveraged to produce sales. To calculate the fixed asset turnover ratio, the company’s net sales

over a specific period, usually a year, are divided by the average fixed assets held during that same period (Sunjoko & Arilyn, 2016). The resulting figure indicates the amount of revenue generated for each dollar of fixed assets. A high fixed asset turnover ratio suggests that the company is efficiently using its fixed assets to drive sales, reflecting an effective production process and robust asset management practices (Purba & Bimantara, 2020). It often implies that the company is making optimal use of its property, plant, and equipment, and has a solid strategy for generating revenue.

Conversely, a low fixed asset turnover ratio may signal that a company is not fully capitalizing on its fixed assets, potentially due to issues such as underutilized production capacity, inadequate maintenance, or other operational inefficiencies (Cheptoo, 2018). Such a ratio could indicate that the company's fixed assets are not being used as effectively as they could be, possibly impacting overall revenue generation and profitability.

2.1.4 Firm Value

Firm value refers to the total worth of a company, representing its overall economic and financial position (Igwe, 2024). It is a concept that encapsulates various financial metrics and indicators to provide a comprehensive view of a company's standing in the market. Firm value is crucial for investors, management, and other stakeholders as it reflects the company's performance, profitability, and growth potential. This value can be assessed through several methods, including market capitalization, enterprise value, and book value (Shuaibu, Ali & Amin, 2019).

Market capitalization, one of the most commonly used measures, is calculated by multiplying the company's current share price by its total number of outstanding shares. This metric provides a snapshot of the company's market value as perceived by investors, reflecting how much they are willing to pay for a share of the company. Market capitalization is a straightforward measure but may not fully capture the company's financial health or growth prospects. Book value, on the other hand, represents the net asset value of a company, calculated as total assets minus total liabilities. While it provides a hint into the company's equity position, it may not fully reflect the market value, especially for companies with significant intangible assets or those in rapidly changing industries. Firm value is not static; it evolves with changes in the company's financial performance, market conditions, and investor perceptions (Shuaibu, Ali & Amin, 2019).

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2.1.5 Tobin's Q

Tobin's Q is a financial ratio used to evaluate the attractiveness of investment opportunities by comparing the market value of a company's assets to their replacement cost (El-Faitouri, 2014). Named after economist James Tobin, this ratio provides hints into how investors perceive the value of a company's assets relative to the cost of acquiring or replacing them. Tobin's Q is calculated by dividing the market value of a firm's assets by their replacement cost. The market value of a company's assets is determined by the current stock price and the value of outstanding securities. It represents what investors are willing to pay for the company's assets based on their expectations of future performance and profitability. The replacement cost, on the other hand, is the estimated cost required to replace the company's assets at current market prices. This cost includes expenses related to acquiring new assets, installation, and any other associated costs.

Tobin Q is extensively used in the financial literature as a proxy for future investment opportunities. The Tobin Q ratio is defined as the market value of a firm divided by the replacement cost of the firm's assets (Shim, 2022). The numerator of the ratio and the market value of the firm depend on the discounted expected future cash flows generated by the firm's assets. Since the denominator of the ratio is simply replacement cost of assets and its expressed in present value terms, it therefore implies that a positive association exist between a firm's Tobin Q and its future cash flows. Tobin Q ratio has been used in a variety of situations in the financial literature to examine different financial phenomena and decisions. The ratio has been used in research related to investment and diversification (Jose, Nichols and Stevens, 1986).

2.2 Empirical Review

Alkomsan (2024) investigated the impact of capital structure, total assets turnover, and liquidity on the financial performance of companies listed on the Egyptian Stock Exchange. The researcher relied on a sample of 48 companies across five sectors, according to the nature of each of these sectors in terms of type of industry, as follows: food Sector, manufacturing sector, pharmaceutical =, no consistent impact is seen on long-term shareholder value measured through ROE and Tobin's Q. Finally, control variables firm size and assets tangibility have varying effects depending on the sector and performance measure.

Nworie, Moedu and Onyali (2023) examined the effect of current asset management on the financial performance of listed consumer goods firms in Nigeria. The study specifically determined the extent to which debtor turnover ratio, cash ratio and inventory turnover ratio affect the Earnings Per Share of listed consumer goods firms on the Nigerian Exchange Group, using causal-comparative research design. Purposive sampling technique was deployed to determine the twelve (12) consumer goods firms that made up the sample participants of the study, out of a population of twenty-one. Secondary data were obtained from the annual reports and accounts of the selected companies over a period of ten years which spanned from 2011 to 2020. The hypotheses formulated were tested using Ordinary Least Square technique at 5% level of significance. The findings revealed that while debtor turnover ratio and inventory turnover ratio have a positive effect on earnings per share, cash ratio negatively affects the Earnings Per Share of listed consumer goods firms on the Nigerian Exchange Group. However, the effects were not significant at 5% level.

Yanti, Brahmayanti and Ratnawati (2023) determined the effect of asset structure, Capital Structure, and structure ownership against performance finance and risk business. Good corporate Governance (GCG) was used as moderation on company mining which listed in exchange effect Indonesia in the years 2019–2021. Population of the study comprised company mines in the selected coal sector (*coal production*) in a manner of perceptive sampling and selected 13 coal mining companies with a period of research from 2019 to 2021. Data processing techniques in research used PLS with Outer Model Analysis tests, Inner Model analysis tests, and Hypothesis Testing. The results of the study showed among others that Asset structure is not influential and significant to Risk business; Asset Structure has no significant effect on financial performance.

Rachman, Karyatun and Digdowiseiso (2023) determined the effect of Total Asset Turnover (TATO) on Financial Performance of listed firms in Indonesia. This study was processed using the eviews 10 application. In this study, there were 79 population of Property and Real Estate companies listed on the Indonesia Stock Exchange (IDX) for the 2016-2020 period. The sample of this research used purposive sampling method. Based on the criteria that have been set, then obtained 20 samples of companies that will be studied in this study. The results of the regression analysis show that partially total Asset Turnover (TATO) has a positive and significant impact on the financial performance of property and real estate companies listed on the IDX in 2016-2020.

Basri (2023) investigated how asset structure influences the performance of manufacturing firms listed on the Indonesia Stock Exchange. This research combined qualitative and quantitative methods to collect data. Qualitative data, including historical information and company structures, was sourced from literature, online resources, and academic journals. Quantitative data was obtained from the Makassar branch of the Indonesia Stock Exchange and included financial statements from manufacturing firms. Additionally, secondary data was collected from the Indonesia Stock Exchange's official documents and website. The study's regression analysis revealed that asset structure had a negative and insignificant effect on the stock performance of these manufacturing firms when considered independently.

Abebe (2022) analyzed how asset and liability management affects the financial performance of microfinance institutions in sub-Saharan Africa. Utilizing a statistical cost accounting method, the study examined a sample of 106 microfinance institutions from 2014 to 2018. The regression analysis indicated that the asset-liability mix has both positive and negative impacts on the financial returns of these institutions.

Wokeh (2022) explored the impact of non-current assets on financial performance among listed deposit money banks in Nigeria. Using an ex-post facto design, the study covered all thirteen listed deposit money banks in Nigeria for 2022, employing a census approach. Data from the annual reports of these banks from 2017 to 2021 were analyzed using multiple regression and Stata12 software. The findings revealed a negative and insignificant relationship between property, plant, and equipment and return on assets, and a positive but insignificant relationship between these assets and return on equity. The study suggested that banks should focus on long-term investments and optimize their use of property, plant, and equipment to enhance financial performance and shareholder satisfaction.

Kajola, Alao, Sanyaolu and Ojurongbe (2019) ascertained effect of leverage and liquidity on financial performance of Nigerian firms using data of seventeen consumer goods firms listed on the Nigerian Stock Exchange during the financial years, 2012 to 2017. The study adopted multiple regression method, with pooled Ordinary Least Squares as estimation technique. The finding revealed that leverage proxies- degree of operating leverage and degree of combined leverage have significant effect on financial performance. The study could not however provide empirical evidence in support of liquidity proxies- current ratio and quick asset ratio

having significant effect on performance of the companies. The study recommended that in order to improve profitability level, corporate managers and top decision makers should take advantage of debts' tax shield from the interest in companies' financial structure and develop robust strategies that will monitor and efficiently manage liquidity requirements.

Abdulrahman and Musa (2020) conducted a study to assess the determinants of financial performance of firms listed in the consumer goods sector of Nigerian economy. The study covered the period, 2013 to 2018 using a sample of nine firms. Panel data was used which consists of 54 firm year observations analyzed using multiple regression model. Ordinary Least square model was employed to test the effect of firm size, leverage, board size and audit committee size on firm performance proxy by Returns on Assets (ROA). The outcome of the analysis revealed that firm size has a coefficient of -0.08 which is significant at 1% (p=0.008), liquidity is also significant at 1% (p=0.000) with 0.15 as coefficient and board size has a coefficient of 0.011 which is significant at 5% (p=0.031). However, the coefficient of audit committee size is not significant at all (p=0.131). These results show that firm size, leverage and board size are determinants of firms' performance; however liquidity is the most determinant of firms' performance of listed consumer goods firms in Nigeria. From the findings, the study recommends, among others, the management of consumer goods firms in Nigeria should maintain or increase the amount of their current assets (especially cash) in order to meet current obligations since liquidity is a good determinant of firms' performance.

Sarafa and Joshua (2020) determined the effect of asset efficiency on the financial performance of quoted manufacturing firms in Nigeria. The study applied least square multiple regression for the hypotheses testing. The study revealed that total asset turnover ratio, non-current asset turnover ratio and inventory turnover ratio have positive but statistically insignificant relationship with the financial performance of manufacturing firms in Nigeria while turnover ratio and firms size have positive and statistically significant relationship with the financial performance of the firms studied. The study concludes that asset efficiency has positive effect on the financial performance of manufacturing firms in Nigeria.

3. MATERIALS AND METHOD

The ex-post facto design adopted in examining the effect of asset management on the firm value of listed oil and gas firms in Nigeria because it allows for the analysis of existing data

to identify relationships between variables after events have occurred. Since asset management practices and firm value metrics are historical in nature, this design enables the investigation of past asset management strategies and their impact on firm value, as measured by Tobin's Q, without manipulating variables. This design is advantageous in capturing real-world data from financial statements and market reports of listed firms, providing a comprehensive view of how asset management decisions have influenced firm value over time. By leveraging historical data, the study can uncover patterns and relationships that contribute to understanding the long-term effects of asset management practices on firm value in the Nigerian oil and gas sector.

The study examined all publicly listed Oil and Gas firms on the Nigerian Exchange Group (NGX). As of December 31, 2023, there are nine Oil and Gas companies on the NGX, which are listed as follows:

Table 1 Population

1. Capital Oil PLC
2. Conoil PLC
3. Eterna PLC
4. Japaul Oil & Ventures PLC
5. MRS Oil Nigeria PLC
6. Oando PLC
7. Rak Unity Petroleum PLC
8. Seplat Nigeria Petroleum PLC
9. Totalenergies Nigeria PLC

Nigerian Exchange Group (2024)

The sample for this study was determined through consensus sampling, selected all the nine firms. The annual reports and financial statements of these oil and gas companies, covering the period from 2014 to 2023, were used for variable computation and analysis. The data collection method for this study will be involved the use of annual reports from the selected oil and gas firms. Specifically, data were sourced from the financial statements and annual reports of the sampled firms—spanning the financial years from 2014 to 2023. This approach ensured that the data were comprehensive and relevant for the analysis of asset management's impact on firm value. By relying solely on these reports, the study was able to obtain detailed

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and consistent financial information necessary for examining the relationships between asset management practices and firm value metrics.

Table 2 Operationalization of Variables

Variables	**Description**	**Measurement**	**Source**	***Apriori***
Independent Variables				
Fixed Asset Turnover Ratio	FITR	The ratio of revenue to non-current asset of the firm	Zheng-Sheng (2018)	+
Current Asset Turnover	CUAR	The ratio of revenue to current asset of the firm	Usman (2019)	-
Dependent Variable				
Firm Value	Tobin Q	The market value of a company, divided by its assets' replacement cost.	Zheng-Sheng (2018)	
Control Variable				
Firm Leverage	FLEV	Total book value of debt/Total assets	Binsbergen (2019)	

Source: Researcher's Compilation, (2024)

The study adapted the model of Saleh (2018). The model establishes the relationship between firm value as the dependent variable and tangible fixed assets, and intangible fixed assets as the independent variables. Saleh's model is STR = TANG, INTANG, CR

The model was modified to suit the variables selected for this study, as follows

$Tobin_{it}=\beta_O+\beta_1 FITR_{it}+\beta_2 CUAT_{it}+\beta_3 LEV_{it}+\ldots.\mu_{it}$……Eqn 1.

Where:

Tobin Q= TOBIN's Q

FITR = Fixed Assets Turnover Ratio

CUAT = Current Asset Turnover

FLEV = Firm Leverage

β_O– β_3 = Slope Coefficients

ì=ìth Firm

t=Time Period

μ = Error Term

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Data were gathered and input into E-View 9.0 software for the computation of both independent and dependent variables. The analysis was conducted using descriptive statistics and ordinary least squares (OLS) regression. The estimates obtained from the OLS regression served as the foundation and tool for hypothesis testing. The use of the OLS analytical method is justified in this study because it offers a robust framework for analyzing the impact of independent variables on a dependent variable while minimizing error.

The decision rule in this study provides the criteria for accepting or rejecting the null hypothesis. The criterion is based on a 5% level of significance, which means that if the p-value in the result is greater than 0.05, the null hypothesis will be accepted. In opposition, if the p-value is less than 0.05, the null hypothesis will be rejected and the alternative hypothesis will be accepted.

4. RESULT AND DISCUSSIONS

4.1 Data Analysis

4.1.1 Descriptive Analysis of Data

Table 3 Descriptive Analysis

	TOQ	CUTR	FITR
Mean	1.070704	2.637259	17.83480
Median	0.898076	2.421921	9.053035
Maximum	2.984020	14.00062	128.9230
Minimum	0.628096	0.004719	0.011631
Std. Dev.	0.440060	2.264350	24.83891
Skewness	2.227935	2.626002	2.612736
Kurtosis	9.233313	13.94463	10.66700
Jarque-Bera	122.3103	307.0178	179.3510
Probability	0.000000	0.000000	0.000000
Sum	53.53522	131.8630	891.7401
Sum Sq. Dev.	9.488996	251.2367	30231.59
Observations	50	50	50

Source: E-views 10.0 Analytical Result (2024)

The analysis of Tobin's Q (TOQ) indicates a mean value of 1.0707, suggesting that, on average, the market values of listed oil and gas firms in Nigeria exceed their asset values, reflecting positive investor sentiment. The maximum value of 2.9840 highlights instances

where the market capitalization significantly outstrips the firm's asset base, potentially indicating high growth expectations or market confidence. Conversely, the minimum value of 0.6281 indicates some firms are valued below their asset values, possibly due to negative perceptions or performance issues. The standard deviation of 0.4401 reveals moderate variability around the mean, suggesting differences in firm valuations across the industry. The skewness of 2.2279 pointed to a rightward skew in the distribution, indicating that a few firms have very high market valuations. Lastly, the kurtosis of 9.2333 indicates a leptokurtic distribution, suggesting a higher likelihood of extreme values in the dataset, and the probability of the Jarque-Bera statistic at 0.0000 confirms that the TOQ data is significantly non-normally distributed.

Examining the Current Asset Turnover Ratio (CUTR), the mean of 2.6373 suggests that, on average, the listed oil and gas firms are able to generate approximately 2.64 units of revenue for every unit of current assets, indicating efficient utilization of current assets. The maximum value of 14.0006 suggests exceptional asset management practices in some firms, while the minimum value of 0.0047 reflects extreme inefficiencies in at least one firm. The standard deviation of 2.2644 indicates a high degree of variability in the ratio, pointing to significant differences in how firms manage their current assets. The skewness of 2.6260 signifies a pronounced rightward tilt, suggesting that a few firms achieve very high turnover ratios, while most have more moderate performance. The kurtosis of 13.9446 indicates a high peak in the distribution, pointing to a concentration of values around the mean and a higher likelihood of extreme values. The Jarque-Bera probability of 0.0000 confirms that the distribution of CUTR is significantly non-normal.

For the Fixed Asset Turnover Ratio (FITR), the mean of 17.8348 indicates a strong capacity of the firms to generate revenue from their fixed assets, averaging about 17.83 units of revenue per unit of fixed assets. The maximum value of 128.9230 suggests that certain firms exhibit exceptional efficiency in utilizing their fixed assets to generate revenue, while the minimum of 0.0116 points to severe inefficiencies in some firms. The standard deviation of 24.8389 reflects considerable variability in how effectively different firms manage their fixed assets, indicating diverse operational practices across the sector. The skewness of 2.6127 indicates a significant rightward skew, suggesting that a few firms significantly outperform their peers in terms of fixed asset turnover. The kurtosis of 10.6670 indicates a distribution with heavier tails, suggesting a greater likelihood of extreme values than in a normal distribution. The

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Jarque-Bera test shows a probability of 0.0000, confirming that the FITR data is significantly non-normally distributed.

4.2 Test of Hypotheses

The analysis was conducted using descriptive statistics in addition to ordinary least squares (OLS) regression. The estimates obtained from the OLS regression served as the foundation and tool for hypothesis testing.

Table 4 Regression Result from OLS Model

Dependent Variable: TOQ
Method: Least Squares
Date: 10/23/24 Time: 04:29
Sample: 1 50
Included observations: 50

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CUTR	0.091155	0.143569	0.634923	0.5286
FITR	0.000762	0.003222	0.236589	0.8140
C	1.237748	0.105330	11.75110	0.0000

R-squared	0.081266	Mean dependent var	1.070704
Adjusted R-squared	0.021348	S.D. dependent var	0.440060
S.E. of regression	0.435338	Akaike info criterion	1.251229
Sum squared resid	8.717867	Schwarz criterion	1.404190
Log likelihood	-27.28072	Hannan-Quinn criter.	1.309477
F-statistic	1.356293	Durbin-Watson stat	1.414739
Prob(F-statistic)	0.267952		

Source: E-views 10.0 Analytical Result (2024)

The regression analysis presented in Table 4 examines the effect of asset management on the firm value of listed oil and gas firms in Nigeria, as measured by Tobin's Q (TOQ). The adjusted R-squared value of 0.0213 suggests that only about 2.13% of the variability in TOQ is explained by the independent variables in the model, indicating that the model may not adequately capture the factors influencing firm value. Additionally, the F-statistic probability of 0.2679 implies that the overall model is not statistically significant, suggesting that the

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included predictors do not collectively have a meaningful effect on the firm value measured by Tobin's Q.

4.2.1 Hypothesis I

H_{01}: Current asset turnover ratio does not significantly affect the Tobin's Q of listed oil a nd gas firms in Nigeria.

In analyzing the Current Asset Turnover Ratio (CUTR), the coefficient is 0.091155 with a p-value of 0.5286. This indicates a positive but statistically insignificant relationship between current asset turnover and Tobin's Q. In practical terms, this suggests that a one-unit increase in the current asset turnover ratio is associated with an increase in Tobin's Q of approximately 0.0912, but since the p-value exceeds the threshold of 0.05, we accept the null hypothesis. This outcome indicates that current Asset Turnover Ratio has a positive but non-significant effect on Tobin's Q of listed oil and gas firms in Nigeria (Beta: 0.091155, p = 0.5286).

4.2.2 Hypothesis II

H_{02}: Fixed asset turnover ratio does not significantly affect the Tobin's Q of listed oil and gas firms in Nigeria.

The Fixed Asset Turnover Ratio (FITR) presents a coefficient of 0.000762 and a p-value of 0.8140, revealing a positive and again statistically insignificant effect on Tobin's Q. This result implies that an increase in the fixed asset turnover ratio contributes a marginal increase of 0.000762 to Tobin's Q, but with a p-value far exceeding 0.05, the effect is not statistically significant. Consequently, we also accept the null hypothesis for FITR, indicating that the efficiency in utilizing fixed assets does not significantly influence the firm value in the oil and gas sector. Thus, Fixed Asset Turnover Ratio has a positive but non-significant effect on Tobin's Q of listed oil and gas firms in Nigeria (Beta: 0.000762, p = 0.8140).

The analysis in hypotheses one and two revealed, in hypothesis one, a positive coefficient of 0.091155 for the current asset turnover ratio even though the effect was not significant. This suggests that efficient management of current assets has the potential to enhance firm value. A higher current asset turnover ratio indicates that a company is effectively utilizing its current assets to generate sales, which can lead to improved liquidity and operational efficiency. In the context of oil and gas firms, where cash flow management is crucial due to fluctuating

market conditions, effective management of current assets may help firms navigate financial challenges and maintain stability. However, the observed relationship may also be influenced by external factors such as regulatory environments and market volatility, which can overshadow the impacts of asset turnover on firm valuation. The finding that the Current Asset Turnover Ratio has a positive but non-significant effect on Tobin's Q aligns with several studies such as Olaoye and Ayodele (2019) which discovered an insignificant positive impact of current assets on profit after tax among quoted firms in Nigeria, indicating a similar trend in the lack of strong correlation with financial performance. Wokeh (2022) also found a positive but non-significant relationship between current assets and return on assets for Nigerian banks, suggesting that while current asset management is important, it may not lead to substantial impacts in some contexts. Sarafa and Joshua (2020) reported that total asset turnover had a positive but statistically insignificant relationship with financial performance in Nigerian manufacturing firms, reinforcing the idea that asset turnover ratios can vary in effectiveness across sectors. Lastly, Abebe (2022) highlighted that asset management impacts vary, with mixed results on their significance, supporting the notion that current asset turnover may not always correlate significantly with performance measures like Tobin's Q.

In hypothesis two, the fixed asset turnover ratio showed a coefficient of 0.000762, indicating a minimal positive but non-significant effect on firm value. This suggests that while firms might be utilizing their fixed assets to generate revenues, the impact on market valuation is marginal. In the oil and gas industry, where substantial investments in fixed assets such as drilling rigs and refineries are common, the benefits of efficient asset utilization might not be immediately reflected in firm value. The long-term nature of these investments often means that returns may take time to materialize, which can create disconnect between operational efficiency and market perception. Additionally, factors like global oil prices and geopolitical stability can significantly influence investor sentiment more than the internal efficiencies demonstrated by the fixed asset turnover ratio. The finding regarding the Fixed Asset Turnover Ratio's positive but non-significant effect on Tobin's Q is supported by various studies like Wokeh (2022) that found a positive but insignificant relationship between property, plant, and equipment and return on assets in Nigerian banks, suggesting limited impact on performance metrics. Similarly, Mawih (2013) noted that fixed assets had no significant impact on profitability for manufacturing companies, indicating that fixed asset efficiency might not always translate to performance improvements. Charlie and Akpan (2020) reported that while tangible assets impacted profitability, their effects were not

uniformly significant across all banks studied, mirroring the non-significant trends observed. Additionally, Ubesie and Ogbonna (2013) found that non-current assets contributed positively to return on assets but not significantly, further supporting the notion that fixed asset management may not have a strong direct influence on market-based performance measures like Tobin's Q.

CONCLUSION AND RECOMMENDATIONS

Firms that manage their assets in a manner that maximizes efficiency are able to minimize costs, and optimize production, thereby enhancing overall firm value. Asset management practices when strategically aligned with the firm's long-term goals ensures that assets are well-maintained, reliable, and capable of delivering consistent performance over time. Additionally, firms would proactively manage risks associated with asset failures, regulatory compliance, and environmental impacts, thereby protecting their investments and maintaining a strong reputation among stakeholders. The findings of the study suggest that an increase in the current asset turnover ratio is associated with a higher Tobin's Q, indicating that firms are able to generate more revenue from their current assets. This could be reflective of efficient management practices and operational agility in utilizing short-term assets to drive sales. Also, firms generating revenue effectively from their fixed assets can contribute to their overall market value. In the capital-intensive oil and gas industry, where significant investments in infrastructure and equipment are necessary, effective utilization of fixed assets can signal operational efficiency.

Finally, while some firms achieve high total asset turnover, they might do so at the expense of profit margins, leading to lower market valuations. In the oil and gas sector, a high turnover could be misleading if it does not translate into profitability or if it is indicative of aggressive revenue generation tactics that compromise asset quality. Such dynamics might cause investors to reassess the sustainability of growth generated from asset turnover alone, focusing instead on overall financial health and long-term viability. The negative coefficient prompts consideration of broader strategic factors and operational effectiveness beyond asset management practices. In conclusion, effective asset utilization must be complemented by robust profitability and strategic positioning to drive investor confidence and enhance market valuation.

Based on the forgoing, the study recommended that:

1. Management teams of listed oil and gas firms enhance their current asset management practices to improve efficiency by adopting more sophisticated inventory management systems and optimizing working capital, thereby driving higher revenue generation from current assets.
2. The boards of directors of listed oil and gas firms should prioritize investments in training and development for operational staff to ensure optimal utilization of fixed assets. This training can enhance asset productivity and support sustainable growth in firm value.

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