Corporate governance and financial performance of oil and gas firms: The Nigerian experience

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Abstract

As a result of corporate scandals, governments and corporations around the world enacted a slew of laws and recommendations known as best practices codes. As a result, this study examines the effect of corporate governance on the financial performance of listed Nigerian oil and gas firms from 2012 to 2022. The sample size for the study was set at nine firms. Corporate governance was measured by board size, composition, independence, and audit committee size, while financial performance was measured by Return on Asset (ROA) and Return on Equity (ROE). The hypotheses were tested using fixed effect panel regression, which was informed by the Hausman test. Findings revealed that board size has a significant positive effect on ROA while board size have an insignificant effect on ROE. In addition, board composition has an insignificant effect on both the ROA and ROE. Furthermore, board independence has a significant negative effect on the ROA and ROE. Similarly, the size of the audit committee has a significant negative effect on ROA, while the effect on ROE was negative but insignificant. The study concludes that corporate governance significantly affect financial performance of listed oil and gas firms in Nigeria. The Security and Exchange Commission should ensure that listed oil and gas firms adhere strictly to the required board size since a larger board does not influence financial performance.

Keywords: Audit committee size, Board composition, Board size, Return on asset, Return on equity.

JEL Classification: M4; M41; M42; O16.

1. Introduction

The failure of some multinational companies in developed and developing countries have awakened investors to take necessary steps to ensure their investment's safety. For this reason, there has been an increase in good corporate governance among companies in various nations, especially in quoted companies. Corporate governance is referred to as set of rules, regulations, and processes that regulate the control and management of a corporation. These rules are intended to protect the firm's internal and external stakeholders. Aligning the interests of shareholders, directors, management, and staff is are key aspects of corporate governance.

The outcome of corporate scandals made countries and corporate agencies worldwide enact a set of rules and regulations to serve as standards for conduct. These guidelines are laid down rules that regulate and guide the corporate board’s policies, procedures and structure in implementing their monitoring roles. In Nigeria, the Nigerian Code of Corporate Governance (NCCG) 2020 applies to all economic sectors.

The firm's primary objective is shareholders' wealth maximisation, which is reflected in how well its strategies are translated into monetary terms. Corporate governance has been linked with firms' financial performance. This study financial performance is proxy as Return on Equity (ROE) and Return on Asset (ROA). It has been said that Nigeria's oil and gas business is fraught with volatility. The common practise of commercial activities that are unethical but widely accepted. Kehinde, Segun, Ibidunni and Kehinde (2021) argued that corporate firms are expected to follow all applicable rules and regulations set forth by government agencies to ensure the efficient operation of a business. The firm's compliance level has gradually increased since introducing the governance codes. However, they have been records of corporate failures.

A review of past studies showed that the focus was centered on other sectors such as manufacturing (Okeke, 2021; Owolabi, Bamisaye, Efuntade & Efuntade, 2021) conglomerates (Okolie & Uwejejean, 2022) banks (Woh & Ibanichuka, 2021; Oyedekun, 2015; Olayinka, 2019) service industry (Esogbene & Oghenevwogaga, 2021). This leaves a gap in Nigeria's oil and gas sector. A review of previous studies findings showed no consensus corporate governance and financial performance nexus. For example, Oyedekun (2019) study established an insignificant negative effect of corporate governance on financial performance. In contrast, Iheyen (2021) and Balagobie and
Velanpally (2018) found that board size was negatively linked with firm performance. These mixed findings call for further research.

This study also observed that previous studies mostly explored ROA as a financial performance measure. For example, Habtoor (2022); Aigbovorhuwaa, Adediran and Achimigou (2022); Sobhan (2021) Oyedekun (2019) and Borlea, Achim and Mare (2017). The current study adopts both ROA and ROE. In addition, Shehu (2017) study focused on listed oil and gas companies in Nigeria from 2010 to 2015. The current study extends the scope to 2021.

Given this context, this study seeks to fill the identified gaps that previous studies concentrated on in other sectors that do not capture the oil and gas sector. Secondly, the inconsistencies in the findings of previous studies. Thirdly, this study examines the effect of corporate governance if different financial performance proxies are employed (ROA and ROE). Furthermore, this study broadens the scope of past research on corporate governance on financial performance nexus. This study investigates the impact of corporate governance on the financial performance of listed Nigerian oil and gas firms.

The remainder of this study is structured as follows: section 2 highlights the literature reviews which discusses the past empirical studies and hypotheses formulation. Section 3 presents the materials and methods used in the study followed by the results of the analysis which is presented in section 4. Section 5 highlights the discussion of findings and section 6 concludes.

2. Literature Review

The agency theory postulated by Jensen and Meckling (1976) which explains the principal-agent relationship that exists within a corporation is used to underpin this study. In this context, the principal refers to the shareholders of the firm, while the agent refers to the management or executives who represent the shareholders. The principal-agent relationship creates a possible conflict of interest because the agent may pursue their own objectives, which may not align with the principal's. Corporate governance mechanisms are implemented to mitigate this agency problem and align Shareholders' and management's interests. These mechanisms include the board of directors’ size, composition, and committees' compositions. The theory explains the effectiveness of corporate governance in addressing agency problems which directly affect the firm's financial performance. In this study, corporate governance is proxied as board size, composition, independence and audit committee size, while performance is measured as ROA and ROE. This study introduces firm size as a control variable.

The effectiveness of member discussion and the board’s capacity to make the best financial decisions are both impacted by the board size. There has been an ongoing debate about the ideal board size in corporate governance studies. Several disagreements exist regarding the link between corporate board size and financial performance. According to Sani (2021) larger boards will likely offer more diversity and expertise while enhancing their oversight capacity. Moreover, boards of bigger size are more likely to consist of independent directors who possess substantial expertise. Larger boards have the ability to provide additional responsibilities to board committees, which serves as a deterrent to opportunistic managerial conduct. On the other hand, smaller boards are predicted to be more successful at overseeing and regulating firm governance (Biase & Onorato, 2021). Based on this argument, the hypothesis is stated as follows:

H1: Board size has no significant effect on the financial performance of listed Nigeria’s oil and gas firms.

The board’s composition into executive and non-executive directors is another important feature. According to Fuzi, Halim, and Julizaerma (2016) the board’s non-executive directors won’t be able to perform their responsibilities well unless they are separate from management and make sure to offer objective business judgement. Non-executive directors are the individuals whose shareholders have chosen to represent them, and their presence will lessen agency issues. The 2018 Code of Corporate Governance also points out that non-executive directors provide the board with their knowledge, expertise, and unbiased Evaluation of strategic decisions and operational effectiveness.

Nevertheless, following the recommendations won’t be enough if the non-executive directors don’t carry out their duties (Kanakriyah, 2021). Prior empirical studies (Habtoor, 2022; Benvolio and Ironke, 2022) have shown that financial performance is affected by board composition. On the contrary, studies such as Ukemenam, Ezike and Chihoike (2019); Kiptoo, Kariuki and Ochao (2021) found that firms’ do not perform optimally when they are composed with higher ratio of non-executive directors. Therefore, the hypothesis is stated as:

H2: Board composition has no significant effect on the financial performance of listed Nigerian’s oil and gas firms.

Another distinguishing feature of the board of directors is how it is organised. According to Hamada and Jwailes (2021) the board’s independence allows them to take an autonomous view of the company's financial reporting process. It ensures that executive directors do not dominate the board. According to Ahmad-Zaluki and Wan-Hussin (2010) a board with more members and a higher proportion of independent directors have higher forecast accuracy. Furthermore, Ali and Meah (2021) believe that an independent board strengthens it and reduces the agency problem and the possibility of insider exploitation. Due to its independence, the committee can monitor financial reporting transparency with greater objectivity. Agency issues between executives and other shareholders are diminished by an impartial board towards the executive. An essential factor in ensuring board effectiveness is that the committee members be chosen to be free of the influence and pressures of top management (Hamada & Jwailes, 2021). Okolie and Uwejeian (2022); Biase and Onorato (2021); Owolabi et al. (2021) study showed that board independence is significant governance factor which exerts a positive effect on performance. Gatehi and Nasieku (2022), Aigbovorhuwaa et al. (2022); Atty, Mostuofalosiman and youssef (2018) establish that Board independence has no significant effect on financial performance. From the preceding discourse, the hypothesis is stated as:

H3: Board independence has no significant effect on the financial performance of listed Nigeria’s oil and gas firms.

The audit committee is a sub-committee of the firm’s board responsible for overseeing financial reporting and disclosures reliably and accurately. Different schools of thought have differed on the optimal amount that should make up the Audit committee of the Executive and the Ebechain and the Tebahpah (2018) as the Acromart and the committees may not participate as well, which will impact the committee’s cohesion when making decisions and weaken the committee’s job of keeping an eye on things and making sure they are done right. In turn, this could have an effect on how well the business does financially. According to Hamada and Jwailes (2021) a suitably
sized audit committee would give members the opportunity to put their knowledge, experience, and expertise to work for the benefit of all parties involved. They also claimed that firms with smaller audit committees with more financial expertise to perform better. According to the dependency resource theory, larger audit committees are more efficient since they have more power to devote to solving the company’s problems. The audit committee comprises directors who are expected to have a maximum of six members under CAMA requirements. Empirical studies (Wobo & Ibanichuka, 2021; Iheyen, 2021; Olayinka, 2019) have shown that the size of audit committee does not significantly affect performance. In contrast, empirical evidence (Esoeghene & Oghenewwójaga, 2021; Okeke, 2021; Daniel Eguasa & Excellence, 2021) showed that audit committee size has significant positive effects on financial performance. Hence, the hypothesis is stated as follows:

H0: Audit committee size has no significant effect on the return on asset of listed Nigeria’s oil and gas firms.

3. Materials and Methods

An ex-post facto research method is adopted in this study. This study looks at oil and gas firms that were traded on the Nigerian Exchange Group (NGX) between 2012 and 2022. The study uses a sample of seven firms based on data availability. The panel data were sourced from the annual reports of the selected firms.

Table 1. Description of variables.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Return on asset (ROA)</td>
<td>Ratio of net income to total asset</td>
</tr>
<tr>
<td>Return on equity (ROE)</td>
<td>Ratio of net income to total equity</td>
</tr>
<tr>
<td>Board size (Bsize)</td>
<td>Total number of board directors</td>
</tr>
<tr>
<td>Board composition (Bcom)</td>
<td>Ratio of non-executive directors to total number of directors</td>
</tr>
<tr>
<td>Board independence (Bind)</td>
<td>Ratio of independent directors to the total number of directors</td>
</tr>
<tr>
<td>Audit committee characteristics (ACS)</td>
<td>Total number of audit committee size</td>
</tr>
<tr>
<td>Firm size (Fsize)</td>
<td>Measured as the log of total asset</td>
</tr>
</tbody>
</table>

3.1. Empirical Model

Panel regression models capture corporate governance’s effect on the performance of listed Nigeria oil and gas firms. The models were subjected to the Hausman (1978) test to examine whether the regression coefficients in the Fixed Effect (FE) and Random Effects (RE) models differ statistically. If the null hypothesis of the Hausman test is significant, then the FE is preferable; otherwise, the RE is used. The significance of the p-value of the Hausman test statistic supports the choice of the fixed effects estimator over the random effect estimator. The Hausman test statistic suggests the use of fixed effect (17.12 and 10.75), which were significant at 1% and 5% significant levels, respectively.

The models are specified as follows:

\[
\text{ROA}_i = \beta_0 + \beta_1 \text{BSIZE}_i + \beta_2 \text{BCOM}_i + \beta_3 \text{BIND}_i + \beta_4 \text{AUDCOM}_i + \beta_5 \text{FSIZE} + \mu_{it} \quad (1)
\]

\[
\text{ROE}_i = \beta_0 + \beta_1 \text{BSIZE}_i + \beta_2 \text{BCOM}_i + \beta_3 \text{BIND}_i + \beta_4 \text{AUDCOM}_i + \beta_5 \text{FSIZE} + \mu_{it} \quad (2)
\]

Where \(t\) and \(i\) are time and the number of firms, respectively, while \(\beta\) is the constant term, \(\beta\) to \(\beta\) are the parameters estimated, and \(\epsilon\) is the error term.

4. Results

4.1. Correlation Matrix and Summary Statistics

Table 2 show that the mean of ROA is 1%, which implies that on average, the oil and gas firms’ management in Nigeria are inefficient in generating profits from their total assets. The dispersion, measured as the standard deviation around the mean, stood at 20.5%. The minimum and maximum values of ROA are -5.8% and 1.51%, respectively. This finding implies that some oil and gas firms utilise larger assets to generate profits while others use fewer assets to generate their profits.

The average value of ROE is 23.4% with a deviation of 1.05%. The minimum and maximum values of ROE for oil and gas firms are -3.62% and 4.84%, respectively. These findings imply that there is a huge disparity between Nigeria oil and gas firms. It shows that some firms do not effectively manage shareholders’ wealth while others make as much as 4.84% of the stakeholders’ investment.

The average board size for oil and gas firms in Nigeria is approximately 10, while the minimum and maximum are 4 and 16, respectively. The deviation from the average is approximately 3 board members. The findings imply that the board size of oil and gas firms is not strictly adhering to the corporate governance codes, which require quoted firms to have a minimum of 5 board members.

The average of board composition of oil and gas firms in Nigeria is 42% with a deviation of 23%. However, the minimum and maximum number of non-executive members to the total board size is 0% and 100%. This implies that the board’s composition in Nigeria’s oil and gas sector does not adhere to the corporate governance code, which stipulates that the board should be composed of a majority of the board as non-executive directors.

The table also shows that the average of board independence is 15%. The deviation from the mean is 19%, while the minimum and maximum number of independent directors are 0% and 56%. Impliedly, the findings of this result show that the board’s composition contradicts the corporate governance code, which recommends at least 1 independent director on the board.

The board’s average number of audit committees is 6 members, with a deviation of 1. Also, the minimum and maximum number of audit committee size is 5 and 12, respectively. The finding implies a wide disparity among oil and gas firms in constituting their audit committees.

A descriptive analysis of firm size shows that the average size of oil and gas firms is N 6.69 billion with a deviation of N 7.05 billion, while the minimum and maximum size of oil and gas firms are N 3278.2 million and N 2.90 billion, respectively. This implies that oil and gas firms are large.
The result shows that the link between ROA and BSIZE is negative. This implies that an increase in BSIZE results to a decrease in ROA. Similarly, the relationship between BSIZE and ROE is negative. The link between ROA, BCOM, ACS, and total asset is negative. This implies an increase in BCOM, ACS and FSIZE decrease ROA. The result is similar when carried out using ROE. In contrast, the association between BIND and ROA is positively correlated. In other words, increasing the sum of independent directors on the board increases the ROA and ROE of Nigeria oil and gas firms.

4.2. Empirical Results

Table 2. Correlation analysis and descriptive statistics.

<table>
<thead>
<tr>
<th>Variables</th>
<th>ROA</th>
<th>ROE</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSIZE</td>
<td>-0.03517</td>
<td>-0.0066</td>
</tr>
<tr>
<td>BCOM</td>
<td>-0.05363</td>
<td>-0.0922</td>
</tr>
<tr>
<td>BIND</td>
<td>0.0989</td>
<td>0.1085</td>
</tr>
<tr>
<td>ACS</td>
<td>-0.0221</td>
<td>-0.0754</td>
</tr>
<tr>
<td>FSIZE</td>
<td>-0.2551</td>
<td>-0.2572</td>
</tr>
</tbody>
</table>

The result shows that the link between ROA and BSIZE is negative. This implies that an increase in BSIZE results to a decrease in ROA. Similarly, the relationship between BSIZE and ROE is negative. The link between ROA, BCOM, ACS, and total asset is negative. This implies an increase in BCOM, ACS and FSIZE decrease ROA. The result is similar when carried out using ROE. In contrast, the association between BIND and ROA is positively correlated. In other words, increasing the sum of independent directors on the board increases the ROA and ROE of Nigeria oil and gas firms.

4.2. Empirical Results

Table 3. Regression results.

<table>
<thead>
<tr>
<th>Variables</th>
<th>ROA</th>
<th>ROE</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSIZE</td>
<td>0.024776</td>
<td>(2.30)**</td>
</tr>
<tr>
<td>BCOM</td>
<td>-0.015213</td>
<td>(-1.16)</td>
</tr>
<tr>
<td>BIND</td>
<td>-0.028859</td>
<td>(-2.11)**</td>
</tr>
<tr>
<td>ACS</td>
<td>-0.054660</td>
<td>(-2.88)**</td>
</tr>
<tr>
<td>FSIZE</td>
<td>-8.71</td>
<td>(-0.98)</td>
</tr>
<tr>
<td>F-test (Model)</td>
<td>2.78**</td>
<td>1.81</td>
</tr>
<tr>
<td>R²</td>
<td>0.4578</td>
<td>0.1969</td>
</tr>
<tr>
<td>Hausman test</td>
<td>17.12***</td>
<td>10.75***</td>
</tr>
<tr>
<td>Hettest</td>
<td>12.74***</td>
<td>6.01***</td>
</tr>
<tr>
<td>Mean VIF</td>
<td>1.70</td>
<td></td>
</tr>
</tbody>
</table>

Note: The standard errors are in parenthesis, while **, *** represent significant levels at 5% and 1%, respectively.

5. Discussions

The result from the first model using ROA shows that the R² is 47.38% which explains that 47.38% of the variations in the financial performance of listed oil and gas firms can be explained by corporate governance (proxy as BSIZE, BCOM, BIND, ACS and FSIZE). However, the second model, which proxy financial performance as ROE, shows that the R² is 19.6%, implying that the variations in the financial performance of listed oil and gas firms can be explained by corporate governance by only 19.6%. The F statistics test was used to show the fitness of the models. The findings indicate that the F-statistic of the ROA model is significant at 5%.

The findings on BSIZE and ROA, was positive and significant. It can be inferred that an increase in the size of the board size increases ROA. The finding supports the agency theory, which infers the association between owners and management. Hence, increasing shareholder size positively influences agents (managers), which increases financial performance. This finding aligns with the study of Sani (2021) and Owolabi et al. (2021) who argued that larger boards would likely offer more diversity and expertise while enhancing their oversight capacity, resulting in higher performance. On the contrary, Kiptoo et al. (2021) and Olabisi et al. (2018) found that a large board has a significant negative effect on ROA. This suggested that companies with larger boards did not outperform those with smaller boards. In contrast, when financial performance is proxy by ROE, the result found a positive but insignificant effect. This finding aligns with the study of Gatehi and Nasieku (2022) who found that BSIZE had statistically insignificant effects on financial performance.

The effect of BCOM on the ROA listed oil and gas firms was found to be negative and insignificant. This finding corroborates the finding of Sobhan (2021) and Prabowo (2018) who found that the BCOM does not significantly impact firm performance. The objective, which assessed the effect of BCOM on the ROE listed oil and gas firms, found a significant negative effect. However, Noja et al. (2021) showed that BCOM improves performance. Fuži et al. (2016) argued that the board's non-executive directors cannot perform effectively except they are separate from management and make sure to offer objective business judgement.

The study ascertained the effect of the BIND on the ROA of listed oil and firms' and found a significant negative effect. This finding implies that increasing the independent directors has a negative effect on ROA. This finding is similar when using ROE. These findings contradict the claim by Ali and Meah (2021) who argued that an independent board strengthens it and reduces the agency problem and the possibility of insider exploitation. The board’s independence makes it more dispassionate in their pursuit of auditing financial disclosures. If the board is not partial to the executive, the agency conflict between them and the shareholders is mitigated. Also, Hamada and Jwailes (2021) argued that the board's independence allows them to take an independent view of the company’s
financial reporting process and ensures that executive directors do not dominate the board. According to Ahmad-Zaluki and Wan-Husain (2010) board with more members and a higher proportion of independent directors have higher forecast accuracy.

The findings regarding audit committee size and ROA of listed oil and firms’ found a significant negative effect. This is similar to the findings using ROE. These findings align with Shehu (2017) and Fariha, Hossain and Ghosh (2021) studies that found a significant negative effect. According to Appah and Tepehah (2020), some directors may not take part in the audit committee meetings because of its size, which makes it harder for the committee to make decisions together and hurts its ability to perform its duties and consequently affecting financial performance. Hamada and Jawles (2021) argued that a suitable-sized audit committee would enable participants to contribute their skills for the benefit of all parties. They also claimed that firms with smaller audit committees that have more financial expertise and experience perform better. In contrast, Ommony and Ebire (2023) found that ACS do not affect financial performance. Additionally, it has been argued that the size of the firm has a significant effect on the financial performance of firms. From the analysis, it is found that firms’ size in both models were insignificant.

In addition, the residual of the panel regression was subjected to a heteroscedasticity test. Using the Breusch-Pagan/Cook-Weisberg test, the null hypothesis which states that there is no heteroscedasticity, was rejected at 1% significant level (see Table 3).

The regression analysis was subjected to a multicollinearity test to detect the presence of collinearity among the variables. The mean Variance Inflation Factor (VIF) is 1.70, which is a lot less than the minimum of 10. The VIF for each variable on its own was also quite low. This means that the variables used to explain things in the model were not linked to each other. This means that there was no multicollinearity between the variables.

6. Conclusion

This study examines corporate governance effect on the financial performance of listed Nigeria oil and gas firms from 2012 to 2022. The panel data from the sampled firms were analysed using fixed effect estimation. The study concludes that the effect of corporate governance on different financial performance measures (ROA and ROE) yields different results. Specifically, Board size significantly increases ROA but does not affect the ROE of listed Nigeria oil and gas firms. Board composition does not significantly affect the ROA and ROE of listed Nigeria oil and gas firms. Increasing independent directors on the board decreases both the ROA and ROE of listed Nigeria oil and gas firms at different significant level. A larger audit committee size decreases the ROA and ROE. The study recommends that the Security and Exchange Commission should ensure that listed oil and gas firms adhere strictly to the required board size since larger board does not influence financial performance. The Security and Exchange Commission should ensure that listed oil and gas firms comply with its corporate governance codes in the board’s composition to influence financial performance. The management of listed oil and gas firms should maintain the required at least one independent director on the board since increasing the number of independent directors do not increase financial performance. The management of listed oil and gas firms should limit the audit committee size since larger audit committees do not increase financial performance.

This study focused on corporate governance impact on financial performance of listed Nigeria oil and gas firms. The study provided insight into the novelty of the significance effect of corporate governance on different performance indexes. The findings of this study is limited corporate governance (board size, composition, independence, audit committee size) on financial performance (ROA and ROE) in oil and gas firms. Future studies can explore other sectors, and other corporate governance measures such as board meetings, and gender diversity.

Authors’ Contributions

Lucky Ommony – contributed to framing the topic, drafting the introductory part of the article and reviewing the manuscript. Kolawole Ebere – designed the methodology and carried out the analysis of the data as well as writing the manuscript. Kehinde Lawal – contributed to framing the topic and drafting the conclusion of the manuscript.

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