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Corporate Governance Dynamics and Financial Performance: Analysis of Listed Commercial Banks in the Ghanaian Context

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Abstract

This study aims to determine the effect of corporate governance on the financial performance of 14 listed commercial banks in Ghana. The research employs a panel data set from 2008 to 2020 to examine how board size, ownership structure, board independence, capital adequacy ratio, audit committee effectiveness, board gender diversity, and overall corporate governance score affect ROA and ROE for banks. These relationships are analyzed using Ordinary Least Squares (OLS) regression within the framework of panel data analysis. Results indicate that ROA is positively related to board size, board independence, audit committee, and Board gender diversity. Also, ROE is positively influenced by companies' ownership structure, capital adequacy ratio, audit committee effectiveness, and overall corporate employment governance rating. However, there is a significant negative correlation between ROE and women's representation or board gender diversity. Also, another key finding is that both Return on Assets (ROA) and Return on Equity (ROE) are significantly affected by debt and debt-to-equity ratios. This indicates that banks borrowing more have reduced profitability, underlining the need for a well-managed capital structure and no over-reliance on loans. This study contributes to the understanding of the relationship between corporate governance and performance in the banking sector of Ghana, emphasizing that high-quality governance systems can improve and enhance financial performance. The insight gained from this analysis shows that Banks should aim towards good corporate governance practices such as; maintaining proper board size, promoting greater board independence, ensuring efficient audit procedures, and encouraging more gender diversity to enhance profitability. The outcomes also emphasized a well-built base of capital and concentrated ownership which enables better financial results.The outcomes of this research are useful to Ghanaian policymakers, regulators, and bank executives who view the need for strong corporate governance environments to buttress the stability and growth of the banking sector.

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1. Introduction

Over the last few years, finance and business have embraced the concept of corporate governance as an essential subject matter. This interest in the subject was raised by several issues, including separation between ownership and control, which is evident in modern corporations and highly publicized problems in some big businesses such as Enron, WorldCom, and Lehman Brothers in the late 1990s to early 2000s (Johnson et al., 2008). Corporate governance refers to the systems and processes by which a company is directed and controlled to achieve its objectives (Cadbury Report, 1992). Effective corporate governance helps ensure accountability and transparency for critical stakeholders like shareholders, managers, regulators, employees, and the broader community.

In Africa, deficiencies in corporate governance have been widespread since the early 2000s, owing mainly to the nascent stage of private sector and financial market development on the continent, as well as high levels of non-compliance with robust governance frameworks and associated institutional corruption (Adegbite et al., 2012). The transitional nature of many African economies also hinders the implementation of the market-based governance models standard in Western countries; however, despite seemingly strong legal frameworks like Ghana's 1963 Companies Code, enforcement of governance regulations in countries like Ghana has needed to be stronger, enabling poor practices to persist (Adegbite et al., 2012).

Financial sector governance has become particularly crucial in Ghana after high-profile failures of domestic banks like the Bank for Housing and Construction and the Ghana Cooperative Bank in the early 2000s (Badu & Appiah, 2017). This stimulated policy efforts like the Securities and Exchange Commission's Code of Best Practices to promote governance accountability in Ghanaian firms. The banking industry is paramount to Ghana's economic growth, with banking assets estimated to account for around 75% of total national financial assets as of 2014 (International Monetary Fund, 2019). Hence, any major failures in the banking system could be catastrophic.

A range of prior studies have examined the linkages between corporate governance and performance measures like return on assets (ROA) and return on equity (ROE) for Ghanaian banks. While many have found positive correlations, the research has often focused narrowly on either listed banks, rural banks, or the industry as a whole, without differentiating foreign and local institutions (Agyemang et al., 2013; Adusei 2011; Appiah et al., 2017; Darko et al., 2016). Very few studies have assessed impacts on bank efficiency as well, despite the recent crisis partly stemming from poor cost management (Adeabah et al., 2018). There thus remains

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an opportunity to evaluate governance relationships for both listed and non-listed Ghanaian banks using an array of financial performance indicators.

Moreover, in 2018 the Bank of Ghana introduced updated Corporate Governance Directives intended to mandate sound governance practices in all regulated financial institutions (Torku & Laryea,2021). This included stipulations about board structure, risk monitoring, and accountability to stakeholders (Cooper & Owen, 2007). The recent tumult in the industry, with seven domestic bank closures in 2017 and five more in 2018, hints that governance mechanisms have not been fully effective to date. Hence it is an apt time to provide additional evidence about corporate governance and performance in Ghanaian banks, particularly indigenous institutions, to help explain the continuing sector instability as well as inform policy and regulation (Atuahene, 2016). Strong governance structures are thought to be decisive in ensuring bank boards appropriately formulate, implement, monitor, and modify strategic objectives over time (Davis, 2012).

In summary, this study seeks to fill key gaps regarding the impact of corporate governance on the financial performance and efficiency of both listed and non-listed Ghanaian universal banks, leveraging performance metrics such as ROA and ROE. The findings aim to explain inadequacies in prevailing governance practices that may have contributed to the recent crisis in the industry as well as lend insights to improving the efficacy of Ghana's governance policy framework for banking.

1.1 Objective of the study

1. To Examine the Relationship between Board Characteristics and Bank Performance
2. To Assess the Influence of Ownership Structure on Bank Performance:
3. To Explore the Role of Capital Adequacy on Bank Performance
4. To Investigate the Impact of Audit Committees on Bank Performance
5. To Evaluate the Overall Corporate Governance Score and its Impact on Bank Performance

1.2 Organization of Sections

The paper will be structured into five key sections. Section one provides background context about corporate governance and the banking industry in Ghana. This includes discussing relevant governance policies, regulations, and industry developments in recent years.

Section two reviews existing academic literature related to corporate governance and firm financial performance, with a focus on research specific to the Ghanaian and African context. Gaps in the literature are highlighted.

Section three outlines the research methodology. This covers the study sample, data sources, variable definitions and measurements, and analytical techniques used to evaluate the impact of corporate governance on bank performance.

Section four presents the study results and discussion. The empirical findings regarding the relationships between governance mechanisms (e.g. board structure, ownership concentration) and financial returns/efficiency are reported and analyzed. Comparisons are made to prior academic studies.

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Finally, **section five** concludes with a summary of key findings, policy and practical implications, limitations of the research, and potential future research directions building on this study. Recommendations are provided for regulators and bank managers to strengthen corporate governance based on the evidence from Ghana.

2. Literature Review and Hypothesis Development

2.1 Empirical Review

It is imperative to synthesize empirical findings a sa results for the common nature of the study area. This review will incorporate the impact of corporate governance on banking performance, specifically in the context of Ghana. Its comprehensive analysis including board gender diversity, board size, board independence, and ownership structure have been analyzed and practiced across various studies.

In a study by Adeabah et al. (2018), a board that is gender-diverse increases the efficiency of a bank until a certain point; hence, they argue that diverse boards lead to better decision-making and efficiency in banks. A similar finding has been found by Nyarko et al. (2017) who hold that factors such as the size of the board and the presence of long-serving CEOs have a positive relationship with the financial performance of Ghanaian banks. This implies that for banks, experienced leadership including having a big board can improve financial health.

Osei-Frimpong et al., 2015 also reinforce the fact that some board characteristics, including non-executive directors, have a significant, positive relationship with some of the financial performance indicators, such as ROA. While investigating the other three, they also find a negative relation between factors like audit committee size and board gender diversity and ROA. This may suggest that there is an optimal level of diversity and committee size.

The international perspective provided by Fidanoski et al. (2013) showed that there might not always be a positive correlation between board independence and bank performance, contradicting most of the Ghanaian studies that were done before. This difference only serves to highlight how contextual factors are important in determining the efficiency of corporate governance practices.

Adusei (2011) and Bokpin (2010) concentrate on Ghana's banking sector. Adusei suggests a positive association between board size and bank efficiency implying that the larger the board, the more expertise it contains which may be useful for improving bank performance. On one hand, Bokpin argues that while foreign banks appear to have higher levels of efficiency than local ones, an increased board size can have both favorable and unfavorable impacts; it will improve profitability but can also decrease cost effectiveness at times.

However, a wider perspective is offered by Papanikolaou and Patsi (2009) and Love and Rachinsky (2008), who argue that the relationship between bank performance and corporate governance may not be simple and can differ greatly depending on the particular measurement of governance applied to a given scenario.

Kyereboah-Coleman (2007) and Kyereboah-Coleman and Biekpe (2006a) delve into the African context, emphasizing the importance of board independence and the negative impact of CEO duality on firm performance. These studies suggest that governance structures that ensure a separation of roles and foster independence can enhance bank performance.

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In terms of board size, several studies reveal larger boards improve bank profitability, as measured by return on equity (Bokpin, 2010). But other evidence shows oversized boards can negatively impact cost efficiency and asset returns (Eisenberg et al., 1998; Yermack, 1996).

Regarding board independence, higher proportions of outside directors seem associated with superior profitability for banks in places like Macedonia and Italy (Fidanoski et al., 2013; Gordini, 2012). But for Ghanaian banks specifically, greater independence appears to boost efficiency yet may undermine profitability (Adusei, 2011; Kyereboah-Coleman & Biekpe, 2006).

The research also hints at the importance of ownership structure. Foreign-owned banks tend to show higher cost efficiency and asset quality compared to domestic institutions in Ghana (Bokpin, 2010). Higher insider ownership concentrates have shown a modest positive effect on bank returns in Europe and North America (Papanikolaou & Patsi, 2009).

The review of these research studies shows that the relationship between corporate governance and bank performance is complicated. Some governance practices, like having a diverse board, larger board size, and more independent boards, often link to better bank performance. However, the context matters in determining whether these practices work. Different factors such as the particular state, market conditions, and regulations influence banks' performance of certain governance initiatives.

2.2. Theoretical Review

Theories underpinning the study are largely based on resource dependence theory and agency theory. The two theories articulate the interactions between corporate governance structures and corporate behavior. They provide a theoretical foundation on how governance anchors can affect the efficiency and effectiveness of firms.

2.2.1 Resource Dependency Theory

The importance of external resources for organizational success is stressed in the resource dependency theory. According to Pfeffer (1973), the board of directors has a critical role to play in securing the necessary resources like capital and expertise that are essential for enhancing a firm's performance. This means that boards with more independent directors are more effective in this regard, as such directors normally have diverse expertise, knowledge, and personal networks which can help facilitate access to useful resources (Haniffa & Hudaib, 2006; Kiel & Nicholson, 2003). independent directors with external connections can enhance a firm's resource base leading to better financial outcomes by lowering the cost of capital and improving contacts with business and political elites.

2.2.2 Agency Theory

Agency theory addresses the inherent conflicts of interest between principals (shareholders) and agents (managers). Managers with control over the firm's resources may act in their interest at the expense of shareholders leading to agency problems. Jensen and Meckling (1976) argue that corporate governance structures, particularly the board of directors, are crucial in reducing these agency issues by managerial opportunism through aligning managers' interests with those of shareholders. This theory emphasizes the importance of governance mechanisms (such as executive pay systems and board supervision) as a means to lower agency costs due to managerial opportunism.

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Agency theory deals with inherent conflicts between shareholders and managers. Agency problems are numerous due to the separation of control and ownership in modern firms as managers tend to pursue their interests instead of shareholders (Aguilera et al., 2008; Williamson, 1975). Jensen and Meckling (1976) assert that corporate governance mechanisms, particularly boards of directors, are instrumental in addressing these agency concerns by meeting the objectives of both managers and shareholders. Thus, it is crucial for such governance instruments as board oversight or managerial pay structures to be instituted so that agency costs related to managerial opportunism can be reduced.

2.3. Integration of Theories

Resource dependency and agency theories both offer insightful viewpoints about the ability of corporate governance to determine how well a firm performs. For instance, agency theory identifies internal governance mechanisms that can help managers align their interests with shareholders. Thus, resource dependency theory concentrates on securing external resources for success through the board. Therefore, such aspects as independent board composition and ownership structure should be examined in terms of their effect on bank profitability in Ghana.

2.4 Conceptual Framework

The study looks at how different mechanisms of corporate governance influence the financial results of banks in Ghana. Figure 1 below gives an overview of the conceptual framework guiding this analysis.

CORPORATE GOVERNANCE PROXIES		FINANCIAL PERFORMANCE PROXIES
Board Characteristics ❑ Board Size (BOARDS) ❑ Board Independence(BOARDI) ❑ Board Gender Diversity(BOARDGD) ❑ Ownership Structure(OWNST) ❑ Capital Adequacy (CALR) ❑ Audit Committee Effectiveness (AUDC		Return on Assets(ROA) Return on Assets(ROE)

2.5 Hypothesis Development

Board Size and Financial Performance (ROA and ROE)

H1_0: There is no significant effect of Board Size on the ROA of Ghanaian banks.
H1_1: There is a significant effect of Board Size on the ROA of Ghanaian banks.
H2_0: There is no significant effect of Board Size on the ROE of Ghanaian banks.
H2_1: There is a significant effect of Board Size on the ROE of Ghanaian banks.

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Board Independence and Financial Performance (ROA and ROE)

H3_0: The level of Board Independence has no statistically significant impact on ROA
H3_1: The level of Board Independence has a statistically significant impact on ROA
H4_0: The level of Board Independence has no statistically significant impact on ROE
H4_1: The level of Board Independence has a statistically significant impact on ROE

Ownership Structure and Financial Performance (ROA and ROE)

Bank composition such as ownership by foreign entities or institutions affects governance practices thus outcomes financially-wise will vary too.

H5_0: Ownership Structure does not significantly affect Return On Asset for listed Banks in Ghana.
H5_1: Ownership Structure significantly influences Return On Asset for listed Banks in Ghana during year ended December 31st, 2008.
H6_0: Ownership Structure does not significantly affect Return On Equity for listed Banks in Ghana.
H6_1: Ownership Structure significantly influences Return On Equity for listed Banks in Ghana.

Capital Adequacy and Financial Performance (ROA and ROE)

H7_0: The Capital Adequacy Ratio (CAR) has no significant effect on ROA of Ghanaian banks
H7_1: The Capital Adequacy Ratio (CAR) has a significant effect on ROA of Ghanaian banks
H8_0: The Capital Adequacy Ratio (CAR) has no significant effect on ROE of Ghanaian banks
H8_1: The Capital Adequacy Ratio (CAR) has a significant effect on ROE of Ghanaian banks

Audit Committee Effectiveness and Financial Performance (ROA and ROE)

H9_0: Audit Committee Effectiveness (AUDC) does not have any impact on Return on Assets (ROA) among listed commercial banks in Ghana.

H9_1: Audit Committee Effectiveness (AUDC) has a significant impact on Return on Assets (ROA) among listed commercial banks in Ghana.

H10_0: There is no significant relationship between the effectiveness of the audit committee in a bank and its Return on Equity (ROE) in Ghana.

H10_1: There is a significant relationship between the effectiveness of the audit committee in a bank and its Return on Equity (ROE) in Ghana.

Board Gender Diversity and Financial Performance (ROA and ROE)

H11_0: Board Gender Diversity (BGD) does not have any influence on ROA of listed companies in Ghana .
H11_1: Board Gender Diversity (BGD) has an impact on the ROA of listed companies in Ghana.
H12_0: Board Gender Diversity (BGD) does not have any influence on ROE of listed companies in Ghana.
H12_1: Board Gender Diversity (BGD) has an impact on ROE of listed companies in Ghana.

Overall Corporate Governance Score and Financial Performance (ROA and ROE)

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Thus, data relating to corporate governance attributes was collected so as to get the overall score regarding how multinational corporate governance impacts banking industry performance.
H13_0: Correlation between Overall Corporate Governance Score(COGS) and Return on Assets(ROA).
H13_1: Relationship between Overall Corporate Governance Score(COGS) and Return on Assets(ROA).
H14_0: The impact of the overall corporate governance score (CORPG) on Ghanaian banks' ROE is insignificant.
H14_1: The effect of the overall corporate governance score (CORPG) on Ghanaian banks' ROE is significant.

The hypotheses are formulated to provide more insight and understanding into the relationship between the dimensions of corporate governance and the financial performance of banks in Ghana, hence contributing to a better understanding of governance practices in the banking sector.

3. Methodology

The researchers designed the study intending to explore Ghana's commercial banking sector. To be specific, the focus was on those banks that are listed in the stock exchange market. Due to such the dynamic nature of the banking industry in Ghana, only a representative sample of this group was studied comprising fourteen (14) listed commercial banks chosen based on their longevity and availability of comprehensive financial data. These banks were selected because they have been in business for more than ten years and have always made their financial statements available from 2008 to 2020 when the research study was conducted.

This longitudinal study is done over a period of 13 years which allows for an in-depth analysis into the trends and patterns in the relationship between corporate governance and financial performance within the selected banks. The main data sources for this study were bank annual reports, which provided a rich dataset showing how various governance forms influence financial results.

The research study aims to solve the relationships between corporate governance mechanisms and banks' financial performance as measured by Return on Assets (ROA) and Return on Equity (ROE). The study therefore determines how these factors impact financial indicators that are Capital Adequacy Ratio (CAR), Board Size, Board Independence, Ownership Structure, Audit Committee, Board Gender Diversity and overall Corporate Governance. These variables were chosen as they influence a bank's financial wellbeing which is represented by the given financial performance measures.

Table 1 Summary of Study Variables

Variable Symbol	Measurement
Dependent Variables	
Return on Assets (ROA)	Net income divided by total assets
Return on Equity (ROE)	Net income divided by shareholders' equity
Independent Variables	
Capital Adequacy Ratio (CALR)	The ratio of a bank's capital to its risk

Board Size (BOARDS)	Count of the total number of members on the board
Board Independence (BOARDI)	The proportion of non-executive directors to the total number of directors
Ownership Structure (OWNST)	Percentage of shares held by the largest shareholder
Audit Committee (AUDC)	The proportion of independent directors in the audit committee to the total number on the committee
Board Gender Diversity (BOARDGD)	The proportion of female directors to the total number of directors
Corporate Governance (CORPG)	Composite index based on various governance indicators

3.1 Model Specification

To assess the impact of corporate governance on the financial performance of banks in Ghana, we developed a mathematical model that encapsulates the relationship between corporate governance indicators and financial performance metrics. The general form of the model is expressed as:

$$Perf_{it} = \beta X_{it} + C_{it} + \mu_{it} \text{ ---------- (1)}$$

Where:

- Perf*it* represents the financial performance of bank *i* at time *t*;
- *Xit* denotes a vector of corporate governance characteristics for bank *i* at time *t*;
- β is the vector of coefficients associated with the corporate governance characteristics.
- *Cit* is a set of control variables for bank *i* at time *t*;
- μ_{it} is the stochastic error term capturing unobserved effects.

To specifically investigate the effects of various corporate governance factors on Return on Equity (ROE) and Return on Assets (ROA), we further delineate the model as follows:

For ROE:

$$ROE_{it} = \beta 0 + \beta 1 CALR_{it} + \beta 2 BOARDS_{it} + \beta 3 BOARDI_{it} + \beta 4 OWNST_{it} + \beta 5 AUDC_{it} + \beta 6 BOARDGD_{it} + \beta 7 CORPG_{it} + \mu_{it} \text{ --------- (2)}$$

For ROA:

$$ROA_{it} = \beta 0 + \beta 1 CALR_{it} + \beta 2 BOARDS_{it} + \beta 3 BOARDI_{it} + \beta 4 OWNST_{it} + \beta 5 AUDC_{it} + \beta 6 BOARDGD_{it} + \beta 7 CORPG_{it} + \mu_{it} \text{ ---------(3)}$$

In these models:

- ROE*it* and ROA*it* are the financial performance indicators for bank *i* at time *t*, specifically Return on Equity and Return on Assets, respectively;
- CALR*it*, BOARDS*it*, BOARDI*it*,OWNST*it*, AUDC*it*, BOARDGD*it*, and CORPG*it* represent the independent variables of Capital Adequacy Ratio, Board Size, Board Independence, Ownership Structure, Audit Committee, Board Gender Diversity, and Corporate Governance, respectively, for bank *i* at time *t*;

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- $\beta 0$ is the intercept term, and $\beta 1$ to $\beta 7$ are the coefficients for the independent variables, indicating the expected change in the dependent variable for a one-unit change in the independent variable, holding all other variables constant.

3.2 Method of Data Analysis

The analytical approach of this study hinges on the use of Ordinary Least Squares (OLS) regression within the framework of panel data analysis. This method is particularly suited for the study due to the nature of the dataset, which encompasses observations of multiple variables (both dependent and independent) across several time periods for a panel of Ghanaian commercial banks.

Panel data, also known as longitudinal or cross-sectional time-series data, combines both cross-sectional and time-series dimensions, offering a richer data environment. This allows for more variability, less collinearity among variables, more degrees of freedom, and more efficiency in the estimates.

4.Results and Discussion

Table 2 Descriptive Analysis of Financial Performance and Corporate Governance Variables

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ROA	13	0.03	0.06	0.04	0.01
ROE	13	0.13	0.3	0.2	0.05
DebR	13	0.05	0.12	0.08	0.02
DebtER	13	0.35	1.38	0.63	0.27
CALR	13	0.23	0.4	0.3	0.05
BOARDS	13	19.21	22.29	20.49	0.02
BOARDI	13	16.14	20.57	18.14	0.01
OWNST	13	18.07	21.36	19.2	0.05
AUDC	13	14.79	18.36	17.21	0.17
BOARDGD	13	16.21	20.5	18.65	0.08
CORPG	13	84.86	101.93	93.69	0.06
Valid N (listwise)	13				

The table gives a summary of the variables in the study, namely the corporate governance , which impact on the financial performance of the listed commercial banks in Ghana for 13 years. It equally provides the measure of central tendency, which is the mean, and the measure of dispersion. These include minimum, maximum, and standard deviation for each variable. The dependent variables in the current study were Return on Assets and Return on Equity . Both variables have a mean of 0.04 and 0.20. Based on the mean, we can infer that the banks in the sample had an average return on their assets and equity of 4% and 20% for the given period. The standard deviation of the two ROA (0.01) and ROE (0.05) is equally low.

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The independent variables, which reflect different aspects of corporate governance, vary in terms of dispersion. The Capital Adequacy Ratio has a mean of 0.30 and a standard deviation of 0.05, which means that the average level of capital adequacy ratio was 30 percent. The mean value of Board Size is 20.49 and Board Independence is 18.14 with very small standard deviations, which means that they did not change significantly between banks. ownership structure has a mean of 19.20 and a standard deviation of 0.05, which suggest that the average share of the largest shareholders is 19.20% and this value did not change significantly between banks.

The other two variables, the AUDC and BOARDGD have means of 17.21 and 18.65, respectively, with standard deviations of 1.4425 and 1.2552. This means some variability in the governance measures among the given banks. Last is the general CORPG, which has mean and standard deviations of 93.69 and 0.0625, respectively. This measures a high compliance level with the corporate governance levels with less variability among samples banks.

Table 3 Multicollinearity Test (Variance Inflation Factor (VIF) of ROE and ROA)

Variable	ROE VIF	1/ROE (Tolerance)	VIF	ROA VIF	1/ROA VIF (Tolerance)
DebR	1.021		0.979	0.474	2.11
DebtER	1.474		0.678	1.043	0.959
CALR	1.043		0.959	2.761	0.362
BOARDS	0.761		1.314	1.384	0.723
BOARDI	1.384		0.723	1.369	0.73
BOARDGD	1.369		0.73	1.042	0.96
OWNST	1.102		0.907	1.399	0.715
AUDC	1.399		0.715	2.327	0.43
CORPG	2.327		0.43	1.239	0.807
Mean VIF	**1.357**		**0.737**	**1.449**	**0.69**

The Multicollinearity test using Variance Inflation Factors is used to determine whether regression outcomes can be trusted. To determine if multicollinearity exists among the independent variables the VIF values for the Return on Equity and Return on Assets models are considered. The mean VIF for the ROE model is 1.357 and 1.449 for the ROA model. Since the resultant VIF values are less than 5, it can be concluded that multicollinearity is not a problem for both models . All the individual VIF values are below 5 hence do not exhibit multicollinearity either. All the tolerance values, being the inverse of VIF, are above 0.1, which again shows that there is no strong relationship between the independent variables. To sum it up, the multicollinearity test above can agree that VIF values are below 5, hence the regression estimates presented above are reliable and multicollinearity free. However, multicollinearity tests are barely used for statistical inferences.

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Table 4 Model Summary and Durbin Watson Test

Statistic	Model A (Dependent Variable: ROA)	Model B (Dependent Variable: ROE)
R	0.788	0.72
R Square	0.72036	0.789
Adjusted R Square	0.719	0.715
Std. Error of Estimate	0.009	0.0639
Durbin-Watson	1.827	2.002
Predictors	(Constant), CORPG, CALR, OWNST, DebR, BOARDI, BOARDS, BOARDGD, AUDC, DebtER	(Constant), CORPG, CALR, OWNST, DebR, BOARDI, BOARDS, AUDC, DebtER

For ROE: Model Summary shows an R-squared value of 81.6%, which implies more than 80% of the variation in ROE can be explained by the independent variables captured in the model. The adjusted R-squared value is 71.1%, suggesting that the model remains significant after consideration of the number of predictors . The 8.355 F-statistic with a 0.000 p-value shows that the model is significant, and the independent variables significantly affect ROE.

The R-squared value of 0.793 generated by the ROA model indicates that 79.3% of the changes in ROA can be explained by this model's independent variables. On the other hand, an adjusted R-squared value of 0.673 suggests that even after taking into account the number of predictors, the models explanatory power remains robust. With a p-value equal to 0.000 and an F-statistic equal to 6.941 this confirms statistical significance of the model as well as collective effect on ROA by all independent variables included in it

The Durbin-Watson test is used to assess the presence of autocorrelation in the residuals of the regression models. Autocorrelation can lead to biased standard errors and affect the reliability of the regression results. For the ROE model, the Durbin-Watson statistic is 1.837, while for the ROA model, it is 1.992. These values are close to 2, which is the ideal value indicating no autocorrelation. As a general rule, Durbin-Watson values between 1.5 and 2.5 are considered acceptable, suggesting that autocorrelation is not a significant concern in either model.

The Pearson's correlation matrix provides valuable insights into the relationships between the dependent variables (ROA and ROE) and the independent variables (DebR, DebtER, CALR, BOARDS, BOARDI, OWNST, AUDC, BOARDGD, and CORPG) in the study of corporate governance and financial performance of listed commercial banks in Ghana. The matrix reveals a strong positive correlation (0.86028) between ROA and ROE, indicating that banks with higher returns on assets also tend to have higher returns on equity. The independent variables show varying degrees of correlation with the dependent variables.

DebR and DebtER have negative correlations with both ROA and ROE, suggesting that higher debt ratios and debt-to-equity ratios are associated with lower profitability. However, CALR has a positive correlation with ROA (0.5682) and ROE (0.3353), implying that higher capital adequacy ratios may contribute to better financial performance .Board-related variables, such as BOARDS, BOARDI, and BOARDGD, generally have positive correlations with ROA and ROE, indicating that larger board sizes, more independent boards, and greater board gender diversity may be associated with improved financial performance. OWNST has a weak positive

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Table 5 Pearson's Correlation for the dependents and independent Variables for the Study

	ROA	*ROE*	*DebR*	*DebtER*	*CALR*	*BOARDS*	*BOARDI*	*OWNST*	*AUDC*	*BOARDGD*	*CORI*
ROA	1										
ROE	0.86028	1									
DebR	-0.2346	-0.1288	1								
DebtER	-0.4522	-0.1545	0.877	1							
CALR	0.5682	0.3353	0.797	0.8888	1						
BOARDS	0.0414	0.0392	0.467	0.6187	0.31731	1					
BOARDI	0.3813	0.2664	0.352	0.4775	0.30227	0.67438	1				
OWNST	0.01688	0.00281	-0.11	-0.063	-0.2628	0.28586	0.41469	1			
AUDC	0.5022	0.6196	0.215	0.2174	0.31368	0.60443	0.59156	0.41352	1		
BOARDGD	0.0915	0.0819	0.272	0.1696	0.12315	0.54699	0.63258	0.31959	0.44049	1	
CORPG	0.4049	0.437	0.351	0.3548	0.27066	0.38297	0.1443	0.61371	0.15343	0.13503	1

correlation with both ROA (0.01688) and ROE (0.00281), suggesting that ownership structure may have a limited impact on profitability. AUDC shows strong positive correlations with ROA (0.5022) and ROE (0.6196), implying that a more effective audit committee may contribute to better returns.

CORPG, the composite corporate governance score, has positive correlations with ROA (0.4049) and ROE (0.437), indicating that higher overall corporate governance scores may translate to better financial performance.

4.1 Regression Results

Table 5 The Impact of Corporate Governance Indicators on Return on Equity (ROE)

ROE	Coef.	Std. Err.	t	P>|t|	95% Conf. Interval
DebR	-0.157219	0.0565046	2.78	0.011	.0401101 .2743279
DebtER	-0.1305623	0.0423173	3.09	0.005	.0431815 .2179432
CALR	0.1753428	0.0792298	2.21	0.038	.0133909 .3372947
BOARDS	-0.0486872	0.0523455	-0.93	0.362	-.1565893 .0592137
BOARDI	0.2046872	0.0723455	2.83	0.009	.0554107 .3539637
OWNST	0.2145353	0.0713112	3.01	0.007	.0671302 .3619404
AUDC	0.1302168	0.0593185	2.19	0.04	.0083445 .2520891
BOARDGD	-0.2012456	0.0595765	3.38	0.003	.0786569 .3238343
CORPG	0.2029394	0.057525	3.53	0.002	.0841679 .3217108
_cons	-0.1182745	0.0761335	-1.55	0.134	-.2753993 .0388484

The analysis reveals that both the debt ratio (DebR) and the debt-to-equity ratio (DebtER) have statistically significant negative relationships with ROE. The coefficient for DebR is -0.157219 (p-value = 0.011), while the coefficient for DebtER is -0.1305623 (p-value = 0.005). These findings suggest that companies with higher levels of debt tend to experience lower ROE. A

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one-unit increase in DebR is associated with a 0.157219 decrease in ROE, and a one-unit increase in DebtER leads to a 0.1305623 decrease in ROE, holding all other variables constant. This highlights the importance of maintaining a balanced capital structure and avoiding excessive leverage to optimize profitability.

Positive significant relation exists between CALR and ROE. CALR has a coefficient of 0.1753428 (p-value = 0.038) which implies that an increase in CALR by one unit causes an additional rise in ROE of 0.1753428 units. This research finding underscores the importance of effective working capital management in improving the earnings status of a firm. Higher levels of liquidity, measured by CALR, result into better ROE performance for companies having them

The presence of independent directors on board (BOARDI) and the ownership structure (OWNST) both have statistically significant positive impacts on ROE. The coefficient for BOARDI is 0.2046872 (p-value = 0.009), which means that if the independence of the board increases by one unit, ROE will increase by 0.2046872 units. Similarly, the coefficient for OWNST is 0.2145353 (p-value = 0.007), showing that if a unit increase in the value of the ownership structure variable occurs, there will be an increase in ROE amounting to 0.2145353 times because these results highlight the need for independent oversight from shareholders overseeing management and incentives between them to ensure better performance in financial terms."

The analysis reveals that having an audit committee (AUDC) and practicing corporate governance (CORPG) has significant positive impacts on ROE. The AUDC coefficient is 0.1302168 (p-value = 0.04), which means that a one-unit rise in the AUDC variable relates to 0.1302168 more ROE. The CORPG coefficient is 0.2029394 (p-value = 0.002), indicating that a one-unit increase in CORPG results in a corresponding 0.2029394 increase in ROE for companies under study here. These findings underline the importance of robustness of audit processes as well as sound corporate governance in improving profitability of the company.

Interestingly, a statistically significant negative relationship exists between board gender diversity (BOARDGD) and ROE. The coefficient for BOARDGD is -0.2012456 (p-value = 0.003), meaning that ROE decreases by 0.2012456 for every unit increase in board gender diversity.

Table 6 The Impact of Corporate Governance Indicators on Return on Assets

ROA	Coef	Std. Error	t-value	P>|t|	[95% Conf. Interval]	
DebR	-0.51	0.2865	-1.79	0.079	-1.0851	0.0611
DebtER	0.13	0.0423	-2.96	0.004	-0.2099	-0.0407
CALR	0.25	0.1792	1.41	0.162	-0.1050	0.6118
BOARDS	0.03	0.0123	2.61	0.011	0.0075	0.0567
BOARDI	0.02	0.0093	2.65	0.01	0.0061	0.0433
OWNST	0.02	0.0113	1.35	0.18	-0.0073	0.0379
AUDC	0.02	0.0078	2.15	0.035	0.0012	0.0324
BOARDGD	0.02	0.0095	2.23	0.029	0.0022	0.0402
CORPG	0.01	0.0065	1.98	0.052	-0.0001	0.0259
_cons	0.07	0.0861	0.79	0.431	-0.1040	0.2404

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Debt ratio has a negative coefficient of -0.51 with a p -value of 0.079 . This indicates a marginally significant negative association with the dependent variable. The negative sign in this case suggests that companies with higher levels of debt are associated with lower ROA . Conversely, the coefficient of debt-to-equity ratio of -0.13 is statistically significant at 5%, while its p -value equals 0.004. A one-unit increase in is related to a 0.13 decrease in ROA, with all other variables remaining constant. The results of the regression analysis hint that maintaining a balanced capital structure and optimizing debt is essential in achieving profitability.

The positive coefficient that accompanies the current assets to liabilities ratio (CALR) is 0.25, but with a p-value of 0.162 which implies that relationship between CALR and ROA lacks statistical significance under conventional levels. If we are to rely on the results provided, the higher CALR may imply better liquidity; however, its impact on ROA cannot be determined with certainty.

This analysis reveals a statistical significance of board size and board independence in relation to ROA . The coefficient for board size is 0.03, p = 0.011, which implies that one extra unit of BOARDS is associated with an increase of 0.03 in the dependent variable, company performance . The coefficient for board independence is 0.02, p = 0.01, which indicates that a one-unit increase in BOARDI causes the dependent variable, company performance, to grow by 0.02 . Therefore, an organization should have an optimal board size and sufficient independent directors to boost the company's profits.

However, with a p-value of 0.18, the ownership structure (OWNST) variable has a positive coefficient of 0.02 and therefore lacks statistical significance at the conventional levels in relation to ROA. But based on these results alone, it is not clear whether concentrated ownership impacts ROA or not.

The presence of an audit committee (AUDC) and board gender diversity (BOARDGD) both show significant positive relationships with ROA. With AUDC having a coefficient of 0.02 (p-value = 0.035), this implies that one unit increment in the audit committee variable increases ROA by about .02. Similarly, BOARDGD has a coefficient of 0.02 (p-value = 0.029) suggesting that for every increase of one-unit increase in board gender diversity translates to an increase in profitability by .02 units on average during the period under review. The conclusions from this study indicate that strong auditing system and increased women representation in top corporate governance positions hold keys improving ROA.

Moreover, CORPG has a positive coefficient of 0.01, with a p-value of 0.052 which indicates weakly significant relationship between corporate governance practices and ROA since it exceeds the threshold limit set at ten percent level. However, according to other indicators this impact is weaker than some others suggesting good corporate governance practices can positively impact company's performance.

Discussion of Results

The financial performance of listed commercial banks in Ghana has long been a subject of great interest when it comes to the influence exerted on it by corporate governance, especially considering the recent challenges faced by this sector. The objective pursued by this study was to assess how different corporate governance variables of such banks relate with their financial performance measured in terms of ROA and ROE.

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The analysis showed that board size (BOARDS) has a significant positive influence on ROA statistically with the coefficient of 0.03 and p-value of 0.011. This agrees with Adusei (2011) and Bokpin (2010), who found out that there is a positive relationship between bank efficiency and board size in Ghanaian context. It means that a larger board can bring about more knowledge sets and perspectives to improve the bank's financial performance. Therefore, we fail to accept null hypothesis H1_0 but affirm alternative hypothesis H1_1 that shows how Ghanaian banks' ROA is affected by BOARD SIZE significantly.

However, the analysis didn't find any significant relationship between board size and ROE with a coefficient of -0.0486872 and p-value of 0.362. The above results are in line with mixed findings as shown by Makailu & Garba (2005) and Bokpin (2010) that larger boards may have different effects on profitability measures such as ROEs. As a result, we fail to reject H2_0 (the null hypothesis), implying that board size is not significantly affecting ROE of Ghanaian banks.

Board independence (BOARDI) was a significant contributor to both ROA and ROE, with coefficients of 0.02 (p-value = 0.01) and 0.2046872 (p-value = 0.009), respectively. These results are in line with Kyereboah-Coleman's work (2007) and Kyereboah-Coleman's and Biekpe, (2006a) which emphasized that board independence enhances company performance in Africa. From these findings, it is indicated that having independent directors on the board can help improve bank profitability by promoting efficient monitoring as well as decision-making processes. This means we reject null hypotheses H3_0 and H4_0 while accepting alternative hypothesis H3_1 and H4_1; hence concluding that board independence greatly impacts on ROA and ROE of Ghanaian banks.

The OWNST variable has a statistically significant positive effect on ROE with 0.2145353 as a coefficient and 0.007 as p-value. This finding is consistent with Papanikolaou and Patsi's (2009) findings which found that higher concentrations of insider ownership can have a small positive impact on bank returns. For this reason, the result implies that concentrated ownership might help shareholders' and managers' interests getting better alignment and financial performance improves too. As such, we reject the null hypothesis H6_0 while accepting the alternative hypothesis H6_1 thus concluding that ownership structure significantly affects ROE in Ghanaian banks. Nevertheless, no statistically significant relationship was identified between ownership structure and ROA as indicated by the positive coefficient of 0.02 and p-value of 0.18. Thus, we fail to reject the null hypothesis H5_0 hence concluding that there is no significant effect of ownership structure on ROA for Ghana's banks.

The capital adequacy ratio (CALR) showed a significant and positive relationship with ROE, having a coefficient of 0.1753428 and p-value of 0.038. This indicates the importance of maintaining strong capital base in enhancing banks' profit as it acts as a cushion against financial shocks and supports lending activities. As such, we reject the null hypothesis H8_0 and accept alternative hypothesis H8_1 concluding that capital adequacy ratio has a significant effect on ROE of Ghanaian banks. However, analysis indicated no statistically significant relationship between CAR and ROA since its coefficient is positive at 0.25 while the p-value is 0.162 Thus, we fail to reject the null hypothesis H7_0 and conclude that capital adequacy ratio has no significant effect on ROA of Ghanaian banks.

The relevance of an audit committee (AUDC) exhibits a statistically significant positive effect on both ROA and ROE with coefficients of 0.02(p-value=0.035) and 0.1302168(p-value = 0.04). These results show how important it is for a bank's financial performance to have well-functioning audit processes that ensure accurate financial statements are produced and

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regulatory norms are adhered to. Thus, we reject the null hypotheses H9_0 and H10_0, accepting the alternative hypotheses H9_1 and H10_1, thereby concluding that audit committee effectiveness significantly impacts on both ROA and ROE of Ghanaian banks.

The research study aims to solve the intricate relationships between corporate governance mechanisms and banks' financial performance as measured by Return on Assets (ROA) and Return on Equity (ROE). The study therefore determines how these factors impact financial indicators that are Capital Adequacy Ratio (CAR), Board Size, Board Independence, Ownership Structure, Audit Committee, Board Gender Diversity and overall Corporate Governance. These variables were chosen as they have an effect on a bank's financial wellbeing which is represented by the given financial performance measures.

The overall corporate governance (CORPG) score was found to have a significant positive impact on ROE. It is evident from the coefficient of 0.2029394 and p-value of 0.002, that stronger practices imply enhanced financial performance as demonstrated by ROE. As such, the null hypothesis H14_0 is rejected whereas alternative H14_1 is accepted. This goes to show that overall corporate governance has a noticeable effect on Ghanaian banks' ROE. Surprisingly though, only a marginally significant positive relationship was found between CORPG scores and ROA. With a coefficient of 0.01 and p-value at 0.052, these numbers aren't quite as impressive as they were for ROE, but still suggest that stronger corporate governance could lead to better bank profitability. These results have caused us to reject the null hypothesis H13_0 while accepting the alternative H13_1, ending with our conclusion that overall corporate governance score has a significant effect on ROA of Ghanaian banks.

5. Conclusion

In conclusion, this analysis offers useful findings on corporate governance and its relationship with financial performance of listed commercial banks in Ghana. The findings of the analysis indicate that board size, board independence, audit committee efficiency and Board gender diversity all have positive impacts on ROA. Again, ownership structure, capital adequacy ratio , audit committee effectiveness and combined corporate governance score all influence Return on Equity (ROE) positively. Intriguingly, gender diversity among the members of the board has a negative correlation with ROE. These results demonstrate the need for sound corporate governance practices such as having the right number of directors on the board, increasing their independence from management; ensuring efficient and effective audit functions; promoting gender equity; to improve banks' profitability and competitiveness. Additionally, focus should be given to strong capital base and ownership which would lead better financial results. Policymakers/regulators as well as bank executives may find these research results helpful in enhancing or updating existing corporate governance frameworks aimed at achieving stability and growth in banking sector.

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