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Examining the relationship between financial performance indicators and capitalization ratios: Analysis of Ghana's banking sector

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Abstract
Purpose: This study examines the relationship between the capitalization ratio and business profitability, particularly its effect on return on assets (ROA) and return on equity (ROE). Capitalisation is crucial for financial growth and operational stability; however, an imbalance in the capital structure can adversely affect profitability. This study examines the essential issue of optimising capitalisation to improve firm performance, particularly under fluctuating economic conditions.
Method: This study employs a quantitative research approach to analyse firm-level data and to examine the relationship between capitalisation and profitability, with E-veiw as the analytical tools for regression analysis. The results indicate that elevated capitalisation ratios correlate with diminishing profitability and lower equity returns, highlighting the danger of excessive leverage. Overreliance on debt financing increases financial and operational risks, restricts liquidity, and reduces shareholders' net returns.
Results: This research provides practical recommendations for corporate executives and governments. Businesses are urged to use balanced capital structures to improve financial flexibility and secure sustainable returns. Policymakers must strengthen regulatory frameworks to promote prudent financial management and mitigate the dangers linked to excessive debt financing.
Contribution: This study contributes to the literature by offering empirical information regarding the relationship between capitalization and profitability, specifically in emerging markets. The work's novelty is in its concrete advice that links academic frameworks to practical financial strategies.
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1. Introduction

Capital structure decisions are complex and have a significant impact on a firm's ability to remain competitive and achieve sustainable growth. Investigating and enhancing the correlation between capital structure and financial performance is a crucial area of emphasis. Companies obtain two main benefits from utilizing debt. The initial concept is the tax shield, whereby interest payments, such as tax-deductible expenses, augment a firm's total value. Second, debt enforces management discipline, as Michael C Jensen (1986) posits. Managers are responsible for distributing free cash flow among investments, dividends, or reserves. In the absence of mandatory fixed payments such as interest payments, there is a danger of managerial inefficiency or resource misallocation. Shareholders

frequently use debt as a governance tool to ensure executive accountability. Also, financing agreements often have strict financial covenants, such as minimum requirements for free cash flow or certain ratios, like debt-to-EBITDA and EBITDA-to-interest expenses. Compliance with these agreements enhances operational efficiency and financial prudence.

Financial decision-making is essential and fundamental for firms worldwide (Iqbal & Javed, 2017). The choice of capital structure involves determining the appropriate mix of short-term and long-term debt to support firm objectives. (Yapa Abeywardhana, 2015). These decisions function as strategic frameworks that promote operational continuity and expansion (Kurshev & Strebulaev, 2015). Efficient management of capital structure advances organizational objectives by enabling access to diverse financial resources (Saeedi & Mahmoodi, 2011)Click or tap here to enter text.. A key metric in this context is the debt-to-capital ratio, which reflects a company's financial leverage. This ratio, derived from the division of interest-bearing debt by total capital, offers critical insight into a company's financial framework and investment potential. An elevated debt-to-capital ratio indicates heightened reliance on debt financing, leading to augmented commitments and an increased risk of default. Entities exhibiting disproportionate debt relative to equity are termed "thinly capitalised," a condition associated with heightened leverage or gearing (Ferrar & Mawami, as cited in Akabom and Ejabu (2018)). Some important capitalization ratios to look at are debt equity, long-term debt-to-capitalization, and total debt-to-capitalization. These ratios show how much a company relies on debt to fund its growth. While heightened debt levels inherently augment investment risk, they may also signify substantial business growth potential. From the company's perspective, debt financing poses a dual challenge: it elevates financial leverage, enhancing earnings potential, while also heightening the risk of insolvency or bankruptcy if the organization does not meet its financial obligations. Firms with elevated capitalisation ratios are especially vulnerable to financial distress, underscoring the delicate equilibrium required to manage debt within the capital structure.

In Ghana, the banking sector faces significant challenges in an effort to optimise capitalisation to balance profitability and financial stability. Regrettably, in research, there is a scarcity of empirical evidence on how capitalisation ratios influence financial performance in emerging markets of the banking sector in Ghana. Thus, the current study closes the scarcity gap in research by assessing the relationship between capitalisation ratios and key performance metrics including Return on Asset (ROA) and Return on Equity (ROE) in the banking sector of Ghana. Understanding the relationship between capitalisation ratio and financial performance is critical for policy makers and management bodies of banking institutions in Ghana with the aim of enhancing stability and operational efficiency. The current study will, however, provide a deeper understanding of how effective capitalisation strategies can mitigate the risk associated with excessive leverage and improve profitability. The study will also benefit financial managers in making financial decisions in balancing debt-equity strategies. For this reason, the current study examines the relationship between financial performance indicators and capitalisation ratios.

The research questions were established based on the prior analysis and conceptual discussion as follows:
RQ 1 : What is the effect of the capitalization ratio on the return on assets and equity (ROA and ROE) of banks listed on the Ghana Stock Exchange.
RQ2 : Does the capitalisation ratio affect listed banks' ROE) on the Ghana Stock Exchange?

2. Literature review

2.1 Debt as an indicator

Debt is a financial obligation requiring fixed interest payments irrespective of a company's profitability, whereas equity consists of shareholder money that yields dividends based on the firm's performance (Brigham, 2016). The debt component of a capital structure, encompassing both short- and long-term liabilities, profoundly influences organizational performance.

Alternatively, a company can acquire equity through the issuance of shares. The configuration of a company's capital structure reflects its risk profile and financial strength. Abbadi and Abu-Rub (2012) contend that insufficient equity financing can disproportionately augment shareholder control, potentially skewing decision-making processes. Businesses typically obtain capital through two primary methods: equity issuance and debt finance. Debt financing is typically more cost-effective due to the tax deductibility of interest payments.

While leveraging debt can offer financial benefits, excessive reliance on it may result in financial instability and reduced performance. An empirical study of this issue is crucial in the Ghanaian context to address the unique difficulties and opportunities within the local economic landscape. In the banking sector, stakeholders, particularly substantial shareholders, exert significant influence on financial decisions, often steering the strategic direction of organizations.

Arhinful and Radmehr (2023) explored the impact of capital structure on the financial performance of financial institutions in Ghana. Their findings reveal an unfavorable correlation between the capitalization ratio and key performance indicators, including the net interest margin, loan-to-asset ratio, and return on assets. The debt-to-EBITDA ratio demonstrates diverse effects, underscoring the intricate consequences of debt financing. Abor (2005) examined the relationship between capital structure and profitability in publicly traded companies in Ghana and found a positive correlation. As a result, this suggests that companies with higher levels of leverage, which means they have more debt in their capital structures, usually make more money. All of these studies show that debt has two sides: it can help you make more money, but it can also cause your finances to become unstable if you don't use it wisely.

2.2 Debt-to-Equity Ratio as an indicator

The debt-to-equity (D/E) ratio is an essential financial indicator that reflects the ratio of debt to equity in a company's capital structure, providing insights into the firm's leverage and financial stability. This ratio is a crucial measure of a firm's risk profile and stability, as emphasized in the literature. The D/E ratio is an important way to measure financial leverage because it shows how helpful debt financing is for a business's operational and strategic goals (Samour & Hassan, 2016). Click or tap here to enter text.An elevated D/E ratio often signifies heightened financial risk, whereas a diminished ratio normally denotes financial stability and a prudent borrowing strategy. Tamplin says that the best debt-to-equity (D/E) ratio is different for each business. Industries that need a lot of capital to invest in things like infrastructure and equipment tend to have higher D/E ratios. The debt-to-equity (D/E) ratio is crucial since it offers insight into a company's capital structure strategy. Finding the right balance between debt and equity is important for keeping your finances flexible, which lets your business deal with the pros and cons of the market. A well-managed D/E ratio can enhance a company's growth potential while minimizing financial risks. By strategically leveraging debt, a business can invest in opportunities that drive expansion, all while maintaining sufficient equity to support its long-term stability. This balance allows companies to take calculated risks that can lead to significant returns while also ensuring they remain resilient during economic fluctuations. Ultimately, a thoughtful approach to the debt-to-equity ratio positions a business for sustainable success.

The significance of attaining an ideal D/E ratio highlights the need to balance capital investments while minimizing financial risks to maintain long-term financial stability. From this point of view, the D/E ratio stands out as an important, situation-specific number that should be studied along with other financial indicators to get a full picture of a business's financial health. This comprehensive analysis can help stakeholders make informed decisions regarding investments, resource allocation, and growth strategies. Ultimately, understanding the D/E ratio in conjunction with other metrics enables businesses to navigate market fluctuations and sustain their competitive edge (Gropp & Heider, 2010). Click or tap here to enter text.A Higher D/E ratio indicates increased financial risk; yet, it may enhance prospective returns due to the tax shield benefits associated with debt financing. Gill, Biger, and Mathur (2011) assert that the debt-to-equity (D/E) ratio is crucial for optimizing capital structure by balancing profitability and risk. Titman and Wessels (1988) observe that companies with high debt-to-equity ratios

typically encounter heightened financial risk, which directly influences their cost of capital and total valuation. This link illustrates that the dual nature of financial leverage can foster growth and enhance profitability under advantageous conditions. Nonetheless, it also increases the likelihood of financial distress, necessitating meticulous management of the capital structure.

2.3 Theoretical Review

This section comprises two main components: theoretical and empirical. This theoretical review looks at the basic ideas that support the idea of capital structure and the indicators that go with it. It does this by giving us a way to think about how debt and equity are allocated over time. This empirical review assesses previous research pertinent to this study, providing insights into established findings and highlighting gaps in the literature.

Establishing an ideal equilibrium between debt and equity constitutes a crucial financial choice that profoundly affects shareholder risk and returns. These decisions are not exclusively focused on maximising shareholder wealth; they also aim to enhance an organisation's resilience and adaptability within a competitive, volatile, and uncertain business landscape. This section presents theories that establish a solid theoretical foundation for this study, enhancing the understanding of capital structure and its effects on organisational performance.

We established the theoretical grounding by examining three primary frameworks: stakeholder theory, acceptance theory of authority, and dividend irrelevance theory. Theories are essential to the study, as they guide the analysis of how firms organise their capital to attain financial sustainability and strategic goals. This study seeks to enhance the understanding of capital structure decisions by integrating theoretical perspectives with empirical insights, particularly considering the current organisational challenges.

2.3.1 The Stakeholder Theory

Stakeholder theory asserts that business risks are not limited to shareholders but also include employees, creditors, suppliers, and regulated sectors such as banking, policymakers, and regulators. This perspective highlights how management must consider the broader network of stakeholders to ensure sustainable operations and mitigate the risks of shareholder-centric approaches, as emphasized by agency theory (Freeman, Phillips, & Sisodia, 2020). This study employs stakeholder theory because of its comprehensive framework grounded in capitalism, highlighting the interaction between businesses and their stakeholders to generate mutual value. This theory emphasises the necessity of effectively managing stakeholder relationships and proposing strategies to align their varied interests to attain optimal outcomes. Stakeholder theory holds considerable importance in business ethics, as it provides a framework for promoting human development and enhancing research. This study examines the ethical and managerial obligations of engaging stakeholders in organisational settings. Effective implementation necessitates the identification and definition of stakeholders along with an analysis of the conditions required to address their interests fairly. To promote sustainable and ethical practices, organizations should prioritize stakeholder needs prior to decision-making.

Recent crises in Ghana's banking sector have been linked to agency problems, wherein decisions predominantly favour the interests of leaders and shareholders, adversely affecting other stakeholders. Because of the sector's importance, especially in emerging economies, regulators are vital in protecting stakeholder interests.

2.3.2 Financial Distress and Bankruptcy Costs Theory

Zeitun and Tian (2014) argue that while debt offers tax benefits, it simultaneously heightens bankruptcy risks, as the associated expenses often surpass the advantages gained from tax shielding. The research reveals an optimal capital structure where the marginal benefit of substituting equity with debt exceeds the expenses related to bankruptcy. This theoretical equilibrium underscores the imperative of diligently regulating leverage to avert adverse financial repercussions.

Companies might utilize the correlation between tax advantages and bankruptcy costs as a signal of potential financial hardship. The decline in a company's financial condition is associated with an escalation in the intensity of these signals, suggesting a heightened probability of default. Their findings reveal that indirect bankruptcy expenses, such as lost profits, significantly reduce a firm's worth and often exceed the tax benefits associated with debt financing. Harris and Raviv (1991) enhance this research by demonstrating the interconnection between capital structure, liquidation costs, and the consequences for management and shareholders during bankruptcy scenarios. The findings reveal that firms with high debt levels demonstrate greater susceptibility to bankruptcy, due to the disproportionate effect of liquidation costs relative to tax benefits. This research emphasizes the imperative for organizations to meticulously manage debt levels, as excessive leverage may heighten financial instability and jeopardize long-term sustainability, hence underscoring the significance of capital structure decisions.

2.3.3 Agency Costs Theory

The agency costs hypothesis, initially presented by Michael C. Jensen and Meckling (1976) and further developed by Myers (1977), offers a foundational framework for examining the correlation between capital structure and business performance. This concept posits that agency costs arise from inherent conflicts of interest among key stakeholders, including managers, creditors, and shareholders. Conflicts emerge from divergent priorities: shareholders seek value maximization, while managers may prioritize personal gains or adopt risk-averse policies that can contradict shareholder objectives. Creditors aim to safeguard their investments by instituting restrictive covenants that may constrain managerial decision-making.

This hypothesis highlights the significance of capital structure in alleviating or intensifying these conflicts. Leveraging debt can impose discipline on managers by decreasing free cash flows, which in turn restricts resource misallocation. Excessive reliance on debt can elevate the financial distress and agency costs between shareholders and creditors. The agency cost hypothesis emphasises the necessity of achieving an optimal capital structure to improve firm performance.

2.4 Empirical Literature Review and Hypothesis Development

This section examines empirical studies that explore the correlation between capitalization ratios and financial performance indicators, such as return on assets (ROA) and return on equity (ROE). An empirical review is crucial for contextualizing the current research, since it provides a foundation based on data derived from prior experimental or observational studies. This review consolidates findings to offer a detailed comprehension of essential patterns and correlations, augmenting the analytical rigor of the study.

Empirical research on capitalization ratios underscores their significance in assessing financial leverage and its impact on profitability and stability. Moreover, these studies offer critical insights into the complexities of capital structure optimization and clarify the relationship between debt and equity financing. This study employs these ideas to achieve more precise and dependable results, so enriching the overarching discourse on the factors influencing financial success in organizational contexts.

2.4.1 Capital Structure Meaning and Dynamics.

The financial stability of a firm is intricately connected to its capital structure, which is a crucial resource for corporate expansion. Capital structure, defined as the mix of debt and equity financing, is a critical determinant of a firm’s financial strategy and overall performance (Singh et al., 2019). This framework delineates a firm's approach for financing its operations, with the debt-to-equity ratio serving as a pivotal indicator of financial leverage. Companies may function with either a high or a low ratio, indicating the degree to which they depend on debt relative to equity for financing. Brigham (2016) indicates that a high debt-to-equity ratio implies increased dependence on borrowed capital for operational financing. By contrast, a lower ratio generally denotes a more cautious stance on debt financing.

In this context, debt signifies a liability that requires interest payments irrespective of the firm's profitability, whereas equity denotes shareholder investments that yield dividends (Brigham, 2016). Capital structure includes both short-term and long-term debt, each affecting business performance in a unique manner. Typically, issuing stock generates equity.

The capital structure of a company indicates its risk profile and financial capability. Abbadi and Abu-Rub (2012) assert that insufficient equity financing can result in heightened shareholder control, potentially distorting the decision-making processes. Conversely, debt financing is generally less expensive because interest expenses are tax-deductible

Capital structure decisions are influenced by factors including business characteristics, earnings stability, market conditions, and investor perceptions. Debt maturity has a significant impact on performance, as noted by Graham and Leary (2018), who argues that firms with extensive experience in managing their debt maturities are better positioned to allocate resources effectively, enabling them to capitalize on profitable investment opportunities. Abor (2005) identifies a positive correlation between short-term financing and business performance within the Ghanaian context, indicating that short-term debt may be a more effective financing strategy for firms listed on the Ghana Stock Exchange. This suggests that businesses evaluate both short-term and long-term debt financing strategies to support their operations. Furthermore, research by Nimalathasan and Brabete (2010) and Pratheepkanth (2011) demonstrated a diverse impact of capital structure on business profitability.

2.4.2 Capital Structure and the Return on Assets (ROA)

Ahmed and Teru (2020) conducted a study analysis on the impact of capital structure on the financial performance of Deposit Money institutions in Nigeria, focusing on seven out of 21 institutions. The research, which spanned from 2007-2016, found that Returns On Equity (ROE) positively influenced capital structure. Banks with more equity capital than debt were perceived as safer and more profitable. The findings suggest that a strong workforce is crucial for efficient asset management and boosting public confidence in banks. We recommend further research to explore other aspects such as working capital management, customer satisfaction, and corporate governance.

Rashid and Bilal (2020) also examined the financial performance of non-financial sectors in Pakistan concerning capital structure. Data from annual audited financial statements of 152 firms listed on the Pakistan Stock Exchange during 2010–2017 were analyzed using descriptive, correlation, and regression analyses. The findings explore a substantial positive contribution of long-term debt to earnings per share (EPS) and return on assets (ROA), and a significant negative role in net profit margin (NPM) and return on equity (ROE). The study suggests preferring long-term debt over short-term debt due to lower financing costs and recommends internal financing (retained earnings) over external financing.

Despite these contributions, the generalisation of these findings to African countries remains problematic because of variations in business environments and firm practices, which can significantly influence outcomes. For example, Anafo, Amponteng, and Yin (2015) conducted a similar study in Ghana that examined the impact of capital structure or leverage on the profitability of listed banks on the Ghana Stock Exchange from 2007 to 2013. Data was collected from the Ghana Stock Exchange and the annual reports of the 17 listed banks. We analyzed the data using descriptive statistics and multiple regression models. The result revealed that the banks listed on the Ghana Stock Exchange are highly geared. This can be attributed to their overdependence on short-term debt, which is due to the relatively high Bank of Ghana lending rate and low level of bond market activity. Return on assets (ROA), return on equity (ROE), and earnings per share (EPS) were used to measure how profitable a company was. Short-term debt to total assets (STDTA) was also found to be significantly linked to profitability. The study also found a significant positive relationship between Long Term Debt to Total Asset (LTDTA) and ROA and ROE, but a negative and insignificant relationship was observed with EPS. The asset growth rate had a negative and insignificant relationship with profitability measured by ROA, ROE,

and EPS. Firm size also demonstrated a positive and significant relation with all the profitability measures, such as ROA, ROE, and EPS.

Hypothesis 1: There is a positive effect of the capital structure on the return of Assets (ROA)

2.4.3 Capital Structure and the Return on Equity (ROE)

Baciu and Petre (2018) investigates the relationship between capital structure and financial performance, specifically return on equity (ROE), within the Romanian wholesale motor vehicle parts and accessories industry. The authors employed multifactor regression analysis on secondary data from 194 companies. The study found a significant correlation between capital structure and ROE, indicating that financial decisions, particularly the levels and types of debt financing, substantially influence firms' profitability in this sector. The study highlights the importance of strategic financial planning in optimizing capital structure to enhance financial returns. This study underscores the complexities of evaluating a company's capital structure and its impact on profitability, emphasizing the need for careful consideration of financing decisions to optimize financial performance.

Komara, Hartoyo, and Andati (2016) report a negative impact, while Koech (2013).Koech (2013) argues that capital structure has a positive effect on the ROE of financial firms listed on the Nairobi Stock Exchange. Gansuwan et al. (2012) used a different method for their research than Koech's, which used quantitative analysis and secondary data from 2008 to 2012. This finding indicates that country-specific factors and differing timeframes may account for the observed discrepancies. The discrepancies among these studies underscore the influence of institutional contexts and economic conditions across different countries, suggesting that variations in outcomes may stem from these contextual factors. Extensive research reveals a notable gap in the literature regarding the capital structure and financial performance of financial institutions in Ghana. The role of corporate governance in this context remains inadequately examined. This study aims to fill this gap by providing evidence from the Ghanaian banking sector, specifically analyzing banks listed on the Ghanaian Stock Exchange, to improve our understanding of these relationships.

Hypothesis 2: Capital structure on the Return on Equity (ROE).

2.4.4 The effect of capitalization ratio on ROE and ROA among banks listed on the Ghana Stock Exchange

In Ghana, Arhinful and Radmehr (2023) examined capital structure impact on the financial performance of financial institutions in Ghana. The study involved a total of 10 banks listed on the Ghana Stock Exchange and results indicated that capitalization ratio negatively affects return on assets. The study also revealed that debt financing has a statistically significant impact on the financial performance of banks listed on the Ghana Stock Exchange. Thus, debt financing allows financial managers to take advantage of tax shields to lower the amount of tax that must be paid by an institution to the government. In another study, Akomeah, Bentil, and Musah (2018) assessed the impact of capital structure on the performance of non-financial firms in Ghana. This involves sampling a total of 20 non-financial firms listed on the Ghana Stock Exchange from the period of 2010 to 2016. Findings from the study indicated that equity ratio and leverage ratios are inversely related to the performance of the select companies. In the part of unlisted firms that rely more on debt, there is a high chance of high capitalisation that can result in lower ROE. The significant impact of capital ratio on financial performance explains that listed banks on the stock exchange have better risk management frameworks due to more access to capital and regulatory oversight.

Nyamekye, Bunyaminu, Abdul-Mumuni, Sherif Sumani, and Kweku (2022) assessed the effect of financial risk on the performance of banks in Ghana listed on the Ghana Stock Exchange (GSE). The study employed a quantitative research design, and the results indicated that financial risk estimates in the long run in terms of credit risk, liquidity risk, and credit risk have a negative but significant impact on the performance of banks. This explains that banks that rely mostly on debt have a higher chance of achieving poor financial performance. In Ghana, capital structure is skewed towards more debt and less equity, and as such, debt is used to acquire assets in the long term to generate revenue. Banks mostly transform debt into various short- and long-term assets to generate interest income. However, the

inability of the banks to manage debts in the prevailing macroeconomic environment may have a crucial effect on their capital structure and financial performance. Most of the empirical studies done in Ghana don't do a critical analysis of how the capitalization ratio affects ROA and ROE by looking at the role of different macroeconomic and microeconomic factors. Therefore, there is a pressing need for additional research analysis to close this research gap and enhance the generalizability of results on the subject.

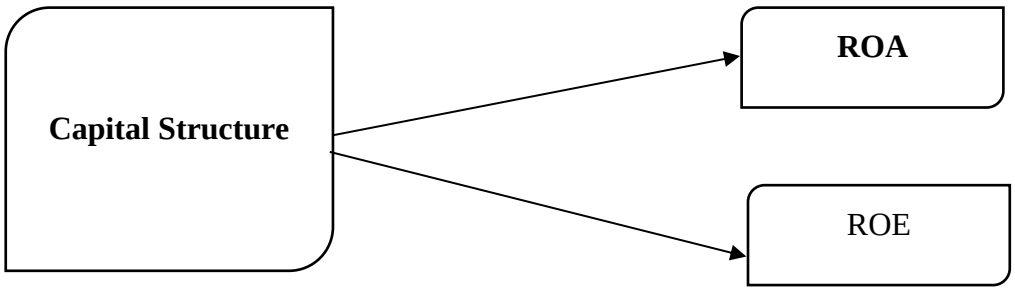

Figure 1. Conceptual Framework

3. Research Methodology

Research methodologies are deliberately chosen to improve the accuracy and dependability of results. This chapter details the research methodology utilized in this study and explains the approach taken to ensure the robustness and validity of the results.

3.1 Research Design

This study employed a descriptive design to examine the relationship between the two variables, aligning with the research objectives. This method was employed for the study because it facilitates a comprehensive analysis of each variable and provides an accurate characterization of the research phenomenon. A quantitative research methodology was utilized to gather measurable data, subsequently analyzed through statistical techniques. Quantitative methods emphasize objective, statistical, and numerical analyses of data, usually sourced from surveys, polls, and secondary materials, offering detailed insights into the studied phenomenon (2017). The use of secondary data mitigates specific limitations associated with primary data collection by providing access to a wide range of relevant information. Quantitative research may restrict participants' ability to express their perspectives due to the structured nature of predetermined responses.

The study population comprised both listed and unlisted banks on the Ghana Stock Exchange from its inception until 2020. Data from the Ghana Stock Exchange reveal that nine banks sustained a strong performance from 2008 to 2020. This study's sample population includes Access Bank Ghana Limited (ABG), Agricultural Development Bank (ADB), Cal Bank, Ecobank Ghana Limited (EBG), GCB Bank, Republic Bank, Standard Chartered Bank (SCB), Societe Generale Ghana Limited (SG), and Trust Bank.

3.2 Sampling Technique/Size

This study employs a non-probability sampling method, specifically purposive sampling, due to the secondary and quantitative nature of the data used. Unlike probability sampling, which relies on random selection, non-probability sampling is more suitable in this context as it allows for intentional selection based on specified criteria. This approach is relevant due to the defined time frame, focusing on banks listed on the Ghana Stock Exchange from 2008 to 2020.

Purposive sampling ensures that the sample includes banks relevant to the study, as all selected banks are listed on the Ghana Stock Exchange. We selected banks that met the study's criteria. The selection process involved the consideration of banks that disclose sufficient financial information on profitability. Additionally, banks that meet the capitalization ratio thresholds and have a stable financial

history were also considered. Banks that fall within the criteria were selected for secondary data gathering.

3.3 Research Instrument

The data for this study was obtained from the financial reports of chosen banks, utilising secondary data sources. A data collection sheet was created in MS Excel to methodically capture pertinent information. The research employed panel data from 2008 to 2020, integrating cross-sectional and time-series observations. We obtained the information from the annual reports of banks listed on the Ghana Stock Exchange and other publicly accessible financial documents. The data-collecting sheet guaranteed that the extracted information was consistent, accurate, and dependable for analysis. The gathered data offered extensive insights into the financial performance and capital structure of the chosen banks during the 12-year duration. This method enabled comprehensive statistical investigation of the correlation between financial performance metrics and capitalization ratios. By using secondary panel data, time and resource constraints were lowered, which made it possible to do a full analysis of trends and connections between many banks over many years.

3.4 Data Analysis

Panel data regression analysis is used in this study to look into the link between capitalization ratios and the financial performance of Ghana Stock Exchange-listed banks. It does this by combining time-series data from different cross-sectional units, such as individuals, firms, and countries. Panel data regression is a good way to look at how short time series data changes over time, which makes it easier to look at differences between times and between sections of time. The research variables were analyzed using Eviews version 10, a software specifically designed for panel data analysis and suitable for secondary data examination.

When you do panel data analysis, you need to choose the right regression model. You need to know the difference between fixed-effects models (FEM) and random-effects models (REM). The Hausman Chi-square test is a widely used statistical method for determining the most appropriate model in econometric analyses, particularly when dealing with panel data. It assists researchers in choosing between fixed effects and random effects models by evaluating the consistency and efficiency of their estimators (Hausman, 1978). This study employs the Hausman test to assess the suitability of fixed effects and random effects models to analyze the relationship between capital structure and key performance indicators, including return on assets and return on equity.

After conducting the Hausman test, the researcher chose a suitable model by analysing the relationship between regression coefficients and unobserved, observation-specific random effects. If no significant relationship was found, REM was deemed more appropriate. If a significant relationship is identified, the fixed-effects model (FEM) is favoured, as it more precisely reflects the variations inherent to individual observations. By contrast, the Random Effects Model (REM) may result in biased estimates. This method guarantees strong and dependable outcomes, consistent with this study's aim of evaluating the subtle effects of capital structure on financial performance.

3.5 Model Specification

The following is a standard approach to modeling the relationship between the dependent variable and a set of explanatory variables, capital structure, and financial performance

$$Yit = \alpha i + \beta Xit + \varepsilon it \quad (1)$$

'Y' is the dependent variable, which considers the variation in the expected outcomes, and 'X' is the set of explanatory variables, also known as the independent or predictor variables. Furthermore, 'α' is the individual effects, 'i ' is the individual dimension, 't' is the time dimension, 'β' is the vector coefficient regression and 'ε' is the error term.

i = Number of banks

t = 2008 to 2020
Yit = Financial performance (ROA and ROE for banks i at. The time t)

Xit = Capital structure (CAPS)
α = constant
εit = error for banks i at time t
3.7 Research Objectives for the Model
The Ω
research objectives are framed around the model

The effect of the capital structure on the return on assets (ROA) of listed banks

$$ROA = a + \beta 1(CAPS) + \varepsilon it \quad \textbf{(2)}$$

The effect of the capital structure on the return on equity (ROE) of listed banks

$$ROE = a + \beta 1(CAPS) + \varepsilon it \quad (3)$$

3.5 Variable Definitions/Measurements

This research utilized dependent and independent variables, as outlined in Table 3, based on the framework developed by Sanda, Garba, and Mikailu (2011)Click or tap here to enter text.. The first column of the table categorizes these variables under their respective headings, providing a clear overview of their classifications and functions within the study's analytical framework. The modifications guarantee that the variables are pertinent to the context and consistent with the research objectives.

Table 1. Variables, Definitions, and Measurement

Variable	Definition	Measurement
Firms Performance		
ROA	Return on Asset	Net profit as a percentage of total assets
ROE	Return on Equity	Net profit as a percentage of shareholders' equity
Capital Structure		Long Term Dividends as percentage of long-term dividend and Shareholders Equity.

3.6 Empirical Estimation Methodology

In the random effects model, the individual-specific impact is a random variable that is uncorrelated with the explanatory factors. The model posits that the individual-specific effect is a random variable that is uncorrelated with the explanatory variables from the individual's past, present, and future periods. A random effects model is suitable for hypothesis testing, generally assessing the null hypothesis. A random effects model is a useful tool for hypothesis testing, typically used to evaluate the null hypothesis. The random effects model is a statistical framework wherein certain parameters (effects) influencing the model's systematic components fluctuate randomly. A fixed-effects model is suitable for testing various hypotheses.

3.7 Data Description and Sources

Research typically relies on two principal groups of data sources: primary and secondary. Creswell and Creswell (2017) characterized primary data as information obtained directly from sources. Conversely, secondary data pertains to the use of pre-existing information, generally sourced from published materials like journals, textbooks, and reports.

This study utilized secondary data. Secondary data facilitate the examination of previously gathered material from a fresh viewpoint, thereby producing innovative insights and conclusions. This analysis employed data sourced from the Ghana Stock Exchange website and the annual reports of the chosen banks from 2008 to 2020. These reports typically delineate critical financial parameters, such as Return on Equity (ROE), Return on Assets (ROA), and measures of capital structure.

The decision to employ secondary data is justified by the necessity for comprehensive numerical data, which is essential for the study's analysis. Annual reports, publicly available and rich in financial information, offer reliable and verifiable statistics. Thus, secondary data were recognized as the most appropriate and effective technique of data collecting for this study, providing a solid foundation for subsequent analysis and argumentation**.**

4. Results and Discussions

4.1 Descriptive Statistics

Table 2 presents the descriptive statistics for the analyzed dependent and independent variables. The variables were classified into three main dimensions: performance metrics, capital structure (including debt ratio, equity ratio, and capitalisation ratio), and corporate governance (covering board size, board independence, audit committee presence, gender diversity, and ownership structure).

The descriptive statistics for the pertinent columns encompass essential measurements including mean, standard deviation, minimum, median, maximum, skewness, and kurtosis for each variable. The statistics provide insights into the central tendencies, variability, and distributional aspects of the variables, boosting the comprehension of the data characteristics and linkages examined in this study.

Table 2. Descriptive Statistics

	ROA	ROE	CALR	DEBR	DEBTER
Mean	0.039358	0.045546	0.296169	0.081081	0.630453
Median	0.040099	0.229219	0.246469	0.046212	0.327121
Maximum	0.092417	0.082894	0.869182	0.395725	6.644232
Minimum	-0.046949	-0.323372	0.001871	0.001257	0.001875
Std. Dev.	0.024689	0.061445	0.205905	0.084925	0.838045
Skewness	-0.332810	13.37929	0.645727	1.583867	3.450162
Kurtosis	3.659461	180.0055	2.472391	5.073926	20.18757
Observations	182	182	182	182	182

Source: Processed data by E-view (2024)

The data indicates an average Return on Assets (ROA) of 3.93% for banks, with a maximum of 9.24% and a minimum of -4.69%. The mean Return on Equity (ROE) was 4.55%, with variations between 8.29% and -32.34%. A low mean ROA signifies inefficient asset utilization, maybe attributable to asset quality concerns. Outliers, shown by a maximum ROA of 9.24%, signify instances of extraordinary performance by certain banks in the face of prevailing industry problems. The capitalization ratio,

averaging 29.62%, displayed considerable fluctuation between 0.18% and 86.92%, reflecting varied capital adequacy across institutions.

Debt-related metrics provide further insight into the financial leverage of banks. The average debt ratio is 8.10%, with a range from 0.12% to 39.57%. The mean debt-to-equity ratio was 63%, with a significant variation from 0.18% to 664.4%. The figures underscore banks' reliance on debt funding, revealing varied risk profiles among the institutions.

The fluctuation in returns, spanning from -4.69% to 8.29%, underscores differences in asset efficiency and managerial efficacy. Certain banks yield positive returns, while others fail to do so, as seen by negative ROA and ROE. A superior average ROE of 4.55% relative to ROA signifies a more effective management of shareholder equity. The board's membership varies in size from one to seven members, prominently featuring non-executive directors, which improves governance quality. Gender diversity, exemplified by an average of 1.27 female board members, reflects varying degrees of inclusivity across banks.

4.2 Pearson Correlation Matrix

Correlation analysis was conducted to assess the strength of the relationships among the variables. The results in Table 3 indicate that the independent variables exhibit either weak positive or weak negative correlations with one another. This signified an absence of significant multicollinearity among the variables. Multicollinearity occurs when two or more independent variables have a significant correlation, thereby skewing regression results and complicating the understanding of their effects. A correlation coefficient more than 0.70 or less than -0.70 suggests possible multicollinearity, potentially leading to incorrect regression coefficient estimations and inflated standard errors.

The analysis results reveal weak correlations, indicating that the independent variables lack linear dependency, potentially leading to multicollinearity problems. This finding substantiates the argument that include all independent variables in the model is justified, as they do not appear to provide redundant information. In cases of high correlations, it is prudent to reduce multicollinearity by removing one of the collinear variables, hence maintaining model stability and result validity. There weren't any strong correlations in this analysis, which meant that multicollinearity wasn't a problem. This meant that all variables could be used in later analyses.

Table 3. Pearson’s correlation matrix.

	ROA	**ROE**	**CALR**	**DEBR**	**DEBTER**
ROA	1.000000				
ROE	-0.041220	1.000000			
CALR	-0.235129	0.207422	1.000000		
DEBR	-0.107399	0.262245	0.890352	1.000000	
DEBTER	-0.172475	0.534857	0.859884	0.883108	1.000000

4.3 Regression Analysis

The next sub-sections present the findings of the regression analysis, utilizing both fixed- and random-effects models to choose the best appropriate model for the analysis. The best model is chosen by carefully looking at the statistical features and assumptions of each method. This makes sure that the model chosen accurately shows the structure of the data and how the variables are related to each other.

Table 4.The Result of the Effect of Capital Structure on ROA and ROE

Independent Variables	**Dependent Variables**	
	Return on Asset (ROA)	**Return of equity (ROE**

CALR	-0.051122***	-20880365***
	(0.017466)	(3532322.)
DEBR	0.187166***	-41483942***
	(0.047638)	(9482602.)
DEBTER	-0.008565**	12040907***
	(0.003962)	(814448.3)
C	0.044723***	2411922.***
	(0.005396)	(726357.8)
R-squared	0.07563	0.59366
Adjusted R-squared	0.04936	0.58681
S.E. of regression	0.01831	386447.
F-statistic	6.65855	86.6855
Prob(F-statistic)	0.00028	0.00000
Durbin-Watson stat	1.00448	1.31428

4.3.1 The Effect of capitalization ratio on return on assets and equity (ROA and ROE).
Table 4 presents the regression results for the effect of the capitalization ratio (ROA) on assets. The results demonstrate a statistically significant negative correlation between capitalization and ROA, with a coefficient of ($\beta = -0.0511$, $t = -2.927$, and $p = 0.004$) at the 1% significance threshold. This indicates that an increase in a company's capitalisation ratio correlates with a decrease in its capacity to generate profit from assets. For each 1% increase in the capitalisation ratio, ROA decreases by 5.11%, demonstrating a negative relationship between capital structure and asset efficiency.

The principal reason for this negative consequence may be a company's increased reliance on debt finance. Rising debt levels result in elevated interest payments, which reduce net income and thus impair return on assets (ROA). Furthermore, heightened capitalisation may signify an increased cost of capital, since the corporation may be required to offer superior returns to attract investor cash. The increased cost of capital may negatively impact profitability by limiting a firm's ability to generate returns that exceed these costs. Moreover, elevated levels of capitalization pose financial and operational risks, as companies must generate sufficient returns to fulfill their debt obligations. The correlation between increased capitalization and asset efficiency is substantial, suggesting that companies must carefully assess the implications of a high capitalization ratio on financial risk and profitability.

The table above displays the regression analysis of capitalization on equity (ROE). The results ($\beta = -2088$, $t = -5.911$, $p < 0.001$) indicate a significant negative connection at the 1% significance level, implying that increased capitalization correlates with a decrease in ROE. For every 1% rise in capitalization, the return on equity (ROE) diminishes by 20.88 percentage points. The decline in ROE suggests that elevated debt levels associated with increasing capitalization may not enhance returns for equity stakeholders.

Augmented debt financing enhances financial leverage, hence amplifying the impact of earnings volatility on stock returns. Nevertheless, if the return on assets (ROA) fails to sufficiently offset the rising debt expenses, the augmented financial leverage exacerbates the decrease in return on equity

(ROE). Moreover, elevated interest payments associated with greater capitalization reduce the net income available to equity holders, leading to a decline in ROE. This link underscores the imperative of judiciously managing debt and equity to optimize returns while minimizing financial risk. Macroeconomic factors, such as interest rates and inflation, can affect this dynamic, underscoring the imperative for enterprises to proactively manage their capital structure.

Moreover, elevated capitalization ratios improve financial flexibility. Nevertheless, they also present heightened risk, potentially leading to a reduced ROE and lowered profits for equity investors. An effectively organized capital strategy is essential for aligning leverage with long-term shareholder value.

5. Conclusion

5.1 Conclusion

The findings reveal a statistically significant negative relationship between the capitalisation ratio and both ROA and ROE, aligning with Hypothesis 1 and Hypothesis 2. For every 1% increase in capitalisation, ROA decreases by 5.11%, and ROE declines by 20.88 percentage points. This result fits with the Financial Distress and Bankruptcy Costs Theory (Zeitun & Tian, 2014), which says that debt can help with taxes, but too much of it can make things more unstable and increase the risk of bankrupt.

The results also align with Agency Costs Theory (Michael C. Jensen & Meckling, 1976), where conflicts of interest between managers, creditors, and shareholders can arise due to heightened debt. Managers may priorities debt servicing at the expense of profitability, leading to reduced shareholder returns. This theory highlights the importance of balancing capital structure to mitigate inefficiencies caused by debt. Contrasting studies, such as Abor (2005), showed positive impacts of debt in Ghana's context, but our findings align more with Hajisaaid (2020). The study investigates the relationship between capital structure and profitability in eight companies within Saudi Arabia's basic materials sector from 2009 to 2018. The study employs regression analysis, fixed effect models, random effect models, and the Hausman test, with Return on Equity (ROE) as the dependent variable. The findings reveal a negative relationship between short-term debt to total assets ratio (SDA) and profitability. Additionally, a negative relationship between long-term debt (LDA) and profitability is observed, consistent with studies such as El-Sayed Ebaid (2009). Conversely, a positive relationship between total debt (DA) and profitability is found, supporting a study conducted by Abor (2005). Theory perspective, firms must address the interests of all stakeholders by maintaining optimal capitalisation. Globally, the findings underscore the need for firms to develop balanced financing strategies that minimise financial risk while maximising returns, particularly in volatile emerging markets.

5.2 Limitations

The study's focus on listed banks excludes a significant portion of the financial ecosystem, such as non-banking financial institutions (NBFIs), rural banks, and microfinance institutions, which are essential to Ghana's economy. The exclusion limits comprehension of how capitalization affects smaller or unregulated financial entities, which may encounter unique economic trends or regulatory pressures. The study assumes the accuracy and completeness of previously collected information using secondary data. Secondary data obtained from the Ghana Stock Exchange and annual reports may lack certain qualitative details, including internal management practices or stakeholder influence, which could be effectively captured through primary research. Moreover, changes in the global financial landscape post-2020, especially because of the COVID-19 pandemic, may have altered the relationship between capitalization ratios and profitability, thereby diminishing the relevance of the findings in the present context. Panel data provides significant insights through the combination of cross-sectional and time-series information; nonetheless, it is susceptible to econometric issues. Multicollinearity among independent variables, including the debt-to-equity ratio and capitalization ratio, can distort regression results. The choice between fixed-effects and random-effects models significantly influences the results, depending on the appropriate consideration of unobserved variables correlated with the explanatory variables.

5.3 Suggestion

Based on the results and the theoretical frameworks, I suggest that, Policymakers should encourage business to manage debt to reduce financial risks and maintain profitability. Corporate capital structures should balance debt and equity financing to minimize risk and boost long-term profitability (Modigliani & Miller, 1958). Comparative Analysis across Countries, to see if other emerging markets have comparable patterns to Ghana. This helps extrapolate findings and comprehend macroeconomic issues. Future studies should also include Net Interest Margin (NIM), Economic Value Added (EVA), or Market-to-Book Ratio to examine if the end effects holds across profitability metrics..

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