

Relationship between Capital Structure and Banks' Performance; an Evidence of Banks Listed on the Ghana Stock Exchange

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Abstract The capital structure of an organization is potentially one of its most important choices. The success of every organization depends on its capital mix or structure. This places a greater responsibility on financial managers to decide the best capital combination that will maximize shareholders' wealth. Due to the abstract nature of capital structure in an organization, this paper attempts to examine the influence of capital structure on the financial performance of banks in Ghana. The study uses debt ratio (DR) as proxy for banks capital structure and uses return on assets (ROA), return on equity (ROE) and earning per share (EPS) as proxies for banks performance measurement in the country under study. The study sampled 7 banks out of the 11 banks listed on the Ghana stock exchange (as at 2017) over a seven-year period from 2008 to 2014 and data from their respective annual financial statements were extracted. It was concluded that capital structure has a negative effect on banks performance as the results confirms various studies reviewed.

Keywords: banks performance, debt ratio, Ghana stock exchange, capital structure

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1. Introduction

1.1. Background of the Study

The capital structure of an organization is potentially one of its most important choices. The argument concerning the importance of choosing the best capital structure of a company is abstract. But in essence, it concerns the impact of splitting the cash flow into a debt and equity component on the company's total market value. Traditionally, financial experts believe that increasing the leverage of a company, i.e. increasing the debt ratio in the capital structure of the company, would increase the value to a desirable point. But further increase beyond that particular point in leverage would result in the increase the company's overall cost of capital thereby decreasing its total market value. Ideally, changes in capital structure does not affect the overall value of the firm. Capital structure decisions may affect the division of value between marketable claims and non-marketable claims. It is said that, the optimal capital structure is the one that maximizes the firm's value and minimizes the cost of capital. Various Scholars

postulate that, there is an optimal range of capital structure. The specified methodology financial managers are to use to determine a firm's optimal capital structure is not yet proven possible. That notwithstanding, financial theory provides an understanding to how a company's chosen financing mix affects the overall value of that company.

In the real business world, the organization uses its assets to generate an operating cash flow stream in its business. The company makes distributions to its capital providers in the form of dividends after paying taxes and retains the balance for business operations depending on the company's policy. If a company is fully financed by equity, the entire after-tax operating cash flow at the end of each period accrues to the benefit of its shareholders (in the form of dividend and retained earnings). On the other hand, if the company has borrowed a portion of its capital, a portion of the cash flow amount must be allocated to servicing this debt. In actual fact, debt holders have a higher right of claim to the cash flow of a company, whiles shareholders are only entitled to the residual or left over. The choice of a company's capital structure determines the apportionment of its operating cash flow each period between debt holders and shareholders.

In capital structure arguments, the Modigliani and Miller theory, proposed by [1], forms the basis for modern thinking on capital structure. Modigliani and Miller (1958 and 1963) explain in their highly influential article that in a friction-free world, the debt of a firm is not linked to its value, but then, the value of the firm and its capital structure in an environment with tax-deductible interest payment are positively related. Miller [2] added personal taxes to the analysis and demonstrates that optimal debt usage occurs on a macro level, but it does not exist at the firm level. Interest deductibility at the firm level is offset at the investor level. In addition, Modigliani and Miller [1] made two propositions under a perfect capital market condition. Their first proposition is that, the value of a firm is independent of its capital structure. Their second proposition state that the cost of equity for a leverage firm is equal to the cost of equity for an unleveraged firm plus an added premium for financial risk.

However, other theories such as the trade-off theory by Myers [3], pecking order theory and agency cost theory by Jensen and Meckling, [4] argue that if capital structure decision is irrelevant in a perfect market, then, imperfection which exist in the real world may be adduce for its relevance. Such imperfections include bankruptcy costs Baxter, [5] and Kraus & Litzenger, [6], agency cost Jensen and Meckling, [4], gains from leverage-induced tax shields De Angelo and Masulis, [7] and information asymmetry [3].

Deducing from the above, Pandey [8] argues that the capital structure decision of a firm influences its shareholders return and risk. Consequently, the market value of its shares may be affected by the capital structure decision. The goal of a company should therefore be geared towards the maximization of its assets by analyzing its capital structure or financial leverage decision from the point of view of its effect on the firm value.

Table 1. Banks information

BANK	DETAILS	STATED CAPITAL
CAL Bank	CAL Bank formerly called Continental Acceptances Ltd and CAL Merchant Bank commenced operations in July 1990 to provide world-class financial solutions to the Ghanaian banking sector. CAL Bank received its Universal Banking License in 2004 and soon commenced providing specialized retail banking services. CAL Bank Limited provides a broad range of banking and financial solutions to large corporations, small and medium-sized enterprises, public sector institutions and retail customers through a network of 26 branches and over 100 ATMs across Ghana. CAL Bank was listed on the Ghana Stock Exchange (GSE) on 5 th November 2004. Their Symbol on the Ghana stock exchange is CAL.	
Ecobank Ghana Ltd	Ecobank Ghana Ltd (EBG) is a member of the Pan-African Ecobank chain which operates in thirty-two (32) countries. The bank is a fully networked commercial bank in Ghana with branches in almost all regions of the nation and was listed on the Ghana Stock Exchange in July 2006. The bank was formed in 1990. In December 2011, Bank of Ghana gave approval for Ecobank Transnational to acquire 100% interest in The Trust Bank (TTB), another licensed commercial bank. Ecobank successfully merged TTB and EBG. The new bank is known as Ecobank Ghana. Its symbol on the Ghana stock exchange is EGH.	GH¢226.64 Million
GCB Bank Ltd	Formerly known as the Ghana Commercial Bank, now legally GCB Bank Ltd. The second largest bank in Ghana by net profit and total assets, licensed by Bank of Ghana. GCB Bank Ltd is the largest indigenous financial institution in Ghana with 157 branches. As of December 2015, the bank's total assets were valued at about US\$1.27 billion (GH¢2.45+ billion). GCB Bank Ltd was listed on Ghana Stock Exchange on 17 th May 1996. Its symbol on the Ghana stock exchange is GCB	GH¢ 72,000,000
HFC Bank Ltd/Republic bank	HFC Bank (Ghana) Limited, is one of the leading financial institution in Ghana. It is currently called the Republic bank following the Bank of Ghana's recapitalization exercise. It offers one-stop financial services that include Corporate, Commercial and Retail Banking; Investment Banking; Mortgage Banking and Micro Finance. These services make HFC Bank arguably the most diversified universal banking institution in the Ghanaian Banking industry and was listed on the Ghana Stock Exchange on March 17, 1995. Its Symbol on the Ghana stock exchange used to be HFC but RBGH currently.	GH¢ 95,000,624
Societe Generale Ghana Limited	Societe Generale Ghana Limited (SG), founded in 1975 is a bank that is based in Ghana, previously known as Société Générale – Social Security Bank (SG-SSB). The bank is part of the Société Générale banking group. The company was listed on the Ghana Stock Exchange on October 13, 1995. The bank's name was changed to SSB Bank Ltd in 1998. In March 2003, Société Générale of France acquired a controlling interest in SSB Bank Ltd. On March 31st, 2004, the Company's name was changed to SG-SSB Limited to reflect the new strategic focus being pursued by the Company. However, in 2013, shareholders of the bank approved for the bank's name to be changed to Societe Generale Ghana Limited. Its Symbol on the Ghana Stock exchange is SOGEGH	GH¢ 62,393,557.80
Standard Chartered Bank Ghana Ltd	Standard Chartered Bank Ghana Limited is a market – leading financial services brand in Ghana, listed on the Ghana Stock Exchange on the following dates; Provisional: November 12, 1990 Formal: August 23, 1991 Listing of Preference Shares: Feb. 16, 2006. It has operated for 118 years in the country and is currently the highest priced stock on the exchange. The Bank's focus and commitment to developing deep relationships with clients and customers have driven its consistent growth in recent years. It has a current network of 27 branches and 56 ATMs across Ghana. Its symbol on the GSE is SCB	
UT Bank Limited	UTB is a medium-sized financial services provider headquartered in Ghana with subsidiaries in West Africa and Western Europe. The bank's total assets in December 2011 were valued at approximately US\$378.4 million (GH¢ 712.9 million), with shareholders' equity of approximately US\$32.5 million (GH¢ 61.23 million). On 14 August 2017, the Bank of Ghana announced the takeover of UT Bank by GCB Bank. Due to this, UT Bank have been delisted from the stock market. Its symbol used to be UTB	

The mix of long-term debt, short-term debt as well as common equity and preferred equity can be referred to as capital structure. When analyzing capital structure, a company's share of short- and long-term debt is considered. Whenever investors and speculators refer to capital structure, they most probably refer to the debt-to-equity (D /E) ratio of a company that provides insight into a company's riskiness. Normally, a highly debt-financed company has a more aggressive capital structure and thus postures greater risk to speculators and investors. However, this risk may be the principal source of growth for the company.

There are two major ways a firm can raise capital in the market of which debt is one. Tax advantages are the main reason why Companies like to issue more debt compared to equity. This is because, interest payments are tax deductible. Debt also helps an organization to retain ownership, as opposed to equity. Moreover, debt is bountiful and easily accessible in times of low interest rates. In particular, when interest rates are low, equity is more expensive than debt. Comparatively to debt, if earnings fall, equity need not be repaid. In addition, as a part owner, equity constitutes a claim on the company's future benefits. Either has got its advantages and disadvantages. On the balance sheet, debt and equity can be located and the assets stated on the balance sheet are acquired with this debt and equity raised by the firm. Understanding the issues surrounding capital structure and its respective mix, it can be said that a company that pays for assets with more equity than debt has a low leverage ratio and a conservative capital structure. Having said that, a high leverage ratio and/or an aggressive capital structure may also lead to higher growth rates, while a moderate capital structure may lead to lower growth rates. The firm can increase leverage by issuing debt and/or purchasing outstanding shares. Alternatively, it can decrease leverage by issuing shares and/ or retrieving outstanding debt. This is actually in line with the theory of risk and returns. As a result of this, it is the goal of every company's management to find the optimum mix of debt and equity, also referred to as the optimal capital structure and this hasn't been an easy task for financial managers.

1.2. Objective of the Study

Following from this, the objective of this study is to find out the impact of capital structure on banks performance.

This study is conducted specifically to determine the situation of the Ghana banking sectors especially those listed on the Ghana Stock market. The study uses banks that were listed on the GSE as at 2017. There were 11 banks listed on the Ghana Stock exchange as at 31st December 2017. Seven (7) out of the eleven (11) banks have been selected for the purpose of the study. The other 3 listed banks (The Trust bank-Gambian, Access bank, ADB bank and ECOBANK Transnational incorporated) were not selected based on their late listing and unavailability of needed information within the stipulated time of the study. The selected banks for the study are briefly highlighted below. However, there are currently 10 banks listed on the GSE as at 2019 after the financial sector clean-up exercise in Ghana. Concerning the state of

banks in Ghana, Obuobi et al [9] wrote that in the last sixteen years, the banking industry has gone through three recapitalization programmes which was to strengthen the sector. Some listed banks were however affected because of this 2017 recapitalization exercise. Table 1 shows information about the banks used for the study.

2. Literature Review

2.1. Capital Structure Theories

Various theories concerning capital structure have evolved from capital structure literature of which some of them are explained below:

2.1.1. Modigliani and Miller (MM) Theory (1958, 1963)

In Modigliani and Miller provided the seminal in capital structure under certain assumptions include no taxes, homogenous expectations, perfect capital markets, and no transaction costs [1]. This theory also known as "capital structure irrelevance" states that the relationship between capital structure and cost of capital is irrelevant. This means that, an increase in debt does not affect cost of capital. As a result, the expectations of the investor's future benefits are totally dependent on firm value and cost of capital.

Modigliani and Miller later introduced a new evidence that, cost of capital effect on capital structure, and thus effect on firm value when taxes are taken into consideration as assumption. This is referred to as borrowing giving a tax advantage, because the interest will be taken from the tax which serves as a tax shield. This in turn reduces the cost of debt thereby maximizing the firm's performance [10].

2.1.2. Pecking Order Theory

Pecking order theory is the result of Asymmetric information. It is not the ideal structure of capital that addresses this model as relevant, but it suggests that businesses have two main sources to finance their financial obligations, internally and externally. This implies that companies tend to use firstly internal funding such as surplus liquid assets or retained profits before considering external funding. Explaining further, it states that when internal financing isn't enough to finance investment projects, businesses may or may not obtain external funding and managers may choose between the different sources of external financing to reduce the additional cost of asymmetric information. Firms prefer to use debt leverage firstly, secondly issuance of preferred stock and finally issuance of common stock [11,12].

2.1.3. Trade-off Theory

Trade off theory is an extension of the MM theory developed by Modigliani and Miller. The theory suggests that the firm's optimal capital structure include the trade-off among the influences of firms and personal taxes, agency costs and bankruptcy costs, etc. This theory requires companies to choose debt levels to balance interest-tax shield advantages with future financial distress or current financial rigidity costs.

2.1.4. The Agency Theory

Agency cost theory which was developed by Jensen and Meckling [4] actually discusses the conflict of interest between principals (shareholders) and decision makers (agents) of firms (managers, board members, etc.). This conflict arises from the differences in behavior, decisions or point of view. Each side part (agents and shareholders) often have different goals, and different tolerances toward risk. In this case, the managers who are responsible for the day-to-day management of the firm towards the achievements of the organizational goal might put their personal goals first rather than maximizing shareholders wealth. Hence, what shareholders do is to ensure that managers (agents) do not invest the free cash flow in unprofitable projects. This usually creates the conflict between the parties. As a result, it is believed that increasing the debt to equity ratio would help put managers on their toes to work in the interest of the firm to maximize shareholders wealth.

2.2. Literature on Capital Structure

Companies have increased their debt compared to their equities. As a result, their total corporate debt has increased significantly. It has been found that companies with lower debt have a higher value than those with high debt. This means, companies can maximize their value by opting for a low debt or zero debt) [13]. When the investment of the company is huge, countervailing incentives result in both high and low-cost. Firms would prefer the same capital structure in equilibrium capital structure, thereby detaching capital structure from private information. When the investment is small or moderate, the model will allow for a separate equilibrium whereby high-cost companies have provided greater equity and low-cost companies have greater reliance on debt financing. Spiegel and Spulber, [14]. The availability of corporate tax shields to offset debt means that each company has a special, optimal internal leverage choice, and when businesses issuing debt move from below to the industry average, the market will respond more favorably than when the company moves away from the average sector. The overall finding is that the relationship between a firm's debt level and that of its industry does not appear to be of concern to the market [15]. Debt ratios are found to be decreasing in cash flow or profitability and increasing in the investment of the firm. The study revealed a positive result in accordance with pecking order approach but not consistent with the tradeoff approach [16]. The organizational essence of strategic assets suggests that they should mainly be funded by equity and other less specified assets should be debt funding.

Years after the Modigliani and Miller's theory been published, there has been various researches conducted and many are still in the process of studying the relationship between capital structure and firms' performance. Some studies revealed that there is a negative relationship between capital structure and firms' performance, whereas others found otherwise. In terms of significance, many papers found a significant relation between capital structure and firm's performance, while some of them also had an insignificant relationship between capital structure and firms' performance.

There are various papers concerning capital structure and banks profitability, but in this paper, we will discuss the latest papers published in this regard. This is because it will give a closer reality and these literatures have similar characteristics with the researchers' objectives and the Ghanaian banking sector.

Concerning the topic understudy, various researches like Onaolapo and Kajola [17] investigated the influence of capital structure on financial firm performance and he applied it on non-financial firms listed in Nigerian Stock Exchange according the period from 2001 to 2007. To examine capital structure they used Debt Ratio (DR), and used Return on Assets (ROA) and Return on Equity (ROE) to examine firm's performance. Their study revealed that capital structure has a significant adverse effect on the company's financial performance. The effects of capital structure on banks performance was also examined by [18]. The study was conducted to cover 7 banks listed on the Ghana Stock Exchange. The outcome proved a negative relationship between capital structure and banks performance. The went ahead to state the implication which is, banks cannot rely on debt as a measure of reducing agency cost thereby enhancing shareholders returns. Similarly, Badar and Saeed [19] also studied the impact of using leverage in firm's capital structure on firm's performance. Their study which was applied on all firms of food sector listed on Karachi stock exchange taking into consideration a period of five years from 2007-2011 found that long term debts have a positive and significant impact on firm performance, while, short term debts have negative significant impact of on firm performance. In their study, the capital structure variables used were, long term debts to total assets (LTDTA), Total debt to Equity (TDE), and Short-term debts to Total assets (STDTA). Firm's performance was also measured by Return on Assets (ROA) and Assets Turnover Ratio (ATO). Mumtaz [20] also in his quest to investigating the relationship between capital structure and firm performance in the context of large private companies in Pakistan, he adopted Debt to Equity ratio (DR) as the capital structure variable, while using Return on Asset (ROA), Earning per Share (EPS), Return on equity (ROE), Operating profit Margin, Price to Earnings Ratio as firm performance measurement. After a series of empirical arguments his study revealed that, the relationship between capital structure of a firm and performance of the firm is a negative and significant one which is consistent to [17,20] results. In the same years as Mumtaz [20], Le and Phung [21] also delve into a study which similarly aimed at investigating the impact of capital structure on firm performance in all firms listed in Vietnamese Stock Exchange during the period from 2007 to 2011. Their study which used firm's return on assets (ROA), return on equity (ROE), and Tobin Q to measure their performance also found a significant negative relationship between capital structure firm's performance. To measure capital structure they used short-term debt, long term-debt, and total debt ratios. Going forward, Nasar S. [22] also empirically analyzed the impact of capital structure on firms' (particularly on industrial sector companies listed under XUSIN index) in Istanbul's stock market performance. The study's results suggested that firm's capital structure is negatively and significantly

associated with financial firm performance measured by EPS, ROE, and ROA variables.

Contrary to the above views, Salteh [23] tried to investigate the impact of capital structure on firm's performance in Iranian corporations listed as a vehicles and parts manufacturing economic sector in Tehran Stock Exchange (TSE). Five variables including, Return on Assets (ROA), Return on Equity (ROE), Tobin's Q, Earning per Share (EPS) were used to measure firm's performance and equity market value to equity book value (MB/ VR). Whereas capital structure was measured by, Long-Term Debt, Short- Term Debt and Total Debt to Total Assets, and Total Debt to Total Equity. Their findings revealed a positive and significant relationship between capital structure and ROE, MB/VR, and Tobin's Q, while showing a negative relationship with ROA and EPS. The latter however add-up to the initial findings discussed above. Also, Ahmad et al [24] study explained the influence of capital structure on firm performance of Malaysian firms listed as consumers and industrials sectors in Malaysian equity market from 2005 to 2010. In measuring the firms' performance, he used return on equity (ROE) and return on asset (ROA), and to measure capital structure long-term debt (LTD), short-term debt (STD), and total debt (TD) were adopted. The study revealed that each of debt level has significant negative relationship with ROE, while ROA has significant positive relationship only with STD and TD. The former is however consistent with the initial literature reviewed while the latter is in contrary. In partial contradictory situation, a study by Abor [10] which investigated the relationship between capital structure and profitability of listed firms on the Ghana Stock Exchange (GSE) during a five-year period (1998-2002). Panel data methodology and regression analysis were used in the estimation of functions relating the return on equity (ROE) with measures of capital structure. The Study's findings showed a significantly positive relationship between the short-term debt to total assets ratio and the ROE. Nevertheless, the ratio of long-term debt to total assets and ROE were found to have a negative relationship. His former of his findings is in contrary with the negative significant relationship between capital structure and firm's performance but his latter findings is however consistent with it.

In more contrary situations, a study by Salim and Yadav [25] using panel data technique for 237 Malaysian listed companies on the Bursa Malaysia Stock exchange between the periods of 1995 and 2011 examined the relationship between capital structure and firm performance. Their study adopted four performance measures including return on equity, return on asset, Tobin's Q and earning per share as dependent variable. They used five independent variables to explain capital structure and these are long term debt, short term debt, total debt, ratios and growth. The empirical tests conducted indicated that, there is a significant positive relationship between a firm's performance and its capital structure. Supporting the argument of Salim and Yadav [25], Musah [26] also investigated the impact of capital structure on profitability of commercial banks in Ghana using the panel regression model. In his study, the results showed that, there was an inverse relationship between capital structure (short-term

debt ratio and long-term debt ratio) and profitability of banks except total debt ratio which had a positive relationship. This scenario is also partially consistent and partially inconsistent from the topmost literature reviewed.

For insignificant scenarios, Iorpev and Kwanum [27] study can be used as a reference. Their study discusses the relationship between capital structure and firm performance of manufacturing companies listed on the Nigerian Stock Exchange. The study was conducted in a five (5) years period from 2005-2009. The study examined the firm's performance indicators using profit margin (PM) and return on asset (ROA) in a multi-retrogression analysis. The variables adopted to measure capital structures, were long-term debt to total assets (LTDTA), short-term debt to total assets and total equity debts (TDE. They found that STDTA and LTDTA have insignificant negative relationship with ROA and PM; while TDE has a positive relationship with ROA and negative relationship with PM. STDTA and LTDTA are significantly linked to ROA and PM respectively. The study then drew a conclusion that, capital structure isn't a major determinant of firm's performance.

3. Data and Methodology

3.1. Data Source

In this study, we used data from the individual financial statements (Balance Sheets and income statements) of seven (7) out of the eleven (11) commercial banks listed on the Ghana stock exchange (as at 2017) between the periods 2008 to 2014. We used panel data analysis to show the relationship between the dependent variable (Bank performance) represented by Return on Assets (ROA), Return on equity (ROE) and Earnings per share (EPS). The independent variable (Capital structure) represented by Debt ratio is used.

3.2. Model Specification

3.2.1. Variables Measurement and Empirical Model

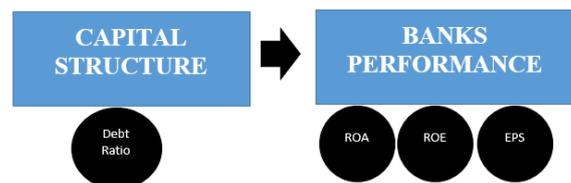


Figure 1. Variables of the study designed by the researcher

Banks' performance (dependent variables): In measuring banks performance, various ratios and methods can be used. This study adopts the three-accounting based measure of performance which are; return on assets (ROA), return on equity (ROE) and earning per share (EPS) and are computed as follow:

$$\text{Return on Assets (ROA)} = \frac{\text{Net income}}{\text{Total Assets}}$$

$$\text{Return on Equity (ROE)} = \frac{\text{Net income}}{\text{Total Equity}}$$

$$\text{Earnings per share (EPS)} = \frac{\text{Net income} - \text{Dividend on preferred stock}}{\text{Average outstanding shares}}$$

Capital structure (independent variable): This study takes total debt to total assets as a proxy for capital structure of the banks. Companies' capital structure can however be measured by different accounting methods including short term liability to total assets, long term liability to total assets and total debt to total assets. For the purpose of this study total debt to total assets was used as a proxy for capital structure of the banks as in the case of Mumtaz and Onaolapo and Kajola.

$$\text{Debt ratio (DR)} = \frac{\text{Total debt}}{\text{Total Assets}}$$

3.3. Regression Analysis Model

This model put banks performance as dependent variable. This is represented by Return on assets (ROA), return on equity (ROE) and earning per share (EPS) and Capital structure was taken as independent variables. The variable used as explanatory and independent variable; total debt to total assets was considered as proxy for the capital structure decision of respective banks. The independent variable serves as explanatory variable for the banks performance measure in ROA, ROE and EPS. Panel data regression model is adopted for this study specifically fixed effect model. In order to determine the relationship between capital structure and performance of banks, the model is specified as follows:

$$BP(ROA, ROE, EPS) = \alpha_0 + \beta_1 DR + \mu_t \quad (1)$$

The breakdown of equation can be seen as follows:

$$ROA = \alpha_0 + \beta_1 DR + \mu_t \quad (2)$$

$$ROE = \alpha_0 + \beta_1 DR + \mu_t \quad (3)$$

$$EPS = \alpha_0 + \beta_1 DR + \mu_t \quad (4)$$

α_0 , β_1 , and β_0 are parameters to be estimated

Where

BP = Bank performance

ROA = Banks return on assets

ROE = Banks return on equity

EPS = Banks earnings per share

DR = Debt Ratio (total debt to total assets)

μ = error term.

3.4. Hypotheses

Based on the various literature and theories reviewed, there has been different points of view concerning the topic under study. However, the most frequent ones as seen in the literature review are those of Onaolapo and Kajola [17], Awunyo-Vitor and Badu [18], Le and Phung [21], Nasar S. [22] among others which shows that capital structure has a negative relationship on banks' performance. Based on these, a hypothesis has been developed. The following hypothesis is formulated for the study:

H₁: There is a negative relationship between capital structure (DR) and (ROA).

H₂: There is a negative relationship between capital structure (DR) and (ROE).

H₃: There is a negative relationship between capital structure (DR) and (EPS).

4. Results and Analysis

4.1. Descriptive Statistics

Table 2 below gives details of descriptive statistics of the variables used in this study. It provides information on mean, median, maximum, minimum, Standard deviation, Skewness, Kurtosis, etc. The First row of the table indicates the mean values of the variables Debt ratio (DR), return on equity (ROE), return on assets (ROA) and earnings per share (EPS). The respective mean values are 0.866, 0.254, 0.0336, and 0.517. The standard deviation for the respective variables is 0.034, 0.113, 0.0157 and 0.917 as can be seen in (Table 2).

Table 2. Descriptive statistics of variables

Variable	Observations	Mean	Standard deviation	Minimum	Maximum
ROA	49	0.0336207	0.0157451	0.0067274	0.0696098
ROE	49	0.2541313	0.1134207	0.0758296	0.4998435
EPS	49	0.5173735	0.9173967	0.02	3.97
Debt Ratio	49	0.8660482	0.0344188	0.7833297	0.930956

4.2. Correlation Analysis

Table 3. Correlation analysis

Variables	ROA	ROE	EPS
DR (Correlation)	-0.33697	0.11000	0.111144
Significance	0.0179*	0.4518	0.4471
R ²	0.1135	0.01210	0.01235

The above Table 3 shows the correlation relationship between the capital structure variable (DR) and performance variables (ROA, ROE and EPS). From the table there is a weak negative correlation between capital structure (DR) and Return on Assets (ROA). However, there is a weak positive correlation between capital structure (DR) and banks performance (ROE and EPS).

Specifically, the correlation between DR and ROA is -0.33697. Significant level is 0.0179. The co-efficient of determination is 0.1135. That means 11.35% of variance in the capital structure (DR) is accounted by ROA. The correlation between DR and ROE is 0.11. Significant level is 0.4518. The co-efficient of determination is 0.012. This also means that, 1.2% of variance in the capital structure (DR) is accounted by ROE. Finally, the correlation between DR and EPS is 0.111144. Significant level is 0.4471. The co-efficient of determination is 0.01235. This suggests that 1.2% of variance in the capital structure (DR) is accounted by EPS.

4.3. Regression Analysis

The panel regression analysis specifically the fixed effect module is used to examine the relationship of capital structure and banks performance of the listed banks on the Ghana stock exchange. A summary of the test results is illustrated in (Table 4) below.

Table 4. Regression analysis of variables

Variables	Financial performance		
	ROA	ROE	EPS
DR (Co-efficient)	-0.277676	-0.430468	-0.38129
Constant	0.274101	0.626937	0.847593
R ²	0.52	0.449	0.79
F-Value	6.45	4.7	22.05
Significance	0.0001*	0.3877	0.8777

The table above shows the regression result used to verify the relationship between independent variable (DR) and dependent variables (ROA, ROE and EPS). The result indicates a negative significant relation between DR and ROA. Moreover, it could be seen that DR has a negative but insignificant effect on ROE and EPS. This means a 1 Ghana Cedi increase on DR increases ROA, ROE and EPS by 0.278, 0.430, 0.38128 Ghana Cedis respectively. The R² for the variables ROA, ROE and EPS are 52%, 44.9% and 79% respectively showing how the independent variable (DR) explains the dependent variables (ROA, ROE and EPS). R² averaged 60% proving how well the independent variable explains the dependent variables. This implies that, Capital structure measured by total debt to total assets is a good explanatory variable for banks performance measured by ROA but not a good explanatory variable for banks performance measured by ROE and EPS even though they all had a negative relationship. (Table 4)

5. Findings and Conclusion

5.1. Findings

The empirical evidence of this study proves that reject alternative hypothesis and accept all three hypotheses (H₁, H₂, and H₃) which states there is a negative relationship between capital structure and banks performance measured by ROA, ROE and EPS. The study is consistent with Nasar S. [23] indicating that capital structure has a significant negative effect on banks performance measured in ROA. It is however inconsistent with it banks performance measured by ROE and EPS which states capital structure has a significant negative impact on ROE and EPS.

Also, the results are consistent with Awunyo-Vitor and Badu [18], Mumtaz et al., [20] and Phung [21], Ahmad et al., [24] and Onaolapo and Kajola [17], who pointed to the negative relationship between capital structure and financial firm performance. However, in the case of ROE and EPS it is partially consistent with Iorpev and Kwanum [27], who found that capital structure and firm performance have negative but not significant relationship. It is inconsistent with Badar and Saeed [19] and Musah [26] who found a significant positive relationship between capital structure and firms' performance.

5.2. Conclusion

In conclusion, this study investigates the impact of capital structure measured by debt ratio on the performance of banks listed on the Ghana stock exchange. The panel data regression showed a negative and significant relationship between Debt ratio and banks performance measured by ROA but shows a negative insignificant relationship between Debt ratio and banks performance measured by ROE and EPS. The overall conclusion is that, banks' capital structure negatively affects their performance. The results of the study confirms the pecking order theory which argues that more profitable firms will prefer to use internally generated funds to debt due to the existence of negative relationship between leverage and profitability.

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