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THE IMPACT OF CAPITAL STRUCTURE ON THE PROFITABILITY OF COMMERCIAL BANKS IN CAMEROON FROM 2021-2024

Roland Agwenjang Anyingang, PhD
Department of Banking and Finance
University of Buea, Cameroon
anyingangrol@yahoo.com

Alain Louis Maimua
Department of Economics
University of Buea, Cameroon

Rene Oru Tabong
Department of Banking and Finance
University of Buea, Cameroon

Abstract

This study investigates the impact of capital structure on the profitability of commercial banks in Cameroon. The study aims to understand how equity capital, debt capital, and the debt-to-equity ratio influence Cameroon commercial banks profitability. Cross sectional and longitudinal research design were adopted for this study. Collected data from various annual publications of banks under study were analyzed using descriptive statistics of mean and standard deviation and inferential statistics of pool least square (PLS) regression. Findings revealed that there exist an inverse relationship between debt to equity ratio, debt ratio and the profitability of commercial banks in Cameroon as measured by return on equity and return on asset and the there exist a significant relationship between equity ratio and the profitability of commercial banks in Cameroon as measured by return on Equity (ROE) and Return on Asset (ROA). Based on the findings the study recommended that because the major parts of the banks operation are

financed by the deposit of customer. As indicated in the finding part leverage has an effect to lower the performance of the banks measured by ROA. So, the bank must consider using optimal capital structure. Commercial banks in Cameroon construct their capital structure at optimal level by participate in the practice of making best debt/equity ratio by raising capital from equity finance in order to improve their performance.

Keywords: Capital Structure, debt capital, equity capital, debt/equity ratio, profitability, commercial banks

INTRODUCTION

The capital structure of financial institutions, especially commercial banks, significantly affects their performance and profitability. Capital structure involves the mix of equity, debt, and other financial instruments used by banks to fund their operations and investments. Theoretical frameworks, including the Modigliani-Miller theorem (Modigliani & Miller, 1958), trade-off theory (Kraus & Litzenberger, 1973), and pecking order theory (Myers & Majluf, 1984), have extensively explored the relationship between capital structure and firm performance. These theories highlight the complexities and trade-offs inherent in selecting the optimal mix of debt and equity.

Empirical studies provide varied insights into how capital structure affects bank profitability. For instance, Berger and Bonaccorsi di Patti (2006) found that leverage is positively correlated with profitability up to a point, beyond which excessive debt can lead to financial distress and decreased profitability. Similarly, Margaritis and Psillaki (2010) identified a positive association between capital structure and firm performance in their research on French manufacturing firms. However, in the context of developing countries, the relationship might be influenced by distinctive economic, regulatory, and institutional factors.

In Cameroon, the banking sector plays a crucial role in the country's economic development. Over time, the sector has undergone significant transformations, including regulatory reforms and increased competition, influencing banks' decisions regarding capital structure. The banking industry in Cameroon is characterized by a high level of concentration, with a few large banks dominating the market (World Bank, 2020). Regulatory guidelines from the Central African Banking Commission (COBAC) also affect banks' leverage and capital adequacy.

Despite its importance, research specifically focusing on the impact of capital structure on the profitability of commercial banks in Cameroon is limited. Many existing studies concentrate on general financing issues or other aspects of bank performance, rather than

delving deeply into the nuances of capital structure. This research aims to bridge this gap by providing a comprehensive analysis of how different capital structure configurations impact bank profitability in the Cameroonian context.

Understanding the relationship between capital structure and profitability is critical for stakeholders, including bank management, regulators, investors, and policymakers. Effective capital structure management can enhance a bank's profitability, stability, and competitive edge, contributing to the overall health and growth of the financial sector. Therefore, the findings of this study could provide valuable insights for decision-making and strategic planning within the banking industry.

Objectives

The main objective of this study is to investigate the impact of capital structure, specifically equity financing, debt financing, and gearing (mix) financing, on the profitability of commercial banks in Cameroon. To achieve this overarching objective, the study is guided by the following specific objectives:

1- To determine the impact of equity capital on the profitability of commercial banks in Cameroon.
2- To examine the influence of debt capital on the profitability of commercial banks in Cameroon.
3- To ascertain the impact of debt-to-equity ratio on the profitability of commercial banks in Cameroon.

LITERATURE REVIEW

Conceptual Review

Capital Structure

Capital structure has attracted a lot of definitions by numerous authors and scholars. However, all these definitions are unambiguous and point to the same direction. According to Saad (2010), capital structure in financial term means the way a firm finance their assets through the combination of equity, debt, or hybrid securities. It represents the proportionate relationship between equity and debt used to fund the bank’s operations and investments. According to Modigliani and Miller (1958), the choice of capital structure can significantly affect a bank’s profitability, risk, and overall value.

Operationally, equity capital includes common stock, preferred stock, and retained earnings. Debt financing comprises borrowed funds such as bank loans and corporate bonds which must be repaid with interest. Other financial instruments might include convertible bonds,

lines of credit, and commercial paper, providing additional flexibility in managing finances. The optimal capital structure aims to balance the benefits and costs of debt and equity to maximize profitability while managing risk effectively. This section aims to provide a detailed understanding of the capital structure concept and its various components:

Equity Capital

Equity capital refers to the funds raised by a bank through the issuance of shares, which represents ownership interests held by shareholders. This type of financing does not require repayment and entitles shareholders to a portion of the profits in the form of dividends. Equity capital is a crucial component of a bank's capital structure, providing a buffer against losses and enhancing the firm's borrowing capacity (Modigliani & Miller, 1958). The components of Equity capital as follow:

i- **Common Stock**: These are shares that provide voting rights to shareholders and the potential for capital appreciation. Common stockholders are residual claimants on the bank's assets, meaning they are paid after all debts and obligations have been settled (Jensen & Meckling, 1976).

ii- **Preferred Stock:** Unlike common stock, according to Myers & Majluf, (1984), preferred stock typically does not confer voting rights but offers a fixed dividend and priority over common stock in the event of liquidation.

iii- **Retained Earnings:** These are profits that the bank has decided to reinvest in the business rather than distribute as dividends. Retained earnings play a significant role in equity financing as they enhance the firm's equity base without diluting ownership (Modigliani & Miller, 1958).

Debt Capital

Debt financing refers to the method of raising funds for business operations and expansions through borrowing. This includes loans, bonds, and other forms of debt. Unlike equity financing, debt financing involves a contractual obligation to repay the borrowed amount along with interest over a specified period. Debt financing is a crucial component of a bank's capital structure, providing necessary funds while imposing financial discipline through regular interest payments and principal repayment (Jensen & Meckling, 1976).

i- **Bank Loans:** Borrowed funds from banks, which may be secured or unsecured and usually have fixed or variable interest rates.

ii- **Corporate Bonds:** Long-term debt securities issued by firms to raise capital, typically with periodic interest payments and principal repayment at maturity.

iii- **Other Financial Instruments**: These could include commercial paper, convertible bonds, and lines of credit.

Debt to equity ratio

Gearing, also known as mix financing, involves a combination of both debt and equity financing. This strategy seeks to balance the advantages and disadvantages associated with each type of financing to optimize a firm's capital structure and enhance its overall financial performance.

The gearing ratio measures the proportion of a firm's debt relative to its equity. It indicates the level of financial leverage used by the firm. A higher gearing ratio implies greater reliance on debt, while a lower ratio indicates more reliance on equity. The optimal gearing ratio balances the benefits of debt's tax shield against the costs of potential financial distress (Kraus & Litzenberger, 1973). The leverage effect here is the use of various financial instruments or borrowed capital (like debt) to increase the potential return of an investment. While leveraging can magnify gains, it also increases the potential for significant losses and increase obligations.

Financial Performance

Financial performance is a key indicator of a firm's ability to generate earnings in relation to its expenses and other costs over a specific period. In the context of commercial banks, financial performance is critical for assessing the health and efficiency of banking operations. This study focuses on specific financial metrics to evaluate the profitability of banks in Cameroon:

Return on Assets (ROA)

ROA measures the net income generated by a firm relative to its total assets. It indicates how efficiently the bank is utilizing its assets to produce earnings. ROA is therefore calculated as Net Income divided by Total Assets. Higher ROA indicates more efficient management of assets to produce earnings (Berger & Bonaccorsi di Patti, 2006). We chose this measure of performance because it is crucial for comparing the performance of banks within Cameroon and it provides insights into asset efficiency irrespective of the size of the bank.

Return on Equity (ROE)

ROE gauges the profitability of a firm relative to shareholders' equity, reflecting the ability of a bank to generate profits from its shareholders' investments. ROE is calculated as Net Income divided by Shareholders' Equity. A higher ROE indicates better financial performance in

terms of return on investment to shareholders (Modigliani & Miller, 1958). For this study, ROE is essential for understanding how well commercial banks in Cameroon are generating earnings from their equity base, which directly impacts shareholders' returns.

This section presents some conceptual issues relating to the subject matter of this study. The main theoretical issues covered relate to the concept of capital structure and financial performance i.e. profitability of commercial banks.

Theoretical Review

Modigliani-Miller Theorem

Modigliani and Miller (1958) propounded a theory which states that the market value of a firm is determined by its earning power and the risk of its underlying assets is independent of the way it chooses to finance its investment or distribute dividends. In clear term the theory posits that in a perfect market, the value of a firm is unaffected by its capital structure. This theorem has profound implications for corporate finance, highlighting the irrelevance of debt-to-equity mix for firm valuation under certain conditions.

The Modigliani-Miller theorem relies on several key assumptions: perfect capital markets, where no transaction costs, taxes, or bankruptcy costs exist, and all market participants have equal access to information; homogeneous expectations, meaning all investors have the same expectations about future earnings and risks associated with the firm; no taxes, implying that the tax shield provided by debt is irrelevant; and no bankruptcy costs, indicating that the cost of financial distress or bankruptcy does not affect capital structure decisions. Based on the assumptions, the following propositions were made by the Modigliani-Miller (M-M)

Proposition I: Modigliani-Miller Proposition I states that under the above assumptions, the value of a leveraged firm (one that includes debt in its capital structure) is equal to the value of an unleveraged firm (one that is financed entirely by equity). This proposition implies that the choice between debt and equity has no impact on the overall value of the firm (Modigliani & Miller, 1958).

Proposition II: Modigliani-Miller Proposition II introduces the concept of the cost of equity. It posits that the cost of equity increases linearly with financial leverage because the risks associated with increased debt levels lead shareholders to demand higher returns. While the firm's overall cost of capital remains unchanged, the cost of equity adjusts to compensate for higher debt levels. This proposition highlights the relationship between leverage and required returns on equity (Modigliani & Miller, 1958).

The Modigliani-Miller theorem provides several important insights for financial management: in a perfect market, firms do not need to worry about their debt-to-equity ratio when making financing decisions, as it does not affect their overall value; firms should focus on their operational performance and investment decisions rather than capital structure optimization; and in practice, deviations from the theorem's assumptions (such as the existence of taxes, bankruptcy costs, and asymmetric information) imply that capital structure decisions can indeed impact firm value.

While the Modigliani-Miller theorem is influential to finance professional, it has limitations in real-world applications. Subsequent research has incorporated factors such as corporate taxes, personal taxes, transaction costs, and bankruptcy costs to develop more nuanced models of capital structure (Miller, 1977).

Trade-Off Theory

The Trade-Off Theory of capital structure developed by economists Kraus and Litzenberger in 1973 posits that firms seek to balance the benefits of debt financing against the potential costs associated with financial distress and bankruptcy. The theory acknowledges that while debt provides tax advantages, it also increases the risk of financial insolvency and associated costs (Kraus & Litzenberger, 1973). The Theory rest on the key assumption that firms aim to balance the tax benefits of debt financing against the potential costs of financial distress and bankruptcy. It also operates under the assumption that interest payments on debt are tax-deductible, providing a tax shield that enhances firm value. However, as firms increase their leverage, the risk of financial distress and associated costs, such as legal fees, impaired business relationships, and loss of key employees, also rises. The theory also considers the presence of agency costs, where conflicts between debt holders and equity holders could influence capital structure decisions. Firms are assumed to aim for an optimal capital structure where the marginal benefit of the tax shield from additional debt equals the marginal cost of financial distress.

Therefore, the theory was developed with the key standing that one of the principal benefits of debt financing is the tax shield it provides. Interest payments on debt are tax-deductible, which reduces the firm’s taxable income and, consequently, its tax liability. This tax advantage makes debt a more attractive financing option compared to equity (Modigliani & Miller, 1958). Additionally, debt imposes financial discipline on managers by requiring regular interest payments. This reduces the free cash flow available for potential misuse by management, thereby aligning their interests more closely with those of shareholders (Jensen &

Meckling, 1976). Consequently, the combination of tax benefits and management discipline underscores the strategic advantages of incorporating debt into a firm's capital structure.

However, as a firm increases its leverage, the likelihood of financial distress and bankruptcy rises, bringing with it financial distress costs, which include both direct costs (such as legal and administrative expenses) and indirect costs (such as lost sales, impaired relationships with suppliers and customers, and loss of key employees) (Kraus & Litzenberger, 1973). Additionally, conflicts between debt holders and equity holders can result in agency costs. For instance, debt holders may restrict management from taking certain actions that could benefit shareholders, such as investing in high-risk, high-reward projects (Jensen & Meckling, 1976).

These implications highlight that while debt financing offers advantages, it also carries significant costs that firms must carefully evaluate. The optimal capital structure is therefore achieved by balancing the marginal benefits of the debt tax shield against the marginal costs of financial distress. Firms will continue to increase leverage up to the point where the additional tax shield from an extra unit of debt is equal to the incremental expected cost of financial distress (Myers, 1984).

Margaritis and Psillaki (2010) provided empirical support for the Trade-Off Theory by demonstrating that firms with an optimal balance of debt and equity financing tend to perform better. Similarly, Berger and Bonaccorsi di Patti (2006) tested the Trade-Off Theory in the banking industry and found that higher leverage could enhance performance by reducing agency costs, but excessive debt increases the risk of financial distress. These findings suggest that while leveraging debt can offer performance benefits, maintaining an optimal balance is crucial to avoid the risks associated with financial distress.

While the Trade-Off Theory provides a useful framework for understanding capital structure decisions, it has limitations. Specifically, it assumes that firms can precisely balance the benefits and costs of debt. In the real world, market imperfections, such as asymmetric information and fluctuating economic conditions, make this balance difficult to achieve. Critics also argue that the theory may overemphasize the importance of tax shields while underestimating the complexity of financial distress costs (Myers, 1984).

Empirical Literature

Bhatt and Jain (2020) investigated the relationship between capital structure and profitability of commercial banks in Nepal. The study used a sample of 18 commercial banks, representing over 60% of the total population, and analyzed secondary data from 2010 to 2019. Using multiple linear regression models, the research examined variables such as Return on

Equity (ROE), Short Term Debt Ratio (STDR), Long Term Debt Ratio (LTDR), and Total Debt Ratio (TDR). The findings revealed that the average profitability (measured by ROE) of Nepalese commercial banks was 9.37%, indicating robust earnings on equity capital during the study period. Overall, the study concluded that different components of capital structure influence the profitability of commercial banks, with both short-term and long-term debt ratios having significant impacts on bank returns.

Egundeyi (2021) explored the impact of capital structure on the financial performance of listed Deposit Money Banks in Nigeria from 2009 to 2018. Through an ex-post facto research design and secondary data analysis, the study employs multiple regression and panel data estimate models. Empirical review reveals diverse opinions on the relationship between capital structure (measured by debt ratio, equity ratio, and debt-to-equity ratio) and financial performance. The findings indicate a significant positive impact of debt ratio and mixed effects of equity ratio and debt-to-equity ratio on financial performance. The study recommends optimizing debt financing to maximize shareholders' wealth, challenging some traditional theoretical frameworks like trade-off theory, and aligning with others such as agency theory and pecking order theory.

Chen and Lin (2021) studied the effects of debt financing on bank profitability within European banks. Utilizing panel data from 2000 to 2020 on a sample of 150 banks from various European countries, the researchers used a dynamic panel data model incorporating lagged dependent variables to capture internal adjustments, and GMM (Generalized Method of Moments) was employed to address endogeneity issues. Model testing included the Arellano-Bond test for serial correlation and Hansen test for over-identifying restrictions. The study found that higher leverage ratios were linked to increased profitability due to lower capital costs and tax advantages, but very high leverage increased financial distress and decreased profitability. The research emphasized the necessity for future studies to consider the influences of post-2020 regulatory frameworks on capital structure decisions and bank profitability.

Kariuki and Mutuku (2021) analyzed the effect of leverage on the profitability and stability of Kenyan commercial banks. The study utilized panel data from 2008 to 2021, including data from 40 banks. Employing a dynamic panel data approach with System GMM to handle endogeneity, the researchers tested the models using the Arellano-Bond test and Hansen test. The study found that moderate leverage ratios were associated with higher profitability and stability, whereas excessive leverage increased financial risk. The research emphasized the need for further studies to understand the implications of recent regulatory changes on optimal leverage levels and bank performance in Kenya.

Mbui et al. (2021) examined the role of debt financing in the profitability of Kenyan commercial banks. Using panel data from 2005 to 2020, covering 45 banks, the study employed a dynamic panel data model and utilized System GMM to address potential endogeneity issues. Model testing included the Arellano-Bond test for serial correlation and the Hansen test for over-identifying restrictions. The results highlighted that while moderate debt levels could boost profitability by reducing capital costs, excessive leverage led to financial distress and lower profitability. The study recommended future research on how recent regulatory changes impact debt financing decisions and bank performance in Kenya.

Ogunbiyi and Kehinde (2021) examined the impact of equity financing on the profitability of Nigerian commercial banks. Using panel data from 2005 to 2021, covering 55 banks, the study employed fixed effects modeling to address potential endogeneity. The researchers conducted model testing using the Hausman test and included robustness checks for consistency. The findings revealed a strong positive correlation between higher equity levels and profitability, offering greater resilience during financial instability. The study suggested future research to explore the interplay between regulatory changes and equity financing and their combined effects on profitability.

Khan (2022) analyzed the impact of capital structure on bank performance in emerging markets, specifically examining empirical evidence from Gulf Cooperation Council countries using data from 50 banks over the period from 2012 to 2017. Utilizing an unbalanced panel data set, the study employs pooled Ordinary Least Squares (OLS), fixed effects, and random effects regression models to examine the relationship between capital structure (measured by the total debt ratio) and bank performance (measured by return on assets (ROA) and return on equity (ROE)). Control variables include bank size, asset tangibility, earnings volatility, growth, GDP growth rate, and inflation rates. The study finds that the total debt ratio has a significant but mixed impact on bank performance: it is positively associated with ROE while showing an insignificant relationship with ROA under the fixed effects model. These results suggest that higher leverage might support financial development and economic diversification in the GCC region. The paper concludes with recommendations for future research to explore non-performing loans and comparative studies between conventional and Islamic banks in the GCC.

METHODOLOGY

Research Design

The research design chosen for this study is the cross sectional design and the longitudinal design. These designs were selected because it enables the repeated observations of the same variables over an extended period of time. This allows researchers to track changes

and development within individuals or groups over time. Since our study involves collecting data from different banks over a specific time period, the designs were deemed suitable for the study.

The Data Source

The area of study focuses on commercial banks operating in Cameroon. Cameroon was chosen due to its dynamic banking sector, which plays a crucial role in the country's economy. Ten out of the nineteen commercial banks in Cameroon were selected and used for the study.

A total of 10 commercial banks were chosen based on the availability of consistent financial data and their significant role in the Cameroonian banking sector and Data were collected from various annual publication of the various banks from 2021 to 2024. The selected banks are: Ecobank Cameroon, CB Cameroun (Société Commerciale de Banque Cameroun), NFC Bank (National Financial Credit Bank), Union bank of Cameroon (UBC), United Bank for Africa (UBA), BGFI Bank Cameroun, BICEC Bank, CCA Bank, Access Bank and Atlantique Bank. These banks are either Cameroonian-owned or have significant local ownership, playing a direct role in the local financial ecosystem.

Model Specification

The study employs a statistical model to analyze the relationship between capital structure and profitability of commercial banks in Cameroon. The following equation was determined to conduct the analysis:

$$PERF = \alpha + \beta_1.ECR_{it} + \beta_2.DCR_{it} + \beta_3.DTEC_{it} + \beta_4.SOB_{it} + \xi$$

Where:

PERF= Performance (measured by Return on Assets and ROE= Return on Equity).

ECR *= Equity Capital Ratio (Total Equity/Total Assets)*

DCR *= Debt Capital Ratio (Total Debt/Total Assets)*

DTEC *= Debt-to-Equity Capital Ratio (Total Debt/Total Equity)*

SOB *= Total assets - control variable representing the size of the bank.*

α *= Intercept of the model*

$\beta 1, \beta 2, \beta 3$ & $\beta 4$ $(\beta i > 0)$ *= Coefficients of regression for the respective variables.*

ξ *= Error term representing any unexplained variation*

Panel data regression analysis is appropriate for examining the impact of multiple independent variables (capital structure components) on dependent variables (profitability metrics).

Description of Variables

The dependent variable to this study is the profitability of commercial banks with the independent variable being the capital structure which is broken down into multiple variables as seen on the table below:

Table 1. Operationalization of variables and justification for inclusion in the model

Variable	Operational description	Indicators	Significance to the model
Dependent variable			
Profitability (measured by ROA & ROE)	Indicates the bank's efficiency in generating profits.	ROA = Net Income / Total Assets; ROE = Net Income / Shareholders' Equity	A higher measure of either ROA or ROE indicates better financial performance and profitability.
Independent Variables			
Debt-to-Equity Ratio (DCR)	Indicates the proportion of debt financing relative to equity financing.	DTE = Total Debt / Total Equity	A higher DCR ratio suggests more reliance on debt financing, which can impact profitability due to interest obligations and financial leverage.
Total Debt Ratio (DTEC)	Represents the proportion of debt in total assets	DTEC = Total Debt / Total Equity	A higher DTEC ratio suggests more reliance on debt financing, which can impact profitability due to interest obligations and financial leverage.
Equity Capital Ratio (ECR)	Represents the proportion of equity in total assets.	ECR = Total Equity / Total Assets	A higher ECR indicates a stronger equity position, which can buffer against losses and contribute to financial resilience.
Control Variables			
Size Of Bank (Size)	Measured by total assets.	SOB = Total Assets	Larger banks may benefit from economies of scale and have more diversified operations, influencing profitability.

ANALYSIS AND FINDINGS

Table 2: Descriptive statistics of variables under study

	N	Min	Max	Mean	Std. Deviation	Skewness	Kurtosis
DTEC	30	-4.32	18.64	3.9717	5.83166	0.944	0.296
DCR	30	-0.05	0.14	0.059	0.05598	-0.78	-0.386
ECR	30	0.02	0.84	0.3387	0.30733	0.734	-1.353
SOB	30	189	1092	583.87	242.5647	0.205	-0.492
ROE	30	10.7	49	24.957	9.1119	0.646	0.36
ROA	30	0	3.39	1.7283	0.77664	0.192	-0.093

Table 2 above revealed that ROA has a mean value of 1.7283 with standard deviation of 0.77664 and the ROE has a mean of 24.957 and standard deviation of 9.1119. These positive arithmetic mean for return on assets and return on equity can specify that the profitability of banking sector in Cameroon was generally positive over the years under study. This is also an indication that the examined banks had improved financial performance during the period covered by this study. The mean values of all the variables were within the range of their respective minimum and maximum as expected, affirming that the data were evenly spread.

Table 3: Pool Ordinary Least Square Regression result of the relationship between capital structure and the performance of banks as measured by return on equity (ROE)

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	21.160	5.702		3.711	.001
	DTEC	-.225	.048	-.187	-4.728	.000
	DCR	-.606	.205	-.207	-2.952	.003
	ECR	.600	.027	.268	21.841	.000
	SOB	.392	.144	.194	2.726	.007

Dependent Variable : ROE

R= .77 R^2 = .590 Adj. R^2 = .584 F-value = 88.37 DW-statistics =2.75

The overall fitness of the model as measured by both R and R square is good. R has a value of .0.77 explicating the well representation, Similar, the value of R^2 is .590, shows that four independent variables can explain the variation in bank performance as measured by return of equity (ROE). In other words, in the attempt to explain the variation in bank

performance as measured by ROE we can look at the variation in debt to equity ratio, debt ratio, equity ratio and bank size This can provide 59% of the response but the rest requires looking into other factors as 41% of the variation in bank performance cannot be explained by the identified elements.

The prediction capacity of the model is also in good front as witnessed by the F-ratio and the associated significance value of that F-ratio. The utilized data with, F = 88.37, is significant at $p < .001$. Therefore, there appears a less than a 0.1% chance that an F-ratio this large would happen if the null hypothesis were true. Therefore, we can conclude that our regression model results in significantly better prediction of the bank performance as measured by ROE.

The coefficient for debt to equity ratio is negative implying that there exist an inverse relationship between debt to equity ratio and the performance of banks as measured by ROE. This results is also in line with apriori criteria and significant at 0.05 level of significance.

The estimated coefficient for debt ratio is negative implying that there exist an inverse relationship between debt ratio and the performance of banks as measured by ROE. This results is also in line with apriori criteria and significant at 0.05 level of significance.

The estimated coefficient for equity ratio is positive implying that there exist a direct relationship between equity ratio and the performance of banks as measured by ROE. This results is also in line with apriori criteria and significant at 0.05 level of significance.

The estimated coefficient for bank size is positive implying that there exist a direct relationship between bank size and the performance of banks as measured by ROE. This result is also in line with apriori criteria and significant at 0.05 level of significance.

Table 4: Pool Ordinary Least Square Regression result of the relationship between capital structure and the performance of banks as measured by return on asset (ROA)

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.241	1.885		2.781	.006
	DTEC	-.222	.048	-.186	-4.597	.000
	DCR	-.244	.050	-.214	-4.934	.000
	ECR	.250	.028	.437	9.027	.000
	SOB	.529	.168	.408	3.156	.002

Dépendent Variable : ROA

R= .712 R^2 = .507 Adj. R^2 = .489 F-value = 74.25 DW-statistics =2.18

The overall fitness of the model as measured by both R and R square is good. R has a value of .712. indicating a well representation, Similar, the value of R^2 is .507, shows that the four independent variables can explain the variation in bank performance as measured by return of asset (ROA). In other words, in the attempt to explain the variation in bank performance as measured by ROA we can look at the variation in debt-to-equity ratio, debt ratio, equity ratio and bank size. This can provide 51% of the response but the rest requires looking into other factors as 49% of the variation in bank performance cannot be explained by the identified elements.

The prediction capacity of the model is also in good front as witnessed by the F-ratio and the associated significance value of that F-ratio. The utilized data with, $F = 74.25$, is significant at $p < .001$. Therefore, there appears a less than a 0.1% chance that an F-ratio this large would happen if the null hypothesis were true. Therefore, we can conclude that our regression model results in significantly better prediction of the bank performance as measured by ROA.

The coefficient for debt-to-equity ratio is negative implying that there exist an inverse relationship between debt to equity ratio and the performance of banks as measured by ROA. This result is also in line with apriori criteria and significant at 0.05 level of significance.

The estimated coefficient for debt ratio is negative implying that there exist an inverse relationship between debt ratio and the performance of banks as measured by ROA. This results is also in line with apriori criteria and significant at 0.05 level of significance.

The estimated coefficient for equity ratio is positive implying that there exist a direct relationship between equity ratio and the performance of banks as measured by ROA. This results is also in line with apriori criteria and significant at 0.05 level of significance.

The estimated coefficient for bank size is positive implying that there exist an direct relationship between bank size and the performance of banks as measured by ROA. This results is also in line with apriori criteria and significant at 0.05 level of significance. Service

DISCUSSION

The findings of this study revealed that there is a negative significant relationship between debt-to-equity ratio and the performance of banks in Cameroon as measured by both ROA and ROE. This finding agrees with the findings obtained by Aggarwal & Padhan (2020) who conducted an empirical study to investigate the relationship between capital structure and company performance indicators within the United Kingdom (UK) pharmaceutical sector from 2009 to 2019. He found out that there exist a significant but negative relationship between debt to equity ratio and the performance of the companies as measured by ROA. Also in line with the finding of this study is the study of Chen & Lin (2021) who studied the effects of debt financing on bank profitability within European banks. Utilizing panel data from 2000 to 2020 on a sample

of 150 banks from various European countries, the researchers used a dynamic panel data model incorporating lagged dependent variables to capture internal adjustments, the study found that higher leverage ratios were linked to increased profitability due to lower capital costs and tax advantages, but very high leverage increased financial distress and decreased profitability.

The results of the second aspect of this study revealed that there exist a significant and negative relationship between debt ratio and the performance of commercial banks in Cameroon. This implies that as the debt ratio of the banks increases their performance will decreases and vice versa. This finding agreed with the findings obtained by Khan (2022) who analyzed the impact of capital structure on bank performance in emerging markets, specifically examining empirical evidence from Gulf Cooperation Council (GCC) countries. Using data from 50 banks over the period from 2012 to 2017, the study found out that the total debt ratio has a significant and negative impact on bank performance: it is positively associated with ROE while showing an insignificant relationship with ROA under the fixed effects model. These results suggest that higher leverage might support financial development and economic diversification in the GCC region. He concluded with recommendations for future research to explore non-performing loans and comparative studies between conventional and Islamic banks in the GCC.

The finding of the third aspect of this study revealed that there exist a significant effect of equity ratio and the performance of Commercial banks in Cameroon as measured by ROE and ROA. This implies that as equity capital of the bank increases the performance of banks will also increases and vice versa. This findings is in agreement with the findings obtained by Bhatt & Jain (2020) who investigated the relationship between capital structure and profitability of commercial banks in Nepal. The study used a sample of 18 commercial banks, representing over 60% of the total population, and analyzed secondary data from 2010 to 2019. Utilizing multiple linear regression models, the research examined variables such as Return on Equity (ROE), Short Term Debt Ratio (STDR), Long Term Debt Ratio (LTDR), and Total Debt Ratio (TDR). The findings revealed that there exist a significant effect of equity ratio of the banks and the performance of the banks as measured by ROE of Nepalese commercial banks. Also in agreement with the findings of this study is the findings obtained by Ataur et al. (2019) who explored the impact of capital structure on the profitability of publicly traded manufacturing firms in Bangladesh. A sample of fifty observations from twenty-five manufacturing firms listed on the Dhaka Stock Exchange (DSE) were selected for the period of 2013-2017. They concluded that equity capital has a positive impact on return on assets, return on equity, and earnings per share of the manufacturing firms.

The findings of this study also revealed that there exists a significant effect of bank size on the performance of Commercial banks in Cameroon. This implies that an increase in the size of the banks will lead to an increase in the performance of the banks as measured by ROA and ROE. This finding agreed with the study of Mbui et al. (2021) examined the role of debt financing in the profitability of Kenyan commercial banks. Using panel data from 2005 to 2020, covering 45 banks, the study employed a dynamic panel data model and utilized System GMM to address potential endogeneity issues. Model testing included the Arellano-Bond test for serial correlation and the Hansen test for over-identifying restrictions. The results highlighted that while moderate debt levels could boost profitability by reducing capital costs, excessive leverage led to financial distress and lower profitability. The study recommended future research on how recent regulatory changes impact debt financing decisions and bank performance in Kenya.

CONCLUSIONS

Capital structure has been an important focus point in the literature since the seminal work of Modigliani and Miller in 1958. Capital structure decision is crucial for any organization in order to enhance the value of the firm in the industry, specifically related with performance of the firm. Although a lot of literature has been in developed counties on these issue still it is one of the under studied area in developing country like Cameroon. In Cameroon except a few studies which are also limited their scope on the determinant of banks capital structure, no study is made on capital structure and performance of commercial banks. The purpose of this study to examine the relationship between capital structure and performance of commercial banks in Cameroon by selecting ten banks as a sample for the period from 2021 to 2024. This study measure capital structure by using debt ratio, equity ratio and debt to equity as independent variables and performance is measured by using ROA and ROE as dependent variables. In addition to these variables, the study used size of the bank as control variables by taking the log of total asset. The finding of the study led us to the conclusion that capital structure of the bank measured by debt ratio, equity ratio and debt to equity ratio have significant and negative relation with performance of commercial banks in Cameroon as measured by ROA. While capital structure has a significant positive relation with ROE when it is measured by debt ratio, and it has insignificant positive relationship with ROE when it is measured by debt ratio. In addition to this the result of the regression analysis revealed led us to the conclusion that the size of the bank has significant positive relation with all performance measurement variables. The overall findings of the regression analysis are agreed with the hypothesis of the study.

The significant negative coefficient between debt-to-equity ratio and return on asset indicate that the Cameroonian banking industry followed pecking order theory of capital structure and banks are prefer to use internal source of finance before raising funds from debt or equity. This finding also tells commercial banks in Cameroon reject trade off theory due to the reason that in most case the amount of debt exceeds from the threshold level of tax shield advantage that comes from high amount of debt. Further, commercial banks in Cameroon receive funds from small and dispersed individual or investors. These parties have a right to ask the money at any time when they face with the need of funds. Therefore, due to fear of bankruptcy the management may leave out important investment decisions that increase performance of the banks in turn increase return on asset of the banks. In addition to these, the banking industry is more persistent with the well-known agency problem. The negative linkage between debt-to-equity ratio and return on total asset may also indicate the existence of agency problem in the banking industry of Cameroon. As leverage increase, the interest of equity holder to monitor bank performance becomes less. On the creditor side because of lack of incentives and recourses, the ability to follow up the bank management is limited. Thus have an indication that increase leverage may let the bank management free from strict monitoring. Hence, the decline in ROA obtains when management pursues its interest at the cost of principals. Observe that ROA is determined by asset use and operating efficiency, among others. Thus, the agency problems alluded to thus far may contribute to lower asset use and/or operating efficiencies thereby giving rise to lower observed return on assets as leverage increased.

RECOMMENDATIONS

Based on the findings of the regression analysis and conclusions, the following recommendations were forwarded.

The findings of the study reveal that, the banking sector of the country is highly levered institution. Because the major parts of the banks operation are financed by the deposit of customer. As indicated in the finding part leverage has an effect to lower the performance of the banks measured by ROA. So, the bank must consider using optimal capital structure. Commercial banks in Cameroon construct their capital structure at optimal level by participate in the practice of making best debt/equity ratio by raising capital from equity finance in order to improve their performance.

The study reports the positive association between leverage and bank performance measured by ROE, which indicates that the portion of cake for equity holder is improved by using debt.

Even though the finding reports a direct relation between leverage and ROE, there is an issue that needs to investigate before making any decision by considering this result. As it is known there is a direct relationship between debt and risk of equity capital. Even if the result of this study indicate that debt and ROE are moving in direct positive relation, it does not necessarily follow that equity holder are really getting a better off with more debt. Therefore, before making decision it is important to measure a return with risk.

The findings of this study also suggest the policy implication for commercial banks in Cameroon. Firstly, this finding can be one incentive for banks to see back their credit policy with respect to the customer status or repayment ability in connection with the collateral requirement to accept the loan requirements and if there is a possibility to relax a collateral requirement and/or search other means of giving loan in order to enhance their performance.

Secondly, the study found negative linkage between leverage and performance measured by ROA and ROE. This has an inference for positive association between equity capital and ROA and ROE. Thus, by considering this finding the researcher suggested an intermediary solution may be called up on to address the matter like opining secondary market.

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