ABSTRACT

Introduction:

The capital structure is amongst the greatest important areas of corporate finance, which involves deciding amongst the various funding options available to businesses. A notion dubbed the trade-off theory evolves as the profit and debt financing costs are in proportion. (Gul and Cho., 2019). The capital structure, on the other hand, is made up of a combination of lengthy finances such as debt securities, long-term debt, preference shares, and common equity investment, which includes reserves and surpluses as well as net cash. This method of financing a company's assets using a combination of debt, equity, and convertible securities. (Iheanyi et al, 2016). Another critical challenge for managers nowadays will be how to select the optimal mix of sources of finance were used to create the ideal capital structure, which would reduce expenses while increasing profits for the company's shareholders (Saeed et al, 2013).

Objectives of the Study

- Evaluate the impact of the short-term debt-asset ratio on the financial performance of Sierra Leone commercial banks.
- Examine the impact of the long-term debt-asset ratio on the financial performance of Sierra Leone commercial banks.
- Determine the impact of interbank borrowings on the financial performance of Sierra Leone commercial banks.
- Examine the impact of equity on the financial performance of Sierra Leone commercial banks.

Research Questions

- What impact does the short-term debt-to-asset ratio have on Sierra Leone commercial banks' financial performance?
- What impact does the long-term debt–asset ratio have on the financial performance of Sierra Leone commercial banks?
- What impact do interbank borrowings have on Sierra Leone commercial banks' financial performance?
- What impact does equity have on the financial performance of Sierra Leone commercial banks?

Significance of the Study

Shareholders, finance experts, policymakers, and financial specialists will all benefit from the findings of this study. Investors, experts, management, and auditors are all interested in forecasting an organization's financial performance. Management is keenly interested in forecasting future earnings for budgetary and control objectives, whereas auditors would gain from profit projections in their analytical assessments of clients' financial statements. Lastly, the study will be useful in assisting the

Government of Sierra Leone, and the Central Bank of Sierra Leone as regulators in their efforts to simplify operations in the banking sectors, taking into consideration that the economy itself is dependent on how the banking industry operates. (Kuria, 2013).

Literature Review

Theoretical Review

The capital structure of the company has no relevance on its fair value. Despite the fact that their theory is founded on non-existent presumption market circumstances, such as no taxes, transaction costs, and so on, Managers are unconcerned about the ruling choices since they bring little value. This would seem to imply that it does not actually exist. (Modigliani & Miller, 1958).

The agency cost concept argued that managers prioritize their own goals rather than optimizing shareholder returns. A conflict of interest exists between investors and managers in the case of agency cost of equity, while a collusion exists between shareholders and creditors in the case of agency cost of debt. (Nguyen and Tran, 2019).

When debt levels are high, management have been under stress to engage in profitable ventures in order to generate cash flow to charge interest. To put it another way, at modest levels of leverage, attain its objectives generates good rewards reduces overall agency costs and reduce issuing shares agency expenses. (Jensen, 1986),

Myers (1984) and Myers and Majluf (1984) proposed the pecking order idea as also an additional theory that this research was founded. This theory states that due to imbalance in information regarding a firm's alternative investments with both managers and investors, the market may devalue a firm's additional shares compared to the value which would be evaluated if managerial' information regarding their firm's investment options have been made known to the market. As a result of the value flow from old to the new owners, issuing new shares may affect current shareholders. In relative to the pecking order theory, Firms that are financially viable and, as a result, yield higher revenue to be held are anticipated to have fewer debt in their capital structure as opposed to firms which does not yield greater earnings, because they can fund their investment options with retained earnings.

Empirical Review

In terms of empirical evidence, numerous studies support the notion that debt has a variety of effects on corporate performance. Abor (2005) used correlations and regression analysis to explore the impact of capital structure on firm efficiency. This research reveals that the ratios of return on equity is highly influenced by short-term debt to total assets and accumulated debt to total assets. Weill, (2008) evaluated statistics from seven Eu nations to show that the connection involving leverage and company performance differs between countries.

Furthermore, some research has discovered a non - linear relation of capital structure and financial performance. In their analysis, Berger (2006) employed a simultaneous-equation ability to estimate the confounding variables linking

performance to leverage. They contended, based on statistics from the US financial sector, that taking on debt can lower the agency cost of equity, increasing profit efficiency.

The Financial Performance of the firms

Relating to the examination of Tauseef et al, (2015) the influence of debt financing on the financial performance in Pakistan of textile firms. Tauseef et al. (2015) utilized ROE as an indicator of a firm's financial performance in their research. The percentage return which stockholders gain on their investment was considered as net income (after-tax income) divided by the total number equity of the company. Other parameters, such as firm size and increased sales, were incorporated in the model in regard to the debt-asset-ratio, as they were seen to effect company ROE. the researchers incorporate two variables, company size and sales growth, to mitigate for the real impacts. Firm size was determined as a percentage change in sales, and sales growth was computed as a log of total assets.

Banks' short-term debt-to-asset ratio and financial performance

Abor (2005) explored the association between capital structure and profitability in Ghanaian publicly traded companies and discovered that STD is positively associated to profitability (ROE). The current research will seek to determine the influence of short-term borrowing on commercial bank financial performance in order to see if the results are equivalent to Abor's (2005).

Banks' long-term debt-to-asset ratio and financial performance

Ametefe et al, (2011) conducted research in Ghana to see how the long-term debt-to-total-assets ratio and amounts of resources affect bank performance. The return on all assets under management (ROA) was chosen as the main metric for determining bank profitability. Furthermore, unlike return on equity, it was not affected by high equity multipliers. The research was conducted between 2001 and 2007. 16 of the 17 banks that existed in 2001 were included in the study. In addition to descriptive and correlation analysis, the generalized linear model (GLM) was utilized to analyze the data. According to the findings, the debt-to-total-assets ratio has a significant negative effect on profitability. This research suggested that as bank capital structures became more reliant on debt, banks became less profitable.

Inter-bank borrowing and financial profitability

Pouw and Kakes (2013) looked examined the factors that influenced bank earnings in countries that are members of the Organization for Economic Cooperation and Development (OECD). The research analyzed banking records from 28 nations from 1980 to 2009. Using statistical cost accounting techniques, the researchers discovered a realistic sequence of individual assets and liabilities' inputs to earnings and expenses. Interbank lending was among the costliest sources of funding, with both wholesale and retail transactions yielding positive profits. Commercial banks that used inter-bank lending had much poorer profitability as evaluated by ROA, according to the study.

Equity and financial performance

In Turkey, Ayaydin and Karakaya (2014) investigated the reason relating to how the bank capital influences profitability and risk. The study's goal was to provide some important light on the factors that influence bank risk-taking, as well as to investigate the link between determinants of profit. The researchers employed the Two-Step system (GMM) technique for dynamic panels with records from 23 Turkish financial institutions from 2003 to 2011 to analyze the effects of bank capital on profitability and risk. The research discovered proof that increase in bank capital has a significant positive effect, confirming regulatory hypotheses. The findings also indicate that capital and profitability have a favorable relationship.

Methodology:

The Methodology includes the research design as well as the technique used for data collection and analysis.

Research Design:

This study adopted a descriptive research design. Finding the relationship between variables using descriptive study will be possible. Because it attempts to give conclusive evidence for examining the association between two or more variables under examination, descriptive research is related to this study in this way: (Creswell, 2009). Recently, will be utilized to fix the association between capital structure and financial performance, according to a study.

The 25 commercial banks in Sierra Leone were included in this study's target population. A total of 10 years (2011–2020) of data from these commercial banks were included in the research. The 15 banks that were in full operation from 2011 to 2020 were specifically chosen for the study. This selection process was carried out in order to establish a balanced panel.

Data Collection:

A variety of secondary sources were used to acquire the data needed for the study. It is anticipated that secondary data will be acquired from the Central Banks of Sierra Leone, as well as from commercial banks' publicly available financial reports and individual bank websites. Every year, data on interbank borrowings, shareholders' equity, as well as long and short-term debt levels, were gathered. Publications can be found at https://www.bsl.gov.sl/Publications.html, https://mof.gov.sl/.

Data Analysis:

The research applies a panel data regression model that employs the ordinary least squares method (OLS). It will be examined what the relationship is between the independent and dependent variables using the normal ordinary least square method, which will be performed using the E-view 10 software. The Ordinary Least Squares strategy is a mathematical approach for selecting the most acceptable solution for a

model while seeking to reduce the number of residual squares. This approach is widely utilized in multiple regression and estimation. (Peprah and Mensah, 2017). The descriptive analysis of the data, which comprised the mean, range, minimum and maximum values, and standard deviations, was used to represent the distribution and dispersion of the data (Saunders et al, 2013). In addition, to find out, a panel data estimation model was applied. whether or not the study's independent components had a significant impact on the dependent variable.

Empirical Model:

Model Specification:

The model that was used in the inquiry is included in this report.

$$Y_{it} = \alpha + \beta X_{it} + \varepsilon_{it} \quad \text{(i)}$$

Wherein:

Dependent Variables

- **Yit** = ROA
- **i** = refers to the different Commercial Banks
- **t** = refers to the time period involved.

Independent Variables

- **Xit** = interbank borrowing, equity, debt-equity ratio, and client/customer deposits are all terms that can be used interchangeably.
- **εit** = signifies error term

Table 1: Variables Measurement and Implementation

Variable	**Variable Type**	**Acronym**	**Measurement**
Financial Performance	Dependent	ROA	Net income/total assets
Short-term-debt to Asset-ratio	Independent	SDAR	Total current liabilities / total assets
Long-term debt to Asset-ratio	Independent	LDR	Ratio of long-term liabilities to total asset Worth
Inter-bank borrowing	Independent	IBBG	Total net borrowing from another banks/total Assets
Equity	Independent	EQT	Total value of shareholders’ equity at the end of the financial year

Model Specification Test

Panel data analysis can be carried out using either the fixed effects model or the random effects model. After estimating the effects of variables that change over time, the fixed-effects (FE) model is utilized to assess their effects on the outcome. The random effects (RE) model, on the other hand, states that variation within entities is random and unrelated to the independent causes. Consequently, the entity-specific features can have an impact on the dependent variable when the RE model is used (Baltagi, 2021).

Diagnostic Test:

A diagnostic test will be performed to decide whether or not the data is suitable for panel data analysis The goal of these tests was to determine whether or not the data corresponded to the regression assumptions. Among the tests carried out were heteroscedasticity, serial correlation, and multicollinearity tests, among others.

The Hausman experiment was conducted to investigate which model was best suited for the data, comparing the null hypothesis that RE is the better model to the alternate hypothesis that FE is the preferable model (Schreiber, 2008)

Empirical Results and discussions

Table 2: Descriptive Statistics

Variable		Mean	Std. Deviation	Min	Max
ROA	Overall	0.1019	0.0876	-1.1859	**0.4156**
	Between		0.0540	-0.0377	**0.2027**
	Within		0.0695	-0.0526	**0.3317**
Short term debtasset ratio	Overall	0.7876	0.0762	0.5087	**0.9193**
	Between		0.0636	0.5953	**0.9019**
	Within		0.0432	0.6052	**0.9062**
Long term debt asset ratio	Overall	0.0485	0.0915	-0.8850	**0.2955**
	Between		0.0595	-0.1666	**0.2302**
	Within		0.0701	-0.6700	**0.2603**
Interbank borrowing/total Assets	Overall	0.2848	0.3693	-0.2007	**0.8716**
	Between		0.0392	0.1931	**0.3620**
	Within		0.3672	-0.2040	**0.8409**

	Overall		0.5622	6.2728	**8.5763**
Log of Equity	Between	7.4499	0.5565	6.4122	**8.4737**
	Within		**0.1205**	**7.1203**	**7.9863**

A descriptive analysis of the data had been conducted prior the panel model analysis, with the findings shown in Table 2. According to the statistics, overall debt accounts for 54.78 % of overall financing of a firm's assets. Long-term debt accounts for 15.57 %, while short-term debt accounts for 39.21 percent. According to the findings, the banks' average return on assets was 0.1019, with a short-term debt assets ratio of 0.7876. Furthermore, the log of long-term assets averaged 7.4499, while the long-term debt asset ratio was 0.0485, according to the findings.

Table 3: Correlation

	SDAR	**LDAR**	**IBBG**	**EQ**	**ROA**
Pearson Correlation	1				
SDAR Sig. (2-tailed)					
N	170				
Pearson Correlation	-.524**	1			
LDAR Sig. (2-tailed)	.000				
N	170	170			
Pearson Correlation	.174**	-.062	1		
IBBQ Sig. (2-tailed)	.001	.255			
N	170	170	170		
Pearson Correlation	-.150**	.095	-.164**	1	
EQ Sig. (2-tailed)	.005	.080	.002		
N	170	170	170	170	
Pearson Correlation	-.067	-.011	.444**	.317**	**1**
ROA Sig. (2-tailed)	.216	.839	.000	.000	
N	**170**	**170**	**170**	**170**	**170**

**. at the 0.01 level, the correlation is significant (2-tailed).

In regards to the data in table 3, there have been no two independent variables that were substantially linked with one another. Short term debt asset ratio and long-term debt asset ratio, on the other hand, had a significantly negative relation (r = -0.524; p 0.05), whereas long term assets and equity had a strong and positive relation (r = 0.663; p 0.05). Interbank borrowing was also significantly linked to return on assets (r = 0.444; p 0.05). The log of total assets, on the other hand, was used as a control variable in the study.

Analysis of the Diagnostic Test

The outcomes of the diagnostic examination of the panel data can be obtained in this part to check that the model didn't breach any of the regression criteria.

Table 4: Time-Fixed Effects Test Results

Model	Dependent variable	F-value	p-value
1	**Return on Asset**	**0.978**	**0.1810**

The first testing was to see if there were any significant fixed effects associated to time. If these effects are discovered, the model is repeated with the addition of dummy variables to reflect the time-dependent fixed effects. Table 4 shows the results, which show that significant time fixed effects (p > 0.05). As a result, there's no need to include dummy variables to account for time-dependent fixed effects.

Table 5: Heteroscedasticity using a Modified Wald Test

Model	Dependent variable	χ^2-value	p-value
1	**ROA**	**2.61**	**0.1792**

The Modified Wald test was used to determine heteroscedasticity. It was carried out to ascertain whether the error terms' variance was constant. As a result, whenever the error terms do not possess constant variances, this model's outputs can be inefficient, and estimations can be skewed. Table 5 shows the results, which found no trace of heteroscedasticity (p > 0.05).

Table 6: Wooldridge-Drukker Test of Serial Correlation

Model	Dependent variable	F-value	p-value
1	**ROA**	**0.976**	**0.3915**

The Wooldridge-Drukker test was used to determine serial correlation. It was conducted to see if the model's error terms were linked to the error terms from previous years. The results, shown in Table 6, showed that there was no indication of serial correlation for the model's error terms (p > 0.05).

The data was found to be suitable for analysis employing the panel model after a diagnostic test (FE or RE). The next part explains how the model to be utilized was chosen, as well as the model's results.

Analysis of relating to the Panel Data

Table 7: Results of the Hausman Test

Model	Dependent variable	Chi^2 value	Prob > Chi^2
1	**Return on Assets**	**89.83**	**0.0000**

To determine whether of the two panel models (FE or RE) was the most suited, a Hausman test was performed. This was due to the fact that the data set included both time series (10 years) and cross sectional (15 banks) data. Because the firm-specific impacts are undetermined, Hausman, (1978) presents a test that examines the coefficient estimates using RE and correlated panel specific effects assumptions. Table 7 shows the results of the test, which show that the chi square value remained significant ($\chi^2 = 89.83$; $p < 0.05$) showing fixed effects model was most appropriate for the data.

Table 8: Regression with Fixed Effects Panels on ROA

Fixed-effects (within) regression				**Number of obs = 170**		
Group variable: Bank				**Number of groups = 15**		
R-sq:	within = 0.4609			**Obs per group: min = 10**		
	between = 0.3156			**avg = 10.0**		
	overall = 0.0313			**max = 10**		
				F(5, 301) = 51.48		
Corr (u_i, Xb) = -0.9351				**Prob > F = 0.0000**		
ROA	Coef.	Std. Err.	t	P>t	[95% Conf.	**Interval]**
SDAR	-.014227	.1679563	-0.08	0.933	-.3447443	**.3162903**
LDAR	.1316084	.110023	1.20	0.233	-.0849033	**.3481202**
IBBG	.0417289	.0120476	3.46	0.001	.0180208	**.0654371**
EQ	.1783623	.0813794	2.19	0.029	.0182177	**.3385068**
_cons	2.367693	.2993376	7.91	0.000	1.778634	**2.956753**
sigma_u	.19872034					
sigma_e	.05412069					
Rho	.93094932	**(fraction of variance due to u_i)**				
F test that all u_i=0:	**F(33, 301) = 6.43**			**Prob > F = 0.0000**		

According to the data in table 8, the overall r-squared is 3.13 percent, indicating that the independent variables used to signify capital structure in the given scenario and the implications 3.13 percent of the variability in ROA.

Also, the internal r-squared is 46.09 percent, showing that the model explained 46.09 percent of the changes within the variables. The r-squared value is 31.56 percent, means that the model described 31.56 percent of the variance between the variables. The entire model was also shown to be significant ($F = 51.48$; $p < 0.05$). It thus revealed that at least one of the regressors really wasn't zero, implying that it had some predictive potential.

Also, significant predictors of ROA were interbank borrowing as a percentage of assets ($= 0.0417$; $p < 0.05$) and log of equity ($= 0.1784$; $p < 0.05$). As a result, a 0.0417 rise in ROA results from a unit increase in interbank borrowing as a proportion of assets. Moreover, a one-unit rise in equity values would result in an increase in ROA of 0.1784 percent. According to the data, short-term debt-to-asset ratio (-0.0142; $p > 0.05$) and long-term debt-to-asset ratio ($= 0.1316$; $p > 0.05$) were not significant drivers of ROA in the banking business. Furthermore, the control variable, log of assets, had significantly negative impact on ROA ($= -0.4639$; $p < 0.05$), demonstrating that major banks were less lucrative due to scale imbalances.

Discussion of the Results

Short-Term Debt has an Impact on Financial Performance.

The research's main goal was to investigate the impact of short-term debt-to-asset ratio on Sierra Leone's commercial bank financial performance. The short-term debt asset ratio had no significant influence on commercial bank profitability (-0.0142; $p > 0.05$), according to the study. The new data disprove the trade-off concept (Jensen and Meckling, 1976), stated that more successful firms have greater debt ratios. Because the study's findings found no relation with debt and profitability, this is the case. The outcomes of the research similarly contradict those of Abor (2005) who identified a link between short-term debt and corporate profitability. Abor (2005), on the other hand, did not conduct a study in the banking industry.

Long-Term Debt has a negative Impact on Financial Performance.

A secondary goal of the study was to look into the influence of long-term debt-to-asset ratio on commercial banks. Sierra Leone's financial performance The long-term debt-to-asset ratio had no effect on the profitability of the commercial banks studied ($= 0.1316$; $p > 0.05$), according to the findings. Sheikh and Wang (2013) discovered a negative link between long-term debt asset ratio and return on assets, which contradicts these findings.

Interbank Borrowing has an Impact on Financial Performance.

The study's aim was to see how interbank borrowings affected Sierra Leone's commercial banks' financial performance. The results of the study demonstrate that interbank borrowing as a percentage of assets is a strong predictor of banks'

profitability ($\beta = 0.0417$; $p < 0.05$). The current findings, on the other hand, contradict those of Pouw and Kakes (2013), who found that commercial banks that utilised inter-bank lending had much poorer profitability as evaluated by ROA.

Equity's Impact on Financial Performance

The study's ultimate goal was to accurately measure the influence of equity on Sierra Leone's commercial banks' financial performance. The log of ($\beta = 0.1784$; $p < 0.05$) was found to be a significant favorable determinant of ROA in the study. This backs with Myers' (1984) pecking order theory, which states that companies with high equity and low debt are more likely to claim high profit margin.

Conclusion

The relevant conclusions are derived based on the findings of the investigation. Firstly, the short-term debt-to-asset ratio has little impact on commercial bank profitability. The short-term debt ratio has no discernible impact on bank profitability. This can be due to the close supervision and regulation that is observed in the banking sector which limits the control of management on how much short-term debt they can have in their banks.

Secondly, the long-term debt-to-asset ratio has no bearing on commercial bank profitability. Furthermore, the analysis found that long-term debt accounts for a very modest portion of bank capital. As a result, its impact on the bank's activities and efficiency is decreased, and so cutting or increasing the long-term debt amount has insignificant implications for the bank 's entire operations.

Thirdly, the ratio of interbank borrowings to assets has a considerable impact on commercial banks' financial performance in Sierra Leone. As a result, the study suggests that interbank borrowing is advantageous to businesses, implying that banks with a large number of interbank lenders will bid less fiercely in interbank lending auctions and thus incur reduced liquidity costs. Furthermore, according to the report, banks with a large portfolio of high lending connections are important for meeting their liquidity obligations, which has a beneficial impact on their performance.

Finally, the study reveals that equity does have a major impact on commercial banks' financial performance in Sierra Leone. The capital strength of a bank is determined by its degree of equity, that also shows the bank's sustainability and risk level. According to the recent study results, a large capital base appears to boost profitability. This could be because banks with a strong capital base lure a lot of depositors, clients, and institutions.

Recommendations

We make the related recommendations. Initially, because long-term or short-term debt-to-asset ratios have no bearing on commercial bank profitability, the investigation advises bank executives to concentrate on achieving an acceptable debt level which complies with regulatory requirements, rather than focusing on other parameters that may be essential in impacting profitability. Managers must, however,

guarantee that their firms' sustainability is not jeopardized by high amounts of short- or long-term debt, which might severely impact the bank's liquidity situation or cash flows.

Moreover, the report advises bank executives to concentrate on strengthening their banks' capital positions, as this has been shown to boost profitability. Banks are no exemption when it comes to capital structure. Nevertheless, banking capital stability is crucial since banks' financial statements have not had large long-term debt levels, leaving equity as the only main source of long-term financing. Bank management can strengthen their banks' capital stability through right issue, issuing bonus shares, or retaining a large percentage of profits.

Finally, interbank borrowing also known to be an essential element in establishing commercial banks' profitability. Managers of banks must have strong connections with other banks so that they can borrow money from them when they need it. Banks may be able to manage liquidity problems by utilizing established interbank ties. Furthermore, in the interbank market, relationship lending has the potential to limit banks' liquidity provision expenditures, so indirectly increasing profitability.

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