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IMPACT OF CAPITAL STRUCTURE ON PROFITABILITY OF COMMERCIAL BANKS IN TANZANIA

Abstract

This paper aims to examine how the capital structure, specifically debt and equity, affects the profitability of commercial banks in Tanzania, using panel data from 2017 to 2021. A panel data research design was employed, utilizing secondary data extracted from audited financial statements of commercial banks. Return on assets (ROA) served as the dependent variable, while the independent variables included debt capital, equity capital, and the debt-to-equity ratio. Results indicated that the variables were initially not normally distributed, necessitating normalization. Correlation analysis revealed no multicollinearity problems among the variables. Based on the Hausman test, the fixed effects model was identified as the appropriate model. The analysis showed that a 1% increase in debt capital increases the profitability of a commercial bank by 16.79%. The positive coefficient for debt implies opportunities for commercial banks to enhance profitability through debt financing. In contrast, a 1% increase in the debt-to-equity ratio is associated with an 18.07% decline in profitability (ROA), indicating a negative relationship. Similarly, an increase in equity capital is linked to a decline in profitabil-

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ity, holding other factors constant. The study advocates for a comprehensive assessment and consideration of situational factors when making capital structure decisions. The inverse relationship between the debt-to-equity ratio and profitability also suggests that excessive debt may pose financial risk, making the bank less attractive to potential investors.

Key Words:

capital structure, commercial banks, profitability.

JEL: G21, G32, O55.

1 figure, 2 formulas, 3 tables, 23 references.

Problem Statement

The composition of capital is a critical choice within the realm of corporate finance and pertains to the method a company uses to fund its assets, particularly when it involves a blend of debt and equity (Gul & Cho, 2019). The significance of this topic arises from the fact that capital structure has a direct impact on the profitability of corporations, regardless of their specific industry. Capital structure can be succinctly described as the mix of debt and equity that is tailored to achieve the management's objective of maximizing shareholder profitability or wealth. Shareholders' wealth can be gauged by the present profitability of the company's stock, and to attain this goal financial management of the firm, particularly financing decisions, must be made with great care to lower the company's cost of capital (Goyal et al., 2013). The blend of debt and equity that accomplishes the aforementioned objective (lowering overall cost of capital) is referred to as the optimal capital structure. Companies are in need of funds in order to satisfy their daily targets and meet their daily obligations (Myers, 2001). These funds could be obtained from either internal or external sources that generate either long-term or short-term financial commitments. The owner's funds (equity, share capital, and

retained earnings) and long-term debts are the two primary sources from which a firm might raise the long-term capital that it requires (Myers, 2001).

Capital structure has evolved into one of the most extensively examined areas in both theoretical and empirical finance literature (Uddin et al., 2022). Pham et al. (2022) investigated the impact of capital structure on the profitability of commercial banks in Vietnam. Their study analyzed data from 30 commercial banks over the period 2012-2018, a critical phase of the country's banking system restructuring. The findings revealed that non-deposit liabilities positively affected bank's profitability, unlike deposit liabilities. In contrast, other studies have yielded different results. For example, Mukhiya (2024) studied the impact of the leverage ratio on the profitability of commercial banks in Nepal. This study analyzed 12 commercial banks and used net interest margin as a proxy measure for bank's profitability. The findings revealed that the leverage ratio had a negative impact on the profitability of commercial banks.

Studies have also varied in their focus, with some giving relatively less attention to the determinants of capital structure (Endang et al., 2020) and others concentrating more on the impact of capital structure on the profitability of publicly traded companies (Ayalew & McMillan, 2021; Okeke, 2023). The Government of Tanzania has been implementing various measures to improve the operation of the banking system and ensure the sustainability of the banking sector. These measures include, but are not limited to, minimum required capital, strengthening corporate governance, improving anti-money laundering measures, establishing a secured transactions law and collateral registry, and issuing revised regulations on agent banking for banks and financial institutions, in an effort to revitalize banking service delivery (Bank of Tanzania, 2021).

Despite the government's attempts to strengthen and create an ideal atmosphere for banking operations, particularly for commercial banks, the number of commercial banks in the banking sector decreased from 40 in 2018 to 34 in 2021. This decline is the result of the inability to meet regulatory capital requirements, which is hindering economic growth (Bank of Tanzania, 2021).

In light of the points raised previously, **the general purpose** of this study is to analyze the impact of capital structure on the profitability of licensed commercial banks in Tanzania from 2017 to 2021. Specifically, the study aims to:

i. Determine the effect of equity capital utilization on the return on assets (ROA) of commercial banks in Tanzania.

ii. Determine the impact of debt capital utilization on the ROA of commercial banks in Tanzania.

iii. Determine the impact of the debt-to-equity ratio on the ROA of commercial banks in Tanzania.

The remaining part of this paper is organized into four parts. The *Literature Review* presents an overview of empirical and theoretical literature. The *Methodology* section describes the research methodology, including the data and model used in the analysis. The *Research Results* section covers the findings and discussion, which also includes a comparison with findings from similar previous studies. Finally, the *Conclusions* section outlines the conclusions, implications, and recommendations derived from the study.

Literature Review

Different studies have explored the relationship between capital structure and profitability in commercial banks. For example, Pham et al. (2022) examined the relationship between capital structure and profitability of commercial banks in Vietnam, using data from 30 private commercial banks in panel data analysis (2012-2018). The findings revealed a positive impact of deposit and non-deposit liabilities on profitability. Mukhiya (2024) studied the relationship between capital structure and bank profitability in Nepal, using data from 12 banks and net interest margin (NIM) as a measure of profitability. The study found that the leverage ratio had a significant positive impact on bank profitability.

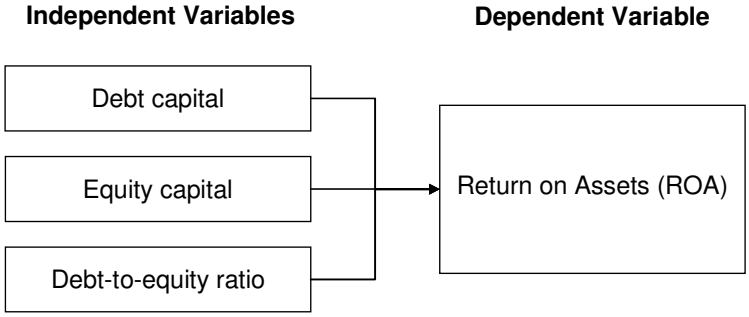
In Ethiopia, Ayalew and McMillan (2021) investigated the relationship between capital structure and bank profitability, using data from 16 private banks in a panel-fixed effects model, covering the period 2013/14 to 2018/19. The results indicate that both short-run and long-run debt ratios tend to be associated with bank profitability. Gohar and Rehman (2016) examined the impact of capital structure on bank performance in Pakistan over the period from 2009 to 2013, using return on assets (ROA), return on equity (ROE), and earnings per share (EPS) as measures of bank performance and long-term debt-to-capital ratio, short-term debt-to-capital ratio, and total debt-to-capital ratio as capital structure determinants. The study found a positive relationship between the determinants of capital structure and bank performance.

In Nigeria, Okeke (2023) applied multiple regression analysis to examine the impact of financial leverage on the profitability of recapitalized banks from 2010 to 2021. The findings revealed that financial leverage had a significant negative effect on profitability. Arhinful et al. (2023) investigated how capital structure affected the performance of financial institutions in Ghana, using a panel random effects model as the appropriate method. The study found that the use of debt had significant impact on profitability, compared to equity financing.

The relationship between the variables forms the conceptual framework (Figure 1). The variables are divided into independent and dependent. According to Flannelly et al. (2014), independent variables will typically accept changes in the effect that are exerted on dependent variables.

Figure 1

Conceptual framework



Source: authors' own work (2023).

This study is built on the *trade-off theory* proposed by Myers (1984). The theory suggests that firms face a trade-off when determining their optimal capital structure. This theory takes into account the benefits of tax shields provided by debt, which lower the overall cost of capital, and the financial distress costs associated with high debt levels. In essence, the trade-off theory posits that firms aim to strike a balance between the tax advantages of debt and the increased financial risk that comes with higher leverage. According to this theory, when a firm increases its debt, it can benefit from interest expense tax deductions, leading to a reduction in the firm's tax liability. However, beyond a certain point, the costs of financial distress–including potential bankruptcy and associated legal and agency costs–start to outweigh the tax advantages of debt. Firms aim to find the level of debt that optimizes their overall cost of capital and minimizes these financial distress costs, while still reaping the benefits of tax shields (Myers, 1984).

Methodology

Data and variables selection

This study utilizes panel data from 23 commercial banks over a five-year period, from 2017 to 2021. Secondary data were extracted from the financial reports of these commercial banks. The selection of the banks was based on data availability and the main objective of the study. The dependent variable in this study is the Return on Assets (ROA), a financial ratio that measures a company's

profitability in relation to its total assets. ROA provides insight into how efficiently a company utilizes its assets to generate profits (Petersen & Schoeman, 2008). It is calculated by dividing net profit by total assets. The independent variables include debt capital, equity capital, and the debt-to-equity ratio.

Model selection and analysis

Since the analysis of the relationship in this study involved the use of panel data, the following model was selected to explain the relationship between the variables.

Random effects model:

The random effects model operates under the assumption that the independent variables are not correlated with the unobserved heterogeneity, also known as individual-specific effects. This implies that there is no systematic relationship between the explanatory variables and the randomness of these individual-specific effects. While taking into consideration individual variations, the random effects model computes the mean correlation between variables across all entities. The model treats the entity-specific effects are random and uncorrelated with the independent variables.

The random effects model can be specified as follows:

$$ROA_{it}=\alpha_i+\beta_1 EQUITY_{it}+\beta_2 DEBT_{it}+\beta_3(DEBT\text{-}EQUITY)_{it}+u_i+\epsilon_{it} \quad (1)$$

where: ROA_{it} represents the return on assets for entity *i* at time *t;* α is the overall intercept; $\beta_1\beta_2,\beta_3$ are the coefficients for the independent variables; u_i represents the random effect specific to entity *i;* ϵ_{it} is the idiosyncratic error term; $EQUITY_{it}$ is the equity for entity *i* at time *t*; $DEBT_{it}$ is the debt for entity *i* at time *t; DEBT-EQUITY*$_{it}$ is the debt-to-equity ratio for entity *i* at time *t.* β_1 represents the change in ROA for a one-unit change in *EQUITY,* holding other factors constant. β_2 represents the change in ROA for a one-unit change in *DEBT,* holding other factors constant. β_3 represents the change in ROA for a one-unit change in the *DEBT-EQUITY* ratio, holding other factors constant.

Fixed effects model:

Individual-specific effects are assumed to be correlated with the independent variables in the fixed effects model. By incorporating an individual fixed effect for each entity, this model adequately accounts for all time-invariant unobserved heterogeneity. A fixed effect model can help account for unobserved heterogeneity when it is constant over time and correlates with the independent variables. In this study, the dependent variable is the Return on Assets (ROA), while the independent variables are EQUITY, DEBT, and DEBT-EQUITY. The model can be specified as follows:

$$ROA_{it}=\alpha_i+\beta_1 EQUITY_{it}+\beta_2 DEBT_{it}+\beta_3(DEBT\text{-}EQUITY)_{it}+\epsilon_{it} \quad (2)$$

Where: ROA_{it} represents the return on assets for entity *i* at time *t,* α_i is the entity-specific intercept capturing fixed effects, $\beta_1, \beta_2, \beta_3$ are the coefficients for the independent variables, ϵ_{it} is the error term, $EQUITY_{it}$ is the equity for entity *i* at time *t,* $DEBT_{it}$ is the debt for entity *i* at time *t*; $DEBT\text{-}EQUITY_{it}$ is the debt-to-equity ratio for entity *i* at time *t.* β_1 represents the change in ROA for a one-unit change in *EQUITY,* holding other factors constant. β_2 represents the change in ROA for a one-unit change in *DEBT,* holding other factors constant. β_3 represents the change in ROA for a one-unit change in the *DEBT-EQUITY* ratio, holding other factors constant.

To determine the appropriate estimation method (fixed effect or random effect), the Hausman test was applied. This test examined the null hypothesis that the random effect was more suitable. As a general principle, if the probability value is significant ($P < 0.05$), the null hypothesis is rejected in favor of the alternative, indicating that the fixed effect estimation is more suitable.

Research Results

Normality test and correlation analysis

We started by testing normality of the variables and found that variables were not normally distributed. Therefore, we normalized the variables by subjecting them into logarithm form. Then we tested the null hypothesis that variables follow normal distribution against the alternative that variables do not follow normal distribution. Findings indicate that variables are normally distributed since we failed to reject the null hypothesis (since probability is greater than 0.05).

To quantify the strength and direction of the relationship between the variables, correlation analysis was performed. It is a fundamental technique in data analysis, providing insights into the patterns of association between different variables (Gogtay & Thatte, 2017).

The results of the correlation analysis, presented in Table 1 (correlation matrix table), revealed no multicollinearity problems among the four financial variables: Return on Assets (ROA), debt-to-equity ratio (DEBT-EQUITY), total debt (DEBT), and total equity (EQUITY). The problem of multicollinearity arises if the correlation between variables exceeds 80%.

Table 1

Results of correlation analysis

	ROA	*DEBT-EQUITY*	*DEBT*	*EQUITY*
ROA	*1.0000*			
DEBT-EQUITY	*-0.3011*	*1.0000*		
DEBT	*-0.3630*	*0.6363*	*1.0000*	
EQUITY	*-0.1509*	*-0.0185*	*0.5890*	*1.0000*

The Hausman Specification Test

The Hausman test is a statistical test used in econometrics and panel data analysis to determine whether a model with random effects (RE) or fixed effects (FE) is more appropriate for a given dataset (Pace & LeSage, 2008). It helps to decide whether individual-specific effects (unobserved heterogeneity) in panel data should be treated as random (RE) or fixed (FE) across individuals. To ensure the correct specification of our econometric model, the Durbin–Wu–Hausman test was conducted to decide between the fixed effects and the random effects estimation. Under this test, the null hypothesis is that the random effects model is more appropriate. The results showed a probability of 0.0323 ($P < 0.05$), leading to the rejection of the null hypothesis in favor of the fixed effects model. The results of the Hausman test are shown in Table 2.

Table 2

Hausman fixed random test

---- Coefficients ----			
(b)	*(B)*	*(b-B)*	*sqrt (diag (V_b-V_B))*
Fixed	*Random*	*Difference*	*S.E.*
EQUITY214.9198	-61.52003	-153.3998	65.36682
DEBT 16.7862	4.788449	11.99775	5.163013
DEBT-EQUITY -18.06747	-5.271277	-12.79619	5.568598
b = consistent under Ho and Ha; obtained from xtreg			
B = inconsistent under Ha, efficient under Ho; obtained from xtreg			
Test: Ho: difference in coefficients not systematic			
chi2 (3) = (b-B)'[(V_b-V_B)^(-1)](b-B)			
= 6.43			
Prob>chi2 = 0.0323			

The test involves comparing the coefficients obtained from the fixed effects (b) and random effects (B) models. The independent variables in the model are *EQUITY, DEBT,* and *DEBT-EQUITY.* Coefficients: For *EQUITY*, the coefficient in the fixed effects model is -214.9198, and in the random effects model, it is -61.52003. For *DEBT,* the coefficient in the fixed effects model is 16.7862, and in the random effects model, it is 4.788449. For *DEBT-EQUITY*, the coefficient in the fixed effects model is -18.06747, and in the random effects model, it is -5.271277. Difference in Coefficients: The «b-B» column shows the differences between the coefficients obtained from the fixed and random effects models.

Standard Errors: The «sqrt (diag (V_b-V_B))» column represents the square root of the diagonal elements of the difference in covariance matrices between the fixed and random effects models.

Hausman Test Results: The Hausman test statistic is 6.43 and the associated probability (Prob>chi2) is 0.0323. The test is based on a chi-square distribution with 3 degrees of freedom (chi2 (3)). The null hypothesis (Ho) states that the differences in coefficients between the fixed effects and random effects models are not systematic, meaning that either model can be used without a significant difference. The alternative hypothesis (H1) is that the differences are systematic, indicating that one model is consistently better than the other. Since the probability (0.0323) is less than the significance level of 0.05 (assuming a common significance level of 5%), we reject the null hypothesis. This implies that there is evidence to suggest that the differences in coefficients between the fixed and random effects models are systematic, and one of the models is more appropriate for the data than the other. In this case, the fixed effects model seems to be preferred over the random effects model based on the results of the Hausman test.

Fixed effects model

To account for individual-specific or group-specific effects that are constant over time but vary across different entities, and based on the results of Hausman test, a fixed effect regression model was used for analysis. The results are presented in Table 3.

The results of the fixed effects estimation in Table 3 show that the sample characteristics are as follows: number of observations (cases) = 115, number of groups (individuals or entities) = 23.

The coefficient for EQUITY (-214.9198) suggests that for a given firm, a one-unit increase in equity is associated with a decrease of 214.9198 units in ROA, holding all other factors constant. The negative coefficient indicates an inverse relationship between equity and ROA. The *t*-value of -2.86 and *p*-value of 0.005 imply that this relationship is statistically significant at the 1% level.

Table 3

Fixed effects regression analysis

Fixed-effects (within) regression				Number of obs = 115	
Group variable: id				Number of groups = 23	
R-sq:				Obs per group:	
within = 0.1013				min = 5	
between = 0.2334				avg = 5.0	
Overall = 0.8913				max = 5 F (3, 89) = 3.34	
Corr (u i, Xb) = -0.8546				Prob > F = 0.0227	
ROA	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]
EQUITY	-214.9198	75.23881	-2.86	0.005	-364.4177 -65.42186
DEBT	16.7862	6.058615	2.77	0.007	4.747863 28.82454
DE/EQ	-18.06747	6.401452	-2.82	0.006	-30.78702 -5.347921
_cons	328.5208	114.1831	2.88	0.005	101.6414 555.4001
Sigma u 2.6097831					
Sigma e 1.5621304					
rho .7362238 (fraction of variance due to u_i)					
F- test that all u i=0: F (22, 89) = 3.66 Prob > F = 0.0000					

The coefficient for DEBT (16.7862) indicates that for a given firm, a one-unit increase in DEBT is associated with an increase of 16.7862 units in ROA, holding all other factors constant. The positive coefficient signifies a direct relationship between DEBT and ROA. The *t*-value of 2.77 and probability of 0.007 suggest that this relationship is statistically significant at the 1% level.

In contrast, the coefficient for DE/EQ (-18.06747) shows that for a given firm, a one-unit increase in the debt-to-equity ratio (DE/EQ) is associated with a decrease of 18.06747 units in ROA, holding all other factors constant. The negative coefficient indicates an inverse relationship between DE/EQ and ROA. The *t*-value of -2.82 and probability of 0.006 implies that this relationship is statistically significant at the 1% level.

The constant coefficient of 328.5208 implies the intercept term, which represents the expected ROA when all independent variables are zero. The *t*-value of 2.88 and probability of 0.005 indicate that the intercept is statistically significant at the 1% level.

The within R-squared indicates that about 10.13% of the variability in ROA within firms over time is explained by the independent variables. The between R-squared shows that about 23.34% of the variability in ROA between different firms is explained by the independent variables. The overall R-squared indicates that

about 89.13% of the total variability in ROA is explained by the independent variables, accounting for both within and between variations.

F-statistic (3, 89) = 3.34, Prob > F = 0.0227: This indicates that the model is statistically significant overall at the 5% level, meaning that the independent variables collectively have a significant effect on ROA. Correlation *(u_i, Xb)* = -0.8546: This suggests a high negative correlation between the fixed effects and the predicted profitability, indicating that unobserved individual effects are strongly correlated with the predictors. Sigma values: sigma (2.6097831) represents the standard deviation of the unobserved individual effects, while sigma (1.5621304) represents the standard deviation of the idiosyncratic error. The rho value (0.7362238) indicates that approximately 73.62% of the variance in ROA is due to differences across firms (between variance). F test that all u_i=0: F (22, 89) = 3.66, Prob > F = 0.0000: This result confirms the significance of firm-specific effects (u_i), justifying the use of a fixed-effects model.

These findings are consistent with those of Pham et al. (2022), which demonstrated a positive relationship between profitability and both total deposit and non-deposit liabilities in Vietnam. The results suggest that as commercial banks mobilize capital through non-deposits, financial leverage increases, which eventually increases the impact on profitability. The negative relationship between the use of equity capital and the profitability of commercial banks in Tanzania can be associated with the trade-off theory of capital structure. According to this theory, firms aim to find an optimal balance the advantages of debt financing, including tax benefits, against the associated costs, particularly the costs of financial distress. In the Tanzanian context, this negative relationship indicates that commercial banks may rely more on equity capital, potentially leading to suboptimal capital structures. This approach might be driven by a desire to avoid the increased financial distress costs associated with higher debt levels, in line with the theory's emphasis on risk management. The negative relationship underscores the importance of making informed trade-offs between the benefits and costs of different sources of capital and highlights the applicability of the trade-off theory in explaining the capital structure decisions and profitability outcomes of Tanzanian commercial banks.

This means that the level of debt a firm has in its capital structure plays a crucial role in determining its overall profitability. Several studies, including those conducted by Mills and Mwasambili (2022), Doorasamy (2021), Alghifari et al. (2022), Cheng et al. (2010), and Cuong and Canh (2012), support this finding. This also aligns with the principles of the trade-off theory of capital structure. The theory suggests that firms aim to balance the benefits of debt financing, such as tax advantages, with the associated costs, particularly financial distress costs. The positive relationship indicates that Tanzanian commercial banks are actively seeking this balance by leveraging the tax benefits of debt, optimizing their capital structure, and effectively managing financial distress costs. In essence, this consistency underscores the relevance of the trade-off theory in explaining how

commercial banks in Tanzania make capital structure decisions and how these decisions impact their profitability.

The coefficient for *DEBT-EQUITY* is -18.06747, indicating that a one-unit increase in the debt-to-equity ratio is associated with a decrease of approximately 18.07 units in ROA. The negative coefficient suggests an inverse relationship between the debt-to-equity ratio and ROA. The *t*-value (-2.82) and probability (0.006) indicate that the coefficient is statistically significant at the 0.05 significance level. The 95% confidence interval suggests that the true value of the coefficient is likely to fall between -30.79 and -5.35. The negative relationship between these variables indicates that as the debt-to-equity ratio increases, representing a higher proportion of debt relative to equity in the capital structure, the firm's profitability tends to decrease.

The finding that higher debt-to-equity ratios are associated with lower firm profitability is consistent with the findings of a previous study conducted by Rayan (2008), which examined the relationship between capital structure and firm profitability, concluding that higher debt levels reduce profitability. The negative relationship between the debt-to-equity ratio and firm profitability suggests that excessive debt may pose financial risks and reduce the company's attractiveness to investors. High debt levels can increase financial leverage and interest expenses, making firms more vulnerable to economic downturns and interest rate fluctuations.

The constant coefficient represents the intercept term in the model, which in this case is 328.5208. This value indicates the predicted ROA when all independent variables are zero. The *t*-value (2.88) and probability (0.005) indicate that the intercept term is statistically significant at the 0.05 significance level. The 95% confidence interval suggests that the true value of the intercept is likely to fall between 101.64 and 555.40. Overall, the fixed-effects regression model indicates that the independent variables have strong explanatory power within each group, and the model as a whole is statistically significant.

Conclusions

The study found a significant relationship between the capital structure and the profitability of commercial banks in Tanzania. Results from the analysis showed that a 1% increase in debt capital is associated with a 16.79% increase in commercial bank profitability. The positive coefficient for debt suggests opportunities for enhancing profitability of commercial banks through debt, but a comprehensive assessment of risks and situational factors is crucial for informed decision-making. This implies that debt capital can be strategically employed by banks to enhance their overall profitability, emphasizing the need for a balanced

mix of equity and debt in financial strategies. However, this also underscores the importance of prudent risk management practices to mitigate potential risks associated with increased leverage.

Regarding equity, the negative relationship between equity capital and profitability suggests that higher reliance on equity financing in the capital structure may adversely affect the bank's overall profitability. This finding indicates that increasing equity capital at the expense of debt capital may not necessarily lead to greater profitability for commercial banks in Tanzanian. The negative relationship between the debt-to-equity ratio and profitability implies that as the debt-to-equity ratio increases (indicating a higher proportion of debt relative to equity in the capital structure), the firm's profitability tends to decrease.

Overall, the results call for the proper optimal combination of capital structure to handle the risk associated with composition of debt and equity in the capital structure of commercial banks in Tanzania. Regulatory authorities should closely monitor and oversee the composition of equity and debt contained in the capital structure of commercial banks, as this may pose challenges to risk management in the banking sector. Financial regulations should reflect changes in debt and equity sizes over time to safeguard sector stability. Banks should be attentive to interest rate fluctuations and their impact on debt servicing costs in order to manage the trade-off between increased profitability and debt-related expenses. Diversifying the sources and types of debt, such as bonds, loans, and other financial instruments, can reduce dependence on a single source and enhance risk management. Additionally, optimizing the debt-to-equity ratio for each bank's specific context is essential, taking into account their risk tolerance, business model, and market conditions. These recommendations aim to help banks in Tanzania effectively utilize debt capital to drive profitability while maintaining financial stability and regulatory compliance.

Further studies on the relationship between capital structure and the profitability of commercial banks in Tanzania can offer valuable insights. First, examining the long-term effects of capital structure on bank performance, while considering changing economic conditions and market fluctuations, would offer a more comprehensive understanding of this relationship over time. Second, conducting bank-specific analyses to understand how the relationship between capital structure and profitability varies based on factors like bank size, market competition, and regional economic conditions is crucial for tailored decision-making.

References

Alghifari, E. S., Solikin, I., Nugraha, N., Waspada, I., Sari, M., & Puspitawati, L. (2022). Capital structure, profitability, hedging policy, firm size, and firm value: Mediation and moderation analysis. *Journal of Eastern European and Central Asian Research (JEECAR), 9*(5), 789-801. https://doi.org/10.15549/jeecar.v9i5.1063

Arhinful, R., Mensah, L., & Owusu-Sarfo, J. S. (2023). The impact of capital structure on the financial performance of financial institutions in Ghana. *International Journal of Finance and Banking Research, 9*(2), 19-29. https://doi.org/10.11648/j.ijfbr.20230902.11

Ayalew, Z. A., & McMillan, D. (2021). Capital structure and profitability: Panel data evidence of private banks in Ethiopia. *Cogent Economics & Finance, 9*(1), 1953736. https://doi.org/10.1080/23322039.2021.1953736

Bank of Tanzania. (2021). *Financial sector supervision annual report 2021*. https://www.bot.go.tz/Publications/Other/Banking%20Supervision%20Annual%20Reports/en/2022091410410455.pdf

Cheng, Y.-S., Liu, Y.-P., & Chien, C.-Y. (2010). Capital structure and firm value in China: A panel threshold regression analysis. *African Journal of Business Management, 4*(12), 2500-2507. https://academicjournals.org/journal/AJBM/article-full-text-pdf/B20594B27420

Cuong, N. T., & Canh, N. (2012). The effect of capital structure on firm value for Vietnam's seafood processing enterprises. *International Research Journal of Finance and Economics*, 89, 221-233.

Doorasamy, M. (2021). Capital structure, firm profitability and managerial ownership: Evidence from East African countries. *Investment Management and Financial Innovations, 18*(1), 346–356. https://doi.org/10.21511/imfi.18(1).2021.28

Endang, M. G., Suhadak, S., Saifi, M., & Firdausi, N. (2020). The effect of ownership structure and leverage towards dividend policy and corporate values. *Journal of Public Administration Studies, 5*(1), 1–4. https://doi.org/10.21776/ub.jpas.2020.005.01.1

Flannelly, L. T., Flannelly, K. J., & Jankowski, K. R. (2014). Independent, dependent, and other variables in healthcare and chaplaincy research. *Journal of Health Care Chaplaincy, 20*(4), 161–170. https://doi.org/10.1080/08854726.2014.959374

Gogtay, N. J., & Thatte, U. M. (2017). Principles of correlation analysis. *Journal of the Association of Physicians of India, 65*(3), 78-81. https://www.kem.edu/wp-content/uploads/2012/06/9-Principles_of_correlation-1.pdf

Gohar, M., & Rehman, M. W. U. (2016). Impact of capital structure on banks performance: Empirical evidence from Pakistan. *Journal of Economics and Sustainable Development, 7*(1), 32-38. https://core.ac.uk/download/pdf/234647361.pdf

Goyal, P., Rahman, Z., & Kazmi, A. A. (2013). Corporate sustainability performance and firm performance research: Literature review and future research agenda. Management Decision, 51(2), 361–379. https://doi.org/10.1108/00251741311301867

Gul, S., & Cho, H.-R. (2019). Capital structure and default risk: Evidence from Korean stock market. *The Journal of Asian Finance, Economics and Business, 6*(2), 15–24. https://doi.org/10.13106/JAFEB.2019.VOL6.NO2.15

Mills, E.F.E.A., & Mwasambili, J. J. (2022). Capital structure and firm value nexus: the Ghanaian experience. *International Journal of Applied Decision Sciences, 15*(1), 46-67. https://doi.org/10.1504/IJADS.2022.10041581

Mukhiya, R. (2024). Capital structure and profitability of commercial banks in Nepal. *The Mega Journal, 3*(1), 49-62. https://doi.org/10.3126/tmj.v3i1.63772

Myers, S. C. (2001). Capital structure. *Journal of Economic Perspectives, 15*(2), 81-102. https://doi.org/ 10.1257/jep.15.2.81

Myers, S. C. (1984). Capital structure puzzle. *The Journal of Finance, 39*(3), 574-592. https://doi.org/10.1111/j.1540-6261.1984.tb03646.x

Okeke, P. C. (2023). Financial leverage and profitability of recapitalized banks in Nigeria from 2010-2021. *Nigerian Journal of Management Sciences*, 24(1b), 344-351. https://nigerianjournalofmanagementsciences.com/wp-content/uploads/2023/02/35.-FINANCIAL-LEVERAGE-AND-PROFITABILITY-OF-RECAPITALIZED-BANKS-IN-NIGERIA.pdf

Pace, R. K., & LeSage, J. P. (2008). A spatial Hausman test. *Economics Letters, 101*(3), 282–284. https://doi.org/10.1016/j.econlet.2008.09.003

Petersen, M. A., & Schoeman, I. (2008, July 2-4). Modeling of banking profit via return-on-assets and return-on-equity. In S. I. Ao, L. Gelman, W. L. Hukins, A. Hunter, & A. M. Korsunsky (Eds.) *Proceedings of the World Congress on Engineering* (Vol. 2, pp. 828-833). Newswood Limited.

Pham, N. H., Hoang, T. M., & Pham, N. T. H. (2022). The impact of capital structure on bank profitability: Evidence from Vietnam. *Cogent Business & Management, 9*(1), 2096263. https://doi.org/10.1080/23311975.2022.2096263

Rayan, K. (2008). Financial leverage and firm value (Publication No. 27526977) [Doctoral Dissertation]. University of Pretoria. Gordon Institute of Business Science. https://repository.up.ac.za/bitstream/handle/2263/23237/dissertation.pdf?sequenc

Uddin, M. N., Khan, M. S. U., & Hosen, M. (2022). Do determinants influence the capital structure decision in Bangladesh? A panel data analysis. *International Journal of Business and Society, 23*(2), 1229–1248. https://doi.org/10.33736/ijbs.4868.2022

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