

Effects of Capital Structure on the Performance of Banks Listed at the Dar es Salaam Stock Exchange

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Abstract

The study assessed the effects of capital structure on financial performance of the banks listed at Dar es Salaam Stock Exchange using panel data of six commercial banks. Bank size and NPL were used as control variables. Various models and tests were carried out. The problem of cross-sectional dependence existed which resulted in the use of the Group Mean result that successfully produced the final result used for estimation purposes. The Group Mean model result considered ROA and ROE as the two measures of performance model both in the long run and short run.

The Group Mean result on ROA model found that short term debt, long term debt and share capital affect the financial performance of tire two listed banks while short term debt, retained earnings and share capital affect the performance of tire one listed banks. Retained earnings for tire two banks and long term debt for tire one bank have an insignificant effect on ROA. Short term debt, long term debt, retained earnings and share capital were found to affect the performance of listed banks with $NPL \leq 5\%$ while long term debt, retained earnings and share capital affect ROA for banks with $NPL > 5\%$ and short term debt has an insignificant effect.

The results of the Group Mean result on the ROE model show that short term debt, retained earnings and share capital significantly affect the financial performance of tire two listed banks. Short term debt, long term debt, retained earnings and share capital significantly affect the performance of tire one listed banks. On the other hand, only changes in retained earnings were found to have a significant effect on performance of listed banks with $NPL \leq 5\%$ and for banks with $NPL > 5\%$ retained earnings and share capital were found to have significant effects.

It is recommended that banks should focus on raising funds to finance assets using short term debt financing, equity financing obtained from stock market or capital injection and effective utilization of retained earnings. It is further recommended that banks should reduce the use of long term debt in financing assets due to their cost implication in form of interest payments.

Key Words: Capital Structure, Commercial Banks, Performance, Portfolio management

Introduction

Capital structure generally refers to how the income generating assets of a company have been financed (Baisi, 2025; Ross, et. al., 1998). The sources of finance can be in the form of short term debt, long term debt, share capital or a mixture of securities (Saad, 2010; Baisi, 2025). Financial performance is the

overall evaluation of a company's financial health, profitability, and efficiency over a specific period (Baisi, 2025). Erasmus (2008) defines financial performance as a process of quantifying the outcomes of a company strategies and operations in financial terms and stipulates that return on equity and return on asset are among many others factors which can be used by shareholder to assess the financial performance of a company.

Capital structure decisions are necessary because they affect the return to shareholders and influence company growth (Ishaya and Abduljeleel, 2014). Finance theory has shown that capital structure has a relationship with a company's financial performance. For instance, pecking order theory postulates that a firm should opt for internal sources of financing because they are less costly (Myers and Majluf, 1984; Baisi, 2025). The choice of a company's optimal financial structure involves an assessment of a number of factors including financial performance (Shubita and Alsawalhah, 2012). For that reason, the preference between debt and equity as a choice of financing influences a firm's financial performance. In fact, financial performance as measured by ROE and ROA on the one hand and financial structure on the other are interrelated (Chiang, et. al., 2002). As Singh and Faircloth (2005) correctly attested, it is indispensable that appropriate attention be paid whilst making decisions on financial structure otherwise it can lead to firm financial misery.

Studies, for example, Shubita and Alsawalhah (2012) have shown that there is a significant difference in performance between firms depending on their sources of funds and also that the pecking order theory applies to non-financial services firms in general (Abor, 2005; Kishore, 2009). This study sought to find out whether there is a reverse relationship between performance and source of financing and the applicability of the pecking order theory for financial firms in Tanzania.

Statement of the problem

From the early 1980s the world experienced banking crises with most of them taking place in developing countries (Demirguc-Kunt and Detragiache, 1998). These crises were mainly caused by banks inefficiencies in their operations like inability to raise enough liquidity from the market, under-capitalization, extreme overhead cost and unhealthy loan portfolios. Like in most other developing economies, failure of business entities because of financing problems is a common phenomenon in Tanzania as well (Baisi, 2008).

Mwakabumbe (2013) evaluated the impact of financial structure on the performance of MFIs in Tanzania and found that the source of financing was crucial for a firm's performance with most of them preferring debt over equity. Like in most other economic sectors, the commercial banking sector has likewise been affected by the choice of financing. The country has witnessed a couple of bank failures (Chijoriga, 2000; Akite, 2018). The banking regulatory authority revoked business licenses of five banks, which were undercapitalized hence unable to continue with their operations (BOT, 2018). The liquidation of 8 banks-between 2016 and 2018 pointed to the re-emergence of the bank failure trend that characterized the 1990-2005 period, and raised questions as to the potential for a fully-fledged systemic banking crisis within Tanzania. Nevertheless, there is a scarcity of literature highlighting the effects of capital structure on the financial performance of listed commercial banks (Silva, 2008). This study set out to bridge that knowledge gap.

Literature Review

Theoretical Literature Review

A company is expected to make use of loans to the point where the marginal value of tax shields on added debt is offset by the increase in the current value of probable cost of financial distress and that financial distress is expected to affect negatively the value of the firm (Myers, 2001). The trade-off theory proposes that company managers have a preference of debt as a source of financing (Myers, 2001). They balance the expected benefits and costs of debt with the focus to attain a most advantageous leverage level, the interest cost on the debt is tax deductible which reduces the amount of tax to be paid, in so doing reducing the effective price of opting for the use of debt in comparison to equity. Accordingly, the use of debt as a source of funds is expected to reduce the company's free cash flow (Myers, 2001).

The pecking-order theory introduced by Myers and Majluf (1984) built on the work of Donaldson (1961) who found that organizations which are in need of financial resources have no specific financial structure rather they have preference of choices which give priorities to internal sources followed by external sources. This theory proposes that due to information asymmetry, companies have their own preference in term of sources of capital to finance the business operations (Myers and Majluf, 1984) and these preferences reflect the relative costs of the different financing choices (Abor, 2005; Berk and DeMarzo, 2007).

The agency cost theory is centred on the premise that the interests of the company's shareholders and managers are not wholly aligned. Jensen and Meckling (1976) argue that the separation of company control and ownership is a result of agency costs whereby managers are likely to make decisions maximizing their own value at the expense of firm value. In the world assumed by Jensen and Meckling (1976) rising leverage is expected to enforce financial discipline to company management. The agency theory aims at resolving two problems that can happen in the agency relationship (Eisenhardt, 1989). One is the problem of risk sharing, which can arise when the principal and the agent have different risk preferences and the second problem is the "agency problem" itself. There is the possibility of managers of the company to misbehave if the interests of the company owners and the agent managers disagree (Dalton, et. al., 2007). It is commonly not possible for the principal to make sure that the agent will at all times act in the best interests of the principal. Managers can be part of the owners of the company in form of equity which will then help to advance the shareholder interests (Dalton, et. al., 2007). In other words, equity ownership by managers can help bring together the interests of owners and managers (Jensen and Meckling, 1976), and the board of directors can serve as an information system that stockholders can use to monitor in appropriate behaviour of top executives (Fama and Jensen, 1983).

Review of Empirical Studies

A study by Silva (2008) using ROA and ROE as a measure of financial performance found that total debt and ROE are positively related whilst it was negatively related to ROA evidencing that LTD finance is mostly used by financial institutions as a source of finance for their business operations. Silva's (2008) study advocates the extent to which financial structure influences commercial banks' performance. On the other hand, the study carried by Saddik, et. al. (2017) on the role of financial structure to the banking industry in India using ROA and ROE as a measure of performance found that financial structure is positively correlated to performance.

Panel data analysis by Shubita and Alsawalhah (2012) established that debt and profitability are significantly negatively related. This implies that, *ceteris paribus*, profitable companies opt for equity as compared to debt as a source of finance which opposes Myres and Majluf (1984) assertion that debt is a favourite choice of financing and not equity. However, we think that the findings by Shubita and Alsawalhah (2012) could have been more realistic if they had treated retained earnings (RE) as a separate equity component item and if they had extended the study to include other sectors to enable a generalization of the results. In another study done by Nimalathan and Brabete (2010) on the capital structure and its effects on profitability, it was found that there is a positive and strong association between debt-equity ratio and profitability of the companies listed at Sri Lanka stock market. While, the same study done in Ghana by Abor (2005) established that ROE and short-term debt are significantly positively related confirming further that profitable companies prefer short-term debt sources of finance for their business operations.

In the study by Sathyamoorthi, et. al. (2017) on performance of listed banks in Botswana using secondary data found that banks were highly leveraged with a sound liquidity position. The study further found that there was a positive correlation between EPS and liquidity ratio of total customer deposits to total assets while equity capital to assets was significantly negatively correlated. In addition, the liquidity status was found to be significantly related to the performance of selected banks at 5% level of significance. The study done by Liu and Pariyaprasert (2014), on the financial performance of 13 Chinese listed Banks for the period 2008-2011 revealed that return on equity of the listed bank can be influenced by costs to income ratio, operating expenses to assets ratio and advanced loans to deposits ratio. Another study by Fries, et. al., (2002) reiterated that the performance of commercial banks differs significantly depending on the competitive conditions and the reform of the environment in which banks operate. As much as one might be inclined to agree with the findings of the study, one of its major shortcomings is that it ignored the ownership difference as a major factor that could affect the commercial bank performance.

Little has been done in Tanzania in assessing the effects of financial structure on financial performance of listed commercial banks at the DSE. Mwakabumbe (2013) studied the impact of financial structure on the performance of MFI in Shinyanga and found that MFIs prefer the use of debt to equity which results in increasing their cost of capital. Swai, et. al. (2016) found that the key determinants of the bank capital in order of importance are bank size, profitability, non-tax depreciation shield, growth and volatility.

The available literature indicates mixed if not conflicting results on the effects of financial structure on the financial performance of banks. While some studies point out a positive impact on banks' financial performance there are other cases where negative effects on profitability have been reported. Moreover, most of the recent studies done on performance of banks appear to have been carried mainly in the developed world with little or no focus on developing economies. As a result, one fails to draw a generalized global conclusion as to whether financial structure influences the performance of banks listed in the stock market.

Further, the focus of many studies conducted so far in Tanzania are too general, as they have not clearly drawn attention on the effect of financial structure on the performance of commercial listed at the DSE stock market. The absence of a consensus on the impact of financial structure in the banking industry together with inadequate studies done on financial institutions in the Tanzanian context created a potential knowledge gap. This study was, therefore, motivated by the necessity to close this knowledge

gap by undertaking a study on the effects of financial structure on financial performance of listed banks in Tanzania.

Research Methodology

Study sample

A sample of 152 financial data was drawn on a quarterly basis from six commercial banks listed at the Dar es Salaam Stock Exchange (DSE). The study examined the effects of capital structure on financial performance of the banks listed at the DSE using quarterly panel data of six listed commercial banks drawn from 2014Q1 to 2024Q2 for CRDB, DCB and NMB (tire one banks) and from 2021Q1 to 2024Q1 for Mwalimu Commercial Bank, Mkombozi Bank and Maendeleo Bank (tire two banks). The Mean Group Model estimation technique was employed to reduce the problem of cross-sectional dependence. All banks had been in operation for at least three years since being listed at the DSE. Secondary data was obtained from mandatory published financial reports of the selected commercial banks on quarterly basis from their websites and the DSE website. The secondary data collected was analysed using descriptive statistics, followed by correlation analysis and then multiple-regression analysis using the STATA 14V. The conclusion on the significance of regression coefficients was tested using t-statistic at 5% level of significance (Chisti et al., 2013; Maina and Kondongo, 2013; and Abor, 2007).

The regression model used for the analysis was.

$$FP = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_6 + \varepsilon$$

Where:

FP - represents return on assets (ROA) and return on equity (ROE)

X_1 - represent short term debt (customers deposit and liabilities) i.e. STD

X_2 - represent long term debt (external borrowing and subordinated debt) i.e. LTD

X_3 - represent retained earnings i.e. RE

X_4 - represent capital (ordinary and preference)

X_5 - represent bank size i.e. TA

X_6 - represent assets quality i.e. NPL

β_0 - represents a constant number

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$ - represents regression coefficients

ε - represent an error term

Findings

Descriptive Performance statistics

Table 1 presents the descriptive statistics for the period of 2014Q1 to 2024Q2. ROA is observed to have an average of 24.10829 during the period with a standard deviation of 38.64047. The skewness of 1.816685 and the kurtosis of 5.001526 imply that the distribution of the series is flat relative to the normal. This explains that while on average banks have a positive ROA the majority are to the right side of the distribution.

Table 1: Descriptive statistics

	ROA	ROE	NPL	STD_TA	LTD_TA	RE_TA	SC_TA
Mean	24.10829	33.25388	43.56158	7.407328	6.765312	6.811651	6.826697
Median	4.000000	24.21500	17.00500	0.828306	0.047568	0.103277	0.084697
Maximum	145.5000	145.5000	149.5000	90.50000	90.50000	90.50000	90.50000
Minimum	0.000000	1.000000	0.000000	0.139463	0.000000	0.000299	0.003505
Std. Dev.	38.64047	35.22345	51.24920	18.82226	19.04972	19.03327	19.02881
Skewness	1.816685	1.711867	0.952437	2.801960	2.790519	2.791346	2.791129
Kurtosis	5.001526	4.991448	2.238617	9.490021	9.422152	9.427033	9.426929
Jarque-Bera	108.9807	99.35623	26.65225	465.6538	458.4829	458.9969	458.9578
Probability	0.000000	0.000000	0.000002	0.000000	0.000000	0.000000	0.000000
Sum	3664.460	5054.590	6621.360	1125.914	1028.327	1035.371	1037.658
Sum Sq. Dev.	225456.0	187344.5	396598.6	53495.92	54796.66	54702.05	54676.45
Observations	152	152	152	152	152	152	152

ROE has an average of 33.25388 while the standard deviation is 35.22345. The skewness statistic is 1.711867 and the kurtosis statistic is 4.991448 implying that the distribution of the series is flat relative to the normal. This is an indication that listed banks at the DSE are cost-effective to compensate for the investment made by those banks. The standard deviation of ROA is 38.64 which is higher than that of ROE at 35.22. The NPL which was used as a control variable reveals a mean of 43.56 with a maximum and minimum value of 149.5 and 0.000 respectively with a standard deviation of 51.25 in a total of 152 observations.

Customer deposit (short term debt) to total bank assets is on average 7.41% while borrowing (long term debt) to total bank asset is on average 6.77%, retained earnings and share capital both of them to total asset are on average 6.81% and 6.83% respectively which is indicative that a larger part of the banks' asset (loans) is mainly financed by the short term debts (i.e. customers' deposits), followed by capital, retained earnings and finally by long term debt. This means that listed banks issue loans to borrowers mainly depending on customer deposits. The same phenomenon is confirmed by observing the maximum and minimum values in Table 1. This may suggest that short term debt (STD) financing for the listed banks are available at no or minimum cost as compared to long term debt (LTD) financing which in most cases need to be secured and involves a lot of process and procedure to acquire. The results further show that since all STD, LTD, SC and RE to Total Assets are positively skewed it means that banks have not utilized below average financing as they all rest on the right side of the mean. This implies that despite most of the listed banks raising capital through selling shares in the stock market, the majority are positively skewed.

Unit root tests

Table 2 shows the panel unit root results. The test results give mixed evidence on the order of integration of all variables. The test results from both Fisher-type Augmented Dickey-Fuller and Philip-Perron

strongly reject the null hypothesis of stationarity ‘At level’ for NPL and RE_TA from which the first difference is integrated with order one. Both tests fail to reject the null hypothesis at 5% significance level ‘At level’ for other variables such as ROA, ROE, STD_TA, LTD_TA and SC_TA since the p values are less than 5%. This means that all the variables (ROA, ROE, STD_TA, LTD_TA and SC_TA) are stationary i.e. there is no unit root problem.

Table 2: Unit root tests

Variable	Fisher-type (ADF-Z)		Fisher-type (PP-Z)	
	At level	First difference	At level	First difference
ROA	-5.3193***		-3.1809***	
ROE	-6.2942***		-3.8409***	
NPL	-1.1812	-9.7004***	-0.8416	-8.7095***
STD_TA	-2.0626**		-2.3353**	
LTD_TA	-1.9621**		-1.6603**	
RE_TA	-0.3321	-10.6150***	0.0304	-8.3557***
SC_TA	-1.7612**		-2.6088**	

Null hypothesis: the series has no unit root. The asterisks (***) and (**) represent level of significance at 1% and 5% respectively.

Cointegration test

Table 3 presents the results for several cointegration tests. The Pedroni and Kao test uses the Bayesian information criterion to automatically select the appropriate lag length (maximum set to 3) and the estimates are based on the residuals of the long-run static regression (Kirikkaleli, et. al., 2028). The following variables of interest STD_TA, STL_TA, RE_TA and SC_TA for both models have been tested to establish their long run relationship. With the exception of Pedroni’s panel-rho statistic, panel-pp statistic and group-pp statistic, all tests reject the null hypothesis of no cointegration among the variables at 1% significance level. This means that these variables have a significant long-run relationship. Thus, all tests reject the null hypothesis of no Cointegration, suggesting that there exists a long run relationship between STD_TA, STL_TA, RE_TA and SC_TA and financial performance measured by ROA and ROE. We get similar results with the Kao test and Fisher trace statistics which indicates that there are four counteracting equations at 5% level of significance (Thompson, 1990).

Table 3: Cointegration test

	Statistics	ROA Model	ROE Model
Pedron Test	Panel v	-1.0050	-0.2831
	Panel rho	-3.8029***	-3.3952***
	Panel PP	-5.4642***	-7.3092***
	Panel ADF	-0.2233	1.4325
	Group rho	-0.0084	-0.2645
	Group PP	-2.9261***	-4.9597***
	Group ADF	-0.2157	0.8396

Kao test	T	-1.867**	-2.2114**
Fisher (Trace Stats)	None	112.20***	115.70***
	At most 1	39.94***	46.69***
	At most 2	15.71**	17.07**
	At most 3	13.46**	12.18**
	At most 4	16.51**	16.70**

Null hypothesis: the series has long-run relationship. The asterisks (***) and (**) represent level of significance at 1% and 5% respectively.

Hausman Test

The Hausman test confirms on a more practical model to a less practical one but reliable to ascertain that the more practical model also gives practical result. In the various statistical results below, Hausman Test was carried out to accommodate the overlooked variables which may have a negative or positive effect on the predictor variables used in the model. A 5% level of significance was considered to establish the fitness of application of fixed effect model or random effect model (Green, 2008). The null hypothesis for this test was that the random effect model is favored and the alternative is fixed effect model. If the p value is less than 5% then the null hypothesis is rejected which means that fixed effect model is ideal to the random effect model (Green, 2008; Vicente, 2001).

Pesaran CD Test

Pesaran CD test is a statistical procedure intended to test for cross-sectional dependence. It is the Lagrange multiplier (LM) used when the time-series dimension of the panel is larger than the cross sectional dimension (Breusch and Pagan, 1980)

Discussion

Relationship between Capital Structure and ROA as a measure of financial performance, using bank size as control variable

Table 4 shows the estimates for fixed and random effect of the returns on assets given the size of the bank which falls under tire one and tire two. Based on the Hausman test, random effect results estimates seem to fit well the data set for tire one while fixed effect fits for tire two. However, we cannot rely on tire one results since they suffer from cross sectional dependence problem while tire two results are reliable since the Pesaran CD test did not detect weak cross-sectional dependence of the variables in the model. A study that relies on static panel estimates such as fixed and random effects for listed banks might have underestimated the effects of short-term debt, long-term debt, share of capital and change in retained earnings on return on assets (Vicente, 2001).

For tire one banks with random effect results, short-term and long term debts have a significant positive relationship effect on ROA. This means that a significant positive relationship exists between short and long term debt and return on asset for tire one banks listed at the Dar es Salaam Stock market with a coefficient of 19.4311 and 226.2091 and standard deviation of 8.5130 and 55.1218 respectively. A positive change in short term and long term debt leads to a significant increase of ROA by 19% and 226% respectively. This indicates that the debts generally have a positive influence on the performance of listed banks. It should be noted that larger percentages of the bank's assets are financed by short term

debts (FDRs and demand deposits) and long term debts of the banks and not from non-financial institutions. An increase in short term debt tends to have less cost implication as banks pay less or no interest on demand deposits held by banks and used to finance bank lending. On the other hand, long term debt forms a small percentage of bank deposits not only due to the nature of activities which banks carry but also because most of them are obtained from international entities which charge low interests as well as bonds which also are less costly.

For tire two banks with fixed effects results, short-term debts have an insignificant negative relationship effect on ROA. This means that a negative relationship exists between short term debt and return on asset for tire two banks listed at Dar es Salaam stock market with a coefficient of -21.7383 and standard deviation of 83.5466 . A negative change in short term debt leads to a decrease in ROA by 21.7% . This indicates that for tire one banks, short term debts have a negative influence on the performance of listed banks. It should be noted that larger percentages of the bank's assets are financed by short term debts (demand deposit) whereby small banks under tire two usually tend to struggle to convince clients to deposit fund in their banks. which are then forced to pay high saving interest on their saving and current account as a means to attract deposit. An increase in short term debt tend to have high cost implication hence reduce the profit margin through high interest paid to depositors to save their money which then banks use for lending purpose and meet other client maturing obligation timely.

The positive effect of long term debt and short term debt on the financial performance of tire one banks tends to agree with the argument of Modigliani and Miller's trade-off theory stipulating that company managers have a preference of debt as a source of financing. In support of the trade-off theory, Myres (2001) argues that a company is expected to make use of loan to the point where the marginal value of tax shields on added debt is offset by the increase in the current value of probable cost of financial distress. The findings disagree with Abdul (2012) who, using ROA as a measure of performance, established that there is a significant negative relationship between financial leverage and company performance.

Retained earnings have a positive but insignificant effect on ROA for both tire one and tire two random effect results and fixed effects result with coefficients of 0.0863 and 0.0935 and standard deviations of 0.2249 and 0.0942 respectively. The positive effect of retained earnings on the performance of listed banks supports the POT which advocates for the internal sources of fund to finance business operations and expansion. Generally, an increase in retained earning signifies an increase in bank performance if it is re-invested back to generate income (Baisi, 2025).

With regard to random effect result of tire one listed banks, unexpectedly, the return on assets is significantly affected by share capital but the effect is negative with coefficient of -244.6974 and standard deviation of 46.5146 . This means that a positive change in share capital reduces return on assets by 244.6974% but since the effect is insignificant the bank can continue increasing the share capital. In general, the findings agree with Abor (2007) that there is a negative effect of share capital on ROA but disagree with Ishaya and Abduljeleel (2014) that there is positive relationship between share capital and profitability as well as Ebaid (2009) who found that capital has a small or no impact on a firm's financial performance.

Table 4: ROA model results basing on Bank size

	(FE)	(RE)	(FE)	(RE)
Dependent variable ROA	Tire Two	Tire Two	Tire One	Tire One

Short term debt	–21.7383 (83.5466)	–15.0659 (37.4433)	9.4697* (0.8561)	19.4311** (8.5130)
Long term debt	–148.3987 (111.8804)	–81.4406 (60.3826)	227.7502 (61.5063)	226.2091*** (55.1218)
Change in Retained Earnings	0.0935 (0.0942)	0.1240 (0.0924)	–0.1561* (0.0212)	0.0863 (0.2249)
Share Capital	169.9512 (189.8793)	96.2308*** (23.9281)	–236.3060 (60.5560)	–244.6974*** (46.5146)
Constant	9.5704 (29.5521)	18.4789 (31.6504)	8.1784 (1.5576)	0.8047 (1.0625)
N	68	68	78	78
Hausman Test	0.0055***	0.05	0.2139	0.05**
Pesaran CD Test	0.164	–	–	0.000***

Standard errors in parentheses * $p < 0.1$, ** $p < 0.05$, *** $p < 0.001$

*, **, *** denote significance at 10, 5 and 1 per cent levels respectively

Relationship between Capital structure and ROA as a measure of financial performance, using NPL as control variable.

Table 5 depicts ROA fixed and random effect results basing on non-performing loans. The non-performing loans (NPL) were categorized into two groups, NPL less or equal to 5% which is the acceptable rate by the central bank of Tanzania and NPL greater than 5%. Basing on Hausman test fixed effects and random effects results seem to fit well our data for less than 5% and greater than 5% model respectively but these results cannot be relied upon due to the existence of cross-sectional dependence problem as the Pesaran CD test suggests (Amini, 2012; Hoyos and Sarafidis, 2006). With regard to random effect results long term debt were found to have significant negative effects on ROA with coefficient of –33.0108 and standard deviation of 13.0853.

Short term debt and long term debt base on random effect result has a negative relationship with ROA with a coefficient of –46.6045 and –5.2467 and standard deviation of 8.2063 and 10.4939 respectively for listed bank with NPL of greater than 5%. Short term debt has significant negative effect while long term debt has insignificant effect. This implies that for listed banks with non-performing loans above 5% short term loans (i.e. customer deposits) have a significant negative effect on ROA which was the expected relationship because an increase in non-performing loans leads to high provision which directly reduces bank profit. For banks with non-performing loans of 5% and below both short term and long term debts have a positive effect on ROA with a coefficient of 6.6186 and 7.7221 and standard deviation of 2.4826 and 4.9914 respectively. This implies that banks with few non-performing loans always enjoy high profitability levels generated from the banks' assets which are facilities granted to clients resulting from a reasonable margin obtained as a result of using cheap deposits from customer savings in the bank.

Random effect results for banks with NPL of 5% and above show that retained earnings and share capital have a significant positive relationship with ROA with coefficient of 0.6623 and 49.8621 respectively and standard deviation of 0.2089 and 7.1104 respectively. Increase in capital and retained earning implies an additional liquidity to the banks which is expected to compensate the un-received amount of money from loans which are not performing which then assist to create more other earning assets hence lead to increase return on asset of the banks. Fixed effect result of the banks with NPL of 5% and below retained earnings and share capital have a negative effect on ROA with coefficient of – 0.0031 and –14.2964 respectively and standard deviation of 0.0067 and 2.6480 respectively. Share capital has a significant negative effect while retained earning has insignificant effect. This implies that increase in capital while the bank has performing assets will lead to increase in payments of dividends to shareholders which then reduces the net income of the bank. These results agree with the agency cost theory which is anchored on the premise that the interests of the company's shareholders and managers are not wholly aligned (Jensen and Meckling, 1976).

Table 5: ROA results basing on NPL

Dependent variable ROA	(FE) NPL <= 5%	(RE) NPL <= 5%	(FE) NPL > 5%	(RE) NPL > 5%
Short term debt	6.6186 (2.4826)	–2.5083 (1.6521)	–24.7993 (15.3523)	–46.6045*** (8.2063)
Long term debt	7.7221 (4.9914)	4.6533** (2.0467)	70.3000 (129.5402)	–5.2467 (10.4939)
Change in Retained Earnings	–0.0031 (0.0067)	0.0058 (0.0040)	0.1633 (0.3605)	0.6623** (0.2089)
Share Capital	–14.2964** (2.6480)	–2.1832 (3.6812)	–46.3935 (134.9602)	49.8621*** (7.1104)
Constant	–0.2929 (1.8559)	5.7036*** (1.0383)	51.5525** (10.6389)	62.8400*** (5.7016)
N	40	40	106	106
Hausman Test	0.0011***	0.05	0.1938	0.05**
Pesaran CD Test	0.000***	–	–	0.052*

Standard errors in parentheses *p < 0.1, **p < 0.05, ***p < 0.001

Generalized Method of Moments (GMM) result on ROA Model

The results of GMM on ROA Model are presented in Table 6 which shows GMM results using Arellano-Bover/Blundell-Bond estimation technique. Test for serial correlation in the first-differenced residuals shows the moment conditions are valid since there is no serial correlation in the idiosyncratic errors/residuals as autoregressive of order one p-value is not significant. Also AR (2) detects serial correlation at higher levels which implies the endogenous instruments to be valid for estimations. Sargan

test for over identification restrictions rejected the null hypothesis of valid instruments used in the estimations. This means that the model is mis-specified and cannot be relied upon. These findings rationalize the use of more highly developed estimation techniques (i.e. Mean Group results), which help to give out robust and realistic results.

Table 6: GMM results on ROA model

Dependent variable: ROA	(1) Tire One	(1) NPL <= 5%	(2) NPL > 5%
Lag of ROA	0.7034*** (0.0676)	-0.0117 (0.0088)	0.6548*** (0.0598)
Short term debt	2.7703 (28.7083)	-0.5829 (0.9187)	-11.8119 (20.0393)
Long term debt	20.9118 (71.0168)	1.3075 (2.1102)	-4.4027 (35.0727)
Change in Retained Earnings	0.0834 (1.0292)	0.0062** (0.0028)	0.0509 (0.4644)
Share Capital	-23.4979 (84.5091)	-0.7437 (2.0315)	15.8865 (27.0769)
Constant	4.4849 (24.2610)	4.2894*** (0.7038)	17.6204 (15.8029)
N	78	40	106
AR (1) p-value	0.3116	0.1033	0.1220
AR (2) p-value	0.3141	0.4023	0.7487
Sargan Test p-value	0.1227	0.0003***	0.0652*

Standard errors in parentheses *p< 0.1, **p< 0.05, ***p< 0.001

Mean Group results on ROA Model

The Mean Group results on ROA model in Table 7 suggest that in the long run short term debt, long term debt and share capital affect the financial performance of tire two listed banks while also in the same period short term debt, retained earnings and share capital affects the performance of tire one listed banks. Retained earnings for tire two banks and long term debt for tire one bank have an insignificant effect on ROA. On the other hand, short term debt, long term debt, retained earnings and share capital effect the performance of listed banks with the non-performing loans of 5% and below. With regard to banks with NPL of above 5%, long term debt, retained earnings and share capital effect performances of listed banks while short term debt has an insignificant effect.

In the short run the group mean result on ROA model in Table 7 further suggests that short term debt, long term debt, retained earnings and share capital affect the performance of tire one and tire two listed

banks. For the listed banks with non-performing loans of 5 % and below short term debt, long term debt, retained earnings and share capital affect the financial performance measured in terms of ROA while listed banks with non-performing loans of above 5%, only retained earnings and share capital have effect on performance.

Table 7: ROA Mean Group Results

	(1) Tire Two	(2) Tire One	(3) NPL ≤ 5%	(4) NPL > 5%
ECM	0.3495*** (0.2536)	0.7891*** (0.1410)	0.2504*** (0.2675)	-9.7938*** (10.3926)
Long-run				
Short term debt	38.0255*** (38.0702)	56.9550*** (56.9857)	35.3043*** (60.4065)	63.6535 (346.0022)
Long term debt	12.3939*** (9.5947)	-1.1920 (2.5289)	20.4016*** (19.6443)	47.7151** (64.7624)
Change in Retained Earnings	-31.6793 (89.0298)	-92.9808*** (92.2018)	-62.9720*** (49.5994)	-62.0437*** (59.6592)
Share Capital	14.0039*** (45.2086)	21.0450*** (20.7412)	44.7504*** (46.3210)	48.8317* (77.5571)
Short-run				
Short term debt	-19.1046*** (19.1004)	36.9132*** (36.9417)	33.7251*** (33.9004)	-0.43198 (19.4004)
Long term debt	15.9991*** (8.7206)	12.9710* (21.6372)	13.8124*** (7.7353)	1.7281 (17.4987)
Change in Retained Earnings	39.0873*** (35.7087)	60.3788*** (59.6542)	-39.2070*** (39.3087)	46.0705*** (27.7403)
Share Capital	-4.7322*** (3.2431)	-0.1370*** (134.0139)	-18.1683*** (17.2095)	-48.9056*** (44.4351)
Constant	16.0096*** (15.2094)	-36.7035*** (36.6653)	33.3651*** (33.0299)	2.4420 (18.0693)
N	72	80	38	104

Standard errors in parentheses * p< 0.1, ** p< 0.05, *** p< 0.001

In the long run for tire two banks, a significant effect of short term debt on ROA exists whereby short term debt has a positive coefficient of 38.0255 while in the short run it has a negative coefficient of 19.1046 as anticipated. This confirms that in the long run tire two banks need short term debt to create a sound liquidity position. An increase in short term debt tends to have less cost implication to banks as they pay less or no interest to demand deposits held. Tire two banks in the short run short term debt has a negative effect on ROA which confirms that small banks need more stable sources of finance other than cheap deposits which are volatile and are expensive to raise.

With regards to tire one banks, in the long run short term debts have a positive coefficient of 56.9550 while in the short run they also have a positive coefficient of 36.9132. Short term debt has a significant positive effect in the long run and short run. The long run result and short run result disagree with POT which advocates for the internal sources of fund to finance business operation and expansion as opposed to the use external funds. This is because financial institutions mainly depend on the use of external fund to finance bank assets (loans and government security). This result advocates for the need of the bank both in the short run and long run to create a more favourable environment to attract short term debts (customers deposit and FDs) which are a cheaper source of finance used by banks to finance their asset.

Regarding banks with $NPL = <5\%$, in the long run, short term debt has a positive coefficient of 35.3043 and in the short run it has a positive coefficient of 33.7251. In the long run a positive relationship was expected because banks with quality assets portfolio and cheap deposits will always have a positive financial performance while both in the long run and in the short run short term debt has insignificant effect on ROA for bank with NPL of above 5%.

Long term debt for tire two banks in the long run, have a positive coefficient of 12.3939 while in the short run have a positive coefficient of 15.9991. Both in the long run and short run, long term debt has significant positive effect on ROA of tire two banks. This suggests a need for a stable and sound liquidity position both in the short run and long run for tire two banks which can be used to invest in productive assets. An increase in long term debts creates a sound and stable liquidity position which lead to the creation of assets which then cause an increase in return on assets. For tire one banks in the long run, long term debt has a negative coefficient of 1.1919 while in the short run, coefficient of long term debt of 12.9710 is positive and significant, however in the long run the effect is insignificant. For banks with $NPL \leq 5\%$ long term debt in the long run has a significant positive coefficient of 20.4016 while in short run it has a significant positive coefficient of 13.8124. This means that an increase in long term debt leads to an increase in ROA of listed banks given quality asset portfolio both in the long run and short run. For banks with $NPL > 5\%$ long term debt has a significant and positive coefficient of 47.7151 on ROA while in the short run long term debt has an insignificant positive coefficient of 1.7281. This implies that in the long run listed banks with $NPL > 5\%$ need long term debt to enable them absorb the shocks resulting from non-performing loans. This is in agreement with Flamini et. al. (2009) of a positive relationship given that the shareholders' aim is risk adjusted rates of returns and in order to compensate the high risk they tend to charge high interest rates on the assets created by the use of long term debt.

The coefficient of retained earnings for tire two banks is -31.6793 in the long run but has insignificant effect on ROA while in the short run retained earning has a positive and significant coefficient of 39.0873. This implies that in the long run if tire two banks retained earnings continue to increase it is indicative that they are not invested in productive assets and hence they affect the ROA. However, in the short run an increase in retained earning leads into an increase in ROA which is an evidence that the

assets are generating enough income. The same result is observed for tire one banks regarding the effects of retained earnings on ROA both on the long run and short run. For banks with $NPL \leq 5\%$ retained earnings in the long run has a negative and significant coefficient of 62.9720 and in the short run a negative and significant coefficient of 39.207. This implies that both in the short run and long run an increase in retained earnings tend to reduce return on assets as the retained earnings becomes idle resources not utilized to generate income. For banks with $NPL > 5\%$ in the long run retained earning has a significant negative coefficient of 62.0437 and in the short run a significant positive coefficient of 46.0705. This implies that in the long run an increase in retained earnings tends to reduce ROA while in the short run an increase in retained earnings cause an increase on ROA. A positive and significant effect of retained earnings on ROA for bank with $NPL > 5\%$ suggests that they should invest their retained earnings to create more productive assets.

Share capital in the long run has significant and positive coefficient of 14.0039 for tire two banks while in the short run a significant capital coefficient of -4.7322 . This suggests that in the long run capital comprising of funds raised during listing has significant effect on ROA while in the short run share capital has a significant negative relationship with ROA as expected. In the long run the bank will have utilized the funds raised during listing and invest in profitable assets. In the short run the negative effect of capital may be due to un-invested funds and costs incurred during the listing process. For tire one banks in the long run, share capital has a significant positive coefficient of 21.0450 as expected which is a reflection of the strong balance sheet positions of the big banks in Tanzania, which have adequate capital that eventually leads to positive ROA. In the short run share capital has a significant negative coefficient of 0.13703 for tire one bank as in Rasiah (2010).

Effect of Financial structures on ROE

Relationship between Financial structures and ROE as a measure of financial performance, using bank size as control variable

Table 8 shows the estimates for fixed and random effect of returns on equity given the size of the bank which falls under tire one and tire two categories. Based on Hausman test, fixed results estimates seem to fit well our data set. However, we cannot rely on both results since they suffer from cross sectional dependence problem as detected by Pesaran cross-sectional dependence test.

From Table 8, fixed effect results shows that short term debt for both tire one and tire two listed banks has a negative impact on the financial performance of banks as measured by ROE with a coefficient of -6.3326 and -32.9079 and standard errors of 1.4073 and 80.3917 respectively. This implies that an inverse relationship exists between short term debts and ROE. Also long term debt has a negative relationship with ROE for tire two banks under fixed effect results with coefficient of -86.4128 and standard errors of 120.3564. Both effects are, however, insignificant and hence should not be relied upon. Therefore, banks should continue raising short term debts because they have no significant effect on ROE. Regarding long term debts and ROE for tire one banks, insignificant positive relationship exists with coefficient of 173.0033 and standard errors of 31.6244. The negative effect of long term debt and short term debt on ROE imply that since long term debt and short term debt come with costs in form of interest expenses, it then tends to reduce the net income distributable to equity owners leading to lower ROE.

Retained earnings and share capital of tire two banks on fixed effect result shows an insignificant positive relationship with ROE with coefficient of 0.0705 and 119.0032 and standard errors of 0.0958

and 199.2595 respectively. This supports the POT which advocates for the internal sources of funds to finance business operations and expansion. Regarding tire one banks the retained earnings have a significant negative relationship with ROE with a coefficient of -0.0954 and standard error of 0.0001. Particularly for larger tire one banks this indicates that a significant increase in retained earnings has a negative effect on financial performance signifying that the retained earnings are not fully utilized to generate income thus becoming idle resource or else it is just reported number and not actual cash available for investment. Tire one share capital also has an insignificant negative effect on returns on equity with coefficient of -166.6649 and standard error of 32.9110.

Table 8: ROE model results basing on Bank size

	(FE)	(RE)	(FE)	(RE)
Dependent variable ROE	Tire Two	Tire Two	Tire One	Tire One
Short term debt	-32.9079 (80.3917)	-59.0196 (47.9170)	-6.3326 (1.4073)	9.7074 (11.3536)
Long term debt	-86.4128 (120.3564)	5.7206 (71.4161)	173.0033 (31.6244)	170.5218*** (21.4107)
Change in Retained Earnings	0.0705 (0.0958)	0.0938 (0.0925)	-0.0954*** (0.0001)	0.2949 (0.3384)
Share Capital	119.0032 (199.2595)	52.5902** (24.1826)	-166.6649 (32.9110)	-180.1769*** (9.9375)
Constant	37.5799 (23.9857)	67.7511* (34.8154)	29.9221** (2.2846)	18.0488*** (1.1679)
N	68	68	78	78
Hausman Test	0.0040***	0.05	0.0987*	0.05
Pesaran CD Test	0.025**	—	0.000***	—

Standard errors in parentheses * $p < 0.1$, ** $p < 0.05$, *** $p < 0.001$

*, **, *** denote significance at 10, 5 and 1 % levels respectively

Relationship between Financial structures and ROE as a measure of financial performance, basing on NPL as a control variable

Table 9 shows the relationship which exists between financial structures and ROE as a measure of financial performance based on NPL as a control variable. The acceptable rate of $NPL \leq 5\%$ had a total of 40 observations and the $NPL > 5\%$ had a total of 106 observations which were sufficient for estimations. Basing on Hausman test, fixed effect results seem to fit well our data although Pesaran CD test says they cannot be relied upon since they have a cross-sectional dependence problem.

The fixed effect results of banks with $NPL > 5\%$ shows that, the short term debt has an insignificant negative relationship with return on equity with a coefficient of -26.2807 and standard deviation of

13.6932. This implies that an increase in bank short term debts on non-performing assets negatively affects net income and hence, lower ROE. Banks with $NPL \leq 5\%$ short term debt have a positive relationship with ROE with coefficient of 13.1312 and standard deviation of 8.1507. This implies that an increase in short term debt comprising cheap deposits lead to enough liquidity which enables the creation of other assets through overnight lending, long term lending and purchase of government papers which eventually increase the net income and hence rise ROE.

Long term debt for banks with $NPL > 5\%$ and banks with $NPL \leq 5\%$ has an insignificant positive relationship with returns on equity with a coefficient of 44.8980 and 45.574 and standard deviation of 100.8062 and 17.4904 respectively. This implies that an increase in bank's long term debts while at the same time asset are created using this debt, influences the positive effect on ROE because the net income increases from the new assets created. Retained earnings have positive relationship on return on equity with a coefficient of 0.4385 and 0.0132 and standard deviation of 0.3390 and 0.0179 for banks with $NPL > 5\%$ and banks with $NPL \leq 5\%$ respectively. This was an expected relationship because retained earnings is the amount of profit which remains after netting all expenses and it has already considered the impact of provision of non-performing loans, therefore, increase on retained earning leads to increase on ROE. For both banks with $NPL \leq 5\%$ and above 5%, share capital have a negative relationship with ROE with a coefficient of -58.6912 and -19.7592 and standard deviation of 15.8386 and 108.8655.

Table 9: ROE model results basing on NPL

	(FE)	(RE)	(FE)	(RE)
Dependent variable ROE	$NPL \leq 5\%$	$NPL \leq 5\%$	$NPL > 5\%$	$NPL > 5\%$
Short term debt	13.1312 (8.1507)	-49.9002*** (6.7716)	-26.2807 (13.6932)	-36.7643*** (5.5379)
Long term debt	45.5745 (17.4904)	186.1149*** (23.7030)	44.8980 (100.8062)	-13.5340 (12.6566)
Change in Retained Earnings	0.0132 (0.0179)	0.0108 (0.0095)	0.4385 (0.3390)	0.8716*** (0.2350)
Share Capital	-58.6912* (15.8386)	-136.8540*** (27.4285)	-19.7592 (108.8655)	48.3760*** (10.4647)
Constant	16.7830 (5.7731)	67.1119*** (2.7004)	57.3566*** (7.5360)	61.9508*** (9.1539)
N	40	40	106	106
Hausman Test	0.0000***	0.05	0.0889*	0.05
Pesaran CD Test	0.0000***		0.006 ***	—

Standard errors in parentheses * $p < 0.1$, ** $p < 0.05$, *** $p < 0.001$

Generalized Method of Moments (GMM) result on ROE Model

Table 10 shows GMM results using Arellano-Bover/Blundell-Bond estimation technique. Test for serial correlation in the first-differenced residuals shows that moment conditions are valid since there is no serial correlation in the idiosyncratic errors/residuals as autoregressive of order of one p-value is not significant (Blundell and Bond, 2023). Also, AR (2) failed to detect serial correlation at higher levels which implies the endogenous instruments to be valid for estimations. Sargan test for over identification restrictions rejected the null hypothesis of valid instruments used in the estimations for NPL models. This means that the models are mis-specified and cannot be relied upon (Kiviet and Kripfganz, 2021).

Table 10: GMM ROE results

	(1)	(2)	(3)	(4)
Dependent Variable ROE	Tire Two	Tire One	NPL > 5%	NPL <= 5%
Lag of ROE	0.4129*** (0.0847)	0.7101*** (0.0659)	0.6194*** (0.0605)	0.2279*** (0.0620)
Short term debt	-3.8620 (21.1025)	-1.1144 (34.7835)	-7.2982 (19.5218)	-29.7984*** (7.8490)
Long term debt	-20.2325 (31.8419)	14.6147 (68.6020)	13.1084 (34.4975)	128.7280*** (16.8984)
Change in Retained Earnings	0.0148 (0.0863)	0.1111 (0.9271)	0.0644 (0.4383)	-0.0087 (0.0239)
Share Capital	24.0447 (20.7090)	-13.5793 (89.1335)	-6.0889 (30.5486)	-99.3321*** (16.2161)
Constant	17.5895 (16.8010)	9.6844 (29.3713)	19.1966 (15.0617)	44.5456*** (6.5682)
N	68	78	106	40
AR (1) p-value	0.1803	0.3121	0.1153	0.3358
AR (2) p-value	0.2325	0.3030	0.7324	0.3565
Sargan Test p-value	0.0599*	0.0772*	0.0514*	0.0149**

Standard errors in parentheses *p< 0.1, **p< 0.05, ***p< 0.001

Mean Group Results on ROE Model

Table 11 shows that in the long run short term debt, retained earnings and share capital significantly affect the financial performance of tire two listed banks. Also in the short run, short term debt, long term debt, retained earnings and share capital have significant effects on the performance of tire two listed banks as measured by ROE. For tire one banks, both in the long run and short run, short term debt, long term debt, retained earnings and share capital significantly affect their performance as measured by ROE. On the other hand, only changes in retained earnings in the long run were found to have a

significant effect on the performance of listed banks with NPL $\leq 5\%$ which is the Central Bank's threshold requirement. For banks with NPL $> 5\%$, retained earnings and share capital were found to have significant effect on the performance of listed banks. Short term debt, long term debt, retained earnings and share capital have a significant effect on ROE in the short run for banks with NPL $\leq 5\%$. For banks with NPL $> 5\%$, retained earnings and share capital significantly effect ROE.

Table 11: ROE Mean Group results

	(1) Tire Two	(2) Tire One	(3) NPL $\leq 5\%$	(4) NPL $> 5\%$
ECM	0.2391** (0.3158)	0.6859*** (0.1000)	1.5854** (2.1448)	-9.5673*** (10.0388)
Long-run				
Short term debt	41.0125*** (41.0369)	52.9450*** (52.5954)	12.0146 (46.3197)	96.9335 (35.3608)
Long term debt	-5.5880 (21.5847)	-11.0288*** (4.5606)	12.8234 (47.8766)	-6.1826 (13.7826)
Change in Retained Earnings	-54.7891* (94.9744)	-79.7061*** (81.5032)	68.3663*** (33.9076)	-77.9919*** (58.2395)
Share Capital	87.7217*** (71.6590)	34.5041*** (34.4652)	20.2691 (21.6864)	10.9903*** (11.5985)
Short-run				
Short term debt	18.4058*** (18.3942)	31.0566*** (30.7819)	1.8403*** (18.6014)	-19.1829 (17.5283)
Long term debt	12.0514*** (7.0794)	8.0202*** (4.2304)	86.7714*** (44.8142)	-2.1744 (15.6180)
Change in Retained Earnings	40.8913*** (36.3982)	46.5219*** (47.9342)	-2.1903*** (22.1194)	42.8702*** (26.2530)
Share Capital	-35.1193*** (35.7372)	-2.0203*** (20.1635)	-94.7460*** (85.1001)	-69.7423*** (66.8676)
Constant	16.0458*** (14.2879)	-28.8394*** (29.4614)	18.2558*** (18.1609)	49.4153 (15.6504)
N	72	80	38	104

Standard errors in parentheses * $p < 0.1$, ** $p < 0.05$, *** $p < 0.001$

Short term debt has a positive coefficient of 41.0125 and in the short run it has a positive coefficient of 18.4058 for tire two banks in the long run. Thus, in the long run, short term debt's effect on ROE resembles the effect on ROA for tire two banks. This confirms the impact of short term debt on ROA and ROE, that an increase in short term debt leads to an increase in bank performance because short term debt has less or no cost implication as banks pay less or no interest to demand deposits held.

Retained earnings negatively effects ROE in the long run implying that for tire two banks increases in retained earnings reduce returns on equity. Also in the short run for tire two banks share capital negatively effects ROE while short term debt, long term debt and retained earnings have positive effects. This implies that in the short run tire two banks not only need more short term and long term debts to create a more stable liquidity position but also to re-invest earnings for subsequent higher returns to equity holders. The significant positive effect of short term debt on ROE resembles the effect on ROA necessitating the need for banks to go for cheaper deposits during their introductory initial stages in the market as opposed to the usage of easily available more expensive deposits. The significant negative effect of share capital on ROE in the short run signifies that an increase in capital which are not invested to generate income automatically lowers ROE. On the other hand, however, a positive effect implies an increase in net income resulting from the assets created by the additional capital raised by listing the bank or injected by equity holders.

In both the long run and short run all independent variables have a significant positive or negative effect on ROE for tire one banks. In the long run short term debt and share capital have significant positive effect on ROE. This implies that in the long run big banks with larger market shares have an access to cheap deposits in the form of short term debt and it is easy to access funds from the stock market due to their stability which in return increases the return on equity. Long term debt and retained earnings in the long run have significant negative effect on ROE implying that in the long run tire one banks should reduce the level of long term debt and ensure that earnings are re-invested back into the business to generate income and hence result into a positive ROE.

In the short run all independent variables have a significant positive effect on ROE except for share capital. This implies that in the short run, an increase in short term debt, long term debt and retained earning lead to a positive increase in ROE inferring that in the short run tire one listed banks have to use more long term debt to finance lucrative projects with good margins. On the other hand, an increase in share capital leads to a decrease in ROE because the short run raised capital has not yet started to generate income and hence reduce the return on equity. In the long run retained earnings for banks with $NPL \leq 5\%$ significantly effects ROE positively with a coefficient of 68.3663 while all other variables have insignificant positive effects. In the short run short term debt and long term debt have a significant positive effect on ROE which implies that income is generated by assets (loans and government securities) financed by debts (short term and long terms). A quality asset portfolio generates more income which then leads to high ROE while retained earnings and share capital significantly affect ROE negatively.

With regard to banks with $NPL > 5\%$, in the long run retained earnings and share capital have significant effect on ROE, whereby retained earning has a significant negative effect and share capital has a significant positive effect. In the short run retained earnings and share capital also have a significant effect on ROE whereby retained earnings have a significant positive effect and share capital has a significant negative effect. Long term debt and short term debt have negative effect on ROE but the effect is insignificant.

Conclusion and Recommendations

The study has come up with supporting evidence that capital structure affects the financial performance of listed banks in Tanzania. Generally, capital structure and financial performance measured in terms of ROA and ROE have strong and significant relationships. The results show that there is sufficient statistical evidence to conclude that short term debt has significant effect on ROA and ROE. The findings agree with the agency cost theory which advocates for the use of debt in financing assets specifically to hedge against the agency problem in the quest to improve returns. In line with Myers (2001) the trade-off theory which proposes that company managers have a preference of debt as a source of financing has been confirmed by the study. It has also been established that long term debt has significant negative effect on ROA and ROE for tire one banks implying that these banks should not opt for long term borrowing because of its negative effect on performance. Results of the study show that, for profitability's sake, listed banks should focus on raising short term debts in the form of demand deposits, fixed accounts, and saving accounts to finance their assets growth as these have got lower or no cost implication compared long term debt.

Furthermore, the results have shown that retained earnings have negative relationships with ROA and ROE implying that an increase in retained earnings reduces ROA and ROE indicative that either a big chunk of the bank's retained earnings may not have been re-invested back to finance income generating assets or the reported retained earnings are just numbers and not actual cash, hence cannot be invested to generate income. It has also been established that share capital has significant positive effect on the bank's ROA and ROE. The listing of banks at the stock market is one among the many other factors which influence the performance of banks through raising enough liquidity and increase in transparency. It is recommended that banks should raise investment funds by the use of both debt financing (particularly short term debt) and equity as well as utilizing effectively the retained earnings. Also banks should opt for going into stock market to raise deposits which are long term in nature to ensure that they have got a stable liquidity position. This should then be a wakeup call for the stock market to create favorable environments which attract banks' listing.

The findings also reveal the need for banks to invest heavily on the provision of financial literacy education to the unbanked population to entice them to utilize the savings and current accounts bank products. Regarding regulations, commercial banks should also be tracked on the level of financial literacy achieved from quarter to quarter and this should be one of the compliance requirements which banks need to fulfill within three years of their operations. The regulator should also set enforceable policies to enable the banks to list in the stock market as participants in the country's financial intermediation process and help the government in implementing the monetary policies. This will enable the banks to increase transparency and commitment that will enhance their market position.

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