

Original Article

Capital Structure Influence on Firm's Financial Performance: Differences in Commercial Public and Private Banks, Evidence from Tanzania

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Abstract: This study investigates the influence of capital structure on private and public firm's financial performance measured by ROA and ROE in Tanzania. The period of 2000-2022 was chosen for the study as both databases have the capacity to store data for up to 22 years and beyond. The study survey was undertaken from 21 private commercial banks and 13 public commercial banks, which are listed at the Dar es Salaam Stock Exchange (DSE), which reached 426 and 286 years of observations, respectively. Total debt, long-term debt, and short-term debt are indicators of capital structure. The study then determines whether these correlations differ from one another. The link between the independent and dependent variables was examined using fixed effect regression. With the exception of the impact of short-term debt on Return On Assets (ROA) for publicly traded commercial banks and the impact of long-term debt on ROA for private financial institutions, the capital structure was shown to have a positive effect on performance. With the exception of long-term debt, there was no statistically significant difference in the impact of capital structure on profitability between private and public commercial banks.

Keywords: Capital Structure, Financial Performance, ROA, ROE, Commercial Banks.

I. INTRODUCTION

Companies are founded with the goal of increasing their value and that of their shareholders. This can be achieved through dividend payments and investments in profitable projects. Studies conducted in developed and developing countries could not solve the problem of dividend changes [1]. The payment of dividends is one of the most discussed issues in the field of finance amongst scholars, students, researchers, managers, and policymakers.

The firm has to make decisions on its optimal capital structure, in which it determines the portion to be retained for further business expansion and which portion to be distributed to shareholders in the form of dividends. Dividend policies adopted by a firm are related to the financial performance of those firms [2]. John Lintner proposed a model in 1959 which stressed that dividend payment increases the value of the firm and the wealth of shareholders.

John Lintner, in 1961, made a survey on what factors constitute dividend payments. Out of his survey, he found the following. The model proposed that most of the firms have got long-run target dividend payout ratio. Therefore, rather than concentrating on absolute levels, many managers concentrate on dividing changes. The author contends that variations in long-term feasible earnings determine changes in dividends. Therefore, managers are likely to only make partial progress toward their goal, even if the situation seems to call for a significant dividend rise. Dividends are, therefore, far more consistent than earnings. Reversing dividend changes is something that many management do not want to undertake. They do not want to raise the payout any further since doing so would force them to lower it.

However, Lintner's arguments are not accepted by all. The findings by Modigliani Miller and Franco Modigliani (MM) in 1961 argued that share valuation is a function of the level of corporate earnings, which reflects a company's investment policy, not a function of the part of a firm's earnings distributed as dividends. They also maintained that a company's capital structure was irrelevant and that the only elements influencing its market value were its investment policy or the earning potential of its assets, which determined a company's future profitability. Miller and Modigliani came to the conclusion that a company's dividend level has no bearing on the share valuation.

Companies battling in the same industry, with similar assets and operating scale, may have different ownership structures, corporate governance policies, and competitive strategies, even within the same institutional and legal framework. This diversity in ownership structures is a key factor in explaining why corporate strategy and performance differ from one another [3].



Despite the overriding importance of dividend policy impact on financial performance among Tanzanian financial institutions, only a few studies have been conducted to assess the determining factors of dividend payment in commercial banks in Tanzania (see [4]; Lotto, [5]; [6]; [7]) and the impact of on financial performance, market values, and profitability (see Ushahidi, 2018;). By extending the scope to include both listed banking institutions on the Dar es Salaam Stock Exchange (DSE) and non-listed financial institutions operating in Tanzania, this study aims to close the gap once more. Comparing the effectiveness of businesses that differ in the pertinent area of ownership—the stock market listing—is the aim of this study. For this reason, we contrast the stock market performance of listed and unlisted commercial banks. Verifying whether this discrepancy affects the companies' financial structure, profitability, and investment potential is the goal. By doing this, the study hopes to contribute to the understanding of how ownership structure, corporate governance, and performance are related.

Decisions on dividend payments made by firms are the crucial financial judgments that finance executives have to undertake for firms.

The dividend pay-out decision is considered the most important financial decision that finance managers come across. Payments of dividends to shareholders from after-tax profit earned may be paid twice a year for the case of UK companies or on a quarterly basis for USA companies [8]. The decision to pay for final dividends needs the approval of shareholders at the Annual General Meeting (AGM). Once payment of dividend is declared it becomes a financial liability to the company.

Several studies about dividend policy have been carried out on the effect of dividend policy on the financial performance of banks globally and particularly in Tanzania and came out with different results (see [2]; [7]; [9]; [4]).

In Tanzania, studies on dividend policy have been limited to the determining factors of dividend pay-out ratios of listed commercial banks [5] and [4], effects of earnings on dividend policy of firms listed at Dar es Salaam Stock Exchange [10], examining the relationship between company's performance and stock returns of firms listed at Dar es Salaam Stock Exchange [11], and dividend policy and bank performance (Ushahidi, 2018). However, none of these academics focused their investigation on Tanzanian non-listed banks as well as listed banks at the DSE. By extending the time frame to the most recent 10 years, this study aimed to close the gap because it can impact the findings of previous research and add to the body of existing knowledge.

The general objective of the study is to establish and examine listed firms' financial performance versus unlisted firms in Tanzania. To address the main objective of the study, we conducted this study specifically to:

1. To establish whether there is a Difference In Performance (ROE) between listed banks and private/unlisted banks in Tanzania.
2. To establish whether there is a Difference In Performance (ROA) between listed banks and private/unlisted banks in Tanzania

The goal of this study is to analyze the influence of capital structure on the performance of unlisted/private and public commercial banks and investigate if there is a difference in the impact of capital structure on the banks' performance. Therefore, the major research question and minor research questions are as follows:

The major research question was developed as follows:

What is the influence of the capital structure on the performance of public and private Tanzanian commercial banks, and is there a difference between them?

The minor research questions were developed as follows:

1. What is the influence of the capital structure on the financial performance of public commercial banks?
2. What is the influence of the capital structure on the financial performance of private/unlisted commercial banks?
3. Is there a difference between the two impacts?

A dataset was compiled from multiple sources to evaluate how capital structure affects performance in both private and public companies. The DSE database provided the data on public commercial banks, whereas the Bank of Tanzania (BOT) database provided the data on private commercial banks. A sample of Tanzanian publicly traded companies was obtained from this dataset. Our sample was taken from the BOT database, which includes data on practically all Tanzanian banks, including private banks.

The period of 2000-2022 was chosen for the study as both databases have the capacity to store data for up to 22 years and beyond. Both samples sought to find methods of data retrieval. First, it must be those that are listed for the nominal banking sector or Listed in the public sector. Second, they did not see government finances because the systems and provision of accounting information are completely different from other sectors. Moreover, their capital sector is controlled by the government

through the Control and Auditor General of Government Accounts (CAG). This resulted in 21 private commercial banks and 13 public commercial banks, which reached 426 and 286 years of observations, respectively.

For answering the third research question a matched sample of public and private commercial banks was constructed for the sake of comparability. Each publicly listed bank was matched to private commercial banks.

This work is significant and important in two ways. First of all, it will provide additional empirical evidence regarding the mysterious character of private enterprises, which makes it of indisputable academic value. It will be difficult to reconcile the variations in the capital structure with the performance disparities that have been previously noted. Second, the assistance managers and business owners receive in making capital structure decisions will serve as the foundation for the research's practical usefulness. This knowledge has unquestionable practical value if there is, in fact, a substantial correlation between private enterprises' capital structure and performance.

II. LITERATURE REVIEW

This section examines the literature related to the study. This was done by reviewing the existing theoretical and empirical literature. This section is also a conceptual framework that guided research in the financial sector performance in Tanzania.

A) *Capital Structure*

How a business finances its operations and financial investments is determined by its capital structure. A variety of securities, including debt, equity, and hybrid securities, are part of the capital structure [12]. A security that symbolizes an ownership interest, like common stock, is called equity. Anything else that belongs to someone else is considered debt. According to their maturity, debts are categorized as either long-term (like bonds or loan agreements) or short-term (like notes or some bank loans), depending on how long they last. If the debt is longer than 12 months, it is defined as long-term. Convertible or preferred stock are examples of hybrid instruments that combine aspects of debt and equity. This study will focus on debt to measure the capital structure, specifically total debt, short-term debt and long-term debt in the business.

III. THEORETICAL LITERATURE REVIEW

A) *Modigliani-Miller Theory*

The discussion on the theory of capital structure is the contribution and basic work of two masters in the financial sector, Modigliani & Miller, in 1958. Theories are based on ideas: first, markets exist but without friction, which means there are no procurement costs; second, markets are competitive among all competitors, and individuals and businesses are price takers; third, individuals and entering into income transactions at the same price (e.g., borrowing at the same rate; fourth, all participants in the market have the same information; finally there is no tax.

These ideas partially led to the popular "irrelevance of the capital structure", where debt has no influence on the value of the company under the efficient market hypothesis. Modigliani & Miller's proposal shows that by taking the career policy as given, in an ideal market, excluding taxes, transaction costs and with all information, the capital structure has no effect on the value of careers. However, each of these assumptions is not true in the "real world". Modigliani and Miller later recognized the limitations of the previous model and decided to include taxes in the equation. This led to the false suggestion that it was financed with 99.99% of the debt to increase its value. Just by "resting" with thought, it is obvious that the capital structure is important to the value of the company. In the case when all the assumptions are true, the capital structure has an influence on the value of the company.

B) *Agency Cost Theory*

[13] developed the theory of agency costs. The total residual losses, agency costs incurred by the agent, and monitoring expenses incurred by the principal are known as agency costs. Conflicts between managers and the company's owners (equity agency costs) or between the owners and loan holders (debt agency costs) are the root causes of agency problems. Agency theory states that there are a number of issues related to debt. The first is referred to as the "free cash flow theory" or the overinvestment problem. Because ownership and control are separated, managers are more likely to maximize their personal expenditures than to act in the company's best interests. As [14] noted, "the problem is how to motivate managers to part with funds rather than investing them below the cost of capital or wasting them through corporate negligence." Debt capital is discussed as a way to control agency costs [12]. In this case, the leverage will act as a management mechanism for the organization and will force managers to pay the interest payments required to execute and issue cash. Debt serves as a means to encourage managers to align their actions with the interests of shareholders by constraining managers. Thus, interest payments will reduce the amount of cash flow available for managers to use in empire building or other projects with negative NPV [14]. High financial leverage also has the potential to influence managers and lower agency costs by threatening bankruptcy, which loses managers' money, their reputation, and their demand. As a result, the idea contends that having a lot of debt helps the company's agency costs and agency disputes decrease.

The second problem is known as the risk-shifting problem. This problem arises in situations where managers have an incentive to take on too much risk. Since the maximum rate of return available to debt holders is set by the interest rate on debt and the maximum rate of return to equity holders is almost unlimited, managers tend to take on riskier projects and strive to earn higher returns. Debtors are deprived of this abnormal return and bear the cost of risk. This leads to another meaning of the agency cost of debt, investment in risky projects by equity holders at the expense of debt holders.

The final problem is the situation of underinvestment. Managers or owners of firms may choose not to invest at all in projects that provide returns to debt holders. When investments are financed with debt, an incentive problem arises because the proceeds of a project must be shared between the owners and bondholders. Whenever shareholders do not receive the desired return, then projects with a positive NPV may not be taken, which leads to a decrease in overall performance.

C) Performance

There is no consensus on financial performance. However, it can be defined as the overall financial health of the business/firm [15]. All businesses take financial assets and utilize them to generate revenue and, hence, profits. The metrics that are used to assess financial performance include inventory turnover, total asset turnover, Return On Equity (ROE), and Return on Assets (ROA).

D) Unlisted/Private and Public Commercial Banks

In this study, public commercial banks are defined as commercial banks that have shares quoted or listed on the stock exchange, and unlisted/private commercial banks are commercial banks that do not have shares listed on the stock markets. This is one of the primary distinctions between public and private commercial banks [12]. The owners of unlisted/private commercial banks have greater influence over the bank's operations since private corporations have more concentrated ownership than public commercial banks.

IV. EMPIRICAL LITERATURE REVIEW

Through a paired survey study on a sample of 30 listed companies and 30 unlisted companies, [3] found that listed companies tend to be faster, use less financial leverage, invest less in tangible assets and earn less return on equity compared to non-listed companies.

A study by [16] on the financial performance of listed public firms and unlisted private firms in the U.K. over the period 2003-2012 revealed that private firms outperform public firms due to a number of factors, including greater operational efficiency stemming from managerial flexibility, higher R&D investment due to longer time horizon, and an increase in controlling ownership *ceteris paribus*.

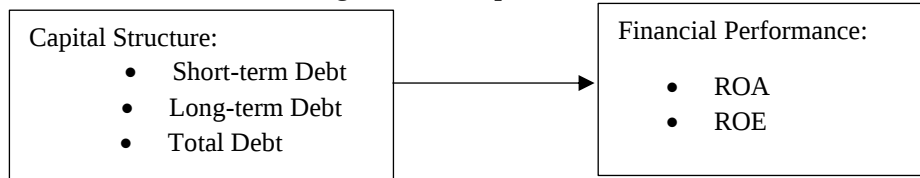
Similarly, a study on the relationship between listing and firm performance among 48 listed and unlisted Vietnamese firms by [17, p. 363] indicated that there is no proof that a company's profitability, operating efficiency, or leverage have improved; listed corporations can simply increase their post-listing revenues and lower their reinvestment rate. This outcome explains why, despite the Vietnam government's explicit requirements regarding the listing period for businesses following equitization, corporations don't have to participate in listing immediately.

The study results by [12] indicated a positive relationship between capital structure and the financial performance of private firms, except for the long-term debt on return on assets. In the case of public firms, the findings also indicated a positive relationship between the variables, except for short-term debt, which was found to influence ROA negatively due to the fact that it induces myopic behavior. [12, p. 9] further points out that:

When comparing the regressions of the two samples, only short-term debt influence on ROA was found to be statistically significantly different between the two types of companies. It is assumed that it is due to the higher cost of accessing the long-term debt market by private firms.

A) Conceptual model

From the above review of literature, our study developed a dependent variable and independent variable for our study, hence developing a Conceptual model as depicted in Figure 1. For the study purpose, dependent variables that were used to measure performance were ROE and ROA, while for independent variable capital structure was operationalized as short-term debt, long-term debt and total debt

Figure 1: Conceptual model

Source: Based on Researcher's conceptualization

V. RESEARCH METHODS

A) Variables.

ROE and ROA were the dependent variables employed in this study to gauge performance. Short-term debt, long-term debt, and total debt were used to operationalize the capital structure. There were five control variables found to yield meaningful findings. The greatest impact on financial performance is attributed to these factors. These included size, growth, asset, sales growth, risk and efficiency.

a. Performance variables: ROE and ROA

A company's ability to use its resources to maximize revenue is measured by its financial performance. Research on Return on Equity and Return on Assets was frequently utilized as a gauge of the company's performance. Thus, net income divided by total assets was used to compute ROA, whereas net income divided by total equity was used to calculate ROE.

b. Explanatory variables: short-term debt and long-term debt.

Total debt, long-term debt, and short-term debt were used to calculate the financial leverage. Since market prices for private enterprises are unavailable, book values of profits were used as the variables. For the reason of comparison, book values for publicly traded corporations are crucial. In this study, efficiency is defined as follows: total debt: total debt to total assets; long-term debt: book value of long-term debt to total assets; and short-term debt: book value of short-term debt to total assets. The explanatory variables were lag-timed by one year to prevent potential endogeneity issues.

c. Control variables: size, growth in sales, growth in assets, efficiency and risk.

The five variables that have been identified as being most frequently used in these types of studies and most likely to affect performance are included in this study as controls. Size was measured as the logarithm of total assets. The yearly growth rate of total assets is a measure of asset growth. The increase in operating income from time t-1 to time t is used to calculate sales growth. Asset sales are used to calculate efficiency, which is calculated as operating income divided by total assets. The standard deviation of the average return on assets over a four-year period was used to calculate risk.

B) Model

In order to explain and understand the influence of the capital structure on public, commercial banks and private commercial bank's performance, cross-sectional time-series data analysis was used; this is also called panel data. The panel method was used because the sample has data across different firms and over twenty two years. The regression model was specified as follows:

$$y_{i,t} = \beta_0 + x'_{i,t-1}\beta + z'_{i,t}\beta + e_{i,t}, i = 1 \dots N \text{ and } t = 1 \dots 22$$

Where:

$x_{i,t} - 1$ is a K-dimensional vector of independent variables;

$z_{i,t}$ Is a K-dimensional vector of control variables which does not contain an intercept term;

$y_{i,t}$ represents the dependent variables and can be either ROE or ROA, depending on the model;

independent variables consist of capital structure, which can be either total debt, long-term debt or short-term debt.

The models were run separately for the samples of private and public commercial banks.

To answer the third minor research question and check whether there are statistical differences among the coefficients in the two linear regressions, compare the coefficients of two regressions as suggested by Gregory Chow in 1960.

Correlation matrixes have been presented in Table 1. It was found that most cross-correlation values for the independent and control variables were fairly small, which indicated the absence of the multicollinearity problem among the variables. The values of the public commercial banks' dataset are represented on the left side of the matrix, whereas the values for the private commercial banks' dataset are represented on the right side.

Table 1 Correlation matrix

Publicly held	Privately held												
	Variables	ROA	ROE	ROA	ROE	TD	LTD	STD	SIZE	GS	GA	EFF	RSK
		NI	NI	EB	EB								
	ROA NI	1.00	0.56	0.81	0.55	0.19	-0.18	0.05	0.08	0.13	0.08	0.16	0.15
	ROE NI	0.19	1.00	0.55	0.88	0.18	0.00	0.22	0.11	0.13	0.08	0.20	0.13
	ROA EB	0.85	0.25	1.00	0.67	-0.10	-0.15	-0.00	0.11	0.14	0.08	0.19	0.11
	ROE EB	0.14	0.86	0.23	1.00	0.24	0.02	0.24	0.13	0.13	0.07	0.21	0.09
	TD	0.02	0.02	0.08	0.08	1.00	0.54	0.66	0.09	0.03	-0.02	0.22	-0.08
	LTD	0.04	0.03	0.02	0.01	0.56	1.00	0.43	0.21	-0.04	-0.04	-0.032	-0.01
	STD	0.03	0.01	0.10	0.08	0.55	-0.10	1.00	0.05	0.10	0.01	0.44	0.01
	SIZE	0.29	0.03	0.31	0.05	0.29	0.10	0.28	1.00	0.10	0.04	0.37	-0.11
	GS	0.03	-0.01	0.04	-0.01	-0.10	-0.08	0.01	0.15	1.00	0.30	0.11	-0.05
	GA	0.13	-0.00	0.04	-0.02	-0.04	-0.03	0.01	0.47	0.01	1.00	-0.03	-0.01
	EFF	0.10	0.17	0.16	0.19	0.45	0.33	0.15	0.41	-0.04	-0.12	1.00	-0.02
	RISK	0.47	-0.12	-0.49	-0.14	-0.27	-0.01	0.41	0.25	0.05	0.02	-0.02	1.00

VI. RESULTS**A) Descriptive statistics**

Table 2 displays the complete descriptive statistics. The average Return On Assets (ROA) for public commercial banks is 3.0% when measured using EBIT and 0.4% when measured using net income (NI). When measured using NI and EBIT, respectively, the mean ROE of public companies is very favorable at 21% and 35%. Examining the lower medians of 10% and 16%, as well as the high standard deviations of 35% and 48%, respectively, leads to this conclusion. In contrast to theirs, the ROE in this sample is higher. With debt accounting for an average of 59% of their capital structure, public commercial banks are extremely leveraged. Given that the median is 56%, this result is not biased. 39% is long-term debt, which is likewise not skewed. Compared to LTD, short-term debt is lower at 28%.

The average return on assets (ROA) for private commercial banks is 5% for NI and 7% for EBIT. Once more, ROE is greater than ROA, coming in at 19% for NI and 27% for EBIT. Debt accounts for 67% of private companies' total assets. Short-term debt accounts for 39% of total assets, while long-term debt makes up 24%.

A matched sample and a t-test for mean comparison were used to compare private and public commercial banks. According to net income and EBIT, private commercial banks outperformed public commercial banks in the matched sample by 5% and 4%, respectively. However, the scenario with the difference between ROE as assessed by EBIT and by Net Income is completely contrary. EBIT indicates a 7% difference between public and private commercial banks' performance. The market-dependent nature of public commercial banks' equity explains the discrepancy between ROA and ROE; as a result, when the company's performance deteriorates, the equity's value decreases, and ROE increases. Private commercial banks, on the other hand, are not bound by market value and so do not face this issue. The 5% higher TD in private commercial banks is justified by the greater cost of equity for these commercial banks. In contrast, LTD is 16% higher in public commercial banks, and STD is 18% higher in private commercial banks. This difference may be attributed to the difficulty private commercial banks face in accessing long-maturity debt markets. Regarding the disparity in control variables, public commercial banks are typically 20% larger than private commercial banks, even in matched samples. The difference in the unmatched sample is 69%. Compared to public commercial banks, private commercial banks are 3% riskier and 71% more efficient.

Table 2. Descriptive statistics

Panel A. Full sample														
Private							Public					Differences		
Variable	#Obs	Mean	S.D.	Med	Min	Max	#Obs	Mean	S.D.	Med	Min	Max	$\overline{Prv} - \overline{Pub}$	t-statistic $\square_{in}$
ROA NI	426	0.055	0.083	0.042	-0.182	0.470	286	0.004	0.176	0.021	-1.420	0.217	0.051***	20.471
ROE NI	426	0.191	0.262	0.138	-0.367	0.987	286	0.218	0.354	0.100	-0.214	0.830	-0.005	0.028***
ROA EB	426	0.073	0.120	0.060	-0.181	0.519	286	0.030	0.127	0.042	-0.569	0.260	0.047***	15.454
ROE EB	426	0.270	0.337	0.188	-0.326	1.311	286	0.352	0.483	0.163	-0.103	1.267	-0.071***	-6.771
TD	426	0.664	0.259	0.680	0.014	0.971	286	0.591	0.261	0.553	0.008	0.966	0.063***	7.207
LTD	426	0.241	0.239	0.181	0.009	0.829	286	0.391	0.237	0.380	0.007	0.827	-0.116***	-20.380
STD	426	0.392	0.252	0.404	0.001	0.881	286	0.284	0.248	0.303	0.000	0.994	0.102***	10.710
SZ	426	4.454	0.522	4.201	3.731	5.755	286	5.620	0.982	5.636	3.641	7.419	-0.684***	-32.054
GS	426	0.039	0.178	0.017	-0.361	0.720	286	0.082	0.260	0.025	-0.336	1.268	-0.028***	-5.320
GA	426	0.047	0.163	0.014	-0.252	0.803	286	0.067	0.240	0.016	-0.335	1.329	-0.012***	-2.245

EFF	426	2.184	1.443	1.832	0.066	5.862	286	1.042	0.737	0.916	0.007	3.086	1.140***	24.454	1.007***
RSK	426	0.041	0.038	0.028	0.003	0.219	286	0.056	0.065	0.028	0.004	0.518	-0.021***	-14.017	0.007
Panel B. Matched firms															
Variable	#Obs	Mean	S.D.	Med	Min	Max	#Obs	Mean	S.D.	Med	Min	Max	$\overline{Prv-Pub}$ t-statistic $\square^{in}$ median		
ROA NI	426	0.057	0.082	0.051	-0.174	0.244	286	0.001	0.143	0.023	-1.330	0.217	0.052***	6.408	0.019***
ROE NI	426	0.220	0.284	0.146	-0.359	0.897	286	0.220	0.412	0.101	-0.214	0.840	-0.000	-0.014	0.046***
ROA EB	426	0.075	0.103	0.065	-0.141	0.378	286	0.031	0.116	0.041	-0.209	0.250	0.041***	5.214	0.014***
ROE EB	426	0.306	0.379	0.204	-0.317	1.221	286	0.382	0.531	0.147	-0.102	1.257	-0.072**	-2.165	0.038
TD	426	0.650	0.253	0.653	0.003	0.881	286	0.612	0.186	0.615	0.014	0.967	0.049***	5.403	0.028***
LTD	426	0.210	0.173	0.207	0.001	0.739	286	0.385	0.210	0.372	0.012	0.916	-0.163***	-13.764	-0.106***
STD	426	0.419	0.251	0.440	0.001	0.881	286	0.240	0.216	0.216	0.000	0.904	0.182***	8.668	0.224***
SZ	426	4.828	0.582	4.905	3.721	6.003	286	5.115	0.821	5.206	3.643	7.307	-0.204**	-3.402	-0.274
GS	426	0.056	0.181	0.028	-0.360	0.720	286	0.053	0.206	0.025	-0.308	1.258	-0.005	-0.311	0.007
GA	426	0.064	0.182	0.039	-0.241	0.701	286	0.060	0.218	0.021	-0.325	1.319	0.003	0.200	0.012
EFF	426	2.046	1.367	1.863	0.055	5.761	286	1.324	0.711	1.241	0.031	3.076	0.712***	7.112	0.612***
RSK	426	0.044	0.035	0.028	0.002	0.129	286	0.072	0.100	0.036	0.003	0.677	-0.034***	-3.656	-0.005

***, **, * represent significance at 1%, 5% and 10% levels, respectively. Differences are calculated as Private-Public. Inferences about the differences in means are taken out via the t-test, and inferences about differences in medians via the Two-sample Wilcoxon rank-sum test.

B) Regression results

Firstly, the discussion of public commercial banks' regression was conducted, which was followed by the discussion of private commercial bank's regressions, and lastly, the matched sample regressions were compared using the Chow test. All of the regression results can be found in Tables 3 and 4.

Table 3. Results of the fixed effect regression model

Panel A. Results for the full sample												
Dependent variable	Private firms						Public firms					
	ROA (NI)			ROE (NI)			ROA (NI)			ROE (NI)		
Independent variable	TD	LTD	STD	TD	LTD	STD	TD	LTD	STD	TD	LTD	STD
Control variables	0.039** (2.60)	-0.022 (-1.97)	0.039*** (2.89)	0.215*** (5.10)	0.055 (0.51)	0.179*** (4.30)	0.053* (1.82)	0.158*** (4.39)	-0.079** (-2.43)	0.109* (1.78)	0.130* (1.74)	0.091 (0.02)
Size	0.020*** (2.60)	0.009 (2.69)	0.039*** (2.70)	0.119*** (3.02)	0.080 (1.32)	0.132*** (3.22)	0.025 (0.65)	0.030 (1.12)	0.035 (1.01)	-0.169** (-2.29)	-0.101 (-1.50)	-0.113 (-0.34)
Growth in sales	0.031*** (3.59)	0.050*** (3.60)	0.023** (3.61)	0.100*** (4.09)	0.120*** (2.45)	0.106*** (4.19)	-0.008 (-0.35)	-0.002 (-0.43)	-0.026 (-1.32)	0.083** (2.05)	0.079** (2.09)	-0.065 (-0.51)
Growth in assets	0.310*** (3.28)	0.019* (5.70)	0.308*** (3.20)	0.048** (2.19)	0.050 (1.18)	0.050*** (1.89)	0.145*** (4.19)	0.139*** (5.70)	0.170*** (6.20)	0.164** (2.50)	0.050 (1.02)	0.120 (0.90)
Efficiency	0.0142*** (3.90)	0.004* (3.63)	0.012*** (3.63)	0.012 (1.29)	0.011 (0.59)	0.008 (0.78)	-0.150*** (-5.50)	-0.110*** (-5.22)	-0.051*** (-2.49)	0.077 (1.59)	0.024 (0.63)	0.060 (0.51)
Risk	0.661*** (13.93)	0.580*** (10.60)	0.651 (13.59)	1.558*** (11.99)	1.548*** (7.97)	1.549*** (11.95)	-4.388*** (-5.38)	-0.279*** (-4.51)	-0.280*** (-4.00)	-0.3430** (-2.29)	0.059** (0.49)	0.399 (1.30)
constant	-0.218*** (-3.08)	-0.221** (-2.20)	-0.221** (-1.81)	-0.599** (-3.27)	-0.463* (-1.09)	-0.555** (-3.10)	0.019 (0.09)	-0.129 (-0.69)	-0.79 (-0.35)	0.971** (2.42)	0.640** (1.69)	0.49 (0.22)
Within R ²	0.117	0.191	0.149	0.139	0.180	0.129	0.249	0.179	0.20	0.111	0.091	0.066
F statistic	54.00***	42.40***	53.97***	42.50***	14.11***	41.16***	21.81***	22.69***	19.29***	4.30***	2.37**	2.14*
N	21	21	21	21	21	21	13	13	13	13	13	13

P-values are given in parentheses. ***, **, * represent significance at 1%, 5% and 10% levels, respectively

C) Public Commercial Banks

In the public commercial bank's regression, one can observe the F statistic and see that all models are statistically significant, at least at the 5% level. The model overall R-squared varies from 18% to 23% explained the difference. In the model of ROA the overall average parameter R-square of 22% is to be considered. This indicates that these models can account for a fifth of the variation in ROA. Performance is statistically positively impacted by both total and long-term debt, meaning that the greater the amount of debt a company has, the better it does. This finding confirms the hypothesis that we formulated above. However, Short Term debt shows a significant influence especially in terms of ROA. STD can be explained by the fact that short-term debt stimulates myopic behavior in public treatment. Since public organizations have less asymmetry of information, they are at risk of not being able to refinance themselves or the risk of bankruptcy by the lender if they do not meet short-term revenue targets. This fear of bankruptcy may mean not choosing projects that have a high NPV value but are accrued more in the future. With the technology in the new technology can be rejected, quick payment will be given, which is a poor interpretation. Regarding the control variables, Resource Growth has a positive effect on diversity in all models. Risk and efficiency have a significant influence on ROA in all models. In general, the results of the regression of public opinion confirm that the debt public trust is good. However, due to the low comparability of public information and the general myopia of the public, STD affects ROA negatively.

P-values are given in parentheses. ***, **, * represent significance at 1%, 5% and 10% levels, respectively. The difference columns in the matched sample show

Table 4. Results for the matched sample																		
Dependent variable Independent variable	Private firms						Public						Difference?					
	ROA (NI)			ROE (NI)			ROA (NI)			ROE (NI)			ROA			ROE		
	TD	LTD	STD	TD	LTD	STD	TD	LTD	STD	TD	LTD	STD	TD	LTD	STD	TD	LTD	STD
	0.069* (2.13)	-0.002 (-0.04)	0.100* (1.83)	0.321** (2.44)	0.219 (0.71)	0.421** (3.19)	-0.154 (-0.61)	0.220** (2.59)	-0.110 (-1.66)	0.230* (1.70)	0.440*** (2.60)	0.090 (0.70)	-	-	+	-	-	-
Control variables																		
Size	-0.053 (-1.20)	-0.088 (-1.22)	-0.060 (-1.33)	-0.451** (-2.18)	-0.357 (-1.70)	-0.289** (-3.01)	-0.098* (-1.75)	-0.141** (-2.75)	-0.085 (-1.57)	-0.180** (-2.01)	-0.187** (-1.85)	-0.154 (-1.39)	-	-	-	+	-	+
	0.085* (1.90)	0.187** (2.71)	0.082* (1.88)	0.240** (2.20)	0.577** (2.85)	0.260** (2.33)	-0.098* (-1.83)	-0.092* (-1.75)	-0.122** (-2.32)	-0.113 (-1.25)	-0.070 (-0.70)	-0.119 (0.88)		+		+	+	+
													+		+			
Growth in sales																		
Growth in assets	0.030 (0.55)	0.130** (3.12)	0.032 (0.62)	0.145 (1.31)	0.302 (1.29)	0.215 (1.41)	0.361** (5.10)	0.366** (5.90)	0.312** (4.81)	0.411** (3.70)	0.444*** (3.66)	0.371*** (3.30)	+	+	+	-	-	-
Efficiency	0.003 (0.41)	0.009 (0.51)	0.000 (0.25)	0.017 (0.40)	-0.040 (-0.70)	0.008 (0.830)	0.057 (0.95)	0.060 (0.89)	0.057 (1.24)	0.050 (0.65)	0.182** (1.99)	0.171** (2.06)	-	-	-	-	+	-
Risk constant	0.053 (0.20)	-0.320 (-0.93)	0.050 (0.20)	0.035 (0.08)	-0.370 (-0.40)	0.043 (0.19)	-0.377** (-2.51)	-0.257** (-1.82)	-0.181 (-1.38)	0.002 (0.00)	0.195 (0.79)	0.199 (0.78)	-	-	-	-	-	-
	0.593 (1.32)	0.600 (1.42)	0.331 (1.20)	1.770** (2.33)	2.300* (1.87)	1.540** (2.09)	0.54=58** (2.09)	0.559** (2.72)	0.388 (1.63)	0.890** (2.30)	0.700 (1.45)	0.695 (1.55)						
Within R ²				0.088	0.184	0.108	0.331	0.281	0.223	0.146	0.157	0.098						
F statistic	0.126 2.38**	0.2322 3.52**	0.059 2.04*	2.60**	2.90**	2.89**	8.21***	8.47***	6.60***	2.70***	3.89***	1.82*						
N	21	21	21	21	21	21	13	13	13	13	13	13						

the results of the Chow test. + represents the difference of at least a 10% level of significance. – represents no difference.

D) Private Commercial Banks

Regarding the shape of private firms, all models are statistically significant, at least at the 1% level and have total R-squares ranging from 12% to 18%. In the ROA models, Total Liabilities and Short Term Liabilities confirm the assumption by showing positive results. Long Term Debt, however, defies the concept with serious negative consequences. This can be explained by the high floating costs that trust companies incur in order to obtain debt with a higher maturity. Because of the long-term popularity of the part of the profit that is the example of the search they will get for the search, for the search for more profit in less investment. This has an influence on the total sales of the company; however, it does not affect the return, as seen in the case of ROE. ROE is significantly and significantly affected by TD and STD, which confirms our hypothesis. Regarding the winning variables, size, sales growth, asset growth, efficiency and risk all have a positive effect on both dependent variables in multiple models.

E) Comparison

The regression results on the matched samples are shown in Table 4. First, the ROA was compared and then the ROE models. According to the regression, short-term debt benefits firms but has no discernible impact on them. The findings also indicate that the public and trust have different effects on ROA when it comes to short-term debt. The public and religious beliefs do not differ in any of the other variables that were discovered. The findings demonstrated that the dependent variables in none of the ROE models differed statistically significantly. Consequently, the conclusion that there is no distinction between the teaching and public opinions regarding the impact of the capital structure on performance validated the third hypothesis.

F) Robustness Testing

Regarding robustness testing, a few methods were adopted. First, the dependent variable was measured by other agents; that is, instead of using actual consumption, EBIT too. When the regressions were run again, no differences from the main model results were found. As for the second robustness test, OLS regression and analysis of the means of a series of variances were performed. The effect on performance in these models was controlled for by the industry dummy (two-digit SIC code). These models did not show any strong connection from the main model either.

VII. CONCLUSION

By using a fixed effect regression model, this study examined the connection between capital structure and business performance in Tanzanian private and state commercial banks. Except for the case of long-term debt's impact on return on assets, which was explained by the increased impact of the underinvestment problem and high floatation costs, the results supported the hypotheses and showed that capital structure has a positive impact on the financial performance of private commercial banks. With the exception of short-term debt, which is proven to have a negative impact on ROA, the hypothesis' prediction was accurate in the case of public commercial banks. The reason for short-term debt's departure from the forecast was that it caused shortsighted conduct. The only factor that was found to be statistically substantially different between the two types of organizations when comparing the regressions of the two samples was the impact of short-term debt on ROA. It is thought to be because private companies find it more expensive to access the long-term debt market. Regarding future studies, it would be intriguing to examine it by incorporating various floating prices and the cost of debt into the model. Overall, it was determined that there was no discernible difference between private and public commercial banks in the impact of debt on the firm's performance.

This study adds to a body of research that has never been conducted in Tanzania before on the relationship between debt and the performance of commercial banks, as well as the impact of the structure of stable financial capital. Additionally, it advances the study of public commercial banks. After comparing the outcomes, it concludes that public and commercial banks have the same impact on performance from capital structure. By doing this, the ability to generalize to studies involving only public, commercial banks would be strengthened. In terms of the research's practical applications, commercial bank management can discuss how short-term debt can improve performance and feel secure enough to rely on debt in their capital structure.

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