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The relationship between debt financing and financial performance of the listed firms in East Africa

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Abstract
Capital structure decisions given their effect on financial performance are among the key issues that require great analysis in financial management by entities if they are to achieve their targeted goals. This study employed a data collection sheet and documentary review guide which were used to guide the researcher collect secondary data from the annual financial reports of the listed firms on the East Africa securities exchanges: Nairobi (NSE), Dar es Salaam (DSE), Uganda (USE), and Rwanda (RSE)). The study covered the period between 2012 to 2016 where a total of one hundred and thirteen (113) firms were listed in East Africa that is NSE (64), DSE (26), USE (16), and RSE (7). The data was analyzed using descriptive statistics, correlation analysis, simple linear regression and multiple regression analysis; aided by Statistical Package for Social Science (SPSS 22.0) software. It was found out that capital structure in listed firms in East Africa has a negative correlation and statistically low significance influence on East African listed firms' financial performance, which suggest that an increase in debt financing [short term debt rates (STDR), long term debt rates (LTDR), and total debt rates (TDR)] results into a decrease in corporate financial performance (Returns on Assets (ROA) and Returns on equity (ROE)]. It was also evident that on average profitable listed firms in East Africa preferred to use internal source of financing in their capital structure as compared to external source of financing like debts. In conclusion, increase in debt financing affects negatively the performance of listed firms in East Africa. It is therefore recommended that listed firms should use more of equity financing such as retained earnings if they are to achieve good financial performance.

Keywords: capital structure, financial performance, return on assets (ROA), returns on equity (ROE), earnings per shares (EPS)

Introduction

Financial performance is a blue print of the financial affairs of a concern and it reveals the organization's ability to translate its financial resources into mission related activities (Mwaura, 2014). Walker (2001) points out that a company's financial performance is evaluated in three dimensions, namely: company's productivity or processing inputs into outputs efficiently, profitability dimension or the level of which company's earnings are bigger than its costs and market premium or the level of which company's market value is exceeding its book value. In the quest to achieve favorable financial performance, firms face several challenges which include competition from other organizations, government policies, increased provisions through non- performing assets and also increased interest costs (Tsuma and Gichinga, 2016).

Capital structure choice is an important decision for a firm (Ghani & Bukhari, 2008). It is important not only from a return maximization point of view, but also this decision has a great impact on a firm's ability to successfully operate in a competitive environment. In Sri Lanka, value of financial performance ratios indicates that 36.6%; 91.6%; 36% and 11.2% to the observed variability in financial performance (ROE, EPS, Gross profits, and Net profits) are explained by the debt/equity and debt ratios (Arulvel and Ajanthan, 2013) [1]. The assets of the company can be financed by owner or the loaner, the owner claims increase when the firm raises funds by issuing ordinary shares or by retaining the earnings which belong to the shareholders, the loaners claim increase when the company borrows money from the market using some instrument other than shares (Mwaura, 2014). A study conducted by Gharaibeh (2015) [3] in Bahrain Bourse, revealed that lagged macroeconomic variable of inflation associated with the use of debt finance has a significantly negative relationship with certain performance measures (ROA, ROE, and EPS) while gross domestic product growth (GDPG) has a significantly negative relationship with financial performance measured by EPS. This therefore indicates that there are other factors which affects a firm's financial performance.

In East Africa, securities' exchanges are not performing well and characterized by negative performance and fluctuations. This is evident on the annual financial reports of Uganda Clays Limited (2014 & 2015), where the financial performance is poor and this is indicated by the losses the company registered. In 2014 the firm had a loss of US dollars 1,871,136.5 and a loss earning per share of US dollars (0.0021) and in 2015, a loss of USD$358,022.1 and a loss earning per share of US dollars (0.00040). Further, the company registered a loss of US dollars 203,375.8 and a loss earning per share of US dollar (0.00046) and in 2015 they registered a loss of US dollars 3,889,199.4 and a loss earning per share (0.0096) according to financial reports of Home Africa Limited) recorded in NSE in 2014 & 2015.

In addition, most of the listed firms if not all have high fluctuations in their financial performance indicators. For example, using earning per shares (EPS) for different companies listed on East Africa's securities exchanges; Simba Cement in DSE, shows EPS between 2012 and 2016 (in US dollars) to be 0.345, 0.324, 0.246, 0.062 and 0.032, respectively. Furthermore, East Africa Portland Cement in NSE, EPS from 2012 to 2016 were (0.108), 0.229, (0.049), 0.806 and 0.456 US dollars, respectively; Vision group in USE, EPS from 2012 to 2016, 0.019, 0.018, 0.015, 0.020 and 0.018 US dollars, respectively, and Bralirwa in RSE, EPS from 2012 to 2016, 0.059, 0.045, 0.016, 0.0093 and 0.0017 US dollars, respectively. As per Annual Financial reports: the financial performance of other firms not mentioned here is not different from what is shown above.

If this trend in financial performance continues there may be a reduction in investment, planning complexities, negative growth of the stock exchange markets and loss of confidence by investors in the listed firms in NSE, DSE, USE and RSE which may lead to shut down of some of the firms. Hence the need to conduct research to examine the relationship between capital structure and financial performance of the listed firms in East Africa Securities Exchange markets. The objective of this study was to examine the relationship between capital structure measured by Equity finance and Debt finance and financial performance measured by Return on Equity (ROE), Return on Asset (ROA), profitability, and Earning per Shares (EPS) of the listed firm in East Africa.

Methodology

The study was conducted on the listed firms in East Africa securities exchanges (Nairobi Security Exchange (NSE), Dar es Salam Security Exchange (DES), Uganda Security Exchange (UES), and Rwanda Security Exchange (RES)). A total of 113 firms are listed in according to the Capital Markets Authorities (2017), in which data was collected from 2012 to 2016, only listed firms in East African securities exchanges were purposively selected. A total of one hundred and thirteen (113) firms were identified after which a census was done; only firms with required information in regards to capital structure and financial performance from 2012 to 2016 were selected. The study employed a data sheet and a document review as a method of collecting secondary data of capital structure and financial performance of the listed firms in East Africa securities exchanges, Mburu (2015) used a similar technic in his study, the data was extracted from published annual financial reports and financial statements of the listed firms in East Africa. To test the validity of the documentary review guide and data collection sheet, the research consulted the supervisors and together they checked the items consistence, relevance, clarity and ambiguity (Heale and Twycross, 2015). For validation and reliability of instruments, the study consulted experts for evaluation and recommendations. The data was analyzed using descriptive statistics, correlation analysis, simple linear regression and multiple regression analysis. The survey methodology was aided by Statistical Package for Social Scientists (SPSS 22.0) software (Kipesha & Moshi, 2014). The relationship between Debt finance and financial performance of the listed firms in East Africa was based on analyzed on inferential statistics in which Pearson correlation, simple liner regression and multiple regression analysis were employed to generate Pearson correlation moment, correlation coefficient, beta values and associated p-values.

Empirical Model

Based on the works of Siddik, Rabiraj and Joghee (2017) [11], an empirical model was adopted for this study, where financial performance of firms was denoted by FP_{it}, measured by ROA, ROE, profitability and EPS for firm i in year t, as follows, FPit = a +ß1EFit + Ɛi-t: FPit a + ß2DFit+ Ɛi-t.

$ROE_{i,t}$= a + $ß_1EF_{i-t}$ + $Ɛ_{i-t}$**:** a+ $ß_2DF_{i-t}$ + $Ɛ_i$………(Equation 1)
ROA_{it}= a + $ß_1EF_{i-t}$ + $Ɛ_{i-t}$**:** a+ $ß_2DF_{i-t}$ + $Ɛ_{i-t}$……. (Equation 2)
$Profit_{i,t}$= a + $ß_1EF_{i-t}$ + $Ɛ_{i-t}$**:** a+ $ß_2DF_{i-t}$ + $Ɛ_{i-t}$ …….(Equation 3)
$EPS_{i,t}$= a + $ß_1EF_{i-t}$ + $Ɛ_{i-t}$**:** a+ $ß_2DF_{i-t}$ + $Ɛ_{i-t}$ ………(Equation 4)

Where

a = constant
FP_{it}= financial performance for firm i at time t
EF_{it}= equity financing for firm i at time t
$ß_1$= is the Slope (Beta coefficient) for EF_{it}
DF_{it} = debt for firm i at time t
$ß_2$ = is the Slope (Beta coefficient) for DF_{it}
$Ɛ_{i-t}$ = Error level acceptable

The Null Hypothesis, which stated that there is no significant relationship between debt finance and financial performance of the listed firms in East Africa, was rejected since the p-values for the hypothesis (statistical test) was less than 0.05 level of significance, and Alternative Hypothesis was accepted since the p-value was (0.0862) greater than the significance level (0.05).

Results and discussion

The Pearson correlation was run to establish the relationship between debt finance and financial performance, (returns on assets, returns on equity, earnings per share, and net profit margin) (Table 1). The findings show that there was a negative significant relationship between debt finance -0.518 at a confidence level of 0.05 with returns on assets. On the other hand, the findings showed that debt finance had very low significant relationship with other financial performance indicators (returns on equity, earnings per share, and net profit margin). The negative relationship between debt finance and financial performance (returns on assets) implies that when debt finance increase by one unit, returns on assets will decrease whereas when debt finance is reduced returns on assets will increase.

Table 1: Relationship between debt finance and financial performance of listed firms in East Africa

Variables	Pearson's correlation (r)	r^2	p
Debt Financing and Returns on Assets	-0.518^{**}	-0.268	0.000
Debt Financing and Returns on Equity	-0.120	-0.014	0.325
Debt Financing and Earnings per Share	-0.100	-0.010	0.415
Debt Financing and Net Profit Margin	0.226	0.051	0.62

Correlations is significant at ** 0.05 level

According to the regression findings in Table 2, $R^2 = 26.9\%$ at $p < 0.05$, this means that debt finance can explain only 26.9% of financial performance (Returns on Assets) and 73.1% can be explained by other factors. Therefore, if financial performance is to improve by 100%, debt finance can only account for 26.9% of the variation in financial performance. Even when the findings show that 73.1% is explained by other factors other than debt finance, the contribution of debt finance on financial performance cannot be ignored.

The findings as indicated by beta values in table 2 show that there was a negative significant relationship between debt financing and financial performance (ROA) with a beta equals to -0.518. This shows that there was a negative impact of debt finance on financial performance (ROA), where by when debt financing is increased by one unit, returns on assets will decrease by 0.518 and when debt financing is reduced by one unit returns on assets will increase by 0.518. This therefore implies that firms listed in East Africa should reduce their debt finance to achieve higher returns on assets.

Table 2: Contribution of debt finance on financial performance (returns to assets) of listed firms in East Africa

Model		Unstandardized Coefficients		Standardize Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	4.370	.159		27.398	.000		
	Debt Financing	-.120	.024	-.518	-4.960	.000	1.000	1.000
	R	.518[a]						
	R Square	.269						
a. Dependent Variable: Return on Assets								

The negative relationship between debt finance and financial performance (returns on assets) could be as a result of financial risk that increases when borrowing increase. The traditional approach of capital structure by Solaman of 1963 in Atrill (2009), argues that as debt finance increases so does the financial risk of a firm. This is because the ordinary shareholders become aware of the financial risk hence demand for higher returns, the debtholders to become aware of the risk and also demand for higher returns. This in-turn increases the cost of capital which eats up on the profits of the firm hence the negative relationship between debt finance and financial performance (returns on assets).
These findings of this study were supported by the literature by Arulvel and Ajanthan (2013) [1], who said in their study they observed a negative relationship between debt capital and financial performance (ROA, ROE, and EPS); and a positive relationship between NPM. Siddik, Kabiraj and Joghee (2017) [11] also found out that there was a significant inverse relationship between debt financing and ROA. However, the study of Gharaibeh (2015) [3] differs from the findings of this study as he found out that debt financing had a significant positive impact on ROA, ROE, and EPS. Furthermore, Mwambuli (2016) [7] concludes that, increase on debt financing leads to a reduction in financial performance; and Vatavu (2015) also echoes out that equity financing impacts positively ROA and ROE. All these are in congruence with this study. In contrast, Arulvel and Ajanthan (2013) [1] in their study found out that debt equity ratio negatively related to ROA and ROE.

Empirical Model

Using an empirical model, where financial performance of firms was denoted by FP $_{it}$, measured by (returns on assets [ROA], returns on equity [ROE], net profit margin [NPM] and earnings per share [EPS]) for firm i in year t, thus,

$FP_{it\,1} = a + ß_{1EFit} + \mathcal{E}_{i\text{-}t}$: $FP_{it\,1} = a + ß_{1DFit} + \mathcal{E}_{i\text{-}t.}$

In this study since other performance measures of ROE, NPM and EPS, when correlated showed no significant relationship with debt, the study only used ROA which had a significant relationship on the regression models as illustrated on Table 2. Where the following equation can be developed

$FP_{it\,1} = a + ß_1DF_{it} + \mathcal{E}_{i\text{-}t.}$

Thus in Table 2,

Debt financ ($FP_{it} = 4.370 - 0.120_{DF\,it} + \mathcal{E}i_{\text{-}t}$)

The regression equation indicated that taking into account the financial performance (ROA) as a result of debt finance, constant at no investment on capital will be 4.370 when other factors are held constant. When debt finance is increased by one-unit, financial performance (ROA) will decrease as show in the regression formula ($FP_{it} = 4.370 - 0.120_{DF\,it} + \mathcal{E}i_{\text{-}t}$). This further affirms the correlation findings in Table 1, that there is a negative significant relationship between debt finance and financial performance (returns on assets) of the listed firms in East Africa.

Conclusion and Recommendations

The study found out that there was a negative significant relationship between debt finance and financial performance. The study also showed that debt finance can only explain 26.9% of financial performance in East Africa listed firms which mean that there were other factors that explain financial performance of listed firms in East Africa.
As per the finding of this study, it was recommended that listed firms in East Africa should reduce the use of debt finance in which they use to finance their activities. This as suggested by the traditional approach to capital structure, will reduce the cost of capital and financial risk hence increasing the financial performance of the listed firms in East Africa.
Researchers should also examine the other factors which may be affecting financial performance of listed firms in East Africa. Since this studyfindings revealed that financial performance can be explained by debt 26.9 only, which meaning their other factors that affects financial performance of listed firms in East Africa,
by including a moderating variable or intervening variable to determine the reason for the fluctuation in financial performance.

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