

Relationship between Financial Structure and Financial Performance of Firms Listed at East Africa Securities Exchanges

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Abstract

Among other factors, the choice of financial structure and mismanagement has led to corporate failure of firms' world over particularly in East Africa. While mismanagement is being aggressively addressed through ethical code of conduct and even thresholds on managers control in firms, financial structure choice and its impact on financial performance remains a great dilemma to all stakeholders. This study therefore investigated the relationship between financial structure and financial performance of listed firms at the East Africa Securities Exchanges. The study employed explanatory research design with secondary panel data from the financial statements of 61 firms retrieved from the securities exchanges hand books for the period December 2006-2014. Feasible Generalized Least Squares method, random effect for models without moderator and fixed effect for models with moderator, based on Hausman specification test were used. The study found out that in isolation, short term debt, long term debt, retained earnings and external equity had insignificant negative relationship with return on assets but insignificant positive relationship with return on equity. While combined, financial structure had a significant positive and negative relationship with return on equity and return on assets respectively. On moderation of the relationship between financial structure and financial performance, it was found out that gross domestic product growth rate had a significant moderating effect. It is therefore recommended that firms combine both debt and equity in their financial structure and East Africa governments grow and maintain their GDPs trends since GDP was found to have a contingent effect on the financial structure. It is therefore incumbent on firms' managers and financial advisors to continuously study the market and advice on the appropriateness of the proportions of the various sources of finance based on market circumstances at any given time.

Key Words: Financial structure, financial performance

1. Introduction

The determination of a firm's optimal financial structure is a difficult one since it involves an analysis of several factors, key among them risk and profitability (Shubita & Alsawalhah, 2012). The decision becomes even more difficult, in times when the economic, social, technological and political environments in which the firm operates exhibits high degree of instability (Shubita & Alsawalhah, 2012). Therefore, the choice among ideal proportion of debt and equity can affect the value of the company, as well as financial performance. Indeed, Chiang, Chan and Hui (2002) study at Hong Kong Stock Exchange concluded that financial performance as measured by profitability and capital structure, a subset of financial structure, are interrelated. Many firms therefore fail for not putting proper strategies, financial among others, in place.

Financial structure of a firm refers to how a firm finances its assets with all its available resources (Moyer, McGuigan & Kretlow, 1999). In general, firms finance only a part of their assets with equity (ordinary, preference and retained earnings) capital, while the other part is financed by other resources such as long term financial debt or liabilities (like bonds, bank loans and other loans) and other short term liabilities for example trade payables (Moyer et. al, 1999). Capital structure on the other hand refers to how a firm finances its assets with permanent short term debt, long term debt, preferred stock and common equity (Moyer et al., 1999). The two terms have been used interchangeably by scholars as inferred from their application, a concept that the researcher wishes to borrow.

Firms can choose among many alternative financial structures. For example, firms can arrange lease financing, use warrants, issue convertible bonds, sign forward contracts or trade bond swaps. Firms can also issue dozens of distinct securities in countless combinations to maximize overall market value (Abor, 2005). Dare and Sola (2010) suggested that capital structure can take any of the following three alternatives: 100% equity: 0% debt, 0% equity: 100% debt or X% equity: Y% debt. On Dare and Sola (2010), Ishaya and Abduljeleel (2014) had the following take on their proposed options. Option one is that of a purely equity financed firm that ignores leverage and its benefits in financing its activities and all the distributions goes to equity providers. This however is rare in practice. Option two is that of a firm that finances its affairs wholly on debt, again unrealistic in the real world situation too because hardly will any provider of fund invest in a business without owners. In essence, it is the equity element present in capital structure that motivates the debt providers to give their scarce resources to the business. Option three is that of a firm combining certain proportion of both equity and debt in its capital structure. It will therefore reap the benefits of combined debt and equity while the cash flows generated are appropriated between equity and debt providers.

The challenge in option three as provided is the dilution of equity ownership and therefore the likelihood of emergence of agency conflict between the equity owners and debt providers (Ishaya & Abduljeleel, 2014). Financial structure decision is therefore very critical and fundamental in the business life cycle not only to maximize shareholders wealth but also due to the impact it has both on sustainability and its ability to satisfy external objectives (Ishaya & Abduljeleel, 2014). Capital structure theory addresses the means of acquisition of finance available to a firm, the best mix of such sources that reduces the overall cost of capital while maximizing returns and the management to achieve the desired objectives (Abor, 2005).

Financial performance is the process of measuring the results of a firm's policies and operations in monetary terms (Erasmus, 2008). It identifies the financial strengths and weaknesses of a firm by establishing relationships between the items of the financial position and income statement. As noted by Erasmus (2008), profitability, return on equity and liquidity ratios among others provide valuable tools or measures to stakeholders to evaluate the past and current financial performance of a firm. To this end, ratios relating to profitability and financial structure were used.

Many empirical and theoretical studies have shown that financial structure really influences firm's performance. Berger and Patti (2006) for instance posit that capital structure employed by firms influence their financial performance trends, whose empirical determination and analysis using listed firms in East Africa Securities Exchanges (EASE) is the overall objective of this study.

1.1 Problem Statement

Financing decisions result in a given financial structure and suboptimal financing decisions can lead to corporate failure (Chisti, Ali & Sangmi, 2013). A great dilemma to scholars, business managers, investors among other stakeholders is whether there exists an optimal financial structure that maximizes the stakeholders' wealth, as the core object of firms except public utility providers. Therefore, measuring the quality of any financing decision is to investigate the effect of such a decision on the firm's performance and in particular its impact on financial performance (Gill et al., 2011).

To establish the impact and clear understanding on the relationship between financial structure and financial performance of a firm, research has been undertaken by various researchers all over the world particularly on capital structure. For example, in examining the effect of capital structure on profitability of the American service and manufacturing firms, Gill et al. (2011) concluded that there exist a positive relationship between short-term debt to total assets and profitability and between total debt to total assets and profitability in the service industry. Abor (2005) investigated the relationship between capital structure and profitability of listed firms at the Ghana Stock Exchange (GSE) and found a significant positive relation

between the ratio of short-term debt to total assets and return on equity (ROE) and negative relationship between the ratio of long-term debt to total assets and ROE.

On the contrary however, Abdul (2012) conducted a research to determine the relationship between capital structure decisions and the performance of firms in Pakistan and found that financial leverage has a significant negative relationship with firm's performance, measured by return on assets (ROA). Ebaid (2009) carried out a study in Egypt to investigate the impact of choice of capital structure on the performance as measured by gross profit margin and concluded that capital structure has little or no impact on a firm's performance

While many studies have been done elsewhere, in Kenya only a few known to the researcher has been done and documented even as many firms keenly focus on financial restructuring to avoid delisting or even liquidation. Kaumbuthu (2011) for example carried out a study to determine the relationship between capital structure and return on equity for industrial and allied firms at the NSE during the period 2004 to 2008 and found a negative relationship between debt to equity ratio and ROE. His study however focused on one predictor variable (debt to equity ratio) which therefore seems simplistic.

To investigate the relationship between leverage and the financial performance of listed firms in Kenya, Maina and Kondongo (2013) found a significant negative relationship between debt and profitability but no effect on firm value over the period 2002 – 2011. Again, no attempt was made to separate debt into short and long term and analyse their respective contributions. Like Kaumbuthu (2011), their study focused on one predictor variable too.

In summary, studies on the relationship between firm's financial structure and financial performance have yielded mixed results. In East Africa (EA), available studies have not attempted to split equity so as to appreciate the contribution of the retained earnings and share capital to financial performance separately. No attempt too known to the researcher has been made to split debt into short and long term and analyse their statistical significance to financial performance or rank the various sources based on the specific's source contribution to financial performance that may even help to validate the pecking order theory in Kenya. Even the working capital studies that the researcher came across has focused more on cash conversion cycle which is not an objective in this study. Worse off is lack of documented studies known to the researcher that compare the financial structure and financial performance relationship of firms in East Africa. It is for this reasons that this study was therefore conducted. The general objective was to study the relationship between financial structure and financial performance of firms listed at EASE with the following specific objectives.

1. To explore the relationship between short term debt and financial performance of firms listed at EASE.

2. To find out the relationship between long term debt and financial performance of firms listed at EASE.
3. To assess the relationship between retained earnings and financial performance of firms listed at EASE.
4. To determine the relationship between share capital and financial performance of firms listed at EASE.
5. To evaluate the moderating effect of GDP growth rate on the relationship between financial structure and financial performance of firms listed at EASE.

The research hypothesis were

H0₁: There is no statistically significant relationship between short-term debt and financial performance of firms listed at EASE.

H0₂: There is no statistically significant relationship between long-term debt and financial performance of firms listed at EASE.

H0₃: There is no statistically significant relationship between retained earnings and financial performance of firms listed at EASE.

H0₄: There is no statistically significant relationship between share capital and financial performance of firms listed at EASE.

H0₅: There is no statistically significant moderating effect of GDP growth rate on the relationship between financial structure and financial performance of firms listed at EASE.

2. Literature Review

In an attempt to explain how firms finance their assets and the factors that influence these funding decisions, a number of theories and models of capital structure have been proposed over the years by different theorists. These theories and models try to explain the percentage of debt and equity in a firm that not only maximize firms' value, but also the impact on the firms' capability to face the competition in the ever changing market. This study is underpinned by capital structure theories that provide the basis of study variables choice. In particular, capital structure irrelevance, relevance, agency, signaling theory, trade off and pecking order theories are reviewed since all of them support both the dependent and predictor variables as shown in the conceptual framework.

Capital structure irrelevance theory was proposed by Modigliani and Miller (1958) who said that without taxes and under assumptions of perfect markets, with no capital market frictions (no transaction costs, asset trade restrictions or bankruptcy costs), symmetric access to credit markets (firms and investors can borrow or lend at the same rate and firm financial policy reveals no information), each firm belonging to a risk class set with common earnings, a firm's

debt-equity ratio does not affect its market value. Therefore the value of the levered firm is equal to the value of the unlevered firm and hence capital structure financing decision is therefore irrelevant. They argued that if two firms are identical in all respects but only differ in their total market value and in the way that they are financed, investors will sell shares of the overvalued firm, buy shares of the undervalued firm and continue this process until the two firms command the same value through a process referred to as arbitrage.

On cost of capital, MM argued that the cost of equity of a levered firm is equal to the cost of equity of an unlevered firm plus a financial risk premium, which depends on the degree of financial leverage. Using more debt in the capital structure will not increase the value of the firm because the benefits of cheaper debt will be exactly offset by an increase in the riskiness of the equity and hence it's cost to keep the value of the firm constant. The MM irrelevance theory has been largely criticized due to the assumptions held which are unlikely to hold in practice at least in the long run.

In incorporates taxes, MM (1963) modified their irrelevance theory and argued that capital structure indeed matter in determining the value of a firm. The theory was based on the fact that in many jurisdictions interest on debt is an allowable expense hence tax shield. Based on this assertion, firms could borrow up to a 100% to reduce their taxes to zero if possible. In practice however, company tax system and personal tax system interact in complex ways. Miller (1977) suggested that the presence of taxes on personal income may reduce the tax advantage associated with debt financing and hence 100% debt financing is not feasible.

Static tradeoff theory assert that while investment decision and firm assets are held constant, an optimal capital structure is attained when the tax benefit of debt equals to leverage associated costs which include financial distress, bankruptcy and agency (Myers, 2001). The theory hold that more profitable firms have more debt-serving capacity thus a higher debt ratio and vice versa (Luigi & Sorin, 2009). The theory assumes the existence of different target leverage for different firms due to firm's specific factors and also believe that firms are already at their presumed targets (Myers, 2001). Dynamic trade off theory propose that firms may deviate from their target capital structure but they will exhibit an adjustment behavior towards that target (Abdeljawad, Nor, Ibrahim & Rahim, 2013). The existence of a presumed target requires that any deviation from that target leverage be adjusted at a certain speed of adjustment (SOA) but the magnitude of this SOA is different for different firms (Frank & Goyal, 2007).

The pecking order theory by Myers and Majluf (1984) argue that firms have a preferred hierarchy for financing decisions with the highest preference being to use internal financing before resorting to any form of external funds. They envisage an inverse relationship between debt and financial performance. Though Agency theory, Jensen and Meckling (1976) argue that an optimal capital structure is attainable by reducing the costs resulting from the conflicts

between the managers, owners and debt holders. They argued that debt can be used to control the managers' behaviour by reducing the free cash flows within the firm likely to be misappropriated by ensuring prompt payment of interest payments. Agency theory has support for high debt and financial performance relationship.

Information signaling theory argue that the choice of firm's capital structure signals to the outside investors the information that the insiders possess. It further argue that due to the problem of information asymmetry, it makes it difficult for lenders and prospective common stock investors to accurately assess their level of risk and hence the reliance on what is communicated by the insiders (Ross, 1977). In sum, two hypothesis emerge from the theory. First is by Ross (1977) who argue that a firm signals an increase in the firm's asset value by increasing its leverage since it has the confidence of meeting the debt obligation. Second is by Brealey, Leland and Pyle (1977) who argue that a firm signals the increase in firm's value by reducing it leverage since it has enough retention to finance its future growth.

Life cycle theory posit that firms use different types of financial structure at different stages of life cycle. Not many debt providers are keen to lend to new firms however, in any case there are no assets to act as collateral mostly. Preference for debt is at growth at maturity stages when financial performance and asset bases are sound. A critic to the theory is the criteria for classifying life cycle stages which is not precise and hence varied stages by different scholars yielding different empirical findings (Castro, Tascón, & Amor, 2011).

Many empirical findings on the relationship between debt and profitability have been reported by various researchers that this study explores. For instance, to investigate the relationship between capital structure and profitability of conglomerate, consumer goods, and financial services firms quoted in Nigeria Stock Exchange, Babatunde, Akinwunmi, Khadijah and Yusuf (2014) showed that the relationship between capital structure and ROA is not significant across all firms except for 7up and Nestle. The study also showed an insignificant relationship between ROE and debt asset ratio. However, there was a significant relationship in almost all firms between ROE and debt to equity ratio. They concluded that highly geared firms have significant relationship with ROE and insignificant relationship with ROA.

The sample size was 120 obtained using random sampling covering the period 2000 to 2011. ROA and ROE were used as performance proxies while debt equity ratio and debt asset ratio were used as capital structure proxies. The relationship between the performance and capital structure proxies were analysed using correlation coefficient and regression techniques. This findings are consistent with Anil and Zenner (2005) view on life cycle theory that companies with large and stable profits should make greater use of debt to take advantage of interest tax shields. It would have been imperative though for the study to separate short and long term debt and analyse their implications separately

To analyse on how firms choose their capital structure under pecking order and trade-off theories particularly when they have leverage target Zurigat (2009) concluded that leverage is positively related to profitability. They used data from 114 non-financial Jordanian firms (of which 62 are industrial firms and the remaining are services firms) for the period 1997-2005. Panel data analysis was employed. While the study disagree with the pecking order theory hypothesis, it supported both the Agency cost and MM capital structure relevance as both provides that profitability increase with debt capacity. The study did not discuss in depth the proxy for profitability.

To study the effect of capital structure on profitability of the industrial companies listed on Amman Stock Exchange during a six-year period (2004-2009), Shubita and Alsawalhah (2012) found a significantly negative relation between debt and profitability. This suggests that profitable firms depend more on equity than debt. The study sample consisted of 39 randomly selected companies with correlations and multiple regression analysis as techniques of analysis. The findings contravene Myres and Majluf (1984) pecking order hypothesis that debt is preferred to equity. It would have been good for the study to separate the retained earnings from other equity and assess its impact on profitability and span beyond manufacturing sectors for generalizations of the results. This are some of the objectives of this study.

To test the predictions of pecking order theory using data from the Chinese market Tong and Green (2005) found a significant negative relationship between leverage and profitability and a significant positive relationship between leverage and past dividend. They argue that their findings support the pecking order theory over trade-off theory and will be capable of explaining the financing behaviour of Chinese companies. The sample size was 42 firms. This study however considered a s small sample size in a wide market. Possibly results would have been different if the sample size was improved.

To determine the relationship between capital structure and financial performance for industrial and allied sectors in the NSE during the period 2004 to 2008, Kaumbuthu (2011) found a negative relationship between debt to equity ratio and ROE. The findings therefore suggest that industrial firms prefer equity to debt again invalidating the pecking order theory. The proxies for capital structure and financial performance were debt to equity ratio and ROE respectively with regression as the technique of analysis. Again, it would have been imperative for the study to span beyond one sector for generalization of findings which is what this study seeks to do.

To examine capital structure and profitability of the Nigerian listed firms from the agency cost theory perspective Ishaya and Abduljeleel (2014) found that debt is negatively related with profitability but equity is directly related with profitability. A sample of 70 out of population of 245 firms listed at the Nigerian securities Exchange was used for the period 2000 – 2009.

Panel data for the firms were generated and analyzed using fixed-effects, random-effects and Hausman Chi Square estimations. The findings are consistent with Shubita and Alsawalhal (2012) survey and also provide evidence against the agency cost theory.

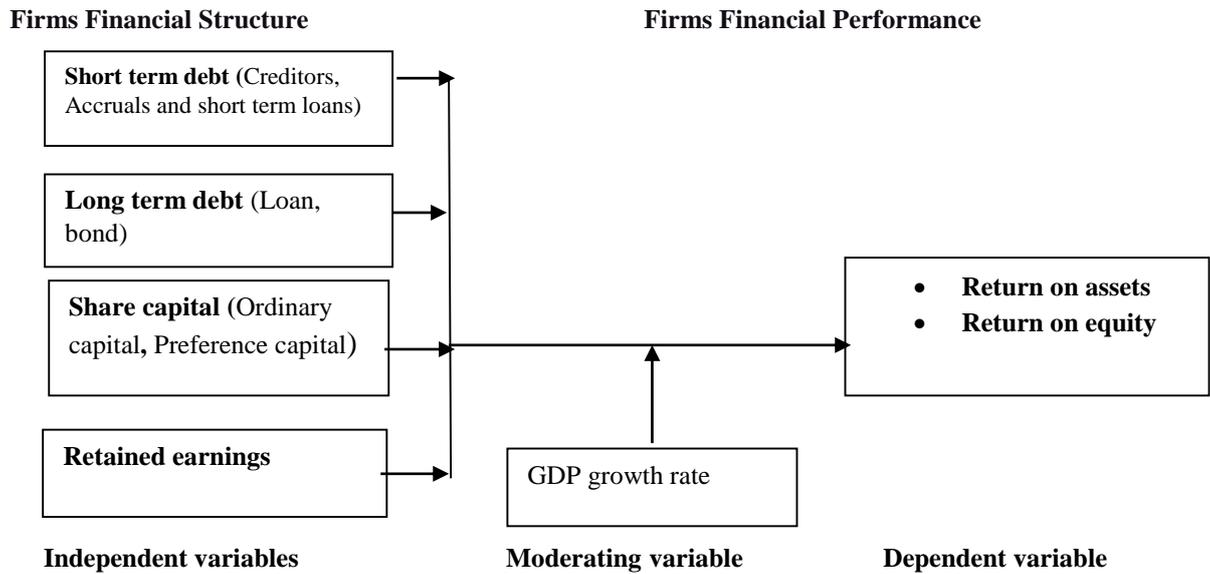
To determine the impact of choice of capital structure on the performance of firms in Egypt, Ebaid (2009) carried out a study of listed firms in Egypt and found that capital structure has little or no impact on a firm's performance. ROE, ROA, and gross profit margin were used as proxies for performance while short-term debt to asset ratio, long-term debt to asset ratio, and total debt to total assets were used as proxies for capital structure. Multiple regression was used to analysis the data. The results were consistent with Berger and Patti (2006) findings.

To evaluate the relationship between leverage and the financial performance of listed firms in Kenya, Maina and Kondongo (2013) found a significantly negative relationship between debt and profitability but no effect on firm value. Data for the period 2002 – 2011 was analysed using descriptive, regression and correlation. Tobin's Q was used as proxy for firm value while ROE and ROA were used as proxies for financial performance. Debt to equity, debt to assets and long term debt to equity were used as proxies for leverage. This results present contradicting and interesting findings. While they validate MM (1958) irrelevance theory through Tobin Q, they negate the same since debt had a negative relationship with profitability, implying that ultimately, it affects the firm value somehow since a firm value is sum of its debt and equity(which includes retained profits).

While analyzing the impact of macro-economic circumstances and social protection expenditure on economic deprivation in 25 European countries over the period 2007–2011, Visser, Gesthuizen and Scheepers (2014) found that GDP growth rate had a moderating effect on the relationship. They used linear multilevel regression analyses so as to take care of the hierarchical structure of the data from 148383 respondents.

In summary, the literature review informs the study variables and their underlying relationships as a basis of developing a conceptual framework that facilitates a quick understanding of the connection between the responses, explanatory and moderating variables by the reader as follows.

Figure 2.1 Conceptual Framework



3. Methodology

The study employed explanatory research design with secondary panel data from the financial statements of 61 non-financial firms from a target population of 63 firms, retrieved from the securities exchanges hand books for the period December 2006-2014. Data was analysed using correlations, descriptive statistics and multiple regression with the aid of Statistical Package for Social Sciences (SPSS) 18 and STATA 12. The exclusion of financial institutions is to remove anomalies associated with regulation like liquidity levels, core capital and bad debt provision (Santos, 2001).

The regression models used for the analysis are.

1. $R_{it} = \beta_0 + \beta_1 SD_{it} + \beta_2 LD_{it} + \beta_3 RE_{it} + \beta_4 E_{it} + e_j$
2. $R_{it} = \beta_0 + \beta_1 SD_{it} + \beta_2 LD_{it} + \beta_3 RE_{it} + \beta_4 E_{it} + \beta_5 GDP_{it} + \beta_6 (SD_{it} + LD_{it} + RE_{it} + E_{it}) + e_j$ [Baron & Kenny, 1986].
3. $R_{it} = \alpha_0 + \alpha_1 SD_{it} + e_3$
4. $R_{it} = \lambda_0 + \lambda_1 LD_{it} + e_4$
5. $R_{it} = a_0 + a_1 RE_{it} + e_5$
6. $R_{it} = b_0 + b_1 E_{it} + e_6$

Where R_{it} is ROA and ROE for each firm i and year t ;

ROA is net profit after tax/total assets

ROE is net profit after tax/total equity

SD is current liabilities/total assets

LD is non-current liabilities/total assets.

RE is the retained earnings/total assets

E is reserves, preference and ordinary capital/total assets

GDPR is gross domestic product growth rate

β_i , α_i , λ_i , a_i and b_i ($i=0,1,\dots,5$) are the associated regression coefficients.

E_j is the error term ($j=1,2,\dots,6$)

4. Findings and Discussion

4.1 Diagnostic tests

4.1.1 Multicollinearity

All the correlation coefficients between variables (in absolute form) were less than 0.8 indicating that there was no multicollinearity Gujarati (2003). This is an assurance that the regression coefficients were stable hence valid significance tests as put by Cooper and Schindler (2006).

4.1.2 Serial (Auto Correlation) Correlation

The F statistics for models with and without moderation of GDP rate were 12.063 and 63.232 with ROA as the response variable and 12.016 and 127.57 with ROE as the response variable respectively. The p value for both ROA and ROE models without moderation was 0.0000 and 0.001 for both with moderation. The test statistics were therefore significant in all cases at 5% level of significance to indicate presence of first order serial correlation in the data. To remedy this problem, feasible generalized least squares (FGLS) method was therefore used. This method also guarantee the efficiency and consistency of the estimators for valid significance tests.

4.1.3 Heteroscedasticity

The null hypothesis was no heteroscedasticity for all models with or without moderator. For a regression model with ROA as the response variable, the test yielded a chi-square value of 342.45 with a p-value of 0.000 with moderation and a chi-square value of 54.27 with a p-value of 0.000 without moderation. The chi-square values were in both cases statistically significant at 5% significance level and hence the null hypotheses were rejected to signify the existence of heteroscedasticity. To overcome the problem so as to make the standard errors unbiased leading to valid test statistics and hence significance tests as advocated by Wooldridge (2002), FGLS method was used.

For a regression model with ROE as the response variable, the test yielded a chi-square value of 342.02 with a p-value of 0.0000 with moderation and a chi-square value of 71.05 with a p-value of 0.0000 without moderation. The chi-square values were again in both cases statistically significant at 5% significance level and hence the null hypotheses were rejected to signify the existence of heteroscedasticity. Subsequently, FGLS method was employed to overcome the problem.

4.1.4 Stationarity

The null hypotheses that all panels contain unit roots for all variables were rejected at 5% significance level since the p values were less than 5%. This therefore implies that all the variables were stationary (no unit roots) and hence robust regression results even without lags (at level).

4.1.5 Hausman Specification

For ROA and ROE without moderator respectively, the nulls were failed to be rejected since the p values, 0.0933 and 0.2159 respectively were greater than 5% level of significance. This implies that random effects models were preferred. For ROA and ROE with moderator respectively, the nulls were rejected since the p values 0.0109 and 0.011 respectively were less than 5% level of significance implying that fixed effects models were preferred. This in tandem with Green (2008) recommendations.

4.1.6 Granger Causality

The p-values for all lagged financial structure components in isolation against ROA are greater than 5% level of significance implying that the null hypotheses that financial structure does not granger cause financial performance are not rejected. When all lagged values of financial structure are run against ROA, the p values are zero, which are less than 5% level of significance hence the null hypothesis that financial structure does not granger cause financial performance is rejected. The same results are replicated when financial structure components are run against ROE.

The p-values for all lagged values of ROA and ROE regressed against SD, LD, E, RE and all combined are all greater than 5% level of significance hence the null hypotheses that financial performance does not granger cause financial structure is not rejected. In summary, the tests imply that while a single component of financial structure does not granger cause financial performance, a mixture of the same does. Financial performance does not however granger cause financial structure.

4.1.7 Normality

The Shapiro Wilk results for all regression models (with and without the moderator) were a $w=0.861$ with a p value of 0.000. This therefore indicated that the null was rejected at 5% level of significance to imply that the residuals were not normally distributed. To overcome this problem that may distort the significance tests, robust standard errors were used instead of the normal standard errors (Gujarati, 2003). Robust standard errors generally improves the efficiency of the estimators (Green, 2008).

4.2 Descriptive Statistics

As shown in table 4.1, for all firms in EASE the average ROE over the period was 20.85% with a minimum value of -10.18, maximum value of 19.94 and a standard deviation of 1.19928.

This shows that though on average firms had a positive return on equity, the majority of firms ROE are to the right of the distribution just like ROA. The mean ROA was 10.76% with a standard deviation of 0.15793 and a minimum and maximum of -0.54 and 1.64 respectively. This shows that firms were generally profitable to reward the investment in assets. The fluctuation of returns in ROE were however higher than ROA as shown by standard deviations.

The average short term and long term debts to total assets are 28.89% and 16.97% respectively. This demonstrates that a large portion of firms' assets was financed with short term debt. The maximum borrowings also reaffirms this position as shown in table 4.1 with short term debt to total assets ration being 1.11 and long term to total assets ratio being 0.82. This could imply that short-term debt financing was easily available compared to the long term debt which is usually associated with high value collateral and at times restrictive covenants to make it unattractive. All firms however reported positive skewness on their debts to show that majority lied on the right tail of the distribution. This findings contradict Mwangi, Muathe and Kosimbei (2014) who concluded that majority of firms at the NSE use long term debt to finance their assets.

The average retained earnings to total asset over the period was 18.94%, minimum of -0.84 and maximum of .82 with a negative skewness of -0.424. This implies that majority of firms were utilizing their retained earnings above average usage and therefore lied on the left tail of the distribution. The mean equity to total assets ratio is 35.2% with a minimum of -0.11, maximum of 1.05 and a positive skewness of 0.61. This show that though generally firms raised capital through shares, majority were to the right tail. Finally, the average GDP growth rate over the period was 5.4525%, minimum of 0.2% and maximum of 10.4% with a negative skewness of -0.886.

Table 4.1: Descriptive Statistics

		N	Minimum	Maximum	Mean	Std. Deviation	Skewness
EASE	GDP(%)	418	0.2	10.4	5.4525	2.20671	-0.886
	SD	418	0	1.11	0.2889	0.20904	1.032
	LD	418	0	0.82	0.1697	0.16119	1.507
	E	418	-0.11	1.05	0.352	0.25056	0.61
	RE	418	-0.84	0.82	0.1894	0.26588	-0.424
	ROA	418	-0.54	1.64	0.1076	0.15793	2.67
	ROE	418	-10.18	19.94	0.2085	1.19928	8.999

4.3 Regressions Statistics

4.3.1 Relationship between Financial Structure and Financial Performance of Firms Listed at EASE

As shown in table 4.2, results on the relationship between financial structure and ROA show that the coefficient of SD was -6.76 hence a negative relationship with ROA. The p value was 0.153 which is greater than 5% level of significance. This indicate that SD had a statistically

insignificant inverse relationship with ROA. The coefficient of LD was -6.13 hence a negative relationship with ROA. The p value was 0.162 which is greater than 5% level of significance. This indicate that LD had a statistically insignificant inverse relationship with ROA.

This findings were consistent with MM (1963) capital structure irrelevance theory that the amount of debt in the capital structure does not affect the performance and the value of the firm. Tthe negative relationship between long term debt and the firm performance tends to support the pecking order theory too. The results also agree with Ebaid (2009) who concluded that capital structure has little or no impact on a firm's performance in Egypt. They are also consistent with Afza and Nazir (2007) who concluded that aggressive financing policy and firm's profitability are negatively related. However, the findings contradict those of Abdul (2012) who found that financial leverage has a significant negative relationship with firm's performance, measured by ROA in Pakistan.

Similarly, the coefficients of E and RE were also negative at -6.750 and -1.142 respectively showing a negative relationship with ROA too. The p values were 0.809 and 0.16 respectively hence E and RE had insignificant inverse relationship with ROA also. The results agreed with Abor (2007) who concluded a negative relationship between all capital structure sources and ROA but contradicts Ishaya and Abduljeleel (2014) who concluded that a positive relationship between equity and profitability exist. The overall model is significant and strong with a p value of 0.0000 of being greater than the Wald Chi-square of 2447.24 and a coefficient of determination of 82.9%. This implies that financial structure components are able to explain to the extent of 82.9% of ROA with only 16.1% left to other variables not in the model or by chance.

It is interesting to note that while all individual predictors are insignificant at 5% level of significance, the overall model is significant and even the coefficient of determination is high. There is nothing inconsistent between this relationships, it's simply because the coefficient of determination never decreases when you add variables to the model but multicollinearity between predictors changes (Paul, 2006). Slight multicollinearity makes confidence intervals to be much wider, leading to the acceptance of the null hypothesis more easily due to relatively large standard error (Gujarati, 2003). Paul (2006) posit that although the t ratio of one or more of the coefficients is more likely to be insignificant with multicollinearity, the coefficient of determination for the model can still be relatively high, like exhibited in this analysis. This possibility may have been due to -0.6 correlation between RE and E and 0.4 correlation between E and SD which are close to 0.8 as a benchmark for concluding multicollinearity. The overall model becomes

$$ROA = 6.64 - 6.76SD_{it} - 6.61LD_{it} - 1.14RE_{it} - 6.75E_{it}$$

Table 4.2: FGLS Regression Results of ROA as Dependent Variable without Moderator-Random Effects Model

ROA	Coefficient.	Std. Err.	Z	P>z
SD	-6.760795	4.73033	-1.43	0.153
LD	-6.613276	4.73231	-1.4	0.162
E	-6.750107	4.73323	-1.43	0.154
RE	-1.14242	4.73269	-0.24	0.809
_cons	6.645838	4.7299	1.41	0.16
Prob > Chi	.0000	R ² =82.9		Wald Chi 2(4)=2447.24

As shown in table 4.3, with regard to ROE, the coefficient of SD was 2.644 hence a positive relationship with ROE. The p value was 0.709 which is greater than 5% level of significance. This indicate that SD had a statistically insignificant positive relationship with ROE. The coefficient of LD was 2.617 hence a positive relationship with ROE. The p value was 0.712 which is greater than 5% level of significance. This indicate that LD had a statistically insignificant positive relationship with ROE.

This findings were consistent with MM (1953) capital structure irrelevance theory that the amount of debt in the capital structure does not affect the performance and the value of the firm. While the results agreed with Abor (2005) on SD and ROE, they contradict his findings on LD since he concluded a negative relationship. The findings also differ with Mumtaz, Rauf, Bashir and Noreen (2013) on the significance of the relationship since he found out that financial performance of firms in Pakistan is significantly affected by their capital structure. In terms of the nature of the relationship, this study complement Mumtaz et al. (2013) who also found a negative relationship.

Similarly, the coefficients of E and RE were also positive at 7.932 and 2.452 respectively showing a positive relationship with ROE too. The p values were 0.263 and 0.729 respectively hence E and RE had insignificant positive relationship with ROE at 5% level of significance also. The results contradict Abor (2007) who concluded a negative relationship between all capital structure sources and ROE but agree with Ishaya and Abduljeleel (2014) who concluded that a positive relationship between equity and profitability exists. Overall, the model is significant and strong with a p value of 0.0000 of being greater than the Wald Chi-square of 799.65 and a coefficient of determination of 69.73%. This implies that financial structure components are able to explain to the extent of 67.19% of ROE with only 32.81% left to other variables not in the model or by chance. The overall model becomes

$$ROE = 2.648 + 2.645SD_{it} + 2.617 + LD_{it} + 2.45RE_{it} + 7.932E_{it}$$

Table 4.3: FGLS Regression Results of ROE as Dependent Variable without Moderator-Random Effects Model

ROE	Coef.	Std. Err.	Z	P>z
SD	2.644535	7.087832	0.37	0.709
LD	2.616849	7.092413	0.37	0.712
E	7.931728	7.08775	1.12	0.263
RE	2.452277	7.089415	0.35	0.729
_cons	-2.647566	7.0866	-0.37	0.709
Prob > Chi	.0000	R ² = 0.6719		Wald chi2(4)=799.65

4.3.2 Moderating Effect of GDP Growth Rate on the Relationship between Financial Structure and Firm Performance of Firms Listed at the EASE

As shown in table 4.4, results on the relationship between financial structure and ROA while GDP is incorporated in the model show that the coefficient of SDG was -0.303 hence SD had a negative relationship with ROA as GDP growth increase. The p value was 0.029 which is less than 5% level of significance. This indicate that the moderating effect of GDP growth rate on SD was statistically significant on ROA's contribution. The coefficient of LDG was -0.0059 hence a negative relationship with ROA as GDP growth rate increase. The p value was 0.762 which is greater than 5% level of significance. This indicate that moderating effect of GDP growth rate on LD was statistically insignificant on ROA's contribution.

Similarly, the coefficients of EG and REG were also negative at -0.698 and -0.37 respectively showing a negative relationship of E and RE with ROA too when GDP growth increase. The p values were 0 for both hence the moderating effect of GDP growth rate on E and RE was statistically significant on ROA's contribution at 5% level of significance. The overall moderating effect of GDP growth rate on explanatory variables towards ROA was 9.2% since the proportion of variation of ROA due to the variation in the explanatory variables when the moderator was incorporated was 92.1%, compared with 82.9% without the moderator.

It is worth noting that this coefficients of determination were determined using the regression with panel corrected standard error (PCSE) approach, as an alternative to FGLS (Beck & Katz, 1995). According to Beck & Katz (1995), like FGLS, PCSE is used when the disturbances are assumed to be either heteroscedastic across panels or heteroscedastic and contemporaneously correlated across panels. The disturbances may also be assumed to be auto correlated within panel, and the autocorrelation parameter may be constant across panels or different for each panel like in this study. While both approaches yield consistent and very close estimators, FGLS estimators are more efficient. Indeed, the standard errors for the FGLS model are 50%–100% smaller than those of PCSE model (Beck & Katz, 1995). This in essence implies that the coefficient of determination determined by PCSE is smaller than but close to FGLS.

Since FGLS does not provide the coefficient of determination, PCSE was therefore used as an alternative to approximate the coefficients of determination.

Indeed, Akinlo and Egbetunde (2010) in examining the long run causal relationship between financial development and economic growth for 10 countries in Sub Saharan Africa found that financial development is co-integrated with economic growth and in particular a bidirectional relationship between financial development and economic growth in Kenya existed, supporting this findings. Visser et al. (2014), in analyzing the impact of macroeconomic circumstances and social protection expenditure on economic deprivation in Europe found that indeed GDP growth rate had an interaction effect with social protection on economic strain. This study too found GDP growth rate to have an interaction effect with financial structure and hence supported by Visser et al. (2014).

To determine the average marginal effect of financial structure components on ROA and ROE, the regression model 2 in data analysis section is differentiated partially with respect to each component and then the average GDP is incorporated in the differentiated models as below.

$$\frac{\partial Rit}{\partial SDit} = \beta_1 + \beta_6 GDP = -5.807 + 5.45 = -0.357$$

$$\frac{\partial Rit}{\partial LDit} = \beta_2 + \beta_7 GDP = -3.936 + 5.45 = 1.514$$

$$\frac{\partial Rit}{\partial REit} = \beta_3 + \beta_8 GDP = -2.138 + 5.45 = 3.312$$

$$\frac{\partial Rit}{\partial Eit} = \beta_4 + \beta_9 GDP = -7.76 + 5.45 = -2.31$$

This marginal changes show how much ROA increased or decreased with an increase in one unit of the relevant financial structure component when the average moderator value was incorporated. When this values are compared with the coefficients of ROA model without the moderator, they are different further supporting the fact that GDP growth rate has indeed a moderating effect on the relationship.

Table 4.4: FGLS Regression Results of ROA as Dependent Variable With Moderator-Fixed Effects Model

ROA	Coef.	Std. Err.	Z	P>z
SD	-5.807451	3.109566	-1.87	0.062
LD	-3.935761	3.109666	-1.27	0.206
E	-7.760367	3.108278	-2.5	0.013
RE	-2.137549	3.107341	-0.69	0.492
GDP	0.403187	0.021985	18.34	0
SDG	-0.3025945	0.138365	-2.19	0.029
LDG	-0.0059448	0.019643	-0.3	0.762

EG	-0.6984889	0.067313	-10.38	0
REG	-0.3704068	0.04203	-8.81	0
_cons	5.577779	3.103793	1.8	0.072
Prob >Chi	.0000	R ² = 0.921		Wald chi2(9)=568 1.27

As shown in table 4.5, results on the relationship between financial structure and ROE while GDP growth rate is incorporated in the model show that the coefficient of SDG was 0.305 hence SD had a positive relationship with ROE as GDP growth rate increase. The p value was 0.028 which is less than 5% level of significance. This indicate that the moderating effect of GDP growth rate on SD was statistically significant on ROE's contribution. The coefficient of LDG was 0.006 hence a positive relationship with ROE when GDP increase. The p value was 0.761 which is greater than 5% level of significance. This indicate that moderating effect of GDP growth rate on LD was statistically insignificant on ROE's contribution.

The coefficients of EG and REG were negative at -0.302 and -0.63 respectively showing a negative relationship of E and RE with ROE too just like when there was no moderator. The p values were 0 for both hence the moderating effect of GDP growth rate on E and RE was statistically significant on ROE's contribution at 5% level of significance. The overall moderating effect of GDP growth rate on the financial structure towards ROE was 26.85% since the proportion of variation of the ROE due to variation in the explanatory variables when the moderator is incorporated was 94.04%, compared with 67.19% without the moderator. Kanwal and Nadeem (2013) using the real GDP as independent variable found that it had an insignificant impact on ROE and ROA, to suggest that it may have impact on the financial structure in an insignificant manner as has been observed in this study.

To determine the average marginal effect of financial structure components on ROA and ROE, the regression model 2 in data analysis section is differentiated partially with respect to each component and then the average GDP is incorporated in the differentiated models as below.

$$\frac{\partial Rit}{\partial SDit} = \beta_1 + \beta_6 GDPR = 5.77 + 5.45 = 10.22$$

$$\frac{\partial Rit}{\partial LDit} = \beta_2 + \beta_7 GDPR = 3.9 + 5.45 = 9.35$$

$$\frac{\partial Rit}{\partial REit} = \beta_3 + \beta_8 GDPR = 2.1 + 5.45 = 7.55$$

$$\frac{\partial Rit}{\partial Eit} = \beta_4 + \beta_9 GDPR = 7.72 + 5.45 = 13.17$$

This marginal changes show how much ROE increased with an increase in one unit of the relevant financial structure component when the average moderator value was incorporated.

When this values are compared with the coefficients of ROE model without the moderator, they are different further supporting the fact that GDP growth rate has indeed a moderating effect on the relationship.

Table 4.5: FGLS Regression Results of ROE as Dependent Variable with Moderator-Fixed Effects Model

ROE	Coef.	Std. Err.	Z	P>z
SD	5.768252	3.110715	1.85	0.064
LD	3.898061	3.110653	1.25	0.21
E	7.721012	3.109442	2.48	0.013
RE	2.09508	3.108464	0.67	0.5
GDP	0.5967804	0.022006	27.12	0
SDG	0.3047437	0.138402	2.2	0.028
LDG	0.0059859	0.019663	0.3	0.761
EG	-0.3018437	0.06734	-4.48	0
REG	-0.6299905	0.04208	-14.97	0
_cons	-5.537366	3.104953	-1.78	0.075
Prob>Chi	.0000	R ² =.9404		Wald chi2(9)=5855.78

5. Summary and Conclusion

Based on the findings of the study, it is worth concluding that financial structure indeed affects the financial performance of firms listed at the EASE, though differently based on the source. Overall, there exist a strong relationship between financial structure, ROA and ROE. Both ROE and ROA models were significant at 5% level of significance. In addition, results on the relationship between SD and ROA or ROE suggest that agency theory is applicable based on the investors return on investment since while ROE model support the agency theory dictate, ROA model does not. The huge proportion of asset financing through SD could imply that short-term debt financing was less costly and therefore available compared to the long term debt which is usually associated with high value collateral and at times restrictive covenants making it unattractive. Generally on debt financing, it is prudent to conclude that firms should borrow to finance their growth without fear of adverse effect on profitability since it is insignificant.

On moderation of the relationship between financial structure and financial performance of firms at the EASE, the study concluded that indeed GDP growth rate had significant moderating effect. This is realistic since as expected, the GDP of a country dictates a lot on the behavior of not only investors at the securities market but even elsewhere hence a change in GDP is bound to affect the amounts available for consumption and savings for investment.

6. Recommendations

This study established that in isolation, some financial structure sources contribute insignificantly to financial performance but when combined with others, the contribution is significant. It is therefore recommended that firms combine both debt and equity in their financial structure. It is therefore incumbent on firms' managers and financial advisors to continuously study the market and advise on the appropriateness of the proportions of the various sources of finance based on market circumstances at any given time. This way, their decisions shall boost firm's competitiveness and consequently financial performance.

To the EAC secretariat, it is recommended that it aggressively lobby to the EAC membership for each to meet its mandate so as to ensure improved infrastructure to simplify and rationalize cross border trading. It is upon it to increase sensitization and awareness on the EAC protocols, address reported trade barriers towards securing a single securities exchange. It should also work to strengthen the institutional and regulatory framework for dispute resolution. This measures as recommended will foster the growth of the much anticipated single EASE, boost its capital base to attract the much needed foreign capital. It is also recommended that the EA governments grow and maintain their GDPs trends since GDP was found to have a contingent effect on the financial structure.

7. Suggestions for Further Research

This study focused on non-financial firms listed at EASE. It is therefore the researcher's view that further research be done on non-listed firms and compare their results with those of this study. It is also imperative to undertake similar studies on larger scope like Africa or European Union or United States of America or Asia markets and compare their findings with the current findings.

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