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The Impact of Capital Structure Decisions on Firm Performance: The Case of Listed Non-Financial Institutions in Ghana

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Abstract

The study examined the effect of firm capital structure decisions on their performance based on a sample of non-financial firms. The results of the study show that capital structure decisions thus affect firms' performance significantly. The study sampled 20 listed firms on the Ghana Stock Exchange over a 7 year period from 2010 to 2016. The study used both equity ratios and leverage ratios to measure capital structure. In all the regression results, the leverage variables were inversely related to performance. Short-term debt to equity which was expected to be positively related to performance is equally negatively related. The argument for short-term debt being positively related is due to the fact that such funds are generally cheap and easily accessible. However, the significance of such decisions on performance is mostly observed on equity holders. Thus, the return on equity as a measure of performance is significantly impacted by capital structure decisions. This is true regardless of the financial leverage variable observed, be it short-term debt, long-term debt or total debt. This, therefore, suggests that managements' decision regarding how much debt to be employed in a business is constantly made with shareholders being the revolving factor.

Key words

Capital structure, long-term debt, short-term debt, Return on Equity (ROE), Return on Assets (ROA), Performance, Ghana

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1. Introduction

The significance of financing decisions cannot be stressed enough in business. This is because numerous issues that give rise to businesses collapsing can be tackled by employing tactics and financial decisions that steer the growth and attainment of organizational objectives (Salazar *et al.*, 2012). The finance factor is identified to be the key source of imperilment in almost every organization (Memba and Nyanumba, 2013). Financing decisions are known to lead to a given capital structure. Based on the financing decisions of a firm, a suboptimal decision (financing) could lead to corporate failure. The challenge of management and investors equally is to identify the optimal capital structure or right capital mix. The overall or most important objective of any manager is to maximize the wealth of investors. The immediate or short-term measure of wealth maximization of investors is by measuring the firm performance. Therefore the quality of a financial decision is reflected in the firm's performance.

According to Jensen (1986), financial leverage is a proxy by which firms' ability to meet the demands of various stakeholders is gauged. Financial leverage is the proportion of debt (interest bearing) in the

capital structure. Most financial economics use or consider financial leverage as a parameter to sufficiently determine the extent of a firm to fulfill its commitment to capital providers. Companies obtain capital from two main sources, internally and externally. The internal source of capital available to management includes but not limited to retained earnings. External sources of funding available to management include borrowings from financial institutions (loans), credit from a firm's suppliers, issuance of bonds, and issuance of equity shares. The formation of a capital structure, therefore, can significantly affect the structure of governance within an organization. This also may impact the capability of a firm to make strategic choices (Jensen, 1986).

1.1. Motivation of the study

Capital structure decision refers to the combination of the claim of ownership (debt or equity) employed by a firm to fund its operations (Damodaran, 2001). The link between capital structure and firm performance has been largely studied in the last four decades. Managers utilize various debt ratio, also known as leverage ratio, as a performance-enhancing strategy of the firm (Gleason *et al.,* 2000). Employing this approach, companies in general, try to accomplish an optimal debt ratio in order to raise the firm value and lower the cost of capital and risk. Put differently, the optimal debt ratio improves the value over competing firms (competitive advantage) that a firm can provide in the capital market. Researchers, Rajan and Zingales (1994) opined that capital structure differs from country to country and hence has various patterns. A number of studies have sort to investigate this phenomenon in some European countries and the United States of America. Likewise, Roden and Lewellen (1995) reveal that there is a significant positive relationship between capital structure and firm performance in the United States whiles Gleason et al. (2000) state that there is a negative association between capital structure and company performance in European countries. The importance of capital structure decision to organizations and how it affects their bottom is evidenced by the litany of studies conducted on the subject matter (Musah, 2017; Anarfo, 2015; Hossain and Hossain, 2015; Yegon et al. 2014; Appiadjei, 2014; Checeht and Olayowola, 2014; Fosu, 2013; Niresh, 2012; Dadson and Badu, 2012; Awunyo-Vitor and Badu, 2012; Chen and Chen, 2011; Gatsi and Akoto, 2010, Abor, 2007; Abor, 2005). The empirical literature shows that these researches have been skewed towards other emerging and developing economies.

In the Ghanaian context, some studies have been conducted on capital structure on both its determinants and the impact of capital structure on firm performance (Musah, 2017; Anarfo, 2015, Appiadjei, 2014; Awunyo-Vitor and Badu, 2012; Gatsi and Akoto, 2010; Abor and Biepke, 2009; Abor, 2008; Amidu, 2007; Abor, 2007; Abor, 2005). Some of these studies have focused on determinants of capital structure (Abor, 2008; Amidu, 2007; Abor, 2007). Other too have focused on banks and other financial institutions (Musah, 2017; Anarfo, 2015; Awunyo-Vitor and Badu, 2012; Gatsi and Akoto, 2010; Amidu, 2007). Whiles some few have examined the subject matter in the context of SMEs (Abor and Biepke, 2009; Abor, 2008, Abor, 2007). Very few have focused on listed firms in Ghana (Appiadjei, 2014; Abor, 2005). In all these studies, what is common among them is the facts that they all agree firms in Ghana are dependent on debt financing. The most recent study among those that used listed firms in Ghana used data from 2004 to 2008. The continuous development on the financial market and capital market might influence firms' capital structure decision which will affect profitability and firm value in a different way. The aim of this study is to measure the influence of capital structure on firms' performance. As studies are on-going, this work will aim to provide empirical evidence in addition to the existing theories. Additionally, this research's intent is to aid the management of firms in determining the optimal capital structure.

1.2. Significance of the study

There has been a substantial amount of research and on-going research on the impact of capital structure on firm performance undertaken in economies that are developed, advanced developing and developing. This study aims at offering empirical evidence to endorse the veracity of the concepts to support the management of the firm to ascertain the best capital structure. The exploration intends to instruct readers on the consequence of capital structure on firm performance for listed firms in the Ghana Stock Exchange. It also enables managers to know how owner's funds and leverage (long and short) affect the firm performance and how the firm can implement an inexpensive source of funding. This investigation

would help improve financing decisions of most businesses in less developed countries like Ghana hence offer a foundation for development. The study will also contribute to the on-going research work in the area of capital structure and firm performance, hence helping to shape future research work.

2. Literature Review

2.1. Capital structure

Capital structure is the means by which the corporation funds their assets usually by creating a blend of owner's funds and leverage. Capital structure has been defined as the various means by which a firm is financed meaning the commensurate association between leverage and shareholders' funds (Pandey, 2001). Leverage and owners funds (equity) are the two foremost types of claims against a firm's assets. Shareholders and debt holders denote the two types of investors in the firm. Separately these claims are accompanied by dissimilar levels of threat, control and benefits. Leverage signifies money that the company borrowed from a financial institution or from the public through the issuance of debenture through the stock exchange under agreed period in which there is repayment of principal and interest. Equity represents a share of ownership in the company, so when investors purchase shares they provide capital to the company and become owners. Therefore capital structure refers to the combination of these claims in the firm's financing arrangements.

2.2. Firm Performance

From the perspective of the shareholder and with regards to this study, firm performance denotes to how improved the shareholder is at the close of a given point in time as compared to when he was at the commencement of the period. According to Berger and Patti (2002), this improvement can be ascertained using various ratios computed from financial statements, mainly the statement of financial position and income statement or using data from the stock exchange market prices These computations signal whether or not the organization is accomplishing the shareholders' goals of increasing their wealth and additionally can be used in relation to other businesses or to find movements in the performance over time of the same firm (Severin, 2002).

2.3. Theoretical literature Review

The selection of the sources of finance in a firm is the most critical decision to be taken especially for financial managers (Bundala, 2012). The financing decision is one of the roles that financial managers undertake in any given institution. This decision depends on the goals that a firm wants to reach or stage of growth of the business. At commencement, a business may begin with owners' equity but as it grows it may possibly need more capital than what it can internally make or owners can make available. The choices here are therefore to raise capital from outside the firm through the issuance of shares or debentures. Capital structure is, therefore, an art of putting together equity and debt finance to achieve an appropriate financing structure which could reduce the cost of capital and in turn increase the value of the firm. The notion of the link between capital structure and firm performance has been studied by different researchers. There are several views that strongly support or oppose the relationship between capital structure and firm value. Those in support of the theory believe that financing mix affects the performance of the firm through the earnings available to stockholders (Durand, 1952). Those who oppose believe the capital structure is immaterial, and it has no impact on shareholders wealth and hence there is no such thing as an optimal capital structure (Modigliani and Miller, 1958).

Modigliani and Miller's (1958) Irrelevancy theorem is achieved under perfect capital market condition assumptions. The theory supposed that circumstances without bankruptcy cost and taxes are where capital markets operate. This is not, however, the case of the real world. Therefore, their revised theory integrated tax benefits and reasoned that in imperfect market conditions, the firm value will rise with the amount of the debt utilized when payments made on interest accrued on debt are tax-deductible (Modigliani and Miller, 1963). Modigliani and Miller (1963) therefore posit that a firm's capital structure is best when totally financed by debt as it lessens the weighted average cost of capital and maximizes firm

performance and value. Nevertheless, challenges remain in the increased use of leverage in the capital structure as it may raise the potential bankruptcy costs.

Static tradeoff theory as proposed by Jensen and Meckling (1976) explains that a firm can attain its ideal capital structure whenever there was a balance between tax shield provided by leverage and the costs of leverage such as bankruptcy cost and financial distress. This ideal structure will only prevail if firm investment decisions are kept constant. The theory also states that if firm issues equity, it means that firm was parting with optimal capital structure and that was unfavourable news for the company. The theory, therefore, proposes that there is a positive relationship between the firm's leverage and performance.

In the mid-1970s, studies were conducted into agency costs with the concentration on what brought them to bear: the conflicts of interest between owners of the firm (shareholders) and the agents employed by the owners to run the firm (managers) and between lenders and firm owners. The study is grounded by the supposition that an ideal capital structure characterizes a concession amongst the impact of agency cost, interest deductible payments that are tax deductible and financial distress costs. "Agency cost theory" posits that debt can be used as a monitoring mechanism to keep management in check. Thus, increased use of debt results in an attendant reduction in agency cost which in turn may raise the efficiency of the firm and thereby lead to an improvement in firm performance.

The signaling hypothesis as developed by Ross (1977) posits that managers know about the dissemination of firm profits but individuals who want to invest in the firm are not privy this knowledge. Investors may deduce that a firm has increased future cash flows and a responsibility to fulfill its contractual obligations if managers decide to increase leverage in the capital structure. These will exhibitions the high amount of assurance towards the firm's future prospects by management. Investors interpret a strategy by management to issue new equity, as a signal that managers have no assurance about the future projections of the firm. The theory, therefore, posits that firm performance and debt utilization are positively correlated.

Researchers in the early 1980s were focused on attaining knowledge on information irregularities among investors and businesses, which formed the basis for the pecking order theory. The study reasons that there is an order in the preference of a firm in funding its investments, and that observing the hierarchy represents the ideal financing strategy. As such, as issuing new stocks would be disadvantageous to current shareholders, managers choose first to finance investments from internal sources such as retained earnings. If this source proves insufficient, managers will then gravitate to sources outside the organization, first to levered financing and lastly to the issuance of new shares as last resort. According to pecking order theory, more profitable firms generate higher earnings that can serve for self-financing, enabling them to opt less for debt financing; conversely, less profitable firms cannot have access to the benefits of higher levels of profitability and as such they opt for debt financing. Accordingly, the theory affirms an inverse association between the debt level and firm performance. In the 1990s, researches that were undertaken were marked by an emphasis on the disjunctive-hypothetical reasoning, investigators sort to deliver opinions in support of or against the two theories proposed, that is, the trade-off theory and pecking order theory.

2.4. Empirical literature review

Empirically, the relationship between capital structure and firm performance has been subjected to many studies since the work of the researchers, Jensen and Meckling (1976) and there have been reports of diverse findings. Some authors have posited a positive relationship; some an inverse relationship while others attained varied or no relationship between capital structure and firm's performance. Discussed below are some of the chief contributions to the literature on this topic.

Kipesha and Moshi (2014) attempted to study the influence of capital structure on the performance of banks using a panel data of 38 banks in Tanzania over five year's period. The research postulation was that capital structure has a positive impact on firm performance. The research used two variables, capital structure as an independent variable and firm performance as a dependent variable. Capital structure was measured by using debt to equity ratio, short-term debt to equity, total debt to total asset and short debt to asset and short debt to asset ratio, short debt to asset ratio. The study results specified the presence of inverse relationship and hence exchange between the usage of leverage and firm performance. Capital

structure was measured using the ratio of debts to equity and performance was measured by cost efficiency and return on equity on capital structure. The study found firms in Tanzania employed more debt than equity financing. The study also determined that firms in Tanzania choose to use more short-term debts, hence they still have a chance to excel as the debts to asset ratio was found to have a significant positive impact on return on equity. The study concluded that there was a negative relationship between the capital structure and performance of the banks.

Pastory *et al.* (2013) studied the relationship between capital structure and commercial bank performance using panel data analysis. The study was aimed at identifying the relationship between capital structure and bank performance by employing data from bank scope and covered 20 banks in Tanzania. The causal research design was used because the study sought to identify the relationships between the dependent and the independent variables. The dependent variable is ROE (return on equity). The independent variables are equity to loans, equity to total asset, liabilities to equity and equity to customer funding. The study concluded that there was a negative relationship between the capital structure and performance of the banks.

Adesina *et al.* (2015) study on capital structure and firm performance in Nigeria. The study used profit before tax as a dependent variable and two capital structure variables (Equity and Debt) as an independent variable. The sample of the study consists ten Nigerian banks quoted on NSE for a period of eight years from 2005 to 2012. Ordinary least square regression analysis of secondary data shows that capital structure has a positive relationship with financial performance. This suggests that the management of quoted banks in Nigeria consistency use debt and equity capital in financing to improve earnings. Abor (2005) also investigated the link between capital structure and profitability of firms listed on the Ghana Stock Exchange for the period 1998–2002. Using regression analysis, he reported a significantly positive relationship among ROE and the short-term debt and total debt ratio, while, a negative relation with long-term debt.

Conversely, using panel data consisting of 257 South African firms over the period 1998 to 2009, Fosu, (2013) investigated the association between capital structure and firm performance. To test the relationship, he used GMM regression approach and found a positive and significant relation between financial leverage and firm's performance. Tianyu (2013) examined the influence of capital structure on firm's performance in both developed and developing markets. A sample of 1200 listed firms in Germany and Sweden and 1000 listed firms in China for the period 2003-2012 were used in his study. Applying OLS regression method, he documented that capital structure has a significant negative effect on firm's performance in China, but, a significant positive effect in two European countries, i.e., Germany and Sweden, before the financial crisis in 2008. Margaritis and Psillaki (2010) observed a significant positive relation between leverage and firm's performance. They used a sample of both low and high growth French firms for the period 2003-2005 and found that leverage has a positive effect on firms' efficiency over.

3. Methodology of research

Regression analysis is the most commonly used tool for the evaluation of the relationship between two or more variables. It explains how the change in explanatory variables influences the change in the outcome variable. Regression analysis can be applied for the panel data, and then the regression equation can be described in the following form:

$$y_{it} = \alpha + \beta x_{it} + \mu_{it} \quad (1)$$

where y_{it} is the response variable, α is the intercept term, β is a vector of coefficients to be estimated on the explanatory variables, and x_{it} is a vector of observations on the explanatory variables, the subscripts t and i represent units of time and cross-sectional units with the possible values of t = 1, 2, …, T and i = 1, 2, …, N (Brooks, 2008).

The simplest way to analyze longitudinal data is to use single equation for the whole dataset. The ordinary least squares (OLS) model is suitable for this type of estimations. However, as it is the simplest way to proceed, the model has several limitations. Most important, the OLS provides the derived average values of variables and the relationship between them, which does not change over time or across the

countries. Despite this drawback, the analysis of longitudinal data allows studying the broader range of problems and determines common results for several cross-sectional units over the particular time period.

Furthermore, the precise estimations require the long time period, while it is more difficult for the macroeconomic data analysis, thus the usage of panel data increases the number of observations as well as the degrees of freedom and the results become more efficient. Last but not least, the application of a certain panel data model can eliminate the omitted variables bias. The panel data can be analyzed by using variety of models as OLS, instrumental variables (IV), fixed effects (FE), random effects (RE) models or generalized method of moments (GMM).

3.1. Population/Sample

The target population of the study is made up of all non-financial companies listed on the Ghana Stock Exchange (GSE). The companies in the financial sector are excluded from the study to remove any inconsistencies associated with the sector which is highly regulated by the central bank on matters regarding liquidity, asset and capital holding, and provision for bad debts and other factors (Santos, 2001). The financial leverage of financial companies is significantly incomparable to that of non-financial companies (Mwangi *et al*., 2012).

3.2. Variable measurements

The variables to be employed by the study are basically categorized into firm specific and economy wide variables.

Dependent Variables

ROA: The dependent variable for the first measure of performance is return on asset (ROA). ROA is measured as the net profit after tax divided by total assets.

ROE: The dependent variable for the second measure of performance is return on equity (ROE). Return on equity is measured as the net profit after tax divided by equity (net assets) for the respective firms for the respective years.

Independent Variables

The firm specific independent variables are further categorized into leverage, working capital, and economy wide variables. Financial leverage measures the level of risk of the business and these variables include:

LDA: Long-term debt divided by total equity of the firm.

SDA: Short-term debt divided by total equity of the firm.

TDA: Total debt dived by total equity of the firm.

Working capital variables measure the ability of the company to run it daily operations without running into liquidity challenges. These variables include:

(TCL/TA): Short-term obligation to total assets: this variable measures the ratio of short-term financial obligations to total assets. This ratio compares the proportion of total assets of the firm that is financed from short term borrowings.

(TCA/TA): Short-term assets to total assets: this variable measures the ratio of total current assets to total assets. Thus, the variable shows the proportion of total assets of the business that is financed by short term assets.

SIZE: this variable measures the size of the company. It is computed as the natural logarithm of total assets.

GDPR: this variable measures the Gross Domestic Product of the country for the respective years of the study.

After incorporating the various relevant variables, the regression models thus become:

Performance as measured by Return on Assets (ROA)

$$ROA_{it} = \beta_0 + \beta_1 SDA_{it} + \beta_2 \left(TCL/TA\right)_{it} + \beta_3 \left(TCA/TA\right)_{it} + \beta_4 SIZE_{it} + \beta_5 GDPGR_t + \varepsilon_{it} \quad (2)$$

$$ROA_{it} = \beta_0 + \beta_1 LDA_{it} + \beta_2 \left(TCL/TA\right)_{it} + \beta_3 \left(TCA/TA\right)_{it} + \beta_4 SIZE_{it} + \beta_5 GDPGR_t + \varepsilon_{it} \quad (3)$$

$$ROA_{it} = \beta_0 + \beta_1 TDA_{it} + \beta_2 \left(TCL/TA\right)_{it} + \beta_3 \left(TCA/TA\right)_{it} + \beta_4 SIZE_{it} + \beta_5 GDPGR_t + \varepsilon_{it} \quad (4)$$

Performance as measured by Return on Equity (ROE)

$$ROE_{it} = \beta_0 + \beta_1 SDA_{it} + \beta_2 \left(TCL/TA\right)_{it} + \beta_3 \left(TCA/TA\right)_{it} + \beta_4 SIZE_{it} + \beta_5 GDPGR_t + \varepsilon_{it} \quad (5)$$

$$ROE_{it} = \beta_0 + \beta_1 LDA_{it} + \beta_2 \left(TCL/TA\right)_{it} + \beta_3 \left(TCA/TA\right)_{it} + \beta_4 SIZE_{it} + \beta_5 GDPGR_t + \varepsilon_{it} \quad (6)$$

$$ROE_{it} = \beta_0 + \beta_1 TDA_{it} + \beta_2 \left(TCL/TA\right)_{it} + \beta_3 \left(TCA/TA\right)_{it} + \beta_4 SIZE_{it} + \beta_5 GDPGR_t + \varepsilon_{it} \quad (7)$$

4. Data analysis and interpretation of results

4.1. Test for Multi-Collinearity

Variance Inflation factors

A statistical problem that is addressed in this study is multi-collinearity among the independent variables. As recommended by Gujarati (2003), Variance inflation factor or VIF method is used to test for the existence of multi-collinearity among the independent variables of the study. VIF measures how much the variances of the estimated regression coefficients are inflated as compared to when the determinants are non-linearly related. According to Gujarati, if VIF of any independent variable exceed the value of 10, then the variable is said to be highly collinear. The VIF among the independent variables of the study are presented in Table 1 below.

Table 1. Variance Inflation Factors

Variable	VIF	1/VIF
TCLTA	1.24	0.804214
TCATA	1.19	0.836834
SIZE	1.08	0.925519
GDPR	1.07	0.933476
SDA	1.03	0.971911
LDA	1.03	0.971911
SDA	1.03	0.971911

4.2. Descriptive Statistics and Correlation Analysis

This section shows summaries of the major variables that were used for the study. The first subsection takes a look at the summaries of return on assets (ROA) and return on equity (ROE) variables. The second subsection presents results of correlation tests carried on the major variables employed in the study. Table 2 shows the summary statistics of sampled listed firms for the study. The number of observations that constitutes the summary statistics is one hundred and forty (140).

Table 2. Summary Statistics of Data

Variable	Observations	Mean	Std. Dev.	Min	Max
TCL/TA	140	0.45	0.38	0	1
TCA/TA	140	0.47	0.24	0	1
SDA	140	4.59	34.72	-12.74	407.93
LDA	140	6.20	67.59	-7.81	799.99
DA	140	10.80	102.11	-13.78	1207.91
SIZE	140	16.54	1.71	13.44	19.43

ROA	140	0.01	0.19	-1.03	0.30
ROE	140	-0.98	10.43	-120.06	3.71
GDPR	140	7.57	3.05	4.30	14

The mean for SIZE is 16.54 with a corresponding standard deviation of 1.71. The associated minimum and maximum values of size are 13.44 and 19.43 respectively. Size is measured as the natural log of total assets value. The ratio of current liability to total assets (TCL/TA) has a mean value of 0.45 and a standard deviation of 0.378. This implies that on average firms sampled have about 45% of total assets being financed through current liabilities. The corresponding minimum and maximum values are 0 and 1 respectively. This also suggests that with the years of observation, a firm had no current liability on its statement of financial position. Another firm within the same year of observation also had 3.5. TCL/TA is measured as total current liabilities divided by total assets. Current assets to total assets ratio for firms sampled averaged 0.47 and a standard deviation of 0.24. The maximum value of 1 implies that a firm within the observed firms had all of its total assets being financed by current assets. The minimum value of 0 equally implies that a firm within the sample did not have any current assets on its statement of financial position in the years under review. The ROA averaged less than 1% for the firms sampled for the study. The standard deviation is 0.186 or 18.6%. The maximum value of 0.304 or 30.4% means that highest return on assets for the sampled firm is less than 40%. The minimum value of -1.03 or 103% indicates that one firm during the years under review had losses accumulated being far greater than the value of total assets.

The variable SDA (short term debt to total equity) has an average of 4.59% and a standard deviation of 34.72%. The statistics however indicates a minimum SDA of -12.73% implying that a company within the years under review had inadequate capital (accumulated losses eroding stated capital). The maximum value of 407.92% equally shows that a company within the sample has short term debt compared to total equity (shareholders fund) being more than four times. LDA (long term debt to total equity) ratio has a mean or average value of 6.20% with a corresponding standard deviation of 67.59%. The minimum and maximum values for LDA ratio are -7.8% and 799.98% respectively. This implies that overall firms within the sample made little use of long term debt. However, some firms equally employed significant long term debt in proportion to equity capital. DA which measures total debt to total equity capital of sampled listed firms has a mean of 10.79%. The associated standard deviation for DA is 102%. The corresponding minimum and maximum values are 13.77% and 1207% respectively. The overall mean values of debt to total assets ration implies firms within the sample did not employ significant amounts of debt. The maximum and minimum values on the other hand shows that some selected firms have a huge appetite for risks, hence, the recoding of values as high as 1207% and 407%. GDPR as a variable measures the growth rate of Ghana's Gross Domestic Product for the years in review. The average growth rate is 7.57% and a standard deviation rate of 3.05%. The minimum and maximum GDP rates were 4.3% and 14% respectively. The GDP percentages imply that the GDP of the country during the years of the study were steady.

4.3. Correlation Analysis

From the correlation matrix, TCATA is positively correlated to TCLTA implying as either variable increases the other equal increases. The relationship however is not strong. ROA has a strong negative correlation with TCLTA. This indicates that as ROA increases, TCLTA will decrease significantly. ROE has a semi-strong negative correlation with SDA with a correlation coefficient of -05891. ROE has a negative correlation with both LDA and DA with associated correlation values of -0.4739 and -0.3812 respectively. ROA has a weak negative correlation with SDA, LDA and DA. This is evidenced by correlation values of -0.0707, -0.049 and - 0.0571 respectively. Overall, it appears leverage ratios have stronger correlation with performance as measured by ROE compared to ROA.

Table 3. Correlation Matrix

	TCLTA	**TCATA**	**ROA**	**ROE**	**GDPR**	**SDA**	**LDA**	**DA**
TCLTA	1							
TCATA	0.3588	1						
ROA	-0.6163	0.2597	1					
ROE	0.0073	0.0808	0.1164	1				
GDPR	0.2329	0.0829	-0.0922	0.0064	1			
SDA	-0.0072	-0.0612	-0.0707	-0.5891	0.0103	1		

LDA	-0.026	-0.0748	-0.0499	-0.4739	0.0108	0.4909	1	
DA	-0.0196	-0.0703	-0.0571	-0.3812	0.0107	0.496	0.399	1

4.4. Comparison of ROA results

From table 3 SDA, LDA and DA are different variables measuring three different forms of financial leverage or debt against capital. The results of SDA, LDA and DA in all three results show a negative association or correlation with firm performance as measured by return on assets (ROA). This implying that regardless of the financial leverage variable employed, the response in relation to ROA remains the same. Thus as short, long and total debt increases the impact on ROA decreases and vice versa. Whiles the coefficients of SDA, LDA and Da are all negatively related to ROA SDA remains the only statistically significant of the variables.

TCLTA across the three results all show a negative coefficient to ROA and all three results also show statistically significant relationships. All the p-values of the results are 0.0000 for all three results for TCLTA. The coefficients for TCLTA for the results ranges from -0.38448 and -0.38541. Thus holding all other variables constant the change in ROA does not significantly vary. TCATA across the three results also shows a consistent positive coefficient to ROA. The coefficients of TCATA did not show any significant variations. The coefficients varied between 0.3848 and 0.3858. These positive associations however had one thing in common, thus a statistically significant relation with p-values of 0.000 throughout. SIZE like TCATA also has positive relationship with ROA with the highest coefficient being 0.0262 and the least being 0.0258. SIZE has all three relationships being statistically significant. GDPR the only non-firm variable has positive association with ROA for all three results. However, none of the relationships is statistically significant at any level. The coefficients are 0.00173 on the average signifying that holding other factors constant, the change in ROA as a result of GDP in not significant.

4.5. Comparison of ROE results

Table 4. Regression Results (ROE)

ROE/OLS
REGRESSION COEFFICENTS FOR MODELS 1, 2 & 3 FOR ROE

Variable	1	2	3
SDA (short term debt to equity)	***-0.29797******		
LDA (long term debt to equity)		***-0.1504******	
DA (total debt to equity)			***-0.1003******
TCLTA (current liabilities to total assets	-0.181919	-0.7410834	-0.5501377
TCATA (current assets to total assets)	0.7452654	0.6100086	0.6379533
SIZE (natural log of total assets)	0.18322**	0.0753939	0.1152174
GDPR (gdp rates of ghana)	0.0481906	0.071564	0.0636873
Prob (F)	0.0000	0.0000	0.0000
Rsqd	97.96%	94.96%	96.35%
Adj. Rsqd	97.89%	94.77%	96.21%

*significant at 1%
**significant at 5%
***significant at 10%

The table shows the regression coefficients for all three models used in measuring effects of SDA, LDA and DA on firm performance as measured by ROE. Comparatively, all financial leverage variables were statistically significant at the various relevant levels. SDA has a coefficient of -0.29797 indicating that 29.797% of the variations in ROE are explained by short term debt, holding all other factors constant. The negative association is consistent with that of LDA and DA which also have coefficients of -0.15 and -0.10 approximately.

TCLTA has negative associations with ROE for all three results. The results of regression (2) showing a coefficient of -0.7410 is the highest followed by -0.55013 (results 3) and -0.1819 (results 1). None of the observed relationships is statistically significant at any of the relevant levels. TCATA for all three results show a positive relationship with ROE with no statistical significance. TCATA coefficient of 0.74526 (results

1) is the highest with 0.63795 (results 3) and 0.6100 (results 2) in that order respectively. SIZE for results 1 has a coefficient of 0.18322 and is statistically significant at 5%. 0.07539 and 0.11521 are the coefficients of results 2 and 3 respectively. GDPR has a positive association throughout the results for ROE. Again none of all three positive relationships are statistically significant at any of the relevant levels.

Table 5. Regression Results (ROA)

ROA/OLS
REGRESSION COEFFICENTS FOR MODELS 1, 2 & 3 FOR ROA

Variable	1	2	3
SDA (short term debt to equity)	***-0.00042****		
LDA (long term debt to equity)		***-0.0001746***	
DA (total debt to equity)			***-0.0001261***
TCLTA (current liabilities to total assets	-0.38448***	-0.3854***	-0.3851***
TCATA (current assets to total assets)	0.3848***	0.3858***	0.3854***
SIZE (natural log of total assets)	0.0262***	0.0258***	0.0259***
GDPR (gdp rates of ghana)	0.0017075	0.0017399	0.0017305
Prob (F)	0.0000	0.0000	0.0000
Rsqd	70.37	70.14	70.21
Adj. Rsqd	69.26	69.03	69.1

*significant at 1%
**significant at 5%
***significant at 10%

The table shows the regression coefficients for all three models used in measuring effects of SDA, LDA and DA on firm performance as measured by ROA.

4.6. Comparison across performances (ROA and ROE)

This section compares the results of capital structure and its effect on firm performance as measured by ROA and ROE. This section seeks to identify variables that significantly vary when regressed on ROA and ROE. This is to enable the researchers thoroughly assess variables that have significant impact on firm performance from capital structure perspective. The regression coefficients of SDA, LDA and DA for both ROA and ROE were negatively related regardless of the measure of performance used (as dependent variable). In the case of ROE; SDA, LDA and DA were all statistically significant at 1% level. The same variables in the case of ROA have only SDA being statistically significant at 10% level with LDA and DA being insignificant.

TCLTA in both cases (thus looking at ROA and ROE) for all results show a negative relationship with the respective measure of performance. The results in the case of ROA for all three models are statistically significant at 1% whereas that of ROE were statistically insignificant. On average the weight of the coefficients for TCLTA in ROA are lesser compared to ROE. This evidenced by the least of coefficient -0.181919 and a highest of -0.74108 for ROE, compared to the least coefficient of -0.38448 and a highest of -0.3854. TCATA follows a similar pattern with coefficients being positively related to ROA and ROE. However, all the coefficients under ROA are statistically significant at all relevant levels (thus at 1% significance). SIZE for both ROE and ROA is positively related. The positive association of SIZE against ROA is significant throughout whereas against ROE it is significant only when SDA (short term debt) is regressed against ROE. GDPR for all models is positively related to ROE and ROA. In no instance were any of the associations statistically significant, implying that, the growth of the country's economy generally does impact firm performance significantly.

5. Discussions

5.1. Effect of debt financing on firm performance

The results of regression (1) show a negative association of SDA with ROA. The same is true for results for ROE. This implies that the employment of short term debt decreases the financial performance of firms. This observation could be due to influx of banks into the Ghanaian economy over the past decade

making more firms rely on immediate on long term borrowings as opposed to short term borrowings. The low usage of short term debt is evidenced by an average debt to equity (SDA) of 4.59%. This finding is contrary to that of Abor (2005) who found that, firms observed between 1998 and 2002 had a positive significant relationship with performance. The effect of SDA on ROE is more profound compared to ROA. This implies that when short term debt increases, the decrease in ROE is greater compared to ROA. This could be attributed to management of these firms inability to turn around these short term borrowings to generate returns, sufficient to pay of the principal as well as interest components. This could also explain why firms appear to opt for less use of short term funds in running the businesses. This observation is inconsistent with Kipesha and Moshi (2014) findings.

The results in regression (2) for both ROA and ROE are negatively related to LDA. This suggests that as firms employ more long term debt, performance as measured by both ROE and ROA falls. However, the expected decrease in performance is greater and statistically significant for ROE compared to ROA. This suggests the cost of long term debt in the country generally is expensive. The expensive nature of long term finance therefore reduces the profits of companies thereby decreasing profits retained by firms. The results suggest that firms should be mindful of the amount of long term debt that they employ in financing the operations of the firm. The results are consistent with the study by Adae *et al.* (2013). Factors that could be attributed to the high cost of long term debt in Ghana are the under developed nature of Ghana's long term debt market and double digit Treasury bill rates. Since Treasury bill rates are usually the base rates below which lenders will never agree to, it generally tends to make cost of accessing funds fall within the double digit margin. This point is alluded to by Abor, (2007)

The results in regression (3) shows total debt to equity (DA) is negatively related to performance. The relationship again, is statistically significantly significant in the case of ROE. This implies that as the total debt of the company increases, the firm performance also decreases. The decrease on the other hand is expected to be profound in the case of ROE compared to ROA. The evidence is in the value of the coefficients. The negative relationship could explain why the firms sampled for the study relied less on debt in their operations. Firms used on average 10.79% total debt in financing their operations. In all instances as examined by the SDA, LDA and DA, all three measures of financial leverage re negatively related to performance. This implies that for firms to increase profitability or performance, then management need to reduce the cost of operations or cost of sales. This is so as contracting debt in which ever form does not necessarily affect performance positively. The negative association is inconsistent with the findings of Fosu (2013).

SIZE in the case of ROA is positively related to ROA and ROE. This implies that as a firm increases its total amount tangible assets, performance as measured by both ROA and ROE equally increases. The relationship in both cases is statistically significant. However, the relationship in terms of change to ROE is greater compared to ROA. This evidenced by the coefficients of SIZE in the results of the regression for ROA and ROE. The impact of SIZE on ROE being greater than ROA could be attributed to management's ability to turn these assets around to generate enough return to equity holders. Generally, the acquisition of assets, particularly plants and machinery, would require little or no maintenance and operating cost within the first few years. This would in turn reduce the expenditure line (maintenance and operating cost) for these assets, hence more profits retained thereby increasing ROE and ROA.

GDPR which measures the GDP growth rate in the country is positively related to ROA and ROE. However, the relationship is not statistically significant implying that regardless of the economic growth the economy experiences, it appears the firms within the sample do not experience significant changes in their performances. The attributing factor to firms not experiencing significant impact on performance could be due the sectors of the economy that are experiencing growth. As has been in the case of the country, the sectors of the economy that have seen and contributed significantly to the economy of Ghana over the last decade has been the Telecommunications and banking industry and most recently, the oil industry. The vast number of firms sampled for the study fall outside these sectors and that accounts for the insignificant contribution of GDPR to firm performance.

5.2. Effect of working capital on firm performance

The success of running of a company in achieving its day-day operations is dependent on efficient management of its working capital. The working capital financing, be it conservative or less conservative will ensure if a firm is able to adequately fund its short term obligations with existing current assets. The efficient management of working capital equally affects the profitability of a company.

The study employed two working capital variables being TCLTA and TCATA. TCLTA measures the proportion of total assets being financed by current liabilities whereas TCATA measures the proportion of total assets being financed by current assets. The results show that TCLTA has mean of 0.4529. This indicates firms within the sample approximately financed 45% of total assets through current liabilities. This observation indicates that the companies used less current liabilities to finance assets build-ups. These results imply that non-financial companies investigated employed a conservative financing working capital management policy. The results output shown in table 1 show that the average value of total current assets to total assets ratio – TCATA (working capital management 2) was 0.4723 with minimum and maximum values of 0.0002 and 1 respectively. The mean value indicates that, on average, companies were neither very aggressive nor excessively conservative in their investing in working capital management practices. The maximum observation of 1 indicate that there was a company during the period under study that was following an extremely conservative investing working capital management policy by holding high levels of investment in current assets.

TCLTA in regression results (1, 2 and 3) show an inversely related relationship with performance. The relationship implies that as firms increase the proportions of total assets financed by current liabilities the profitability of such firms begins to decline. This observation could be explained by the increase in risks associated with increasing current liabilities. Suppliers and other creditors who agree to increase indirect financing to a company would most likely increase the price of supplies or short term interests. This move would be considered by indirect financiers (creditors) as an adequate consideration for the additional risks they assume. These actions would increase the cost of doing business which invariably decreases the returns of firms. These inverse relationships are statistically significant in the case of ROA compared to ROE.

TCATA in the regression results (1, 2 and 3) is positively related to performance as measured by ROA and ROE. This suggests that as firms increase the proportion of total assets financed by current assets, the expected level of profitability equally increases. Put differently, it appears it is profitable for firms to be aggressive in their working capital management. This observation could be attributed to working capital management policies geared towards stimulating revenue and invariably increasing returns. Firms usually accomplish this through significant build ups of debtors, frequent turnover of inventory and short term investment of excess cash to generate other income. These management actions could be the attributing factors in explaining the positive relationship between TCATA and performance. The expected change in performance with respect to TCATA is greater for ROE compared to ROA. This is evidenced by the greater coefficients of TCATA under ROE compared to ROA. However, the expected changes as measured by the coefficients are statistically significant in the case of ROA but insignificant in the case of ROE.

6. Conclusions

Capital structure decisions are crucial for any business establishment. The decision is critical due to the need for firms to maximize returns to various capital providers. Again, capital structure decisions significantly affect the firm's ability to compete in the business environment. The study evaluated the impact of capital structure decisions on firm performance of listed firms during a seven year period, from 2005 to 2011. The study examines the impact of short term debt, long term debt and working capital on firm performance. The results indicate a negative significant relationship between short term debt and performance. This suggests that, firms use low amounts of debt in financing their operations. This proposes that management in their quest to improve performance of firms relied less on short term debt and long term debt. From the descriptive statistics, short term debt accounted for 4.59% of total debt financing. Long term debt accounted for 6.20%. These are further indications that listed firms relied less on debt financing in their operations. With regards to working capital, the results of the study indicate that TCLTA (proportion of assets financed by current liabilities) are negatively related to performance. This implies firms again outside of traditional debt, did not make significant use of indirect financing. However, TCATA (proportion of total assets financed by current assets) had a positive significant relationship with

performance. This relationship indicates that firms depended heavily on current assets in financing their operations rather than conventional borrowings. The study shows that, firms prefer to finance their operations through working capital management policies rather than borrow from individuals and other financial institutions. The results of the study show that capital structure decisions thus affect firms' performance significantly. However, the significance of such decisions on performance is mostly observed on equity holders. Thus, return on equity as a measure of performance is significantly impacted by capital structure decisions. This is true regardless of the financial leverage variable observed, be it short term debt, long term debt or total debt. In all the regression results, these leverage variables were inversely related to performance. Short term debt to equity which was expected to be positively related to performance is equally negatively related. The argument for short term debt being positively related is due to such funds being generally cheap and easily accessible. Numerous studies have shown that capital structure decisions greatly affect performance of firms; as measured by ROE. ROA on the other hand according to studies appears not to be highly influenced by capital structure decisions. This therefore suggests that, managements' decision regarding how much debt to be employed in a business is constantly made with shareholders being the revolving factor.

It is often argued that as the economy of any nation grows, the expected performance of organizations equally expands. However, this assertion is not the case. The performance of a company is dependent on the sector of the economy driving the growth. Investments in assets also do not necessarily guarantee significant positive impact on firm performance as indicated by the results. Investment in tangible assets (SIZE) will yield the needed return depending on how efficiently these assets are turned around to generate returns.

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