

# Capital Structure and Financial Performance of Non-Financial Firms Listed at Nairobi Securities Exchange, Kenya

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## ABSTRACT

**Background:** Globally, the choice of an optimal capital structure has posed a great challenge to most firms. In Kenya, some firms have achieved optimum levels while others are still faced with serious capital structure issues. Theoretically, there is a general inclination that capital structure employed automatically affects financial performance. It is against this background, that the purpose of the study was to establish the effect of capital structure on financial performance of non-financial firms listed at the Nairobi Securities Exchange in Kenya. Specifically, the study sought to establish the effect of capital structure on financial performance. Theoretical literature postulates conflicting relationship between capital structure and financial performance which has underscored the usefulness of panel dataset in the study.

**Materials and Methods:** This study employed both cross sectional and longitudinal research designs, organized as panel data. The sample population of the study consisted of thirty-three (33) non-financial listed firms. This study only used data from the 2009 to 2018 annual financial reports. The study adopted purposive sampling procedure in the determination of the sample size and secondary data from annual financial reports of the firms, African Listed Companies, Nairobi Securities Exchange publications and Capital market Authority handbooks were used. STATA statistical tool was employed in the analysis of the data. Descriptive statistics were used to analyse the main characteristics of the variables. The hypotheses were tested using regression analysis and correlation analysis.

**Results:** The findings of the study revealed that the effect of Debt Ratio (DR) and Debt-Equity Ratio (DER) on firms' financial performance (ROA) was statistically significant. Further, the results of Equity Ratio showed that the effect of equity finance on financial performance was not statistically significant.

**Conclusions:** The study not only contributed to understanding the link between capital structure and financial performance in Kenya, but at the same time confirms the findings of previous studies which revealed significant and insignificant links between capital structure and financial performance.

**Keywords:** Capital Structure, Financial Performance, Nairobi Securities Exchange.

## INTRODUCTION

Financing is one of the most imperative areas of a firm. Financing decision is a crucial decision made by the finance manager relating to the financing mix of an organization (Brendea, 2011). The finance managers are concerned with the determination of the best financing mix and combination of debt and equity for the firm referred to as capital structure. The analysis of a firm's capital structure decisions started with the famous Modigliani and Miller (1958) irrelevance theorem. Together with Markowitz's portfolio theory, this is regarded by many as the beginning of modern finance. The study of capital structure has a wider relevance than the name suggests since it includes the cost of capital and, hence, capital budgeting issues. It also helps to disclose which projects are easy to finance because they carry much debt (Obuya, 2017). Capital structure is also a major factor in the evaluation of firms' performance. It is concerned with the borrowing and allocation of funds required for the investment decisions (Akeem, Terer & Kinyanjui, 2014). The choice of internal or external financing is one of the serious concerns of a firm (Chadha & Sharma, 2015). In the recent decades, capital structure and its effect on firm value is still a puzzle in corporate finance theory and finance literature (Abeywardhana, 2016; Dare & Sola, 2010). Capital structure theories which are highly based on large firms have failed to explain the optimal mix of debt to equity. The choice of capital structure still remains a crucial issue for both large and small firms. The financial decisions set by management are very important in determining the optimal capital structure. The management of the firm itself has to set their capital structure in a way to optimize their firm value. However, firms have different levels of leverage and managers try to achieve the best set to attain an optimal capital structure (Salim, 2012). Many business owners may not know what a capital structure is or why they should even concern themselves with the term, but the concept of capital structure is extremely important.

### Capital Structure

Modigliani and Miller (1958) defined capital structure as the mix of long-term debt, specific short-term debt; common equity and preferred equity maintained by a firm. It further affirmed that a firm's financing is of crucial importance to both the managers of firms and providers of funds. It is how a firm finances its overall operations and growth through combination of equity, debt, or hybrid securities (Brendea, 2011). Debt is a resource borrowed with the expectation of paying back after a specified period of time. If the specified time is spread a period of more than one year then it becomes long term debt and if the expected payment period is less or equal to one year then it becomes a short term debt. Since financial capital is an uncertain and scarce, it is a critical resource for all firms and hence suppliers of finance are able to exert control over firms (Kajirwa, 2015).

Debt and equity are the two major classes of liabilities, with debt holders and equity holders representing the two types of investors in the firm. Each of these is associated with different levels of risk, benefits, and control. Debt comes in the form of bonds issued or long-term notes payable, while equity is classified as common stock, preferred stock or retained earnings. Explaining the role of debt in a firms' financial performance has been one of the primary objectives of the contemporary research for more than fifty (50) years (Modigliani and Miller, 1958). However, this role remains a questionable subject and puzzle which has attracted the attention of many researchers such as Goddard, Tavakoli, and Wilson (2005), Berger and Dipatti (2006), Rao, Al-Yahyaee, & Syed (2007), Baum, Schafer and Talavera (2015), Margaritis and Psillaki (2010) and Kebewar (2012).

Since late 1950s studies of Lintner (1956), Hirshleifer (1958) and Modigliani and Miller (1958) emerged with much focus on capital structure. In the recent past, capital structure has become one of the most interesting issues in the corporate finance literature and it has also been one of the main topic of scholars and business research. The importance of capital structure is derived from the fact that it is strongly related

to the ability of firms to fulfill the needs of various stakeholders. The last decade has witnessed continuous development of new theories on the issue of capital structure, firm characteristics, corporate governance and financial performance. Additional capital structure theories, such as the trade-off and pecking order theories have since emerged over the years. According to Kraus and Litzenberger (1973), the static trade-off theory assumes that firm's trade-off the benefits and costs of debt and equity financing and finds an 'optimal' capital structure after accounting for market imperfections such as taxes, bankruptcy costs and agency costs.

This study measured capital structure using three different dimensions namely: Debt ratio (DR), Equity Ratio (ER) and DER following the studies by Masnoon and Anwar (2012), Berger and Di Patti (2006); Saeedi and Mahmoodi (2011). Although the agency theory postulates a positive effect of leverage on firm efficiency and performance, this might not be true for highly indebted firms. Such firms meet strong financial constraints which may negatively affect financial performance (Michaelas *et al.*, 1999). Besides that, a linear relationship between the use of debt and firm's financial performance is not consistent with the trade-off theory.

Therefore, the finance managers should plan an optimum capital structure for the firm so as to optimize the financial value of the firm. However, empirical studies on capital structure and financial performance are contradictory, mixed and inconclusive which underscores the need to conduct this study. Despite the effort being made in theorizing capital structure in non-financial firms as a result of different funding sources and performance, there has not been convincing and conclusive results with regard to its relationship with financial performance. Hence, this study sought to fill the gap in the literature as a result of unending debate by investigating the effect of capital structure on financial performance of non-financial firms listed at Nairobi securities exchange in Kenya for a period of 10 years (2009 to 2018).

### **Financial performance**

The financial performance of the firm is measured by how better off the shareholder is at the end of a period, than at the beginning. This can be established using accounting-based ratios derived from financial statements, mainly the balance sheets and income statements, or using data on security market prices (Berger & Dipatti, 2002). More profitable firms should have lower leverage ratios than the less profitable ones as they are able to finance their investment opportunities with the retained earnings.

According to Short, Ketchen, Palmer and Hult (2007), Ameen and Kiran (2017); Martis and Bremen (2013); Abor (2007); Arcas and Bachiller (2008) and Akeem *et al.* (2014), financial performance was measured using several parameters which included; ROA, ROE and Tobin's Q which were often used as the firm's performance measurement indicators. These ratios give an indication of whether the firm is achieving the owners' objectives of making them wealthier, and can be used to compare the firm's ratios with other firms or to find trends of performance over time. Charreaux (2001) argued that an adequate performance measure ought to give an account of all the consequences of investments, on the wealth of shareholders. The main objective of shareholders in investing in the business is to increase their wealth. Thus the measurement of performance of the firm must give an indication of how wealthier the shareholder has become as a result of the investment over a specific time. The studies concluded that ROA and ROE ratios are good measures of financial performance since they had consistently shown robust results and have become the key indicators of whether the firm is achieving the owners' objectives of making them wealthier (Okiro, Aduda & Omoro, 2015). In addition, these indicators can be used to compare the firm's ratios with other firms or to find out the trends of performance over time. The key area of concern of this study is the profitability of the firms as measured by ROA. Thus this study adopted ROA as a measured financial performance, since it has proved to be more robust and the most commonly used accounting-based ratio (Goddard *et al.*, 2005; and Okiro *et al.*, 2015).

The rationale for selecting non-financial firms in this study is because unlike financial firms whose capital

holding is strictly regulated by the Central Bank of Kenya (CBK), capital holding regulations do not apply to non-financial firms in spite of all listed firms falling under the purview of CMA. This means that non-financial firms are technically at liberty to adopt any capital structure portfolio favorable to them in financing their operations. This laissez-faire approach predisposes non-financial firms to possibilities of over-gearing and subsequent financial challenges (Bitok et al., 2011).

### **Statement of the Problem**

The studies on capital structure and financial performance have been at the center of great empirical investigations in the field of finance and economics (Wakaisuka, 2017; Okiro *et al.*, 2015). The subject of capital structure has been part of research studies in business and economics fields since the first study by Modigliani and Miller (1958). In Kenya, seven (7) firms have been delisted from NSE due to unsatisfactory financial performance and corporate governance challenges since the year 2008. Furthermore, at least thirteen (13) other firms risk being put on the recovery board, due to poor and declining financial performance, corporate governance issues and the rapid decline of their share prices (NSE, 2019). These firms including; Uchumi supermarkets, Mumias Sugar Company, Kenya Power, National Bank, Trans-Century, Express Kenya, Sameer Africa Plc, Athi River Mining, EA Cables Ltd, EA Portland Cement Ltd, Home Africa Ltd, Olympia Capital Holdings Ltd and Eveready East Africa Ltd risk being delisted if they fail to turnaround within the timelines given by Capital Markets Authority. In April 2020, NSE issued further extension of suspension from trading of Mumias Sugar Company and Deacons East Africa shares until further notice.

### **Specific Objectives of the study**

The specific objectives of the study are as follows;

1. To establish the effect of Debt Ratio on financial performance among listed non-financial firms at NSE, Kenya.
2. To examine the effect of Equity Ratio on financial performance among listed non-financial firms at NSE, Kenya.
3. To find out the effect of Debt-Equity Ratio on financial performance among listed non-financial firms at NSE, Kenya.

## **MATERIALS AND METHODS**

### **Data Collection Procedure**

Panel data on capital structure and financial performances were collected from secondary sources as African Stock Market Companies, Capital Markets Authority, Annual reports of the non-financial firms, Nairobi Securities Exchange publications and URL of the Nairobi Securities exchange for ten-year period of 2009 to 2018.

### **Sampling Procedure**

The Nairobi Securities Exchange (NSE) had 40 non-financial firms representing 7 business sectors as at 31<sup>st</sup> December, 2018. Out of the 40 non-financial firms 33 firms were selected for the present study using judgmental sampling.

### **Methodology**

The purpose of this section is to describe the research methodology of the study. Since the objective of the

study was to test the effect of capital structure on financial performance, the design of the methodology was based on prior research into these relationships. This part describes the method of data collection, the variables used to test the hypothesis and statistical techniques employed to report the results. The regression model adopted by this study was based on the models used by Ram Kumar Kalkani *et al.* (1998); and Martis and Bremen (2013) with some modifications in the capital structure measures (DR, ER and DER). The research hypotheses were tested by using multiple regression model by regressing capital structure against financial performance (ROA) to establish the individual effects on financial performance as shown in the regression analysis below;

$$Y_{ROA} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Where;  $Y_{ROA}$  = Financial performance as measured by ROA.  $\beta_0$ =constant;  $\beta_1, \beta_2$  and  $\beta_3$ =Regression coefficients,  $X_1, X_2$  and  $X_3$ = Debt ratio, Equity ratio and Debt-equity ratio, and  $\varepsilon$  = error term.

### Conceptual Frame work

The following conceptual model was formulated through the extensive literature as shown in Figure 1 below.

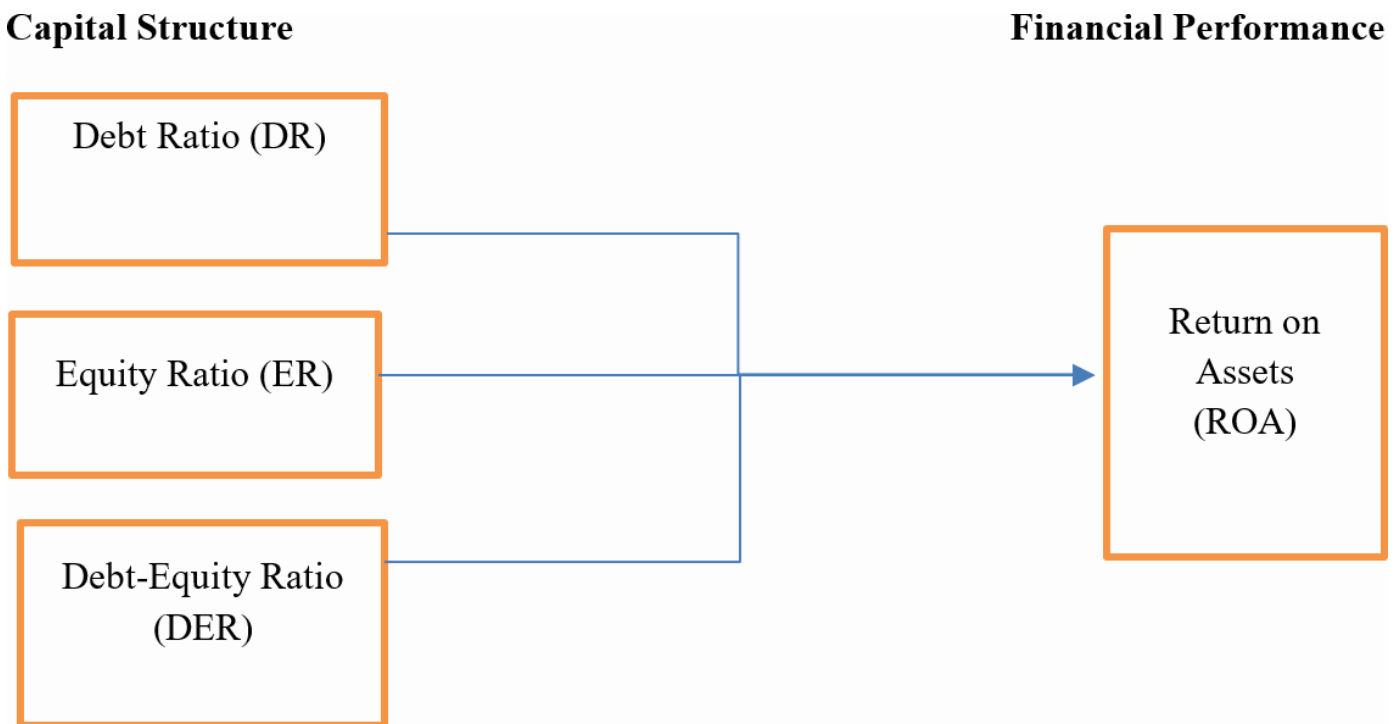


Figure 1: Conceptualization Model

The above model shows the relationship between the determinants of the capital structure and financial performance.

### Research Hypotheses

**H01** : Debt Ratio has no significant effect on financial performance among listed non-financial firms at NSE, Kenya.

**H02** : Equity Ratio has no significant effect on financial performance among listed non-financial firms at NSE, Kenya.

**H03** : Debt-Equity Ratio has no significant effect on financial performance among listed non-financial firms

at NSE, Kenya.

## RESULTS AND DISCUSSIONS

### Analysis and Interpretation

This section presents and explains the results from the data collected and the findings are presented and analysed in respect to the specific objectives and hence testing the hypotheses of the study. It also covers data analysis, interpretation and discussion of the research findings. The results were presented in the form of frequency tables.

### Descriptive Statistics

This section presents the descriptive analysis results of the capital structure components (DR, ER and DER) and financial performance (ROA). Table 3.1 below presents description statistics of the data collected as illustrated in table 3.1 below.

Table 3.1: Descriptive Statistics of Capital Structure

Capital Structure Ratios	N	Minimum	Maximum	Average Mean	Std. Deviation
Debt Ratio (DR)	33	0.084	1.275	0.5112	0.276
Equity Ratio (ER)	33	-0.332	3.246	0.427	0.633
Debt Equity Ratio (DER)	33	-21.539	19.263	2.098	6.746
Return on Assets (ROA)	33	-0.325	0.343	0.049	0.125

From table 3.1 above, the debt ratio had the minimum value of 0.084 and maximum value of 1.275 for the 10-year period under study (2009-2018). The average mean value was 0.5112 and the standard deviation was 0.276 during the study period. Equity ratio had a minimum of -0.332 and maximum of 3.246; average mean of 0.427 and standard deviation of 0.633 during the period under study. Debt-Equity ratio had a minimum of -21.539 and maximum of 19.263; average mean of 2.098 and standard deviation of 6.746 for the period under study. Further, ROA had a minimum of -0.325 and maximum of 0.343; average mean of 0.049 and standard deviation of 0.125 for the period under study.

### Correlation Analysis

Before testing the hypothesis, the study assessed the overall associations and correlation between the independent and the dependent variables conceptualized in the study. Correlation analysis was conducted using pair-wise correlation coefficient technique, partial and semi-partial correlation analysis to examine the existence of an association between firm characteristics indicators and financial performance (ROA) of non-financial firms listed at NSE. The correlation results between Debt ratio (DR) and financial performance (ROA) established a strong negative significant association ( $\beta = -0.47$ ,  $p = 0.0000$ ) at 0.05 level of significance. Further, the correlation between Equity Ratio (ER); Debt-Equity Ratio (DER) and financial performance (ROA) disclosed insignificant association ( $\beta = 0.081$ ,  $p = 0.143$ ;  $\beta = 0.011$ ,  $p = 0.83$ ).

### Hypothesis Testing

Multiple regression analysis between capital structure components (DR, ER and DER) against financial performance as measured by Return on Assets (ROA) was carried out to establish the nature of effect and conclusion of the hypotheses. The study used the t-tests statistics of the three variables to show the significance of each factor in explaining financial performance of the firms and to ascertain the proposition

whether the null hypotheses were accepted or not. The results of the regression model are as shown in table 3.2 below.

Table 3.2: Regression Results

.Xtreg ROA DR ER DER, fe						
Fixed-effects (within)	regression	Number of obs		= 330		
Group variable: Firms		Number of groups		= 33		
R-sq: within	= 0.1659	Obs per group: Min		= 10		
between	= 0.3310	Avg		= 10.0		
overall	= 0.2247	Max		= 10		
		F(3,294)		= 19.49		
corr(u_i, Xb)	= -0.4334	Prob > F		= 0.0000		
ROA	Coef.	Std. Err.	t	P> t	[95% Conf.	Interval]
DR	-0.239306	.0317322	-7.34	*0.000	-0.3017579	-0.1768557
ER	0.0087802	.0055605	1.58	0.098	-0.0021633	0.0197237
DER	0.0027529	.0007839	3.51	*0.000	0.0012165	0.0042893
cons	0.1683733	.0172122	9.78	0.000	0.1344986	0.2022481
sigma_u	.06645341					
sigma_e	.10133957					
rho	.30070318	(fraction of variance due		to u_i)		

\*Significance level at 0.05

The results presented in table 3.2 above shows that the overall R-Square statistic ( $R^2 = 0.22.47$ ) and F test statistic ( $F=19.49$ ,  $p\text{-value}<0.05$ ) which implies that there is fitness of the model. This also implied that 22.5% of the variation in financial performance of non-financial firms was explained by debt ratio, equity ratio and debt-equity ratio; and the difference of 77.5% was accounted for by other variables not included in the model. The model also revealed that capital structure as measured by debt ratio had a negative significant effect on financial performance ( $\beta = -0.239$ ,  $t = -7.54$ ,  $p\text{-value}<0.05$ ), failing to accept the null hypothesis and concluded that the use of debt finance leads to decrease in the financial performance of non-financial firms. The results were consistent with the previous scholars that debt ratio had a significant negative link with financial performance of firms (Ameen and Kiran, 2017; Martis and Bremen, 2013; & Karanja, 2014). The empirical results revealed that capital structure total debt (TD) and short term debt (STD) had a negative significant effect on financial performance as measured by ROE, which is consistent with Ebaid (2009) with similar results.

Equity Ratio (ER) as the second component of capital structure had a coefficient ( $\beta = 0.009$ ,  $t=1.58$ ,  $p\text{-value}>0.05$ ) which revealed a p-value of more than 0.05 (5%) implying an insignificant effect on financial performance of firms, thus, failing to reject the null hypothesis. The results were consistent with Kerongo, *et al.* (2020) which posted no link between capital structure and value of the firm. Further, the results of Debt Equity Ratio (DER) revealed a positive significant effect on performance ( $\beta = -0.0027529$ ,  $t= 3.51$ ,  $p\text{-value}<0.05$ ) failing to accept the null hypothesis and concluded that the portfolio of debt and equity financing (DER) has a positive link with performance. The results were consistent with Innocent *et al.* (2014; Basit and Irwan (2017). The estimated formulated equation by substituting the beta coefficients of the regression results in the following form:

$$FP_{it} = 0.168 - 0.24DR + 0.009ER + 0.003DER + \mu_{it} + \varepsilon_{it}$$

The outcome of the equation above implied that a unit increase in the use of debt ratio (DR) results in a decrease of financial performance of -0.24 or 24 percent, while a unit increase in debt-equity ratio (DER) leads to an increase of 0.3 percent in financial performance as measured by ROA. This means that non-financial firms need to minimize utilization of debt finance since it adversely affects the value of the firms. Moreover, there was generally a decline in financial performance of non-financial firms resulting from utilization of debt finance which supports the findings by Ameen and Kiran (2017); Nasar (2016); Salim and Yadav (2012), while Debt-equity ratio found positive effect between capital structure and firm's financial performance consistent with the findings by Anton (2016); Basit and Irwan (2017); and Palacios *et al.* (2016).

## CONCLUSIONS

In conclusion, the listed non-financial firms under the Nairobi Securities Exchange (NSE) are sourcing financing using both debt and equity finance. The findings of the study revealed a negative significant effect between capital structure as measured by debt ratio (DR) and financial performance, implying that the use of debt finance leads to decrease in the financial performance of the firms. The results supported the propositions by the Trade-off theory which stated that higher leverage means that the firm has higher commitments to fulfil its future obligations, in terms of principal and interest payments hence leading to adverse effects on firm's financial performance. Moreover, higher leverage ratios also lead to higher costs relating to firms' financial distress. The theory further postulated that the use of debt may not always be beneficial since there is risk of higher costs of financial obligation and bankruptcy costs that the firm may incur due to market imperfections hence decreasing financial performance of non-financial firms.

The results also revealed that equity financing (ER) has insignificant effect on the performance of the firms hence not viable financing with equity alone due to the high costs associated with the funds. Further, the results showed that debt-equity ratio had positive significant effect on financial performance of the firms. This means that having an optimum portfolio of debt and equity finance (DER) is beneficial to the firms since it increases financial performance. The literature reviewed revealed mixed results and significant relationship between capital structure and firms' performance. The results of DR and DER are consistent with Ameen and Kiran (2017); Martis and Bremen (2013) and Karanja (2014) which found significant relationships between capital structure and performance, associated with growth opportunities, interest coverage and probability of reorganization following default.

The findings of the study contribute to both existing theory and practice. This study would guide future researches on financial management especially on making optimum capital structure decisions of non-financial firms at the NSE. The outcome of the research would also guide management arms of the various non-financial firms at the NSE on gathering more insights on restructuring and employing sound business strategies as they decide on firm's optimal capital structure policy and sanction viable projects that improve securities returns and maximize wealth for the shareholders. The existing firms would be able to appraise their portfolios more efficiently as they would be able to assess the overall risk of their investments and securities returns. The firms may also use ratio analysis to measure their results against other organizations and make judgments concerning management effectiveness and mission impact.

Future researchers should diversify the operationalization of financial performance to include other accounting measures which includes; Return on Equity (ROE) and market measures (Tobin's Q and EPS) so as to enhance comparability of the results. Further, in order to broaden the understanding of the effect of capital structure on financial performance, this study should be replicated in the privately held firms not



listed at NSE, financial firms, different geographical regions and also in other countries to establish the nature of effect. Such replication could further determine whether the findings of this study hold true for other firms or countries with diverse cultural, regulatory, governance and management contexts. This will enhance wider understanding of the relationship between capital structure and financial performance in different contexts and environments.

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