

# **EFFECT OF CAPITAL STRUCTURE ON FIRM PERFORMANCE AMONG FIRMS LISTED IN NAIROBI SECURITIES EXCHANGE, KENYA**

**Ronoh Shadrack Kipkosgei**

Department of Accounting and Finance,  
School of Business and Economics, Moi University, Kenya  
ronohshadrack98@gmail.com

**Ngetich Willy Kiptoo** 

Department of Accounting and Finance,  
School of Business and Economics, Moi University, Kenya  
willyngetich48@gmail.com

## **Abstract**

*Finance literature suggests that capital structure decision plays a critical role in determining the performance of a firm. Capital structure is an important field of finance because this is how firms finance its activities. There is a little research that has focused on the effects of capital structure especially on developing nations like Kenya. This study therefore sought to fill in this gap by determining the effects of capital structure on firm's financial performance in Nairobi security exchange. The study was guided by Static Trade-Off and Pecking Order Theory. The study was carried out using a longitudinal research design. The target population for the study comprised all listed firms at Nairobi Securities Exchange, a survey of all 45 firms that have consistently been operating at the NSE for the past 5 years from 2011-2016 was conducted. Secondary data was obtained from companies annual reports. Descriptive statistics, correlation analysis, fixed effects and Random effects regression models were adopted. Hausman test was carried out and Random effect model was found to be the best model. The study findings indicate that capital structure had a positive significant effect on firm performance ( $\beta$ , 0.1135,  $p = 0.000$ ),  $p < 0.05$ ). The study concludes that capital structure is important on how a firm*

*finances its operations and growth using different sources of funds. The study recommends firms to increase and diversify their portfolio in terms of their products in order to increase funds.*

*Keywords: Nairobi Security Exchange, NSE, Chief Executive Officer, CEO Duality, Capital Structure, Firm performance*

## **INTRODUCTION**

Firm performance is the ability of an organization to gain and manage the resource in several different ways to develop competitive advantage (Iswatia & Anshoria, 2007). There are two kinds of performance namely; financial performance and non-financial performance, non-Financial performance measures, measure non-financial aspects of the firm. Examples of non-financial performance measures are measures such as workforce development, product quality, and customer satisfaction, on time delivery, innovation measures, attainment of strategic objectives, market share, efficiency, productivity, leadership and employee satisfaction (Ibrahim & Lloyd, 2011).

Financial performance emphasizes on variable related directly to financial report. Financial performance is a subjective measure of how well a firm can use its' assets from its' primary business to generate revenues. Erasmus (2012) noted that financial performance measures like profitability and liquidity among others provided a valuable tool to stakeholders to evaluate the past financial performance and the current position of a firm. Company performance is evaluated in three dimensions.

The first dimension is company's productivity or process of inputs into output efficiently. The second is profitability dimension, or the level of which company's earnings are higher than its costs. The third dimension is the market premium, or the level of which company's market value is exceeding its book value (Walker, 2001). Two other aspects should be considered when attempting to define performance: its time frame and its reference point. It is possible to differentiate between past and future performance; past superior performance does not guarantee that it will remain superior in the future (Carneiro, 2005). Another issue related to time is the duration of the interval (short, medium or long term) considered. The reference against which performance is being measured, for instance the industry average, the results of main competitors, an established target, or past performance (Carneiro, *et al.*, 2007), is also important. Comparisons in relation to targets and past performance indicate the efficiency and evolution of the company. However, they are not suitable for comparing companies from

different sizes and industries. Using the average value of the industry or of the main competitors as the baseline indicates companies' competitive position and may be more useful for strategic analysis.

A firm's financial performance, in the view of the shareholder, is measured by how better off the shareholder is at the end of a period, than he or she was at the beginning and this can be determined using ratios derived from financial statements; mainly the balance sheet and income statement, or using data on stock market prices (Berger, *et al.*, 2014). These ratios give an indication of whether the firm is achieving the owners' objectives of making them wealthier, and can be used to compare a firm's ratios with other firms or to find trends of performance over time.

Charreaux (2013) stated 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 a business is to increase their wealth. Thus the measurement of performance of the business must give an indication of how wealthier the shareholder, has become as a result of the investment over a specific time.

Capital structure is one of the popular topics among the scholars in finance field which aims to resource allocation it is very important since it related to the ability of the firm to meet the needs of its stakeholders (Saad, 2013). Capital structure decision is the mix of debt and equity that a company uses to finance its business (Damodaran, 2015) it is a mixture of a company's debts (long-term and short-term), common equity and preferred equity. For example it's essential on how a firm finances its overall operations and growth by using different sources of funds, whether or not an optimal capital structure exists is one of the most important and complex issues in cooperate finance (Myers, 2015).

The relationship between capital structure and financial performance is one that received considerable attention in the finance literature. To study the effects of capital structure on financial performance, will help us know the potential problems in performance and capital structure. Various studies have provided link between capital structure and firm performance, Berger, *et al.*, (2014) concluded that higher capital structure will positively affect firm performance. However, Singh & Hamid (2015) in study found out that there is a negative relationship between high level of capital structure and firm performance. Abor (2014) found a positive relationship between total assets and return on equity the researcher concluded that profitable firms depended more on debt as a main financing option due to a Perceived low financial risk. This was supported by Titman &Wessel (2014) who stated that high level of debts in capital structure mix will have negative effect on firm performance.

## STATEMENT OF THE PROBLEM

The financial performance of companies is a subject that has attracted a lot of attention, comments and interests from both financial experts, researchers, the general public and the management of corporate entities. (Omondi, & Muturi, 2013), yet, picking out the most successful firms has always proved to be a difficult task to many as a firm may have a high level of profitability, but at the same time be in a very bad situation regarding its liquidity. The best known listed firms in the Kenya's securities market, with over fifty listed companies, have their performance analyzed in terms of profitability, dividend growth, sales turnover, asset base, capital employed among others. A single factor cannot reflect every aspect of a company performance and therefore the use of several factors allows a better evaluation of the financial profile of firms. The problem is then to decide what weight to attach to each of the factor that influences performance (Damodaran, 2016).

Previous Studies on Capital structure & firm financial performance has mainly focused on developed nations with less emphasis on developing nations like Kenya. Some of the studies include; Siro, (2013) who investigated the effect of capital structure on financial performance of firms listed at the Nairobi securities exchange. Muia (2014) studied the relationship between capital structure and financial performance of SMEs in Nairobi, Kitony (2013) examined a test of relationship between capital structure and agency costs.

Few studies have been carried out on the issue of capital structure corporate profitability of firms listed in Nairobi Security Exchange, hence there is need for more studies in the in developing nations like Kenya. Therefore, as a result of the aforementioned scarcity, this study was out to add to the growing body of knowledge on the relationship between capital structure and firm financial performance using a set of firms listed on the Nairobi Security Exchange as a case study to empirically evaluate the likely effect of capital structure and firm performance.

## LITERATURE REVIEW

The concept of firm performance entails measuring the results of a firm's policies and operations in monetary terms. These outcomes are indicated by the company's gains from new ventures, used resources, increase in value, among others. According to Verreyne *et al.*, (2008), the relative productivity of different businesses is usually the concern of scholars and state organs alike. The underlying motivation for this kind of research is the quest for those factors that may provide firms with competitiveness and hence drive firm profitability. However, despite the attention for and importance of the construct, defining and measuring performance for a specific industry has always been a subject of research in the recent past.

The rate of performance varies across separate competitive environments as much as across different industries. Therefore, examining the specific firms rather than the industry as the basis unit of study can help scholars to gain a more in-depth knowledge of the rivalry patterns between firms and drivers of performance (Houthoofd, 2006). Firm performance comprises the real output or results of a firm as measured against its intended outputs (or goals and objectives). According to Richard *et al.*, (2009), business productivity entails three specific aspects of company output: (a) financial output (profits, return on assets, return on investment); (b) product market output (sales, market share), and (c) shareholder return (total shareholder return, economic value added). Specialists in many fields are concerned with structural productivity, including strategic planners, operations, finance, legal, and structural development. Capital Structure is a mix of securities and financing sources used by corporations to finance real investments (Myer, 2013). The capital structure is the mix of debt, preferred stock and common equity with which the firm tends to increase capital. The firm needs to make the investments in order to at least remain in business and also display some growth. Capital structure is also referred as financial structure of a firm. The capital structure of a firm is very important since it related to the ability of the firm to meet the needs of its stakeholders.

Both debt and equity financing are important ways for businesses to obtain capital to fund their operations. Deciding which to use or emphasize, depends on the long-term goals of the business and the amount of control managers wish to maintain. Ideally, experts suggest that businesses use both debt and equity financing in a commercially acceptable ratio. Based on King & Santor, (2014) definition of capital structure this study used ration of debt-to-equity ratio.

### **Debt Financing**

Debt financing refers to the borrowing of funds in order to finance a purchase, acquisition or expansion. For businesses and corporations' debt financing often involves the selling of notes, bonds, mortgages or other debt instruments (Rajan & Zingales, 2014). The individuals and financial institutions which provide the debt financing become creditors. Since debt financing involves borrowed funds, debt financing must be repaid, typically in installments and with interest, Akintoye, (2014).

### **Equity Financing**

Equity financing takes the form of money obtained from investors in exchange for an ownership share in the business. Such funds may come from friends and family members of the business owner, wealthy "angel" investors, or venture capital firms. Abor, (2014), stated that an equity

investment generally refers to the buying and holding of shares of stock on a stock market by individuals and firms in anticipation of income from dividends and capital gains, as the value of the stock rises. It may also refer to the acquisition of equity (ownership) participation in a private (unlisted) company or a startup company, Barbosa & Louri (2014). When the investment is in infant companies, it is referred to as venture capital investing and is generally understood to be higher risk than investment in listed going-concern situations. Equity Capital represents the personal investment of the owner(s) in the business is called risk capital because investors assume the risk of losing their money if the business fails.

### **Capital Structure and Firm Performance**

Various authors have found different results on the relationship between capital structure and firm performance. Lu *et al.*,(2008), found out that capital structure and corporate performance of listed firms are negatively correlated. Lijia Juan (2010) investigated 11 listed China Aerospace companies the empirical results showed a significant negative correlation between capital structure and firm performance. Foreign scholars Jesen, *et al.*, (1992), examined the relationship between managers and debt analysis the researchers' results showed that the business performance and debt ratio is negatively correlated.

Velampy & Pratheepkanth (2012) investigated the relationship between capital structure and profitability of ten listed Srilankan banks. The results showed that there was a negative association between capital structure and profitability except the association between debt to equity and return on equity. Masulis (2013) analyzed the relationship between capital structure and corporate performance the researcher found a positive correlation between the two variables. Anum,(2010), found a positive correlation between capital structure and firm performance. Kato, & Long, (2006).investigated listed companies in Shanghai Stock Exchange and found a positive correlation between capital structure and firm performance.

Chen, (2004) studied China's power industry, listed companies, the results showed a positive correlation between the capital structure and firm performance. Cheng (2005) did not find a relationship between capital structure and corporate performance the results also showed that an increase or decrease the asset-liability ratio has little effect on the company's performance. Salim, & Yadav, (2012) found a positive significant relationship between capital structure and firm performance. Zhu H. (2010), concluded that there is a positive correlation between capital structure of listed companies and corporate performance.

*H<sub>01</sub> There is a significant relationship between capital structure and firm performance.*

## RESEARCH METHODOLOGY

This study used explanatory research design. The study targeted 67 firms listed on the Nairobi Securities Exchange the study sampled all firms that had been listed on the Nairobi Security Exchange (NSE) during the 5 year study a sample of 45 firms was arrived at purposively after eliminating the number of firms delisted, suspended, terminated and those with missing data. The study got its data from secondary sources data was collected from the annual reports of firms listed on the Nairobi Security Exchange (NSE) from 2011 to 2016. The researcher selected 2011 to 2016 because during these 5 years the selected firms had been consistently trading in N.S.E.

The study conducted initial data analysis using descriptive statistics, correlation analysis and the fixed effects and random effects regression models. The descriptive statistics of the firms provides an overview of the background analysis of the sample used in this study as well as results on study variables. The regression model for the fixed and random effects were respectively stored and there after a Hausman test was carried out to establish the best model in predicting the changes infirm performance.

$$Y_{it} = \alpha + \beta_1 X_{1it} + \varepsilon_{it}$$

Y = the dependent variable (Firm Performance)

$\alpha$  = Constant

$\varepsilon$  = Error term

$\beta_1$  = is the regression coefficient in Y by each X variable.

X1 = Capital structure

t = measure of time

i = number of firm observation

The above statistical tests were analyzed using Stata 13. All tests were two-tailed. Significant levels were measured at 95% confidence level with significant differences recorded at  $p < 0.05$ .

## RESULTS

### Descriptive Analysis

Table 1. Descriptive Statistics

Variable		Mean	Std. Dev.
Capital structure	Overall	8.879474	7.43178
	Within		2.98736
EPS	Overall	1.376726	3.41748
	Within		3.18797

The findings in Table 1 revealed a mean of 8.879 for capital structure with an overall standard deviation of 7.432 and within standard deviation of 2.987. EPS, representing the measure of firm performance has a mean of 1.377 with an overall standard deviation of 3.417 and a within standard deviation of 3.188.

### Correlation Analysis

Table 2. Correlation Analysis

	EPS	Capital structure	CEO duality	Firm size	Firm age
EPS	1				
Capital structure	0.1599*	1			

\* Correlation is significant at the 0.05 level (2-tailed).

The findings in Table 2 revealed that capital structure was found to have a positive and significant relationship with firm performance (EPS),  $r = 0.1599$  at 0.05 level of significance. This implied that there is a probability of 0.1599 that firm performance will increase with increase in capital structure.

### Fixed Effects Model

Table 3. Fixed Effects regression model of capital structure on firm performance

<b>Group variable: firm</b>	<b>Number of obs = 225</b>					
<b>R-sq: within = 0.371</b>	Number of groups = 7					
<b>between = 0.3310</b>	Obs per group: min = 8					
<b>overall = 0.3784</b>	avg = 10.1					
	max = 11					
	Wald $\chi^2(6) = 313.6$					
<b>corr(u_i, X) = 0 (assumed)</b>	Prob> $\chi^2 = 0.000$					
Firm performance	Coef.	Std. Err.	T	P>t	[95% Conf. Interval]	
Capital structure	1.139	0.200	5.68	0.000	0.746	1.532
_cons	-12.789	2.014	-6.35	0.000	-16.737	-8.842
sigma_u	1.956					
sigma_e	3.263					
rho (fraction of variance due to u_i)	0.157					



The results presented in the table above revealed that the overall model was found to be significant, with at least one estimated coefficient found to be different from 0,  $p$ -value = 0.000. Assessing the  $t$ -values revealed that the  $t$ -value of capital structure was greater than  $\pm 1.96$  (at 95% confidence) and this implied that capital structure is different from 0. The findings showed capital structure had a positive and significant effect on firm performance (1.139,  $p = 0.000$ ). In addition, this means that with each unit increase in the capital structure, there is 1.139 unit increases in firm performance.

In addition from the findings, 15.7% of the variance is due to differences across panels; „rho“ is known as the intra-class correlation. A general observation was that capital structure has a significant effect on firm performance.

Table 4. Random Effects regression model of capital structure on firm performance

R Square within	0.371					
Wald Chi square	2.75					
Prob> Chi square	0.0201					
sigma_u	1.27083					
sigma_e	3.421					
rho	0.121283					
corr(u_i, X) = 0 (assumed)						
<b>Firm performance</b>	Coef.	Std. Err.	T	P>t	[95% Conf. Interval]	
Capital structure	0.1135	0.0221	5.1357	0.000	0.746	1.532
_cons	0.176582	1.467901	0.12	0.904	-2.70045	3.053615

The findings in the table above revealed that the overall model was found to be significant, with at least one estimated coefficient found to be different from 0, Wald  $\chi^2 = 2.75$ ,  $p$ -value = 0.02 showing that the variation of firm performance was dependent on the model. The findings showed that the estimated standard deviation of  $\alpha_i$  (sigma\_u) is 1.27083 which is smaller than the standard deviation of  $\epsilon_{it}$  (sigma\_e) which is 3.421 suggesting that the individual-specific component of the error is less important than the idiosyncratic error. Furthermore, assessing the  $t$ -values revealed that the  $t$ -values for capital structure was greater than  $\pm 1.96$  (at 95% confidence).

The findings showed that capital structure, (0.1135,  $p = 0.000$ ) has a positive significant effect on the firm performance. This implies that with each unit increase capital structure there is 0.1135 unit increase in firm performance. In addition from the findings, 12.13 % of the variance is due to differences across panels; „rho“ is known as the intra-class correlation.

## Hausman Test

Table 5. Selecting between Fixed Effect Model and Random Effects Model

	---- Coefficients ----			
	(b) fixed	(B) random	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
Capital Structure	1.139	0.1135	0.0189864	0.0158338

b = consistent under Ho and Ha; obtained from xtreg  
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg  
 Test: Ho: difference in coefficients not systematic  
 $\chi^2(5) = (b-B)'[(V_b-V_B)^{-1}](b-B) = 4.15$   
 Prob>chi2 = 0.5284

From the findings in Table 5, the  $\chi^2$  statistic was 4.15 which was not significant, p-value = 0.5284 indicating that the test is in favor of the random effects model which had reduced standard errors compared to the fixed effects model. This means that the most appropriate model that can effectively explain firm performance (EPS) is the random effects model.

## Hypothesis Testing

**Hypothesis 1**(Ho1) revealed that there is significant effect of capital structure on firm performance. Findings show that capital structure had coefficients of estimate which was significant basing on  $(\beta, 0.1135, p = 0.000)$ ,  $p < 0.05$ ). This implies that with each unit increase in the capital structure, there is 0.1135 unit increase in firm performance, implying that we accept the hypothesis and infer that capital structure has a positive significant effect on firm performance.

## CONCLUSION

The primary objective of the study was to find out the effects of capital structure on firm performance. The findings on the effect of capital structure have showed that there is a significant relationship between capital structure and firm performance. The ability of companies to carry out their stakeholders' needs is tightly related to capital structure. Capital structure is essential on how a firm finances its overall operations and growth by using different sources of funds. In this sense, capital structure is a mix of securities and financing sources used by corporations to finance real investments. Consequently, the firm needs to make the investments

in order to at least remain in business and also display some growth. The capital structure of a firm is very important since it related to the ability of the firm to meet the needs of its stakeholders.

## RECOMMENDATIONS

Basing on the findings of the study, it is evident that capital structure is important on how a firm finances its operations and growth using different sources of funds. This means there is need to increase and diversify the portfolio of the firm in terms of their products in order to increase funds. This calls for substantial and targeted investments for the survival of the business and increase its growth. This would also enable the firm to meet its obligations to the shareholders. Furthermore large firms have the ability to control its capital structure. Large size companies tend to be more diversified, and hence their cash flows are less volatile.

## RECOMMENDATIONS FOR FURTHER RESEARCH

The study primary focus of this study was to establish the effect of capital structure on firm performance among listed firms in Kenya. The sample was only drawn from firms listed in the Nairobi Securities exchange, thus this study may be limited in its generalizability of the findings. So, future researchers should have to draw sample of respondents on a larger sample for the sake of generalizing the results of the study. Moreover, more time should be allocated to the same and a combination of more than one data collection as this will help to counter check the information provided by the respondents. A further study needs to be conducted using more variables like; firm size, C.E.O tenure, firm age, foreign C.E.Os and C.E.O tenure by future researchers who might later develop interest to further studies in this area.

Furthermore, the data utilized in this research was secondary data obtained from the Nairobi Securities Exchange. Thus, more research can be carried out by utilizing a research design that would enable collection and utilization of primary data from the firms thereby developing a confirmatory mechanism to the findings of this study.

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