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Effect of Equity Financing Options on Financial Performance of Non-Financial Firms Listed at the Nairobi Securities Exchange, Kenya

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Abstract

Corporate finance managers worldwide have for a long time consistently sought to maximize shareholders' wealth and their firm's market value through their decisions on firm's capital structure. However, both scholars and practitioners of corporate finance are yet to agree on the optimal mix of equity and debt that maximizes a firm's financial performance. The purpose of this study was to examine the effects of equity financing options namely common stock (CS), retained earnings (REN) and total equity (TED) as ratios of total assets on the financial performance measured as return on assets (ROA) and return on equity (ROE) of Kenya's listed firms. Utilizing panel econometric techniques namely pooled ordinary least squares (OLS), fixed effects (FE) and random effects (RE), the study analyzes the effects of equity variables as ratios of total assets on the financial performance of 40 non-financial firms listed at the Nairobi Securities Exchange between 2009 and 2015. The study's empirical results show that CS ratio significantly and negatively affects ROA while REN ratio has a statistically significant and positive effect on ROA. Overall, TE ratio positively and significantly affects ROA. On the contrary, ROE is not significantly affected by the equity variables in the sample. While the non-significant effects of equity on ROE find support in Modigliani and Miller's capital structure irrelevance theory, the positive effects of REN ratio and the negative effects of CS ratio on ROA, which are largely supported by the trade-off theory, may explain the pecking order theory's prioritization of internal capital sources over debt and equity issuances. Thus, corporate finance managers should find a place for internal financing options particularly retained earnings to maximize equity holders' returns on assets employed. Additionally, corporate finance managers should endeavour to minimize on the use of CS due to its negative effects on shareholder earnings on their assets. Nonetheless, a reasonable balance between CS and REN should be considered since the positive effect between TE and ROA is an appraisal for an optimum mix of equity financing options.

Keywords: equity, common stock, retained earnings, return on assets, return on equity

1. Introduction

Maximization of shareholders' wealth as well as market value of the firm is the single most fundamental goal that corporate finance managers around the world consistently seek to fulfil. At the core of maximization is taking appropriate decision on the firm's capital structure. Particularly so, the determination of optimal capital structure. Capital structure mainly consists of two components, equity and debt (Chakraborty, 2010), with equity being the primary business financing option. Equity capital is raised through issuance of common and preferred stock, which bestows firm ownership to the equity holders. Equity holders have a long-term commitment to the firm in the trust that it will grow in near future (Chadha & Sharma, 2015). On the other hand, financing business projects through debt involves issuance of financial instruments in the form of short-term debt, long-term debt, loans payable, notes payable, bonds and debentures among others (Chadha & Sharma, 2016). Whereas finding an optimum mix of equity and debt that maximises firm revenue and value has been the focus of extensive academic research for over half a century since the seminal theoretical postulations of Modigliani and Miller's (1958) path breaking approach to capital structure, Nwude *et al.* and Prempeh *et al.* cited by Achieng, Muturi, & Wanjare (2018) have argued that scholars and

practitioners in the field of corporate finance are yet to agree on the optimal mix of equity and debt that can maximize a firm's financial performance.

A firm's equity capital typically comprises share-capital, share premium, reserves and surpluses (retained earnings) (Chadha & Sharma, 2015; Fraser, 2005; Kongmanila & Kimbara, 2007). Equity holders earn returns in form of dividends from the profits generated by the firm, hence there is no fixed commitment of paying interest and principal re-payments due to the recognition that their capital is needed to fuel business growth (Daniel *et al*., 2010; Titman *et al.*, 2011). Equity terms are generally more flexible than debt, have fewer covenants, and less defined remedies in the event the firm does not perform in accordance with the business plan. Equity investors will seek to align their interests with those of the management team (not always possible with debt), and then work actively to assist management in maximizing the ultimate value of the business during the investment period (Ayub, 2001). Consequently, equity capital seems to be a good solution to business financing for companies at an inflection point of increasing growth and ultimately driving firm financial performance.

Data from Kenya's Capital Markets Authority (CMA) shows that the amount of capital raised through equity by firms listed on the Nairobi Securities Exchange (NSE) between 2010 and 2015 increased significantly and steadily from 430 million Kenyan shillings in 2011 to 1.8 billion shillings in 2015 (CMA, 2016). On the contrary, over the same period, return on equity (ROE) dropped from 20% in 2011 to stand at 17% in 2015 while return on assets (ROA) declined from 18% to 16% between 2011 and 2015 albeit intermittent rises and declines in both ROE and ROA in-between the years (NSE, 2016). A cursory observation from these results and consideration thereof could lend to Modigliani and Miller's (1958) capital structure irrelevance assumptions while at the same time endearing to the trade-off theory (Myers, 2001) that postulates the existence of a relationship between capital structure and firm performance. Notably, prior empirical studies have produced mixed results, with some showing positive effects of equity on firm performance e.g. (Khalaf, 2013; Oke & Babatunde, 2011; Githire & Muturi, 2015) while others have reported negative effect of equity on firm performance (e.g. (Akeem, Terer, Kinyanjui, & Kayode, 2014; Ronoh & Ntoiti, 2015). Yet, other studies have produced non-significant effects of equity on firm performance (e.g. Kebewar and Shah, 2012; Chadha and Sharma, 2016; Raza, 2013). However, most of these studies were conducted outside Kenya and even though some empirical studies have been conducted within the country, the studies did not cover the period 2009 – 2015. In addition, the differences in the methodologies, target populations and sample periods of these studies may not be relevant and applicable to a multi-sectoral economy. The need for further research to generate more knowledge within such a context cannot therefore be overemphasized. It was against this background that this study investigated the effect of equity financing options on the financial performance of non-financial firms listed on the NSE.

2. Literature Review

2.1 Theories of Capital Structure

Several theoretical postulations have been advanced to explain the relationship between capital structure and firm performance. The seminal work of Modigliani and Miller (1958), captured in the "capital structure irrelevance theory" suggest that firm performance or value is independent of its capital structure under perfect capital markets with no corporate taxes, no transaction and agency cost, and there is a perfect disclosure of all the credible information. However, critics of this theory have argued that in reality, perfect capital markets do not exist. Following such critique, Modigliani and Miller incorporated tax benefit in their initial postulation and argued that under market imperfection where interest payments are tax deductible, firm value will increase with the level of financial leverage (Modigliani & Miller, 1963). Financial leverage is the ratio of debt to equity in a firm's capital structure. The agency cost theory of capital structure by Jensen and Meckling (1976) argues that the agency problem is caused by a conflict of interest between equity holders and managers (agency cost of equity) or between equity holders and debt holders (agency cost of debt). The agency cost theory is based on the assumption that agents may not always act in the interest of the principals and it will lead to conflict of interest between agents with those of principals and results in loss in return to the principals. This theory assumes that use of debt may reduce the agency cost through payment of interest on debt, which reduces the surplus cash available to the agent (Seo, 2016).

The trade-off theory of capital structure states that the optimal capital structure that maximises firm value may be attained by developing a balance or trade-off between the tax-free benefit of debt and the distress cost of debt, notwithstanding market imperfections such as taxes, bankruptcy costs and agency costs (Glover & Hambusch, 2014). The theory presumes that a firm can borrow more as long as it is still profitable up to the level where profitability of the firm begins to decrease due to interaction of bankruptcy costs and agency costs (Myers, 2001). Myers & Majluf (1984) in their pecking order theory of capital structure argued that an optimal capital structure doesn't exist. However, according to Myers and Majluf (1984) firms prioritize their sources of funding starting from internal financing or retained earnings (available liquid assets) as their main source of funds for investment. Second preference is debt and third is external equity financing by the firm. Myers and Majluf (1984) mentioned that firm normally avoids issuing

common stock or other risky securities in order to save itself from becoming high leveraged firm because higher leverage may lead to bankruptcy.

The theories discussed in the preceding paragraphs recognize the fact that equity and debt are the main sources of financing despite opposing views on whether these financing options affect firm value/performance or not. The trade-off theory and Modigliani and Miller's (1963) theory, however suggest that firm performance may indeed be explained by capital structure provided that the optimal mix is attained. Consequently, the current study proceeded to determine the effect of equity financing options based on the assumptions of the TOT and M&M (1963) that a firm's performance may be explained by capital structure provided that an optimum level is attained. The study also takes cognizance of Myers & Majluf's (1984) pecking order theory by considering internal financing options, in particular retained earnings. Empirical reviews of prior studies that have utilized TOT and M & M theories to examine the effect of capital structure on firm performance are reviewed under section 2.3 following the discussions on available equity financing options and firm performance measures.

2.2 Equity Financing Options

Equity capital represents the shareholders' interest in the firm's assets after liabilities are deducted and can take the form of common stock (share capital), preferred stock, share premium, revenues reserves, capital surplus, retained earnings and reserves in financial statements (Choi, 2014; Kizito, 2017). Share capital refers to funds raised by a firm through issuance of shares in exchange for cash or other consideration and consists of ordinary shares and preferred stock (Uremadu & Efobi, 2012). Servaes & Tufano (2006) have described share premium as the amount over and above a security's par value, that is, the amount of money paid by a shareholder that is usually greater than the cost of the share in question. Revenue reserves refers to that portion of a firm's profits that is retained by the firm for purposes of future investment and growth rather than paying to shareholders in form of dividend (Uremadu & Efobi, 2012). Revenue reserves are meant to strengthen a firm's financial position, replace depreciated assets, settle short term liabilities and conducting research and development for an enterprise (Uremadu & Efobi, 2012).

Capital reserves are reserves set aside by a firm to cater for future long term capital investments and may include donations, subsidies or part of the retained earnings set aside for future long term developments (Cho, 2014). On the other hand, retained (accumulated earnings) are elements of shareholders equity representing residual income that is not paid out as dividends but retained by a firm to be re-invested either for the purchase of capital assets or pay obligations such as debt (Bhat & Zaelit, 2014). The current study adopts common stock (share capital) and retained earnings as measures of equity financing options, because first, these are the most common forms of equity that conspicuously appear on the financial statements of Kenya's listed firms. Secondly, there has been relatively limited empirical focus on these forms of financing despite their popularity in terms of shareholders equity of majority of firms particularly in Kenya.

2.3 Firm Financial Performance

The financial performance of a firm has traditionally been measured using market, accounting, and survey approaches (Masa'deh, Tayeh, Al-Jarrah, & Tarhini, 2015). Market-based measurement of firm performance reflects the degree of satisfaction of equity holders, while accounting-based measurement reflects a firm's internal efficiency. Survey-based measurement provides subjective estimation of a firm's financial performance. Given that equity holders are more concerned about their financial well-being arising from an increase in their wealth through returns to their investments, the market-based approach would be the most relevant to the equity holders. The most commonly used measures of equity-holders' financial well-being are the returns on assets (ROA) and returns on equity (ROE) ratios derived using data from financial statements (balance sheet and income statement) (Berger & Bonaccorsi di Patti, 2006; Choi & Wang, 2009; (Mahoney, LaGore & Scazzero, 2008; Fauzi & Idris, 2009). Return on asset is the ratio of earnings before interest and tax (EBIT) to total assets and represents the investor's earnings arising directly from commercial operations of the business without the effect of financing. On the other hand, ROE is the ratio of EBIT to total equity and reflects the percentage return that the equity holders earn on their investment. Since these are the indicators that investors would be more interested in, ROA and ROE are adopted as the measures of financial performance in this study. Particularly so, the study seeks to analyse the relationship between equity and what is earned from the amount of equity itself.

2.4 Empirical Review and Hypothesis Development

Antwi, Emire Atta Mills & Zhao (2012) conducted an empirical, cross-sectional study on capital structure and firm value in Ghana. Using OLS econometric analysis method, the study examines the effects of equity on firm value of 34 firms listed on the Ghana Stock exchange for the year ended 31st December 2010. The results of the study show that equity capital as a component of capital structure is relevant to the value of a firm. An empirical study was conducted by Tailab (2014) analyzing the effect of capital structure on profitability on a sample of 30 Energy American firms for a period of nine years from 2005 – 2013. The study employed Smart PLS (Partial Least Square) and established that debt

to equity ratio has insignificant but positive relationships with both ROA and ROE. However, this study reports neither the magnitude of the debt-equity ratio nor the components of equity included in the composite value of equity. The study also fails to indicate the level of equity employed by the firms studied, thus failing to report the specific effects of common stock and retained earnings on ROA and ROE.

Farooq & Masood (2016) examine the impact of financial leverage on the value of 19 cement firms listed on the Karachi Stock Exchange, Pakistan between 2008 and 2012. The study reports that the average ratio of debt to equity among the surveyed listed cement firms is 1.7%. Further, the study establishes that financial leverage has positive and statistically significant association with value of firm which is represented by Tobin's Q. Khalaf (2013) examined the relationship between capital structure and firm performance in 45 Jordan manufacturing companies listed on the Amman Stock Exchange and covering period of five years between 2005 and 2009. By employing multiple regression analysis on performance indicators namely ROA and profit margin (PM) against total debt to equity ratio, the results show that total debt-equity ratio is positively related with ROA and negatively related with PM. Shubita & Alswalhah (2012) study the relationship between capital structure and profitability among 39 industrial companies listed on Amman Stock Exchange for the period between 2004 and 2009. Applying correlations and multiple regression analysis, the results reveal significantly negative relationship between debt and profitability. This suggests that profitable firms depend more on equity as their main financing option. Yet recommendations based on findings are offered to improve certain factors like the firm must consider using an optimal capital structure and future research should investigate generalizations of the findings beyond the manufacturing sectors. Ejupi & Ferati (2015) examine the relationship between capital structure and profitability among 150 small and medium enterprises in the Polog region of Macedonian using financial data collected over a ten-year period. By employing the ordinary least squares regression analysis method to estimate variable relationships, the results reveal that ROE is positively and significantly affected by owner's equity.

Tirmizi & Ahmad (2013) analysed the impacts of retained earnings on firm value and shareholders wealth among 85 randomly selected listed Pakistani manufacturing firms. A cross-sectional survey research design was adopted and a quantitative questionnaire used to collect primary data. Through descriptive and simple linear regression techniques, the study established that Pakistani firms retained 77% of earnings between 2000 to 2009. This retention rate was found to be significantly and positively affecting the value as well as wealth of the shareholders of the listed manufacturing firms operating in Pakistan. Bassey Eyo Bassey, Godwin Onyam Edom (2016) examined the impact of retained profit on corporate performance of Niger Mills Company, Calabar-Nigeria. Adopting the ex-post facto research design, data on retained earnings and profitability was extracted from annual financial records of the company for a 10-year period between 2001 and 2010. The Karl Pearson product moment correlation coefficient and t-test were used to examine the relationship between retained earnings and the company's corporate performance (turnover). The study established that positive and statistically significant relationship existed between retained profits and turnover. A statistically significant relationship between retained profit and future earnings capacity of the company was also established. Javed & Shah (2015) analysed the effect of retained earnings on stock returns of seven (7) food and personal care goods industry firms listed in Karachi Stock Exchange. Panel data for the period 2009 – 2014 (5 years) was extracted from annual financial reports of the 7 firms and analysed through linear regression and Spearman's correlation coefficient analysis. The study found a weak and insignificant relationship between retained earnings and cash dividend per share and capital gain/loss yield. The study also found a moderate positive and significant relationship between retained earnings and closing price of stock.

In their study, Khan, Bilal, Farooq, & Rehman (2017) examine the effect of internal financial policy on shareholders' wealth and firm value among 91 manufacturing sector firms listed on Pakistan Stock Exchange for a 5-year period between 2009 and 2014. Stock price per share and firm value per share were taken as dependent variables whereas retained earnings per share and dividend paid per share used as independent variables and net total asset per share and firm value to book value per share taken as control variables. The study established that dividend pay-out and retained earnings have positive and significant impact on stock price whereas firm book value per share ratio has insignificant impact on stock price. However, dividend pay-out showed a stronger relationship with stock price compared to retained earnings. In addition, dividend pay-out and retained earnings have positive and significant effects on firm value. Ekwe & Inyiama's (2014) empirical study evaluated the relationship between corporate retentions as proxied by retained earnings and some key financial performance indicators in the Nigeria manufacturing industry using the Brewery sub-sector as a focal point. Employing an ex-post facto research design, the study made use of secondary panel data extracted from annual reports and accounts of two market leaders in the sector: Nigeria Breweries Plc and Guinness Nigeria Plc, for the sample period between 2000 and 2013. The relationships between retained earnings and firm performance indicators was modelled through OLS method. Results of the study indicated that a strong relationship exists between retained earnings and net asset value per share. Also, long run relationship exists between retained earnings and all other performance variables (market share price, earnings per share, price earnings ratio, dividend per

share and current asset ratio), implying that if the retained earnings are properly invested, the returns will catalyse growth, development and expansion of the firms while the financial performance indicators will serve as predictors to the appropriate levels of retentions and investment.

On the local scene, a number of studies on capital structure-firm performance relationship have been conducted. For instance, Kuria & Omboi (2015) analysed the relationship between capital structure and financial performance of investment and banking firms listed at the Nairobi Securities Exchange in Kenya. Using financial data for a five-year period between 2009 and 2013 and through OLS regression analysis, the study results show that debt to equity ratio has a significantly negative effect on ROA but significantly and positively affects ROE with the sample of investment and baking firms listed at the NSE. Thuranira (2014) examined the effect of retained earnings on stock return of companies listed at the Nairobi Securities Exchange, Kenya. Using panel financial data obtained from Nairobi Securities Exchange and the listed companies' annual reports for the period 2009 to 2013 and through simple linear regression analysis, the study established that a very weak, insignificant and inverse relationship exists between retained earnings and stock returns. Consequently, the study concluded that retention of earnings was irrelevant in influencing the amount of stock returns earned by investors of NSE listed firms. Mwangi, Muturi, & Ngumi (2016) analysed the relationship between financial structure and financial performance of firms listed at East Africa Securities Exchanges. The study used secondary panel data extracted from the financial statements of 61 listed firms for a nine-year period between 2006 and 2014 and employed OLS, random effects and fixed effects regression analysis to analyse the relationships between financial structure and firm performance. The study established that in isolation, retained earnings and external equity had insignificant negative relationship with return on assets but insignificant positive relationship with return on equity.

From the foregoing empirical reviews, it is worth noting that whereas the theoretical literature reviewed earlier identified several forms of equity capital viz. common stock, preferred stock, share premium, revenue reserves (retained earnings) (Choi, 2014; Kizito, 2017), most of the empirical studies analysing the effects of capital structure seem to have mainly treated equity in its composite form and failed to break it down into its components for a nuanced analysis of specific component effects. The studies have also largely analysed the effects of debt to equity ratio on firm financial performance measures while failing to analyse the reciprocal effects featuring equity-debt ratio. While the approach adopted is in line with the general definition of capital structure espoused by theories of capital structure, such an approach seems to elevate debt to the detriment of equity yet the latter is the single-most important business financing option available for corporate finance managers to employ. In treating equity as a composite variable, the studies fail to take into account the tenets of the Pecking Order theory which posits that a firm would consider internal sources of capital (such as preferred stock, share premium and retained earnings) before issuing debt and equity. Thus, by considering common stock as forming the largest proportion of equity, our study departs from most of the existing empirical literature and analyses the effect of common stock ratio (ratio of ordinary shares to total assets) on financial performance measures (ROA and ROE). Based on the empirical findings most of which have shown mixed significant effects of financial leverage (of which equity is a major component) on firm performance, we postulate our null hypotheses as follows.

$H0_1$: Common stock has no statistically significant effect on return on assets among firms listed at the NSE, Kenya and;

$H0_2$: Common stock has no statistically significant effect on return on equity among firms listed at the NSE, Kenya

The empirical literature reviewed has also shown that significant efforts have been made to analyse the relationship between retained earnings as an internal business financing option (and a component of equity thereof) with a variety of firm performance measures. However, most of the existing empirical literature has employed performance measures such as firm value, turnover, cash dividend per share, capital gain/loss yield, stock price per share, firm value per share, market share price, earnings per share, price earnings ratio and current asset ratio. Notably, the studies have largely ignored ROA and ROE which are the most important measures of firm performance to equity holders as they show how well-off the investor is at the end of the trading period and therefore the ability of the firm to remunerate its equity holders. Thus, based on the effects of retained earnings on other firm performance measures as shown in the extant literature, it is reasonable to expect that the relationships between retained earnings and both ROA and ROE would follow similar trajectories. We therefore hypothesize as follows.

$H0_3$: Retained earnings have no statistically significant effect on return on assets among firms listed at the NSE, Kenya and;

$H0_4$: Retained earnings have no statistically significant effect on return on equity among firms listed at the NSE, Kenya

Finally, taking cue from previous studies, we combine common stock and retained earnings into a single total equity variable and examine the effects of the composite equity variable on firm financial performance. Consequently, we hypothesize as follows.

$H0_5$: Total equity has no statistically significant effect on return on assets among firms listed at the NSE, Kenya and;

$H0_6$: Total equity has no statistically significant effect on return on equity among firms listed at the NSE, Kenya

3. Data and Methods

3.1 Sample and Data

Panel data extracted from annual financial reports of 40 non-financial firms listed firms *at* the NSE and actively trading for the period between 2009 and 2015 was analysed in this study. Whilst the NSE had 63 listed and actively trading by 2015, firms in the banking and insurance services sectors were excluded due to significant differences in their financial reporting with other firms (Basil & Khaled 2011; Pandey 2001). Firms with less than 5 years' annual financial statements and records were excluded to enhance balance in the panel data and allow for objective comparability. Further, the investment services sector mainly comprising the NSE itself was dropped from the sample due to its regulatory role over the other listed firms besides having financial records for only two financial years. The distribution of the final sample of 40 listed firms was across the 8 out of 11 sectors of Kenya's economy over the seven-year sample period as summarized in Table 1.

Cumulatively, total number of 265 records were extracted from the annual financial statement for the sample period 2009 - 2015. The NSE Handbooks (2012 - 2013) and (2015 – 2016) retrieved from the NSE website (nse-handbook.html) complemented with individual firms' published full annual financial statements for each of the financial years 2009-2016 were the main sources of the data. Kenya's companies' laws make it mandatory for all listed public-sector firms to prepare and publish audited financial reports at the end of each financial year as per guidelines issued by the Accounting Standards Board (ASB) and in conformity with applicable International Public-Sector Accounting Standards Board (PSASB). The management of the NSE prepares and publishes the NSE Handbook annually. The Handbook contains and compares balance sheets and income statements for at most the last five financial years for every listed company, thus providing most of the basic financial data for all listed firms in a single document. However, this does not obscure the legal requirement for every listed public company to prepare and publish audited financial statements annually.

Table 1. Distribution by Sector of the Sample Listed Firms

Sector	Number of Firms	Proportion of Firms (%) in Sample
1. Agricultural	6	15
2. Automobiles	3	7.5
3. Commercial Services	10	25
4. Construction and Allied	5	12.5
5. Energy and Petroleum	5	12.5
6. Investments	3	7.5
7. Manufacturing	7	17.5
8. Telecommunication	1	2.5
Total	**40**	**100**

Source: NSE (2015)

3.2 Variables

The independent variables in this study are equity financing options namely common stock and retained earnings while the dependent variables are firm profitability variables, namely return on assets and return on equity. In addition, firm size was included as a control variable. The definitions and computation of these variables are listed in Table 2.

Table 2. Definition of Variables

Variable	Definition
Dependent Variables	
Return on Assets *(ROA)*	Ratio of Total Profits before Tax to Total Assets
Return on Equity *(ROE)*	Ratio of Total Profits before Tax to Total Equity
Explanatory Variables	
Common Stock *(CS)*	Ratio of Common Stock (Ordinary Shares) to Total Assets
Retained Earnings *(REN)*	Ratio of Retained Earnings to Total Assets
Total Equity *(TE)*	Ratio of Total Equity (common stock + retained earnings) to Total Assets
Control Variable	
Firm Size *(SIZE)*	Natural Logarithm of Assets

3.3 Panel Data Analysis Techniques

Panel data econometric techniques namely pooled ordinary least squares (OLS), fixed effects (FE) and random effects (RE) were applied in modelling the effects of equity financing options on firm financial performance measures. The general regression model is expressed as:

$$Y_{it} = \alpha + \beta X_{it} + \mu_{it}$$

Where i is firm and t is time; Y_{it} = the firm performance measure of firm i in year t; X_{it} = K x 1 vector of equity financing variables and; α = K x 1 vector of constants; μ_{it} = error term.

The OLS model above assumes that there are no firm-specific effects and that the error term (μ_{it}) is not correlated with the predictor(s) (X_{it}). However, if the unobserved individual effects (firm specific effects) are present, which is a common characteristic with non-experimental panel data (Baltagi 2005), then OLS may give biased parameter estimates and the FE or RE estimation methods are recommended. With presence of unobserved individual effects, it is assumed that there is an individual firm-specific error term (α_i) and an idiosyncratic error term (ε_{it}) which is not correlated with either X_{it} or α_i such that the total error (μ_{it}) is equal to $\alpha_i + \varepsilon_{it}$ .The linear model therefore becomes:

$$Y_{it} = \alpha + \beta X_{it} + \alpha_i + \varepsilon_{it}$$

If α_i is correlated to X_{it}, meaning that μ_{it} is correlated to X_{it} (since $\mu_{it} = \alpha_i + \varepsilon_{it}$), then the FE model would give consistent estimators whereas OLS estimators would be inconsistent. If on the other hand α_i is not correlated to X_{it}, OLS estimators would be consistent but inefficient because μ_{it} is heteroskedastic and serially auto correlated (since the error term differs from firm to firm and therefore will not have constant variance). Thus, the RE model is preferred in this case to increase efficiency. The rationale behind the RE models is that, unlike the fixed effects model, the variation across the industries is assumed to be random and uncorrelated with the predictor or independent variables included in the models across all time periods (Wooldridge, 2016). By assuming that industry-specific error term is not correlated with the predictors, the RE models allow for time-invariant variables to play a role as explanatory variables (Greene, 2008).

To test the relationship between equity financing options and firm performance, the following OLS, FE and RE models respectively were used in this study:

$$Performance_{it} = \beta_0 + \beta_1 Equity_{it} + \beta_2 Size_{it} + \varepsilon_{it} \quad \text{..... I}$$

$$Performance_{it} = \alpha_i + \beta_1 Equity_{it} + \beta_2 Size_{it} + \mu_{it} \quad \text{..... II}$$

$$Performance_{it} = \beta_0 + \beta_1 Equity_{it} + \beta_2 Size_{it} + \varepsilon_i + \mu_{i,t} \text{.....III}$$

$Performance_{it}$ = one of the two measures of financial performance (ROA & ROE) for the i^{th} firm at time t; $Equity_{it}$ = a proxy for one of the three equity financing options (CS, RE and TE) for the i^{th} firm at time t; $Size_{it}$ = is the control variable for the i^{th} firm at time t; β_0 = the intercept; α_i = Intercept for firm i in year t; $\mu_{i,t}$ = the random error term for firm i in year t and; β_1, β_2 = are the regression coefficients.

A number of criteria were applied in making decisions on the most efficient estimation method between OLS, FE and RE that models the effects of equity variables on firm performance over the sample period 2009-2015. First, the F-test of the joint significance of the fixed effects' intercepts is used to decide between OLS and FE. The null hypothesis is that all of the FE intercepts are zero (*F-test that all u_i=0*). If the null is rejected (i.e. $p<0.05$), then the FE method is considered efficient to produce unbiased estimates hence its results taken over the OLS (Wooldridge, 2016). Secondly, to decide between RE and OLS, the Breusch-Pagan Lagrange Multiplier (LM) test is applied. The null hypothesis in the LM test is that variance across industries is zero, that is, there are no significant differences across industries (i.e. no panel effect) (Prob > $Chibar^2 < 0.05$). If we fail to reject the null, then the conclusion is that RE is not appropriate. That is, there is no evidence of significant differences across industries, therefore a simple OLS regression is appropriate (Greene, 2008). Finally, in determining which model between FE and RE is appropriate, Hausman tests are conducted where the null hypothesis is that the preferred model is RE versus the alternative, the FE. These tests whether the unique errors (μ_i) are correlated with the repressors, the null hypothesis being that they are not (Greene, 2008). A statistically significant Hausman test statistic (Prob > Chi2 < 0.05) indicates that the RE method may give biased and inconsistent estimators, hence the FE model is considered to give unbiased and consistent estimators.

4. Results and Discussion

4.1 Descriptive Statistics

The summary descriptive statistics of all the variables used in this study are presented in Table 3. Overall, the average of total equity (TE) accounted for 53.54% for the sample period between 2009 and 2015. Retained earnings (REN) accounted for a substantial 29.06% while common stock was only 7.23% of total assets. The total equity ratio ranged from -17.71% to 99.98%.

Table 3. Descriptive Statistics for Equity Financing Options and Firm Performance

	No. of Observations	Min	Max	Mean	Std. Dev.
Financing Options					
CS	265	.0001	.4453	.0723	.0857
REN	164	-.3802	.7714	.2906	.2133
TE	265	-.1771	.9998	.5354	.2129
Firm Performance					
ROA	265	-2.0800	.4700	.0523	.1683
ROE	265	-5.5100	23.6300	.1669	1.5728
Moderating Variable					
SIZE	265	10.7200	19.6500	15.6989	1.7413

CS: Common Stock; REN: Retained Earnings; TE: Total Equity Ratio; ROA: Return on Assets; ROE: Return on Equity; SIZE: Firm Size.

With regard to firm performance measures, overall ROA for the full sample was 5.23% while average ROE was 16.69%. ROA values ranged from -2.08 to 0.470 while ROE ranged from -5.51 to 23.6, indicating high variability in performance among Kenya's listed firms. This is particularly so given that the standard deviations for ROA and ROE were 0.17 and 1.57 respectively, suggesting that the highest variability in performance measures was with respect to ROE. Generally, these statistical results of firm performance suggest that Kenya's listed firms posted poor performance over the sample period from 2009 to 2015. In terms of firm size which was included as a control variable, its value ranged from 10.72 to 19.65, with the average size of the sample firms being 15.70 with a standard deviation of 1.74.

4.2 Correlation Analysis

The results of pairwise correlation analysis (Table 4) revealed that common stock (CS) was significantly but negatively correlated with ROA ($r=-0.158$; $p<0.05$) but was not significantly correlated with ROE. Retained earnings (REN) had significant and positive correlations with both ROA ($r= 0.331$; $p<0.01$) while total equity ratio (TE) had significantly positive correlations with ROA ($r= 0.260$; $p<0.01$). Other than correlation with firm's financial performance variables, CS was also significantly but negatively correlated with firm size ($r=-0.307$; $p<0.01$). Total equity had a significant negative correlation with firm size ($r=-0.311$; $p<0.01$). Notably, all the pairwise correlation between explanatory variables were below 34% thus obviating any concerns of multicollinearity during regression analysis.

Table 4. Coefficients of Correlation Between Measures of Equity, Firm Performance, Size

Variables	CS	REN	TE	ROA	ROE	SIZE
CS	1.000					
REN	-0.158**	1.000				
TE	-0.060	0.450***	1.000			
ROA	-0.314***	0.331***	0.260***	1.000		
ROE	-0.082	0.008	-0.111*	0.295***	1.000	
SIZE	-0.307***	0.123	-0.311***	0.094	0.038	1.000

* Significant at the 10% level; ** significant at the 5% level; *** significant at the 1% level; CS: Common Stock; REN: Retained Earnings; TE: Total Equity Ratio; ROA: Return on Assets; ROE: Return on Equity; SIZE: Firm Size.

4.3 Regression Analysis Results

Effects of equity financing options on the financial performance of the firms listed at the NSE were modelled using CS, REN and TE as proxies for firm equity financing options and ROA and ROE to proxy for financial performance and tested through Pooled OLS regression analysis. Firm size was included in the models as a control variable.

First, the regression results show that common stock (CS) has statistically significant but negative effect on ROA across all estimation methods – OLS ($\beta = -0.6410$; $p<0.001$), FE ($\beta = -1.1373$; $p<0.001$) and RE ($\beta = -0.6913$; $p<0.001$). Although CS had equally negative β coefficients in ROE models in OLS, FE and RE estimations, these coefficients were not statistically significant as shown in Table 5. Secondly, the results summarized in Table 6 also revealed that retained earnings (REN) had positive and statistically significant effects on ROA in both OLS ($\beta = 0.1548$; $p<0.001$) and RE ($\beta = 0.1063$; $p<0.001$) but these effects are degraded both in statistical significance and magnitude in FE estimation ($\beta = -0.0085$; $p>0.05$). Though with non-significant beta coefficients, a similar trend is shown with respect to REN effects on ROE. Finally, and overall, total equity ratio (TE) had a statistically significant effect on ROA both under OLS ($\beta = 0.2561$; $p<0.001$) and RE ($\beta = 0.2197$; $p<0.001$) and marginally significant positive effects under FE ($\beta = 0.1390$; $p<0.1$) as shown in Table 7. Contrary to the effects of CS and REN on ROE, TE produced significant negative effects on ROE but only under FE estimation method ($\beta = -3.5081$; $p<0.001$). Firm size only significantly and positively affects ROA in the presence of total equity under both OLS and RE models, though the effects are very weak.

The F-tests for all the ROA-OLS models were significant at p<0.01, indicating good fit of these models. None of the ROE-OLS models had significant F-test despite TE exhibiting a significant, negative β coefficient in FE. On the other hand, in spite of the OLS regression analysis results showing that equity variables have significant effects on ROA, one of the major weaknesses of OLS method is its inability to control for unobserved heterogeneity which has largely been associated with cross-sectional longitudinal data such as that used in the current one.

Based on the decision-making criteria described under section 3.3 of this paper, first, F-tests for the null hypothesis that all of the FE intercepts are zero (F-test that all u_i=0) for all ROA models were significant at p<0.01, leading to the rejection of the null hypothesis. This suggests that the FE estimation method was more appropriate in producing unbiased estimates, thus preferred over the OLS as recommended by Woodridge (2016). Secondly, the Breusch and Pagan Chibar^2 tests for all ROA models were significant at p<0.05, indicating that there were significant variances across industries hence making the RE models more reliable over OLS in estimating the effects of equity on firm performance. Having eliminated the OLS model in favour of FE and RE models, the next step was to compare the FE and RE based on the Hausman test. The statistical results of Hausman's tests (Chi^2) were all non-significant (p > 0.05) for all the ROA models. Based on these statistical tests, the RE method of regression was considered as the best to produce unbiased estimates on the effects of CS and TE on ROA while the FE estimation technique was taken as the best in estimating effects of REN on ROA. Thus, ROA is significantly and negatively affected by CS but positively and significantly affected by REN. Total equity ratio significantly and positively affects ROA.

Table 5. Effect of Common Stock on Firm Performance

Firm Performance	**Predictors**	**Pooled OLS**	**Fixed Effects**	**Random Effects**
ROA	**Constant**	0.0949	0.7694	0.1280
		(0.0984)	(0.5011)	(0.1340)
	CS	-0.6410***	-1.1373***	-0.6913***
		(0.1274)	(0.3205)	(0.1621)
	SIZE	.0002	-0.0405	-0.0017
		(.0949)	(0.0313)	(0.0082)
	Observations	*265*	*265*	*265*
	R^2	0.0916	*0.0554*	0.0490
	F-test	13.900	*6.30*	
	Prob > F	0.0000	*0.0022*	
	Wald Chi^2			19.35
	Prob > Chi^2			0.0001
	F-test that all u_i=0		*2.36*	
	Prob > F		*0.0001*	
	Breusch-Pagan test - Chibar^2			17.03
	Prob > Chibar^2			0.0000
	Hausman Test Chi^2			3.20
	Prob > Chi^2			0.2024
		Pooled OLS	**Fixed Effects**	**Random Effects**
ROE	**Constant**	0.0520	0.0543	0.0520*
		(0.9672)	(5.4649)	(0.9671)
	CS	-1.4920	-0.9414	-1.492
		(1.2547)	(3.4820)	(1.2547)
	SIZE	0.0400	0.0115	0.0142
		(.0593)	(0.3423)	(0.0593)
	Observations	265	*265*	*265*
	R^2	-0.0008	*0.0004*	0.0004
	F-test	0.90	*0.04*	
	Prob > F	0.4089	*0.9561*	
	Wald Chi^2			1.80
	Prob > Chi^2			0.4076
	F-test that all u_i=0		*0.93*	
	Prob > F		*0.6010*	
	Breusch-Pagan test - Chibar^2			0.00
	Prob > Chibar^2			1.0000
	Hausman Test Chi^2			0.03
	Prob > Chi^2			0.9834

** Significant at the 10% level; ** Significant at the 5% level; *** Significant at the 1% level; CS: Common Stock; REN: Retained Earnings; TE: Total Equity Ratio; ROA: Return on Assets; ROE: Return on Equity; SIZE: Firm Size.* (The values in parentheses below each regression coefficient are standard errors associated with the respective variables in the models)

Table 6. Effect of Retained Earnings on Firm Performance

Firm Performance	Predictors	Pooled OLS	Fixed Effects	Random Effects
ROA	**Constant**	0.0186	0.5365*	0.0416
		(0.0649)	(0.3162)	(0.0992)
	RE	0.1548***	-0.0085	0.1063**
		(.0353)	(0.0688)	(0.0461)
	SIZE	0.0010	-0.0289	0.0001
		(0.0041)	(0.0199)	(0.0063)
	Observations	265	*265*	*265*
	R^2	265	*0.0157*	0.0001
	F-test	9.95	*1.06*	
	Prob > F	0.0001	*0.3489*	
	Wald Chi^2			5.38
	Prob > Chi^2			0.0679
	F-test that all u_i=0		*5.16*	
	Prob > F		*0.0000*	
	Breusch-Pagan test - $Chibar^2$			82.10
	Prob > $Chibar^2$			0.0000
	Hausman Test Chi^2			6.09
	Prob > Chi^2			0.0476
		Pooled OLS	**Fixed Effects**	**Random Effects**
ROE	**Constant**	0.4665	2.6108	0.4665
		(1.2685)	(8.2710)	(1.2685)
	RE	0.0911	-1.1551	0.0911
		(0.6887)	(1.8010)	(0.6887)
	SIZE	-0.0131	-0.1268	-0.0131
		(0.0810)	(0.5215)	(0.0809)
	Observations	265	*265*	*265*
	R^2	265	*0.0032*	0.0015
	F-test	-0.0122	*0.22*	
	Prob > F	0.02	*0.8055*	
	Wald Chi^2			0.04
	Prob > Chi^2			0.9806
	F-test that all u_i=0		*0.78*	
	Prob > F		*0.7754*	
	Breusch-Pagan test - $Chibar^2$			0.00
	Prob > $Chibar^2$			1.0000
	Hausman Test Chi^2			0.57
	Prob > Chi^2			0.7522

* Significant at the 10% level; ** Significant at the 5% level; *** Significant at the 1% level; CS: Common Stock; REN: Retained Earnings; TE: Total Equity Ratio; ROA: Return on Assets; ROE: Return on Equity; SIZE: Firm Size. (The values in parentheses below each regression coefficient are standard errors associated with the respective variables in the models)

Table 7. Effect of Total Equity on Firm Performance

Firm Performance	Predictors	Pooled OLS	Fixed Effects	Random Effects
ROA	**Constant**	-0.3865	-0.1554	-0.3324**
		(0.1061)	(0.4893)	(0.1362)
	TE	0.2561***	0.1390*	0.2197***
		(0.0490)	(0.0831)	(0.0572)
	SIZE	0.0192 ***	0.0084	0.0169**
		(0 .0060)	(0.0302)	(0.0078)
	Observations	265	*265*	*265*
	R^2	265	*0.0126*	0.0126
	F-test	14.96	*1.41*	
	Prob > F	0.0000	*0.2451*	
	Wald Chi^2			16.00
	Prob > Chi^2			0.0003
	F-test that all u_i=0		*2.04*	
	Prob > F		*0.0007*	
	Breusch-Pagan test - $Chibar^2$			8.69
	Prob > $Chibar^2$			0.0016
	Hausman Test Chi^2			1.81
	Prob > Chi^2			0.4037
		Pooled OLS	**Fixed Effects**	**Random Effects**
ROE	**Constant**	0.5839	5.0688	0.6010
		(1.0485)	(6.3030)	(1.0575)
	TE	-0.83807*	-3.5081***	-0.8543*
		(0.49347)	(0.9698)	(0.4970)
	SIZE	0.0023	-0.2699	0.0017
		(.0589)	(0.3119)	(0.0595)
	Observations	265	*265*	*265*
	R^2	265	*0.0881*	0.0528
	F-test	1.64	*6.55*	
	Prob > F	0.1961	*0.0562*	
	Wald Chi^2			3.34
	Prob > Chi^2			0.1881
	F-test that all u_i=0		*1.31*	
	Prob > F		*0.1193*	
	Breusch-Pagan test - $Chibar^2$			0.23
	Prob > $Chibar^2$			0.3174
	Hausman Test Chi^2			10.16
	Prob > Chi^2			0.0062

* Significant at the 10% level; ** Significant at the 5% level; *** Significant at the 1% level; CS: Common Stock; REN: Retained Earnings; TE: Total Equity Ratio; ROA: Return on Assets; ROE: Return on Equity; SIZE: Firm Size. (The values in parentheses below each regression coefficient are standard errors associated with the respective variables in the models)

Due to violations of the assumption of homoscedasticity and presence of serial correlation problems, the fixed-effects models were estimated using the robust standard errors method to control for heteroscedasticity and autocorrelation. The results obtained from estimation of the models with robust standard errors showed that only CS retained its significantly negative effect on ROA. In addition, the effect of CS on ROA became significantly negative, largely retaining the value of the β coefficient obtained from the FE estimation.

5. Discussion

The purpose of this study was to examine the effect of equity financing options (CS, REN and TE) on financial performance (measured by ROA and ROE) of firms listed at the NSE. Analysis of data extracted from the financial records of these firms revealed that over the sample period 2009 – 2015, overall, the average ratio of total equity to total assets accounted for 53.54%, with the Agricultural sector standing out as the leading utilizer of equity finance at a ratio of 73.7% and the Energy and Petroleum sector at the lowest at 33.7%. Pearson's product moment correlation analysis showed that common stock (CS) was significantly but negatively correlated with ROA. Retained earnings (REN) had significant and positive correlations with ROA while total equity ratio had significantly positive correlation with ROA.

The results of OLS, FE and RE regression estimations of the effects of CS on ROA and ROE were mixed. While results of OLS, FE and RE estimations consistently revealed that CS significantly and negatively affected ROA, the results for

effects of CS on ROE across all econometric estimation methods were non-significant. On the other hand, OLS, FE and RE estimations of the effects of retained earnings (REN) on ROA were consistent and showed that retained earnings significantly and positively affected ROA. Overall, total equity ratio had positive and significant effects on ROA across all estimation methods of OLS, FE and RE. Although OLS results revealed that total equity ratio had a significantly negative effect on ROE, FE and RE, results were not significant. Intuitively, Hausman's (Chi^2) test revealed that RE estimation produced reliable estimates of equity-performance relationships for the studied sample.

In summary, the results of this study do not support the $H0_1$, $H0_3$ and $H0_5$. Consequently, these null hypotheses are rejected as common stock has a statistically significant negative effect on ROA, retained earnings has a statistically significant effect on ROA and total equity ratio positively and significantly affects ROA. However, $H0_2$, $H0_4$ and $H0_6$ are strongly supported by the empirical results of this study, thus we fail to reject these null hypotheses. The results of this study on the overall effect of equity on firm performance concur with the findings of previous studies such as Khalaf (2013), Oke and Afolabi (2011) who showed that a positive relationship existed between firms' performance and equity financing; Githire and Muturi (2016) who found that equity has a positive and significant effect on financial performance and Njeri and Kagiri (2013) who concluded that equity financing positively affected a firm's financial performance. However, some of the finding contradict those of Akeem *et al*. (2014) and Ronoh and Ntoiti (2015) whose studies revealed that equity financing negatively affected firm performance. These results also support La Porta et al.'s (2002) argument that shows equity concentration as being more likely to positively affect firm performance particularly in firms where control by large equity holders may act as a substitute for legal protection in countries such as Kenya where the capital markets are less developed.

6. Conclusion and Recommendations

The results of this study showed that common equity has a statistically significant effect on ROA while retained earnings have a statistically significant effect on ROA. Overall, total equity ratio has a positive and statistically significant effect on ROA. However, ROE is not significantly affected by the examined equity financing options at least over the 2009 – 2015 sample period. Firm size only significantly and positively affects ROA in the presence of total equity, though the effects are very weak. The results of the study also show that the effects of CS, REN and TE on ROA can efficiently be estimated through random effects regression methods. These positive and negative results of REN and CS respectively as well as the positive results of total equity ratio on ROA find support in the predictions of the trade-off theory as well as Modigliani and Miller's (1963). On the contrary, the non-significant effects of equity financing options on ROE find support in Modigliani and Miller's (1958) theory of irrelevance of capital structure to a firm's financial performance. The positive effects of retained earnings and negative effects of common stock on ROA may explain why the pecking order theory of capital structure argued that firms prefer internal sources of finance, followed by debt while issuing of equity comes as the last priority.

To the corporate finance practitioners, these findings serve to root for internal financing options particularly retained earnings to maximize on equity holders' return on assets. It is also advisable that corporate finance managers should endeavour to minimize on the use of common stock as a source of business financing due to its negative effects on shareholder income on their investments. Nonetheless, a proper balance between common stock and retained earnings should be considered as the positive relationship between total equity and return on assets is a positive appraisal for an optimum mix of equity financing options.

References

Achieng, B. O., Muturi, W. M., & Wanjare, J. (2018). Effect of Debt Financing Options on Financial Performance of Firms Listed at the Nairobi Securities Exchange, Kenya. *Research Journal of Finance and Accounting, 9*(10), 150–164. https://doi.org/10.21275/ART20175036

Akeem, L. B., Terer, E., Kinyanjui, M. W., & Kayode, A. M. (2014). Effects of Capital Structure on Firm's Performance: Empirical Study of Manufacturing Companies in Nigeria. *Journal of Finance and Investment Analysis, 3*(4), 39–57.

Antwi, S., Emire, A. M. E. F., & Zhao, X. (2012). Capital Structure and Firm Value : Empirical Evidence from Ghana. *Internatioanl Journal of Business and Social Sciense, 3*(22), 103–111.

Bassey, E. B., Godwin, O. E. A. A. (2016). Assessing the Impact of Retained Profit on Corporate Performance: Empirical Evidence from Niger Mills Company, Calabar-Nigeria. *European Journal of Business and Innovation Research, 4*(1), 36–47.

Berger, A. N., & Bonaccorsi, P. E. (2006). Capital Structure and Firm Performance: A New Approach to Testing Agency Theory and an Application to the Banking Industry. *Journal of Banking & Finance, 30*(4), 1065–1102. https://doi.org/10.1016/j.jbankfin.2005.05.015

Bhat, H. S., & Zaelit, D. (2014). Forecasting Retained Earnings of Privately Held Companies With PCA and L1 Regression. *Applied Stochastic Models in Business and Industry*, *30*(3), 271–293. https://doi.org/10.1002/asmb.1972

Chadha, S., & Sharma, A. K. (2015). Capital Structure and Firm Performance: Empirical Evidence from India. *Vision: The Journal of Business Perspective*, *19*(4), 295–302. https://doi.org/10.1177/0972262915610852

Chadha, S., & Sharma, A. K. (2016). An Empirical Study on Capital Structure in Indian Manufacturing Sector. *Global Business Review*, *17*(2), 411–424. https://doi.org/10.1177/0972150915619817

Chakraborty, I. (2010). Capital Structure in an Emerging Stock Market: The Case of India. *Research in International Business and Finance*, *24*(3), 295–314. https://doi.org/10.1016/j.ribaf.2010.02.001

Choi, Y. (2014). Making the Poor Pay for the Rich: Capital Account Liberalization and Reserve Accumulation in the Developing World. *Globalizations*, *11*(6), 809–825. https://doi.org/10.1080/14747731.2014.927146

Ejupi, E., & Ferati, R. (2015). Capital Stucture and Profitbility : The Macedonian CASE Rametulla Ferati , PhD Candidate. *European Scientific Journal*, *8*(7), 51–58. https://doi.org/10.1016/j.jbankfin.2008.07.019

Ekwe, M. C., & Inyiama, O. I. (2014). Revenue Reserves and Financial Performance in the Brewery Industry: Evidence from Nigeria. *Applied Economics and Finance*, *1*(2), 117–131. https://doi.org/10.11114/aef.v1i2.571

Farooq, M. A., & Masood, A. (2016). Impact of Financial Leverage on Value of Firms: Evidence from Cement Sector of Pakistan. *Research Journal Of Finance And Accounting*, *7*(9), 73–77.

Fauzi, H., & Idris, K. M. (2009). The Relationship of CSR and Financial Performance: New Evidence from Indonesian Companies. *Issues in Social & Environmental Accounting*, *3*(1), 66–87. https://doi.org/10.22164/isea.v3i1.38

Githire, C., & Muturi, W. (2015). Capital structure and financial performance in Kenya: Evidence from firms listed at the Nairobi Securities Exchange. *International Journal of Economics, Commerce and Management*, *3*(4), 1–10. https://doi.org/10.1017/CBO9781107415324.004

Glover, K. J., & Hambusch, G. (2014). The Trade-Off Theory Revisited: On the Effect of Operating Leverage. *International Journal of Managerial Finance*, *10*(1), 2–22. https://doi.org/10.1108/IJMF-03-2013-0034

Greene, W. H. (2008). Econometric Analysis, Sixth Edition. Upper Saddle River, NJ: Prentice Hall. Hand Applications, Oxford U.K.: 68-119.

Javed, F., & Shah, F. M. (2015). Impact Of Retained Earnings On Stock Returns Of Food And Personal Care Good Industry Listed In Karachi Stock Exchange. *International Journal of Scientific and Research Publications*, *5*(11), 397–407.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure. *Journal of Financial Economics*, *3*(4), 305–360. https://doi.org/10.1016/0304-405X(76)90026-X

Kebewar, M., & Shah, S. M. N. A. (2012). The Effect of Debt on Corporate Profitability: Evidence from French Service Sector. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.2191075

Khalaf, T. (2013). The Relationship between Capital Structure and Firm Performance: Evidence from Jordan. *Journal of Finance and Accounting*, *1*(3), 41. https://doi.org/10.11648/j.jfa.20130103.11

Khan, A., Bilal, M., Farooq, M., & Rehman, A. (2017). Effect of Internal Financial Policy on Shareholders ' Wealth and Firm Value. *Journal of Business and Tourism*, *3*(2), 235–246.

Kizito, O. (2017). *Effect of Capital Structure on Financial Performance of Firms in the Commercial and Service Sector in the Nairobi Securities Exchange for the period 2012 -2016*.

Kuria, J., & Omboi, B. (2015). Relationship Between the Capital Structure and the Financial Performance of Investment and Banking Firms Listed At the Nairobi Securities Exchange in Kenya. *Prime Journal of Business Administration and Management (BAM)*, *5*(11), 1983–1991.

Mahoney, L., LaGore, W., & Scazzero, J. A. (2008). Corporate Social Performance, Financial Performance for Firms that Restate Earnings. *Issues in Social and Environmental Accounting*, *2*(1), 104–130. https://doi.org/10.22164/isea.v2i1.27

Masa'deh, R., Tayeh, M., Al-Jarrah, I., & Tarhini, A. (2015). Accounting vs. Market-based Measures of Firm Performance Related to Information Technology Investments. *International Review of Social Sciences and Humanities*, *9*(1), 129–145.

Modigliani, F., & Miller, M. H. (1963). Corporate Income Taxes and the Cost of Capital: A Correction. *The American Economic Review*, *53*(3), 433–443. https://doi.org/10.2307/1809167

Mwangi, J. M., Muturi, W. M., & Ngumi, P. M. (2016). Relationship between Financial Structure and Financial Performance of Firms Listed at East Africa Securities Exchanges. *Journal of Emerging Issues in Economics Finance and Banking (JEIEFB) An Online International Research Journal*, *5*(1), 1734–1755.

Myers, S. C. (2001). Capital Structure. *The Journal of Economic Perspectives*, *15*(2), 81–102. https://doi.org/10.1007/978-1-349-94848-2

Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, *13*(2), 187–221. https://doi.org/10.1016/0304-405X(84)90023-0

Oke, S., & Babatunde, A. (2011). Capital Structure and Industrial Performance in Nigeria (1999-2007). *Internacional Business and Management*, *2*(1), 100–106.

Raza, M. W. (2013). Affect of Financial Leverage on Firm Performance. Empirical Evidence from Karachi Stock Exchange. *Canadian Journal of Regional Science*, *50383*(Septermber 2013), 1–20. https://doi.org/10.1227/01.NEU.0000349921.14519.2A

Ronoh, C., & Ntoiti, J. (2015). Effect of Capital Structure on Financial Performance of Listed Commercial Banks in Kenya . a Case Study of Kenya Commercial Bank Limited . Cheruyot Ronoh Effect of Capital Structure on Financial Performance of Listed Commercial Banks in Kenya . a. *The Strategic Journal of Business &change Management*, *2*(72), 750–781.

Seo, K. (2016). Excessive Leverage and Firm Performance in Competitive Casino Markets. *Tourism and Hospitality Research*, 146735841667156. https://doi.org/10.1177/1467358416671564

Servaes, H., & Tufano, P. (2006). The Theory and Practice of Corporate Capital Structure. *Global Markets, Liability Strategies Group*, (January), 1–53.

Shubita, M. F., & Alswalhah, J. M. (2012). The Relationship between Capital Structure and Profitability. *International Journal of Business and Social Science*, *3*(16), 104–112. https://doi.org/10.1108/03074350810915851

Tailab, M. M. K. (2014). The Effect of Capital Structure on Profitability of Energy American Firms. *International Journal of Business and Management Invention*, *3*(12), 54–61.

Thuranira, M. (2014). The Effect of Retained Earnings on the Returns of Firms listed at the Nairobi Securities Exchange, (November), 1–46.

Tirmizi, M. A., & Ahmad, M. (2013). Impact Of Retained Earnings On The Maximization Of Firm Value And Shareholders Wealth. *African Journal of Business Management Full*, *7*(18), 1833–1844. https://doi.org/10.5897/AJBM12.111

Uremadu, S. O., & Efobi, U. R. (2012). The Impact of Capital Structure and Liquidity on Corporate Returns In Nigeria: Evidence From Manufacturing Firms. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, *2*(3), 1–16.

Wooldridge, J. M. (2012). Introductory Econometrics. A Modern Approach. Fifth Edition. Michigan State University.