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EFFECTS OF CAPITAL STRUCTURE ON FINANCIAL PERFORMANCE: A CASE OF SELECTED MANUFACTURING COMPANIES ON THE NAIROBI SECURITIES EXCHANGE

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ABSTRACT

Whether a business is a startup or a going concern, it requires funds to carry out its activities as no success is achievable in the absence of fund. The needed fund may be for daily running or business expansions. This tells how important in the life of a business. Capital of firms when sourced, it becomes a burden on enterprises simply because it is other persons' resources which they are to compensate as they derive maximum benefits from it. Therefore, the firm capital structure is intended to provide maximum performance for the cost capital and the profitability for the business. The ability of the organization to carry out their stakeholders need is closely related to the capital structure. The determination of a company's capital structure is a difficult task to achieve. The general objective of this study was to investigate the relationship between capital structure and financial performance of manufacturing firms listed in the Nairobi Securities Exchange. Specifically, the study aimed to evaluate long term debt to asset ratio, short term debt to asset ratio, debt equity ratio, liquidity ratio and firm size, of manufacturing firms listed in the Nairobi Securities Exchange. The study used panel data of selected manufacturing Companies including BOC, British American Tobacco, CarbAcid Kenya, East African Breweries Ltd, Eveready Kenya, Mumias Sugar and Unga Group limited for a period of 9 years. Thus the groups were 7 and the time period was 9 years. All the independent variables are statistically significant. The coefficient of Long-term Debt to Asset ratio is positively related to performance meaning that the higher the Debt to Asset ratio, the greater the profitability. The short-term Debt to Asset Ratio is negatively related to profitability and hence performance of the manufacturing firm. Debt to equity ratio has a positive relationship with performance of a firm. The higher the debt to Equity ratio, the more the profitability hence higher performance of the firm. From the results a high long-term debt to asset ratio increases profitability of a firm whereas a high short-term debt to asset ratio and a high debt to equity ratio lower the performance of a manufacturing firm.

Key Words: *Long Term Debt to Asset Ratio, Short Term Debt to Asset Ratio, Debt Equity Ratio, Liquidity Ratio, Firm Size*

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INTRODUCTION

In reality, capital structure of a firm is difficult to determine because it involves analysis of various factors for example risk and profitability (Shubita & Asawalha, 2012). This becomes harder when the social, economic, political and technological environments where the firms operate show a high degree of instability (Shubita & Alsawalhah, 2012). Therefore, financial managers find difficulty to empirically determine the optimal capital structure. A firm has to issue various securities in a countless mixture to come across particular combinations that can maximize its overall value which means optimal capital structure. Optimal capital structure means that 'with a minimum weighted-average cost of capital and thereby maximize the value of firms'. Although optimal capital structure is a topic that has been widely done by various studies, the study could not find any formula or theory that decisively provides optimal capital structure for a firm. If capital structure is irrelevant in determining firm's performance in perfect market, then imperfections that exist in reality may cause its relevancy.

Factors that contribute towards business failure can be addressed through proper strategies to ensure growth and achievement of organizational objectives (Salazar, Soto & Mosqueda, 2012)

Capital structure is closely linked with corporate performance as quoted by (Heng, 2009). Corporate performance can be measured by variables which involve productivity, profitability, growth or, even, customers' satisfaction.

(Majumdar, 2009) stated that it was important to make appropriate financing decisions since many of the factors that contribute to business failure can be tackled using strategies and financial decisions that drive growth and the fulfillment of organizational objectives. The objective of all financing decisions is maximization of wealth and the most appropriate way of measuring the quality of any financing decision is to examine its effect on the firm's performance.

Capital structure is said to be closely linked to the financial performance (Zeitun &Tian, 2007). Therefore, Financial performance is a subjective measure of how well a firm can use its' assets from its' primary business to generate revenues. Erasmus, (2008) 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.

(Jensen & Meckling, 1976) drew concentration to the impact of capital structure on the performance of enterprises, number of tests as an extension port to inspect the relationship between performance of firm and financial leverage. However, the results documented were contradictory and mixed. Some studies have reported a negative relationship between debt and financial achievement like (Fama & French, 1998) and (Simerly & Li & 2000) as quoted by (Abdullah, 2012) while others like Gill, Nahum and Neil (2011) argued that use of more proportion of debt in capital structure can be effective since it is less costly thereby creating a positive relationship with profitability. This realization therefore requires the decision maker to have enough knowledge so as to analyze and make appropriate judgment on which route follow or even the need to merge the two perspectives.

Manufacturing Firms' operations in Kenya concur with these findings given that they seem to have an over reliance on debt. Most manufacturing firms in Kenya report that the cost of and access to finance are major or severe constraints to business performance and subsequent development. This drives the pinnacle of the study to establish the relationship between corporate structure and financial performance of manufacturing firms listed in the Nairobi Securities Exchange. The precarious employment situation in Kenya has given rise to public policies that aim at giving manufacturing firms a better access to finance. These firms face difficulties in raising this much-needed finance due to information asymmetry and other inefficiencies

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in loan markets. Inevitably, this has a serious impact on their capital structure(Gudmundsson, Ngoka-Kisinguh, & Odongo, 2013).

Access to finance tops the list of constraints faced by manufacturing companies everywhere. Because of the high transaction costs and inability of manufacturing companies to provide collateral banks require, manufacturing firms find themselves starved for funds at all stages of their development ranging from start-up to expansion and growth (Beyene,2002). In Kenya, it is leasing that has bridged the current financing gap experienced by manufacturing firms by providing commercial and industrial equipment as it focuses on the lessee's ability to generate cash flow from the business operations to service the lease repayments rather than on the balance sheet or past credit history (Kisaame, 2007; International Finance Corporation(IFC), 2007).

Statement of the Problem

Capital structure decisions represent an important financial decision of a business organization apart from investment decisions. It is important since it involves a huge amount of money and has long-term implications on the firms. Though Miller and Modigliani (1958) have theoretically argued and proved that capital structure is irrelevant in a perfect market condition, characterized by the capital market with no taxes, no transaction costs and homogenous expectations, other works that assume several market imperfections on the contrary suggest that capital structure decisions are relevant since it can affect shareholders' wealth. Modigliani and Miller (1963) in considering of the existence of corporate taxes suggested that firms should use as much debt capital as possible in order to maximize their value by maximizing the interest tax shield.

The utilization of different levels of debt and equity in the firm's capital structure is one such firm-specific strategy used by managers in the search for improved performance. Hence, most firms have strived to achieve an optimal capital structure in order to minimize the cost of capital or to maximize the firm value, thereby improving its competitive advantage in the marketplace through a mixture of debt and equity financing: and clearly some firms have performed well as a result for example East African Breweries Limited and Safaricom Limited , however others are experiencing declining performance and have even been delisted from the NSE for example Rea Vipingo, East African Portland Cement Company and Access Kenya .This revelation therefore implies that, selecting the right type of debt is an equally important issue as opting for an appropriate debt to equity ratio (Abdullah, 2012). In view of this, selecting the optimal capital structure involve learning the cost of both debt and equity and the proportions.

The lack of a consensus about what would qualify as optimal capital structure in the service and manufacturing industries was motivation enough to conduct this research. A better understanding of the issues at hand requires a look at the concept of capital structure and its effect on the firm's profitability. Sheel (1994) showed that all leverage determinants factors studied, excepting firm size, are significant to explain debt behavior variations while Zeitun and Tian (2007) find that capital structure has a significant and negative impact on firms' performance where underestimation of bankruptcy cost may lead to excessive borrowing hence high debt. However, Gill (2011) came to a conclusion that there exists a positive effect of short term debt to total assets and profitability in the service industry.

Manufacturing companies play an important economic role in many countries. Over the years, economic planners have realized the importance of the manufacturing sector in achieving economic development. The continued poor performance coupled with closure of some manufacturing firms identify that there is a challenge of asset, firm age, equity structure coming in play to sustain the firm (Kenya National Bureau of Statistics Report, 2012). The same report also pointed out that the increase from 2.7% to 10.4% in 2012 in commercial institutions' non-performing assets was attributable

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to small and medium firms' failure to service their loans due to insufficient financial resources (Chege, 2012). The capital structure employed by such firms could be a reason influencing their financial performance trends; an issue that has not been given serious attention. It is on this basis that the researcher was propelled to investigate the contribution of capital structure on manufacturing firms' financial performance in Kenya.

Manufacturing firms' operations in Kenya concur with these findings given that they seem to have an over reliance on debt. Most manufacturing firms in Kenya report that the cost of and access to finance are major or severe constraints to business performance and subsequent development. This drove the pinnacle of the study to establish the relationship between capital structure and financial performance of selected medium sized enterprises in Kenya.

Objectives of the Study

The main objective of this study was to assess the influence of capital structure on financial performance of manufacturing firms on the Nairobi Securities Exchange. The specific objectives were;

- To determine the influence of long term debt to asset ratio on financial performance of manufacturing firms on the Nairobi Securities Exchange
- To assess the influence of short term debt to asset ratio on financial performance of manufacturing firms on the Nairobi Securities Exchange
- To determine the extent to which debt to equity ratio affects financial performance of manufacturing firms on the Nairobi Securities Exchange
- To determine the effect of Firm size as the moderating effect between the dependent variable and the independent variables

The research was guided by the following hypotheses

- Long term debt to asset ratio has no significant influence on the financial performance of manufacturing firms on the Nairobi Securities Exchange
- Short term debt to asset ratio has no significant influence on the financial performance of manufacturing firms on the Nairobi Securities Exchange
- Debt to equity ratio has no significant effect on the financial performance of manufacturing firms on the Nairobi Securities Exchange
- Firm size as the moderator has no effect on the dependent variable and the independent variables

LITERATURE REVIEW

Pecking order theory

The pecking order theory was initially highlighted by Donaldson in 1961 and later further modified by Myers and Majluf (1984) and argued that internal funding; us of retained earnings is a cheaper source of finance rather than external funding; us of debt and equity. Firms choose capitals according to the following preference order: internal finance, debt then equity. This is because internal financing does not incur any flotation costs and doesn't require any additional financial information disclosure that could lead to competitive advantage loss in the market (Kishore, 2009).

Myers and Majluf (1984) argued the existence of information asymmetry between managers (insiders) and investors (outsiders). The theory argues that managers have more inside information than investors and act in favor of old shareholders (Sheikh &Wang, 2011).

The pecking order theory suggests that firms have a particular preference order for capital used to finance their businesses (Myers and Majluf, 1984). Owing to the information asymmetries between the firm and potential investors, the firm will prefer retained earnings to debt, short-term debt over long-term debt and debt over equity. Myers and Majluf (1984) argued that if firms issue no new security but only use its retained earnings to support the investment opportunities, the information asymmetric can be resolved. That

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implies that issuing equity becomes more expensive as asymmetric information insiders and outsiders increase. Firms which information asymmetry is large should issue debt to avoid selling underpriced securities. The capital structure decreasing events such as new stock offering leads to a firm's stock price decline.

An announcement of increasing capital structure events is received by the market as good news because financial intermediaries like investment bank can become insiders to monitor the firm's performance. Managers may have inside information that is not known to the market. Insider investors have more information about the true distribution of firm returns than outsiders. Insider investors tend to limit the use of equity in order to retain control of the firm (Hutchinson, 1995). Moreover, the risk of the firm's return is unknown to investors. They are forced to rely on noisy signals such as the firm's level of capital structure to determine the risk of their investment and firm's value may be underpriced.

The pecking order theory implies that companies with less investment opportunities enough cash flow will have negative debt ratios since the cash will be used to pay the debts and at the Sam time implies that high growth firms with less operating cash will have high debt ratios for their reluctance to raise new equity(Barclay and Smith, 2005)

The Trade-Off Theory

The term trade-off theory is used by differently to describe a family of related theories. In all of these theories, a decision maker running a firm evaluates the various costs and benefits of alternative leverage plans. Often it is assumed that an interior solution is obtained so that marginal costs and marginal benefits are balanced.

The trade-off theory grew out of the debate over the Modigliani-Miller theorem. When corporate income tax was added to the original irrelevance, this created a benefit for debt in that it served to shield earnings from taxes. Since the firm's objective function is linear, and there is no offsetting cost of debt, this implied 100% debt financing.

According to Myers (1984), a firm that observes the trade off theory sets a target debt to value ratio and then slowly moves towards he target

Several aspects of Myers' definition of the trade-off merit discussion. First, the target is not directly observable. It may be imputed from evidence, but that depends on adding a structure.

Second, the tax code is much more complex than that assumed by the theory. Depending on which features of the tax code are included, different conclusions regarding the target can be reached. Graham (2003) provides a useful review of the literature on the tax effects. In addition to that, bankruptcy costs must be deadweight costs rather than transfers from one claimant to another. The nature of these costs is important too. Haugen and Senbet (1978) provide a useful discussion of bankruptcy costs.

Transaction costs must take a specific form for the analysis to work. For the adjustment to be gradual rather than abrupt, the marginal cost of adjusting must increase when the adjustment is larger. Leary and Roberts (2005) describe the implications of alternative adjustment cost assumptions.

In conclusion the target is determined by balancing the tax benefits of using debt against costs of financial distress with use of leverage. It predicts average amount of debt as optimal, there is evidence that the most profitable firms tend to borrow the least hence entering into financial distress becomes low. This creates a contradiction since if the distress risk is low an increase of debt has a favorable tax effect, this should imply that high profits should depict more debt servicing capacity and more taxable income toshield hence resulting in a higher debt ratio.

Static trade-off theory

The static trade-off theory affirms that firms have optimal capital structures, which they determine by trading off the costs against the benefits of the use

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of debt and equity. One of the benefits of the use of debt is the advantage of a debt tax shield. One of the disadvantages of debt is the cost of potential financial distress, especially when the firm relies on too much debt.

Already, this leads to a trade-off between the tax benefit and the disadvantage of higher risk of financial distress. But there are more cost and benefits involved with the use of debt and equity.

One other major cost factor consists of agency costs. Agency costs stem from conflicts of interest between the different stakeholders of the firm and because of ex post asymmetric information (Jensen and Meckling (1976) and Jensen (1986)). Hence, incorporating agency costs into the static trade-off theory means that a firm determines its capital structure by trading off the tax advantage of debt against the costs of financial distress of too much debt and the agency costs of debt against the agency cost of equity. Many other cost factors have been suggested under the trade-off theory, and it would lead to far to discuss them all. Therefore, this discussion ends with the assertion that an important prediction of the static trade-off theory is that firms target their capital structures, i.e. if the actual leverage ratio deviates from the optimal one, the firm will adapt its financing behavior in a way that brings the leverage ratio back to the optimal level.

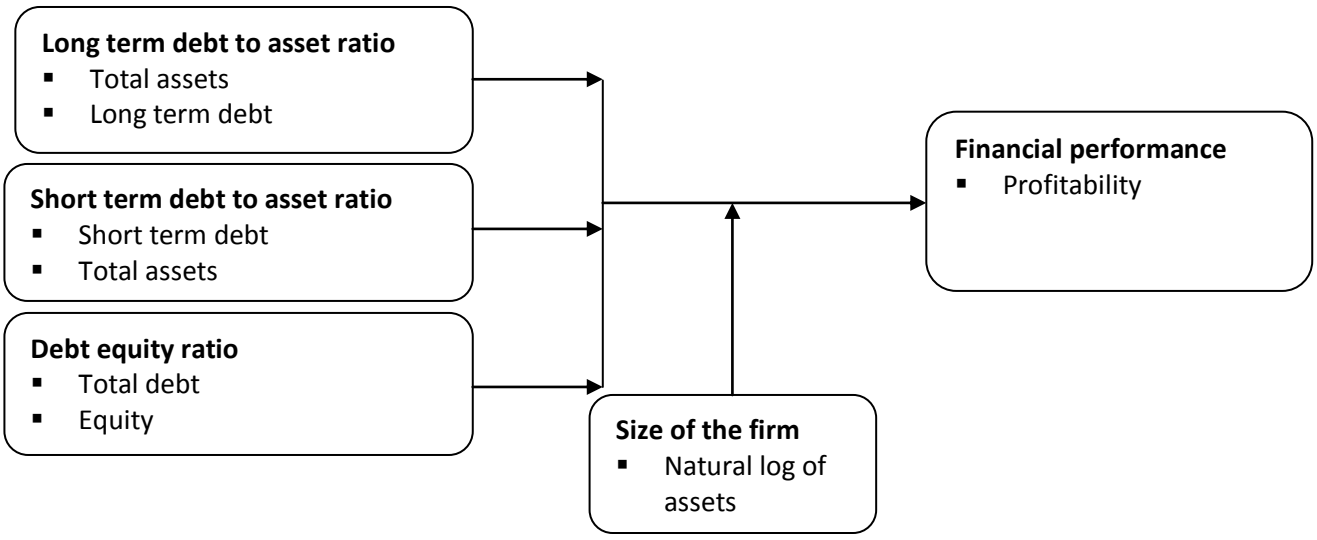

Figure 1: Conceptual Framework

Empirical literature

(Abdullah, 2012) investigated the impact of capital structure on firm performance by analyzing the relationship between operating performance of Malaysian firms, measured by return on asset (ROA) and return on equity (ROE) with short-term debt (STD), long-term debt (LTD) and total debt (TD). Four variables found by most literature to have an influence on firm operating performance, namely, size, asset grow, sales grow and efficiency, are used as control variables. The study found out that only STD and TD have significant relationship with ROA while ROE has significant on each of debt level. However, the analysis with lagged values shows that none of the lagged values for STD, TD and LTD has significant relationship with performance.

A study done by Abor (2005) on the influence of capital structure on profitability of listed companies on the Ghana Stock Exchange during a five-year period found out that there was significant positive relationship between SDA and ROE and shows that firms which earn a lot use more short-term debt to finance their business. In other words, short-term debt is an essential source of financing in favor of Ghanaian companies, by representing 85 percent of total debt financing. The results still showed the adverse relation between LDA and ROE. The

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regression output showed that there was positive relationship between DA and ROE which measure the relationship between total debt and profitability. This indicates that firms which earn a lot are depending on debt as their key financing option.

Alsawalhah, (2012)extended Abor's (2005), and Gill, et al., (2011) findings regarding the effect of capital structure on profitability by examining the effect of capital structure on profitability of the industrial companies listed on Amman Stock Exchange during a six-year period (2004-2009). The findings suggested that profitable firms depend more on equity as their main financing option. Yet recommendations based on findings were 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.

XI Xiaomeng, (2014) found that while using annual asset-liability ratio and ROE, respectively, as a measure of capital structure and financial performance to domestic listed companies in the real estate industry in the period between 1995-2009 all as the research object, are used in empirical research, from the industry perspective on the relationship between capital structure and performance. The empirical results show the existence of a long-term stable relationship asset-liability ratio and ROE. This suggests that companies achieve optimal performance and financial performance, capital structure over the years should be considered.

Duyen (2012) revealed that an increase in short-term debt is associated with a decrease in profitability; hence the higher the short-term debt, the lower the profitability of the firm. It argued that a significant positive relationship exists between the short term debt and profitability and statistically there is a significant negative relationship between long term debt and profitability. These results are partially consistent with the previous studies as the negative relationship between long term debt and the firm performance tends to support the dominant pecking order theory. The association of short term debt and the financial performance supports the static trade-off theory. Total debt as a whole has no association with the firm's performance because of the different characteristics of short term debt and long term debt.

In determining the influence of capital structure on financial performance in Nigeria, Akinyomi and Olagunju (2013) used a descriptive survey research design with the population of 86 manufacturing firms listed in the Nigerian Stock Exchange of which a sample size of 24 was taken. Data was analyzed using correlation coefficient and regression analysis for a period of ten years; 2003-2012 . The results of the study showed that there was a negative relationship between leverage and firm size and also there was a positive relationship between leverage and tangibility of assets.

Magara (2012) researched on capital structure and its determinants at the Nairobi Stock exchange to find out the major determinants of capital structure for the period 2007-2011. It was established that there was a positive significant relationship between firm size, tangibility and growth rate and the degree of leverage of the firm.

METHODOLOGY

A descriptive survey design was used in this study; this assumed world view and several world views (Creswell, 2006). The population consisted of all the manufacturing companies listed in the Nairobi Stock Exchange. Secondary data was used in the study. These data was collected by review of documents and annual reports of the companies, the Nairobi Stock exchange Handbooks and published books of accounts. Annual reports of the companies and NSE handbooks were used, ratios computed and used during analysis. All the data was collected by review of the documents mentioned and the researcher analyzed the data as guided by the research objectives. After data collection, data analysis was done using both descriptive and inferential statistics where rationalization of variables and model

specification estimation was done. The data collected was analyzed using STATA 15. Multiple regression analysis and correlation analysis was utilized to predict and explain the nature and significance of the relationship between dependent and independent variables.

The equation for the regression model was expressed as:

Model 1

$Yper = \beta 0 + \beta 1LDA + \beta 2SDA + \beta 3DE + \varepsilon$

Model 2 (with size as moderator)

$Yper = \beta 0 + \beta 1LDA(FS) + \beta 2SDA(FS) + \beta 3DE(FS) + \varepsilon$

Where

Y = performance

β0 = Regression constant

β1, β2 and β3 = Regression coefficients

ε = Error Term

FS = Firm size

LDA = Long term debt to asset ratio

SDA = Short term debt to asset ratio

DE = Debt to Equity Ratio

RESULTS

Descriptive Statistics

The descriptive statistics entailed Minimum, Maximum, Mean and standard deviation. The results were as shown in Table 1.

Table 1: Descriptive Statistics

Year	Performance	LTDAR	STDAR	DER:	Firm size
		2010			
Count	7.00	7.00	7.00	7.00	7.00
Min	8,703,000.00	0.00	0.05	0.00	8.60
Max	1,770,000,000.00	0.28	1.27	0.00	10.50
Mean	694,000,000.00	0.16	0.45	0.00	9.63
Stdev	726,000,000.00	0.11	0.40	0.00	0.69
		2011			
Count	7.00	7.00	7.00	7.00	7.00
Min	124,000,000.00	0.02	0.03	0.00	8.62
Max	9,010,000,000.00	0.29	1.82	0.00	10.50
Mean	2,120,000,000.00	0.17	0.55	0.00	9.65
Stdev	3,250,000,000.00	0.09	0.60	0.00	0.67
		2012			
Count	7.00	7.00	7.00	7.00	7.00
Min	70,100,000.00	0.01	0.08	0.00	8.65
Max	11,200,000,000.00	0.74	1.53	0.00	10.50
Mean	2,550,000,000.00	0.24	0.60	0.00	9.64
Stdev	3,980,000,000.00	0.24	0.47	0.00	0.67
		2013			
Count	7.00	7.00	7.00	7.00	7.00
Min	1,660,000,000.00	0.01	0.04	0.00	8.70
Max	6,520,000,000.00	0.76	0.89	0.00	10.49
Mean	1,370,000,000.00	0.25	0.58	0.00	9.70
Stdev	2,780,000,000.00	0.24	0.34	0.00	0.63
		2014			
Count	7.00	7.00	7.00	7.00	7.00
Min	33,400,000,000.00	0.01	0.07	0.00	8.55
Max	6,860,000,000.00	0.74	1.60	0.00	10.55
Mean	3,050,000,000.00	0.26	0.66	0.00	9.66

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Stdev	13,600,000,000.00	0.24	0.49	0.00	0.66
		2015			
Count	7.00	7.00	7.00	7.00	7.00
Min	27,900,000,000.00	0.01	0.05	0.00	8.86
Max	9,730,000,000.00	0.64	1.47	0.00	10.62
Mean	1,730,000,000.00	0.23	0.64	0.00	9.70
Stdev	12,100,000,000.00	0.20	0.44	0.00	0.58
		2016			
Count	7.00	7.00	7.00	7.00	7.00
Min	40,300,000,000.00	0.00	0.06	0.00	8.69
Max	7,790,000,000.00	0.64	1.50	0.00	10.53
Mean	3,740,000,000.00	0.23	0.67	0.00	9.72
Stdev	16,400,000,000.00	0.20	0.46	0.00	0.63
		2017			
Count	7.00	7.00	7.00	7.00	7.00
Min	53,500,000,000.00	0.01	0.06	0.00	8.75
Max	7,350,000,000.00	0.71	1.66	0.00	10.65
Mean	5,630,000,000.00	0.24	0.73	0.00	9.69
Stdev	21,300,000,000.00	0.24	0.52	0.00	0.61
		2018			
Count	7.00	7.00	7.00	7.00	7.00
Min	64,600,000,000.00	0.01	0.06	0.00	8.78
Max	8,420,000,000.00	0.67	1.79	0.00	10.56
Mean	6,960,000,000.00	0.24	0.76	0.00	9.65
Stdev	25,600,000,000.00	0.23	0.58	0.00	0.59
		PANEL DATA SUMMARY			
Count	63.00	63.00	63.00	63	63.00
Min	-64,600,000,000	0.0060	0.03	0.000041	8.55
Max	11,200,000,000	0.76	1.82	0.004054	10.65
Mean	-1,600,000,000	0.23	0.63	0.000868	9.67
Stdev	13,400,000,000	0.20	0.46	0.001016	0.60

LTDAR: Long term debt to asset ratio **STDAR:** Short term debt to asset ratio **DER:** Debt to Equity Ratio
Firm size

Table 1 showed summary statistics between 2010 and 2018 for each variable used in the study. From Time series summary, performance ranged from -64,600,000,000 to 11,200,000,000 with a mean of -1,600,000,000. The distribution had a standard deviation of 13,400,000,000. Further, Long term debt to asset ratio ranged from 0.000060 to 0.76 with a mean of 0.23. The standard deviation for natural log of Long term debt to asset ratio was 0.20. Short term debt to asset ratio ranged from 0.03 to 1.82 with a mean of 0.63 and standard deviation of 0.46. Debt to Equity Ratio natural log ranged from 0.000041 to 0.004054 with a mean of 0.000868 and standard deviation of 0.001016. Lastly, firm size natural log ranged from 8.55 to 10.65 with a mean of 9.67 and standard deviation of 0.60.

Panel Unit Root Test

The study carried out a unit root test to ensure that there was no presence of unit roots (the panel data are stationary). Unit root test were conducted to ensure that the series were stationary and check the problem of having a spurious regression. A variable can only be said to be stationary when it

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has no unit root. The study used Levin Lin–Chu (2002) which is based on hypothesis

Ho: All panels contain unit roots
Ha: At least one panel is stationary
The results were as shown in Table 2.

Table 2: Unit Root Tests without Difference (Levin Lin–Chu

	Statistics	P-Value	Significant
Performance	-3.4867	0.002	**
LTDAR	-14.8929	0.000	**
STDAR	-13.5980	0.000	**
Debt Equity ratio	-14.4368	0.000	**
Firm Size	-1.5329	0.010	*

* sig at 5% level, ** sig at 1% level

LTDAR: Long term debt to asset ratio **STDAR:** Short term debt to asset ratio

Table 2 showed the summary results for Stationarity test. A p-value of more than 0.05 indicated the presence of unit roots (H0) while a p-value of less than 0.05 was an indication that there was no presence of unit roots for Phillips-Perron tests. The results indicated that there was absence of unit root for Performance, Long term debt to asset ratio, Short term debt to asset ratio, Debt to Equity Ratio and Firm size. This showed that all variables are stationery and has no unit rootand the results can for further inferential statistics.

Correlation Analysis

The study further used correlation analysis to test the association between independent variables and dependent variable. The results were as shown in Table 3.

Table 3: Correlation Analysis

	LTDAR	STDAR	DER	Firms Size	Performance
LTDAR	1				
STDAR	0.3872	1			
	0.0017				
DER	-0.126	0.4871	1		
	0.3251	0.0001			
Firm Size	0.4916	-0.2867	-0.0934	1	
	0.000	0.0227	0.4666		
Performance	0.2938	-0.2122	-0.782	0.0432	1
	0.0194	0.0225	0.000	0.7367	

The results in Table 3 revealed that there was no high correlation among the independent variables (short term debt to asset ratio (STDAR), long term debt to asset ratio (LTDAR) and debt equity ratio (DER)). The relationship between long term debt to asset ratio and performance is 0.2938, P=0.0.0194. This implied that there is positive and significant linear relationship between performance and long term debt to asset ratio. However, short term debt to asset ratio has significant and negative relationship with performance as indicated performance. Further the relationship between DER and performance is -0.782, P=0.0000. This implied that there is positive and significant linear relationship between performance and DER. However, there was insignificant relation between performance and performance as indicated by R=0.0432, P=0.7367.

Diagnostic Test for Regression

Prior to conducting regression analysis, there was need to conduct diagnostic tests to adhere to the assumptions of the classical linear regression model. This ensured that the estimates produced

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were unbiased and efficient as postulated by long and Ervin (2000). Pedhazur (1997) suggested that when the assumptions of regression are not met the results produced become unreliable and biased. To ensure adherence to the assumptions, the study conducted the following diagnostic tests; normality/ linearity test, test for heteroskedasticity, test for serial autocorrelation, stationarity test and multicollinearity test for all the study variables. It has been observed that few articles report to have tested the assumptions of the test they used in deriving their conclusions (Osborne, Christensen & Gunter, 2001).

Normality Test Using Jarque-Bera

The normality was tested using the Jarque-Bera (JB), Skewness and Kurtosis. The results were as shown in Table 4.

Table 4: Normality Test

Stats	PF	STDAR	LTDAR	DER	FS
N	63	63	63	63	63
Skewness	-3.2783	1.39389	0.93888	1.430095	-0.14394
Kurtosis	5.57035	4.34541	3.351871	4.305477	2.047281
Jarque Bera	1.421	12.451	2.111	16.238	2.600
Probability	0.1243	0.099	0.801	.0687	0.2725

Normality was considered using Skewness, Kurtosis and Jargue-Bera. Skewness of value smaller than 2 and kurtosis value smaller than 6 should be considered normal (Tabor, 2011). From Table 4, all variables had Skewness less than 2. This implied that were normally distributed and the data was adequate and met the assumption of linearity. This observation was also supported by kurtosis values which were less than 6. The study also used a more efficient and conclusive technique known as Jarque-Bera (JB) to further ascertain the normality. The study failed to reject the null hypothesis since the probability value for Jargue-Bera was greater than 5% for STDAR, LTDAR, firm size, debt equity ratio and Performance.

Testing for Heteroscedasticity

The study used Breusch-Pagan/Cook-Weisberg test for Heteroscedasticity. According to the null hypothesis, a constant variance exists while the alternative hypothesis purports that Heteroscedasticity does exist. The violation of homoscedasticity causes an increase as heteroskedasticity increases. From the findings, as shown in table 5, it was revealed that the p value of 0.1677 was greater compared to the significance level (0.05) implying that the study accepts the null hypothesis of homoscedasticity. These findings implied that there was homoscedasticity in the data.

Table 5: Testing for Heteroscedasticity

Breusch and Pagan Lagrangian multiplier test for random effects
Performance_log [Company,t] = Xb + u[Company] + e [Company,t]
Estimated results:

	Var	sd = sqrt(Var)
PFL	2.628145	1.621155
E	0.22219	0.47137
U	1.508293	1.228126
	Test: Var(u) = 0	
	chibar2(01) = 45.34	
	Prob > chibar2 = 0.1677	

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Testing for serial correlation (Independence)

Because serial correlation in linear panel-data models biases the standard errors and causes the results to be less efficient, researchers need to identify serial correlation in the idiosyncratic error term in a panel-data model.

Table 6: Testing for serial correlation (Independence)

Wooldridge test for autocorrelation in panel data
H0: no first order autocorrelation
F(1, 5) = 30.217
Prob > F = 0.2290

The study employed Wooldridge test for autocorrelation to test this assumption. The study sought to test the null hypothesis that no first order serial correlation existed. From the finding presented in table 6, the study concluded that there was no serial correlation of first order since the p-value (p-value=0.2290) was greater than 0.05 leading to the study to fail to reject the null hypothesis. The results indicated that the data adhered to the assumption of residuals not being correlated across time hence adequate for panel regression analysis

Multicollinearity

Multicollinearity also termed as collinearity shows if two or more variables used in a multiple regression model are highly correlated which means that one can be linearly predictable with a higher degree of accuracy compared to the others. The researcher used variance inflation factor (VIF) to test collinearity. This factor measures how high the multicollinearity is in a least squares regression analysis. It gives the index showing the magnitude of the increase of a variance if a regression coefficient is increased because of collinearity. A variable whose VIF value is greater than 10 would merit further investigation. From the findings, the VIFs for the variables, LTDAR=1.5406, STDAR =0.5774 and DER=1.3289 were less than 10. This implies that there was absence of multicollinearity. Pertinent results were as shown in Table 7.

Table 7: Multicollinearity

Var	VIF	1/VIF
STDAR	1.5406	0.6491
LTDAR	1.732	0.5774
DER	1.3289	0.7525

Regression Results for Secondary Data

Linear regression analyses were conducted to determine the influence of capital structure on Performance of manufacturing listed firms on Nairobi securities Exchange, Kenya. Random and fixed effects model was used after applying Hausman test.

Hausman Test

A Hausman test was carried out to determine whether to use the fixed effect or random effect model to address objectives of this study. The appropriate approach of choosing between fixed and random effect model is running a Hausman specification test to determine the more efficient model (Borenstein, Hedges, Higgins, & Rothstein, 2010). Under the test, the null hypothesis is that there is no significant correlation between the individual effects and the independent variables. A rejection of the null hypothesis confirms the argument in favor of the fixed effect against the random effect model. The results were as shown in Table 8.

Table 8: Hausman Test

	Coefficients			
	(b) Fixed	(B) random	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
LTDAR	2.039018	2.664779	-0.62576	0.259604
STDAR	-0.03108	-0.65043	0.61935	0.344066
DER	206.3534	103.5414	102.812	60.98804

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
chi2(3) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= 6.50
Prob>chi2 = 0.0896

Results indicated a prob>chi2 value of 0.0896which is greater than critical P value at 0.05 level of significance which implies that the null hypothesis that a random effect model is the best was not rejected. The study hence used a random effect regression model.

Influence of long term debt to asset ratio on Performance of Manufacturing Listed Firms on NSE

The study sought to determine the influence of long term debt to asset ratio on financial performance of manufacturing firms on the Nairobi Securities Exchange. The first null hypothesis denoted, **H_{o1}:** Long term debt to asset ratio has no significant influence on the financial performance of manufacturing firms on the Nairobi Securities Exchange. Table 9 contains the findings

Table 9: Regression Random Effect of LTDAR on Performance

Random-effects GLS regression		Number of obs =	51
Group variable: Company		Number of groups =	7
R-sq:		Obs per group:	
within =0.1772		min =	9
between = 0.3808		avg =	9
overall = 0.4824		max =	9
		Wald chi2(1) =	10.91
corr(u_i, X) = 0 (assumed)		Prob > chi2 =	0.0010

FP	Coef.	Std. Err.	Z	P>z	[95% Conf.	Interval]
LTDAR	2.172625	0.657742	3.3	0.001	0.883474	3.461775
_cons	19.82104	0.625252	31.7	0.000	18.59557	21.04651
sigma_u	1.589881					
sigma_e	0.464593					
Rho	0.921326	(fraction of variance due to u_i)				

The result obtained from random effect model indicated that LTDAR accounted for 48.24% (Overall R square=0.4824) of the variation in financial performance of manufacturing listed firms on Nairobi securities Exchange. To test the goodness of fit, the study computed Wald chi-square since the model used random effect regression analysis. The findings revealed Wald chi-square = 10.91 with a corresponding p-value =0.0010. The partial regression coefficient for LTDAR was 2.172625

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shows that increase in a unit in LTDAR across time and listed firms makes Performance to increase by 2.172625 units. The regression model is as shown below;

FP_{it}=19.82104+2.172625LTDAR

The study therefore failed to accept the null hypothesis that the model has a goodness of fit and concluded that the model used to link LTDAR and financial performance was statistically significant. This implies that increase in LTDAR would results to increase in financial performance of manufacturing listed firms on Nairobi securities Exchange. The results confirmed findings of other previous studies. Harelimana (2017) researched on effect of debt financing on the level of performance of business in Rwanda. The study found that long term debt levels are strongly related to bank profitability.

Influence of short term debt to asset ratio on Performance of manufacturing listed firms on Nairobi securities Exchange

The study sought to assess the influence of short term debt to asset ratio on financial performance of manufacturing firms on the Nairobi Securities Exchange. The second null hypothesis denoted, **H_{o2}:** Short term debt to asset ratio has no significant influence on the financial performance of manufacturing firms on the Nairobi Securities Exchange. Table 10 contained the findings.

Table 10: Regression Random Effect of short term debt to asset ratio on Performance

Random-effects GLS regression		Number of obs =	51
Group variable: Company		Number of groups =	7
R-sq:		Obs per group:	
within =0.0555		min =	9
between = 0.0056		avg =	9
overall = 0.1325		max =	9
		Wald chi2(1) =	6.53
corr(u_i, X) = 0 (assumed)		Prob > chi2 =	0.0135

FP	Coef.	Std. Err.	Z	P>z	[95% Conf.	Interval]
STDAR	0.76582	0.618273	1.24	0.013	-0.44597	1.977614
_cons	19.90855	0.791424	25.16	0.000	18.35739	21.45971
sigma_u	1.884311					
sigma_e	0.497785					
Rho	0.934765	(fraction of variance due to u_i)				

The result obtained from random effect model indicated that short term debt to asset ratio accounted for 13.25% (Overall R square=0.13.25) of the variation in financial Performance of manufacturing listed firms on Nairobi securities Exchange. The findings revealed Wald chi-square = 76.53 with a corresponding p-value =0.0135. From the findings, short term debt to asset ratio was found to be positively related to financial performance of manufacturing listed firms on Nairobi securities Exchange. Short term debt to asset ratio had a regression co-efficient of 0.76582 which implied that a unit increase in short term debt to asset ratio across time and among listed firms would result an increase of 0.76582units in financial performance. This relationship was further found to be statistically significant since the p-value for short term debt to asset ratio was 0.013 which was lower that the adopted significance level of 0.05. The regression model is as shown below.

PF_{it}=0.865522+0.76582STDAR

Therefore, the study rejected the null hypothesis that short term debt to asset ratio has no significant

influence on financial performance of manufacturing listed firms on Nairobi securities Exchange. The results implied that an increase in the short term debt to asset ratio would lead to a corresponding increase in financial performance.

Influence of Debt equity ratio on Financial Performance of manufacturing listed firms

The study sought to determine the extent to which debt to equity ratio affects financial performance of manufacturing firms on the Nairobi Securities Exchange. The third null hypothesis denoted, **H_{o3}:** 3) Debt to equity ratio has no significant effect on the financial performance of manufacturing firms on the Nairobi Securities Exchange. Table 11 containedthe findings.

Table 11: Regression Random Effect of Debt equity ratio on Financial Performance

Random-effects GLS regression		Number of obs =	51
Group variable: Company		Number of groups =	7
R-sq:		Obs per group:	
within =0.1113		min =	9
between = 0.8807		avg =	9
overall = 0.7872		max =	9
		Wald chi2(1) =	42.11
corr(u_i, X) = 0 (assumed)		Prob > chi2 =	0.0000

FP	Coef.	Std. Err.	Z	P>z	[95% Conf.	Interval]
DER	2.562309	0.394833	6.49	0	1.788451	3.336168
_cons	-4.52725	3.840251	-1.18	0.238	-12.054	2.9995
sigma_u	0.673462					
sigma_e	0.482837					
Rho	0.660495	(fraction of variance due to u_i)				

The result obtained from random effect model indicated that debt equity ratio accounted for 78.72% (Overall R square=0.7872) of the variation in financial performance of manufacturing listed firms on Nairobi securities Exchange. The findings showed Wald chi-square = 42.11 with a corresponding p-value =0.000. The partial regression coefficient for debt equity ratio was 2.562309 shows that increase in one percent in debt equity ratio across time and listed firms makes performance to increase by 2.562309 per cent. The regression model is as shown below

PF_{it}=-4.52725+2.562309DER

The study therefore failed to reject the third null hypothesis implying that debt equity ratio has significant influence on financial Performance of manufacturing listed firms on Nairobi securities Exchange. This implies that increase in debt equity ratio would to significant increase in financial Performance of manufacturing listed firms on Nairobi securities Exchange. The results agree with Omukaga (2017) who sought to determine the influence of capital structure on financial performance of commercial and service firms in the Nairobi Securities Exchange in Kenya. The study found that Debt to Equity ratio has a high correlation with Return on Equity and both Pre and After Tax Profits. As regards the effect of financial leverage on firms' share performance, the study established that the relationship between Debt Equity ratio and Earnings Per Share was low.

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Multiple Linear Regression

The study sought to assess the influence of capital structure on financial performance of manufacturing firms on the Nairobi Securities Exchange. In this regression, the three independent variables were entered as a block. Table 12 contained the findings

Table 12: Regression Random Effect of ROA on Performance

Random-effects GLS regression		Number of obs =	51
Group variable: Company		Number of groups =	7
R-sq:		Obs per group:	
within =0.2443		min =	9
between = 0.8781		avg =	9
overall = 0.6100		max =	9
		Wald chi2(3) =	38.70
corr(u_i, X) = 0 (assumed)		Prob > chi2 =	0.0000

FP	Coef.	Std. Err.	Z	P>z	[95% Conf.	Interval]
LTDAR	1.943424	0.738654	2.63	0.009	0.495688	3.391159
STDAR	-0.38999	0.573001	-0.68	0.046	-1.51306	0.733068
DER	2.120723	0.485425	4.37	0.000	1.169308	3.072137
_cons	-0.48421	4.737716	-0.1	0.919	-9.76997	8.801539
sigma_u	0.855898					
sigma_e	0.455071					
Rho	0.77961	(fraction of variance due to u_i)				

The overall regression model was as shown below

PF_{it}=-0.48421+1.943424LTDAR-0.38999 STDAR +2.120723DER

The result obtained from random effect model indicated that capital structure accounted for 61.0% (Overall R square=0.6100) of the variation in financial performance of manufacturing listed firms on Nairobi securities Exchange. The findings revealed Wald chi-square = 38.70 with a corresponding p-value =0.000. This implies that capital structure is a significant predicator of performance of listed firms at NSE.

From the findings, long term debt to asset ratio had a regression co-efficient of 1.943424 implying that when short term debt to asset ratio and debt equity ratio are controlled, a unit increase in long term debt to asset ratio across time and among listed firms would result in an increase of 1.943424 units in financial performance. This relationship was further found to be statistically significant since the p-value was 0.009 which was lower that the adopted significance level of 0.05. Therefore long term debt to asset ratio was found to be significantly and positively related to financial performance of manufacturing listed firms on Nairobi securities Exchange. Langat, et al., (2014) conducted a study on the effect of debt financing on the profitability of Kenya Tea Development Authority processing factories and indicated that firm performance, which was measured by (ROE and ROA), was significantly and positively associated with long-term debt and total debt at 1% and 5% respectively. Omesa, et al., (2013) examined the relationship between a firm's capital structure and financial performance among a sample of 30 companies listed at the NSE whose data for 5 years period 2007 - 2011. The findings indicate that there was a significant correlation between total assets of a firm and long term debt. Long term debt had a

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positive correlation with ROE which is insignificant and weak. The effect of long term debt was found to be inconsistence in regard to total assets and ROE.

The study established that short term debt to asset ratio had a regression co-efficient of -0.38999implying that when long term debt to asset ratio and debt equity ratio are controlled, a unit increase in short term debt to asset ratio across time and among listed firms would result in a decrease of 0.38999 units in financial performance. This effect was found to be statistically significant since the p-value was 0.046 which was less than the adopted significance level of 0.05. Therefore, short term debt to asset ratio was found to be negatively related to financial performance of manufacturing listed firms on Nairobi securities Exchange. The results are supported by Pradhan and Khadka (2017) who researched on the effect of debt financing on profitability of commercial banks in Napel. The population of the study was twenty two commercial banks. The results revealed a positive association of short-term debt on bank profitability while, long-term debts showed a negative relationship on profitability. Muchugia (2013) sought to establish the effect of debt financing on firm profitability, a case commercial bank in Kenya. The findings show positive relationship between short term debt (SDA) and profitability since short-term debt tends to be less expensive and increasing it with a relatively low interest rate will lead to an increase in profit levels and hence performance. A negative association was established between long term debt (LDA) and profitability.

From the findings, debt equity ratio had a regression co-efficient of 2.120723 implying that when short term debt to asset ratio and long term debt to asset ratio are controlled, a unit increase in debt equity ratio across time and among listed firms would result in an increase of 2.120723 units in performance. This influence was found to be statistically significant since the p-value was 0.000 which was lower that the adopted significance level of 0.05. Therefore debt equity ratio was found to be significantly and negatively related to Performance of manufacturing listed firms on Nairobi securities Exchange. The study conducted by Akinyomi, (2013) on capital structure and financial performance by randomly selected three companies over the five years' time period 2007-2011 from the beverage and food manufacturing industry. The study found that debt to equity indicates optimistic and significant connection with ROA and ROE. Ashraf, Ameen and Shahzadi (2017) sought to find out the impact of capital structure on firm's profitability and explore the optimal capital structure of cement industry of Pakistan. Results demonstrate that debt Equity ratio has insignificant relationship with return on asset (ROA) and return on equity (ROE).

Moderating effect of firm size on the relationship between capital structure and Financial Performance of manufacturing listed firms on Nairobi securities Exchange

The study sought to determine the effect of Firm size as the moderating effect between the dependent variable and the independent variables. Hierarchical regression analysis was performed to determine whether firm size had moderation role on the relationship between capital structure and performance. The fifth null hypothesis denoted, **H_{o4}:** Firm size has no moderating effect on the relationship between capital structure and performance for firms listed on the Nairobi Securities Exchange. The following regression equations were estimated:

$$FP_{it} = \beta_0 + \beta_1 \text{ LTDAR } *FSit + \beta_2 STDAR *FSit + \beta_3 PER*FS + \varepsilon it$$

Where FP is the financial performance estimated by firm size interaction capital structure. The regression coefficient β_1 measured the direct effects of capital structure constructs when firm size equals to zero. To test moderation the researcher tested the coefficient of the interaction term for interaction effects and whether they were significant (Hayes, 2013). Table 13, summarized the regression results.

Table 1310: Model Independent, Moderating, Interaction and Dependent

Source	SS	Df	MS			
				Number of obs	=	51
				F(7,43)	=	47.37
Model	116.3227	7	16.61753	Prob > F	=	0.000
Residual	15.08454	43	0.350803	R-squared	=	0.8852
				Adj R-squared	=	0.8665
Total	131.4072	50	2.628145	Root MSE	=	0.59229

PF	Coef.	Std. Err.	T	P>t	[95% Conf.	Interval]
LTDAR	1.943424	0.738654	2.63	0.009	0.495688	3.391159
STDAR	-0.38999	0.573001	-0.68	0.046	-1.51306	0.733068
DER	2.120723	0.485425	4.37	0.000	1.169308	3.072137
FSZ	1.970705	0.448717	4.39	0.000	1.065782	2.875629
FSZLTDAR	-3.49245	1.454846	-2.4	0.021	-6.42642	-0.55847
FSZSTDAR	2.208211	0.75346	2.93	0.005	0.688715	3.727707
FSDER	-993.515	595.6316	-1.67	0.103	-2194.72	207.6902
_cons	1.291091	4.183582	0.31	0.759	-7.14591	9.728088

R-Square Diff. Model 3 - Model 2 = 0.027 F(3,43) = 3.365 p = 0.026

Model	R^2	F(df)	P	R^2 change	F(df) change	P
1	0.610	24.551(3,47)	0.000			
2	0.858	69.635(4,46)	0.000	0.248	80.424(1,46)	0.000
3	0.885	47.370(7,43)	0.000	0.027	3.365(3,43)	0.026

This model entails PF (Dependent variable), the capital structure (Independent Variables), firm size (Moderating variable) and cross interaction between independent and moderating variables. This model produced three r square values. The first r square is for independent variables (61.0%) while the second r square is for independent variable and moderating variables which is also 85.8%. The introduction of interaction terms (IV*MV) moved R squared from 0.858 to 0.885. The change was significant as indicated by P=.000 implying that firm size interaction capital structure is significant predicator of performance. The study second regression model is as shown below

PF_{it}=1.291091+3.49245X_1Z+2.208211X_2Z - 993.515X_3Z

Where X_1 Z is LTDAR * FSZ

X_2 Z is LTDAR * FSZ

X_3 Zis DER* FSZ

From the resultys, even though one of the three interaction terms had insignificant influence on financial performance of listed firms, several deductions can be made. First, increase in firm size decreases the effect of long term debt to asset ratio on financial performance of listed manufacturing firms and the effect is significant. This implies that long term debt to asset ratio effect on performance increases with decrease in firm size. The same was observed for debt equity ratio implying that increase in firm size decreases the effect of debt equity ratio on performance although the effect was insignificant (P=0.103). On the other hand, increase in firm size increases the effect of short term debt to asset ratio on financial performance of listed manufacturing firms. This implies that short term debt to asset ratio effect on performance increases with increase in firm size significantly.

Size plays an important role in financing strategy and performance as moderating variable. Its importance as moderating variable has become such a routine to employ in empirical corporate finance studies. Smaller firms are more informationally opaque than larger firms and, consequently, the costs to resolve information

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asymmetry with lenders are higher for small firms than for large enterprises. Financing decisions might also be affected by the transaction costs associated with a specific type of financing. . Hussain and Matlay (2007) assert that small firms strive for external sources of finance only if the internal sources are exhaust. Small firms try to meet financial needs with a pecking order of personal and retained earnings, debt and issuance of new equity. These theoretical reasons suggest that smaller firms should have lower debt levels. The size of a company is assumed to have a positive relationship with leverage. The reason is first and foremost that bigger firms tend to have less volatile cash flows and that they take on more debt to maximize the benefits from a tax shield. Another aspect that stems from the pecking order theory is that bigger firms have greater prospects to attract more analysts to provide information about the company. In turn, this decreases the information asymmetry with the market, which makes it possible for the firm to get access to equity financing without ruin firm value.

CONCLUSIONS AND RECOMMENDATIONS

Based on the empirical evidence, a number of logical conclusions were made as follows and presented in terms of study objectives.

From the linear and multiple regression results, the study concluded that long term debt to asset ratio has significant positive effect on financial performance of manufacturing listed firms on Nairobi securities Exchange. An increase in long term debt to asset ratio would results to significant increase in financial performance of manufacturing listed firms on Nairobi securities Exchange. Therefore, long term debt to asset ratio is a significant predicator of financial performance of manufacturing listed firms on Nairobi securities Exchange.

From the linear and multiple regression results, the study concluded that short term debt to asset ratio has significant negative influence on financial performance of manufacturing listed firms on Nairobi securities Exchange. An increase in short term debt to asset ratio would results to significant decrease in Performance of manufacturing listed firms on Nairobi securities Exchange. Hence, short term debt to asset ratio is a significant predicator of financial performance of manufacturing listed firms on Nairobi securities Exchange.

The study concluded that debt equity ratio has significant positive effect on financial performance of manufacturing listed firms on Nairobi securities Exchange as indicated by correlation and linear regression analysis. An increase in debt equity ratio would results to significant increase in financial performance of manufacturing listed firms on Nairobi securities Exchange. Thus, debt equity ratio is a significant predicator of financial performance of manufacturing listed firms on Nairobi securities Exchange.

The study concluded that firm size has significant moderating effect on relationship between capital structure and financial performance of manufacturing listed firms on Nairobi securities Exchange as shown by hierarchical analysis. An increase in firm size results to significant increase on the effect of shortterm debt to asset ratio on financial performance of manufacturing listed firms on Nairobi securities Exchange. On the other hand, an increase in firm size results to significant decrease on the effect of short term debt to asset ratio on financial performance of manufacturing listed firms on Nairobi securities Exchange. Therefore, firm size is significant moderating variable.

The following recommendations were made based on the study conclusions as shown below.

The study recommended that listed firm ought to balance the composition of short and long term debt in their capital structure in a manner that is cost effective and not detrimental to its future growth. Firms should therefore apply the relevant capital structure theories. According to the pecking order theory, just as the name suggests, firms should give priority to internal sources of financing

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before venturing into debt. The trade-off theory on the other hand promulgates the use of debt considering the tax benefits a firm is likely to reap for considering debt financing.

The study also recommended that listed firms should use shareholders' funds as much as practical before they result to borrowing so as to minimize the risks related to debt financing. This risks that include huge interest payments on the debt to erode the returns, restrictive debt covenants, are likely to lead the firms to financial distress and eventual collapse. Firm managers must therefore be encouraged to raise equity by listing at the securities exchanges. The capital market regulators on the other hand should create the necessary infrastructure and regulatory framework that entice the firms to list.

From the results a high long-term debt to asset ratio increases profitability of a firm whereas a high short-term debt to asset ratio and a high debt to equity ratio lower the performance of a manufacturing firm. Firms are encouraged to increase their assets and have long term borrowing plans in order to increase their profitability. Additionally, short term debt should be low so that short term debt to asset ratio declines. A lower short-term debt to asset ratio increases the performance of a manufacturing firm. Lastly, manufacturing firms should maintain a low debt to equity ratio to improve its profitability.

Suggestion for Further Studies

This study examined the effect of capital structure on share prices volatility for firms listed at the NSE. The variables chosen were firm specific variables and may not be the only variables that affect performance. It is recommended that further research could be conducted to establish whether macroeconomic variables affect performance for firms listed in the NSE. This was informed by the low explanatory power of the selected independent variables on the change in dependent variable in the study.

REFERENCES

Abor, J. (2005). The effect of capital structure on profitability: an empirical analysis of listedfirms in Ghana. *The Journal of Risk Finance, 6*(5), 438-445.

Abor, J. (2007). Debt policy and performance of SMEs. *Journal of Risk Finance,* 8(4), 364-379.

Aivaziam, E. (2010). Supply and demand for finance of small enterprises in Ghana: World Bank Publications.

Al-Sakran, S. A. (2009). Leverage determinants in the absence of corporate tax system: the case of non-financial publicly traded corporations in Saudi Arabia [Electronic Version],27, 58-86.

Baker, S. L., Hill, N. C., &Sundaram, S. (2003). An empirical test of stakeholder theory *predictions of capital structure. 18*(1), 36-44.

Barclay, M. J., & Smith, C. W. (2006). On financial architecture: Leverage, maturity, andpriority. 8(4), 4-17.

Berger, A. N., & di Patti, B. (2006). Capital structure and firm performance: A new approach to testing agency theory and an application to the banking industry (Vol. 30, pp. 1065-1102): Elsevier.

Bradley, M., Jarrell, G. A., & Kim, E. H. (2007). On the existence of an optimal capital structure: The structure and pricing of corporate debt covenants. *Journal of Business Finance and Accounting*.

Brigham, E. F., & Houston, J. F. (2007). Fundamentals of financial management: Cengage Learning.

Castanias, R. (2003). Bankruptcy risk and optimal capital structure. *Journal of Finance*, 7(5), 1617-1635.

Cosh, A. D., & Hughes, A. (1994). Size, financial structure and profitability [ElectronicVersion].

Dhankar, R. S., & Boora, A. S. (2006). Cost of Capital, Optimal Capital Structure, and Value of Firm: All Empirical Study of Indian Companies (Vol. 21, pp. 29-36): the Indian institute of management.

Dirmirguc-Kunt, I. D., &Marsimovic, D. J. (2009). Large-sample evidence on the debt covenant hypothesis. 40(4), 1091-1123.

Erasmus, P. D. (2008). Evaluating Value Based Financial Performance Measures.

Esperança, J. P., and, P. M. G. A., &Mohamed., A. G. (2007). Corporate debt policy of smallfirms: An empirical (re)examination". *Journal of Small Business and Enterprise Development,* 1062–80.

Esperanca, J. P., Gama, A. P. M., &Gulamhussen, M. A. (2003). Corporate debt policy ofsmall firms: *an empirical (re) examination. 10*(1), 62-80.

Fama, E. O. & French, J. (2008). Dynamic capital structure choice: Theoryand tests. *Journal of Finance* 44(1), 19-40.

Friend, I., & Lang, L. H. P. (1988a). An empirical test of the impact of managerial self-intereston corporate capital structure. *Journal of Finance*, 271-281.

Friend, I., & Lang, L. H. P. (1988b). An empirical test of the impact of managerial self-intereston corporate capital structure. 43(2), 271-281.

Gleason, K. C., Mathur, L. K., &Mathur, I. (2010). The Interrelationship between Culture,Capital Structure, and Performance:: Evidence from European Retailers. 50(2), 185-191.

Hall, M., &Raviv, A. (2004). The theory of capital structure. 46(1), 297-355.

Hutchinson, P. J. (2005). Determinants of the capital structures of European SMEs. *Journal of Business Finance and Accounting*, 31(5-6), 711-728.

Holmes, S., & Kent, P. (1991). An empirical analysis of the financial structure of small andlarge Australian manufacturing enterprises. 1(2), 141-154.

Michaelas, N. (2011). Financial policy and capital structure choice in UK SMEs: empirical evidence from company panel data. *Small Business Economics*, 12(2), 113-130.

Modigliani, F., & Miller, M. H. (1958). The cost of capital, corporation finance and the theory of investment. 48(3), 261-297.

Myers, S. C. (2000). Determinants of corporate borrowing* 1. 5(2), 147-175.

Pandey, I. M. (2005). Financial Management (Vol. Ninth Edition): Vikas Publishing HousePVT LTD.

Quan, V. D. H. (2002). A rational justification of the pecking order hypothesis to the choice of sources of financing (Vol. 25, pp. 74-90): Emerald, 60/62 Toller Lane, Bradford, West Yorkshire, BD 8 9 BY, UK.

Rajan, R. G., &Zingales, L. (2005). What do we know about capital structure? Some evidence from international data. *Journal of Finance* 50(5), 1421-1460.

Scherr, F. C., Sugrue, T. F., & Ward, J. B. (1993). Financing the small firm start-up: Determinants of debt use. 3(1), 17-36.

Titman, S., &Wessels, R. (2009). The determinants of capital structure choice. *Journal of Finance,* 43(1), 1-19.

Van der Wijst, &Thurm, J. K. (2003). How firm characteristics affect capital structure: an internationalcomparison. *Journal of Financial Research* 22(2), 161.

Wedig, G., Sloan, F. A., Hassan, M., &Morrisey, M. A. (1988). Capital structure, ownership, and capital payment policy: The case of hospitals. 43(1), 21-40.

Mead, D. C. and Liedholm, C. (1998). The dynamics of micro and small enterprises in developing countries. World Development, 26(1), 61-74.

Jain, B.A., &Kini, O. (1994). The post-issue operating performance of IPO firms. *Journal of Finance,* 49, 1699-1726.

Mikkelson, W.H., Partch, M.M. & Shah, K. 1997, "Ownership and operating performance of companies that go public*", Journal of Financial Economics*, vol. 44, no. 3, pp. 281- 307.

Kerlinger, FN (1986). Foundations of behavioural research. Harcourt Brave Jovanovich.

Mugenda, O.M.and Mugenda, A.G (2003). Research Methods Quantitative and Qualitative Approaches, ACT : Nairobi, Kenya.