

Influence of Earnings on Capital Structure of Private Manufacturing Firms in Kenya

Abraham Malenya¹, Dr.Tobias Olweny², Dr.Mbithi Mutua³, Dr.Clive Mukanzi⁴

¹Phd. Candidate Jomo Kenyatta University of Agriculture and Technology Kenya

^{2,3,4}Lecturers Jomo Kenyatta University of Agriculture and Technology Kenya

Abstract: The main objective of the study was to determine the influence of earnings on capital structure of private manufacturing firms in Kenya. The measure of earnings for this research is earnings before tax. Ascertaining and attaining an optimal capital structure for many firms is not an easy task. In Kenya many manufacturing firms are struggling to operate while others have been compelled to shut down.. This study used descriptive survey design on a population of 853 firms as per KAM members' directory of 2015. Using simple random sampling a sample of 208 CFOs of private manufacturing firms were selected from a target population of 455 CFOs of firms situated in Nairobi and its surrounding areas. The researcher collected primary data using self-administered questionnaire to obtain financial measures from the chief finance officers (CFOs) of these firms and secondary data was collected through a data survey sheet and document review form. Data was analyzed using Statistical Package for Social Sciences (SPSS) version 22. Descriptive and inferential statistics were employed. Under descriptive statistics percentages of responses and means of items was computed. In quantitative analysis Karl Pearson's correlation, multiple linear regression, ANOVA and E -Views were used. The study concluded that high earnings cause increase in debt. In addition, firms raise capital first from earnings then debt. Most firms also prefer internal finance first before considering external finance.

Keywords: Earnings, Capital Structure, Earnings Before Tax.

1. INTRODUCTION

Decisions about capital structure are important for every business firm. In the corporate world it is the task of Board of Directors and Management to make capital structure decisions in a manner that will maximize the value of the firm or company (Sheikh & Wang, 2011). However optimization of the firm's value is not an easy task since it involves the selection of debt and equity shares in a balanced percentage keeping in mind various costs and associated benefits. It is noted that a wrong decision or choice may cause a company financial distress that may eventually lead to bankruptcy. The move towards a free or liberal market from 1992 made the operating environment change thereby giving financial managers flexibility in choosing the firm's capital structure. Capital structure is a vital management decision variable because it greatly affects and influences risk and return which in turn affects the firm's market value. Whenever funds are supposed to be raised for various projects a capital structure decision has to be made (Salawu, 2007).

According to Nguyen and Ramachandran (2006) there are conflicting theoretical predictions on the influence of earnings on the debt ratio of firms. Profitability or earnings is a strong point of dissent between pecking order theory and the static order theory. For the static trade off theory the more profitable a firm is the more the debt is issued thereby reducing the tax burden. As opposed to this Pecking order theory assumes that larger earnings lead firms to finance their operations with retained earnings. Kariuki and Kamau (2014) posits that if past profitability is a good proxy for future profitability then profitable firms could borrow more since the likelihood of paying back the debt is greater. Myers and Majluf (1984) postulate a negative relationship between earnings and debt using the Pecking order theory.

Many commercial entities including private manufacturing firms have a deficit in their funding. This constrains their capital structure where the mix of debt and capital is not sufficient to meet all their viable investment needs. These firms

therefore employ prudent measures to enable optimal use of financial resources (Turere, 2012). Firms may therefore face the challenges of capital structure by taking more loans, arranging for loan restructuring; negotiating longer repayment periods and increasing equity base. Firms choose alternative capital structures; they can issue a large amount of debt or very little debt, it can arrange lease financing, use warrants, issue convertible bonds, sign forward contracts and swaps in setting a capital structure that maximizes overall market value of firms (Ngugi & Afande, 2015).

Various studies undertaken in Kenya (Kiogora, 2000; Chode, 2003; Kinyua, 2005; Kuria, 2010; Turere, 2012; Wachilonga, 2013; Muema, 2013; Kiajage & Elly, 2014; Kariuki & Kamau, 2014; Ngugi & Afande, 2015; Wahome, Memba, & Muturi, 2015) remain silent on the optimal capital structure of private manufacturing firms in Kenya. It is for this reason that this study seeks to determine the influence of earnings on capital structure of private manufacturing firms in Kenya.

1.1 Specific Objective:

To establish the influence of earnings on the capital structure of private manufacturing firms in Kenya.

1.2 Research Hypothesis:

H_{a1} Earnings have a significant influence on capital structure of private manufacturing firms in Kenya.

2. LITERATURE REVIEW

According to Köksal, Orman and Oduncu (2013) trade off theory predicts a positive relationship between earnings and leverage. Reasons being lower default risk and interest tax shields of debts are more valuable to firms. However Frank and Goyal (2008) argue that trade off theory can also be viewed as predicting an inverse relationship between leverage and earnings. This would be true if earnings are a better proxy for growth opportunities than market to book value ratios. Moreover dynamic trade off theory models generally predicts a negative relationship between debt and earnings (Köksal *et al.*, 2013). Thus the trade off prediction of profitability or earnings is ambiguous. Pecking order on the other hand predicts a negative relation between debt and profitability as profitable firms can use earnings to fund investments and hence less need for an external debt.

Muema (2013) observes that firms prefer raising capital from retained earnings then from debt and lastly equity. If pecking order applies then higher earnings will correspond to lower debt ratio. As per trade off theory, agency costs, taxes and bankruptcy cost push more profitable firm towards debt. In trade off theory profitable firms prefer debt to benefit from tax shields if past profitability and earnings is a good proxy for future profitability and earnings. Profitable firms can borrow more as the likelihood of paying back loans is greater. Accordingly trade off theory predicts a negative relationship between profitability and debt ratio (Muema, 2013).

Kabede (2011) asserts that firms prefer internal finance first, and then they will issue safest security first after which hybrid securities such as convertible bonds. Accordingly firms that are profitable and therefore generate high earnings are expected to use less debt. One of the main theoretical controversies is the relationship between leverage and profitability of a firm. Profitability is a measure of power of a firm which is the basic concern of its shareholders. The influence of earnings on debts is well explained by pecking order theory. According to this theory there is an ordered preference of financing starting with retained earnings as the main source then followed by debt and last resort would be equity financing. When a firm is profitable and seem to have more earnings will choose to have a lower debt, hence a negative relationship between earnings and debt ratio. However according to trade off theory, high earnings give high level of borrowing capacity, promoting tax shields. Agency cost theory also predicts that profitable firms will make more debt in their structure to control the activities of managers. Thus trade off theory hypothesizes a positive influence of earnings in debt level (Fisseha, 2010).

This conflicting influence is also noted by Nguyen and Ramachadran (2006) who notes that cash flow rich firms may suffer from agency problems of free cash flows. Leverage may therefore be increased to discipline managers, hence predicting a negative influence between capital structures and earnings (Kariuki & Kamau, 2014).

The empirical result of a study conducted by Afza and Hussain (2011) in Pakistan revealed that firms with high earnings used retained earnings, followed by debt financing and that equity financing was considered as the last resort. This evidence supports that pecking order theory. According to extant literature therefore we have strong empirical evidence on the negative influence of earnings on capital structure (Kariuki & Kamau, 2014). However some studies present a

positive correlation and this may be due to lenders being more willing to lend to profitable firms. Hence more profitable firms have access to debt markets and would more likely benefit from greater tax shields (Feidakis & Rovolis, 2007).

In a study of UK property firms Ooi (1999) presents empirical evidence showing that corporate profitability is not an important determinant of capital structure. Similarly a study by De Jong *et al.* (2008) found insignificant inverse relationship between debt ratio and profitability across 42 countries. Amer *et al.* (2013) contends with pecking order theory and argues that firms choose internal funds generated from earnings because internal funds are cheaper and not subjected to outside influence. However earnings are expected to be negatively correlated with leverage (Titman & Wessels, 1988; Rajan & Zingales, 1995). As seen in earlier studies, the negative relationship conflict the trade off theory showing that more earnings pushes a firm to rely more on debt because of its ability to service it. Hence earnings can be both negatively and positively related to capital structure (Shyam–Sunder & Myers, 1999).

3. CONCEPTUAL FRAME WORK

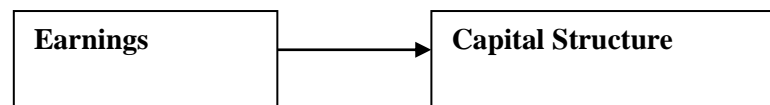


Fig 1. Conceptual framework

3.1 Research Design:

This study used descriptive survey design as it entails finding out what, who, where when and how of the firm characteristics (Kariuki *et al.*, 2015). Lavrakas (2008) describes a descriptive survey research design as a systematic research method for collecting data from a representative sample of respondents. Kariuki, Namusonge and Orwa (2015) stated that a good design is guided by an overarching consideration of whether the design answers the research questions and hypotheses

A research design guides the choice of population, sampling procedure methods of measurement and plan for data collection processing and analysis (Sekaran & Bougie, 2010). A research design is a structure, or the blueprint, of research that guides the process of research from the formulation of the research questions and hypotheses to reporting of the research findings (Ngumi, 2013).

3.2 Target Population:

Lavrakas (2008) defines a population as any finite or infinite collection of individual items. According to Zikmund, Babin, Carr and Griffin (2010) a population refers to all items in any field of inquiry and is also known as the 'universe'. Polit and Beck (2003) refers to population as the aggregate or totality of those conforming to a set of specifications. The population for this study was 853 registered private manufacturing firms as per KAM members' directory (KAM, 2015). The target population which formed the sampling frame for this study consisted of all the 455 chief finance officers of registered manufacturing firms in Nairobi County and surrounding areas registered with KAM in the members' directory of 2015. This excludes chief finance officers of service and consultancy firms who are members and the reason for their exclusion is that these firms do not engage in manufacturing (KAM, 2015).

3.3 Sampling and Sample Size:

A sample is part the population to be studied. Lavrakas (2008) describes a sample in a survey research context as a subset of elements drawn from a larger population. Kombo and Tromp (2009) also describe a sample as a collection of units chosen from the universe to represent it. A study that collects excessive data is also wasteful. Therefore, before collecting data, it is imperative to determine the sample size requirements of a study (Ngumi, 2013). The sampling technique used was simple random sampling where every member of the target population was given an equal chance of being selected. The 455 CFOs were allocated numbers from 1 to 455 and using a table of random numbers the sample 208 was selected.

3.4 Data Collection Procedures:

Primary data was collected through the administration of questionnaires to respondents. Research assistants were engaged to follow-up on the administered questionnaires. Saunders, Lewis and Thornhill (2009) describe primary data as data collected by the researcher himself as opposed to secondary data which is collected from other sources. Secondary

data was collected through a data survey sheet. Websites of 80 different manufacturing firms, firms' offices and registrar of companies were used to provide secondary data to be entered on the survey sheet. The data covered a period of 5 years from 2011 to 2015 a period where latest data was available.

Table: 1 Operationalisation and Measurement of Study Variables

Variable	Name of Variable	Operationalisation	Measurement
Dependent variables	Capital Structure	Debt Ratio	Total Debt/Total Assets
	Earnings	Earnings Before Tax	Earnings Before Tax

3.5 Data Analysis and Presentation:

3.5.1 Descriptive Statistics:

Data analysis involved both descriptive and inferential statistics. The respondents were requested to indicate their level of agreement on the statements on Earnings. Results were presented in Table 2

Table 2 Earnings and Capital Structure

Statements	strongly disagree	disagree	neither agree nor disagree	agree	strongly agree	Mean	Std. Dev
The firm's high earnings cause an increase in debt	6.20%	1.40%	32.60%	47.90%	11.80%	3.38	0.83
The firm can use earnings to fund investments	1.00%	5.20%	2.80%	52.10%	38.90%	4.24	0.78
With high earnings the firm will consider taking less debt	3.40%	1.50%	2.80%	55.60%	36.80%	4.24	0.73
increased earnings support high debt	1.40%	27.1%	21.50%	39.60%	10.40%	3.31	1.03
The firm considers internal funds cheaper	2.00%	2.10%	9.10%	61.10%	25.70%	4.1	0.67
The firm raises capital first from earnings then debt	1.30%	3.50%	14.00%	53.50%	27.80%	4.06	0.76
The firm's profitability lead to use of less debt	1.00%	1.10%	10.40%	61.80%	25.70%	4.11	0.66
With high profitability the firm usually repay loans	9.00%	2.80%	10.40%	45.10%	32.60%	4.08	0.79
By taking more debt the activities of managers are controlled	2.30%	3.30%	21.50%	42.40%	30.60%	3.98	0.87
The firm prefers internal finance first before considering external finance	2.10%	2.10%	13.90%	49.30%	32.60%	4.08	0.86
Average						3.96	0.80

Results in table 2 revealed that majority of the respondents who were 59.70% (47.90%+11.80%) agreed that the firm's high earnings cause an increase in debt. These results were inconsistent with that of Köksal, Orman and Oduncu (2013) who found a negative relationship between debt and earnings. The results also revealed that 91.00% agreed that the firm can use earnings to fund investments. These findings agree with that of Köksal *et al.* (2013) who argued that profitable firms can use earnings to fund investments and hence less need for an external debt. The results further revealed that 92.40% agreed that with high earnings the firm will consider taking less debt. These findings agree with that of Amer *et*

al.(2013) who asserts that firms with volatile earnings are liable to use less debt and supports the bankruptcy costs theory. Results also revealed that 50.00% agreed that increased earnings support high debt.

Further the results revealed that 86.80% agreed that the firm considers internal funds cheaper. These findings agree with that of Amer *et al.* (2013) who contends with pecking order theory and argues that firms choose internal funds generated from earnings because internal funds are cheaper and not subjected to outside influence. The results also revealed that 81.30% agreed that the firm raises capital first from earnings then debt. These findings agree with that of Muema (2013) who observes that firms prefer raising capital from retained earnings then from debt and then equity.

Also, the results revealed that 87.50% agreed the firm's profitability lead to use of less debt. This study agreed with that of Köksal *et al.* (2013) who found a negative relation between debt and profitability as profitable firms can use earnings to fund investments and hence less need for an external debt. The results further revealed that 77.70% agreed that with high profitability the firm usually repay loans. These findings agreed with that of Mbulawa (2014) who found that the larger the firm is the more the probability that it will be able to repay and hence lenders may advance more to it than to smaller firms but this need to be considered with caution because not every firm can pay back. The results further revealed that 73.00% agreed that by taking more debt the activities of managers are controlled. These findings agree with that of Fisseha (2010) who predicts that profitable firms will make more debt in their structure to control the activities of managers. Further the results revealed that 81.90% agreed that the firm prefers internal finance first before considering external finance. These findings agreed with that of Kabede (2011) who asserts that firms prefer internal finance first, and then they will issue safest security first after which hybrid securities such as convertible bonds.

3.5.2 Correlation Analysis:

Correlation analysis was conducted between earnings (independent variable) and capital structure (dependent variable). Results are presented in Table 3

Table 3 Correlation Matrix

		Capital structure	Earnings
Capital structure	Pearson Correlation	1.000	.317**
	Sig. (2-tailed)		0.000
Earnings	Pearson Correlation	.317**	1.000
	Sig. (2-tailed)	0.000	
** Correlation is significant at the 0.01 level (2-tailed).			

Results in Table 3 indicated that there was a positive and a significant association between earnings and capital structure ($r=0.317$, $p=0.000$). These findings agree with that of Muema (2013) who observes that higher earnings will correspond to lower debt ratio

3.53 Regression Analysis:

The results presented in table 4 present the fitness of model used of the regression model in explaining the study phenomena. Earnings were found to be satisfactory variable in explaining capital structure. This is supported by coefficient of determination also known as the R square of 10.1%. This means that earnings explain 10.1% of the variations in the dependent variable which is capital structure.

Table 4: Model Fitness

Variables	Coefficients
R	0.317
R Square	0.101
Adjusted R Square	0.094
Std. Error of the Estimate	0.513

Table 5: Analysis of Variance

	Sum of Squares	df	Mean Square	F	Sig.
Regression	4.178	1	4.178	15.906	0.000
Residual	37.299	143	0.263		
Total	41.478	144			

Table 5 provides the results on the analysis of the variance (ANOVA). The results indicate that the overall model was statistically significant. Further, the results imply that the independent variable is a good predictor of capital structure. This was supported by an F statistic of 15.906 and the reported p value (0.000) which was less than the conventional probability of 0.05 significance level. Regression of coefficient results is presented in Table 6

Table 6: Regression of Coefficients

	B	Std. Error	t	Sig.
(Constant)	1.597	0.455	3.509	0.001
Earnings	0.468	0.117	3.988	0.000

Regression of coefficients showed that earnings and capital structure had a positive and significant relationship ($r=0.468$, $p=0.000$). These results were inconsistent with that of Köksal *et al.* (2013) who found a negative relationship between debt and earnings.

3.6 Response rate:

The number of questionnaires that were administered was 208 and a total of 144 questionnaires were properly filled and returned where as some of the respondents returned the questionnaires half-filled others refused to return them completely despite a lot of follow up. The response rate result is shown in Table 7

Table 7: Response Rate

Response	Frequency	Percent
Returned	144	69.23%
Unreturned	64	30.77%
Total	208	100%

The response rate was 69.23% as shown on Table 7 This represented an overall success according to Mugenda and Mugenda (2003) and also Kothari (2004) a response rate of above 50% is adequate for a descriptive study. Cooper and Schindler (2003) also argues that a response rate exceeding 30% of the total sample size provides enough data that can be used to generalize the characteristics of a study problem as expressed by the opinions of few respondents in the target population Based on these assertions the response rate of , 69.23% was adequate for the study.

3.7 Descriptive Statistics for Secondary Data:

Table 8: Descriptive statistics

	CAPITAL STRUCTURE	EARNINGS BEFORE TAX
Mean	0.845536	65261.91
Median	0.831812	61715.85
Maximum	1.756551	139883.8
Minimum	0.124304	1762.600
Std. Dev.	0.304868	37846.05
Skewness	0.243648	0.257559
Kurtosis	3.083359	1.979211
Jarque-Bera	4.073442	21.78929
Probability	0.130456	0.000019
Sum	338.2142	26104764
Sum Sq. Dev.	37.08483	5.71E+11

From the table 8 above, the mean of the capital structure for the 80 firms running between 2011 and 2015 is 0.845536 with standard deviation of 0.304868. Its minimum and maximum were 0.124304 and 1.756551 respectively. In addition the mean of earnings was 65261.91 with standard deviation of 37846.05. Its minimum and maximum were 1762.600 and 139883.8 respectively.

3.7.1 Trend Analysis:

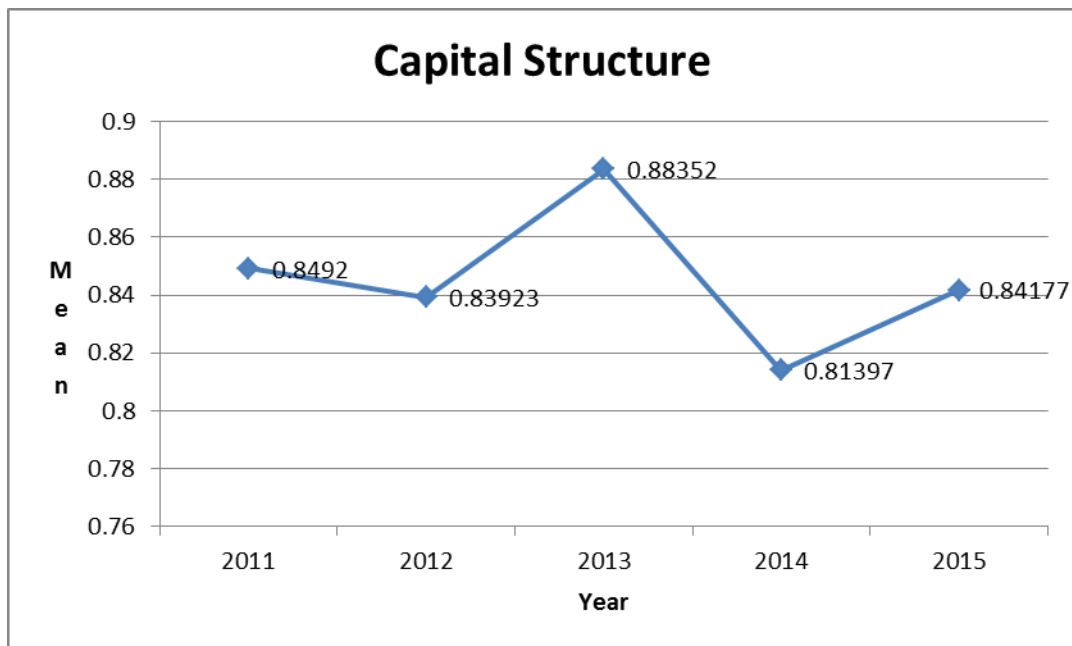


Figure 2: Trend Analysis for Capital Structure

The results revealed that the mean of capital structure in the year 2011 was 84.92%, in the year 2012 the mean was 83.923%, in the year 2013 the mean was 88.352%, in the year 2014 the mean was 81.397% while in the year 2015 the mean was 84.177%.

3.7.2 Earnings:

The results revealed that the earnings in the year 2011 was 66095076.25, the earnings were 64933.96875 in the year 2012, in the year 2013 the earnings were 61070703.75, in the year 2014 the earnings were 71744828.75 while in the year 2015 the earnings were 62464972.5

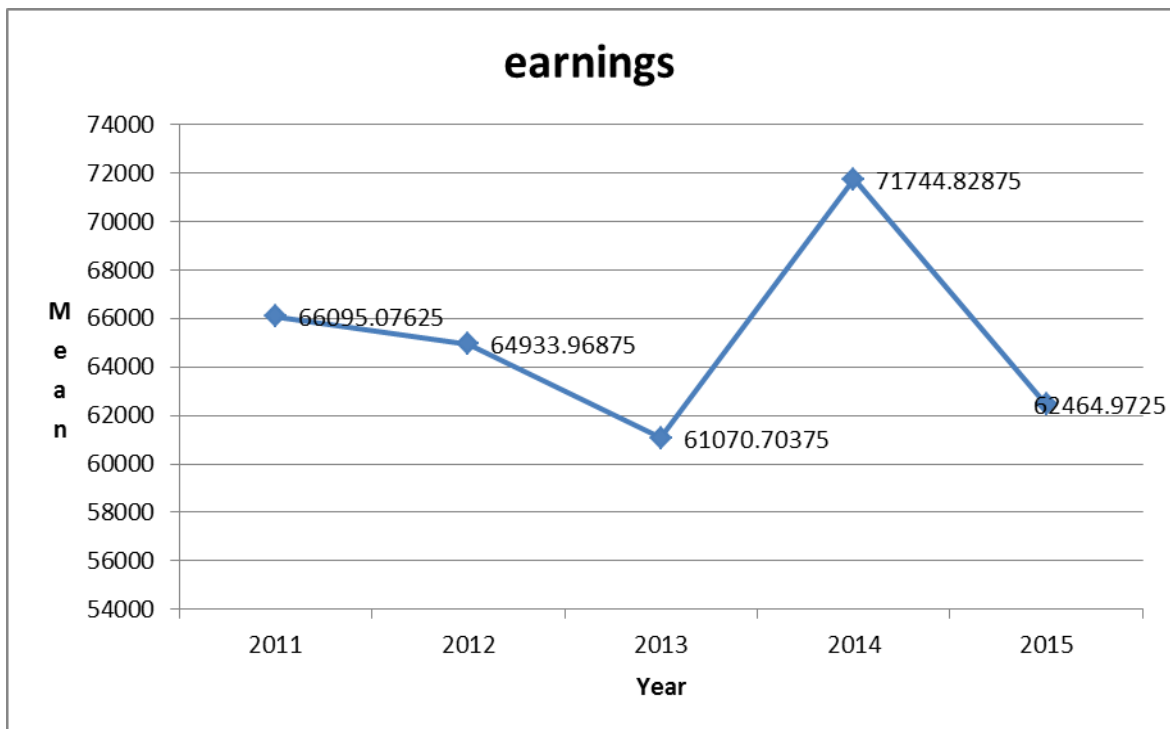


Figure 3: Trend Analysis for Earnings

Table 9: Correlation Analysis

	Capital Structure	Earnings
Capital Structure	1.00	
Earnings	0.1961 *	1.00

*=sig at 0.05

The results in table 9 revealed that earnings and capital structure has a weak positive association. These findings agree with that of Muema (2013) who observes that higher earnings will correspond to lower debt ratio. These findings also agree with that of Amer *et al.*(2013) who asserts that firms with volatile earnings are liable to use less debt and supports the bankruptcy costs theory

4. SUMMARY OF FINDINGS

4.1 Earnings on the Capital Structure:

The objective of the study was to establish the influence of earnings on the capital structure of private manufacturing firms in Kenya. The results revealed that the firm's high earnings cause an increase in debt. These results were inconsistent with that of Köksal *et al.* (2013) who found a negative relationship between debt and earnings. The results also revealed that the firm can use earnings to fund investments. These findings agree with that of (Köksal *et al.*, 2013) who argued that profitable firms can use earnings to fund investments and hence less need for an external debt. The results further revealed that with high earnings the firm will consider taking less debt. These findings agree with that of Amer *et al.*(2013) who asserts that firms with volatile earnings are liable to use less debt and supports the bankruptcy costs theory. Results also revealed that increased earnings support high debt.

Further the results revealed that firms consider internal funds cheaper. These findings agree with that of Amer *et al.* (2013) who contends with pecking order theory and argues that firms choose internal funds generated from earnings because internal funds are cheaper and not subjected to outside influence. The results also revealed that the firm raises capital first from earnings then debt. These findings agree with that of Muema (2013) who observes that firms prefer raising capital from retained earnings then from debt and then equity.

Also, the results revealed that the firm's profitability lead to use of less debt. This study agreed with that of Köksal *et al.* (2013) who found a negative relation between debt and profitability as profitable firms can use earnings to fund investments and hence less need for an external debt. The results further revealed that with high profitability the firm usually repays loans. These findings agreed with that of Mbulawa (2014) who found that the larger the firm is the more the probability that it will be able to repay and hence lenders may advance more to it than to smaller firms but this need to be considered with caution because not every firm can pay back. The results further revealed that by taking more debt the activities of managers are controlled. These findings agree with that of Fisseha (2010) who predicts that profitable firms will make more debt in their structure to control the activities of managers. Further the results revealed that that the firm prefers internal finance first before considering external finance. These findings agreed with that of Kabede (2011) who asserts that firms prefer internal finance first, and then they will issue safest security first after which hybrid securities such as convertible bonds.

The regression results revealed that earnings have a positive and significant effect. These findings agree with that of Muema (2013) who observes that higher earnings will correspond to lower debt ratio. These findings also agree with that of Amer *et al.*(2013) who asserts that firms with volatile earnings are liable to use less debt and supports the bankruptcy costs theory. These findings were inconsistent with that of Köksal *et al.* (2013) who found a negative relationship between debt and earnings.

5. CONCLUSION AND RECOMMENDATION OF THE STUDY

The study concluded that high earnings cause increase in debt. In addition, Firms raise capital first from earnings then debt. Most firms also prefer internal finance first before considering external finance. The study recommended that firms should have high earnings so as to cause an increase in debt.

6. AREAS OF FURTHER RESEARCH

Related studies should be conducted for members of the Kenya Association of Manufacturers who are engaged in consultancy and support services but no manufacturing; a similar study can be carried out on country wide non-manufacturing firms. Since this study concentrated firms within Nairobi and its environs where we have 80% of KAM members as per the members' directory a similar study are conducted on the remaining 20% of those members outside Nairobi and its environs. Further a separate study can be conducted on each segment as provided for in the members' directory of 2015. The study also recommends that a study seeking to establish influence of other variables on capital structure of private manufacturing firms. These other variables may encompass free cash flows, ownership structure

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