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EFFECT OF DEBT FINANCING ON FINANCIAL PERFORMANCE OF MANUFACTURING FIRMS IN NAIROBI SECURITIES EXCHANGE

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ABSTRACT

Every shareholder invests in a company with the dream of making wealth through the company's great financial performance. The capital used in financing a business is made up of funding from owners and funding from lenders. Combining the two sources of funding creates the capital structure of a firm. Capital structure can therefore be defined as a mix of firm's long term debt, short term debt, common equity and preferred equity. This is how a firm funds its whole operations and growth using different sources of financing. This is made up of equity, rights issue, and debt financing, credit market. This research sought to investigate the effect of short-term debt, long-term debt, interest rates and corporation tax rates on the financial performance of manufacturing firms listed in Nairobi Securities Exchange during a five year period of 2013-2017. The study employed use of multiple linear regression models because it considered the relationship between one dependent variable and more than one independent variable. Descriptive statistics, correlation and regression analysis were used to analyze the data. Statistical Package for the Social Sciences (SPSS) software was used to analyze the data. Accounts payable was found to be significant to ROA with a significance level of 0.00 which was less than 0.05. Bank overdraft was found not to be significant to ROA with significance level of 0.132 which is greater than 0.05 while debentures was found to be significant to ROA with a significance level of 0.016 which was less than 0.05. Bank loan and interest payments were found not to be significant to ROA with significance levels of 0.957 and 0.726 respectively which were both greater than 0.05. Interest on tax was found to be significant to ROA with a significance level of 0.014 which was less than 0.05 while Expenses deductibles were found not to be significant to ROA with a significance level of 0.480 which was greater than 0.05.

Key Words: *Short Term Debt, Long-Term Debt, Interest Rates, Corporation Tax, Manufacturing Firms*

INTRODUCTION

In the recent years, there has been a rise in the acknowledgment of the role played by manufacturing firms in the economy. Their contribution to employment creation and poverty relief has also been acknowledged by most governments of developing countries to the extent that they now include them in their development plans. In the midst of the support structures include offering funding to the manufacturing company's sector, usually at concessionary rates. But whether the use of such debt improves the profitability, thereby enhancing performance, is not well known (Matarirano 2007).

Debt financing is the chief component of exterior funding for companies raising additional funds after formation (Baltac and Ayaydın, 2014). It has both a positive and a negative impact on the growth of corporations and for its strategic investments (O'Brien and David, 2010). Fama and French (2002) state that the benefits of debt funding comprise the tax deductibility of interest and the decrease of free cash flow problems, whereas the costs of debt financing comprise possible bankruptcy costs and agency fights between stockholders and debt holders. Hence, in making debt funding choices, managers try to build a balance between the corporate tax advantages of debt financing and the costs of financial distress that rise from bankruptcy risks (Kraus and Litzenberger, 1973) and agency costs (Jensen and Meckling, 1976).

When high levels of debt are used in the capital structure, there will be a rise or a fall in the return on shareholders' equity. Return on equity is the monetary gain by shareholders in profit for the capital they would have given to firms. Debt is always desired if a firm achieves relatively high profits as this result in higher profits to shareholders, positive leverage. If a company experiences a major drop in income, taking more debt in the capital structure will be harmful as the company will not be able to cover the cost of debt, negative leverage (Brown, 2007).

This study research inspects the effect of debt financing on the financial performance of manufacturing companies listed at the NSE in Kenya. The work is centered on the theory of capital structure laid down by Franco Modigliani and Merton Miller in 1963. The purpose of this research study is to determine if the use of debt or leverage by manufacturing companies in Kenya leads to an increase in the returns generated by a company with the intention of improving the performance of manufacturing companies.

Various studies around the world have been able to establish different effects that debt has on performance of manufacturing firms. A research on 39 Amman Stock Exchange based firms carried out by Mohammad and Jaafer (2012) did examine the role of debt in profitably. The outcomes indicated significant but negative relationship between short term debt, long term debt, total debt and return on equity. Another study on French firms by Kebewar (2013) that was grounded on 2325 trade sector firms over a period of 8 years between 1999 and 2006 established that debt has negative affect on profitability. Anandasayanan and Subramaniam (2013) studied on listed manufacturing firms in Colombo stock Exchange and established significantly negative relation between debt and profitability. Wali, Fatima, and Mehboob (2012) considered seventeen (17) textile companies listed on KSE using longitudinal data from 2003 to 2007 and established that the short term debts negatively affect profitability. Weill (2008) carried out a study on different European countries to find the effect of debt on company performance. His findings showed that debt positively affects profitability in countries like Spain and Italy, whereas, Belgium, France, Germany, and Norway presented opposing outcomes. Portugal gave insignificant results.

African continent is also characterized by several contradicting and mixed findings when it comes to debt financing of manufacturing firms. This is despite the regional trading blocs such as East African Community establishing grounds for mutual economic development and favourable grounds for doing business. For instance, previous studies on long term debt in Africa have offered mixed findings on the effects of long term debt on financial performance. Ebaid (2009) in his research on the developing market economy of Egypt established that long term debt has a negative effect on return on asset. He also did carry out a research study to examine the effect of choice of capital structure on the performance of firms in Egypt. The performance was measured using ROE, ROA, and gross profit margin. Capital structure was measured by short-term debt to asset ratio, long-term debt to asset ratio and total debt to total assets. Multiple regression analysis was used to approximate the relationship between the debt level and performance. The study showed that capital structure has little to no impact on a firm's performance. While carrying out a study on the effect of debt financing on productivity of small and medium scale enterprises in Zimbabwe, Dube (2013) was able to establish that productivity in a firm was related positively to the level of debt financing and fluctuations in investment. The study also determined that the level of debt financing must be reasonable so as to avoid large interest expenditures which can inhibit SMEs from investing using internal sources of finance.

A number of research studies carried out locally in Kenya also bring out the contradicting and mixed effect that debt funding has on performance of manufacturing firms. In the time period of 2003 to 2007 the economy of Kenya was able to go over a strong period. This was after a long time of simulated stagnation, as the economic growth rate fast-tracked to 7 per cent. During the same period total factor productivity (TFP) in manufacturing sector improved by as much as 20 per cent (World Bank, 2007). Collective capital formation went up to 19.5 per cent, which was high by Kenyan measures, but definitely less impressive when compared to those of its competitors in Asian countries. And it is so far much away from the long-term target of investments of 30% of GDP. A study carried out by Kaumbuthu (2011) in Kenya established the relationship that existed between capital structure and return on equity for industrial and associated sectors in the Nairobi Securities Exchange for the duration of 2004 to 2008 and established a negative relationship between debt equity ratio and ROE.

From Kenya's independence period, the economy has remained in the mode of agriculture, with industrialization lasting a long part of Kenya's development strategies. The share of industrialized area of monetary GDP has persisted about 15-16% and manufacturing sector was about 10% in the 2010 and 2012 period (Economic Survey, 2013) indicating that Manufacturing events account for the greatest share of industrial production output and form the basis of industry. By 2008, the sector of manufacturing in Kenya had 2,308 firms.

Statement of the Problem

The effect of debt funding on financial performance and profitability is of considerable importance to all businesses. The stress of major studies concerning the financial structure of businesses and firms has been on capital structure and not on debt structure. Also there is no one integrated theory to consider on the effect that debt funding has on the financial performance of companies at the moment that will lead to preset outcomes and consequences when a firm is obtaining or investing in new and current assets. Therefore the lack of concentration on studies on debt funding and rather more attention done on studies on capital structure, is what motivates my study.

In Asian economies, manufacturing industry has been the drive of economic growth. The sector in

Kenya did enjoy diffident rates of growth averaging 4 percent (KAM 2012). The sector saw a reduction in its contribution to GDP from 13.6 percent in the early 90's to 9.2 percent in 2012 (RoK, 2013). The Vision 2030 addresses the need for proper manufacturing strategy for efficient and sustainable practices in order to make the country globally competitive and prosperous (RoK, 2007). Nevertheless, most manufacturing firms in Kenya function at a technical efficiency of about 59 percent compared to their counterparts in Malaysia that average about 74 percent (Achuora, Guyo, Arasa, Odhiambo, 2015) and this raises doubts about the sector's capacity to meet the goals of Vision 2030.

Preceding research analyses have established debt having positive, negative and also both effects on the financial performance of companies. The research gap is that previous studies focus on eyeing the optimum proportion of capital structure and not on debt funding. Some studies discovered a negative effect of debt on profitability. For example, Ngobo and Capiez (2004), Eriotis et al. (2002) and Goddard et al. (2005) indicated negative effect of debt on financial performance. On the other hand, Berger and Bonaccorsi (2006), Baum et al. (2006) and (2007) exhibited a positive impact. In addition, Weill (2008), Simerly and LI (2000), and Mesquita and Lara (2003) found both negative and positive effects in their studies. A non-significant effect was established by Baum et al. (2007) in American industrial companies.

According to KIPPRA (2013) Kenya has a large manufacturing sector contributing about 10% of the country's Gross Domestic Product (GDP) as of 2012. This serves both the market in Kenya and exports to East Africa. The goods manufactured locally contains 25% of Kenya's exports. But the share taken by Kenya to the regional market is only 7% of the 11 billion dollars regional market (GoK, 2017). the market is controlled by imports from outside the region. Within the country, manufacturing has declined over time and the contribution it makes to the GDP has stagnated at about 10% (GoK, 2017). But the sector is anticipated to improve growth with the Government implementing a number of strategies like opening up of the East Africa Customs Union, increasing the capacity in power supply, exemption from duty on manufacturing machinery, treaties with the Common Market for East and Southern Africa, manufacturing under bonds and removal of restrictions on foreign capital repatriations especially for subsidiaries of multinationals.

Studies carried out locally, for example, Lishenga (2003) also inspected the empirical determinants of a firm's debt maturity structures for a sample of 30 firms in Kenya over the period 1998-2002. The study revealed that firms with more growth options have less long term debt in their capital structure. This and many others impel on my study

Objectives of the Study

The primary objective of this study will be to establish the effect of debt financing on Financial Performance of manufacturing firms listed in the Nairobi securities exchange. The specific objectives were:-

- To determine the effect of short term debt financing on financial performance of Manufacturing firms listed in Nairobi Securities Exchange
- To establish the effect of long term debt financing on financial performance of Manufacturing firms listed in Nairobi Securities Exchange
- To assess the effect of interest rates on financial performance of Manufacturing firms listed in Nairobi Securities Exchange
- To examine the effect of corporation tax rate on financial performance of Manufacturing firms listed in Nairobi Securities Exchange

LITERATURE REVIEW

Theoretical Literature

Pecking Order Theory

The theory of Pecking Order was established by Myers and Majluf (1984). According to this theory company's favour internal funding to external funding. Where companies need funding from outside, they would favour debt over equity and only come to equity as a last option. So firms do not have pre-set or optimum debt to equity ratio because of asymmetry in information. The firms employ tactics that are traditional when it comes to dividend and make use of debt financing to maximize the value of the firm. The theory puts forward that firms have a particular order that is favourite for capital used to fund their business. Owing to this information asymmetries between the firm and potential investors, the firm will prefer short term debt over long-term debt, debt over equity, and retained earnings to debt.

Theory of firm growth

This theory was propagated by Penrose in 1959. Penrose argued that firms had no determinant long run or optimum size, but only a constraint on current period growth rates (Penrose, 1959).

There are two major categories of 'causes' of growth; those external to the firm and those internal. Penrose suggests that external causes, for example raising capital, demand condition, sales increment etc., and while of interest 'cannot be fully understood without an examination of the nature of the firm itself. The problem as she saw it was 'the internal incentives to and limits on growth - a theory of the growth of the firm that does not relate to fortuitous externals events. This theory is relevant to this study since it explains interest rates. The currents studies which have used theory of firm growth are; Hermelo, &Vassolo, (2007) who conducted a study on the determinants of firm's growth: an empirical examination and Pervan, Maja, and Višić (2012) who studies on the Influence of firm size on its business success.

Trade off Theory

Modigliani and Miller (1963) are the ones who introduced the tax benefit of debt. According to them the attraction of debt goes down with the personal tax on the interest income. The trade-off theory statuses that financing with debt comes with an advantage. The marginal benefit of further debt increases drops as debt upsurges, while the marginal cost rises, so that a business that is enhancing its overall value will centre on this trade-off when picking how much debt to use for financing. A firm experiences financial ache when the firm is not able to deal with the debt holders' requirements. If the firm is not able to make payments to the holders of debt, it can even be insolvent.

Theory of Tax Effect

Profitability can also influence the capital structure of the firm. In relation to the theory of tax effect, De Angelo and Masulis (1980) contended that businesses that make high profits should have more debt because they are able to benefit from higher tax deductions connected to debt. Ross (1977) acknowledged that using debt widely can show positive gesture about the firm's profitability. Myers (1984) and Myers and Majluf (1984) did report that, it is the desire of businesses to finance themselves.

The structure of the assets, according to this theory, bounds the ability to make use of the tax benefit resulting debt. When the value of the tangible assets is high, the value of depreciation and its benefit in fiscal terms becomes high and consequently, the use of tax deductibility of interest on the indebtedness becomes low. Businesses may alternative to higher levels of debt the when the guarantees on assets are greater, primarily long-term in proportion to their tangible assets.

Conceptual Framework

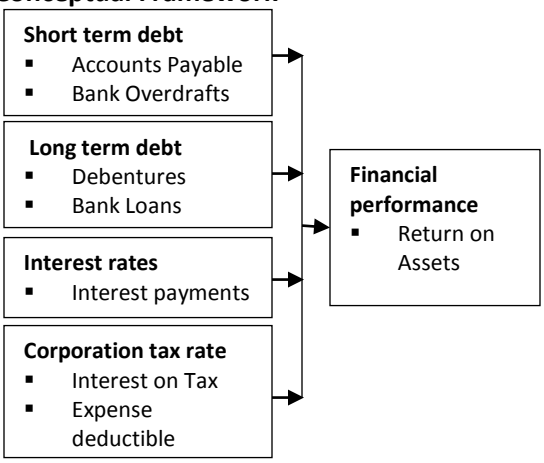

Figure 1: Conceptual Framework

Short term debt

Short term debt is made up of any debt incurred by a company that is due within the current fiscal year. The value of short term debt is very important when determining a company's financial performance. According to Muchugia (2013) there was significant positive relationship between short term debt financing and profitability because 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 therefore performance.

Long term debt

Under the framework of Modigliani and Miller (1958), the capital structure has nothing to do with the enterprise value. However, inconsideration of the corporate income tax, the high the tax rate, the more debt interest deduction. Thus, companies which apply high tax rates may choose higher leverages to increase business values. Modigliani and Miller (1963) support this phenomenon that the value of the company with debt is higher than the debt free company. Therefore, it concludes that debt can generate profits because of interest tax credit. De Angelo and Masulis (1980) find that depreciation, investment tax credits and deferred tax losses can be against taxes like debt interest. Ebaid (2009) and Huang and Song (2006) presented contradicting results on the effect of long-term debt on ROA. While the former found that long term debt has a negative effect on return on asset, the latter found that a long term debt has a negative effect on profitability as measured by the return on assets. This leads to a gap in knowledge for further research.

Interest rates

In a market economy, resources tend to flow to activities that provide the greatest returns for the risk the lender bears. Interest rates serve as market signals of these rates of return hence low Interest rates encourage borrowing and higher debt levels. Kibet et al. (2011) asserts that the interest rate is one of the important macroeconomic variables. Generally, Interest rate is considered as the cost of debt that has arisen during a stated period of time. From the point of view of a borrower, Interest rate is the cost of borrowing money (borrowing expense). From a lender's point of view, Interest rate is the fee gained after lending money. According Kithuria, (2006) an increase in the Interest rate raises the cost of funds. This will have an impact on businesses as well as investors.

Corporation tax rate

This tax is mainly imposed at the national level, state or local level of a country. Generally it is imposed on the net profits. Economists disagree as to how much of the burden of the corporate tax falls on owners, workers, consumers and landowners and how corporate tax affects economic growth and overall financial performance of companies. According to Kariuki (2017) corporate tax has a positive effect of the financial performance of a firm

Empirical Review

Short term debt

Langat, et al., (2014) carried a study on the effect of debt financing on the profitability of Kenya Tea Development Authority processing factories and indicated that company performance, which was measured by ROA, was significantly and positively associated with long-term debt and total debt at 5%, whereas short-term debt showed a negative and significant relationship at 5%. The negative relation between short-term debt and the profitability of factories that process tea meant that providing the finance through debts that are short-term does not lead to profitability. Maina & Ishmail (2014) did a study on financial performance and capital structure of firms listed at the NSE. Using statistical software and a regression model, the study concluded that debt and returns to shareholders are major determinants of financial performance of businesses listed at the NSE. The results obtained showed that there was a negative and significant relationship between financial performances and capital structure. This implied that if a business used more debt as a source of finance it would experience low performance. The study also concluded that firms listed at NSE used more short-term debts than long term.

Teruel and Solane (2008) analysed the Spanish SMEs Corporate cash holdings and found that firms with a higher amount of short-term debt will hold higher levels of cash. Weinraub and Visscher (1998) in their study on debt financing established that short - term debt is positively related to business's profitability, which might be the factor that is most important in accessing outside financing in countries with collateral laws that are not strong. From their studies they also found out that a positive relationship between tangibility and long-term debt and a negative relation between tangibility and short-term debt exists. These results are in line with most theories on capital structure that advocate that firms without fixed-assets to put up as collateral are not able to get hold of long-term financing. According to Garcia-Terul and Martinez – Solano (2007) Short-term debt is positively connected with firm's growth opportunities. The subjective evidence suggests that there is a positive relationship between short term debt financing and financial performance.

Long term debt

Long term debt is money that is owed to financiers for a period that is not less than one year. The study by EBaid (2009) found that there was no significant relationship between return on assets and long term debt. Among well-established corporate institution, Long term debts are most preferable sources of debt financing in most cases by virtue of the base of their assets and collateral. Large financial banks have reduced lending to SMEs substantially thus constraining their potential for growth and financial performance. Masiega et al (2013) did a study investigating the effects of capital structure on the financial performance of listed companies at NSE. Thirty listed companies at NSE were tested and data collected for period of five years starting as from 2001 to 2011. The study concluded that there was a significant positive correlation between total company assets and long-term debt.

According to Githaig and Kabiru (2015), empirical results obtained presented enough evidence that long term debts affect SMEs financial performance in a negative manner. These results are conflicting to Schiantarelli and Jaramillo (1996) argument that long-term loans may lead to enhancements in productivity. Huang and Song (2006) found that a long term debt had a negative effect on profitability which was measured by the return on assets. Abor (2005) found that long term debt had a positive effect on financial performance. Whereas others found that long term debt has a negative effect on financial performance such as Ebaid (2009); Huang and Song (2006), presents conflicting results on this

important element of capital structure leading to a gap in knowledge for further research.

Jaramillo and Schiantarelli (2002) in their study in Ecuador regarding access to long term debt and effects on firm performance got indication that suggested that a shorter maturity was not favourable to greater productivity. Debts that are Long-term may actually lead to productivity boosts.

Effect of Interest rates

Njoroge (2013) carried out a study on relationship between financial performance and interest rates of manufacturing firms listed at the Nairobi Securities Exchange. The main drive of the study was to assess on how interest rates relate to financial performance of firms listed at the Nairobi Securities Exchange. The study factored in five years from 2008 to 2012 comprehensive and the research was built on secondary data that was got from published financial statements of the companies. Results that came out from the study indicated a not significant relationship that was positive between interest rates and financial performance.

Ngumo (2012) conducted a study on the influence interest rates has on the financial performance of companies offering mortgages in Kenya. The study found that Mortgage as a long-term commitment links a prospective individual who wants to own a home down to repayment of mortgage for at least 20 years for the payment of debt. Following liberalization of interest rates, they have varied so as to react to changes in demand and supply of funds that are loan able in the financial market. However, this could result in an unsound financial sector or be counter-productive, in a country with absent experience management by financial institutions. The study embraced a survey research design on all organizations registered for mortgage lending as a target population as of 31st December 2011 which were 33 in number. Secondary data sources were used to collect data from Central Bank of Kenya and CMA library. Multiple linear regression analysis was used to analyze the data at 95percent confidence level. Positive relationships were established in the five regression analysis between the amount of mortgage loans advanced and financial performance; three positive results were established between financial performance and Interest rates. The conclusions of the study were that the amount of mortgage taken up by mortgage firms would lead to a high financial performance (EBIT) as it raises the revenue. On the other hand, the rates of Interest would relate positively with financial performance till it starts depressing borrowings due to increase in mortgage cost.

Corporation tax rate

The impact that taxes have on the financing choice of the firm has been lengthily investigated in the corporate finance literature. Modigliani and Miller (1958) proposed the irrelevance of capital structure in markets that are not perfect but in their 1963 study factored in interest tax deductions to display that debt in the structure of capital could harvest large gains in the form of the tax shields.

Ebaid (2009) carried out a study to investigate the impact of choice of capital structure on the performance of firms in Egypt. Performance was measured using ROA, ROE and gross profit margin. Capital structure was measured by long-term debt to asset ratio, short-term debt to asset ratio and total debt to total assets. Analysis that was applied was Multiple regression to estimate the relationship between performance and the leverage level. The study indicated that capital structure has little to no influence on performance of a business. Abor (2005) did a study investigating the connection between profitability and the capital structure for firms quoted in Ghana Stock Exchange for the period starting 1998-2002. He asserted that short-term debt has a positive relationship with profitability because of interest rates that are low. He also established that positive relationship exists

between profitability and total debt because total debt contains largely of financing that is short-term. Muchugia (2013) researched on how firm profitability of commercial banks in Kenya is affected by debt financing. The study presented a significant positive relationship between profitability and short term debt financing as 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 therefore performance.

METHODOLOGY

The study applied a panel and correlation research design because the study sought to describe the causal effect between the debt funding variables and the financial performance of manufacturing firms listed in the Nairobi Securities Exchange for a five year period (2013-2017). The population for this study consisted of all the listed manufacturing firms composed of nine companies in the NSE from 2013 to 2017. The relationship between debt financing and financial performance was thus estimated in the following regression model:

$Y_{it} = \alpha + \beta_1 STDA_{it} + \beta_2 LTDA_{it} + \beta_3 INT_{it} + \beta_4 DT_{it} + e_{it}$

The regression model above measures the effect of independent variables on financial performance of the firm represented by ROA

Where:

Y_{it} is the ROA for firm i in time t as a measure of performance

$STDA_{it}$ is the short term debt for firm i in time t

$LTDA_{it}$ is the long term debt for firm i in time t

INT_{it} are the Interest rates of a firm i in time t

TSD_{it} are the corporation tax rate for firm i in time t

e_{it} is the error term

α is a constant term

β^s are coefficients of the explanatory variables

RESULTS

Descriptive statistics

Descriptive statistics in Table 1 showed that the average return on assets was 3.4007 with a standard deviation of 7.38284. Kurtosis is a measure of the combined sizes of the two tails whereby it measures the amount of probability in the tails. The value is often compared to the kurtosis of the normal distribution which is equal to three. From Table 1 the statistic on Kurtosis on all variables is equal to 3, implying that the data was normally distributed.

Table 1: Descriptive Statistics

	N	Mean	Std. Deviation	Skewness	Kurtosis
	Statistic	Statistic	Statistic	Statistic	Statistic
ROA	45	3.4007	7.38284	2.169	2.790
ACCPAYABLE	45	66248595.53	1.3488	2.508	3.320
BANKOVERDRAFT	45	530742.33	1424599.154	2.977	3.351
DEBENTURES	45	5631151.07	1.9567	5.233	2.649
BANKLOANS	45	105417.42	497158.640	4.660	2.919
INTRESTPAYMENT	45	-724174.29	2.2787	-2.055	2.922
INTRESTONTAX	45	1580565.42	5885204.321	2.939	2.727
EXPENSEDEDUCTABLE	45	6776553.71	2.0447	3.284	1.408
Valid N (list wise)	45				

Panel Diagnostic Test

Correlation Analysis and Multicollinearity Test

Karl Pearson correlation analysis was adopted in the study (Kothari, 2011). Correlation analysis showed the strength of association between the study variables and also served as linearity test. Results of the study revealed positive and significant relationship between accounts payable and return on assets (rho= 0.632, p value <0.05). This implies that an increase in accounts payable increases return on assets. Secondly, there was a positive and significant relationship between debentures and return on assets (rho = 0.501, p value <0.05). This implies that an increase in debentures is associated with an increase in return on assets. Thirdly, there was a positive and significant relationship between interest on tax and return on assets (rho = 0.481, p value <0.05). This implies that an increase in interest on tax is associated with an increase in return on assets. Additionally, there was no multi-collinearity among the independent variables since none of them had correlation coefficient greater than 0.8 with each other and none of variance inflation factors was greater than 10 or tolerance limits less than 0.1.

Table 2: Correlation Analysis and Multicollinearity Test

	ROA	Acc. Payable	Bank overdraft	Debentures	Bank loans	Interest payment	Interest on tax	Expense deductible	VIF	Torrelance
ROA	1									
Acc. Payable	0.632	1							7.316	0.137
	0.000									
Bank overdraft	-0.170	-0.146	1						1.271	0.787
	0.132	0.169								
Debentures	0.501	0.438	-0.097	1					1.475	0.678
	0.000	0.001	0.263							
Bank loans	0.112	-0.091	0.305	-0.058	1				1.200	0.833
	0.232	0.276	0.021	0.354						
Interest payment	0.327	0.381	-0.038	0.316	0.007	1			1.984	0.504
	0.140	0.005	0.403	0.017	0.482					
Interest on tax	0.481	0.719	-0.198	0.471	-0.058	0.578	1		7.629	0.131
	0.000	0.000	0.096	0.001	0.0352	0.000				
Expense deductible	0.121	0.544	-0.103	0.061	-0.113	-0.490	0.393	1	1.657	0.604

	0.215	-0.000	0.251	0.345	0.231	0.000	0.004

Autocorrelation test

Durbin-Watson test was used to test for the autocorrelation and results were summarized on Table 3. In the current study there was no auto correlation since all the Durbin-Watson statistics were close to 2.

Table 3: Durbin-Watson test for autocorrelation

Dependent variable	Durbin-Watson value	p-value
ROA	1.7576	0.0000

Breusch Pagan Test

In addition, to multi-collinearity and Durbin-Watson test for autocorrelation, another diagnostic test was carried out. First Breusch Pagan test was carried out to test for heteroscedasticity. This was summarized in Table 4 Since the p value was less than 0.05, the null hypothesis of homoscedasticity is not rejected, and therefore multiple regression is the most appropriate model fit.

Table 4: Chi-Square values for the Breusch –Pagan LM Test

Dependent variable	χ^2-value	p-value
ROA	53.0927	0.0000

Test of significance

Table 5 explained the significance fit of the model. ROA was found to be a significant fit of the model with adjusted R^2 of 62%. This means that ROA is explained by 62% of the model.

Table 5: Model Summary

Model	R	R Squared	Adjusted R Squared	Std Error of Estimates	Significant F change
1	0.824	0.679	0.618	4.56476	0.000

The significance of the independent variables on the fitted model is summarized on Table 6 below. Accounts payable was found to be significant to ROA with a significance level of 0.00 which is less than 0.05. Bank overdraft was found not to be significant to ROA with significance level of 0.132 which is greater than 0.05 while debentures were found to be significant to ROA with a significance level of 0.016 which is less than 0.05. Bank loan and interest payments were found not to be significant to ROA with significance levels of 0.957 and 0.726 respectively which are both greater than 0.05. Interest on tax was found to be significant to ROA with a significance level of 0.014 which is less than 0.05 while Expense deductibles were found not to be significant to ROA with a significance level of 0.480 which is greater than 0.05.

Table 6: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
	(Constant)	.162	.882		.183	.855
	ACCPAYABLE	9.514	.250	1.737	6.227	.000
	BANKOVERDRAFT	-8.447	.330	-.163	-1.539	.132
	DEBENTURES	1.082	.560	.287	2.516	.016
	BANKLOANS	8.265	.200	.006	.054	.957
	INTRESTPAYMENT	5.035	.000	.155	.353	.726
	INTRESTONTAX	-1.579	.120	-1.259	-2.576	.014
	EXPENCEDEDUCTABLE	-1.035	.470	-.286	-.713	.480

Regression Analysis

The multiple regression model structure is as follows:

$Y_{it} = 0.162 + 9.514X_{1it} - 8.447X_{2it} + 1.082X_{3it} + 8.265X_{4it} + 5.035X_{5it} - 1.579X_{6it} - 1.035X_{7it} + \varepsilon_{it}$

where;

Y= ROA X_1= Accounts payable X_2= Bank overdraft X_3= Debentures X4= Bank loans X5=Interest payment X6=Interest on tax X7=Expense deductible $\acute{\varepsilon}_{i,t}$= Error term

The variable that generates the highest t-value is the most significant and that which generates the lowest t-value is the least significant. From the table 6 of coefficients, accounts payable has the highest t-value of 6.227 hence the most significant while interest on tax has the lowest t-value of -2.576 hence the least significant.

The first hypothesis of the study stated that there was no significant relationship between short term debt and financial performance. Results of the study revealed that there was a positive and significant relationship between accounts payable and ROA (β = 9.514, p value <0.05). This implies that an increase in accounts payable leads to an increase on Return on Assets with 9.514 units. The other results revealed that there was a negative and not significant relationship between bank overdraft and ROA (β = -8.447, p value >0.05). This implies that an increase in accounts payable leads to a decrease on Return on Assets with 8.447 units.

These results indicate that the sub variables for short term debt show no significance with financial performance except for accounts payable which shows significance to ROA. Empirically the findings support Langat, et al., (2014) who indicated that company performance, which was measured by ROE and ROA, was significantly and negatively associated with short-term debt at 5%. Maina & Ishmail (2014) also concluded that firms listed at NSE used more short-term debts than long term. Teruel and Solane (2008) established that total and short - term debt is positively related to firm's profitability, which might be the most important factor in accessing outside financing in countries with weak collateral laws.

The second hypothesis stated that there was no significant relationship between long term debt and financial performance. Results of the study revealed that there was a positive and significant relationship between debentures and ROA (β = 1.082, p value <0.05). This implies that an increase in issuance of a company's debentures leads to an increase in the

ROA of a company by 1.082 units. There was a positive but not significant relationship between bank loans and ROA (β = 8.265, p value >0.05). This implies that an increase in bank loan leads to a decrease in the ROA of a company by 8.265 units.
The results agree with empirical findings where EBaid (2009) found that there was no significant relationship between long term debt and return on assets. Masiega et al (2013) in their study concluded that there was a significant positive correlation between long-term debt and total company assets. The long-term debt had a positive effect on the financial performance although the nature of the effects was weak and insignificant. Huang and Song (2006) also found that a long term debt has a negative effect on profitability as measured by the return on assets.

The third hypothesis stated that there was no significant relationship between interest rates and financial performance. Results of the study revealed that there was a negative and not significant relationship between interest payments and ROA (β = 5.035, p value >0.05). This implies that an increase in interest payments will lead to a decrease in Return on Assets by 5.035 units.
These results totally agreed with the findings of Njoroge (2013) who carried out a study on relationship between interest rates and financial performance of firms listed at the Nairobi Securities Exchange. Results obtained from the study indicated a not significant positive relationship between interest rates and financial performance.

The fourth hypothesis stated that there was no significant relationship between corporation tax rate and financial performance. Results of the study indicate that there was a negative and significant relationship between interest on tax and ROA (β = -1.579, p value <0.05). This interpretation means that an increase in interest on tax leads to a decrease in ROA by 1.579. There was also a negative and not significant relationship between expense deductible and ROA (β = -1.035, p value >0.05). This interpretation means that an increase in expense deductible leads to a decrease in ROA by 1.035 units.
These results are not in line with what Modigliani and Miller (1958) suggested that debt in the capital structure could yield large gains in the form of the tax shields. Also Bradley, Jarrell and Kim (1984) in contrast to these results found that debt is positively related to non-debt tax shields.

In conclusion, the variable that generates the highest t-value is the most significant and that which generates the lowest t-value is the least significant. From table 6 of coefficients, accounts payable amongst the sub variables was highly influenced by financial performance which reported a t-value of 6.227 hence the most significant. This was followed by debentures with a t-value of 2.516, while interest on tax was the least significant with a t-value of -2.576.

CONCLUSION AND RECOMMENDATIONS

The first objective of the study sought to examine the effect of short term debt measured by accounts payables and bank overdrafts on financial performance of manufacturing firms in Nairobi Securities Exchange. Both correlation and regression analysis revealed a positive and significant effect between accounts payable and ROA. For the bank overdraft, there was a negative but non-significant effect with the ROA.
The second hypotheses of the study sought to determine the effect of long term debt on financial performance of manufacturing companies listed in Nairobi Securities Exchange. Results of the study revealed a positive and significant relationship between debentures and ROA while bank loans had a positive but non-significant effect on ROA.
The third hypotheses of the study sought to determine the effect of interest rates on financial

performance of manufacturing companies listed in Nairobi Securities Exchange. Results of the study revealed there was a negative but not significant relationship between interest payments and ROA.

The fourth hypothesis stated that there was no significant relationship between corporation tax rate and financial performance. Results of the study showed a negative and significant relationship between interest on tax and ROA and a negative and not significant relationship between expense deductible and ROA.

Conclusions of the study

Based on the findings of this study, the following conclusions can be drawn: Since there was a positive and significant relationship between accounts payables and return on assets among manufacturing firms listed in the Nairobi Stock Exchange, there is need for listed manufacturing companies to be awesome at Accounts Payable. This will build trust with the entities that make the business possible and can lead to better deals or rates or even leniency in late payment which will lead to superior return on assets for the companies.

Secondly, there is need for listed manufacturing firms to issue debentures or come up with measures geared towards increasing their issuance because there was positive and significant relationship between debentures and return on assets. Listed manufacturing companies can therefore rely more on issuing debentures as a debt financing option.

Thirdly, listed manufacturing firms cannot rely on interest on tax as a debt financing strategy. This is because it has a negative and significant effect on the returns on assets. A unit increase of interest on tax decreases return on asset by 1.576

Recommendations of the study.

From the findings it can be recommended that manufacturing firms listed at the NSE should continuously formulate measures that sustain their accounts payables because this will lead to increased returns on assets. This will not only indicate better financial performance of the company but also efficiency of the company's management. There is need for manufacturing companies to increase issue of debentures as a long term source of financing. Debenture issue is a low cost course of financing since the interest to be paid to the debenture holders is generally less than the dividend. This has a positive and significant effect on returns on assets. On the other hand, listed manufacturing firms ought to be cautious with the interest on tax as a financial measure as a unit increase on the interest on tax may lead an equivalent decrease on the return on assets.

Suggestions for Further Study

The current study looked at the effect of debt financing on financial performance of listed manufacturing firms in Nairobi Securities Exchange. There is need for studies of this nature to be carried out using the same variables since this was the first study to be conducted using these variables and also by incorporating new variables in the models, and increasing the number of years for the research to more than five years.

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