

Financial Leverage and Financial Performance of the Energy and Petroleum Sector Companies Listed in The Nairobi Securities Exchange

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Abstract- The main objective of a firm is maximization of shareholders wealth. In attempt to achieve this objective the shareholders appoint management board to oversee the firm's operations. The management board then utilizes the firm's capital components of debt and equity at their disposal to achieve this objective. The puzzle of financial managers is the optimal capital structure mix of debt and equity that will ensure the main objective of maximization of shareholders wealth is achieved. One of the key indicators of a firm that is achieving this objective is improved financial performance. In attempt to improve the financial performance of a firm the financial managers may have to increase the company's debt component. This use of debt by a firm to finance and increase its operation to improve financial performance of the firm is referred to as financial leverage. This means that financial leverage is a form borrowing (debt) or a loan that is given to a firm to finance its operations. The proceeds of debt/borrowings are usually reinvested to earn a greater return as compared to the cost of debt financing/interest. This research was directed towards assisting the financial managers in determining whether financial leverage affects financial performance. Financial leverage measurement includes use of debt ratio, debt-equity ratio and interest coverage ratio which are vital since they directly affect the financial performance of firms. This study was anchored on the following research objectives; to establish the effect of debt ratio, debt -equity ratio and interest coverage ratio on financial performance of energy and petroleum sector companies listed in the Nairobi Securities Exchange. The study was anchored on the following theories; Modigliani-Miller theorem, the Pecking Order Theorem and the Trade-off Theorem. The study utilized census since the population size is small. All the five companies from the energy and petroleum sector listed in the Nairobi Securities Exchange. were studied. Energy and petroleum sector is a key sector and player in industrialization of any nation and a key support sector of all other sectors in any economy. The study utilized secondary data that was mainly collected from the published financial statements of these companies. Explanatory research design was used. Quantitative secondary data was collected and analyzed using statistical package for the social sciences. This data was also represented using measures of central tendency such as mean, frequencies, percentages and measures of dispersion such as standard deviation. The study ran a multiple regression equation to determine the relationship between the variables in the study and

to estimate the models for the study. Descriptive statistics was used to analyze data. In order to draw a conclusion and make recommendations, the analyzed data was further presented in tables, charts and graphs. On the effect of debt ratio on return on assets the study indicated that as the debt ratio increased the return on assets decreased. On the effect of debt equity ratio on return on assets the study indicated that as debt equity ratio increased the return on assets decreased. In summary the results indicated that there is a negative relationship between financial leverage and financial performance of petroleum and energy sector firms listed in the Nairobi Securities Exchange.

Index Terms- Debt Equity Ratio, Debt Equity Ratio, Interest Coverage Ratio, Return on Assets, Return on Equity, Return on Investment

I. INTRODUCTION

Firms use either debt/ financial leverage or owners' capital to finance a firm. Financial leverage refers to application of debt financing and borrowed capital in an attempt to increase firm's operations and profitability. Financial leverage is majorly measured through expressing long term liabilities to equity of a firm. A firm is considered leveraged when the firm is partially financed by both debt and equity. Most firms survive with a significant liquidity level which is mainly achievable through use of debt. Many companies use debt to leverage their profits and capital. This means companies are likely to use debt/leverage to increase assets which in turn increase production and profits. Debt bears a fixed cost. This means that when a firm increases debt level, the financial leverage level increases. Leverage is the use of borrowed funds for investment purposes (Gatsi, Gadzo & Akoto, 2013). When firm's management increases the firms profit by using debt element it is an indication of quality corporate governance (Singapurwoko & El-Wahid, 2011). Firm's investments can be finance by use of either debt or equity. When a firm uses fixed-charged funds especially preference capital and debt along with the shareholder's equity this is referred to as financial leverage or gearing (Moses and Steve, 2010). When a company's capital structure is made of only shareholders / owners' equity only it's said to be unlevered firm whereas when a firm's capital structure is made of both debt and owners' equity it is said to be levered (Olweny and Mamba, 2011). Financial leverage can

be informed of a loan or inform of debt (other borrowing). Financial leverage proceeds are reinvested to earn a greater return more than interest expense and cost incurred due to debt acquisition. (Chengand Tzeng, 2010). This means that if a company's marginal rate of return on asset is higher than the company's marginal rate of interest expense payable on the debt, then the company should increase the debt level since it will also increase return on equity. Contrary, when the company's return on asset is lower than the interest rate payable on debt/loan acquisition, the firm should not borrow since borrowing will reduce the firms return on equity, (Athanasoglou, Brissimis and Delis, 2006).

Leverage gives room for increased returns to the investor if available, however it can lead to greater potential loss especially when the investment becomes worthless and the borrowed amount have to be paid with the interest, (Andy et al., 2002). This leads to potential financial risk that may lead to financial loss, (Pandey; 2008). The degree of this potential financial risk is associated to the company's capital structure.

A firm's financial structure in most instances consist of preferred stock, common equity and the long term and short-term liabilities. This means that the means and ways in which a company finances its assets then constitutes to the company's financial structure. Consequently, if the company's short-term liabilities are excluded from the company's financial structure we obtain the company's capital structure. In other words, the company's long-term liabilities consisting of preferred stock, common equity, and long-term debt/loan is referred as capital structure (Banice Olive, 2012). Therefore, the main objective of financial management in a company is structuring the company's capital structure components in a manner that ensure maximization of shareholders wealth as the key measure of management's performance. This study will therefore analyze the effects of financial leverage on financial performance which is an indicator of shareholders wealth maximization, (Molyneux and Thornton, 1992).

II. LITERATURE REVIEW

2.1 EMPIRICAL LITERATURE REVIEW

Debt ratio is financial ratio used to measure the extent to which a firm has financed its assets using debt/borrowings. Debt ratio is expressed by taking short-term debt and long-term debt divided by total assets of a firm. The higher the debt ratio the higher a firm is leverage thus the higher the financial risk and vice versa however it is important to note that leverage is an important tool for a firm to grow, (Mungai, 2010). This ratio varies greatly across firms in different industries due to difference in capital intensive requirements of these industries, (Akhtar, et al (2012)

Ezeamama (2010) defines **debt ratio** as financial leverage ratio that measures the total creditors' funds in relation to total assets held by the firm. Computation of debt ratio is done by taking total liabilities of a company and dividing them with total assets of that company.

Mahnour (2010) did a study on impact of financial leverage on firms' performance in Fuel and Energy sector in Iraq. The study applied debt ratio (DR) as a proxy to measure financial leverage. Return on equity (ROE) and Return on asset (ROA) / were used as proxies to measure firms' performance. Through application of

least squares method, the study results showed that debt ratio and firms return on assets have a significant positive relationship.

Mahmoudi (2014) did a study on effects of leverage on financial performance of firms listed in Tehran Stock exchange between the years 2008 to 2011. In the study he measured leverage using debt ratio (DR) which was statistically tested for a relationship with return on equity and return on assets. In the study Mahmoudi also studied part of the energy sector companies in Tehran stock exchange. The study showed that debt ratio statistically and significantly had a negative relationship with both return on asset ratio and return on equity ratio.

Mustafa Zuthimalim et al (2015) studied effect of financial leverage on financial performance of fuel and energy sector companies in Algeria. Using both primary and secondary data Mustafa found out that debt ratio (DR) had insignificant negative relationship with return on assets (ROA).

Amenophis Hanbal (2015) did a study on the relationship between financial leverage and financial performance of petroleum and mining sectors firms in Egypt. Using data from both listed and non-listed companies in Egypt It was established that statistically return on equity and return on assets had no existing significant relationship.

Zulaika (2016) did a study on the effect of financial leverage on financial performance fuel and petroleum sector firms in Angola. In his study he analyzed the financial statements of these firms from the year 2011-2015. The study results showed debt ratio (DR) has a negative relationship with return on asset ratio (ROA).

2.2 THEORETICAL LITERATURE REVIEW

2.2.1 Modigliani-Miller Theorem

Modigliani-Miller (1958) argues that the firm's value is measured assets associated risk and revenue generation capacity of the assets. This theorem further argues that the firm's market value is not affected by investment financing decisions or dividend distribution decisions. A firm can decide to finance its investments through issuance of shares, borrowed capital or retained earnings/reinvesting profits. This theory assumes that in an imperfect market the choice between use of equity or debt to finance firm's investment make no difference. This theorem states that value of any firm is not associated or depended with the financing decision made or capital. Therefore, the firm's capital structure is an irrelevant proxy in determining the firm's Value. Therefore, whether a firm is highly levered or lowly levered, the capital structure mix has no significant effect on the firm's value, (Modigliani & Miller, 1963).

Modigliani and Miller also argue that future growth prospect of a firm affect market value of the firm while investment risk does not affect market value of the firm. This means that when a firm company has high future growth prospects, the market value of the firm will be higher, and its stock prices will be higher. This means that investors will be more attracted by firms that have high growth prospects as compared to those with low growth prospects, (Miller, 1977). This theory assumes that under no tax regime, the capital structure component does not affect the value of the firm. It also argues that both equity holders and debt holders in a firm have the same interest and priority in the firm, that is, they both should have equal share of earnings. The proponent also argues that debt holders of a firm have an upper hand in claiming the

earning of a firm hence increasing cost of debt which increases expenses and reduces earnings before interest and tax (EBIT) which is associated with the third variable of this study: ICR.

In summary, the main argument of this theorem is that: Under a perfect market, value of the firm is not affected by the capital structure mix of debt and equity. This argument is associated with the first and second variable of this study (debt ratio and debt equity ratio). This theory also argues that the financial leverage / debt level of a firm is in directly proportional to the firm's cost of equity.

Therefore, an increase in debt level implies higher risks to equity shareholders which in turn results to increase in cost of equity. This argument is also associated with the first and second variable of this study (debt ratio and debt equity ratio).

2.2.2 Pecking Order Theory

The first proponent of this theory is Donaldson (1961). This theory was also modified by Myers and Majluf (1984). The proponents argue that when a firm wants to invest, it has to make a decision on whether to source funds internally or externally. It further argues that a firm will prefer to utilize its internal financing in place of external financing.

The preference on internal sources of finance is because internal sources of finance have no fixed cost attached to them as compared to external financing. The internal source of finance includes retained earnings, internal borrowing and trade payables while external financing may include debt, debentures and loan. He further argues that a firm prefers to use internal financing first, when these finances are depleted, the firm will then issue debt. Equity financing should only be issued after a firm has exhausted its debt financing option.

This theory further states that a firm has three financing option: debt, retained earnings and equity, (Myers 1984) A firm would first prefer to use retained earnings since they have no interest of cost attached to them, that is, no adverse selection problem. Both debt financing and equity financing have adverse selection problem though equity has the more serious adverse selection problem than debt. This means that issuance of equity is riskier than issuance of debt hence any external investor will expect higher returns on equity as compared to debt.

Any firm would prefer to fund all its projects by utilizing retained earnings, hence retained earnings is the best source of finance compared to both debt and equity, while debt is a better source of finance as compared to equity. (Harris & Raviv, 2003). A firm should issue securities with low informational cost before issuing securities with high informational cost; hence a firm should therefore utilize short term debt to exhaustion before issuance of long term debt, (Baskin, 2002).

This theory argues that a firm does not first consider optimal capital structure mix but instead considers internal financing over external financing

The pecking order theory assumes that optimal capital structure is not the starting point of making sound financing decisions. Firms sound financing and investment decisions start with considering the available internal finances before considering the external finances. It is when internal finances are inadequate that a firm will decide to acquire external funds. Firms decide which external sources of finance to use by weighing cost of information and benefit of financing source, (Akerlof, 1970).

External investors consider the risk of failure of a firm in the market due to financing options hence resulting to the pecking order of firms financing as follows: Utilization of internal financing then followed by low risk debt finance and as a measure of last resort equity financing.

An external rational investor usually discounts firm's stock prices especially when the firm issues equity instead of issuing debt. For a firm to evade these discounts, the firm should avoid issuing equity as much as possible. Most firms tend to follow the pecking order of firms financing when an investment opportunity arises. When no investment opportunity is available to the firm the firm will retain more earnings hence building up a slack that will avoid raising external source of finance in future, Myers and Majluf model (1984). This theory assumes that a firm will have no optimal capital structure mix due to adverse selection and the fact that firms prefer internal financing to external financing.

This theory is relevant to this study since it majorly talks about internal sources of finance and external sources of finance which are basically debt and equity components of a firm, hence its associated with the first and second variable of this study (debt ratio and debt equity ratio).

2.2.3 Trade-Off Theory

This theory was proposed by Myers (1984). The trade-off theorem of capital structure argues that a firm's choice of debt and equity use in the capital structure is arrived at by balancing the costs of financing and the benefits of financing. In other words, optimal capital structure is only possible when there is a trade-off between financing benefits and financing costs. The cost of financing should be offset against the benefits of financing.

Some researchers have used the term trade-off to describe several related theories. A rational decision maker or investor weighs the benefits against cost of any action or plan and the same case applies when it comes to sourcing of finances. Therefore, firms must ensure a balance and trade-off between marginal benefits of financing and marginal costs of financing.

The trade-off theory was developed from a debate on the Modigliani-Miller theorem. MM theorem argued that when corporate tax is added to a firm it creates a debt benefit since debt increases financing costs which reduce earnings hence reducing taxes. Where a firm's objective is linear function cost of debt cannot be offset hence debt financing is 100%.

This theory acknowledges that firms can only be financed either through debt or equity or both, (Kraus & Litzenger, 1973). The trade-off theorem further argues that firm's capital structure is based on two key concepts, that is, financial distress cost and agency cost. Debt financing is advantageous because of tax benefits associated with debt. Debt financing costs includes financial distress: both bankruptcy and non- bankruptcy cost, (Fama & French, 2002).

In summary the key argument of tradeoff theory is that, a firm decides on how much Debt level and Equity level to employ by striking a balance between financing cost and financing benefits.

This argument is associated with the first and second variable of this study (debt ratio and debt equity ratio).

III. RESEARCH METHODOLOGY AND MODEL SPECIFICATION

The study used descriptive research design. Explanatory research design is used to explain out what, where, when and how of a phenomenon, Cooper & Schindler (2003), Research design is good since it is able to observe & measures variables as they are and without influencing them. This design also enables generalization of findings to other firms. This design enables a researcher to carry out intense investigation on research variables hence enabling drawing of conclusion and recommendation from the study. The population for the study consisted of five firms that are currently listed with the NSE from the energy and petroleum sector in Kenya (NSE, 2015). These firms are Kenol Kobil, Kenya Power, Total Kenya Ltd, Umeme and KenGen.

Descriptive statistics were used to analyze quantitative data. Statistical package for social sciences (SPSS, version 22) was used to analyze and present data in terms of frequencies, means, percentages and standard deviations.

The data was also presented using graphs, bar charts and pie charts. Findings were tallied up and variation percentages computed as well as interpreting and describing data in line with study objectives and research questions..

The study also ran a multiple linear regression analysis to determine the relationship between the dependent and independent variables. The multiple regression equation was;

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \epsilon$$

Where;

Y = Financial performance of energy and petroleum firms listed with the NSE measured by ROA

B0 - intercept coefficient

ϵ_i – error term (extraneous variables)

X1 – Debt Ratio
X2 – Debt-Equity Ratio
X3 – Interest coverage ratio
 $\beta_1, \beta_2,$ and β_3 = regression coefficients

IV. PRESENTATION AND DISCUSSION OF RESULTS

4.1 Descriptive Statistics

Table 4.1

	Minimum	Maximum
DR	0.47	0.8
DER	0.87	4.07
ICR	-3.81	146.66
ROA	-0.19	0.12

Source: Author, 2018

From the table 4.10, Debt Ratio (DR) measured registered a minimum of 0.47 with a maximum of 0.8, mean of 0.65 and standard deviation of 0.10. For Debt Equity Ratio (DER) , the minimum was 0.87 with a maximum of 4.07, mean of 2.11 and standard deviation of 0.93. Interest Coverage Ratio (ICR) posted a minimum of -3.81, maximum of 146.66, mean of 11.34 with standard deviation of 31.04. Return on Assets (ROA), posted a minimum of -0.19, maximum of 0.12, Mean of 0.03 and standard deviation 0.06.

4.2 Correlations

Table 4. 2:

Pearson Correlation	DR	DER	ICR	ROA
DR	1			
DER	0.966**	1		
ICR	-0.510**	-0.404*	1	
ROA	-0.349	-0.458*	0.169	1

The results of the correlation matrix showed that, there was a positive relationship between ICR and ROA as shown by 0.169 and a negative relationship between DR, DER and ROA as indicated by -0.349 and -0.458 respectively.

4.3 Regression Analysis.

Table 4.3:Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate

1	.617 ^a	0.38	0.292	0.04655
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a. Predictors: (Constant), ICR, DER, DR

The results of the model summary in the above table 4.12 indicates that the R- square is 0.38, which means that the independent variables (DR, DER & ICR) explain 38% of the variation in the dependent variable (ROA). This implies that DR, DER and ICR account 38% of the changes or variations of ROA; the remaining 62% is explained by other independent variables not factored in the study.

Table 4.4:ANOVA: Analysis of Variance

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	0.028	3	0.009	4.294	.016 ^b
Residual	0.046	21	0.002		
Total	0.073	24			

a. Dependent Variable: ROA

b. Predictors: (Constant), ICR, DER, DR

The table 4.13 indicates that there is significant relationship between the variables (DR, DER, ICR) and the dependent variable (ROA), This is indicated by the F value and the significance value of 0.016 which is less than 0.05.

Table 4.5:Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-0.359	0.19		-1.887	0.073
DR	-1.012	0.422	1.857	-2.402	0.026
DER	-0.128	0.043	-2.153	-2.96	0.007
ICR	0	0	0.246	1.128	0.272

a. Dependent Variable: ROA

The study shows that there was significant negative association between ROA and DR as shown by $r = -1.012$ and significant negative association between ROA and DER as shown by $r = -0.128$. The study also showed that there was no association between ROA and ICR as shown by $r = 0$, this is also shown by the significance level of ICR being 0.272 (27.2%) which is more than 0.05 (5%). The findings also showed that DR and DER were significant variables in the study since their significance values are less than 0.05, that is, 0.026 & 0.007 respectively.

4.4 Summary of Findings

The study shows that there was significant negative association between ROA and DR as shown by $r = -1.012$ and significant negative association between ROA and DER as shown by $r = -0.128$. The study also showed that there was no association between ROA and ICR as shown by $r = 0$, this is also shown by the significance level of ICR being 0.272 (27.2%) which is more than 0.05 (5%). The findings also showed that DR and DER were significant variables in the study since their significance values are less than 0.05, that is, 0.026 & 0.007 respectively.

The findings also indicate that holding all the variables constant, ROA would be an autonomous value of -0.359. A unit increase in DR would lead to a unit decrease in ROA by -1.012, while a unit increase in DER would lead to a unit decrease in ROA by -0.128. A unit increase in ICR would not affect ROA. The finding also indicate that DR had the greater effect on ROA than DER while ICR had no effect on ROA.

The regression model drawn from table 4.14 above is presented as shown.

$Y = -0.359 - 1.012X_1 - 0.128X_2 + 0X_3 + \epsilon$ This can also be presented as follows

$Y = -0.359 - 1.012X_1 - 0.128X_2 + \epsilon$

Where;

Y = Financial performance of energy and petroleum firms listed with the NSE

ϵ_i – error term (extraneous variables)

X1 – Debt Ratio

X2 – Debt-Equity Ratio

X3 – Interest coverage ratio

V. CONCLUSIONS AND RECOMMENDATIONS

The research results showed that there is a negative relationship between financial leverage and financial performance of selected companies. Therefore, increase in debt financing by the firms means low profits. This could be explained by the assumptions that when firms use debt financing, they have more liabilities to pay hence lowering the firm profit.

The study showed that there is negative relationship between debt equity ratio, debt ratio and return on assets ratio. Therefore, if a firm wants to make more profits it has to reduce the amount of debt used in its capital structure. This also implies that when it comes to investment a firm should use retained earning first before it can shift focus to using debt. Its prudent to note that, a firm also needs to balance use of debt and equity since a firm with more equity δ will pay more dividends thus a firm should also employ use of external financing/debt so as to reduce dividend payouts. This implies that financial leverage and div The results of the study showed that there is a negative relationship between debt ratio, debt equity ratio and return on assets ration of the selected firms. The results showed that financial leverage of a firm negatively affects the financial performance of the firm. This means that as firms rely more on financial gearing/leverage, their profits and financial performance declines.

Based on the research findings the researcher recommends the following;

Firms should strike a balance between use debt financing and equity financing. Excessive use of debt financing would imply low profits and poor financial performance of a firm. Debt financing increases liabilities to creditors hence lowering profits. Excessive use of equity financing implies high dividend payouts hence reducing retaining earnings that would have been ploughed back to the business and earn revenue for the firm.

In line with a firm's main objective which is shareholders wealth maximization, a firm should aim at increasing shareholders wealth through increasing percentage of retained earnings as compared to percentage of dividends payout. The retained earnings would then be reinvested into the business hence increasing shareholders wealth. Use of retained earnings reduces the need for financial leverage which is associated with high risks. Therefore, a firm should strike a balance between dividend payments and retained earnings.

Firms should use debt financing especially when the funds will be used to increase asset utilization. That is, firms should only borrow funds if the funds will be used to increase utilization of existing assets. In summary firms should strike a balance between the borrowing need and asset utilization..

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