REVISITING CAPITAL STRUCTURE AND FINANCIAL PERFORMANCE: THE MODERATING ROLE OF FIRM GROWTH RATE: EVIDENCE FROM KENYAN PETROLEUM FIRMS

[1*] **Joseph K. Kamau**
joseph.khim23@gmail.com

[2**] **Dr. Vitalis Mogwambo**
mogwambov@yahoo.com

[3***] **Dr. James Muya**
muyajn@gmail.com

[1]*Department of Accounting and Finance, Kisii University, Kenya*
[2] *Department of Accounting and Finance, Jaramogi Oginga Odinga University of Science and Technology*
[3] *Department of Human Resource and Strategic Management, Kisii University*

Abstract

Capital structure composition is the financing decision which forms a critical aspect for any business entity. It involves making decisions on optimal mix of debt and equity to finance investment projects of a firm. Managers consider capital mix to finance operations and investments with the objective of increasing the financial performance of the firm. Petroleum firms are capital intensive in operations and investments, majority of petroleum firms in Kenya have closed their business like BP and Caltex but at the same time other firms have been started and expanded their business like Total Kenya, Shell and KenolKobil. The objectives of the study were to determine the effect of total debt on financial performance and to assess moderation role of firm growth rate on capital structure composition and financial performance. The pecking order theory as well as trade off theory were used to direct and predict impact of predictor variable on the outcome variable. The study adopted a descriptive comparative study design. The target population of the study was listed petroleum firms under the energy and petroleum sector of the Nairobi securities exchange. A comparative analysis of total Kenya and KenolKobil was conducted for the period of eleven years from 2007 to 2017. The study utilized secondary data collected from published financial reports. The study employed descriptive statistics and inferential statistics. Moderation effects were estimated using hierarchical regression and probed using SPSS PROCESS macro, model one. The findings indicated that total debt has a significant negative impact on financial performance measured by ROA and ROE. Additionally, the study revealed that firm growth rate had a significant moderating role on the relationship between total debt and financial performance. Further, it was revealed that listed petroleum firms in Kenya followed both the pecking order and the tradeoff models in their capital structure composition.

Keywords: *Capital structure, growth rate and financial performance*

INTRODUCTION

Background of the Study

Over fifty decades since the Modigliani and Miller seminal paper of 1958 and conclusive debate on capital structure remains elusive. Capital structure is the means by which an organization is financed. It is defined as the mix of a firm's long-term financing represented by debt, preferred stock and common stock equity (Kaguri, 2013). Some firms are all equity financed, while others can have less equity and high debt. Firms that are all

equity are said to be un-levered and those financed by debt are said to be levered (Mireku, Mensah, & Ogoe, 2014). Additionally, gearing is a type of leverage analysis that incorporates owner's equity, often expressed by dividing long term debt with total equity in financial analysis. Therefore, gearing contrasts Total liabilities of firm to shareholders' equity committed in that firm.

The need for firms to optimally determine their capital structure is influenced by potential financial risks and tax advantages which are directly linked to a firm's choice of capital structure (Jinseon & Choi, 2016). While debt provide benefits to the firm through tax advantage, it exerts pressure on the firm's cash flow since interest and principal payments are obligations which must be met as they fall due. Failure to honor these contractual obligations exposes the firm to risk of financial distress (Maina & Ishamail, 2014). On the other hand equity financing exposes a firm to double taxation. Fareed, Zulfiqar, and Shahzad (2014) point out that whenever funds have to be raised to finance a firm's projects, then a capital structure decision has to be made.

It is incumbent on the management of a firm to determine an optimum capital structure which will ensure growth in owner's equity as well as minimize owner's risks. Ebaid (2010) note that capital structure composition correlates with financial performance of firms. The study found that firms with a well balanced mix of debt and equity have a higher financial performance. Financial managers in all their activities are trying to achieve an optimum combination that maximizes its overall market value. Salawu & Agboola (2010) argue that composition of a company financing mix is critical to the firm managers and funds providers. In the absence of the information on financing, managers may make wrong decisions leading to poor performance of the firm. Umer (2014) agrees that sound financial decisions of a company would lead to an optimal capital structure. As Ebaid (2010) argue a link between capital structure composition and performance exists in the financial realms of firm.

Performance measures how well a firm uses assets in business operations to create revenues. According to Ongore (2011), financial performance provides an opportunity to evaluate activities of a business objectively in monetary terms. According to Adekunle & Sunday (2010) financial performance is The degree to which financial goals of a firm accomplished. This is the process of appraising the results of business operations policies in monetary terms. It is therefore acceptable as an indicator of a firm's overall financial health over a given period of time, which can also be applied to compare similar firms across the same industry or to compare industries within a sector. In a nutshell, financial performance indicates how well-off or worse-off a shareholder is at the beginning and at the end of an accounting period.

Financial performance can be measured by use different indicators such revenues generated against, incurred expenses, net income, earnings before interest and tax (EBIT), return on asset (ROA) and return on equity (ROE) (Mwangi, Makau, & Kosimbei, 2014). However, the most frequently used are the accounting based indicators of performance which include ROE and ROA. ROE is a measure of return on the shareholders capital computed by ratio of net profit after taxes to total equity capital. It therefore provides the profitability level of a firm in relation to shareholders capital committed.

Statement of the Problem

Capital structure in terms of total debt play a pivotal role in financial performance of firms. Studies from developed and developing countries have been conducted on the effect of specific firm characteristics on capital structure (Chen, et al., 2010; Ebaid, 2010; Fareed, et al., 2014). On the other hand, Abdul (2012), Javed & Akhta (2012) and Oladeji & Olokoyo (2015) have evaluated the link between capital mix with performance. However, empirical studies on moderating role of growth rate on capital structure measures and financial performance relationship is very scanty.

Past scholarly works reveal that listed petroleum firms have been struggling with diminishing revenues which is an indicator of financial performance. Capitalcube (2016) report showed that Total Kenya ROA Declined below the median of peer firms in the region, having recorded a low of 9.49 in 2015 against 23.89 peer median. During the same period KenolKobil recorded ROA at 9.19 and a negative ROE at -5.21 both measured fell below median of peers. Additionally, local studies have shown that the two firms capital mix is almost the same Ongore (2011) and Turere (2012) However, the performance of the firms continue to differ over years. Considering that the two firms operate within the same economic environment, this trend could partly be attributed to capital structure composition choice and effects emanating from firm specific characteristics. As such this study sort to assess moderating effects of firm growth rate, to establish the extent to which growth rate changes influence effects of total debt on financial performance of Total Kenya and KenolKobil.

General Objective

This study sort to assess the moderating effect firm growth rate on capital structure and financial performance of listed petroleum firms.

Specific Objectives

This research was grounded by the following specific objectives:

i.   To determine the effect of total debt on financial performance of listed petroleum firms in Kenya

ii.   To assess the moderating role of firm growth rate on the relationship between total debt and financial performance of listed petroleum firms in Kenya

Research Hypotheses

Based on the specific objectives of the study, the following hypothesis were tested:

$H_0 1$: Total debt has no statistical significant effect on financial performance of listed petroleum firms in Kenya.

$H_0 2$: Firm growth rate has no statistical significant moderating role on the relationship between capital structure measures and financial performance.

Significance of the Study

The study provided relevant and current information pertaining moderating effects of growth rate on capital structure and financial performance in Kenya petroleum firms. Therefore contributing to the general body of knowledge on moderating effects of firm characteristics as well as forming a base for further studies.

Scope of the Study

The study focused on petroleum firms. The firms that were covered in this research are those that were quoted on the NSE for the period from 2007 to 2017. The study utilized audited financial reports of the firms. Whereas there could be other firm characteristics that may affect capital structure association with performance, the current study considered only growth rate. Consequently, this left out other firm characteristics that have received considerable attention.

LITERATURE REVIEW

Theoretical Literature

Theories of capital structure strive to clarify what happens to the value of the company and overall cost of capital when different proportions making up the capital are changed. They try to show finance managers how

to achieve optimal composition of debt and equity for their firms. The following is a brief review of theories relevant to this study.

Trade-off Theory

The Trade-off theory validates use of moderate debt ratios by setting a target capital structure and then pursuing it gradually. The classical version of the model was proposed by Kraus and Litzenberger (1973), they looked at legal and liquidation costs associated with the act of bankruptcy and tax saving benefits of debt (Frank & Goyal, 2011). The trade-off theory stipulates that the firm will issue debt up to that point where the extra advantage of tax shield upon increased debt is equalized by the cost of bankruptcy or agency costs arising when a firm's credit worth is in doubt (Githira & Tabitha, 2015).

The development of the theory followed the debate over the Modigliani and Miller theory. This was as a result of incorporating corporate income tax to the initial proposition of capital structure irrelevance (Frank & Goyal, 2011). This addition of taxation effect brought about a tax shield, insulating earnings from taxation. However, there was no off-setting cost of debt which encouraged debt financing. Therefore, an offsetting cost of debt was needed; hence the introduction of bankruptcy cost of debt which trades off tax saving benefits to strike a balance Kariuki and Kamau (2014).

The trade-off theory contribution to this study was based on its proposition that firms should chose a leverage level that balances the tax advantages of debt with dead-weight costs of financial distress. Hence, Total debt measured by DR is expected to have a positive relation with financial performance (Kuria & Omboi, 2015). Additionally, the theory predicts a negative relationship between short term debts measured by current debt ratio with performance.

Pecking Order Theory

This theory is based on the asymmetric information between managers and investors. The model was popularized by Myers and Majluf (1984). According to Muiruri and Bosire (2014) the theory postulates that financing cost is influenced by uneven information in the market. Myers (1984) maintain that managers have more information about their firms than the investors. Firms tend to follow a 'pecking order' or adhere to hierarchy in financing their projects; firms first prefer to use retained earnings, then to debt, and only in extreme circumstances to equity. Managers are more informed on the true value of a company and the company's riskiness than less informed outside investors which affects the choice between internal and external financing (Alzomaia, 2014).

based on the foundation of the information asymmetry between managers and investors and the hierarchy of financing that firm tends to follow, he theory predicts a negatively relationship between total debt and financial performance (Vergas, Cerqueira, and Brandão, 2015). According to Ayot (2013) as a firm attains higher growth the more profitable it becomes and the greater its capacity to accumulate retained profits. This retained earnings are then used to finance the operations, hence less need to turn to external financing. Accordingly, Serrasqueiro and Caetano (2015) quip that growth rate is expected to have a positive correlation with total debt and performance.

Effect of Total Debt on Financial Performance

Abdul (2012) in his probe of capital structure and the performance of Pakistani firms found that total debt had significant negative effects on firm performance. He measured performance by return on assets, and Tobin's Q. The negative effect were more prominent on performance as measured by Tobin's Q different from return

on assets. The researcher argued that ROA is not as sensitive to debt like Tobin's Q. In another similar study focused on the Karachi Stock Exchange in Pakistan, Javed and Akhtar (2012) explored the relationship between capital structure and financial performance and found contradicting findings to those of Abdul (2012). Correlation and regression tests on financial data indicated to a positive effects of total debt and financial performance. In that study, firm size and growth were also found to have positive influence performance in that study.

Safarova (2010) studied factors that determine firm performance of New Zealand listed companies discovered that total debt measured by DR was the most important factor affecting firm performance. His finding were robust when size and growth rate moderated the relationship. He quips that effects of debt were bigger and more significant as size of firm increased. In a related study, Mirza and Javed (2013) carried out a study on the determinants of financial performance of firms listed on Pakistan stock market. Their study concluded debt was a significant determinant of financial performance for big firms. This was attributed to the fact that big firms have a proper risk management and well governed ownership structure therefore tended to have a superior financial performance.

Sorana (2015) based on a research to evaluate capital structure impact on performance of Romanian companies, was of the opinion that a company's financial performance is directly influenced amount of debt it issues. He identified risk and growth as important factors enhancing a firm's financial performance. His study found that firm's ability to use debt to benefit on tax advantage was critical to financial performance. In contrast to Sorana (2015) findings, Salim and Yadar (2012) in their study of capital structure and firm performance from Malaysia listed companies, using two accounting based measure of firm performance measured by ROA and ROE found out that debt impacted negatively on financial performance of Malaysian firms.

Salteh, Ghanavati, Khanqah and Khosroshali (2012) investigated capital structure and firm performance, using five performance measures; Tobin's Q, return on assets, earning per share, and equity return on equity as dependent variable and measures of capital structure including, long- term debt, short-term debt, total debt to equity as independent variable. Twenty eight Iranian companies listed in Tehran Stock Exchange (TSE) were selected as a sample. The study that covered 2005 to 2009, the results indicate that firm performance is significantly and positively associated with all measures of capital structure, apart from return on equity and Tobin's Q.

Saeedi and Mahmoodi (2011) explored performance of quoted firms on Tehran Exchange, paying particular attention to the effect of total leverage and long term debt. The study found that the two variables had a negative statistically insignificant effect to financial performance. These results are contrary to Fosu (2013) who considered 257 South African listed firms using panel data to study the capital mix effects on firm performance. This study revealed that total debt and long term debt had a significant positive effect on firm performance.

According to Adekunle and Sunday (2010), ordinary least squares method of estimation indicated that debt ratio significantly had a negative influence on measures of performance; return on asset and return on equity. These findings in Nigeria were consistent with Ebaid (2010) in a study of capital structure choice influence on performance of companies in Egypt. Multiple regression analysis showed that debt ratio had statistically significant positive effects. In Kaumbuthu (2011) debt ratio had a negative effect on ROE. The study was carried out among industrial and allied sector of NSE between 2004 and 2008.

Moderating role of Growth Rate on Capital Structure and Financial Performance

Using Pakistani data Anwar (2011) employed a sample of 199 firms across textile, cement and energy sector to investigate cross industry relation between leverage and financial performance, with data from 2005 and 2009 period. Empirical analysis indicated that growth does not show any interaction with leverage measures and financial performance in textile and cement industry but it had a significantly positively interaction effect for firms in energy sector at higher leverage level. This finding confirms the statement of Campello and Giambona (2010) that firms in their growth phase need more funds to finance their project, such that they would have higher leverage hence lower financial performance.

Ellili and Farouk (2011) found out that growth had a positive influence on the current debt while it showed a negative impact on long term leverage relationship with profitability. Their results confirm that companies prefer funding their growth by using long term debt rather than the short term debt. In a related study, Rocca and Cariola (2011) postulates that, Italian firms indicate a positive relations between growth and debt induced financial performance. Their findings corroborate with the forecasts of the pecking order theory.

Yue (2011) from Hong Kong, purposed to examine the tradeoff model and the pecking order model of capital structure using different debt maturities for a sample of 1445 listed firm. Results indicated a negative correlation between growth rate as well as total leverage of firms. Pakistan energy sector, showed that growth was a significant factor for deciding the capital structure decisions. According to Saleem *et al.,* (2013) growth was positively related to leverage and significant at 5% level. These results contradicted with static trade of theory and agency cost theory but supports to pecking order theory that suggest that if firms ought to use external financing then prefer debt over equity. This result implies that firms with higher growth rate maintain higher leverage ratios and firms with higher growth opportunity rate tend to borrow more as opposed to companies whose growth rate is low, causing a positive effect to the relationship between debt and performance.
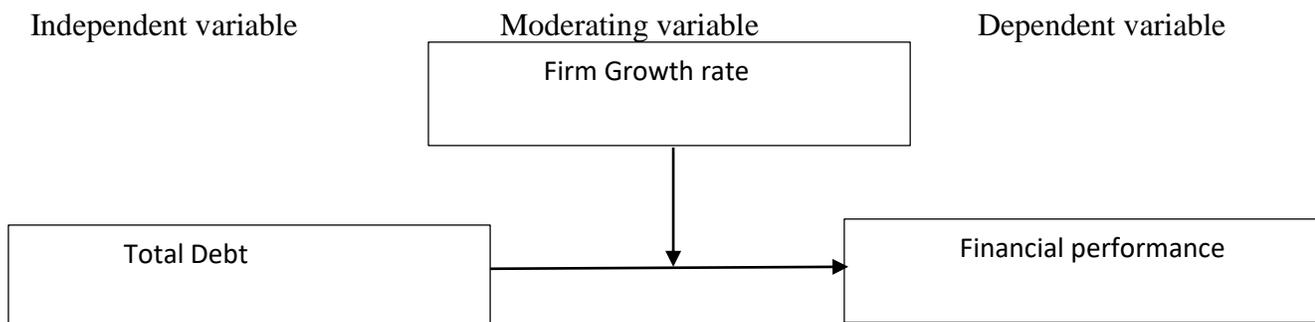
Songul (2015) sought to investigate the determinants of capital structure used panel data methods in Turkey. The sample period was between 1993 and 2010 for 79 firms traded on the Istanbul stock exchange in the manufacturing sector. Growth opportunities, size, profitability, tangibility and non-debt tax shields were used as firm-specific variables that affect capital structure decision. Empirical results presented indicated that growth opportunities related significantly with leverage and profitability, size and tangibility while non-debt tax shield independent variable has insignificant effect on leverage

Avijeya & Anandasaya (2015) undertook a study to identify which factors determined Sri Lankan's manufacturing firms leverage and performance, they considered thirty one listed manufacturing companies. Their study carried out correlation analysis and multiple regression analysis on data collected for the period 2008-2012. The study results showed that in Sri Lankan manufacturing companies, non-debt tax shield and growth opportunity were the most relevant determinant of leverage.

Sharif, Naeem, and Khan (2012) investigated factors identified in developing countries and attributed to attaining an optimum capital structure to provide justification in the Pakistan insurance companies. A panel data of 31 insurance companies was used for the period 2004 to 2009. Two econometric panel data techniques were used in the study; fixed effects and random effects. The results advocated that growth opportunity had a significant positive effect to performance. The finding concurred with more recent findings by Umer (2014) in Ethiopian large taxpayer companies.

Conceptual Framework

This study proposed a relationship between total debts; measured by debt ratio (DR) and financial performance as measured by return on assets (ROA) and return on equity (ROE). Also, an interaction between total debt and growth rate; measured by the percentage change in revenue was considered. Figure 2.1 show the conceptual framework adopted in order to analyze research objectives.

Independent variable   Moderating variable   Dependent variable

Firm Growth rate

Total Debt   Financial performance

RESEARCH METHODOLOGY

Research Design

In this study, a descriptive comparative research design was used. According to Anol (2012) descriptive comparative research design is a scientific method of careful observation and detailed documentation of a phenomenon of interest. This was preferred since it fits best to describe how capital structure composition is related to performance as was used by Muema (2013).

Target Population and Sample Design of the Study

The population comprised of all listed petroleum firms on the NSE. Only listed companies were considered, because of the difficulties in acquiring market information for the unquoted companies (Muema, 2013). The study carried out a census of listed firms which formed the units of comparison, these were Total Kenya Limited and KenolKobil Limited.

Data Collection Instruments and Procedure

To ensure that the most relevant data was collected, this study used data collection schedule. Secondary data for individual firm was recorded in a separate schedule. s. Raw panel Secondary data for a period of eleven years between 2007 and 2017 both years included was collected was collected from annual financial reports and entered in the data collection schedules.

Data Analysis and Presentation

This study analyzed data using descriptive statistics, financial ratios, correlations and hierarchical regression analysis to estimate moderation effects using SPSS. In testing for moderation the researcher was particularly looking at interaction effects of predictor variables with the moderator variable and establishing whether or not the interaction effects are significant in predicting dependent variables better than chance. The estimated models will be as follows:

$Y_{it} = \beta_0 + \beta_1 X_{it} + \varepsilon_{it}$ ……………………………………………… Model 1

$Y_{it} = \beta_0 + \beta_1 X_{it} + \beta_2 M_{it1} + \beta_3 X_{it1} M_{it1} + \varepsilon_{it}$ …………………… Model 2

Where;

Y= Performance, as given by ROA and ROE

β_0 = Constant term

β_1, β_2, & β_3 = Regression coefficients

X_1 = Capital structure Measures, given by DR and DER and CDR

M_1 = Moderator growth rate

ε = the error term

Ethical Consideration

Research ethics are basically a set of principals which guide and assist research in conducting ethical studies (Ayot, 2013). To this end, permission and clearance from the National Commission for Science Technology and Innovation (NACOSTI) was sought through the School of Post graduate studies at Kisii University before starting the study. Plagiarism was avoided by citing all material referred to correctly. Findings of this research are accurately presented, reported and valid conclusions made to avoid misleading information.

FINDINGS AND DISCUSSION

Descriptive Statistics

Table 1 presents the descriptive statistics of the variables used in the study. Among aspects observed are measure of central tendency, measure of dispersion, minimum and maximum values.

Descriptive Statistics

	Mean		Minimum		Maximum		Std. Deviation	
	Total	Kenol	Total	Kenol	Total	Kenol	Total	Kenol
DR	53.84	74.21	42.60	50.76	73.88	105.19	11.62	18.93
Growth	12.36	7.17	-13.76	-187.60	47.17	38.40	16.82	74.19
ROA	5.82	5.86	-19.00	-27.43	11.27	16.01	4.31	14.17
ROE	5.54	-7.23	-1.42	-97.50	12.60	28.10	5.33	42.14

As illustrated in table 1, it was observed that total Kenya is fairly leveraged as evidenced by an average debt ratio of 53.84% while KenolKobil reported an average of 74.21. The average financial performance of Total Kenya as measured by ROA and ROE were 5.82 and 5.54. KenolKobil on the other hand reported an average ROA of 5.86 and a mean ROE of -7.23 with a standard deviation of 42.14. The results also indicated that Total Kenya had a mean growth rate of 12.36% and KenolKobil grew at an average rate of 7.17%.

Correlation Analysis

Before inferential statistics were analyzed the data was inspected to establish its conformity with cardinal assumptions of multiple regression assumptions. Remedial measures were taken where violations of these assumptions were detected. Table 2 shows Pearson moment correlation matrix.

Table 2 Correlation coefficients

| | Total Kenya | | | | | | KenolKobil | | | | | |
	DR	DER	CDR	GR	ROA	ROE	DR	DER	CDR	GR	ROA	ROE
DR	1						1					
DER	.235	1					.270	1				
CDR	.297	103	1				.259	-.050	1			
GR	-.022	-.123	-.094	1			.167	.237	.189	1		
ROA	-.734*	-.714*	-.732*	337	1		-.678*	-.713*	-.667*	.372	1	
ROE	-.632*	-.599*	-.736*	114	931**	1	-.653*	-.586*	-.659*	137	969**	1

* Significant correlations at 0.05 level (2-tailed). ** Significant correlations at 0.01 level (2-tailed).

Regression Analysis on the Effects of Total Debt on Financial Performance

As seen in table 4, Total Kenya reported R^2=.538 for ROA and R^2=.399 for ROE. This means that total debt predicted significantly 53.8% of variation in return on assets and 39.9% of changes in return on equity. The F-statistics of both the regression equations for Total Kenya were significant at 0.05 significance level which confirms that the model were fit to predict the outcome variable. On the other hand, KenolKobil had an R^2 = .459 and .427 for ROA and ROE respectively. This meant that 45.9% of variance in ROA and 42.7% in ROE were significantly caused by total debt.

Table 4 Regression results for effect of total debt on financial performance

| | Outcome Variables for: | | | |
| | Total Kenya | | KenolKobil | |
Predictors & Test Results	ROA	ROE	ROA	ROE
R	.734	.632	.678	.653
R^2	.538	.399	.459	.427
Adjusted R^2	·517	.359	.417	.362
F statistic	6.998	3.986	6.522	6.505
Prob. F (α=.05)	.038	.043	.031	.011
Intercept	20.478	22.860	21.581	31.383
DR	-.272 (-2.645)	-.290(-1.997)	-.212(-1.497)	-.348(.011)
P- value (α=.05)	.038	.043	.031	.897

Values in bracket denote t-statistic of the predictor at a Confidence level of 95%

Source: Field data (2017)

The results indicated that DR was negatively related with financial performance of both firms as specified by the coefficients of DR. For Total Kenya, the coefficient of DR was *b = -.272, P<.05* and *b = -.290, P<.05* in ROA and ROE respectively. This significantly suggested that a unit increase (1%) in total debt ratio leads to approximately .272 units or 27.2% decrease in return on assets and .290 units or 29% decrease in return on equity. Based on these findings the null hypothesis was therefore rejected in favour of the alternate hypothesis.

The finds were greatly in support of the pecking order theory. The findings are consisted with Mouamer (2011), Javed (2012) and Maina & Ishamail (2014) as well as Jinseon & Choi (2016) However, they contradict those of Abdul (2012) and Mirza & Javed (2013) who found a positive significant association for total debt and performance.

Moderation Effect of Growth Rate on Total Debt and Financial Performance

Hierarchical regression analysis was performed to determine whether growth rate had moderation role on financial performance. The null hypothesis tested was that firm growth rate has no statistical significant moderation role on the relationship between total debt and financial performance. The following regression equations were estimated.

$$Y_{it} = \beta_0 + \beta_1 DR_{it} + \beta_2 Growth_{it} + \beta_3 DR*Growth + \varepsilon_{it}$$

Where Y is financial performance estimated by return on earnings and return on assets. The regression coefficient β_1 measured the direct effects of total debt (DR) when growth rate equals to zero. To test moderation the researcher tested the coefficient of the interaction term β_3 for interaction effects and whether they were significant (Hayes, 2013). Table 4.6.1 summarizes the regression results.

As see on table 5 the *F*-statistic for the model are significant for both firms meaning the estimated equation is a good fit predictor of financial performance. The direct effects of debt ratio on financial performance were present and significant. For Total Kenya the model without the interaction term accounted for a significant amount of variance in ROA and ROE at 53.8% and 39.9% respectively. The direct effects reported by Kenolkobil were 46% on ROA and 42.8% on ROE.

Table 5 Model summary of growth rate effects on total debt and financial performance

	Outcome Variables			
Total Kenya			KenolKobil	
Predictors & Test Results	ROA	ROE	ROA	ROE
Model 1: Without moderator				
R	.734	.632	.678	.654
R^2	.538	.399	.460	.428
Adjusted R^2	.517	.359	.427	.362
F-Statistic	6.998	6.986	6.522	6.505
Prob. F (α=.05)	.038	.043	.031	.011
Intercept	19.478	22.860	21.581	31.383
DR	-.270 (.042)	-.290 (.043)	-.212 (.031)	-.348 (.011)
Growth	.082 (.585)	.092 (.620)	.075 (.542)	.085 (.831)
Model 2: With moderator				
R^2	.986	.958	.978	.992
ΔR^2	.448	.559	.518	.564
F-statistic	10.902	9.302	11.313	12.078
Prob. ΔF ($\alpha \leq$ .05)	.001	.003	.001	.000
Intercept	17.676	18.631	25.425	43.705
DR	-.387 (.000)	-.402 (.002)	-.664 (.003)	-.485 (.026)
Growth	.713 (.1)	.382 (.030)	.752 (.035)	.157 (.017)
DR*Growth	-.040 (.001)	-.041 (.010)	.051 (.001)	.024 (.018)
Values in bracket denote significance of the predictor at a Confidence level of 95%				

Upon inclusion of the interaction term (DR*Growth) in the model, the product term accounted for significant variance in financial performance. The interaction term caused an additional significant 44.8% variation in ROA and 55.9% in ROE for Total Kenya. Equally a significant change in R^2 was observed for KenolKobil, ROA and ROE changed by 51.8% and 56.4% over and above what DR was able to predict alone in model one. The coefficients for all variables were all significant, save for growth rate which implies that growth rate by itself is not a reliable predictor of financial performance.

A unit increase in debt uptake by Total Kenya considering the moderator growth rate lead to a decrease of approximately 3.87% and 4.02% units in ROA and ROE which is higher than what DR alone accounted for in model one. An increase of total debt for KenolKobil lead to a decline in ROA and ROE at 6.64% and 11.16% respectively. Total Kenya had a growth rate coefficient of $b=.081$,

$P_< .05$ and $b = .092$ $P_< .05$ for ROA and ROE respectively. This implied that for every one percent increase in growth rate, Total Kenya got 8.1% increase in performance measured in ROA or 9.2% if financial performance is measured by ROE. On the other hand KenolKobil coefficient of growth rate were $b=.075$, $P_< .05$ ROA and $b=.085$, $P_< .05$ ROE. Implying a 1% increase in growth rate would to 7.5% and 8.5% increase in ROA and ROE respectively. The coefficient of the interaction term was also significant $b=.040$, $P_< .05$ for Total Kenya and $b=.051$, $P_< .05$ ROA and $b=.024$, $P_< .05$. This indicated that moderation was taking place. To find out what the influence of the moderator and the type of moderation occurring, the researcher probed the interaction further by observing conditional effects of total debt on financial performance at different values of the moderator. The Aiken and West (1991) convention of using the mean, the value one standard deviation below the mean and the value one standard deviation above the mean was employed in this study to probe conditional effects. Table 6 summarizes the results of conditional effects of debt ratio at different values of the moderator.

Table 6: Conditional effect of total debt on financial performance of Total Kenya

	Outcome Variables	
Growth rate	ROA	ROE
Low	.285 (5.448, .001)	.273 (4.296, 002)
Average	-.387 (-11.615, .000)	-.402 (-10.418, .003)
High	-1.058 (-12.019, .001)	-1.118 (-11.008, .001)

Values of the moderator are at the mean and plus/minus one SD from mean

Values in bracket denote t-statistics and the P- values (α =.05) at 95% confidence level

Source: Field data (2017)

An observation of the conditional effect of DR on ROA and ROE at different values of moderator growth rate indicated that growth rate has an enhancing effect on relationship debt ratio and financial performance of Total Kenya. That is, as growth rate and debt level increased, the effect of DR on financial performance increased. At low growth rate every unit of total debt uptake translated to a statistically significant increase in ROA by 0.285 units, $P_< .05$ and 0.273, $P_< .05$ increase in ROE. At average growth rate, every unit increase in total debt lead to a decline in ROA by 0.387 units $P_< .05$ and 0.402, $P_< .05$ decrease in ROE. Subsequently, at high growth rate a unit rise in debt translated to a variance of about -1.059, $P_< .05$ on returns on asset and

-1.118 units' shrinkage for return on equity. This shows that as Total Kenya attains higher growth an increase in debt uptake leads to diminishing returns, hence the firm should consider funding its operations mostly on retained earnings or equity fund.

Interestingly, for KenolKobil the moderator variable showed a buffering effect of DR on financial performance. That is where increasing level of growth rate decreased the effect of DR on financial performance. At low growth rate a unit uptake of debt by the firm led to a decrease in ROA and ROE by a significant -1.074 and -1.116 units respectively. At average growth rate, every unit of debt lead to a significant variation of about -.664 units in ROA and -0.485 units in ROE. While at high growth rate, every unit of debt lead significantly to an increase in ROA and ROE by 0.102 units and 0.114 units respectively.

Table 7: Conditional effect of total debt on financial performance of KenolKobil

	Outcome Variables	
Growth rate	ROA	ROE
Low	-1.074 (-1.008, .017)	-1.116 (-1.040, .029)
Average	-.664 (-1.587, .003)	-.485 (-1.700, .002)
High	.102 (2.296, .004)	.114 (2.910, .002)

Values of the moderator are at the mean and plus/minus one SD from mean

Values in bracket denote t-statistics and the P- values (α =.05) at 95% confidence level

Source: Field data (2017)

From the foregoing statistics it is evident that growth rate had moderation effects on the relationship between total debt and financial performance, we therefore reject the null hypothesis. The type of moderation that occurred in this case is partial moderation since the direct effects of total debt on financial performance remains significant even after the moderator has entered the model Awang (2012).

The current findings of growth rate moderation on DR and financial performance agree with Saleem et al., (2013) who concur that growth is significant factor influencing the capital structure decision and performance. The findings also supports Songul (2015) who held that growth enhances significantly the relationship between leverage and profitability. However, the findings disagree with Yue (2011) who found no significant effects of growth rate on debt ratio and performance. The results discussed supports the combined prediction of pecking order and the trade-off theory.

CONCLUSION AND RECOMMENDATIONS

Conclusion

This study revealed that if firms continue to depend on debt financing, they tend lose on financial performance. This is due to the charges that come with borrowed funds. As suggested by the pecking order theory listed petroleum firms should only consider borrowed funds as the last option after depleting internal funds and equity. The study concludes that growth rate had significant moderating effects on capital structure measures and financial performance. The researcher concludes that as firms continue to grow, uptake of more debt led to diminishing returns. Therefore, petroleum firms must be cognizant of the effect of debt intake as it has effects on their financial performance as they grow. Findings indicate that growing firms need to use more

retained earnings and equity capital in order to attain high returns. Finally, the study concludes that both the pecking order theory and the tradeoff theory play a collaborative role elaborate the capital financing of listed petroleum firms in Kenya.

Recommendations

Therefore, listed petroleum firms need to evaluate cost of debt against expected marginal rate of return in order to decide on the gearing level to maintain. As such managers should only consider debt financing when the related costs are less than the expected marginal rate of return. Instead of taking up more short and long term debt, petroleum firms should utilize their retained earnings first and then issue equity funds before engaging creditors. Listed petroleum firms should use less of short term debt since it is more costly, therefore affecting financial performance more than long term debt.

The current study basically focused only on NSE listed petroleum firms. Therefore, future studies could be conducted for the entire energy sector. Apparently, the subject of moderating effects of firm characteristics has not been widely studied in Kenya. It is therefore necessary to replicate these studies in other sectors of NSE listed firms as well as on firms not listed and the results compared against those from developed countries.

References

Abdul, G. K. (2012). *The Relationship of Capital Structure Decisions with Firm Performance: A Study of the Engineering Sector of Pakistan. International Journal of Accounting and Financial Reporting, 2(1), 2162-3082.*

Adekunle, O. A., & Sunday, K. O. (2010). *Capital Structure and Firm Performance: Evidence from Nigeria. European Journal of Economics, Finance and Administrative Sciences, 25, 70-82.*

Aiken, L. S. & West, S. G. (1991) *Multiple Regression: Testing and Interpreting Interactions. Thousand Oaks,CA: Sage.*

Alzomaia, T. S. F. (2014). *Capital Structure Determinants of Publicly Listed Companies in Saudi Arabia. The International Journal of Business and Finance Research, 8(2), 53-67.*

Anol, B. (2012). *Social Science Research: Principles, Methods, and Practices (2 ed. Vol. 3): Textbooks Collection.*

Anwar, W. (2011). *Cross-Industry Determinants of Capital Structure: Evidence from Pakistani data. African Journal of Business Management, 7(17), 1625-1629.*

Avijeya, H., & Anandasaya, R. S. (2015). *Determinants of Leverage of Sri Lankan Manufacturing Companies Listed on Colombo Stock Exchange. International Journal of Scientific and Research, 12(6), 33-45.*

Ayot, K. O. (2013). *Capital Structure of Listed Firms in Kenya: The Case of Non Financial Firms Doctoral Dissertation, University of Nairobi.*

Awang, Z. (2012). *A handbook on SEM. Structural Equation Modeling. 3rd ed. Shah Alam UITM Press*

Campello, M., & Giambona, E. (2010). *Liquidity Management and Corporate Investment During a Financial Crisis. National Bureau of Economic Research, (16309). Cambridge, Massachusetts.*

CapitalCube. (2016). *Profitability and Efficiency of Total Kenya Limited and Keno. Peer analysis, from https://online.capitalcube.com/#!/stock/ke/nairobi/totl/peer-analysis/profitability*

Chen, L., Lensink, R., & Sterken, E. (2010). *The Determinants of Capital Structure: Evidence from Dutch Panel Data. Paper presented at the European Economic Association Annual Congress, Berlin.*

Ebaid, I. E.-S. (2010). *The Impact of Capital Structure Choice on Firm Performance: Empirical Evidence from Egypt. Risk Finance, 10(5), 477-487.*

Ellili, D. N. O., & Farouk, S. (2011). *Examining the Capital Structure Determinants: Empirical Analysis of Companies Traded on Abu Dhabi Stock Exchange. International Research Journal of Finance and Economics (67), 82-96.*

Fareed, Z., Zulfiqar, B., & Shahzad, F. (2014). *The Effect of Specific Factors on Capital Structure Decision: Evidence from Power and Energy Sector of Pakistan. Middle-East Journal of Scientific Research, 21, 1419-1425.*

Fosu, S. (2013). *Capital Structure, Product Market. Competition and Firm Performance: Evidence from South Africa. University of Leicester, UK, Working paper No 13/11.*

Frank, M. Z., & Goyal, V. K. (2011). *Trade-off and Pecking Order Theories of Debt. Handbook of Empirical Corporate Finance, 15, 135-202.*

Githira, W. C., & Tabitha, N. (2015). *Capital Structure Determinants among Companies Quoted in Securities Exchange in East Africa. International Journal of Education and Research, 3, 483-496.*

Hayes, A. F. (2013). *Introduction to Mediation and Conditional Process Analysis: A Regression Based Approach. Guilford publication, Inc. New York.*

Javed, B., & Akhtar, S. (2012). *Interrelationships between Capital Structure and Financial Performance, Firm Size and Growth: Comparison of industrial sector in KSE. European Journal of Business and Management, 4(15), 148-157.*

Jinseon, S., & Choi, W. (2016). *Effect of Capital Structure Determinants on Consumer Co-operatives in South Korea. International Journal of Scientific and Research, 7, 17-29.*

Kaguri, A. W. (2013). *Relationship Between Firm Characteristics and Financial Performance of Life Insurance Companies in Kenya. Master of Science in Finance, University of Nairobi.*

Kariuki, S. N., & Kamau, C. G. (2014). *Determinants of Corporate Capital Structure Among Private Manufacturing Firms in Kenya: A survey of Foods and Beverage Manufacturing Firms. International Journal of Academic Research in Accounting, Finance and Managerial Sciences, 4, 49-62.*

Kaumbuthu, A. J. (2011). *The Relationship Between Capital Structure and Financial Performance: A Study of Firms Listed Under Industrial and Allied Sector at the NSE. MBA, UoN, Nairobi.*

Kraus, A., & Litzenberger, R. H. (1973). *A State-Preference Model of Optimal Financial Leverage. Journal of Finance, 28(4), 911–922.*

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

Maina, L., & Ishamail, M. (2014). *Capital Structure and Financial Performance in Kenya: Evidence from Firms Listed at the Nairobi Securities Exchange. International Journal of Social Sciences and Entrepreneurship 1, 209-223.*

Mireku, K., Mensah, S., & Ogoe, E. (2014). *The Relationship between Capital Structure Measures and Financial Performance: Evidence from Ghana. International Journal of Business and Management, 9(6), 151-160.*

Mirza, S. A., & Javed, B. (2013). *Determinants of financial performance of a firm: case of Pakistani Stock Market Journal of Economics and International Finance, 5, 43-52.*

Mouamer, F. M. A. (2011). *The Determinants of Capital Structure of Palestine Listed Companies. The Journal of Risk Finance, 12(3), 226-241.*

Muema, A. K. (2013). *The Determinants of Capital Structure of Firms Listed under the Various Markets Segments in the Nairobi Securities Exchange. MBA, UoN, Nairobi.*

Muiruri, J. W., & Bosire, N. (2014). *Determinants of Capital Structure Decisions of Listed Insurance Companies in Kenya: A survey of Insurance Companies in Nakuru Town. International Journal of Scientific Engineering and Research, 3(5), 78-85.*

Mwangi, L. W., Makau, M. S., & Kosimbei, G. (2014). *Relationship between capital Structure and Performance of Non-Financial Companies Listed In the Nairobi Securities Exchange, Kenya. Global Journal of Contemporary Research in Accounting, Auditing and Business Ethics, 1(2), 72-90.*

Myers, S. C. (1984). *The capital structure puzzle. Journal of Finance and Economics, 39, 575-592.*

Myers, S. C., & Majluf, N. S. (1984). *Corporate Financing and Investment Decisions when Firms have Information the Investors do not Have Journal of Finance and Economics 13, 187-221.*

Oladeji, I. T., & Olokoyo, F. O. (2015). *An Empirical Analysis of Capital Structure on Performance of Firms in the Petroleum Industry in Nigeria. Journal of Accounting and Auditing: Research and Practice.*

Ongore, V. O. (2011). *The Relationship between Ownership Structure and Firm Performance: An Empirical Analysis of Listed Companies in Kenya. African Journal of Business Management, 5(6), 2120-2128.*

Rocca, L., La, R., & Cariola, A. (2011). *Capital Structure Decisions During a Firm's Life Cycle Small Business Economics, 37(2), 107-130.*

Saeedi, A., & Mahmoodi, I. (2011). *Capital Structure and Firm Performance: Evidence from Iranian Companies. International Research Journal of Finance and Economics, 70, 20-29.*

Safarova, Y. (2010). *Factors that determine firm performance of New Zealand listed companies Unpublished Msc. Finance Dissertation Auckland University of Technology.*

Salawu, R. O., & Agboola, A. A. (2010). *The Determinants of Capital Structure of Large Non-Financial Listed Firms in Nigeria. The International Journal of Business and Finance Research, 2(2).*

Saleem, F., Rafique, B., Mehmood, Q., Irfan, M., Saleem, R., Tariq, S., & Akram, G. (2013). *The Determination of Capital Structure of Oil and Gas Firms Listed on Karachi Stock Exchange in Pakistan. Interdisciplinary Journal of Contemporary Research in Business, 4(9), 225-235.*

Salim, M., & Yarda, R. (2012). *Capital Structure and Firm Performance: Evidence from Malaysian Listed Companies Procedia Social and Behaviourial Science, 65, 156 -166.*

Salteh, H. M., Ghanavati, E., Khanqah, V. T., & khosroshali, M. (2012). *Capital Structure and Firm Performance: Evidence from Tehran Stock Exchange. International Proceedings of Economic Development and Research, 43, 225-230.*

Serrasqueiro, Z., & Caetano, A. (2015). *Trade-off Theory Versus Pecking Order Theory: Capital Structure Decisions in a Peripheral Region of Portugal. Journal of Business Economics and Management, 16(2), 445-466.*

Sharif, B., Naeem, M. A., & Khan, A. J. (2012). *Firm's Characteristics and Capital Structure: A Panel Data Analysis of Pakistan's Insurance Sector. African Journal of Business Management, 6(14), 4939-4947.*

Songul, A. K. (2015). *The Determinants of Capital Structure: Evidence from the Turkish Manufacturing Sector. International Journal of Economics and Financial Issues, 5(1), 158-171.*

Sorana, V. (2015). *The Impact of Capital Structure on Financial Performance in Romanian Listed Companies. Procedia Economics and Finance, 32 (2015), 1314 – 1322.*

Turere, P. S. (2012). *The Determinants of Capital Structure in the Energy and Petroleum Companies Listed in the Nairobi Securities Exchange. MBA, UoN, Nairobi.*

Umer, U. M. (2014). *Determinants of Capital Structure: Empirical Evidence from Large Taxpayer Share Companies in Ethiopia. International Journal of Economics and Finance, 6(1), 53-65.*

Vergas, N., Cerqueira, A., & Brandão, E. (2015). *The Determinants of the Capital Structure of Non Financial Firms Listed on Stock Market: Evidence from Portugal. Journal of Economics and Management, 5(55), 1112-1123.*

Yue, H. Y. (2011). *Determinants of Corporate Capital Structure under different Debt Maturities. International Research Journal of Finance and Economics, 5(66), 99-106..*