

Relationship between Capital Structure and Performance of Non-Financial Companies Listed In the Nairobi Securities Exchange, Kenya

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Abstract

Corporate failure among companies in Kenya has often been associated with the financing behaviour of the firms. Momentous efforts to revive the ailing and liquidating companies have focused on financial restructuring. A great dilemma for management and investors alike is whether there exists an optimal capital structure and how various capital structure decisions, both short-term and long-term, influence business performance. This study therefore investigated the relationship between capital structure on the performance of non-financial companies listed in the Nairobi Securities Exchange (NSE), Kenya. The study employed an explanatory non-experimental research design. A census of 42 non-financial companies listed in the Nairobi Securities Exchange, Kenya was taken. The study used secondary panel data contained in the annual reports and financial statements of listed non-financial companies. The data were extracted from the Nairobi Securities Exchange hand books for the period 2006-2012. The study applied panel data models (random effects). Feasible Generalised Least Square (FGLS) regression results revealed that financial leverage had a statistically significant negative association with performance as measured by return on assets (ROA) and return on equity (ROE). The study recommended that managers of listed non-financial companies should reduce the reliance on long term debt as a source of finance.

Key words: *capital structure, non-financial companies*

1. Introduction

The importance of financing decisions cannot be over emphasised since many of the factors that contribute to business failure can be addressed using strategies and financial decisions that drive growth and the achievement of organizational objectives (Salazar, Soto & Mosqueda, 2012). The finance factor is the main cause of financial distress (Memba & Nyanumba, 2013). Financing decisions result in a given capital structure and suboptimal financing decisions can lead to corporate failure. A great dilemma for management and investors alike is whether there exists an optimal capital structure. The objective of all financing decisions is wealth maximisation and the immediate way of measuring the quality of any financing decision is to examine the effect of such a decision on the firm's performance.

Financial leverage refers to the proportion of debt in the capital structure. Capital structure has for long been regarded as an important parameter from a financial economics standpoint since it is linked with a firm's ability to meet the demands of various stakeholders (Jensen, 1986). Firms can obtain funds from either external or internal sources. Internal sources of funds include retained earnings while external sources include loans from financial institutions, trade credit, issuance of loan stock, and issuance of equity shares. The creation of a capital structure, therefore, can influence the governance structure of a firm which, in turn, may influence the ability of a firm to make strategic choices (Jensen, 1986). Financing decisions which results into a given capital structure constitutes one category of managerial decisions.

1.1 Statement of the Problem

The government and the private sector have invested heavily in creating an enabling environment for doing business in Kenya and, indeed, some companies have performed exceedingly well as a result. Several companies, however, are experiencing declining performance and some have even been delisted from the NSE in the last decade. Momentous efforts to revive the ailing and liquidating companies have focused on financial restructuring. However managers and practitioners still lack adequate guidance for attaining optimal financing decisions (Kibet, Kibet, Tenei & Mutwol, 2011) yet many of the problems experienced by the companies put under statutory management were largely attributed to financing (Chebii, Kipchumba and Wasike, 2011). This situation has led to loss of investors' wealth and confidence in the stock market. Studies on the relationship between various financing decisions and performance have produced mixed results. It is against this background that this study was carried out.

2. Literature Review

This study was underpinned by capital structure relevance theories, working capital management theories. The capital structure relevance theories underpinning this study include the agency theory and the Modigliani and Miller capital structure relevance theory. Jensen and Meckling (1976), in their agency theory, asserted that managers do not always run the firm they work for to maximise shareholders' wealth but may instead pursue their own self-interest. According to the agency theory, debt finance acts as a controlling tool to restrict the tendency towards opportunistic behaviour for personal gain by managers. Debt finance reduces the free cash flows within the firm by paying fixed interest payments and in the process forces managers to avoid negative investments and work in the interest of shareholders.

Modigliani and Miller (1963) modified an earlier capital structure irrelevance theory in which they argued that capital structure really does matter in determining the value of a firm. The theory was based on the argument that the use of debt offers a tax shield. Based on this assertion, firms could opt for an all-debt capital structure. Brigham and Gapenski (1996), however, contend that the Miller-Modigliani (MM) model is true only in theory, because in practice, bankruptcy costs exist and will even increase when equity is traded off for debt.

In an effort to validate MM theory in Kenya, Maina and Kondongo (2013) investigated the effect of debt-equity ratio performance of firms listed at the Nairobi Securities exchange. A census of all firms listed at the Nairobi Security Exchange from year 2002-2011 was the sample. The study found a significant negative relationship between capital structure (DE) and all measures of performance. This results collaborated MM theory that indeed capital structure is relevant in determining the performance of a firm. The study further found that that firms listed at NSE used more short-term debts than long term.

Abdul (2012) conducted a similar study to determine the relationship between capital structure decisions and the performance of firms in Pakistan. The study concluded that financial leverage has a significant negative relationship with firm performance as measured by ROA, GM, and Tobin's Q. The relationship between financial leverage and firm performance as measured by the return on equity (ROE) was negative but not statistically significant. In another study, Javed and Akhtar (2012) explored the relationship between capital structure and financial performance. They concluded that there is a positive relationship between financial leverage, financial performance, and growth and size of the companies. The study, which focused on the Karachi Stock Exchange in Pakistan, used correlation and regression tests on financial data. The findings of the study are consistent with the agency theory. This study however isolated the other financing decisions and focused only on financial leverage.

Kaumbuthu (2011) carried out a study to determine the relationship between capital structure and return on equity for industrial and allied sectors in the Nairobi Securities Exchange during the period 2004 to 2008. Capital structure was proxied by debt equity ratio while performance focused on return on equity. The study applied regression analysis and found a negative relationship between debt equity ratio and ROE. The study focused on only one sector of the companies listed in Nairobi Securities Exchange and paid attention to only one aspect of financing decisions. The results of the study, therefore, may not be generalised to the other sectors. The present thesis covered all non-financial companies listed on the Nairobi Securities Exchange to determine the effects of financing decisions on firm financial performance.

Saeedi and Mahmoodi (2011) examined the relationship between capital structure and performance of listed firms in the Tehran Stock Exchange. According to the study market measures of performance are positively related to capital structure and whereas ROA is positively related to capital structure, no significant relationship exists between ROE and capital structure. The findings by Saeedi and Mahmoodi (2011) indicate that financial leverage may affect different measures of performance in different ways.

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 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 applied to estimate the relationship between the leverage level and performance. The study indicated that capital structure has little to no impact on a firm's performance. These results are inconsistent with other empirical studies such as Hadlock and James (2002) and Ghosh *et al.* (2000), which revealed a positive relationship between financial leverage and choice of capital structure. Other studies revealed a negative relationship such as Berger and Udell (2006), Gleason *et al.* (2000) and Simerly and Li (2000) whereby lower equity capital ratio is associated with higher firm performance. The contradicting results give room for introducing additional variables in new studies.

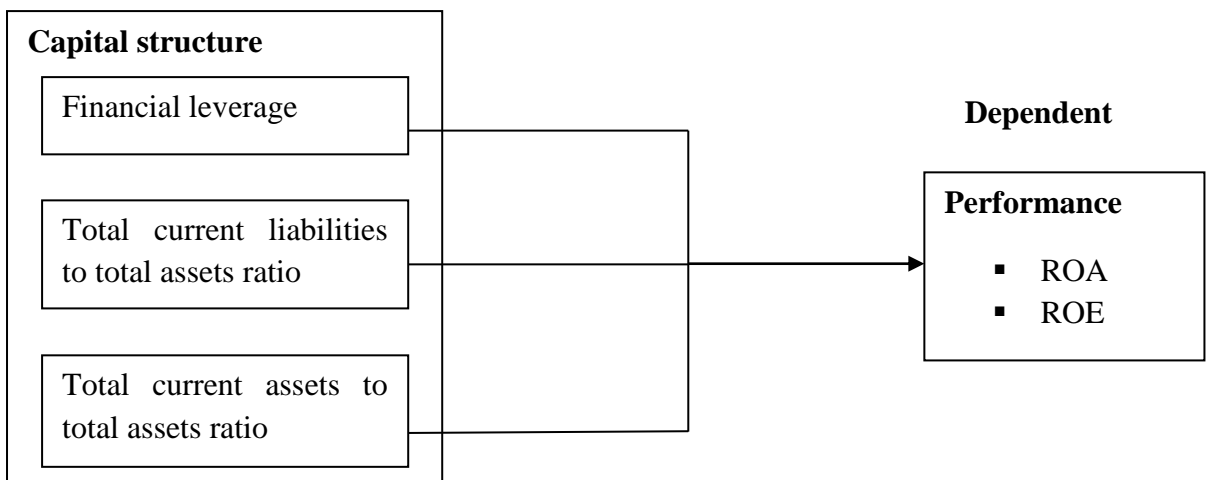
In a study to examine the impact of capital structure on the performance of firms, Adekunle (2009) used debt ratio to proxy capital structure while return on asset and return on equity were used as measures of firms' performance. The study used the Ordinary Least Squares method of estimation. The result of the study indicated that debt ratio has a significant negative impact on the firm's financial measures of performance. The study, however, did not consider other financing decisions in the analysis, including the mediating effect of internal cash flow available.

Comments on literature review

The results of empirical literature on the relationship between capital structure and performance are contradictory which justifies further research. Further many of the reported studies on the relationship between financial leverage and performance have been conducted in developed countries where capital markets are well-developed. The Kenyan capital market is relatively under developed and therefore the traditional capital structure theories that have their origin in the developed countries needed to be tested in the Kenyan context.

Figure 1. Conceptual Framework

Independent variable



Hypothesis

- i. There is no significant relationship between financial leverage and performance of non-financial companies listed in NSE, Kenya.
- ii. There is no significant relationship between total current liabilities to total assets ratio and performance of non-financial companies listed in NSE, Kenya.
- iii. There is no significant relationship between total current assets to total assets ratio and performance of non-financial companies listed in NSE, Kenya.

3. Methodology

3.1 Research Design

This study adopted an explanatory non-experimental research design to analyse the effect of financing decisions on performance of non-financial companies listed in the NSE, Kenya. Explanatory research seeks to establish causal relationship between variables (Saunders *et al.*, 2009 & Robson 2002,). According to Kerlinger & Lee (2000) an explanatory non-experimental research design is appropriate where the researcher is attempting to explain how the phenomenon operates by identifying the underlying factors that produce change in it in which case there is no manipulation of the independent variable. This study was therefore

explanatory non-experimental seeking to establish the relationship between financing decisions and performance.

3.2 Empirical Model

$$ROA_{it} = \alpha + \beta_1 FINL_{it} + \beta_2 (TCL/TA)_{it} + \beta_3 (TCA/TA)_{it} + \beta_4 Size_{it} + \beta_5 GDPGR_{it} + \varepsilon_{it} \dots \dots \dots (1)$$

$$ROE_{it} = \alpha + \beta_1 FINL_{it} + \beta_2 (TCL/TA)_{it} + \beta_3 (TCA/TA)_{it} + \beta_4 Size_{it} + \beta_5 GDPGR_{it} + \varepsilon_{it} \dots \dots \dots (2)$$

Where:

ROA_{it} = Return on assets of company i at time t

ROE_{it} = Return on equity of company i at time t

$FINL_{it}$ = Financial leverage of firm i at time t

$(TCL/TA)_{it}$ = Total current liabilities to total assets ratio of company i at time t .

$(TCA/TA)_{it}$ = Total current assets to total assets ratio of company i at time t .

$Size_{it}$ = size of the company (measured as logarithm of total assets) of company i at time t .

$GDPGR_{it}$ = Gross Domestic Product growth rate

α = Constant term

β^s are coefficients of the explanatory variables

ε_{it} = composite error term

3.3 Target Population

The target population of the study comprised of all non-financial companies listed in the Nairobi Securities Exchange (NSE). The NSE had 44 non-financial companies as at 31st December 2012.

The companies in the financial sector were excluded from the study to remove any anomalies associated with this sector which is highly regulated by the central bank prudential on issues of liquidity, asset and capital holding, and provision for bad debts among other factors (Santos, 2001). The financial leverage of financial companies is not comparable to those non-financial companies (Mwangi, Anyango & Ameyia). Moreover, cash is the trading asset of banks and hence the levels of cash holding are expected to be significantly higher than for firms in other sectors. The study adopted a census approach because of the small number of non-financial companies in the NSE. According to (Saunders, Lewis & Thornhill 2009) a census approach enhances validity of the collected data by including certain information-rich cases for study.

3.4 Data Collection Procedure

The study utilised panel data which consisted of time series and cross-sections. The data for all the variables in the study were extracted from published annual reports and financial statements of the listed companies in the NSE covering the years 2006 to 2012. The data was obtained from the NSE hand books for the period of reference. Data were extracted include the income statement, statement of financial position, and notes to the accounts. Using a document review guide.

3.5 Data Analysis Method

The data were analysed using descriptive statistics, correlation analysis, and panel multiple regression analysis. The panel methodology was aided by STATA 11.0 software. Feasible Generalised Least Square estimation was performed after accounting for various violations of classical linear regression assumptions. The random effect was chosen based on Hausman specification test.

4. Results and Discussions

Table 1: Descriptive Statistics

Variable	Observation	Mean	Std. Deviation	Min	Max
Return on assets	280	0.1172809	0.2963635	-1.614589	3.167213
Return on equity	281	0.1415472	1.252394	-18.11016	6.252167
Financial leverage	280	5.540158	56.28252	0	817.3594
Total current liabilities to total assets ratio	281	0.3210174	0.2857892	0	2.762324
Total current assets to total assets ratio	281	0.497626	.6554207	0.0025644	9.616251
GDP growth rate	282	4.580205	1.821908	1.528	6.99329
Total assets	282	18,400,000	39,300,000	0	307,000,000

Source: Study data (2013)

As indicated in table 1, the mean value of return on assets for 280 observations was 0.1172809 with a standard deviation of 0.2963635 and minimum and maximum values of -1.614589 and 3.167213 respectively. The positive return on assets indicates that the companies were on average profitable although some companies were operating at a loss as reflected in the negative minimum observed value of return on assets. The mean value for return on equity was 0.1415472 with a standard deviation of 1.252394 and minimum and maximum values of -18.11016 and 6.252167 respectively for 281 observations. The negative minimum value observation for return on equity signifies that some companies were operating at a loss.

From the results output displayed in table 1, the mean value of financial leverage is 5.54016. This indicates that, on average, non financial companies listed in the NSE were

highly geared. The greatest proportions of their resources were financed by long term debt. The standard deviation of 56.28252 signifies a great variation in financial leverage as evidenced by the fact that the minimum observed financial leverage was 0 while the maximum was 817.3594. According to the economic survey (2013) the growth experienced in the banking sector increased credit to the private sector by 30.8 percent in 2011 and 11.8 percent in 2012. The increased access to credit may therefore explain the observed phenomenon on financial leverage.

The results in table 1 further indicate that, total current liabilities to total assets ratio (working capital management 1) had a mean value of 0.3210174 with minimum and a maximum values of 0 and 2.762324 respectively. This observation indicates that the companies used less current liabilities to finance assets build-ups. These results suggest that non-financial companies investigated followed a conservative financing working capital management policy. The maximum, value of 2.76234, however, indicates that there was a company that had adopted an extremely aggressive financing working management policy in which the value of current liabilities was almost three times the value of total assets.

The results output shown in table 1 indicate that the mean value of total current assets to total assets ratio (working capital management 2) was 0.497626 with minimum and maximum values of 0.0002 and 9.616251 respectively. The mean value indicates that, on average, companies were neither very aggressive nor excessively conservative in their investing working capital management practices. The maximum observation of 9.616251 indicate that there was a company during the period under study that was following an extremely conservative investing working capital management policy by holding high levels of investment in current assets.

During the period covered by the study from 2006 to 2012, the Kenyan economy grew on average by 4.580205 with minimum and maximum growth rates of 1.528 and 6.99329 respectively. Finally, the mean for the total assets for the firms under consideration was Kshs 18,400 million with a standard deviation of Kshs 39,300 million. The maximum value of the asset for the period covered was Kshs 307,000 million while the minimum value was zero.

4.1 Diagnostic tests Multicollinearity

Table 2: Correlation Matrix

	Financial leverage	Working capital management 1	Working capital management 2	Size	GDP growth rate
Financial leverage	1.0000				
Working capital management policy 1	-0.0241	1.0000			
Working capital	-0.0191	0.4973	1.0000		

management policy2					
Size	0.1109	0.0297	-0.0298	1.0000	
GDP growth rate	-0.0054	-0.0579	0.0542	-0.0931	1.0000

Source: Study data (2013)

As presented in table 2, the correlation coefficients for all variables were less than 0.8 implying that the study data did not exhibit severe multicollinearity as recommended by (Gujarati, 2003; Cooper & Schindler, 2008).

4.1.1 Autocorrelation Test Results

The study used the Wooldridge test for autocorrelation to test the presence of autocorrelation. The null hypothesis of this test was that there was no first order autocorrelation in the data. The test statistic reported was F test with one and thirty nine degrees of freedom and a value of 93.710. The p-value of the F test was 0.0000 implying the F test was statistically significant at 1 percent level. The results therefore indicate that there was a problem of first order autocorrelation in the data. Subsequently, the study corrected for this violation of classical linear regression model assumption by employing FGLS estimation approach.

4.1.2 Heteroskedasticity Test Results

The study tested for panel level heteroskedasticity using the Likelihood Ratio (LR). The null hypothesis of this test was that the error variance was homoskedastic. The likelihood-ratio test produced a chi-square value of 605.30 with a p-value of 0.0000. The chi-square value was statistically significant at 1 percent level and hence the null hypothesis of constant variance was rejected to signify the existence of heteroskedasticity in the study data as recommended by Poi and Wiggins (2001). The study consequently employed the FGLS estimation technique to take care of this problem.

4.1.3 Panel unit root test

Panel unit root test was applied for all variables used in the analysis in order to avoid spurious regression results. The study applied Fisher-type test because it has more advantages than other panel unit root tests. The Fisher-type unit root test requires specification of Dickey-Fuller to test whether a variable has unit root. The study concluded that all the variables under consideration did not have unit root and were therefore used in levels instead of their first difference. This means that the results obtained were not spurious (Gujarati, 2003).

4.1.4 Hausman test

In order to choose between fixed and random effects model for model 1(ROA), Hausman test was used. The null hypothesis of the Hausman test was that the random effects model was preferred to the fixed effects model. For ROA model, Hausman test reported a chi-square of 2.13 with a p-value of 0.9073 implying that at 10 percent level, the chi-square value obtained was statistically insignificant. The researcher therefore failed to reject the null hypothesis that

random effects model was preferred to fixed effect model for ROA as recommended by Greene (2008).

Similarly, in order to choose between the fixed and random effects models for model 2 (ROE), the Hausman test was used. Hausman test reported a chi-square value of -13.96 with a p-value of 0.106 implying that the chi-square value was statistically insignificant at 10 percent level of significance. Hence the researcher did not reject the null hypothesis that random effects model was preferred to fixed effect model for ROE model as recommended by Greene (2008). Thus the researchers applied the models using random effects.

4.2 Hypothesis Testing

Table 3: FGLS Regression Results (Dependent variable: ROA)

Variable	Coefficient	Standard Error	Z	P>z
Financial leverage	-0.0001392	0.000136	-1.02	0.306
Total current liabilities to total assets ratio	0.1174164*	0.0283824	4.14	0.000
Total current assets to total assets ratio	0.0335097**	0.0139033	2.41	0.016
Size	0.0018864	0.0029528	0.64	0.523
GDP growth rate	0.0034529**	0.0015597	2.21	0.027
Constant	0.0252196	0.0497393	0.51	0.612
Wald Chi Square (6) = 55.27 Prob > chi2 = 0.0000				
(*), (**), and (***) denote 1%, 5%, and 10% levels of significance respectively				

Source: Study data, 2013

The regression results presented in table 3 indicate that the coefficient of financial leverage of -0.0001392 was statistically insignificant at 10 percent level with p-value of 0.306 that is greater than 0.1. The results indicate that there was an insignificant negative relationship between financial leverage and performance of non-financial companies listed in the NSE as measured by return on assets.

These findings were consistent with the capital structure irrelevance theory that was first postulated by Modigliani & Miller (1963). These traditional capital structure theories argue that the amount of debt in the capital structure does not affect performance and the value of the firm. Abdul (2012) however, concluded that financial leverage has a significant negative relationship with the firm performance as measured by return on assets (ROA). The findings of this present thesis contradicted the empirical results obtained by Saeedi & Mahmoodi (2011), who concluded that financial leverage is positively related to performance as measured by return on assets.

Table 3 indicate that total current liabilities to total assets ratio is significant at 1 percent level. The coefficient of total current liabilities to total assets ratio is 0.1174164 and significant with a p-value of 0.000 which is less than 0.01. The results indicate that there was a significant positive relationship between total current liabilities to total assets and performance of non-financial companies listed in the NSE as measured by ROA. The positive coefficient indicates that as more current liabilities were utilised to finance assets performance as measured by ROA improved. These results are inconsistent with Afza and Nazir (2007) who found a negative relationship between the aggressiveness of financing policy and accounting measures of profitability. In addition the findings contradicted the findings by Vahid, Mohsen & Mohammadreza who concluded that aggressive financing policy and firm's profitability are negatively related and hence, utilizing more current liabilities to finance firm activities may negatively affect the firm's performance (ROA).

Table 3 indicate that total current asset to total assets was significant at 5 percent level. The coefficient of the total current assets to total assets ratio was 0.0335097, with a p-value of 0.016 which is less than 0.05. The indicate that there was a statistically significant positive relationship between total current assets to total assets ratio and performance of non-financial companies listed in the NSE as measured by return on assets. This observation implies that holding other variables in the regression constant, a unit increase in total current assets to total assets ratio lead to an increase of 0.0335097 in ROA. This observation corroborates the results by Afza and Nazir (2007).

Table 4: FGLS Regression Results (Dependent variable: ROE)

Variable	Coefficient	Standard Error	Z	P>z
Financial leverage	-0.0222606*	0.0006584	-33.81	0.000
Total current liabilities to total assets ratio	-0.0647696	0.0488256	-1.33	0.185
Total current assets to total assets ratio	0.0876082*	0.0185633	4.72	0.000
Size	0.0036795	0.0052275	0.70	0.482
GDP growth rate	0.0043182**	0.0021154	2.04	0.041
Constant	0.0587487	0.0825654	0.71	0.477
Wald Chi Square (6) = 1170.23 Prob > chi2 = 0.0000				
(*), (**) and (***) denote 1%, 5%, and 10% levels of significance respectively				

Source: Study data (2013)

The regression result in table 4 indicate that the coefficient for financial leverage is -0.0222606 and is statistically significant at 1 percent level, with p-value of 0.0000 .The results indicate that there was a significant negative relationship between financial leverage and performance of non-financial companies listed in the NSE as measured by return on equity. These results are consistent with capital structure relevance theories. The results also

corroborate the empirical evidence obtained by Kaumbuthu (2011) who found a negative relationship between financial leverage and ROE. The finding however, contradicts the findings by, Javed & Akhtar (2012) who found the relationship between debt to equity ratio and return on equity to be significantly positive. The findings additionally, contradicted the agency theory postulated by Jensen & Meckling (1976) and extended by Elliotts (2002). The agency theory postulate that the use of leverage (long-term debt) in the capital structure can be used to mitigate the agency conflict by forcing managers to invest in profitable ventures that benefit the shareholders.

The regression results presented in table 4 indicate that the coefficient for total current liabilities to total assets ratio (working capital management policy1) is -0.0647696 and is statistically insignificant at 10 percent level of significance. The results indicate that there was no statistically significant relationship between total current liabilities to total assets ratio and performance of non-financial companies listed in the NSE as measured by ROE. These results are inconsistent with the results obtained by Vahid, Mohsen and Mohammadreza (2012) who concluded that following a conservative investment policy has a negative impact on a firm's profitability.

Table 4 indicate that the coefficient for total current assets to total assets ratio of 0.0876082 was statistically significant at 1 percent level. The results indicate that there was a statistically significant positive relationship between total current assets to total assets ratio and performance of companies listed in the NSE as measured by return on equity. This implies that holding other variables in the regression constant, a unit increase in total current assets to total assets ratio would lead to a 0.0876082 increase in return on equity. These results confirm the findings of Afza and Nazir (2007) who postulate that performance cannot be increased by being aggressive in managing the working capital requirements.

5. Summary and Conclusion

The study concluded that increased financial leverage has a negative effect on performance as measured by ROE of non-financial companies listed in the NSE, Kenya. The study therefore concluded that the Agency theory which postulates that financial leverage mitigates against the agency problem is not applicable among non-financial companies listed in NSE, Kenya. The study established that as a company increases financial leverage the performance as measured by ROE declines contrary to expectations based on the agency theory.

The study further established that the performance of the firm improved using more current liabilities to finance assets increases the performance improves. This is probably because current liabilities are less costly than long-term debt. Additionally, the study found

that increasing the proportion of current assets in relation to total assets enhanced performance as measured by both ROA and ROE.

5.1 Policy implication of the study

The results of this study have significant policy implications at the firm, industry, and macro levels. Firstly, this study found out that performance reduced as financial leverage increased. The study therefore recommends that corporate managers should reduce financial leverage in order to enhance performance. This study further recommends that the government should regulate the financial sector through various monetary and fiscal policies in order to reduce the cost of borrowing given that many companies rely on external borrowing to finance their cash requirements. The high interest rate in Kenya is an impediment to the projected growth of the corporate sector as envisioned by Kenya Vision 2030. Lowly geared firms perform better than their counterparts that are highly geared

Secondly, the management of non-financial companies should adopt aggressive financing policy in order to improve performance as measured by return on assets. This means that the managers of non-financial companies listed in the NSE, should concentrate on using more current liabilities to finance assets. The CMA should create redeemable short-term financing products in addition to corporate bonds which could be traded in the stock market. This is because this study provides evidence that the use of more short-term financing enhances return on assets compared to the use of long-term debt (financial leverage).

Thirdly, corporate managers should follow a conservative investment policy in order to enhance the performance of their companies. This implies that the managers should maintain a higher level of investment in liquid assets relative to non-current assets.

5.2 Suggestion for Further Research

A study should be undertaken to compare the financings decisions of non-financial companies listed on the NSE and those not listed and the effects of these decisions on performance. In addition, future studies could be extended to analyse financial decisions and their effect on performance across the countries especially those in the East African Community.

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