The Moderating effect of Macroeconomic Factors on the Relationship between Capital Structure and Value of non-financial firms listed at the Nairobi Securities Exchange

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Abstract

This study examines the moderating role of macroeconomic factors on the relationship between capital structure and value of non-financial listed firms at the Nairobi Securities Exchange. A target population of 36 non-financial firms at the NSE was selected. A positivistic research philosophy was adopted with descriptive research design tools like the mean, standard deviation, coefficient of variation, kurtosis and skewness and correlation analysis employed. The study adopted stepwise multiple regression analysis to test the hypothesized variables. Capital structure research being one of the most sensitive areas of corporate finance and decision-making because of the interrelationships with other components of financial decision. Findings pointed that firm growth has a significant moderating role and thus is a critical tool that can be used by management when doing capital structures adjustments to ensure efficiency as firms' value changes.

1. Introduction

The macroeconomic factors are variables that influence the outcome of an economy in a wider level (Rajan & Zingales, 1995). They include the exact interest rates, rate of exchange and the rate of GDP growth. The difference in the situation of economy in which a firm operates affects the company's financial performance in the coming periods (Korajczyk, & levy, 2003). Studies done by Oztekin & Flannery, (2012); Fan et al., (2012) and, Jõeveer, (2013), all focused on the capital structure of firms. However, no study has endeavored to look into the variable of the macroeconomic factors. Other studies have tried incorporating the effect of the macroeconomic factors on the decision that managers make concerning debts.

A good number of researches concerning the capital structure and the performance of a firm have indicated a notable connection between them (Myers, 2002). Nevertheless, practically, it is not possible for the structure of capital to cause an increase of the firm value independently. There has to be an enabling economic environment and a proper governance in a firm. An economic environment in which firms operate is an important factor that determines how better a firm can perform (Sambasivam & Ayele, 2013). A significantly positive relation has been found between the capital market advancement and the capital structure. Moreover, this has explained how a good environment allows firms to utilize the external sources to fund their projects. This is in line with the findings of (Booth, Aivazian, Kunt, & Maksimovic, 2001). According to Abor's (2005) study that investigated the debt policy's influence on the firm performance of medium sized businesses, the outcomes pointed that the influence of short-term debt is significant with a negative relationship to returns of the firms in South Africa and Ghana.

 The combined effect of the structure of capital, growth of the firm and the macroeconomic factors on the value of the firm is one of the greatest challenges among the academicians, professionals and the makers

of policies. In spite of the of the adequate tools and necessary advancement of academics that can help to find the connection between decisions of financing and the firm value, the process that leads to an a joint investment decisions that give rise to the desired results is still oblique. Firm mangers should have enough knowledge that can enable them plan properly for the financing of the proposed projects. This knowledge will help them develop a plan and know the sources for their project funding. Further, they will be able to balance the uncertainty or risks that occur and thus minimize the risk.

Listed firms at NSE

NSE is a homegrown capital market that imposes a significant role to enable the local companies listed in to get funding for their projects that are aimed at creating more income. Further, it provides an avenue for selling and buying of the shares in the listed firms (Omondi & Muturi, 2013). Therefore, the NSE plays an important role in directing the transactions of shares for the listed companies and makes an input to the growth of the country's economy. NSE has 64 listed firms and it has singly operated in Kenya since 1954. The listed companies have been classified into three market parts; Main Investment Market Segment (MIMS); Alternative Investment Market t (AIMS) and the Fixed Income Market Segment (FIMS).

Nairobi Securities Exchange forms a part of the rising capital markets that are challenged with a number of problems concerning the availability of resources. The inadequacy of the needed resources for the market causes a limitation of the advancement of the NSE market. This further, causes a delisting of a high number of firms. NSE has further segmented the listed companies to ten smaller sections, which are the commercial, and services, agricultural, telecommunication and technology, banking, automobiles and accessories, insurance, manufacturing and related construction, investment, and the energy and petroleum sector (NSE, 2015). An expansion of the stock market has been experienced through the listing. On the other hand, a notable number of companies have been delisted because of poor performance (Mwangi, 2014).

For a firm to be listed in the NSE, it has to attain the set standards by this capital market. However, the operation environment of a company may change in light of the influence caused on the firms by the macroeconomic factors in a given country. The differing performances registered by firms is a result of these factors, which include the sources of funding, market risk or alternatively, an over financing strategy and many other external factors. Thus, firm managers need to employ frugal strategies for them to keep high the investor confidence at the market regulators (CMA), in the firms they are managing.

Problem Statement

Ngugi (2008) examined the patterns of financing the firms that are listed on the NSE and the outcome showed that Kenyan firms prefer fund their investment projects with short-term debt and the bank overdrafts without looking at the attached risk on these financing sources. In spite of the of the adequate tools and necessary advancement of academics that can help to find the connection between decisions of financing and the firm value, the process that leads to an a joint investment decisions that give rise to the desired results is still oblique.

Since listed firms need to moderate or even eliminate any risk, where possible, using a broad investment portfolio that will enable a firm to generate higher returns that will lead to an increase in the wealth of the shareholders. Available studies from (Odongo, Thabang, & Leonard, 2014, Murekefu & Ouma, 2012 and Nyamao, Opera, Lumumba, Odondo, & and Otieno, 2012) focus on the factors that determine the capital structure. These studies have overlooked at the combined effect that is caused by the capital structure, growth of the firm and the macroeconomic factors on the firm value for those firms listed in the NSE capital market.

The study sought to test the following hypothesis:

1. H_01: *Macroeconomic factors have no significant moderating effect on the relationship between capital and firm value*

2. Literature Review

Theoretical and Empirical Review

Trade off theory as proposed by Kraus and Litzenberger (1973), looks at the manner in which companies select the amount of debt and equity funds to be involved in their structure of capital to help strike a balance between the tax benefits and the costs. Choosing an ideal capital structure is often an important debate that should be focused on by the researchers operating in the field of corporate finance. This will help in the process of optimizing the capital structure of firms. This trade-off theory provides an explanation on how firms ought to fund the investment projects by the use of debt and equity. It poses this explanation in the light of the benefits accrued from the financing of business through debt that results from the aspect of tax shield benefits of paying interest. Relevance of this trade-off theory to the capital structure has been subjected to heated debates over time.

According to Miller (1977), viewing the tradeoff theory as a relevant to the firms' notable value, then the companies need to have a high level of debt than those companies that operate in the market as observed currently. This theory, therefore, remains important in the field of finance regardless of the sharp criticisms it has received from the academicians. A solemn and important investigation was carried out by Graham (2003) on the available pragmatic literature concerning the effects on the firm's significant value. Further, the bankruptcy cost is often taken as a dead weight that is taken from one shareholder to the other over the stated period.

Haugen & Senbet (1988) discussed this phenomenon in their bankruptcy costs discussion. Again, any transaction cost form ought to take up a certain analytical status, which is perceived as an important factor when it comes to the funding of the firm's decisions.Lawal (2014) carried out an investigation of the relation that exist within the capital structure and the value of the firms that are listed in the Nigerian Stock Exchange. The research covered data from the period of 2007 to 2012. The outcomes of the study indicated an important role of the debt financing in the Nigerian financial firms' value. According to the aim of this research, examining the combined effect of the capital structure, the growth of the firm and the macroeconomic factors and the tangible firm value of the companies listed in the NSE.

Bhatti (2014) conducted a study by investigating the influence of macroeconomic factors on the capital structure decision of the firms listed from Pakistan's manufacturing sectors. The study revealed that economic factors have an impact on capital structure decisions of manufacturing listed in Pakistan. The findings showed that GDP has a negative influence on the debt ratio of the manufacturing firms and conflicting results were found when investigating the relationship between lending interest rate and the debt ratios of the same firms in Pakistan. This negative correlation indicated that there is the existence of the lower demands of the firms for debt financing when lending rate increases among the firms in Pakistan. The study by Booth et al. (2001) concentrated on the capital structure decisions made by firms from emerging economies, which revealed that GDP growth rate tends to influence total debt ratio and long-term debt ratio of the firms.

Manawaduge et al. (2010) examine the implications of capital on the value the firms from the emerging markets in the South Asia, Sri Lanka. They used panel data regression for the sample of 171 firms from Sri Lanka, and results revealed that most companies in Sri Lanka as an emerging market finance their investment activities using short-term debt instead of long-term debt capital. The significant negative implications of capital structure on the value of firms associated with the frequent use of the short-term debts and the under-utilization non-current assets provide corporate managers with useful policy direction on an appropriate capital structure and operational decisions.

Additionally, Sambasivam and Ayele (2013) proposed that the growth of the firm, leverage, capital volume and liquidity are the most significant when it comes to the determination of growth and profitability of the firm. They are statistically significant. Further, the related liquidity and leverage ratios have a notable negative effect to the firm's profits. Salim and Yadav (2012) investigated the connection of capital structure to the performance of the firm. They used a sample of 237 firms that are listed in the Malaysia's Bursa Malaysia Stock Exchange. They covered data in the period 1995-2011. The findings in this study presented a negative, significant effect concerning the achievements of a firm.
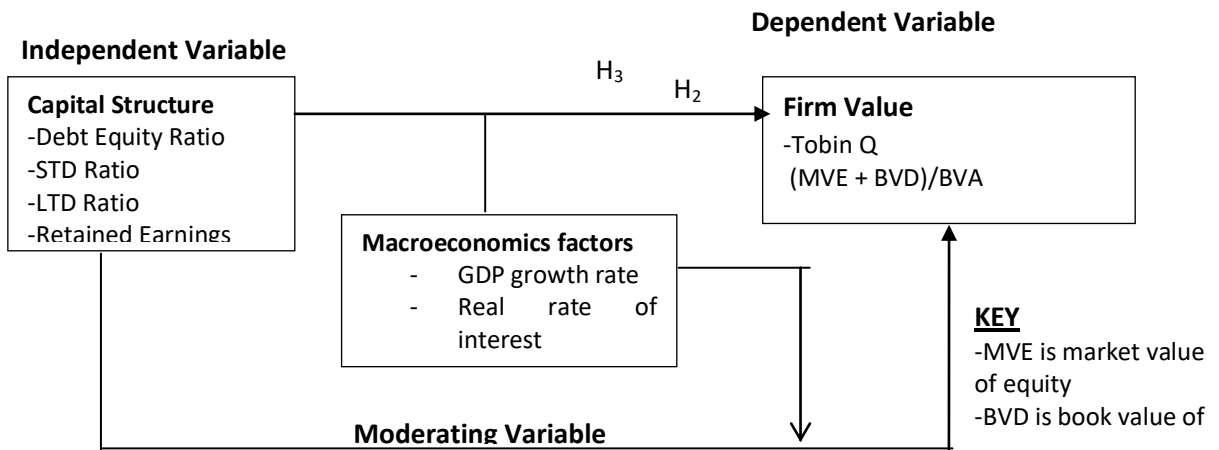
When it comes to the growing of the business, finances are needed in order to boost the firm value. The ability of a firm to raise funds externally depends on the capacity of this same firm to raise finances internally.

When firms seek an external source of financing, they are likely to face greater risks. Further, when a firm has a potential to grow, the level of the capital structure is at minimum (Myers 1977). There is a moral risk that exist when the opportunities a firm has are open to other firms in the market. Thus, these risks are minimized through the firm's decision to finance its expansion opportunities using equities than debt financing. Abzari et al. (2012) looks at the effect of the macroeconomic elements from the perspective of the capital structure of the listed companies in Tehran Stock Exchange.

The investigation fails to find a significant relationship between this variable of macroeconomic and the capital structure in this market. Muthama et al. (2013) did a study in Kenya's rising market. The result of the study showed a positive influence of the GDP, a negative influence from the debt-financing ratio and a positive effect caused by inflation on the capital structure of the companies listed in the NSE. Smith and Watts (1992) revealed in their study that debt and growth chances in a firm have a negative correlation to the firm value. A firm having an opportunity to grow tend to look for the external financing sources to help it utilize the growth opportunity (Michaels et al., 1999). The opportunities to grow in any company gives rise to pressure on the internal resources and it causes the firm to use external financing sources to sustain the identified growth opportunity. This leads to a usage of short-term debt as opposed to the available sources of finance to implement their projects.

Conceptualization

Figure 2.1: The Conceptual Model

3. Methodology

The research design is the systematic sequence which unifies data to enable investigation of questions of research so as to enable drawing of a conclusion based on data available (Yin, 1994). The study used a secondary data compared over years and thus time series and cross-sectional analysis was possible. Cross-sectional data analysis usually includes data analysis over time like from 2010 to 2014.The study took into consideration all the firms hence it was a census survey which usually takes into consideration all firms especially when they are not many (Saunders, Lewis, & Thornhill, (2007). The firms that were considered in this study were 36 non-financial companies that are listed at the Nairobi Securities Exchange.

The study utilized multivariate regression technique, correlation, and point by point insights examinations. The review explored the relationship between the variables and their association with each other. A correlation grid that incorporated the values of correlations coefficients for the variables utilized as a part of the examination. The regression examinations and expressive insights were connected to complete the investigation of the mediating effect of firm growth on the relationship between capital structure, and value of non-financial firms listed at the Nairobi Securities Exchange in Kenya from 2010 to 2014. Multivariate factual examinations were utilized to learn the impact of capital structure and other controllable variables on the value of the firm. The model is as per the following:

$Y_{it} = \alpha + \beta_1 CS_{it} + \beta_2 MF_{sit} + \beta_3 CSMF_{sit} + \varepsilon_i$

Where α is the intercept or constant, β_1 is the coefficient identifying with independent variable, β_2 is the coefficient identifying with mediating variable, β_3 is the coefficient identifying with moderating variable impact. In the event that β_3 is factually not the same as zero, there is critical moderation impact of the CS - Y relationship.

4. Findings

Table 4.1: Results of Moderating (Macroeconomic Factors) on Relationship the Capital Structure and Firm Value(a) Goodness of Fit Results

ANOVA Results

Source	SS	Df	MS
Model	14.0355	6	2.33924
Residual	14.8062	168	0.08813
Total	28.8417	174	0.16576

Note: ANOVA: Analysis of Variances; SS: Sum of Squares; Df: Degree of Freedom; MS: Means Squares and * Significant Level P≤0.05

The regression model was also statistically significant [F (6, 168, p=0.000] as shown in Table 4.1 (a) above showing that there was a significant relationship between capital structure and firm value. Ensure a high-quality product, diagrams and lettering MUST be either computer-drafted or drawn using India ink. Figure captions appear below the figure, are flush left, and are in lower case letters. When referring to a figure in the body of the text, the abbreviation "Fig." is used. Figures should be numbered in the order they appear in the text.

Model Summary

Model Goodness of fit results	
R-squared	0.4866
Adj R-squared	0.4683

Note: * Significant Level P≤0.05

The Weighted Least Square (WLS) regression results in Table 4.2 (b) above show that capital structure parameter was significantly predicted almost half of firm value by approximately 48 percent (Adj. R^2 = 0.4773, p=0.000 at 0.05). Since all the models are statistically significant, then all are acceptable subject to tests of the slope.

These results are signifying that the relationship between capital structure and the firm value was statistically significant.

(c) Estimated Model Results

Estimated Model Results				
	Coefficient	Std. Error	t-test	P>t
DE Ratio	-0.1222	0.137	-0.89	0.372
RTE	0.1996	0.148	1.35	0.179
RGDP	-0.1299	0.042	-3.08	0.002
R Rate Int	0.0721	0.017	4.35	0
EXCR	0.0278	1.043	0.03	0.979
CS MEFit	-0.0426	0.016	-2.6	0.01
_cons	0.0932	0.29	0.32	0.748

Note: DE Ratio: Debt Equity Ratio; RTE: Retained Earnings; FG Rate: Firm Growth Rate; RGDP: Real of GDP; RRate INT: Real Rate of Interest; EXCR: Exchange Rate; MEFs: Macroeconomic Factors; _cons: constant and * Significant Level P≤0.05

About the hypothesis, the coefficient of interaction β_3 was -0.0426 with p-value 0.01 which was less than level of significance (α= 0.05) and thus was statistically significant as a moderating variable. The results indicate there was a significant negative moderating effect of macroeconomic factors on the relationship between capital structure and value of nonfinancial firms listed on the Nairobi Securities Exchange. This indicated that the interaction between independent variable and moderating variable (CS*MEFit) as shown in Table 4.3 (c) above, have a negative coefficient and a significant level of 0.001, showing the important of macroeconomic factors as determinants of capital structure.

Table 4.4: The moderating Effect of Macroeconomic Factors on the Relationship between Capital Structure and Firm Value (With and Without Moderator)

Variables	Without Moderator	With Moderator	% Change in β
DE Ratio	0.1277296	0.1267152	-0.7941777
RTE	-0.2388308	-0.2367461	-0.880564
STDTA	0.0191066	0.0593734	210.7481185
LTDTA	-0.0316618	-0.0297508	-6.035664428

Note: DE Ratio: Debt Equity Ratio; RTE: Retained Earnings; STDTA: Short-term Debt to Total Assets and LTDTA: Long-term Debt to Total Assets. * Significant level P≤0.05)

The moderating effect can be explained by the change in beta coefficient. The moderating variables reduced the statistical significance of the effect of capital structure on the measure of firm value while at the same time the results increase level of significance of other variables like STDTA from 0.0191066 to 0.0593734; this increases came as a result of the nature of debt used by the firm.

5. Discussion

The results showed that macroeconomic factors moderate the relationship between capital structure and firm value. The moderating effect can be explained by the change in beta coefficient. The moderating variables reduced the statistical significance of the effect of capital structure on the measure of firm value while at the same time the results increase level of significance of other variables like STDTA from 0.0191066 to 0.0593734; this increases came as a result of the nature of debt used by the firm.

The DE Ratio change from 0.1277296 to 0.1267152 showing the sensitivity of the beta coefficient, which indicates that the macroeconomic factors have an influence on the capital structure of the firms. On the other hand, the RTE value has decreased from negative 0.2388308 to negative 0.2367461 as well as LTDTA decreases from negative 0.0316618 to negative 0.0297508 showing the strong influence of macroeconomic factors on the relationship between capital structure and firm value. The sensitivity was measured through percentage change in beta coefficient of the variables.

6. Conclusion and Recommendations

On account of macroeconomic conditions not ready to foresee the firm execution to some degree, the firm directors can have the capacity to alleviate the effect of any monetary instability and attempt to exploit such a circumstance by settling on various vital decisions that can make an adaptable change in the firm operation. For this to occur the administration of the firm need to completely comprehend the connected between the macroeconomic factors and their impact on organization execution through a few channels not caught by ordinary bookkeeping frameworks. Indisputably, the findings of this study demonstrate that capital structure firm development and macroeconomic factors are noteworthy factors that drive the value of an organization.

This study likewise suggests that when macroeconomic factors are positive say for ideal GDP development rate, the organizations ought to raise a larger number of assets from inside than without. In light of this, they can also diminish the related dangers and expenses of long haul and here and now obligations through their inward fund producing systems.

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