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Moderating Effects of Cost of Capital on Equity Financing and Firm Value in Nigeria

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Abstract

The study analyzes the moderating effects of cost of capital on equity financing and firm value. Whereas, micro panel analysis techniques was utilised for the companies under study spanning 2006-2016. Secondary data were obtained through the companies' individual annual reports and data base of Nigerian Stock Exchange. The study utilizes a sample of 12 listed industrial goods companies in Nigeria. While, hierarchical moderated multiple regression was applied for the estimate. The outcome revealed a positive association among equity financing and value of listed industrial goods companies in Nigeria. While, cost of capital as a good moderator, it was emphasize that, equity financing and cost of capital are drivers of enhance value of the firm among listed industrial goods companies. It was recommended among others that, the finance manager should emphasize on the viable cost of capital for their firm operation. Hence, equity financing should be given greater priority than debt financing in order to enhance the value of firm.

Keywords

Cost of capital, equity financing, firms value, OLS, Nigeria

JEL Codes: M10, M11

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1. Introduction

Over the past decades, firm managers have been striving for the best and viable capital mix in business operation. It is argued that equity financing will be of great value of the firm operation than other sources like short and long term debts. Equity and liabilities claims to be a business asset. This signifies a capital structure that could be represented by certain portion of either debt or equity for viable business operation (Morris, 2001). The proportion may be in the form of 100 percent of equity with 0 percent of debt or vice vasa as well as the mix of equity and debt. Therefore, it is up great advantage of firm to have mixture of equity and debt.

Furthermore, value of firm has always been one of the utmost noteworthy matter of concern among the researchers and scholars of corporate finance. Its importance derives and strongly associated to achieve the needs of the stakeholders. And yet, some researchers claim that, it is difficult to value a firm and this may be one of the many unresolved problems in finance (Ajanthan, 2013). However, managing cost of borrowing has been one of the most essential issue in financing decisions and the greatest significant judgments which managers are confronted with due to the fact that firms most determine a viable way for finance their business operations. The capital structure decision is significant as it affects the cost of investment and the firm value (Kurfi, 2003).The overall objective of the firm is stakeholder's value, and to determine best capital mix for viable firm operation (Morris, 2001). However, the discussion on the significance of capital structure on value of the firm will not be complete if we do not reveal the extent of this relationship by examining the moderating effect of the firm's cost of investment. Hence, the research will also investigate the contingent effect of the firm's cost of investment on equity financing and firm value relationship.

The moderating variable's presence may modify the initial linkage among the explanatory and explained variables and if this occurs, this contingent effect is commonly referred to as interaction (Abba & Usman, 2016). Moreover, it is emphasized that various elements like financial risk, tax, level of the firm expansion and market situation may attributes to the decision on the rightful choose of equity, debt or their mixture for the firm operation (Huang & Song, 2006). Also, the factors that determine the link among capital mix and firm value has been one of the most difficult aspects, as it concern the analysis of many elements such as financial risk and cost of capital. Furthermore, the judgement becomes more challenging in an event of instability in the nature of economic condition, social aspect, technology and political setting (Shubita & Alsawalhah, 2012). Hence, the absent relationship was the moderating effect of a company's cost of capital on the above mentioned relationship.

Firms have assets which are usually backed by capital providers such as bondholders and shareholders and the cost of this funding (capital) is a measure of what these stakeholders expect in return for lending their money. Thus, this study focused on how the costs of stakeholders' funds influence the relationship between equity financing and overall value of firm.

2. Literature review

The matter of shares, whether to the general public or as a right issue costs money and the cost should be reflected in investment evaluation (Ajanthan, 2013). Equity (vending stocks) must inspire stockholders that suitable return would achieve for greater value of a company. It is further argued that in an event of a suitable rate of borrowing and price shareholders will value the firm in future time (Kurfi, 2003). Sagala (2003) stressed that the connection among cost of capital and value of company on the Nairobi stock exchange was exceptional to the respective firm involve in the analysis. Similarly, Williams (2006) opines that corporate managers should always safeguard that their companies are being financed at the deepest likely cost, so that stockholders could surely trust their savings to companies that assurance supreme return for least risk. He further declares that existing shareholders should reflect the uses of debt to be good news and not using debts to be bad news. He orates that studies have shown that stock price upsurge when a firm broadcasts leverage cumulative events such as, debt for equity exchange touches debt financed, cash tender offers to gain control of additional company. Nevertheless, Khadka (2006) studied the influence of leverage on the cost of capital of firms in Nepalese from 1999 to 2005 by applying regression technique. It finds that leverage has no effect on firms cost of investment. Narayanasama (2014) emphasized that equity fund increase the level of capital mix of firms in Spain. Okiro, Aduda, and Omoro (2015) reveal that capital mix enhances the capacity of firm value for 56 firms in East African community. In another development, Mary *et al.* (2015), portrays existence of low cost of borrowing promotes earnings and returns as well as the firm value at large. Marques *et al.* (2017), in their analysis emphasized that viable cost of investment upgrade the level of firm value. Hence, from the literature reviewed association among equity financing and firm value has established from the past studies. However, moderating effect of cost of borrowing and the link among equity financing and firm value in the Nigerian industrial goods companies has left uninvestigated. Therefore, this study examine the moderating effect of cost of capital on equity financing and firm value relationship in Nigerian industrial goods companies to stands as addition to the present literature.

3. Methodology of research

The study used 12 listed industrial good companies for the analysis. The data of these companies were retrieved from the firm's financial report published in the Nigerian stock exchange from 2000 to 2016. The analysis was based on 132 observations using hierarchical regression method. Thus, the regression equation model can be expressed as below:

$$VF_{it} = \alpha_0 + \beta_1 LEQTA_{it} + \beta_2 LFRMSZE_{it} + \beta_3 LGRWTH_{it} + \varepsilon_{it} \quad (1)$$

$$VF_{it} = \alpha_o + \beta_1 LEQTA_{it} + \beta_2 LFRMSZE_{it} + \beta_3 LGRWTH_{it} + \beta_4 LWACC_{it} + \varepsilon_{it} \quad (2)$$

$$VF_{it} = \alpha_o + \beta_1 LEQTA_{it} + \beta_2 FRMSZE_{it} + \beta_3 GRWTH_{it} + \beta_4 WACC_{it} + \beta_5 LEQTA*WACC_{it} + \beta_6 LFRMSZE*WACC_{it} + \beta_7 LGRWTH*WACC_{it} + \varepsilon_{it} \quad (3)$$

From equation 1, 2 and 3 VF, EQTA, FRMSZE, GRWTH and WACC are firm value, equity ratio (equity to total assets), firm size (logarithm of total assets), growth (logarithm of total assets), and Weighted Average Cost of borrowing (After tax weighted cost of debt + Weighted cost of equity) the moderating variable, while ε_t, i, t are the constant term, cross-sectional observation of the frim and the time.

4. Results

Table 1 shows the moderating effects of cost of capital WACC on the association among equity financing EQTA and value of TOBIN'S Q of listed industrial goods companies in Nigeria. Similar to the above, three models are run to test the association. The results are illustrated as follows:

Table 1. Estimated model of moderating effects of WACC on EQTA with TOBIN'S Q

Variables	Model (1) Tobin's Q	Model (2) Tobin's Q	Model (3) Tobin's Q
Lneqta	-1.0141***	-0.5891***	-0.1749**
	(0.0200)	(0.0253)	(0.0998)
Lnfrmsze	-0.0034	-1.1175***	-1.0696***
	(0.0083)	(0.2009)	(0.3322)
Lngrwth	-0.0057**	-0.1112*	9.5440**
	(0.0003)	(0.0066)	(3.1007)

	Model (1)	Model (2)	Model (3)
lnwacc		-0.0917***	1.5838***
		(0.0204)	(0.7719)
eqta *wac			8.4978***
			(0.0025)
lnsze*wac			9.6796***
			(0.0312)
lngrw*wac			9.5578***
constant	1.0092***	1.1888**	(0.0310)
	(0.0776)	(0.4425)	-11.8195***
			(0.0392)
Autocorrelation:			
F(1,9) =			4.277
Prob >F =			0.1686
Breusch-Pagan Test:			
Test (χ^2)			34.27
Prob > χ^2 =			0.2001
Hausman:			
χ^2			29.37
Prob> χ^2			0.0604
R^2	0.7011	0.7225	0.8733
R^2 Change		-0.0214	0.1508
F Statistics	53.19	25.18	43.45
Observations	132	90	90
Number of comp	12	12	12

Note: Equity Financing =EQTA; Moderating variable = LNWACC; Interaction terms = EQTA*WAC, EQTA*SZE, EQTA*GRW Standard errors in parentheses*** p<0.01, ** p<0.05, * p<0.1

Similarly, the problem of multicollinearity among the variables used in the estimated model is investigated using the variance inflation factor VIF presented in Table 2 below.

Table 2. Multicollinearity diagnostic test

Variables	Tolerance Value	VIFs Value
Lnfrmsze	1.23	0.8160
eqta	1.22	0.8189
Lnwacc	1.05	0.9560
Lngrwth	1.04	0.9647
Mean VIF	1.13	

As presented in Table 2. F-statistics shows that the overall significance of the model is statistically significant. R^2 change of model 3 is 0.1508, which is larger than the R^2 change of model 2 (0.0214), indicating the existence of (LnWACC) as a moderating variable. Moreover, in order to ascertain the validity of the estimated correlated panels corrected standards errors (PCSEs) model, post estimation tests of autocorrelation, Hausman specification and heteroscedasticity tests were conducted. As can be seen from Table 2, the result of the autocorrelation test indicates that there was no problem of autocorrelation in the variables. As for the test of heteroscedasticity, the Probability value of the Hausman shows that there was a problem of heteroscedasticity in the original model which was corrected with the use of panel corrected standards errors (PCSEs). Additionally, the VIF test for multicollinearity among the variables indicates that none of the variables in the model has a VIF value of up to 5 and therefore no much multicollinearity among the variables included in the model. However, the autocorrelation test shows that there was a problem of autocorrelation among the variables which need to be rectified using PCSEs and PCSEs and therefore interpretation of results in Table 2 will concentrate only on the estimated panel corrected standards errors (PCSES) model presented in Table 2. Nonetheless, the model has been used in previous studies (Narayanasama 2014).

The empirical evidence obtained from Table 2 shows that (EQTA*WACC), (SZE*WACC) and (GRW*WACC) are found to be significant to (TOBIN'S Q) implying the moderating effects of (LnWACC) on the association among equity financing (EQTA) and value (TOBINS Q) is significant at 1%. The change in sign and strength of the interaction terms evidenced the moderating effects of cost of capital (LnWACC) on the relations between equity financing (EQTA) and value (TOBIN'S Q) in Nigeria. However, cost of capital (LnWACC) has different effects on the relations between equity financing (EQTA) and

value TOBIN'S Q in Nigeria than the hypothesis. It is hypothesized that cost of capital (LnWACC) has no significant moderating effects on value of firm (TOBIN'S Q). From the table above, it was observed that, this variable is significant. This shows that cost of capital (WACC) reduce value of listed industrial goods firms in Nigeria. This implies that a point decrease in the level of cost of capital (LnWACC) will bring about a point increase in the value (TOBIN'S Q) of listed industrial goods companies significantly.

Based on the findings and analysis in respect of the moderated model of the study, the hypothesis formulated earlier states that cost of capital (WACC) has no moderating effect on the relations between equity financing (EQTA) and value of listed industrial goods in Nigeria is tested using the changes in the level of coefficient, changes in directions of the variables and the level of significance. Therefore, judging from the result presented in Table 2, it can be concluded that the level of (LnWACC) is significance at 1%. However, the significance of the variables increased after the variables were moderated. It implies that cost of capital (WACC) significantly moderates the relationship between equity financing (EQTA) and value of firm (TOBIN's Q), therefore, providing an evidence to reject null hypothesis of the study.

5. Conclusions

This study has presented an empirical estimate of the moderating effect of cost of capital (WACC) on the association between equity financing and value of listed industrial goods companies in Nigeria based on data available on their annual reports for the period 2005–2016. The effect of one explanatory variables is measured on firm value by using (TOABIN'S Q); one of the market-based measures value of firm (TOABIN's Q), cost of capital (WACC) as moderating variables was used to restrain the linkage among equity financing and value of firm. The findings revealed a significant positive association among equity financing and value of listed industrial goods companies in Nigeria. While, cost of capital as a good moderator, it is recognized that, equity financing and cost of capital are drivers of increasing value of the firm among listed industrial goods companies. It was recommended among others that, the finance manager should emphasise on the cost of investment. Further, the listed Industrial goods firms should use more use of equity rather than debt in financing due the fact that it enhance value of firm in a viable manner.

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