Growth Implications of Capital Structure and Corporate Governance on Market Liquidity of Quoted Manufacturing Firms in Nigeria

ABSTRACT

This study contributes to the literature on financial economics by providing valuable insights into the growth implications of capital structure and corporate governance on the market liquidity of thirty (30) quoted manufacturing firms in the Nigerian Exchange Group. While the capital structure was measured by equity financing and debt capital, corporate governance was measured using board size, board representation and audit committee. On the other hand, the value of the shares traded formed the basis for measuring the market liquidity of the 30 quoted firms. The datasets for the variables were obtained from the Nigerian Exchange Group Firms Annual Reports and Accounts Statistics. Descriptive statistics, panel unit root and one-way error component fixed effects model with heterogenous intercept due to the individual firms and homogenous slope parameters for the basis for data analysis. The fixed effects results showed that debt capital affected the value of shares traded positively. This finding is significant at the 5% level, indicating that an increase in debt capital creates an opportunity for improving the value of shares traded during the study period. On the other, there is a negative effect of equity capital and board size on the value of shares traded. The results further showed that board representation and audit committee contributed positively to the value of shares traded. This suggests that the audit committee significantly improved the value of shares traded. This highlights the importance of auditing in driving the market liquidity of the quoted manufacturing firms. Given the findings, this study recommends that the management of the quoted manufacturing firms should prioritise long-term debt to enhance the market liquidity of manufacturing firms. Again, the management firms should ensure that board representation is diversified to include various segments of the firms while prioritising expertise and integrity in the selection of the audit committee to ensure that quality decisions are achieved to improve the market liquidity of the firms.

Keywords: ***Capital structure, corporate governance, market liquidity, shares traded, debt capital, equity financing, board representation and audit committee***

1. Introduction

There has been a growing recognition of the implications of capital structure and corporate governance on the market liquidity of listed firms in developing economies. This follows the understanding that capital structure and corporate governance are critical in shaping the market valuation and overall performance of the quoted firms. The seminal work of Modigliani and Miller (1958) has been described as the initial effort to understand the link between a firm's choice of finance and its market value. This has served as a springboard for further research in financial economics and corporate finance. Essentially, capital structure integrates debt and

equity employed by a firm to finance its assets. Thus, corporate finance managers in need of funds to finance their company's projects are faced with the challenge of whether to raise debt or equity capital. According to Ikponmwosa and Eriki (2017), a company's capital structure determines how well it performs. This is because, when taxes, agency costs, and other factors are taken into account, capital structure tends to impact the performance of the organisation. It is also argued that the financial health of firms, particularly in developing economies, is closely linked to their decisions regarding their capital structure.

As outlined in the agency cost theory, the level of the capital structure that minimises agency costs and maximises firm value is ideal for firms to remain profitable and competitive in the business environment. This suggests that choosing an inefficient capital structure can be detrimental to business survival. Gul & Cho (2019) posit that capital structure is one of the critical decisions in corporate finance. This is because as the mix of debt and equity capital, capital structure integrates the way a firm finances its overall operations and growth through different sources of funds. Uremadu and Onyekachi (2018) assert that financing through equity entails raising capital by offering investors the company's stock in exchange for their investment. On the other hand, debt financing implies raising funds through selling of bonds, mortgages or borrowing directly from financial institutions. However, the accompanying costs are the primary factor in deciding between debt and equity capital and they are essential in determining the market valuation of the firms.

Furthermore, understanding the corporate governance framework of a firm has become necessary due to the risk inherent in the contemporary business environment. It is believed that robust corporate governance has the potential to ensure transparency, accountability, and ethical management practices, which are critical in fostering investor confidence and enhancing market liquidity. By ensuring that the organisation follows recognised ethical standards and best practices, corporate governance provides a structure that benefits the stakeholders (Sugiyanto & Tukiyat, 2021). Additionally, Olawale & Obinna (2023) posit that evidence from previous studies indicates that firms with good governance often portray certain characteristics including better financial performance, lower levels of risk, and higher market valuations. Thus, the effectiveness of corporate governance mechanisms is pivotal for better performance and sustainability of firms. Although many studies abound in the extant literature, the controversies

surrounding their varying findings on the interrelation among capital structure, corporate governance and market valuation of firms have remained a source of worry to both researchers and policymakers. As the controversies continue to grow, imperative for this study to ascertain how capital structure and corporate governance contribute to the market liquidity of the quoted firms in the Nigerian Exchange Group.

2. Literature Review

2.1 Theoretical Literature

The theories linking capital structure and corporate governance to market valuation are diverse. These include the Modigliani and Miller theory, agency theory and pecking order theory, among others. and market timing theory. In particular, Modigliani and Miller's (1958) theory is based on assumptions. The first assumption is that a firm's value is unaffected by its capital structure while the second assumption is that the cost of equity increases linearly with leverage, resulting in a constant weighted average cost of capital. Modigliani and Miller (1963) further explained that in a perfect market characterized by no taxes, bankruptcy costs, or information asymmetries, the value of a firm is unaffected by its capital structure. In other words, whether a firm is financed by equity or debt does not influence its overall value. While the Modigliani-Miller theorem provides a valuable framework for understanding the relationship between capital structure and firm value, it has also faced criticism. One of the main criticisms is that the assumptions of perfect capital markets and equal borrowing rates are unrealistic.

In addition, Jensen & Meckling (1976) introduced the agency cost theory which assumes that individuals act in their self-interest, which can lead to misaligned incentives between owners and managers. This often results in agency costs, defined as the expenses incurred by the principal in monitoring and incentivizing the agent to act in the principal’s best interest. According to agency theory, the choice of funding can reduce agency issues in line with capital structure. Jensen (1986) posits that higher levels of debt create a discipline in management by imposing mandatory interest payments, thereby reducing the amount of free cash flow available to managers for potentially wasteful or non-optimal investments. Unlike the agency cost theory, Myers & Majluf (1984) developed the pecking order theory which outlines a hierarchy of financing preferences available to firms. Essentially, the theory assumes that firms prefer to use retained earnings first, then debt, and finally, external equity as a last resort. This preference

arises because managers possess better information about the firm's prospects than outside investors, which can lead to adverse selection. Shyam-Sunder and Myers (1999) found evidence to justify the propositions of the pecking order theory by establishing that firms tend to prefer internal financing and rely on debt before considering issuing new equity. Despite the popularity of this theory, Graham and Harvey (2001) found that managers often cite market conditions and the costs associated with various financing options as key determinants in their capital structure decisions without strictly adhering to the pecking order.

2.2 Empirical Literature

Olanlokun & sholola (2019) examined the impact of corporate governance on the quality of corporate value in Nigeria between 2006 and 2015. The datasets were obtained from the Annual Report of Financial Statements of thirteen manufacturing companies quoted in the Nigerian Exchange Group. The findings showed that board size and board composition adversely affected the quality of corporate value while the audit committee had a positive significant effect on corporate performance in Nigeria. Given the findings, the study recommends an improvement in corporate governance to create more opportunities for better corporate value. Similarly, Okonkwo, Azolibe & Nwadibe (2019) analyzed the effect of corporate governance on the performance of fifteen banks in Nigeria between 2006 and 2018. The Granger Causality test was applied to determine the direction of causality and the results showed that the board audit committee has a positive relationship with net profit margin while board composition affected revenue growth and profitability negatively.

Pandey and Sahu (2017) empirically investigated the impact of capital structure and ownership structure on the accounting performance of Indian manufacturing firms listed and traded on the Bombay Stock Exchange (BSE). The study employed panel data analysis using the fixed effects regression model and the results showed evidence of a significant negative effect of capital structure on the accounting performance of the sampled firms. However, a positive and significant impact of almost all forms of ownership structure on firms' accounting performance was established from the results. In their studies, Musa, Abubakar and Garba (2020) analyzed the Impact of dividend policy on the financial performance of consumer goods companies in Nigeria. The data were analyzed using multiple regression analysis and the result showed that dividend per share has a positive with a significant and insignificant relationship on return on assets and return on equity respectively. The dividend payout has a negative and insignificant

relationship with the return on assets. The study recommended that managers should ensure that their organizations have a good dividend policy that encourages higher dividends per share.

Vihi, Abu & Iortima (2019) investigated some aspects of corporate governance mechanisms on earning management in Nigeria between 2013 and 2017. Descriptive statistics and multiple regression were used for analysis. The individual variables showed that board composition does not significantly affect the earnings management of the sampled firms. Ownership concentration has a positive and significant relationship with cash-based earning management. The interaction of board concentration and board composition demonstrated a positive and significant relationship with cash-based earning management. This is similar to the findings of Kantudu and Samaila (2015) who employed multiple regression analysis for data analysis and established that power separation, independent directors, managerial shareholdings and independent audit committees influence the valuation of quoted firms.

3. Methodology

3.1 Research Design

This study employed a quasi-experimental research design approach for the data analysis. This was necessitated by the fact the data required for this study cannot be manipulated.

3.3 Model Specification

The model set up for this study is patterned after the works of Chibuike, Amahalu, & Samuel (2023), Lawal *et al.* (2014) and Mbu-Ogar, Effiong & Abang, (2017) with some improvements following the integration of capital structure and corporate governance indicators in the model. The functional form of the model is specified as:

$$VST = f(DC, EF, BS, BR, AC) \quad (1)$$

Where: VST = Value of shares traded, DC = debt capital, EF = equity financing, BS = board size, BR = board representation and AC = audit committee

The pooled regression, random effects model and random effects model are specified as follows:

i. Pooled Regression Models

$$VST_{it} = \beta_0 + \beta_1 DC_{it} + \beta_2 EF_{it} + \beta_3 BS_t + \beta_4 BR_{it} + \beta_5 AC_{it} + \varepsilon_{it} \quad (2)$$

Where: β_0 = common intercept, B_i– β_5 = slope parameters and ε_{it}= error term, *i = 1, . . ., N. t = 1, . . ., T,* i = cross-sectional units which define the 30 manufacturing firms and t = time frame (1990 to 2023)

ii. Fixed Effects Models

$$VST_{it} = \beta_0 + \beta_1 DC_{it} + \beta_2 EF_{it} + \beta_3 BS_t + \beta_4 BR_{it} + \beta_5 AC_{it} + U_i + \varepsilon_{it} \quad (3)$$

Where: U_i= fixed effects (individual effects) and ε_{it} = Random disturbance term

iii. Random Effects Models

$$VST_{it} = \beta_0 + \beta_1 DC_{it} + \beta_2 EF_{it} + \beta_3 BS_t + \beta_4 BR_{it} + \beta_5 AC_{it} + U_i + v_{it} \quad (4)$$

Where: U_i= Random effects (individual effects) and v_i= Remainder disturbance term

3.4 Method of Data Analysis

Descriptive statistics of mean and standard deviation were applied in this study to explain the distribution of each of the variables for the selected 30 manufacturing firms over the study period. The variables were subjected to a panel unit root test to ascertain their stationary status. Specifically, Im-Pesaran-Shin (IPS, 2003) panel unit root test method was utilized to test the null hypothesis of unit root among each of the variables at the 5% level. More importantly, the least squares method formed the basis for estimating the pooled regression while the least squares dummy variable (LSDV) estimator was relied upon for estimating the fixed effects model. Mundlak (1961) introduced fixed effects estimates, particularly the one-way error component model, in situations where the slope coefficients are homogeneous but the intercept coefficients are heterogeneous because of individual units. The choice of the appropriate model between the fixed and random effects results was decided using the Hausman (1978) test results.

4. Findings and Discussion

4.1 Descriptive Statistics

The descriptive statistics for the variables for each of the firms are summarised in Table 1

Table 1: Summary of descriptive statistics for the selected firms

Variable	Obs	Mean	Std. Dev.	Min	Max
VST	450	170.23	239.588	1.02	992.09
DC	450	24.86	53.42	0	402.3

EF	450	25.019	59.78	-78.04	832.4
BS	450	9.6377	2.4440	5	17
BR	450	7.3511	2.4287	1	14
AC	450	5.924	.9688	4	10

Source: STATA 17 output

The results of the descriptive statistics showed that the value of shares traded, debt capital and equity financing averaged 170.23, 0.0889 and 24.86, respectively. This indicates that the value of the selected manufacturing firms witnessed impressive growth during the study period. The result showed that Board size (BS) averaged 9.6377 and fluctuated between positive minimum and maximum values of 5 and 17 respectively. The standard deviation (2.4440) for board size is less than the corresponding mean value indicating that the observations for board size over the study period clustered around its mean. The result further showed that the mean value of board representative (BR) stood at 7.3511, having minimum and maximum values of 1 and 14 respectively. The audit committee averaged 5.924 with minimum and maximum values of 4 and 10 respectively. The standard deviation for audit committee (0.9688) is less than the corresponding mean value, indicating that the observation for the audit committee during the study period clustered around the mean.

4.2 Panel Unit Root Test Results

The IPS panel unit root test method was applied in this study to ascertain whether the variables are stationary or not at the 5% significance level. The results are presented in Table 2.

Table 2: Summary of IPS panel unit root test results

Variable	Levels test results	1st diff. test results	Order of integration
VST	-4.048*** (0.0000)	-	I(0)
DC	-3.7398*** (0.0001)	-	I(0)
EF	-5.687*** (0.000)	-	I(0)
BS	-1.968** (0.0245)	-	I(0)
BR	-5.413** (0.0000)	-	I(0)
AC	-2.213** (0.0247)	-	I(0)

Source: STATA 17 output

Note: *** p<0.01, ** p<0.05, * p<0.1 denote significant at 1%, 5% and l0% level respectively

The IPS panel unit root test results showed that the value of shares traded is stationary. This is based on the fact that the corresponding probability value (0.0000) of the test statistic is less than 0.05. Consequently, the value of shares traded is integrated of order zero, I(0). In addition, the IPS unit root test results showed that debt capital and equity capital are integrated are stationary. This is based on the fact that the probability values of their test statistics at levels is less than 0.05. Similarly, the results showed that board size and board representative are stationary, indicating the observations for the two variables are reliable in predicting changes in each of the dependent variables. This finding also provides the basis for rejecting the null hypothesis of unit root in each of the variables. The results further showed that the data for the audit committee is stationary. The stationarity of this series was established at the 5% significance level given that the probability values of their test statistics at levels is less than 0.05. This provides the basis for rejecting the null hypothesis of unit root. In sum, the IPS unit root test results showed that all the variables are stationary and integrated of order zero, I(0). This further attest that the variables are naturally cointegrated.

4.2.4 Model Estimation

The pooled regression, fixed and random effects results were estimated alongside their diagnostics test. The results are presented in Table 3.

Table 3: Panel regression and Hausman test results

Dependent variable: VST			
	(1)	(2)	(3)
Variables	(POLS)	(FE)	(RE)
DC	0.852***	0.601**	0.641***
	(0.224)	(0.236)	(0.226)
EF	-0.294	-0.289	-0.301
	(0.204)	(0.209)	(0.198)
BS	-0.102	-11.06	-8.448
	(7.736)	(9.937)	(9.086)
BR	-12.56	6.588	1.327
	(7.743)	(10.29)	(9.336)
AC	-19.79*	4.243**	-5.465
	(11.51)	(1.014)	(17.12)

Constant	367.0***	195.5	265.9**
	(84.82)	(146.7)	(123.0)
Observations	450	450	450
R-squared	0.4468	0.5230	0.5369
F-test	4.36		
Prob.(F-stat.)	0.0007		
Number of crossid		30	30
F-test(u_i=0)		6.23	
Prob.>F-(u_i=0)		0.0000	
Chi-square(var(u_i=0))			10.15
Prob.> chi2(var(u_i=0))			0.0712
Hausman test results	Chi2(4) = 2.17		Prob>chi2 = 0.0416

Source: STATA 17 output

Note: *** p<0.01, ** p<0.05, * p<0.1 denote significant at 1%, 5% and l0% level respectively

The Hausman test result was employed for deciding the appropriate results between the estimated fixed effects and random effects results. As observed from the Hausman test results, the probability value (0.0416) of the Chi-square statistic (2.17) is less than 0.05, indicating that the null hypothesis is rejected at the 5% significance level. This implies that the fixed effects results were considered better than the random effects results. Thus, the interpretation of the results is based on the fixed effects results. Specifically, the fixed effects results showed that debt capital has a positive and significant effect on the value of shares traded. This finding suggests that an increase in debt capital creates plays a critical role in improving the value of shares of the quoted firms. This finding is contrary to the results of Lawal, Edwin, Monica, and Adisa (2014) who reported debt capital is negatively associated with the performance of the quoted firms. The implication of this finding is that debt capital is an important source of external financing for manufacturing firms which provides a pathway for long-term investments. Contrary to this finding. there is a negative effect of equity capital and board size on the value of shares traded. The negative effect of equity capital does not conform to the theoretical expectations and the previous findings of Chibuike, Amahalu and Samuel (2023) who reported that equity capital positively affected the valuation of the firms.

Furthermore, the negative effect of board size on the value of shares traded is following the findings of Martins and Osemudiamen (2019) who reported that board size negatively affected the total assets of firms. This finding could be linked to the increased costs associated with the increase in the board size. Additionally, the results revealed that board representation and audit

committees contributed positively to the value of shares traded. The significant positive contribution of the audit committee on the value of shares traded is noteworthy as it indicates that the audit committee play an important in enhancing the performance of quoted firms. This finding is following the results of Mbu-Ogar, Effiong and Abang (2017) who reported that the audit committee is significant in promoting the market value of listed firms in Nigeria. The fixed effects result is associated with an R-squared of 0.5230. The implies that independent variables jointly explained 52.3% of the total variations in the total value of shares traded. This finding is a pointer that the estimated fixed effects model is a good fit. More so, the probability value (0.0000) of the F-statistic is less than 0.05. This suggests that the fixed effects model is a good fit. This finding attests to the statistical reliability of the estimated fixed effects model for policy formulation and forecast.

5. Concluding Remarks

This study examines how capital structure and corporate governance affected the valuation of quoted firms in the Nigerian Exchange Group. This followed the understanding that the interplay between capital structure and corporate governance plays a critical role in determining the market value of firms in developing economies including Nigeria. The findings showed that debt capital significantly improved the value of shares traded, indicating that an increase in debt capital creates an opportunity for improving the value of shares traded during the study period. On the contrary, there is a negative implication of equity capital and board size on the value of shares traded. This finding suggests that access to equity capital and an increase in board size have not translated into an increase in the value of shares traded. The results further showed that the audit committee significantly improved the value of shares traded. This highlights the effectiveness of auditing in determining the performance and sustainability of firms. Owing to the findings, this study concludes that capital structure and corporate governance, audit committees are pivotal to the market liquidity of manufacturing firms in Nigeria. Hence, this study recommends that that the management of the quoted manufacturing firms should prioritise long-term debt to enhance the market liquidity of manufacturing firms. Again, the management firms should ensure that board representation is diversified to include various segments of the firms while prioritising expertise and integrity in the selection of the audit committee to ensure that quality decisions are achieved to improve the market liquidity of the firms.

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