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CAPITAL STRUCTURE AND LIQUIDITY OF LISTED MANUFACTURING FIRMS IN NIGERIA

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Abstract

Since the inception of the global economic and financial crises experienced by many economies over a decade, and the current Covid-19 pandemic crises, there has been a major decline in the flow of finance which leads to instability to manufacturing firms. Organizations have been actively considering various factors that can foster and enhance the financial stability of the firms even amidst several uncertainties. This study was carried out to examine the effect of capital structure on liquidity of listed manufacturing firms in Nigeria. The study employed the ex post facto research design and sampled 16 out of the 20 manufacturing firms listed on the Nigerian Stock Exchange as at 31st December 2019; the data covered ten (10) years from 2010 to 2019, giving a total of 160 firm year observations. However, the study found that capital structure has a significant effect on Liquidity ($Adj. R^2 = 0.29$, $F(2, 157) = 32.97$, $p = 0.000 < 0.05$) and concluded that capital structure significantly affects the Liquidity of listed manufacturing firms in Nigeria.

Keywords: Capital structure, Debt, Equity, Financial stability, Liquidity

Introduction

Campello, Graham, and Harvey (2010) state that during the financial crisis the growth opportunities for many firms were affected negatively since it became harder to acquire external funding. Capital structure is the composite of borrowed fund and owner's fund that adds up to total capital employed of the business organization (Ruri & Omagwa, 2018). Corporate managers need to be cautious when determining the ratio of borrowed fund and owner's fund. Capital structure decisions are of great significance when considering the factors that affect performance of a firm (Ardalan, 2018).

Among the many decisions accomplished by financial managers the one rated as most significant is on capital structure. The composition of capital employed can affect the firm's value and optimality of financing cost. The management core objective is to maximize equity owner's wealth, cutting cost to the minimum and acting within the legal frames

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governing the establishment of the firm. To ensure minimum cost of capital is maintainable, the determining factor will be an optimum capital structure. Current and prospective investors tend to gather and analyze firms' information to understand the operations. Agency costs, according to agency theory can be reduced by ownership and optimal capital structure (Yusuf, Mwakubo, & Mwakachola, 2019).

According to Akintoye (2008), capital structure is the debt-equity mix of business finance. It is used to represent the proportionate relationship between debt and equity in corporate firms' finances. Therefore, in this context, the composition of equity and debt in a firms' capital is what we mean by capital structure. This is in line with the definition Akintoye, (2016) as a mixture of debt and equity financing of a firm. An optimal capital structure is the best debt/equity ratio of a firm, which minimizes the cost of financing and maximizes the value of the firm. Also, capital structure is the composite of borrowed fund and owner's fund that adds up to total capital employed of the business organization (Ruri & Omagwa, 2018). A key decision made by firms is the selection of the components of their capital structure which is defined as "the mix of debt and equity maintained by the firm" (Gitman & Zutter, 2012).

Capital structure is one of the effective tools of management to manage the cost of capital. A firm's capital structure has an important influence on the financial performance and firm efficiency Ghosh, (2008); Margaritis and Psillaki, (2007). A firm could increase or decrease its leverage by either issuing more debt to buy back stock or issuing stock to pay debt. The objective of managing capital structure is to mix the financial sources used by the firm in a way that will maximize the shareholder's wealth and minimize the firm's cost of capital. This proper mix of funds sources is called optimal capital structure. The proportion of debt funding is measured by gearing or leverages. There are different factors that affect a firm's capital structure, and a firm should attempt to determine what its optimal, or best, mix of financing. But determining the exact optimal capital structure is not a science, so after analyzing a number of factors, a firm establishes a target capital structure which it believes is optimal.

Empirical literature on the relationship between capital structure and financial stability of listed manufacturing in Nigeria remains scanty, limited and unclear. In the same vein, the empirical evidence on capital structure and firm performance particularly in Nigeria is scanty (Salawu & Agboola, 2008; Onalapo & Kajola 2010). Capital structure is associated with the capacity of the business being able to meet the interest of investors and also important for any business establishment arising from the need to maximize the wealth of business stakeholder (Dada & Ghazali, 2016).

In the same vein, Spulbăr and Nițoi (2012) concluded that financial stability does not have a keen definition, a model or an analytical framework of assessment. Manufacturing firms in the commercial sector are vital to nearly all economies in the world, particularly to those in evolving countries those that their main challenges are employment and income distribution (Maina, 2014). More so, the few studies do not provide analyses of the dynamic relationship between capital structure and firm performance and specifically on firm stability.

Literature Review

Theoretical Review

This study adopted Modigliani and Miller theory and trade off theory of leverage.

Modigliani and Miller's Trade off Theory

The Modigliani and Miller (MM) theory proves that under a very restrictive set of conditions, a firm's value is unaffected by its capital structure which implies that the financing choice of firms is irrelevant. Modigliani and Miller come to this conclusion under the following assumptions:

- Firms with the same degree of business risk are in a homogenous risk class
- Investors have homogenous expectations about earnings and risks
- There is an existence of perfect capital markets
- Interest rate on debt is the risk-free rate and
- All cash flows are perpetuities

The trade-off theory is a financial theory based on the work of economists Modigliani and Miller in the 1950s, two professors who studied capital structure theory and collaborated to develop the capital-structure irrelevance proposition. This proposition states that in perfect markets, the capital structure a company uses doesn't matter because the market value of a firm is determined by its earning power and the risk of its underlying assets. (Modigliani and Miller, 1963) Modigliani and Miller challenge the traditional view as to the effect of leverage on the cost of capital. They develop a behavioural justification support for the net operating income approach. Without taxes, the cost of capital and market value of the firm remain constant throughout all degrees of leverage (Modigliani and Miller, 1958).

Trade off Theory of Leverage

According to the static trade off models, the optimal capital structure does exist. A firm is regarded as setting a target debt level and gradually moving towards it. The firm's optimal capital structure will involve the tradeoff among the effect of corporate and personal taxes, bankruptcy costs and agency costs. Both tax-based and agency-based theories belong to the static tradeoff theory (Jensen and Meckling, 1976; Chang, 1999). It has been established that the tax advantage is most important for large, regulated and dividend-paying firms – companies that probably have high corporate tax rates and therefore large tax incentives to use debt (Graham and Harvey, 2001).

Criticizing the theory, One important aspect to rise regarding trade-off theory is the fact that the theory assumes that every company should have an optimal capital structure (Kraus & Litzenberger, 1973; Myers, 1984). However, critics show that the theory does not explain the optimal level of debt and equity in detail. The statement is basically that one can reach the optimal level by balancing potential benefits and costs of debt financing, which can be considered as a vague reasoning. On these matters Sheikh and Wang (2012) argue that even though there is huge amount of research within this field, still no specific method is developed for managers to determine the optimal capital structure.

Relevance of the theory to the study connotes, according to the trade-off theory every company should have an optimal capital structure. The reasoning behind the statement lies in the trade-off between the potential benefits and costs of debt financing (Kraus & Litzenberger, 1973; Scott, 1976; Myers, 2001). As Modigliani and Miller (1963) recognize, firms can benefit from leverage due to the interest deductibility of pre-tax income. In other words, there is a tax shield to take advantage of since interest expenses reduce the taxable income and allow firms to collect tax savings (Graham, 2000). A positive impact of leverage on firm value is further proved by Masulis (1980). Debt financing is associated with a commitment for upcoming cash outflow due to the required future

interest payments on debt. Therefore, interest payments negatively affect firms' liquidity and financial performance, which increases the financial risk in terms of bankruptcy and insolvency (Myers, 1984; Ross, Westerfield & Jaffe, 2013).

Conceptual Review

Capital Structure

Capital structure (or financial structure) of an organization is a mixture of debt and equity the organization uses to finance its operations. Capital structure decisions are crucial for the survival of any business organization (Abor, 2004). Al-Zoubi, Jennifer and Abdulaziz (2018) contended that the choice of capital structure is fundamentally a marketing problem. They argue that the organization can issue dozens of distinct securities in countless combinations but it ultimately attempts to find the particular combination that maximizes market value.

Ardalan, (2018) opines that financial capital includes debt and equity. According to him this is known as capital structure. Devereux, Michael, Giorgia, and Jing Xing (2018) states that the most relevant capital structure theories which explain the capital structure of small and medium enterprises (SMEs) are those related to static trade-off, furthermore, adverse selection and moral hazard (agency theory) and the pecking order theory. According to Andree and Kallberg (2008) the genesis of modern capital structure theory lies in the work of Modigliani and Miller (1958) in their famous proposition I – often referred to as the “irrelevance theorem”.

Oyedokun and Somoye (2018) states that the various components of the capital of a firm are as to the amount set aside for the establishment and running of a business organization, these include: Owners Capital; Borrowed Capital; and Working Capital. Olowe (2008) opined that one of the underlying assumptions of capital structure is that the firm employs only two sources of financing: equity and debt and the value of the firm are derived by the value of debt plus the value of equity. This is supported by Van Horne and Wachowicz (2005) that capital structure is a mix or proportion of a firm's long-term permanent financing represented by debt, preferred stock and common stock equity. Further, the study noted that a method of analyzing the appropriate financing mix for a company is to evaluate the capital structure of companies having similar business risk. Companies used in this comparison are most of those in the same industry; this assumption is a good support for our study on the assessment of the best range of capital mix at which cost of capital will be minimizes resulting in profit maximization at the short run and financial stability at the long run manufacturing firms in Nigeria.

Ghose (2017) explains capital structure in terms of a levered firm who finances its assets by the issue of equity and debt securities. He states further that the value of the firm is the sum of the value of all its securities. Adeyemi and Oboh (2011) states the four major elements of capital structure as: equity, preference share, retain earnings and debenture and all these elements are professionally classified as debt and equity. Kennon (2010) referred to capital structure as the percentage of capital (money) at work in a business, stating the two forms of capital as equity capital and debt capital. Stating further, each form of capital has its benefits and drawbacks while significant attempt is made by wise corporate steward (management), in an attempt to finding the best mix of capital that will reduce risk and increase the reward of payoff for shareholders. By implication, borrowed capital also has its risks just as equity capital. Saad, (2010) purported capital structure to

refer to the firm's financial framework consisting of debt (borrowed) capital and equity capital which is contributed by the business owners use to finance the firms.

Adkins (2012) added that a firm needs the of debt capital in order to operate its business. For most firms, financial capital is raised by issuing debt securities and/or by selling common stock. According to him the amount of debt and equity that makes up the firm's capital structure has many risks and return implications. Therefore, management has an obligation to use a thorough and prudent process for establishing a firm's target leverage. Adding that the capital structure is how a firm finances its operations and growth by using different sources of funds.

Liquidity

Liquidity refers to the convenience with which an asset, or a security, may be converted into ready cash without affecting its selling price. Liquidity refers to a bank's ability to fund asset growth and meet obligations as they become due without incurring unacceptably high losses (Gadanecz & Jayaram 2008).

Empirical Review

Lipson, and Mortal, (2009) studied Liquidity and capital structure. The study found that firms with more liquid equity have lower leverage and prefer equity financing when raising capital. For example, after sorting firms into size quintiles and then into liquidity quintiles, the average debt-to asset ratio of the most liquid quintiles is about 38% while the average for the least liquid quintiles is 55%. Similar results are observed in panel analyses with clustered errors and using instrumental variables. The results are consistent with equity market liquidity lowering the cost of equity and, therefore, inducing a greater reliance on equity financing.

Denčić-Mihajlov, Malinić, and Grabiński, (2015) carried out a study on Capital structure and liquidity during the financial crisis in Serbia: implications for the sustainability of the economy. This article employs a new database containing the accounting data from 108 Serbian-listed companies to document the peculiarity of the relationship between liquidity and capital structure characteristics during the crisis period (from 2008 to 2011). The study found a significant negative impact of the quick ratio, the cash gap and the revenue quality on leverage and a positive and statistically significant impact of the free cash flow variable and its volatility on leverage. The main finding of this research, relevant to both firm managers and policy makers, is that during the crisis period companies transferred a significant part of the financing burden to their suppliers. Since suppliers are exposed to similar problems during a crisis, the problem of liquidity spirals and the risk of bankruptcy threaten both individual companies and the whole economy.

De Miguel and Pindado (2001) in the study of the leverage of Spanish firms, analyse cash flow and free cash flow as target debt level determinants. The results of the study confirm the expected inverse relationship between debt and cash flow, which indicates that cash flow is preferred to the use of debt as a source of financing. This preference originates from an attempt to avoid underinvestment when firms face major problems of asymmetric information. The test of free cash flow theory does not confirm the expected positive relationship between free cash flow and debt.

In the recent study by Mateev, Poutziouris, and Ivanov (2013), a negative relationship between net cash flow and leverage offers evidence for the validity of pecking order theory, which predicts that more profitable firms tend to use less debt for financing their activities. The importance of studying firm leverage-cash flow determinants and capital structure decisions in a developing economy is also highlighted by Mustapha and Chyi

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(2012), who investigate the Malaysian capital market. The study indicates that there is no significant relationship between leverage and operating cash flow, which is explained by the specific financing style in developing countries, the effect of the ease of access to external funds at low cost, and firms' financial flexibility to issue new debt rather than being dependent on internal funds.

Anderson, and Carverhill, (2012) in the study corporate liquidity and capital structure solve for a firm's optimal cash holding policy within a continuous time, contingent claims framework using dividends, short-term borrowing, and equity issues as controls assuming mean reversion of earnings. Optimal cash is non-monotone in business conditions and increasing in the level of long-term debt. The model matches closely a wide range of empirical benchmarks and predicts cash and leverage dynamics in line with the empirical literature. Firm value is quite insensitive to changes in the level of long-term debt. The model has interesting implications for asset substitution, hedging, and pecking order. Growth opportunities do not greatly affect cash holding policy.

Sharma and Paul (2015) carried out a study on Does liquidity determine capital structure? Evidence from India and explored the relationship between liquidity of a firm's equity and its capital structure. Firms with more liquid stocks benefit from lower costs of equity issuance. Therefore, it is hypothesized that such firms are likely to have a preference for equity in their capital structure. This article empirically investigates the relationship between liquidity and capital structure decisions on a sample of Indian firms. Contrary to the existing literature, we find no empirical evidence for an inverse relationship between liquidity and leverage among Indian firms. The results are indicative of the fact that due to distinctive features of emerging markets, namely, less sophisticated capital markets, higher information asymmetry, concentrated ownership, constrained access to debt and prevalence of family owned businesses; there are other more significant determinants of capital structure that subsume the explanatory power of liquidity variables.

Frieder and Martell (2006) found evidence of bidirectional causality between liquidity and capital structure on a sample of the US firms. The study observed that leverage increases when there is a decrease in liquidity (measured by bid-ask spreads). There is considerable empirical evidence that documents a negative relationship between stock returns and liquidity. The proposed rationale for this relationship is that the stock's liquidity provides an important cost advantage to the issuers.

Ghasemi, and Ab Razak, (2016) studied the impact of liquidity on the capital structure: Evidence from Malaysia. This study investigates the effect of liquidity on the capital structure among the 300 listed companies in the Main market of Bursa Malaysia from 2005 to 2013 fiscal years. Pooled OLS is applied to investigate the impact of liquidity ratios on different Debt ratios. Liquidity of a company, which is the independent variable of this study, is measured by two common ratios which are: quick ratio and current ratio. Additionally, the Debt/Equity and Debt/Asset ratios represent the capital structures based on the short-term, long-term and total debt. The results show that all the measures of liquidity have significant impacts on all the proxies of leverage. According to the results, Quick ratio has a positive effect on leverage; although, Current ratio is negatively related to leverage. Moreover, short-term debt is more influenced by liquidity compared to long-term debt.

Šarlija and Harc (2012) investigated the effect of asset liquidity on the capital structure based on a sample of 1058 listed firm in Croatia. Findings showed that there were statistically significant correlations between leverage ratios and liquidity ratios.

Moreover, there were statistically significant correlations between the structure of current assets and leverage ratios. The relationship between liquidity ratios and the short-term leverage is stronger than between liquidity ratios and the long-term leverage. The study concluded that the more liquid assets firms have, the less they are leveraged. Long-term leveraged firms are more liquid. Increasing inventory levels leads to an increase in leverage. Furthermore, increasing the cash in current assets leads to a reduction in the short-term and the long-term leverage.

Akinlo (2011) investigated the determinants of capital structure among 66 listed firms on the Nigerian stock Exchange over eight years from 1999 to 2007 by using panel data. The findings revealed that leverage was positively related to liquidity. The findings confirmed that the positive correlation between leverage and liquidity is consistent with Trade-Off Theory. Ahmad and Aris (2015) investigated determinants of capital structure in trading and service industry in Bursa Malaysia during 2007 to 2011. Their finding indicates a significant negative effect of liquidity on debt decision in companies.

Wahab, Amin and Yusop (2012) attempted to investigate the determinants of capital structure of Malaysian property developers. The study investigated 10 public listed Malaysian property developers. In other words, there are 10 samples included in the study. The 10 samples then were divided equally into two different samples. The two samples were top five developers and bottom five developers. The samples in the study were included to the availability and continuity of published financial statements during the period of 2001 -2010. Variables used for the analysis include debt ratio as the dependent variable, profitability, non-debt tax shield, tangibility, growth opportunity and liquidity as the explanatory variables. The data was analyzed by using IBM SPSS statistics to do descriptive statistics and regression analysis. The study showed that only profitability and tangibility are significant in explaining variation in leverage of the top five developers while non-debt tax shield, growth opportunity and liquidity are insignificant in explaining variation in leverage of the top five developers. The study also showed that all of the explanatory variables are insignificant in explaining variation in leverage of the bottom five developers. However, Ume and Niaz (2012) determined the capital structure of listed firms in the Food & Personal Care Industry of Pakistan. The study covered the sample of 16 firms in the sector, listed at the Karachi Stock Exchange, for the period 2001 – 2008 and analysed the data by using pooled regression adjusted with cross sectional variation. Six variables, that is; firm size tangibility of assets, profitability, growth, tax rate and earning volatility were test as determinants of the leverage. The regression model was found to be significant and these six variables determined 89% of leverage. Only two variables-growth and size of firms were found significant and have positive relationship with leverage. So, capital structure of firms in F & PC industry mainly depends upon their sizes and growth opportunities.

Methodology

The population of this study consists of all twenty (20) consumer goods manufacturing companies listed on the Nigerian Stock Exchange (NSE) as at December 31st, 2021. The Sixteen (16) manufacturing companies were selected by Purposive sampling techniques. A purposive sampling also referred to as a judgmental or expert sampling, is a type of nonprobability sample. The main objective of a purposive sampling technique is to produce a sample that can be logically assumed to be representative of the population. Ten (10) year financial data of manufacturing companies (2010 – 2019) were under studied. Selecting an appropriate sample size is a critical aspect in research with particular reference

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to this study. This represents 160 firm-year observations, as the elements of the population or sample size.

Method of Data Collection

The secondary data extracted contain information from the audited accounts and published annual reports of the companies to be sampled for this study. For proper presentation of results, relevant information required from the annual reports were extracted from the statements of profit and loss, financial position statement detailing assets and liabilities of companies, statement of changes in equity and cash flow statement for the period covered by the study. The data gathered was subjected to test of validity and reliability.

The dependent variable for this study was Liquidity while the independent variable was Capital Structure

Functional Relationship

LT = f(DR,EQT)....Equation

Where:

LT = Liquidity

DR = Debt Ratio

EQT = Equity Ratio

Results

Descriptive Analysis

This section provides an overview on the data set while attempt is also made to describe the main attributes of the data sets. The descriptive analysis of the panel data obtained was done through descriptive statistics shown in Table 1. The statistics were mean, maximum, minimum, and standard deviation, skewness, kurtosis, Jarque-Bera and probability values of capital structure variables and liquidity.

Table 1: Descriptive Statistics

Variable	DER	DR	EPS	DPS	LIQ
Mean	2.4689	60.704 2.4724	3.253	2.4962	1.1554
Std. Dev	19.0106	24.337 32.48	8.5048	7.7706	0.5920
Min	-118.68	4.284	-3.23	0	0.0681
Max	202.90	224.11	57.63	61.821	3.0429

Source: Researcher’s Computation (2021)

The statistical properties of the variables are highlighted in Table 1; and the emphasis here is on the mean, minimum, maximum and measures of dispersion of the variables involved in this study. The mean and standard deviation of the debt-to-equity ratio shows a high fluctuation with 2.4689 and 19.0106 which is also confirmed by the ratio being at a minimum of -118.68 and a maximum peak at 202.90 within the period covered in this study.

The debt ratio in this study showed a fluctuation between the mean and standard deviation of 60.704 and 24.337 which could also be confirmed with the minimum and

maximum values of 4.284 and 224.11 which shows that the debt ratio was relatively low within the years of the study.

Also, the descriptive analysis showed that liquidity has been at a fluctuation of its mean and standard deviation of 1.1554 and 0.5920 and its least of 0.068 and at its peak at 3.0429 of its liquidity within the period covered in this study.

The mean and standard deviation of growth of 21.593 and 112.98 showed a relatively high level of fluctuation and also the minimum value of growth is -90.701, and the maximum value of the growth of the firm is 1354.2 shows that the firms have grown relatively during the period of this study.

Table 2: Test of Hypothesis

	MODEL			
	POOLED OLS WITH CLUSTER STD.			
Variable	Coeff	Std.Err	t-	Prob
Constant	1.9481	0.1065	18.2	0.000
DR	-0.0129	0.0016	-7.93	0.000
DER	-0.0023	0.0020	-1.10	0.272
Size	-	-	-	-
Age	-	-	-	-
Growth	-	-	-	-
Adj. R ²	0.29			
F-Stat	F _(11, 133) = 0.52			
Probability of F-Stat	0.8901			
Hausman Test	chi ² ₍₂₎ = 60.36(0.000)			
Testparm Test	F _(9, 133) = 0.54(0.8406)			
Heteroskedasticity	chi ² ₍₁₎ = 8.76(0.0031)			
Serial Auto-	F _(1, 15) = 43.584(0.000)			
Pearson's test	0.623(0.5335)			
Breusch and pagan LM	274.76(0.000)			

Dependent Variable: LQ

Source: Researcher's Computation (2021)

Diagnostic Tests

Hausman tests for both models determining the most appropriate estimating technique between Fixed Effect and Random Effect were conducted at significance level of 5 per cent; The results of the tests with p -values of 0.00, and 0.00 being lower than the 5 per cent level of significance chosen for the study reveal that Fixed Effect is the most appropriate estimator according to its null hypothesis which states that there is presence of unsystematic difference in the model coefficients; thus, the study does reject the null hypothesis. The confirmatory tests on the results of Hausman tests were conducted using Testparm Test. This was done to determine the most appropriate estimating technique between the Fixed Effects and Pooled OLS, with null form of "no panel effect" that is "no significant difference across units". The results with p -values of 0.84, and 0.82 negate the results of the Hausman test, thus confirmed the inappropriateness of the Fixed Effect that there is no panel effect for both Models; therefore, Pooled OLS is the most appropriate and was used for the analyses of both model one and model two.

Breusch-Pagan/Cook-Weisberg Test with p -values of 0.00 and 0.00 indicated that there is presence of heteroskedasticity problem in both models, which implies that the variations in the residuals of the model over the period "t" in both models are trending. The

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existence of associations among the coefficients of the model and its residuals were tested using Wooldridge test for serial autocorrelation as an unhealthy association result to the error terms being smaller than expected and the co-efficient of determination being higher than normal. The statistics derived with p-values of 0.000 and 0.0001 negate the null hypothesis which states that there is no first order autocorrelation. This implies that there is autocorrelation problem among the series in both models.

Based on the results of the diagnostic tests carried out; both Model two and Model five are estimated using Pooled Ordinary Least Square with Cluster Standard Errors.

$$LQ_{it} = \alpha_0 + \alpha_1 DR_{it} + \alpha_2 DER_{it} + \epsilon_{it} \dots \dots \dots \text{Model}$$

$$LQ_{it} = 1.9481 - 0.0129_{it} - 0.0023_{it} + \epsilon_{it} \dots \dots \dots \text{Model}$$

Interpretation

The result of regression model presented in table 2 (model) evidenced that debt ratio has a negative and significant effect on Liquidity (LQ) ($\alpha = -0.19481$, $\rho = 0.000$), a unit increase in debt ratio would result to 94.81% increase in LQ; while Debt to equity ratio negatively and insignificantly affects the Liquidity (LQ) with ($\alpha = -0.0023$, $\rho = 0.272$). A unit decrease in debt-to-equity ratio would result to 23% increase in DPS while the remaining 77% are variables not captured by the model.

Decision

Based on the significance of the probability of the F-test, with p-value of 0.8901 which is higher than the chosen level of significance for this study at 5%, therefore, this study accepts the null hypothesis which states that capital structure does not significantly affect Liquidity of manufacturing firms in Nigeria.

Conclusion

This study examined the effect of capital structure on Liquidity of manufacturing companies listed on Nigeria stock exchange. The study revealed that capital structure has significant effect on liquidity of manufacturing companies listed on Nigeria Stock Exchange. Therefore, the study concluded that there is a significant effect on liquidity of manufacturing companies listed on Nigeria Stock Exchange.

Recommendations

This study examined the effect of capital structure on Liquidity of manufacturing companies listed on Nigeria stock exchange. Based on the findings from the descriptive statistics and inferential statistics and the conclusion drawn, the following recommendations are made: Management should try and improve on their companies financial leverage ratio as this will go a long way in determining their survival Manufacturing companies should strike a balance between the choice of capital structure they make and its effect on financial performance.

References

Abor, J. (2007). Debt policy & performance of SMEs: Evidence from Ghanaian & South African firms. *The Journal of Risk Finance* 8(4), 364-379.

Adeyemi, S. B., & Oboh, C. S. (2011). Perceived relationship between corporate capital structure and firm value in Nigeria. *Annals of Finance* 14(1), 131-143.

Adkins, T. (2012). The optimal use of financial leverage in a corporate capital structure, *Journal of management research*, 32(5), 754-766

- Akinlo, O. (2011). Determinants of capital structure: Evidence from Nigerian panel data. *African Economic and Business Review*, 9(1), 1-16.
- Al-Zoubi, H. A., Jennifer A. O, & Abdulaziz M. A. (2018). Business cycles, financial cycles & capital structure. *International Journal of Business and Social Science*, 2(19), 105–123.
- Anderson, R. W., & Carverhill, A. (2012). Corporate liquidity and capital structure. *The Review of Financial Studies*, 25(3), 797-837.
- Ardalan, K. (2018). Capital structure theory: Reconsidered. *Research in International Business & Finance* 39, 696–710.
- Campello, M., Graham, J. R. & Harvey, C. R. (2010). The real effects of financial constraints: Evidence from a financial crisis. *Journal of Financial Economics*, 97(3), 470–487.
- Chang, C. (1999). Capital Structure as Optimal Contracts, *North American Journal of Economics and Finance*, 10(2), 363 -385.
- Dada, A. O. & Ghazali, Z. B. (2016). The impact of capital on firm performance: Empirical Evidence from Nigeria. *Journal of Economics & Finance*. 7(4), 23-30.
- De Miguel, A., & Pindado, J. (2001). Determinants of capital structure: new evidence from Spanish panel data. *Journal of corporate finance*, 7(1), 77-99.
- Denčić-Mihajlov, K., Malinić, D., & Grabiński, K. (2015). Capital structure and liquidity during the financial crisis in Serbia: implications for the sustainability of the economy. *Post-Communist Economies*, 27(1), 91-105.
- Devereux, M. P., Giorgia M. & Jing X. (2018). Corporate tax incentives & capital structure: New evidence from UK firm-level tax returns. *Journal of Banking & Finance* 88, 250–66.
- Frieder, L., & Martell, R. (2006). On capital structure and the liquidity of a firm's stock. Available at SSRN 880421.
- Gadanecz, B., & Jayaram, K. (2008). Measures of financial stability-a review. *Irving Fisher Committee Bulletin*, 31(1), 365-383.
- Ghasemi, M., & Ab Razak, N. H. (2016). The impact of liquidity on the capital structure: Evidence from Malaysia. *International journal of economics and finance*, 8(10), 130-139.
- Ghose, B. (2017). Impact of business group affiliation on capital structure adjustment Speed: Evidence from Indian Manufacturing Sector. *Emerging Economy Studies*, 3(1), 54–67.
- Ghosh, A. (2008). *Capital Structure & Firm Performance*, United States, Transaction Publishers
- Gitman, L.J. and Zutter, C.J. (2012), *Principles of Managerial Finance*, (13th ed). Boston: Prentice Hall.
- Graham, J. R. (2000). How big are the tax benefits of debt? *Journal of Finance*, 55(19), 01–41.
- Graham, J. & Harvey, C. (2001). The Theory and Practice of Corporate Finance: Evidence from the Field, *Journal of Financial Economics*, 60(2-3), 187- 243.

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- Jensen, M. C. & Meckling H. W. (1976). Theory of Firm: Managerial Behavior, Agency Costs & Ownership Structure. *Journal of Financial Economics* 3, 305–60.
- Kenyon, J. (2010). An introduction to capital structure: why capital structure matters to your investments. *Journal of Financing Economics*, 15(7), 18-22.
- Kraus, A. & Litzenberger, R. H. (1973). A State-Preference Model of Optimal Financial Leverage. *Journal of Finance*, 28(4), 911–922.
- Lipson, M. L., & Mortal, S. (2009). Liquidity and capital structure. *Journal of financial markets*, 12(4), 611-644.
- Maina, G. K. (2014). *The effect of capital structure on financial performance of small and medium enterprises in dairy sector in Kiambu County* (Doctoral dissertation, University of Nairobi).
- Margaritis, D. & Psillaki, M. (2010). Capital structure, equity ownership and firm performance. *Journal of Banking & Finance*, 34(3), 621–632.
- Masulis, R. W. (1980). Stock Repurchase by Tender Offer: An Analysis of the Causes of Common Stock Price Changes. *The Journal of Finance*, 35(2), 305– 319.
- Mateev, M., Poutziouris, P., & Ivanov, K. (2013). On the determinants of SME capital structure in Central and Eastern Europe: A dynamic panel analysis. *Research in international business and finance*, 27(1), 28-51.
- Modigliani, F. & Miller H. M. (1958). The cost of capital, corporation finance and the Theory of Investment. *The American Economic Review*, 48, 261–297.
- Modigliani, F. & Miller, H. M. (1963). Corporate income taxes & the cost of capital: A correction. *The American Economic Review*, 53, 433–443.
- Mustapha, M., & Chyi, H. (2012). Firm leverage-cash flow determinants and capital structure decisions in a developing economy. *Global economy and finance journal*, 5(2), 79-96
- Myers, S. C. (1984). The Capital Structure Puzzle, *Journal of Finance*, 39(3), 575-592.
- Olowe, R. A. (2008). Financial management: Concepts, financial system & business finance. 4th Eds. Brierly Jones Nigeria Limited
- Onaolapo, A. A. & Kajola, S. O. (2010). Capital Structure and Firm Performance: Evidence from Nigeria, *European Journal of Economics, Finance and Administrative Sciences* 25, 1450-2275.
- Oyedokun, G. E., & Somoye, R. O. C. (2018). Working Capital Financing and Entrepreneurship Growth in Nigeria: An Empirical Investigation. *Journal of Accounting and Finance*, 18(10), 92-111.
- Ross, S., Westerfield, R. & Jaffe, J. (2013). *Corporate Finance*. 10th ed. New York: McGraw-Hill/Irwin.
- Ruri, J. K., & Omagwa, J. (2018). Capital Structure and Financial Performance of Small and Medium Enterprises in Embu County, Kenya. *Journal of Business and Management*, 20(5), 1-10.

- Saad, N. M. (2010). Corporate governance compliance and the effects to capital structure in Malaysia. *International journal of economics and finance*, 2(1), 105-114.
- Salawu, R. O. & Agboola, A. A. (2008). The determinants of capital structure of large non-financial listed firms in Nigeria. *The International Journal of Business and Finance Research*, 2(2), 75-84.
- Šarlija, N., & Harc, M. (2012). The impact of liquidity on the capital structure: a case study of Croatian firms. *Business Systems Research: International journal of the Society for Advancing Innovation and Research in Economy*, 3(1), 30-36.
- Sharma, P., & Paul, S. (2015). Does liquidity determine capital structure? Evidence from India. *Global Business Review*, 16(1), 84-95.
- Sheikh, N. A., & Wang, Z. (2012). Effects of corporate governance on capital structure: empirical evidence from Pakistan. *Corporate Governance: The international journal of business in society*, 12(5), 629-641.
- Spulbăr, C., & Nițoi, M. (2012). Sisteme bancare comparate [Comparative analysis of banking systems]. *Sitech, Craiova, Romania*.
- Ume, S. A. & Niaz, A. B (2012). Determinants & Policies of capital structure in the non-financial firms (personal care goods) of Pakistan. *Asian Journal of Business & Management Sciences* 2(2), 27-35.
- Van Horne, J. C., & Wachowicz, J. M. (2005). *Fundamentals of financial management*. Pearson Education.
- Wahab, R. A., Amin, M. S. M., & Yusop, A. K. (2012). Determinants of capital structure of Malaysian property developers. *Middle East Journal of Scientific Research*, 11(8), 1013-1021.
- Yusuf, S. I., Mwakubo, S. M., & Mwachola, S. N. (2019). The Effect of Capital Structure Gearing Levels on Financial Performance of Public and Private Sector Firms in Kenya's Coastal Counties. *International Journal of Economics and Finance*, 11(3), 99-126.