



The Evaluation of Liquidity and Capital Structure of Manufacturing Firms in Nigeria

Elijah Adeiza Evinemi^{1*}, Steve Emeka Emengini²

¹Department of Accounting, University of Nigeria Nsukka, Nigeria, ²Faculty of Business Administration, University of Nigeria, Enugu Campus, Enugu State Nigeria. *Email: elstrong75@gmail.com

Received: 13 January 2023

Accepted: 29 April 2024

DOI: <https://doi.org/10.32479/ijefi.15946>

ABSTRACT

Firms' choices regarding their capital structure influence their net cost or value. Firm characteristics such as firm size, liquidity, growth opportunities, asset tangibility, non-debt tax shield and cost of equity are specific traits of firms. This study investigates the effect of firm liquidity on capital structure of manufacturing firms in Nigeria. Annual data was obtained from reports of thirty-one (35) manufacturing firms covering the period 2007-2021. The effects of liquidity on capital structure were examined using the panel Fixed/Random effect methods. The summary statistics, correlation analysis, slope heterogeneity and cross-sectional dependence were conducted as pre-estimation procedures. The study employed debt-to-equity and debt-to-asset ratios to capture capital structure, while cash conversion cycle in days was used to measure liquidity. The findings show that liquidity has negative significant relationship in explaining the debt-to-asset of manufacturing firms and no significant effect in explaining the debt-to-equity of manufacturing firms in Nigeria. The study recommends that manufacturing firms embrace innovation as a way of increasing the efficiency of the total assets. Also, manufacturing firms should formulate main policies, which support the implementation of positive cash flow.

Keywords: Firm Characteristics, Liquidity, Debt-to-equity, Debt-to-asset, Manufacturing Firms

JEL Classification: L22, L25, M14

1. INTRODUCTION

One of the essential elements for a firm to succeed is capital. In order for a financial manager in industrial companies in Nigeria to make wise investment decisions, it is necessary to take into account a company's capital structure while making financing decisions. Capital structure increases the ability of the company to find new wealth thereby creating investment opportunities (Maama and Mkhize, 2020). It is necessary to consider a variety of elements in order to choose a capital structure for a company that will maximize its profitability and worth. Firms' choices regarding their capital structures influence their net cost or value. A successful move can raise shareholders' wealth, whereas a bad one can lower the company's net reputation (Liu et al., 2021). A firm's capital structure can be influenced by several factors, including profitability, size, growth, tangibility, non-debt tax

shield, volatility, and liquidity. It is up to the company to determine which number is optimum. In the case of liquidity, it helps firms to convert their liquid assets into currency. According to Scott (2021) liquidity is vital to factor in liquidity while planning for investments to ensure that the current needs do not eat into the long-term investment goals.

According to Amahalu and Ezechukwu, (2017) liquidity describes the degree to which an asset can be quickly bought or sold in the market at a price reflecting its intrinsic value. Previous studies establish a link between capital structure and stock market activities (Widagdo et al., 2020). According to Nurlaela et al. (2019); Amahalu et al. (2019), firms with a lower level of liquid stocks may have higher issuance costs, thereby higher cost of equity compared to firms with more liquid equity. Following the literature, firms always face the issue of trading off the net cost

of equity against the net tax benefit of debt. Therefore, firms with lower liquidity may be financed by less equity and more debt. In the same stream, a number of previous studies concerning the link between stock liquidity and capital structure (Kurnia et al., 2020; Al-Slehat, 2020) found that firms with lower stock liquidity tend to be more leveraged.

The assessment of the effects of liquidity on capital structure among industrial companies in Nigeria has been a significant issue that hasn't been answered. There hasn't been any tangible, definitive empirical data in the literature about how liquidity influence capital structure of manufacturing firms in Nigeria up until now despite the use of many methodologies, variables, and theoretical frameworks. For instance, studies by Georgios et al. (2019); Salehi et al. (2019); and Amahalu et al. (2019) discovered a favorable correlation between corporate features and financial success. According to Neves et al. (2020), there is a poor correlation between corporate attributes and financial performance. According to research by Gharaibeh and Khaled (2020), there is no correlation between corporate characteristics and financial success. Studies in Nigeria have focused primarily on the general corporate businesses and the banking organizations listed on the stock market when examining the relationship between firm characteristics and performance. Nevertheless, the manufacturing sector has received little attention and attention in this environment despite its significance for food production, production of capital goods, value creation, and the expansion of the Nigerian economy. Therefore, this study investigates the effect of liquidity on capital structure of manufacturing firms in Nigeria.

2. LITERATURE REVIEW

2.1. Liquidity and Capital Structure

The highly liquid firms are more likely to have substantial internal funds that lower their need to secure more debt financing. In line with the pecking order theory, companies with higher liquidity ratios tend to rely on internal funds to finance their projects. Therefore, some previous literature stated a negative relationship between liquidity and leverage (Sheikh and Wang, 2011; Eriotis and Vasiliou, 2007; Chaklader and Chawla, 2016). On the contrary, the trade-off theory anticipates a positive relationship, indicating that firms with higher liquid assets facilitate the process of debt servicing by providing more collateral assets and security to the lenders. In accordance with existing scholarly literature, companies consistently encounter the challenge of balancing the net cost of stock with the net tax advantage of debt. Hence, companies characterized by lower liquidity levels may choose for a higher proportion of debt financing and a lower proportion of equity financing. Based on the findings of Nurlaela et al. (2019) as well as Amahalu et al. (2019), it can be inferred that companies possessing a lower level of liquid stocks may incur more issuance costs, resulting in a higher cost of equity in comparison to firms with a higher degree of equity liquidity. Several prior research (Kurnia et al., 2020; Al-Slehat, 2020) conducted on the relationship between stock liquidity and capital structure have observed that companies with lower stock liquidity exhibit higher levels of leverage. Moreover, a higher current ratio as a measure of working capital is attributed to the fact that firms are better positioned

to manage short- and long-term financial constraints, which persuades them to obtain debt financing (Al-Najjar and Taylor, 2008; Ramli et al., 2019).

According to Rao et al. (2007), if a firm's liquidity is insufficient over the long-term it may eventually lead to solvency problems and subsequently threaten the survival of a firm. This will increase the financial distress costs of a firm. Liquidity is an important factor in the capital structure debate, because if a firm faces a threat of bankruptcy, they will be better able to use more debt, given that they own sufficient liquid assets (With the threat of bankruptcy, the firm can more easily convert its liquid assets into the funds required). According to Zietlow and Seidner (2007), the traditional view is that liquidity increases debt capacity, because higher liquidity may increase firm value in liquidation and thus liquidity could reduce a firm's ability to issue debt securities. Another rationale for the existence of a relationship between liquidity and capital structure is provided by the agency theory. The conflict between management and shareholders may influence the financing choices of a firm. The argument is that management is extremely risk averse and therefore builds excess liquidity. Also, Widagdo et al. (2020) establish a link between capital structure and stock market activities.

2.2. Empirical Review

Empirically, several studies have shed light on the link between capital structure and liquidity. Jaworski and Czerwonka (2021) identify the primary factors of the capital structure of European Union energy industry firms. The study analyzed a panel of 6122 businesses from 25 EU member states that operated between 2011 and 2018. They discovered a high correlation between corporate debt and tangibility and scale, but not between profitability and liquidity. Ali et al. (2021) investigate the effect of the effective tax rate and firm-specific characteristics (such as liquidity, firm size, growth possibilities, tangibility, risk, profitability, non-debt and tax shields) on the capital structure of multinational energy companies. They use OLS, fixed effect, and random effects to assess a balanced panel datasets of multinational enterprises based in the United Kingdom and the United States of America from 2011 to 2019. They demonstrate that tangibility, risk, profitability, and non-debt tax shields all have a positive and significant effect on long-term and total debt metrics of capital structure. However, they demonstrate that short-term debt is considerably negatively connected to tangibility, non-debt tax shielding, and liquidity, while being positively related to company risk. Additionally, they discover that the effective tax rate and business size have a negligible negative link with multinational firms' leverage decisions, but liquidity has a strong inverse relationship with long-term debt and overall debt. This analysis demonstrates mixed support for prevalent capital structure theories and evidence that multinational enterprises are unambiguously capital structure sensitive.

Moreover, Tamba and Purwanto (2021) investigate the determinants of the capital structure of Indonesian property and real estate firms listed on the Indonesia Stock Exchange. The study analyzed 72 observational data from 12 organizations that had their financial statements audited and met specified requirements. After doing classical assumption tests and multivariate analysis,

the results indicate that tangibility of assets, business risk, and firm size all have a considerable impact on capital structure, but sales growth and liquidity have little effect. Setyawan and Santoso (2021) evaluate the determinants of capital structure of Indonesia's IDX-listed enterprises before (2010-2014) and after (2015-2019) the implementation of Indonesia's infrastructure plan. Between 2010 and 2019, data from 12 SOEs and 210 non-SOEs listed on IDX are evaluated using paired t-tests and OLS to determine the capital structure determinants of state ownership, profitability, company size, tangibility, growth, liquidity, debt tax shield, and firm risk. The result established that SOE leverage increased statistically significantly from 2010 to 2014 to 2015 to 2019. Profitability, business size, tangibility, liquidity, and firm risk are consistently proven to be key factors across both periods. Bhat and Periyasam's (2021) investigate the factors affecting the capital structure of pharmaceutical businesses listed on the NIFTY index. Multiple regression model was used to evaluate the leverage behavior of pharmaceutical businesses in the NIFTY index over a 10-year period, from 2011 to 2020. Short-term debt, long-term debt, and total debt are utilized as dependent variables, whereas profitability, size, growth, tangibility, business risk, NDTs, and liquidity are used as independent variables. The findings indicate that profitability, business size, growth rate, and liquidity are significant predictors of capital structure, and that short-term debt is a significant source of financing for Indian pharmaceutical enterprises.

Furthermore, Almanaseer (2019) investigates the capital structure determinants of banks listed on the Amman Stock Exchange. For the period 2008-2017, a sample of 13 Jordanian commercial banks out of 16 banks registered on the Amman Stock Exchange was chosen. The current study used OLS to investigate the association between financial leverage and business characteristics such as risk, size, profitability, growth, liquidity, taxation, age, and tangibility, as well as macroeconomic variables such as GDP and inflation. Financial leverage, age, growth, risk, size, and tax are all found to have a significant positive association. Additionally, the study discovers a negative correlation between financial leverage and GDP, inflation, liquidity, profitability, and tangibility. Tulcanaza-Prieto and Lee (2019) investigate the internal and external factors of the capital structure of big Korean firms between 2010 and 2017. They discovered that both profitability and liquidity have a negative and significant effect on leverage when using total, short-term, and long-term debt ratios as proxy for capital structure. These findings are congruent with those of other countries, including Malaysia, Pakistan, and Vietnam. Additionally, they demonstrate that both asset tangibility and company size have a beneficial influence on long-term borrowing but have a detrimental effect on short-term borrowing. These findings corroborate those of Pakistani and Vietnamese enterprises. External determinants, on the other hand, demonstrate limited statistical relevance. Their study contributes to the body of knowledge on corporate finance by incorporating both firm-specific and external characteristics that influence the debt-equity option of large companies listed on the Korea Exchange.

Cevheroglu-Acar (2018) examines the firm-specific determinants of the capital structure of non-financial enterprises in Turkey in

order to determine whether the determinants proposed by finance theory provide persuasive explanations for non-financial firms in Turkey. Because the relationship between liquidity and capital structure has not been thoroughly examined in the context of capital structure theories for the Turkish market, they include liquidity as an independent variable alongside profitability, growth, non-debt tax shields, size, tangibility, and risk in their models. They employ panel regression as their econometric model and examine the years 2009-2016. Their findings indicate that profitability, the non-debt tax shield, size, tangibility, and liquidity all contribute significantly to the capital structure, with size being the most robust factor. On the other hand, growth and volatility are unrelated to leverage in a meaningful way. Additionally, they argue that non-financial enterprises' capital structure decisions in Turkey are largely compatible with pecking order theory rather than trade-off theory. Overall, these studies reported the significant contribution of liquidity to capital structure.

3. METHODOLOGY

3.1. Population and Sample Size

The population of this study consists of 61 manufacturing firms in Nigeria as of December 2021, that is, we had 61 manufacturing firms listed on the floor of the Nigerian Exchange Group (NGX). The sampling technique employed is purposive since firms were included in the sample on certain selection criteria. These criteria were based on the firms that are listed on the Nigerian Exchange Group market for 2007-2021; there was access to their annual financial reports within the period and they were not firms operating subsidiaries in Nigeria that are not listed in the Nigerian Exchange Group. Newly listed firms and delisted firms were excluded from the study. Thus, only manufacturing firms that had all relevant data due to continuous existence were included in the sample. Our final sample size consists of 35 manufacturing firms and was arrived at based on the availability of data for 15 years for all the research variables.

3.2. Sources of Data

In this study we employed secondary data sourced from the Nigerian Exchange Group Fact books and related companies' annual financial reports for the periods. In this study we employed secondary data source which has been justified by recent studies of (Olabisi et al., 2017). The data for the sampled manufacturing firms were sourced from Nigerian Exchange Group Fact Books and related companies' annual financial reports and footnotes for the periods covered in the study.

3.3. Model Specification

Model specification refers to the determination of which independent variables should be included in or excluded from a regression equation. In general, the specification of a regression model should be based primarily on theoretical considerations rather than empirical or methodological ones. Estimates of the parameters of a model and its interpretation depend on the correct specification of the model. Hence, based on the theoretical literature and earlier empirical studies on the determinants of capital structure, we specify our model to capture the determinants of capital structure. Thus, the study adapted the model specified

by Jaworski and Czerwonka (2021) which was modified for the purpose of establishing the relationship between the dependent variables and the linear combinations of several determining variables captured in the study. Succinctly, the econometric form of our model is expressed as;

$$DETE_{it} = \beta_0 + \beta_1 CACC_{it} + \mu_{it1} \quad (1)$$

$$DETA_{it} = \beta_0 + \beta_1 CACC_{it} + \mu_{it2} \quad (2)$$

The model specified above is to avoid the problem of multicollinearity.

Where:

$DETE$	=	<i>Debt to Equity (Proxy for capital structure)</i>
$DETA$	=	<i>Debt to Asset (Proxy for capital structure)</i>
$CACC$	=	<i>Cash Conversion Cycle (Proxy for Liquidity)</i>
β_0	=	<i>Constant</i>
β_1	=	<i>Slope Coefficient</i>
ϵ	=	<i>Stochastic disturbance</i>
i	=	<i>i^{th} firm</i>
t	=	<i>time</i>

3.4. Operationalization of the Variables

The dependent variable is capital structure, this was measured using two variables, debt to asset, which is the ratio of total liabilities divided by total asset, and debt to equity, which is computed as the ratio of liabilities to total equity. The independent variable is liquidity and was proxied by cash conversion cycle in days, this is computed as inventory Days plus trade receivable days minus trade payable days. Liquidity was expected to have an either positive or negative effect on capital structure.

3.5. Estimation Technique

In this study, the descriptor panel data came from a sample of firms and in this context, a “panel” represented 15 firm year observations. Panel data set can also be balanced and unbalanced. In a balanced data set, all elements are observed in all time frames whereas in an unbalanced data set certain data category is not observed. The data for this current study is unbalanced but the Stata statistical software could handle the unbalanced data. Panel data offers some benefits, and this includes the fact that it has many large data sets with increased variability and less collinearity among the variables that leads to many reliable estimates (Baltagi and Li, 1995). Moreover, panel data analysis accounts for relationships among a limited number of different subjects (Frees and Miller, 2004). Therefore, it offers the advantage of studying complex issues of dynamic behaviour. Specifically, the econometric techniques adopted in this study are the panel fixed and Random effect regression techniques. Hausman and Taylor (1981) also recommended panel data estimation method because it enables a cross-sectional time series analysis which usually makes provision for a broader set of data points, but also because of its ability to control heterogeneity and endogeneity issues. Hence panel data estimation allows for the control of individual-specific effects usually unobservable which may be correlated

with other explanatory variables included in the specification of the relationship between dependent and explanatory variables. In evaluating the panel regression results, the Hausman specification test will be used to select between fixed effect and random effect. The individual statistical significance test (T-test) and overall statistical significance test (F-test) were also used. Importantly, the goodness of fit of the model was ascertained using the coefficient of determination (R^2). The panel analysis was done after descriptive statistics, normality test, heteroskedasticity, correlation analysis, variance inflation test (test for multicollinearity) and Test for Heteroscedasticity. All analyses were conducted at 5% level of significance using STATA 16 software.

4. RESULTS

This section presents the results of the analysis conducted to achieve the objectives of this study. The results are presented sequentially in line with the objectives enumerated.

4.1. Descriptive Statistics

Table 1 shows the basic features of the data used for the analysis. The total number of observations is 525. From the table 1, the average debt to equity (DETE) ratio of 5.75 indicates that manufacturing firms are less risky with minimum of -118.69 and maximum of 754.37. The standard deviation of 50.56 show a widespread variation around the average value. Furthermore, average debt to asset (DETA) ratio of 0.28 indicates that manufacturing firms have more asset than debt with a minimum and maximum of 0.12 and 3.06 respectively. The standard deviation of 0.62 shows small spread around the average value. The overall average liquidity (CACC) of manufacturing firms is 1.38 with minimum and maximum liquidity of 0.11 and 19.25 respectively. A standard deviation of 1.41 indicates small spread around the average value.

4.1.1. Trend analysis of capital structure of manufacturing firms in Nigeria

Figure 1 shows the trend of capital structure of manufacturing firms in Nigeria as proxied by debt-to-asset and debt-to-equity. As shown in Figure 1, firms with the highest debt-to-equity are Cadbury, International breweries, Eunisell Interlinked Plc, Nigerian Northern Flour Mill and Chellarams while Berger paints Nigeria and Beta glass company have the lowest debt-to-equity ratio. In addition, Premier Paints and Thomas Wyatt have negative debt-to-equity ratio across all listed manufacturing firms. However, debt-to-asset ratio of manufacturing firms have a relatively steady flow across manufacturing firms. By implication, firms with high debt-to-equity are at greater risk and need to reduce debt. However, these debts may be long term and may not be all that alarming. The debt-to-asset of the selected manufacturing firms show that majority of the manufacturing firms are within the range 0.3-0.6 which indicates that investors are comfortable to invest in these firms. Also, this implies that these firms prioritize raising money by issuing stocks to investors. However, firms such as Thomas Wyatt, Chellarams, Nestle Nigeria, International breweries, Nigerian Enamelware and Livestock feeds have a debt-to-asset ratio between the range of 0.7-1.2 which indicates that a greater portion of these firms' assets are funded by creditors.

Figure 1: Trend analysis of capital structure of manufacturing firms in Nigeria

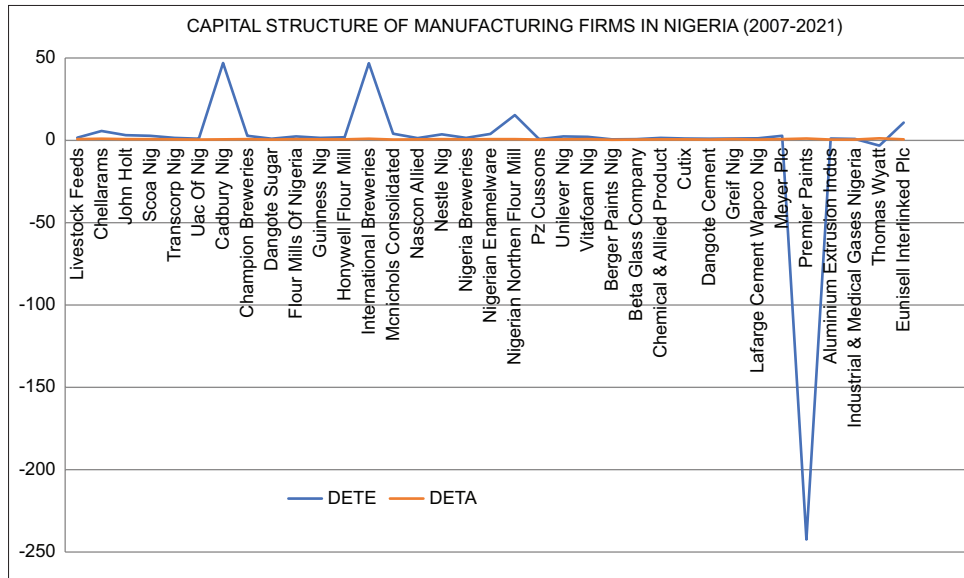


Table 1: Summary statistics

Variable	Mean	Std. Dev.	Min	Max	Observations
Cacc					
Overall	1.377867	1.412393	0.11	19.25	N=525
between		0.50401	0.637333	2.382	n=35
Within		1.322402	-0.5888	18.3912	T=15
Dete					
Overall	5.746178	50.56154	-118.69	754.37	N=525
between		12.00973	-3.20133	46.944	n=35
Within		49.16028	-159.797	713.2628	T=15
Deta					
Overall	0.622356	0.275656	0.12	3.06	N=525
between		0.174127	0.376	1.176667	n=35
Within		0.215897	0.095689	2.741022	T=15

Source: Computed by the Author (2023)

Table 2: Shapiro-Wilk W test for normal data

Variable	Obs	W	V	z	Prob >z
residuals	525	0.13023	266.123	13.359	0.882

Source: Computed by the Author (2023)

Table 3: Correlation matrix

Variable	CACC	DETE	DETA
CACC	1		
DETE	-0.0346	1	
DETA	-0.2773	0.1302	1

Source: Computed by the Author (2023)

Table 4: Pesaran CD cross-sectional dependency test

Pesaran's test of cross-sectional independence	0.786	Pr=0.4321
Average absolute value of the off-diagonal elements	0.292	

Source: Computed by the Author (2023)

4.2. Preliminary Analysis

In deciding the direction of the analysis, certain preliminary tests which show the direction the analysis should be carried out. These include a plot of the correlation matrix, cross-sectional dependence test, etc. As shown from Table 2, based on normality of residuals,

the insignificant values of the test results suggest the acceptance of null hypothesis and indicate that the residual is normally distributed as the probability is greater than 5%. By implication, the model follows a normal distribution.

4.2.1. Analysis of correlation to test for multicollinearity among the variables

Testing for correlation among the variables in the model helps to avoid the possible problems of multicollinearity. Table 3 shows that the correlation coefficient between selected variables used in the study's analysis. According to Daoud (2017), a high correlation coefficient of 0.8 above is a pointer that there is a serious problem of multicollinearity in the model. From the study's result, CACC has negative correlation with DETE. Furthermore, CACC has positive correlation with DETA. Conclusively, there is moderate correlation indicating the absence of multicollinearity in the model.

4.2.2. Cross-sectional dependency test

The test developed by Pesaran (2004) was conducted to test for the existence of cross-sectional dependency, and the CD test is still valid for homogeneous or heterogeneous dynamic models and non-stationary models. The test is based on the null hypothesis of

Table 5: Effect of liquidity on debt-to-equity and debt-to-asset of manufacturing firms in Nigeria

DETE	Coef (Standard error)	Z (P> z)	DETA	Coef (Standard error)	Z (P> z)
Cacc	-1.23793 (1.69031)	-0.73 (0.464)	Cacc	-0.03854 (0.00775)	-4.97 (0.000)
_cons	7.45187 (3.3334)	2.24 (0.025)	_cons	0.675455 (0.01479)	45.66 (0.00)
R-square	Within 0.0006		R-square	Within 0.0557	
	Between 0.021			Between 0.2276	
	Overall 0.0012			Overall 0.0769	
Wald chi ²	0.54 (0.4639)		F (1, 419)	24.72 (0.0000)	
Hausman Test	0.6380		Hausman Test	0.0030	

Source: Computed by the Author (2023)
Standard Error and P value in parenthesis

no cross-sectional dependence and is rejected when the $P < 5\%$. Table 4 shows that the null hypothesis of no correlation across panel groups is not rejected. This indicates that there is no cross-sectional dependence in the panel data model.

4.2.3. Effect of liquidity on debt-to-equity of manufacturing firms in Nigeria

The within r-square of this model is 0.0006, with between r-square of 0.021 and overall r-square of this model is 0.0012. The result of the wald Chi-square (0.54) shows that the model is insignificant with a z score of -0.73 which is negative and lies below the mean. The value of the Hausman test (0.6380) further shows that the random effect model is specified. The regression result shows a negative insignificant relationship between liquidity and debt-to-equity ratio. In conclusion liquidity has no significant effect on debt-to-equity of manufacturing firms in Nigeria. Moreover, from the Table 5, the within r-square of this model is 0.0002, with between r-square of 0.0249 and overall r-square of this model is 0.0015. The result of the F test (0.0000) shows that the model is significant with z score of -4.97 which is negative and lies below the mean. The value of the Hausman test (0.0030) further shows that the Fixed effect model is specified. The regression result shows a negative significant relationship between liquidity and debt-to-asset of listed industrial companies. So that, a unit increase in liquidity leads to a 0.0385 unit decrease in debt-to-asset of manufacturing firms.

5. CONCLUSION AND RECOMMENDATIONS

From the regression analysis, Findings from this study showed that liquidity has negative significant effect on the capital structure (debt-to-asset) of manufacturing firms in Nigeria. Therefore, we reject the hypothesis (H_0) and conclude that liquidity has significant effect on the capital structure of manufacturing firms in Nigeria. This corroborates the findings of Afza and Ahmed (2011) which suggests that liquidity is a significant predictor of life insurance businesses' capital structure. Also, Sheikh and Wang (2011) found liquidity to be negatively associated to capital structure of manufacturing businesses. Cevheroglu-Acar (2018) further suggest that liquidity contribute significantly to the capital structure. Egbunike and Okerekeoti, (2018) found that liquidity is positive and has a significant effect on capital structure of manufacturing firms proxied by debt-to-asset. Also, Suhaila and Wan Mahmood, (2008) found a negative relation of liquidity on

the debt ratio of firms which is confirmed in that firms finance their activities following financing pattern as suggested by the "pecking order" theory. However, Tamba and Purwanto (2021) found no considerable impact of liquidity on capital structure which is not in line with the findings of this study.

This study examined the effect of liquidity on the Capital Structure of manufacturing firms in Nigeria. The study revealed that, liquidity is a major determinant of capital structure of manufacturing firms in Nigeria. Such that that a negative impact of liquidity implies a decrease in capital structure of manufacturing firms. Based on these findings, this study recommends that firms should thoroughly evaluate their financial condition and consistently oversee and modify their capital structure and liquidity management approaches as necessary to attain their long-term financial goals while effectively mitigating risk. This is because liquidity is a fundamental component of a firm's financial management, with various interconnected dimensions.

REFERENCES

- Afza, T., Ahmed, N. (2011), Leverage choice and its determinants: An empirical investigation of insurance sector of Pakistan. Social Science Research Network. <https://doi.org/10.2139/ssrn.1869642>
- Ali, S., Rangone, A., Farooq, M. (2022), Corporate taxation and firm-specific determinants of capital structure: Evidence from the UK and US multinational firms. *Journal of Risk and Financial Management*, 15(2), 55-63.
- Almanaseer, S.R. (2019), Determinants of capital structure: Evidence from Jordan. *Accounting and Finance Research*, 8(4), 186.
- Amahalu, N., Okegbe, T. O., & Eneh, O. M.-R. (2019). Effect of Firm Characteristics on Capital Structure of Deposit Money Banks Listed on Nigeria Stock.
- Al-Najjar, B., Taylor, P. (2008), The relationship between capital structure and ownership structure: New evidence from Jordanian panel data. *Managerial Finance*, 34(12), 913-933.
- Al-Slehat, Z.A. (2020), Impact of financial leverage, size and assets structure on firm value: Evidence from the industrial sector, Jordan. *International Business Research*, 13(1), 109-120.
- Amahalu, N., Okegbe, T.O., Eneh, O.M.R. (2019), Effect of firm characteristics on capital structure of deposit money banks listed on Nigeria stock. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 9, 198-210.
- Amahalu, N.N., Ezechukwu, B.O. (2017), Effect of cash holding on financial performance of selected quoted insurance firms in Nigeria. *Journal of Marketing Management and Consumer Behavior*, 2(1), 90-112.
- Baltagi, B.H., Li, Q. (1995), Testing AR(1) against MA(1) disturbances in

- an error component model. *Journal of Econometrics*, 68(1), 133-151.
- Bhat, S.A., Periyasami, N. (2021), Capital Structure Determinants - an Empirical Analysis of Pharmaceutical Companies in NIFTY. Available from: <https://www.nveo.org/index.php/journal/article/view/1501> [Last accessed on 2023 Jan 10].
- Cevheroglu-Acar, M.G. (2018), Determinants of capital structure: Empirical evidence from Turkey. *Journal Management and Sustainability*, 8, 31.
- Chaklader, B., Chawla, D. (2016), A study of determinants of capital structure through panel data analysis of firms listed in NSE CNX 500. *Vision: The Journal of Business Perspective*, 20(4), 267-277.
- Daoud, J.I. (2017), Multicollinearity and regression analysis. *Journal of Physics: Conference Series*, 949, 012009.
- Egbunike, C.F., Okerekeoti, C.U. (2018), Macroeconomic factors, firm characteristics and financial performance: A study of selected quoted manufacturing firms in Nigeria. *Asian Journal of Accounting Research*, 3(2), 142-168.
- Eriotis, N., Vasiliou, D. (2007), How firm characteristics affect capital structure: An empirical study. *Managerial Finance*, 33(5), 321-331.
- Frees, E.W., Miller, T.W. (2004), Sales forecasting using longitudinal data models. *International Journal of Forecasting*, 20(1), 99-114.
- Georgios, S., Tsoukas, S., Zhang, P. (2019), What influences a bank's decision to go public? *International Journal of Finance and Economics* 24, 1464-1485.
- Gharaibeh, O., Khaled, M.H.B. (2020), Determinants of profitability in Jordanian services companies. *Investment Management and Financial Innovations*, 17(1), 277-290.
- Hausman, J.A., Taylor, W.E. (1981), Panel data and unobservable individual effects. *Econometrica*, 49(6), 1377.
- Jaworski, J., Czerwonka, L. (2021), Determinants of enterprises' capital structure in energy industry: Evidence from European Union. *Energies*, 14(7), 1871.
- Kurnia, P., Darlis, E., Putra, A.A. (2020), Carbon emission disclosure, good corporate governance, financial performance, and firm value. *Journal of Asian Finance, Economics, and Business*, 7(12), 223-231.
- Liu, G., Wujun, L., Chen, Y. (2021), Capital structure adjustment speed over the business cycle. *Finance Research Letters*, 39, 101574.
- Maama, H., Mkhize, M. (2020), Integration of non-financial information into corporate reporting: A theoretical perspective. *Academy of Accounting and Financial Studies Journal*, 24(2), 1-15.
- Neves, M.E.D., Serrasqueiro, Z., Dias, A., Hermano, C. (2020), Capital structure decisions in a period of economic intervention. *International Journal of Accounting and Information Management*, 28(3), 465-495.
- Nurlaela, S., Mursito, B., Kustiyah, E., Istiqomah, I., Hartono, S. (2019), Asset turnover, capital structure, and financial performance consumption industry company in Indonesia Stock Exchange. *International Journal of Economics and Financial Issues*, 9(3), 297-301.
- Olabisi, J., Taofeek, O.A., Toluwalase, O.A. (2017), Audit quality and earnings management among Nigerian Listed Deposit Money Banks. *International Journal of Accounting Research*, 5(2), 159.
- Pesaran, M.H. (2004), General Diagnostic Tests for Cross Section Dependence in Panels. CESifo Working Paper Series No. 1229; IZA Discussion Paper No. 1240.
- Ramli, N.A., Latan, H., Solovida, G.T. (2019a), Determinants of capital structure and firm financial performance- a PLS-SEM approach: Evidence from Malaysia and Indonesia. *The Quarterly Review of Economics and Finance*, 71, 148-160.
- Rao, N., Al-Yahyaee, K.H., Syed, L.A. (2007), Capital structure and financial performance: Evidence from Oman. *Indian Journal of Economics and Business*, 6(1), 1-10.
- Salehi, M., Mahmoudi, M.R.F., Gah, A.D. (2019), A meta-analysis approach for determinants of effective factors on audit quality. *Journal of Accounting in Emerging Economies*, 9(2), 287-312.
- Scott, G. (2021), Liquidity. Available from: <https://www.investopedia.com/terms/l/liquidity.asp> [Last accessed on 2021 Jun 20].
- Setyawan, D., Santoso, F. (2021), Assessing the determinants of capital structure before and during Indonesia's infrastructure plans: Examining Indonesia's IDX-listed firms between 2010-2014 and 2015-2019. *iBuss Management*, 9(2), 39504.
- Sheikh, N.A., Wang, Z. (2011), Determinants of capital structure. *Managerial Finance*, 37(2), 117-133.
- Suhailla, M.K., Wan Mahmood, W.M. (2008), Capital Structure and Firm Characteristics: Some Evidence from Malaysian Companies. Available from: <https://mpira.ub.uni-muenchen.de/14616>
- Tamba, C.A.O., Purwanto, P. (2021), Determinants of capital structure using profitability as moderating in Indonesia's property and real estate firms. *Emerging Markets*, 8(2), 73-88.
- Tulcanaza-Prieto, A.B., Lee, Y.H. (2019), Internal and external determinants of capital structure in large Korean firms. *Global Business and Finance Review*, 24(3), 79-96.
- Widagdo, B., Jihadi, Y.B., Oky, E.S., Sanju, K.S. (2020), Financial ratio, macro economy, and investment risk on Sharia stock return. *Journal of Asian Finance, Economics, and Business*, 7(12), 919-926.
- Zietlow, J., Seidner, A.G. (2007), *Cash and Investment Management for Non-profit Organizations*. United States: John Wiley & Sons.