IOSR Journal Of Humanities And Social Science (IOSR-JHSS)
Volume 27, Issue 11, Series 3 (November, 2022) 42-50
e-ISSN: 2279-0837, p-ISSN: 2279-0845.
www.iosrjournals.org

Effect of Capital Structure Determinants on Financial Performance of Manufacturing Firms in Nigeria. (2010-2019)

Ayeni Tonia YetundePh.DIbukun Felix OlusegunPh.D
akindutireyt@abuad.edu.ngfoibukun@abuad.edu.ng

Abstract:
This study examined the effect of capital structure determinants on financial performance of manufacturing firms in Nigeria. Data covered the periods of 2010 to 2019. Panel regression technique was used to examine the effect of leverage, liquidity, firms' size, age and corporate tax on return on asset. Based on the result of the random regression technique, it was found that leverage had negative and significant effect on return on asset. Also, it was found that liquidity had negative and significant effect on return on asset.Furthermore, findings from the study showed that firm size had negative and significant effect on return on asset. On the other hand, it was established that corporate tax had positive and significant effect on return on asset. Finally, it was revealed that age had positive but insignificant effect on return on asset.

Date of Submission: 01-11-2022 Date of Acceptance: 12-11-2022

I. Introduction

The maximization of firms' value is one of the major corporate objectives of organizations in modern finance. However, the maximization of firm value relies on diverse corporate decisions with financial or capital stature decision playing a leading role. Capital structure deals with decision on the different mixture of finance and the proportion of debt and equity to be employed in financing the investment opportunities of an organization (Kirmi, 2017; Charity, Austin, Orji, Steve &Okechukwu, 2019).

Capital structure decision is germane in corporate organization due to its implication on investment opportunities and future growth prospects. Capital structure decision also has major effect on the survival and expansion of an organization and influences other financial objectives of decision dividend policy and investment decisions (Joshua, 2017). However, the decision of capital structure is influenced by many factors which can either macro or micro in nature. According to Fan, Titman and Twite (2012); Olwale, Ilo and Lawal (2017); the choice of finance can be affected and determined by the mixture of different factors which are connected to a firm's characteristics and their immediate environmental factors.

Supporting this assertion, Booth, Aivazian, VDemiguc-Kunt and Maksimovic (2001); Ghasemi, and Ab-Razak (2016), opined that in developed and emerging countries the decision on the composition of capital structure of firms' relies on some specific factors which are peculiar to firms' and the industry in which they operate. Thus, determinants of capital structure comprise of factors that enlighten firms' in the choice of capital structure decision which can be either to mainly use equity or debt or the combination of both equity and debts base on the firms factors (Chandrasekharan, 2012; Singh &Bagga, 2019). These factors play significant role in the capital structure decision because they facilitate the combination of optimal capital structure composition at least cost while maximizing shareholder's wealth.

Financial performance is an important indicator of the healthiness of firms' and has many measurements with profitability playing leading role. Profitability is very fundamental for a firm. This is because it shows the ability of a firm to generate value from its activities and serves as signal to investors to buy shares of the firm. High profit enhances reputation and value of firms' through increase in the demand for shares and shares prices (Rahman, Sarker&Uddin, 2019). Also, highly profitable firms are able to survive harmful economic shocks and boost firms' stability. Furthermore better performing firms maximizes shareholders utility through high and frequent dividend payment and enhanced increased firm value (Bhutta&Hasan, 2013). Thus, stable and reputable firms that perform better and generate enough profits operate effectively in high-quality economic environment as well cam endure during turbulent economic conditions and recover quicker from negative shocks compared to low performing firms.

However, the linkage between capital structure as well as its determinants and performance of firms has extensively discussed theoretically. The puzzle of capital structure has been diverse and greatly discussed

for many decades following introduction by Modigliani and Miller (1958). The theory of Modigliani and Miller (1958) which is termed the MM model opined that in capital structure decision is does not determine the value of a firm in a situation of perfect capital market. However, the irrelevancy of capital structure has been suppressed through the introduction of several capital market conditions like taxes, bankruptcy costs, transaction costs, agency conflicts and asymmetric information which led to the springing up of alternative theories which explain the relevancy of capital structure in maximizing firms' value. Such theories include the trade-off theory (Kraus &Litzenberger, 1973), agency theory (Jensen &Meckling, 1976), signalling (Ross, 1977), target adjustment behaviour (Myers, 1984; Myers &Majluf, 1984), pecking order theory (Myers, 1984), free cash flow theory (Jensen, 1986) and market timing theory (Baker &Wurgler, 2002; Demirguc-Kunt&Maksimovic, 2002).

Making best decision on the financial objectives remain the major determinants of business survival in Nigeria (Aljamaan, 2018). However, decision on capital structure has been given less priority by companies in Nigeria (Ekwueme&Atu, 2018). Similarly, until the eighties, the corporate sectors faced several constraints on their choices regarding sources of funds. Access to equity markets was either regulated, or limited due to the underdevelopment stock market (Bhaduri, 2002; Eze&Uzochukwu, 2020). Nevertheless, after deregulation and financial liberalization of 1987, there have been changes in the environment in which firms operate. The macroeconomic environment has not been conducive for business while both monetary and fiscal policies of government have not been stable. The monetary interest rate has also been fluctuating. The high interest rate implies that cost of borrowing capital will be high in a financial market, thus increase the cost of operations of every business. Hence, more attention has been paid to capital structure decision and its determinants in the recent years (Mujwahuzi&Mbogo, 2020).

In both developed and developing countries, there has been an argument on the effect of capital structure on firm performance (Nwankwo, 2014). According to Akeem, Terer, Kiyanjui and Kayode (2014) financial structure has been a major factor affecting corporate firms' performance in Nigeria. However, whether factors that determine optimal capital structure inference the performance of firms' is one of the most important and complex issues facing managers of companies in Nigeria. Thus, this study to investigated the relationship between determinants of capital structure and firms performance in Nigeria.

II. Literature Review

Conceptual Review

Capital Structure

Capital structure is the mix of debt and equity that a company uses to finance its business (Adaramola&Olarewaju, 2015). Capital structure is the means by which organization activities are financed. It is the mix of debt and equity capital maintained by a firm. Akinmulegun (2012) define company's capital structure as debt level relative to equity on the balance sheet. Capital structure is concern with the composition of the liability of a company. The capital structure has been defined as the combination of debt and equity that attains the maximization of a firm's market value'. Capital structure is concerned with the manner in which a firm finances its business through mixture of equity and debt capital (Aljamaan, 2018). It is the combination of debt and equity financing.

The term capital structure by Charity, *et al.*, (2019) refers to the relationship between the various long-term sources financing such as equity capital, preference share capital and debt capital. Capital structure is the permanent financing of the company represented primarily by long-term debt and equity and deciding the suitable capital structure is the important decision of the financial management because it is closely related to the value of the firm. Gitman and Zutter (2012) defined capital structure as the mix of long-term debt and equity maintained by the firm. Capital structure is therefore a combination of debt and equity to finance the assets of a firm. Capital structure decision is concerned with the ratio of debt to equity that will maximize the returns of the firm. Debt is a source of finance which has several advantages. The capital structure decision of a firm is a significant managerial decision characterized by a high level of financial planning dexterity. It influences the shareholders' return and risk and subsequently affects the overall performance and market value of the firm.

Determinants of Capital Structure

Liquidity: An organization is insolvent when its "going concern" value does not exceed the expected value of its liabilities. In normal times, when non-financial markets are strong, it is fairly easy to identify insolvent non-financial firms. However, at times of crisis, it is difficult since solvency becomes so co-mingled with liquidity issues. Prices of assets become disconnected from estimates of expected cash flows and, instead, reflect the prices that could be obtained if the assets had to be sold tomorrow to the few investors prepared to buy such assets at such time the liquidity price (Gweyi&Karanja, 2014).

Cost of liquidity and illiquidity are involved in maintaining a particular level of current assets. Very high level of current assets means excessive liquidity hence return on assets will be low as funds are tied up in idle cash and stocks earn nothing while high levels of debtors reduce profitability. Therefore, cost of liquidity

through low rates of return increases with the level of current assets. Conversely, cost of illiquidity means holding insufficient current assets whereby a firm will be unable to honour its obligations forcing it to borrow on short-term at high interest rates. This adversely affects a firm's creditworthiness and may limit future access to funds and possible insolvency. A firm should balance the cost of liquidity and cost of illiquidity at equilibrium (Pandey, 2011).

The mechanisms that explain why liquidity can suddenly evaporate operate through the interaction of funding illiquidity due to maturity mismatches and market illiquidity. As long as a financial institution's assets pay off whenever its debt is due, it cannot suffer from funding liquidity problems even if it is highly levered. However, non-financial firms typically have an asset-liability maturity mismatch and hence are exposed to funding liquidity risk. A funding shortage arises when it is prohibitively expensive both to borrow more funds (low funding liquidity) and sell off its assets (low market liquidity) (Siddik, Kabiraj, &Joghee, 2017).

Firm Size: There exist different points of view about the relationship between the level of debt and the firm size. (Modigliani and Miller, 1958) suggested that there is no relationship between size and level of debt, keep in mind that this result is reliable with the market efficiency hypothesis. However, many authors argued that the negative or positive relationship among the two concepts is vast.

According to Ukaegbu and Oino (2014), listed companies have easier access to the equity market, in comparison with the smaller companies, because of low fixed costs. Therefore, there should be a negative relationship between the firm size and the debt level. Fama and French (2002) argued that transaction cost and asymmetric information problem are lesser in large firms when compare with small firms. Therefore, it is expected that large firms prefer to raise fund from equity rather than debt. Small and Medium Scale Enterprises often find costly to disperse asymmetric information (Uwalomwa, *et al.,* 2015).

Tangibility: When firms are able to pledge their assets as collateral, investment and borrowing become endogenous; pledge able assets support more borrowings that in turn allow for further investment in pled gable assets. Credit multiplier has an important impact on investment when firms face credit constraints: investment-cash flow sensitivities becomes increasing in the degree of tangibility of constrained firms. Therefore, tangibility is influencing whether a firm is classified as credit constrained or unconstrained in a switching regression framework (Ekwueme**&**Atu, 2018).

Leverage: The pecking order theory of capital structure shows that if a firm is profitable, then it is more likely that financing would be from internal sources rather than external sources. In other words, firms tend to use internally generated funds first and then resort to external financing.

This implies that profitable firms will have less amount of leverage (Damodaran, 2001). By this, profitable firms that have access to retained profits can rely on them as opposed to depending on outside sources (debt)agree that firms with high profit rates would maintain relatively lower debt ratios since they can generate such funds from internal sources. Empirical evidence from previous studies seems to be consistent with the pecking order theory. Most studies found a negative relationship between profitability and capital structure (Chesang&Ayuma, 2016).

Age of the Firm: is a significant determinant of capital structure of a firm. The age of the firm stakes holder and managers connotes a standard measure of reputation in capital structure models (Shehu, 2011). As a firm grows longer in business, it establishes itself as an ongoing business and therefore increases its capacity to take on more debt; hence age is positively related to debt. To address issues of creditworthiness, Gomez, Rivas and Bolanos (2014) suggests the use of firm reputation, which must have been developed over the years. It was therefore hypothesized that age of the firm is positively related to capital structure in Nigerian firms.

Growth of a Firm: it is expected that high growth firms will require more external financing and should display higher leverage (Siddik, *et al.,* 2017). It also maintains that growing firms appear more likely to use external finance – although it is difficult to determine whether finance induces growth or the opposite (or both). As enterprises undergo various stages of growth, that is micro, small, medium and large scale, they are also expected to shift financing sources. They are first expected to move from internal sources to external sources (Pandey, 2011).

Financial Flexibility: Financial flexibility was referred to the amount of cash and marketable securities in the current asset of a company. Studies typically showed a negative relationship between financial flexibility and leverage and this is in line with the pecking order theory by Myers (1984). Nassar (2016) performed an empirical study to determine the relationship of multinational firm's capital structure with firm specific factors. Among the factors examined was financial flexibility and found to be significantly affecting the company's leverage. The goal of the firm is to maintain financial flexibility, which means maintaining adequate reserve borrowing capacity. The lower the firm's financial flexibility, the higher is the firm's financial risk.

Asset structure: The degree to which the firms' assets are tangible and generic should result in the firm having a greater liquidation value. By pledging the assets as collateral (Myers, 1977; Iavorskyi, 2013) or arranging so that a fixed charge is directly placed to particular tangible assets of the firm, also reduces adverse selection and moral hazard costs (Mahmud & Musa, 2016). Bank financing will depend upon whether the lending can be secured by tangible assets (Storey, 1994; Schulz, 2017). Tangible assets could also have a negative impact on

financial leverage by augmenting risk through the increase of operating leverage (Hutchinson & Hunter, 1995). Part of the intangible assets, such as reputation, becomes quasi-tangible and interpreted by debt holders as a guarantee (Hassan &Samour, 2015). Liquidity ratios may have a mixed impact on the capital structure decision. Companies with higher liquidity ratios might support a relatively higher debt ratio due to greater ability to meet short-term obligations. On the other hand, firms with greater liquidities may use them to finance their investments. Therefore, the companies' liquidities should exert a negative impact on its leverage ratio (Ozkan, 2001). Moreover, the liquid assets can be used to show the extent to which these assets can be manipulated by shareholders at the expense of bondholders.

Management Attitudes: The last factor to consider when determining an optimal capital structure is managerial attitudes. Some managers are simply more aggressive than others. Therefore, some firms are more inclined to use debt in an effort to boost profits, whereas some managers are very conservative and prefer the capital structure that has always been used, even if it is not optimal (Weston & Brigham, 1990). By taking all of the above factors into account a decision regarding capital structure can be made when evaluating the three case companies.

III. Theoretical Framework

Irrelevance Theory: The cooperation between the university professors and Nobel Prize winners, Franco Modigliani and Merton Miller in 1958, resulted in what is today known as the first and one of the most important theories in the field of capital structure (Pagano, 2010). The original proposition and the fundamentals of Modigliani and Miller's Theorem (1958), suggested that there is a fully efficient market in which there are no taxes, transactions or bankruptcy costs, it also suggested that there is abundant information at the disposal of all parties. Optimal level of leverage is achieved by balancing the benefits from interest payments and costs of issuing debt.

Financially, debt is considered beneficial because of the debt-tax-shields that help to minimize expected tax bills and maximize the after-tax cash flows (Modigliani & Miller, 1958). In 1963, Modigliani and Miller included also the effect of taxes on their model, so that the theory can be closer to the reality. According to Modigliani and Miller's Publications (1958, 1961 and 1963), three important propositions, which form the base of their theorem, can be drawn (Breuer, 2008) into three proposition where a firm's total market value is independent of its capital structure, where the cost of equity increases with its debt-equity ratio and where a firms total market value is independent of its dividend policy.

According to this proposition: the capital structure of a firm does not influence its market value M & M proposition (I) contains assumptions that under certain conditions, the firm's debt equity, ratio has no effect on the firm's market value. As described by Modigliani and Miller (1958), their approach is based on assumptions indicated in the following paragraphs: All capital markets where trading of securities takes place, are perfect. Furthermore, investors can freely buy and sell securities, investors have the entire needed knowledge and are able to know all changes and information, there is no cost when buying and selling of securities (such as broker's commissions, the transfer fee, etc.), booth investors and firms are equal if they want to borrow against securities (Bose, 2010).

Pecking Order Theory: The Pecking Order Theory originated by Myers and Majluf, (1984) is the nearest pertinent theory explaining the company's optimal capital structure. According to Myers and Majluf (1984) Pecking Order Theory is based on the assertion that managers have information about their firms than investors. It deals with the role of asymmetric information in determining the amount of debt and equity a firm will issue. Firms should finance investments first with internal funds, then with safe debt, followed by risky debt and finally with equity to reduce the adverse signals that may be emitted. The implication of the Pecking Order Theory is that firms do not have a target debt-equity ratio as they choose their leverage ratio based on their financing needs.

This theory also implies that firms do not have target cash balances but cash is actually used as a buffer between retained earnings and investment needs (Ferreira &Vilela, 2004). This also means that when a firm increases its internal funds, its leverage falls. As a firm continues to maintain a surplus of internal funds for the purpose of reducing adverse selection costs, it will accumulate excess cash which it will use to pay off its debt when due. As for a firm which does not have a constrained investment policy, it simply uses cash flow to increase cash (Hovakimian, Opler& Titman, 2001). Working capital is a readily available internal source of financing which can thus act as an alternate source of financing to external capital, especially for the purpose of fixed-investment smoothing in order to maintain a stable fixed investment path. External funds can be very costly due to floatation costs and the problem of asymmetric information, especially for financially constrained firms (Fazzarri& Petersen, 1993).

Empirical Review

Abbas, Bashir, Manzoor and Akram (2013) employed panel data technique to investigate the determinant of capital structure in Pakistan and it was found that capital structure determinants significantly affect financial performance of firms. Mohamed (2014) empirically analysed the factors affecting financial performance of non-financial US firms. Findings from the panel regression showed that leverage, inventory, growth and age had negative and significant effect on impact on return on assets.Yusuf, Onafalujo, Idowu and Soyebo (2014) investigated the relationship between capital structure and profitability of firms quoted in Nigeria stock exchange between 2000 and 2011. Using panel regression technique, it was found that capital structure had insignificant on return on asset.

Ghafoorifard, Sheykh, Shakibaee and Joshaghan (2014) examined the effect of firm size and age on financial performance of listed companies in Tehran stock exchange using linear regression technique; empirical evidence suggested that firm size and age enhance financial performance. Enekwe, Agu and Eziedo (2014) analyzed the linkage between financial leverage and financial performance in pharmaceutical companies in Nigeria. In line with the regression technique, it was concluded that debt ratio and debt-equity ratio had undesirable effect on return on asset.

Javed, Rao, Akram and Nazir (2015) examined the effect of financial leverage on efficiency of firms in Pakistan from 2006 to 2011. Employing ordinary least square technique to analyze data, leverage was found to negatively influence efficiency of firms. Uwalomwa, *et al.,* (2015) assessed the effects of firms' characteristics on earnings management of listed companies in Nigeria from 2006 to 2010. The pooled least square regression estimation technique revealed that firm size and firms' corporate strategy had positive relationship with earnings management.

Abdul and Adelabu (2015) looked at the relationship between financial leverage and return on equity of oil and gas industry in Nigeria using ordinary least square regression. It was discovered that there is positive and significant relationship between financial leverage and financial performance of the company. Adaramola and Olarewaju (2015) examined the major determinant of capital structure of quoted composite insurance companies in Nigeria. The results revealed that tangibility, growth and liquidity had negative effect on leverage.

Banafa, Muturi and Ngugi (2015) established the effects of leverage on financial performance of listed nonfinancial firms in Kenya. Regression technique was employed for analysis and it was revealed that financial leverage had negative and significant effect on corporate financial performance. Kimathi, Galo and Melissa (2015) investigated the direction of causality between financial leverage and the financial performance of the firms. Findings of the study revealed that there was no significant difference in financial performance between highly levered and lowly levered firms.

Karacaer, Temiz and Gulec (2016) focusing on Turkish manufacturing using panel regression technique, documented that firm size and non-debt tax shield had positive effect on the financial leverage of manufacturing firms'. Ghasemi and Ab-Razak (2016) investigated the effect of liquidity on the capital structure of listed firms Malaysia from 2005 to 2013. The Pooled OLS w showed that liquidity had significant effect on leverage.

Chesang and Ayuma (2016) looked at the effect of financial leverage on profitability of agricultural firms in Kenya. The regression result suggested that debt to equity ratio and current ratio had significant effect on profitability. Bongoye, Banafa and Kingi (2016) explored the effect of firm specific factors on financial performance of listed non-financial firms in Nigeria between 2011 and 2015. Firm specific factors generally were found to have positive relationship with financial performance of non-financial firms in Nigeria.

M'ng, *et al.,* (2017) investigated the determinants of capital structure of public listed companies in Singapore from 2004 to 2013. It was established that profitability had significant and negative influence on capital structure. Siddik, Kabiraj and Joghee (2017) examined the linkage between capital structure and the performance of banks in Bangladesh from 2005 and 2014. Findings from the pooled ordinary square analysis revealed that capital structure negatively influenced performance of banks.

Olawale, Ilo and Lawal (2017) investigated the effect of firm size on the performance of firms in Nigeria between 2005 and 2013. The panel regression analysis showed firm size had negative effect on performance. Ekwuemeand Atu (2018) examined the nexus between capital structure and firms performance in Nigeria Quoted Insurance companies from 2002 to 2016. It was discovered from the panel regression that equity had weak relationship performance.

Aljamaan (2018) on the determinants and its theories linkage with performance concluded that the relationship between capital structureand firm's financial performance is mixed between positive and negative relation according tothe place, size, and industry. Charity, *et al.,* (2019) examined the determinants of capital structure of firm's financial performance. Based on findings from regression analysis, it was concluded that the level of debt and equity in a company's capital structure has risk and return implications.

Singh and Bagga (2019) investigated the effect of capital structure on the profitability listed companies in India from 2008 to 2017. The panel regression result showed that there is significant and positive relationship

between capital structure and firm's profitability. Rahman*et al.,* (2019) explored the impact of capital structure on the profitability of manufacturing firms in Bangladesh from 2013 to 2017. The study revealed that equity ratio had a significant and positive impact but debt to equity ratio has a significant and negative impact on ROE.

Mujwahuzi and Mbogo (2020) examined the effects of capital structure on business profitability in Tanzania from 2009 to 2018. Ordinary Least Squares (OLS) regression analysis result showed that capital structure is not a major determinant of firm's profitability. Eze and Uzochukwu (2020) evaluated the impact of tax shield on capital structure of quoted non-financial firms in Nigeria from 2015 and 2019 financial year. The panel regression result revealed that debt tax shield and firm leverage significantly impacted capital structure of non-financial firms.

IV. Methodology

The data used in this study included time series data from 2010 to 2019. It is based on secondary data from the Annual Reports and Financial Statement of Accounts of the selected firms.

Model Specification

The model for the study were built on empirical model of Yusuf and Mohd(2021). Abbas, *et al.,* (2013); M'ng, *et al.,* (2017) who modeled capital structure determinants as a function of financial performance. Thus, the simple model for this study is given as:

ROA= *f*(LQD, FS, LEV, CT, AGE) (1)

This is given as:

$$ROA_{it} = \beta_0 + \beta_1 LEV_i + \beta_2 LQD_i + \beta_3 FS_i + \beta_4 CT_{i+} \beta_5 AGE_{it}\, e_{1i} \quad (2)$$

Where:
ROA = Return on assets
LEV = Leverage
LQD = Liquidity
FS = Firm size
CT = Corporate Tax
AGE = Age of Firms
β_0 = Constant Term
$\beta_1 - \beta_5$ = Parameters
i = Individual Firm
e = error term
t = time series variable

V. Methods of Data Analysis

Descriptive Statistic

Table.1: Descriptive Statistic

	ROA	LEV	LQD	FS	CT	AGE
Mean	11.51550	11001.02	1.200665	24.27329	3707833.	63.80000
Std. Dev.	9.092723	108504.6	0.557443	1.539216	5015462.	35.25606
Skewness	-0.922130	9.849350	0.970350	-1.532039	1.739276	0.585989
Kurtosis	6.152776	98.00983	3.774228	5.418252	4.945294	2.928276
Jarque-Bera	55.58869	39228.78	18.19060	63.48551	66.18542	5.744496
Probability	0.000000	0.000000	0.000112	0.000000	0.000000	0.056572

Source: Researcher's Computation, 2021

Table 1 reveals the descriptive statistics for the variables employed in the study. The result shows that most of the data series have low mean values with low dispersion from the starred deviation expected leverage and corporate tax with high average values. The Skewness of the variables which give the value of -0.922130 for return on asset and -1.532039 for firm size implies that that the variables are negatively skewed while leverage, liquidity, corporate tax and age of firms are positively skewed. Finally, the table shows that all the variables employed in the study are highly peak that is the variables are leptokurtic while age of firms which is flatly distributed which implies that variable is platykurtic.

Correlation Matrix

Table 2: Correlation Matrix

	ROA	LEV	LQD	FS	CT	AGE
ROA	1.000000					
LEV	-0.465429	1.000000				
LQD	-0.000854	-0.104022	1.000000			
FS	-0.230876	0.019017	-0.162007	1.000000		
CT	0.347294	-0.068808	-0.349021	0.255566	1.000000	
AGE	0.134480	-0.125503	0.103882	0.262932	-0.020806	1.000000

Source: Researcher's Computation, 2021

Table 2 which is extracted from appendix 3 shows the correlation matrix for the data employed in this research work. A correlation above 0.7 or 70% indicates evidence of multi co linearity. Based on this, statistical evidence from the correlation in Table 2 shows the absence of multi co-linearity among variables under study. The result in Table 2 shows leverage, liquidity and firms size have weak and negative correlation with return on asset of manufacturing firms in Nigeria. Also, the result of the correlation analysis reveals that there is weak and negative relationship between return on asset and liquidity with a correlation value of indicating that higher liquidity will reduce return on asset of the selected nonfinancial firms. Finally, it is revealed that age and corporate tax have weak and positive correlation with return on asset.

Hausman Test

The Hausman test is a formal test to choose between the random and fixed effects models. It is performed to determine the model that produces consistent and efficient estimates between both models. The null hypothesis for the test is that the difference between the fixed and random effects models coefficients is not systematic. The rejection of the null hypothesis connotes that the fixed effects model should be preferred while the random effects model is better if the null hypothesis is accepted. The result of the Hausman test is reported in Table .

Table 3: Hausman Test Result

Test Summary	**Chi-Sq. Statistic**	**Chi-Sq. d.f.**	**Prob.**
Cross-section random	0.000000	5	1.0000
Variable	**Fixed**	**Random**	**Var(Diff.)**	**Prob.**
LEV	-3.805031	-3.685521	0.037963	0.5396
LQD	-4.549701	-4.082440	0.114003	0.1664
FS	-1.463187	-1.868594	0.020148	0.0043
CT	1.714520	1.980998	0.016998	0.0410
AGE	0.028899	0.033643	0.000007	0.0786

Source: Researcher's Computation, 2021

From the table, the chi-square (x^2) with p-value of 1.0000 is statistically insignificant at 5%, thus leading to the acceptance of the null hypothesis. This implies that the random effect model produces better and consistent estimates than the fixed effects model, thus the random effects is considered appropriate for this study.

Random Effects Model

Table 4: Random Effect Regression Result

Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
LEV	-3.685521	0.711077	-5.183016	0.0000
LQD	-4.082440	1.417090	-2.880862	0.0049
FS	-1.868594	0.522897	-3.573538	0.0006
CT	1.980998	0.432443	4.580942	0.0000
AGE	0.033643	0.021931	1.534041	0.1284
C	49.57628	12.29671	4.031670	0.0001
R-squared	0.757259			
Adjusted R-squared	0.685730			
F-statistic	12.91704			
Prob(F-statistic)	0.000000			
Durbin-Watson stat				

	1.786907

Source: Researcher's Computation, 2021

Table 4 reveals the result of the random effect on the relationship between determents of capital structure and performance of manufacturing firms in Nigeria. The results from the table 5 indicates that there leverage has a coefficient of -3.685521 which implies that leverage has significant and negative effect on return on asset of the selected firms. This implies that as firms employed more debts in their capital structure, the return that is due to the shareholders will fall. This findings did not corroborate with the findings of Ekweme and Atu (2018) who found positive relationship between leverage and performance but conformed with the result of M'ng (2017)

In the same vein, the coefficient of liquidity is -4.082440 with the corresponding probability value of 0.0049 indicating that a unit increase in liquidity of the selected firms will lead to 4.082440 unit fall in return on asset. This implies that as companies build more liquidity in order to meet short term obligation, return on asset will fall. This findings is not in line with the empirical results of Sing and Bagga (2019) who found that liquidity impacted positively on financial performance.

VI. Summary

This study examined the effect of capital structure determinants on financial performance of manufacturing firms in Nigeria. Data covered the periods of 2010 to 2019. Panel regression technique was used to examine the effect of leverage, liquidity, firms' size, age and corporate tax on return on asset. Based on the result of the random regression technique, it was found that leverage had negative and significant effect on return on asset. Also, it was found that liquidity had negative and significant effect on return on asset.Furthermore, findings from the study showed that firm size had negative and significant effect on return on asset. On the other hand, it was established that corporate tax had positive and significant effect on return on asset. Finally, it was revealed that age had positive but insignificant effect on return on asset.

VII. Conclusion

The effect of capital structure on the performance of firms is of great significance in the area of financing decision because the choice of capital structure mix influences the financing decision and value of the shareholders. Therefore, financial managers are faced with challenges of determining and employing optimum capital structure that will enhance firms' performance and shareholders' value. This study focused basically on direction and pattern of relationship between capital structure, its determinants and the performance of manufacturing firms' in Nigeria. The study established that capital structure and its determinants play significant on the performance of manufacturing firms. The study thus, concluded that manufacturing firms should made capital structure decisions considering its different determinants in order to enhance financial performance.

VIII. Recommendations

In line with the findings , the following recommendations were made:

1) As a result of the negative relationship between leverage and return on asset, manufacturing firms should be cautious of debt usage and ensure debts do not go beyond cretin limit in order to generate more revenue.

2) Due to the negative effect of liquidity on return on asset, level of liquidity position should be monitored to ensure that excess liquidity are not held. Excess liquidity will constraints investments and hence performance. Thus, excess cash should be invested in revenue generating assets.

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