Financial Leverage And Financial Stability Of Quoted Manufacturing Companies In Nigeria

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Abstract- Shareholders are discourage with the traits of financial instability. To curb this companies require an efficient and competent managers to manage financial leverage to ensure financial stability this study investigated the effect of financial leverage on financial stability of quoted manufacturing companies in Nigeria.

Ex-post facto research design was employed on 99 quoted manufacturing companies listed in Nigeria Stock Exchange as at 2018 and thirteen out of the companies were purposively selected for this study.

The study revealed that financial stability of quoted manufacturing companies in Nigerian was significantly affected by financial leverage. The results showed a positive significant effect on cash flow, ($AdjR^2 = 0.0032$; $F_{(2, 127)} = 14.21$; P-value = 0.001); on return on assets, $AdjR^2 = 0.296$; $F_{(2, 127)} = 161.63$; P-value= 0.000); on return on equity. ($AdjR^2 = 0.870$; $F_{(2, 127)} = 140.61$; P-value = 0.000) and on liquidity, ($AdjR^2 = 0.027$; $F_{(2, 127)} = 89.68$; P-value= 0.000). The study concluded that financial leverage affected financial stability of quoted manufacturing companies in Nigerian. The study recommended that shareholders, managers, policy makers, and other stakeholders should be mindful of companies' financial leverage management and trend of dividend payment profile.

Index Terms- Leverage, liquidity, Return on Asset, Return on equity, cash flow.

I. INTRODUCTION

The manufacturing sector of any country occupy a vital position in a country's economic growth and development because their activities adds value to every other sectors, growth and earnings of the country (Ibrahim, Ahmad & Muhammad, 2016).

In the past two decades numerous cases of financial distress, instability and subsequent failure among globally reputable firms who once represented the icons of corporate financial stability prior to filing for bankruptcy (Muigai, 2016). Financial instability referred to a situation where a firm is unable to generate sufficient funds to meet its financial obligations as at when due (Andualem, 2015).

Financial instability usually arises when firms fail to honor their financial obligation to suppliers and creditors (Eboiyehi & Ikpesu, 2017). It is generally accepted that components of financial stability cut across organization's financial performance indicators, profitability ratios, its liabilities, risk, and dividend payout and earning per share (Yinusa, Ismail, Yulia & Olawale, 2019). One of the ways suggested to solve the problem of financial instability as suggested by Campbell and Asaleye (2016) was policy reform In the view of Adeyefa and Obamuyi (2018) all reforms carried out to liberalize, diversify the financial sector to enable manufacturing firms' access to required funds to finance production and remain stable have not been effective. Nigerian manufacturing firms are facing a lot of risks that are threatening their operational performance and financial stability (Raji, 2018). These risks range from business risks, financial risk, market risk, operational risk, and risk of exposure to tax and fluctuating economic conditions (Gunarathna, 2016). Some of these risks can be avoided while some are intrinsically tied to the very existence of the firm Operating risk cannot be avoided since it arises from uncertainty of the market where the firm undertakes. However, financial risk can be avoided since it arises from the risk of insolvency of the common stock and shareholders due to use of financial leverage (Gunarathna, 2016).

According to Egbunike and Okerekeoti (2018) high performance and financial stability reflects management effectiveness and efficiency in making use of company's resources and their ability to handle financial leverage. The cause of financial instability in firms to include insufficient cash flows, volatile profitability and decline in assets-liability ratio, loss of confidence by the creditors and suppliers, poor capital structure, weak corporate governance, and severe competitions for factors of production and markets (Muigai, 2016; Eboiyehi & Ikpesu, 2017). Research findings by Rajan and Zingales (1995) showed that financing decision plays a critical and vital role in determining the interim financial performance of a firm as well as its long-run survival

As expressed by Rodoni and Ali (2010), the financial condition of a company can be deduced from is capital insufficiency or lack of capital, the amount of debt and interest. It then follows that a major way for firms to be financially stable and competitive is to constantly stay with an appropriate debt- equity mix.

Furthermore, financial stability can be gauged and resolved by the investment decisions and cash flow status of the firm (Ahmadu, 2015) The higher the operational cash flow ratio of the company, the easier the company to get away from the financial distress condition. . If the ratio of cash flow from the company operational activities is low, then it may lead the company to have fewer profits, resulting in the company experiencing financial

distress and harder to get away from its condition (Finishtya, 2019).

Every firm has to choose between equity and leverage (debt) financing. According to Sturesson and Källum (2017) a practical explanation of financial leverage can be observed when high-tech companies often use a relatively low financial leverage, unlike industries like airlines which borrow a lot of capital because their assets are relatively "safe" and tangible (Brealey, Myers & Allen, 2007). Furthermore, Abubakar (2017), stated that the value of the firm is proportionally related to its financial performance. That is Return on Assets (ROA) a financial ratio is related to the capital structure of a company. Similarly, Return on Equity (ROE) a financial ratio, which shows the return on the shareholders' invested capital (Brealey, Myers & Allen, 2007) can also be used to gauge the financial stability of a firm.

According to Borhan and Mohamed (2014) the higher the profitability ratios (ROA and ROE) of a company, the easier the company to get away from financial difficulties. According to the research conducted by Masdupi, Tasman and Davista (2018) a company with higher profitability ratio will experience a negative effect towards financial distress, which means that the greater profitability of a company the lesser the chance of financial distress. Another measure of financial instability is liquidity (Zelealem, 2016). Liquidity occurs due to instability of the market caused by levered investors accumulating too large a share of the asset market (Tobias, Karol & Alexander, 2018).

An excessive amount of financial leverage could increase the risk of financial instability, since it becomes more difficult to repay debt. Even Gunarathna (2016) warned that sometimes costs associated with leverage can outweigh the benefits when the leverage increases beyond an optimal level. It is the stand of this researcher to proposed financial leverage as a way to improve company's financial stability. Many studies had been reviewed on financial leverage and financial instability such as a study led by William, Adam, Paul and Timothy (2015) who found that there is need for continual evaluation and comprehensive analysis of the firms health.

Al-Qudah (2017) and Arowoshegbe and Emeni (2014) discovered that the relationship between leverage and liquidity. This are diverse, inconclusive and requires further studies, to that end, this study aim at exploring the interactions between leverage and financial stability of listed manufacturing firms in Nigeria. Owing to these identified gaps, a study that will cover the various forms of financing mix in order to address the following questions that remain unanswered is desirable: to what extent do total debt to total assets ratio, total debt to total equity ratio, and the ratios of short-term and long term debt to total assets affect the financial stability of manufacturing firms in Nigeria

Statement of problem

Firms experiencing financial instability find it difficult to maintain their cash flow and make sustainable profit from their investment (Tahirdan, 2018) due to instability, declining in cash flows, low turnover, poor liquidity management resulting to dipping earnings for the shareholders (ROE)and returns on assets (ROA). In order to ensure financial stability firms, increase their financial leverage, however low ROA and ROE shows that the companies are not using their assets to generate profit despite that

they are highly levered. According to Lydia (2015) high financial leverage should lead to profitability (ROA, ROE) (Lydia, 2015) but financially leveraged firms in Nigeria have ceased to pay dividends due to high transaction cost and high debt burden arising from financial leverage (Yusuf, 2015). This raises the question, what then constitutes the right level of funding mix that can guarantee firm financial stability?

This study evaluate the effect of leverage on the financial stability of quoted manufacturing firms in Nigeria.
1. It determines the effect of financial leverage on cash flow of quoted manufacturing companies in Nigeria;
2. assess the effect of financial leverage on return on asset of quoted manufacturing companies in Nigeria
3. evaluate the effect of financial leverage on return on equity of quoted manufacturing companies in Nigeria.
4. determine the effect of financial leverage on liquidity of quoted manufacturing companies in Nigeria;

Research Hypotheses

The following hypotheses were formulated and tested in the course of the study.

$H_0$1:   Financial leverage has no significant effect on cash flow of quoted manufacturing companies in Nigeria.

$H_0$2:   Financial leverage has no significant effect on return on asset of quoted manufacturing companies in Nigeria.

$H_0$3:   Financial leverage has no significant effect on return on equity of quoted manufacturing companies in Nigeria.

$H_0$4:   Financial leverage has no significant effect on the liquidity of quoted manufacturing companies in Nigeria.

II.   LITERATURE REVIEW

Financial Stability

A stable financial system contributes to broader economic growth and rising living standards. The CBN (2013) noted that 'financial stability' is the resilience of the financial system to unanticipated adverse shocks, while enabling the continuing smooth functioning of the financial system's intermediation process. The financial system performs one of the most important functions in the welfare of its citizens by supporting the ability of households and firms to hold or transfer financial assets with confidence. The financial stability review (2019) expressed that financial stability can be defined as a condition in which the financial system – which comprises financial intermediaries, markets and market infrastructures – is capable of withstanding shocks and the unravelling of financial imbalances.

This mitigates the likelihood of disruptions in the financial intermediation process that are systemic, that is, severe enough to trigger a material contraction of real economic activity. Financially stable business will not rely too heavily on debt, will use its assets efficiently (ROA), cash flow and will have a healthy profit margin on its sales . A common measure of stability at the level of individual institutions is the z-score. It explicitly compares buffers (capitalization and returns) with risk (volatility of returns) to measure a bank's solvency risk. Another assessment of financial system stability is Systemic Expected Shortfall (SES), which measures each institution's individual contribution to systemic risk. SES takes the individual taking leverage and risk-taking into

account and measures the externalities from the banking sector to the real economy when these institutions fail.

Financial stability is paramount for economic growth, as most transactions in the real economy are made through the financial system. Financial stability ratios are tools for gauging ability to meet long-term obligations with enough working capital left to operate. An accounting ratio is made by dividing one account item into another (Ward, 2003).

Cash Flow

According to Finishtya (2019) Cash flow statement is a summary of the company's cash receipts and disbursement in a certain period. One of the uses of cash flow information is to understand the result of the company's operational activities. If the company's cash flow runs smoothly, it indicates that the company's operational activities run well. The higher the operational cash flow ratio of the company, the easier the company to get away from the financial distress condition. If the ratio of cash flow from the company operational activities is low, then it may lead the company to have fewer profits, resulting the company to experience financial distress and harder to get away from its condition According to Peavler (2019) the cash flow statement is one of the three financial statements a business owner uses in cash flow analysis. Businesses rely on the statement of cash flows to determine their financial strength. The utilization of the performance ratios of cash flows are not common practice; an interpretation of what these indicate is also a novel undertaking. To start with, statements of cash flow may not be equated to statements of income. The latter incorporates both the non-cash and cash items (Helfert, 2001).

One of the well-known ratios is Cash flow Adequacy Ratio**.** The adequacy cash flow determines the ability of a company to generate sufficient cash to offset the available debts and facilitates operations reinvestment initiative. Dividend payout, payment of long-term debts and the reinvestment ratios offer an additional insight for creditors and investors into appreciating the significance of the aforementioned components. The mathematical formula for this ratio is as follows:

$$Cash\ Flow\ Adequacy\ Ratio = \frac{(EBITDA - taxes\ paid - interest\ paid - capital\ expenditures)}{(Average\ annual\ debt\ maturities\ scheduled\ over\ next\ 5\ years)}$$

In this ratio, the numerator represents earnings prior to taxes, interest, amortization and depreciation (EBITDA) minus payable taxes (cash taxes) minus payable interest (cash interest) less capital expenditure. On the other hand, the denominator to this ratio represents average annual debt maturities scheduled over the subsequent five years. The cash flow adequacy ratio assists in the smoothening out of several cyclical factors which could handicap the ratio (Ward, 2003).

Return on Asset (ROA)

Return on Assets (ROA) is a financial ratio used to measure the degree to which the assets have been used to generate profits. The greater the return on assets (ROA) of a company, the greater the company performance and the greater will be the rate of return on investment. Return on Assets expresses the net income earned by a company as a percentage of the total assets available for use

by that company. ROA suggests that companies with higher amounts of assets should be able to earn higher levels of income. ROA measures management's ability to earn a return on the firm's resources assets (Mohd, Muammar & Ainatul, 2014). ROA is computed by dividing net income plus interest expense by the company's average investment in assets during the year.

Return on Equity (ROE)

Return on Equity (ROE) showed the extent to which companies manage their own capital (net worth) effectively, measure the profitability of the investment that has been made owners of their own capital or shareholders of the company. Return on Equity is calculated by the formula Net income divided by Shareholders' equity and can therefore be seen as the return per shareholders invested monetary unit (Brealey, Myers & Allen, 2017). Mohd, Muammar and Ainatul, 2014) in his research found that the results of the Return on Equity (ROE) effect performance.

Liquidity Ratio

According to Zelealem (2016), liquidity represents the capital amount that is available for use as an investment and or expenditure. It is computed by dividing current assets by current liability, thus it shows the ability of a firm to meet their current liabilities as and when they mature. It is the state or condition of a business organization which determines its ability to honor   or discharge its maturing obligations made up of current liabilities and long-term debts. These imply that, as liquidity increases, the probability of technical insolvency is reduced. The most common liquidity ratio is the current ratio, which is the ratio of current assets to current liabilities. This ratio indicates a company's ability to pay its short-term bills. Liquidity is computed by dividing current assets by current liability. Liquidity represents the capital amount that is available for use as an investment and or expenditure.

Financial Leverage

According to Mohammad (2014) financial leverage is referred to the capacity of an organization in using borrowed money. Financial leverage can be explained as a proportion to which a company uses fixed income securities such as debt and equity. As financial is increased, finance cost is also increased as a result. The result of high finance cost earning per share is also affected negatively. It is the investment strategy of using borrowed money, specifically, the use of various financial instruments or borrowed capital to increase the potential return of an investment. Leverage can also refer to the amount of debt used to finance assets (Struesson, & Kallum, 2017). A high operating leverage means that a firm is making few sales but with high margins. This can pose significant risks if a firm incorrectly forecasts future sales. If a future sales forecast is slightly higher than what actually occurs, this could lead to a huge difference between actual and budgeted cash flow, which will greatly affect a firm's future operating ability. According to Rajan & Zingales (1995) the various measures of leverage are current ratio, debt ratio and equity . Financial leverage ratios, measure the value of equity in a company by analyzing its overall debt picture. Current ratio (CR) is a company's ability to pay off short-term debt with current assets of the company. Current ratio (CR) indicates not a good proxy for the company in determining its future earnings growth. This could

be influenced by the supply of raw materials and goods in process is not ready for sale listed in the Current assets. Debt ratio and debt to equity ratio is used as an indicator to measure the solvency of the company to make the company financial in a stable position. According to Nailal and Rika (2016) solvency ratio indicates the extent a company is running through their debt.   The ratio can be determined through fixed assets and long-term debt. The authors also defined solvability ratio as company capability to conduct their financial liabilities if in case the company is in liquidation.A poor solvency ratio may suggest that the company was unable to meet its obligations in the long term. Fortunately, most companies can take steps to improve their solvency ratios and boost profitability in the long term by selling assets to reduce overall debt.

Equity Ratio (EQR)
Equity ratio = Equity/Total asset

Equity Ratio is a financial ratio indicating the relative proportion of equity used to finance a company's assets. It measures the proportion of the total assets that are financed by stockholders and not creditors. A low equity ratio will produce good results for stockholders as long as the company earns a rate of return on assets that is greater than the interest rate paid to creditors.

Debt Ratio (DER)
Debt ratio is a solvency ratio that measures firm's total liabilities as a percentage of its total assets. In a sense, the debt ratio shows a company's ability to pay off its liabilities with its assets. In other words, this shows how many assets the company must sell in order to pay off all of its liabilities. This ratio also measures the financial debt of a company. Companies with higher levels of liabilities compared with assets are considered highly indebted and more risky for lenders (Masdupi, Tasman & Davista, 2018). The debt ratio is calculated by dividing total liabilities by total assets. Both of these numbers can easily be found in the balance sheet. A lower debt ratio usually implies a more stable business with the potential of longevity because a company with lower ratio also has an overall debt posture.

III.   THEORETICAL REVIEW

These theories reviewed are Modigliani and Miller theory I, Pecking order theory, Trade-off theory and Agency cost theory.

The Modigliani and Miller Theory I
The theory was proposed by Modigliani and Miller (1958 and sometimes the theory is called leverage irrelevent theorem. A theory of corporate capital structure that posits financial leverage has no effect on the value of a company if income tax and distress costs are not present in the business environment. In developing their theory, Miller and Modigliani first assumed that firms have two primary ways of obtaining funding: equity and debt. While each type of funding has its own benefits and drawbacks, the ultimate outcome is a firm dividing up its cash flows to investors, regardless of the funding source chosen. Criticisms of the irrelevance proposition theorem focus on the lack of realism in removing the effects of income tax and distress costs from a firm's capital structure

Pecking Order Theory
Donaldson (1961) proposed the pecking order theory when he conducted an interview survey of 25 large United States (US) firms and concluded that management strongly prefers to use internal funds when available and prefers not to use external sources of funds unless internal sources are unavailable(Abubakar, 2019). Myers and Majluf (1984) provided a theoretical justification of Donaldson's (1961) results. According to Tayyab(2017) the Pecking order theory which is also known as pecking order model, simply posits that the cost of financing increases with asymmetric information. When it comes to raising finance in business, Pecking order theory explains that when assessing whether to use internal funds, debt, or new Equity, the ranking is as follows: Companies will first prefer internal financing, then debt, before issuing new Equity, in that order. The Pecking theory suggests that firms prefer to finance new investment first internally with retained earnings, second with debt, and last by issuing new equity

The Trade-off Theory
Kraus and Litzenberger(1973) proposed the Trade-off Theory. According to Sinha (2017) the traditional Trade - Off Theory or the Tax Shield - Bankruptcy Cost Theory postulates that the value of a firm may be maximized at an optimal level of capital structure where the marginal benefits of debt (that is, the present value of tax savings from tax - deductibility of interest payments) and the marginal costs of debt (that is, the present value of potential bankruptcy costs, holding its assets and investment plans constant are equalized. The trade-off theory has become the most acceptable theory to explain optimal capital structure in the real world.

Agency Cost Theory
The theory was proposed by Myers (2001) who highlighted the conflict of interest arising in the firm's management in trying to pursue its interest rather than the interest of its boss (shareholders). Agency theory has brought forward the concept of agency conflict and the cost that arises out of it (Jensen & Meckling, 1976). Agency costs are one of the internal costs attached with the agents that occur due to the misalignment of the interest between the agent and principal. It embraces the cost of examining and picking up a suitable agent, collecting information to fix performance benchmarks, watching to control.

Critiques of the theory include Perrow (1986), Wiseman and Gomez-Mejia (1998), and Sanders and Carpenter (2003). Pepper and Gore (2012) criticised that positivist agency researchers have only concentrated on the agent side of the 'principal and agent problem', and opined that the prob-lem may also happen from the principal side.

Theoretical Framework
The anchor theory for this study is the Pecking order theory and tradeoff theory. There are justifiable reasons for this.

Rationale for choice of the adopted theories: Trade-off theory and pecking order theory. Trade-off theory actually supports the leverage to construct capital structure by assuming leverage-benefits. 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). Trade-off theory hence predicts the cost and benefit analysis of debt financing to achieve optimal capital structure. On the contrary, the other prominent theory related to capital structure is pecking order theory that focuses on finance firm operations with its internally generated sources first, that is retained earnings rather than issuing debt and equity (external financing). Pecking order theory argues to minimize the firm's insiders-outsiders issues related to information asymmetry by following a particular financing hierarchy (Myers, 1984; Myers & Majluf, 1984) The theory gives a clear idea that the managers first prioritize the retained earnings to finance their activities and if they need more funds, they choose to issue debt, lastly when issuing more debt makes no sense, equity is issued. Pecking order theory, on one side, supports the assumption that high profitable firms would most likely finance their activities with internal funds and would tend to lower the level of debt ratio. Whereas trade-off theory also depicts the positive relation between leverage and profitability by showing that the high profitable firms prioritize their investments with external finance to shield the income from taxes with the help of leverage.

Researcher   Conceptual   Model

Figure 1: Conceptual Model of the Research, 2019

IV. METHODOLOGY

The study employed an *ex-post facto,* the study employed the use of *ex-post facto* for the study because the study considered the past events relationship between the dependent and independent variables. Panel data was used due to the nature of the stated models being multiples variables, hence descriptive and inferential statistics were used to analyze the data. The population of this study consists of all ninety-nine (99) quoted manufacturing firms Nigeria stock exchange (SEC), 2018. The study made use of purposive sampling technique. Thirteen (13) manufacturing firms were purposively selected, one firm from each division and it must

had been existing for the past 10years (selected firms table 2). Secondary data extracted from an audited financial statement of the manufacturing companies from 2009 to 2018 was used for the analysis. Descriptive and inferential statistics were carried out on panel data. Descriptive assisted in simple average, median and standard deviation analyses while panel regression models shows the Hausman test, The Breusch and Pagan LM Test, Heteroskedasticity test, serial Autocorrelation test and cross-sectional dependence test

Model Specifications

$Y = f(XZ)$.

$Y_{it} = \beta_0 + \beta_1 XZ_{it} + \varepsilon_{it}$

Where

Y = Dependent variable (financial Stability)

X = Independent variable (Financial Leverage)

Z = Moderating Variable

β_0 = regression intercept which is constant

β_1 = the coefficient of the explanatory variable

ε is the error term of the model

i = cross-sectional variable (13)

t = time series variable (16)

Models of the Study

$CAF_{it} = \beta_0 + \beta_1 DER_{it} + \beta_2 EQR_{it} + \varepsilon_{it}$ ----- Model 1

$ROA_{it} = \beta_0 + \beta_1 DER_{it} + \beta_2 EQR_{it} + \varepsilon_{it}$ ---- Model 2

$ROE_{it} = \beta_0 + \beta_1 DER_{it} + \beta_2 EQR_{it} + \varepsilon_{it}$ ----- Model 3

$LIQ_{it} = \beta_0 + \beta_1 DER_{it} + \beta_2 EQR_{it} + \varepsilon_{it}$ -------Model 4

Where

CAF = Cash Flow

ROE = Return on Equity

ROA = Return on Asset

LIQ = Liquidity

V. RESULTS

Descriptive Analysis

Cash Flow from Operation (CAF): From Table 3, it's obvious that the average value of this dependent variable that provides a clearer picture of the current reality of the business called Cash Flow from Operation (CAF) is found to be 0.113 (about 11.3%), and the rate of dispersion of the CAF values i.e. standard deviation is 0.257: these values spread between -1.019 and 2.378 and the number of observation is 130. All of these depict a considerable financial stability. *Return on Asset (ROA)*: As been shown in Table 4. 1. 1, the mean value of Return on Asset (ROA) is 0.061 which represents about 6.1% profit generated using the companies' asset, with standard deviation value which is 0.118. This connotes that the selected firm's average ROA in the period of this study stood at 6.1%; while wide variation is observed in its values. ROA values are found to spread out between -0.449 and 0.326 having about 130 observations. All these show that the companies under concentration are utilizing their asset efficiently, *return on Equity (ROE)*: has an average value of 0.043 and rate of its values dispersion (standard deviation) is 1.286, which depicts that the selected firms' mean ROE during this year of study was 4.3%; in other words the firms were able to make about 4.3 % profit from their share investment. *Liquidity (LIQ)*: It's clearly seen from Table 3 that Liquidity (LIQ), has an average value of

1.368 with standard deviation of 1.273. The values are spread in the range of 0.131 to 14.160 under the observation being 130. All these show that the companies got great capital from turning their asset into cash.

Test of Hypotheses:
Hypothesis One

Research Objective: To determine the effect of financial leverage on cash flow of quoted manufacturing companies in Nigeria.

Research Question: What is the effect of financial leverage on cash flow of quoted manufacturing companies in Nigeria?

Research Hypothesis (H_01): Financial leverage has no significant effect on cash flow of quoted manufacturing companies in Nigeria

Going by the Hausman and LM tests results; Hausman Test results in the lower parts of Table 4, show insignificant value (P-value > 0.05) and these go a long way to suggests the acceptance of the null hypotheses and conclude random-effects as the appropriate estimator in investigating the effect of financial leverage on the performance (in respect to Cash Flow from Operation CAF) of quoted manufacturing companies in Nigeria.

In order to validate the preferred random effect and fixed effect estimators, Pesaran CD Test is one of the tests carried out. From the result in Table 4, Pesaran CD Test value is insignificant (P – value > 0.05) for the estimated model . Besides, from Heteroskedasticity Test carried out to ascertain whether the residual has constant variance or not, the results show statistically significant values (P – value < 0.05) which indicate that the models do not have constant variances. In other words, it means that the models are not free from Heteroskedasticity problem. For Serial autocorrelation Test carried out, the obtained value is insignificant (P – value > 0.05) for model which means that there is absence of first order autocorrelation among the residuals in the first model Based on these results, we used Random-effects GLS Regression with Robust standard errors and Fixed-effects GLS regression with Driscoll-Kraay standard errors in models (1)

$$CAF_{it} = \beta_0 + \beta_1 DER_{it} + \beta_2 EQR_{it} + \varepsilon_{it} ....Model 1$$
$$CAF_{it} = 0.236 - 0.203DER_{it} - 0.005EQR_{it} + \varepsilon_{it}$$

In Table 4, the model is statistically significant, having significant value F-statistics/Wald [14.21 (P – value = 0.001)]: this depicts that the combine effect of Debt Ratio (DER) and Equity Ratio (EQR) on Cash Flow from Operation (CAF) is significant at 5% level of significance. Adjusted R-square value in this column is 0.032 which signifies that about 3.2% of variances in the Cash Flow from Operation values are jointly caused by Debt Ratio (DER) and Equity Ratio (EQR). The coefficients of debt ratio and equity ratio are negatively signed and not consistent with expectation (β_1 = -0.203 < 0), this implies that a unit change in debt ratio, equity ratio will lead to a decrease of 0.203 in cash flow of quoted manufacturing companies in Nigeria. From the results obtained, at the significance level of 0.05, Adj. R^2 = 0.032; F-Stat/Wald = {14.21 (0.001)} for model one, which is less than 0.05 level of significant in each case, show enough proofs against the null hypotheses {H_{01}}. The study reject the null hypotheses and accept the alternatives

Hypothesis Two

Research Objective: To assess the effect of financial leverage on return on asset of quoted manufacturing companies in Nigeria.

Research Question: What is the effect of financial leverage on return on asset of quoted manufacturing companies in Nigeria?

Research Hypothesis (H_02): Financial leverage has no significant effect on return on asset of quoted manufacturing companies in Nigeria.

Table 5 Hausman Test result is statistically insignificant (P-value > 0.05) these suggest the acceptance of the null hypotheses and make random effect estimator most appropriate in investigating the effect of financial leverage on the performance. Pesaran CD Test is employed and its results are seen in Table 4.2.2 above, being statistically significant for the models (P-values < 0.05). These suggest the rejection of the null hypothesis of no cross sectional dependence. Heteroskedasticity Tests is also carried out, and the results are significant at 5% level of significance [P-values < 0.05], which depict the rejection of the null hypothesis of homoscedasticity, thus estimated regression models do not have constant variance (i.e not free from heteroskedasticity problem). As a result of the outcomes of CD and heteroscedasticity tests, we use ***Driscoll-Kraay standard errors***

$$ROA_{it} = \beta_0 + \beta_1 DER_{it} + \beta_2 EQR_{it} + \varepsilon_{it}............Model 2$$
$$ROA_{it} = 0.233 - 0.284DER_{it} - 0.009EQR_{it} + \varepsilon_{it}$$

the selected regression model is significant; with F-statistics/Wald [161.63 (0.000)]: which connotes that the combined effects of Debt Ratio (DER) and Equity Ratio (EQR) on Return on Asset (ROA) is significant at 5% level of significance. Also, 0.307 is the Adjusted R-square value , this represents about 30.7% of variations in the Return on Asset. The coefficients of debt ratio and equity ratio are negatively signed and not in tandem with expectation (β_1 = -0.284; < 0), this implies that a unit change in in debt ratio, equity ratio will lead to a decrease of 0.284 and 0.009 in return on assets of quoted manufacturing companies in Nigeria. At the significance level of 0.05, Adj. R^2 = 0.307; F-Stat/Wald = {161.63 (0.000)} which is less than 0.05 level of significant in each case, show enough proofs against the null hypotheses {H_{02}}. Hence, the study reject the null hypotheses and accept the alternatives in models two, concluded that financial leverage had significant effect on return on assets of quoted manufacturing companies in Nigeria

Hypothesis Three

Research Objective: To evaluate the effect of financial leverage on return on equity of quoted manufacturing companies in Nigeria.

Research Question: In what way does financial leverage affect return on equity of quoted manufacturing companies in Nigeria?

Research Hypothesis (H_03): Financial leverage has no significant effect on return on equity of quoted manufacturing companies in Nigeria.

From the result obtained in Table 6, Hausman Test results for third models are found to be significant at 5% level of

significance (P-values < 0.05): these suggest the rejection of the null hypothesis, thus fixed effect estimator is most suitable in investigating effect of financial leverage. Checking whether there is cross sectional dependence problem or not while regressing Return on Equity (ROE) on Debt Ratio (DER) and Equity Ratio (EQR). So from Pesaran CD Tests Table 6 show statistically significant P – value at 5% level of significance for the third model [P-values < 0.05]. This suggest the rejection of the null hypothesis of no cross sectional dependence in the third model. Heteroskedasticity Tests carried out for the third model, the result is significant at 5% level of significance [P-values < 0.05] . Furthermore, from Serial Autocorrelation Tests carried out shows an insignificances in the results of the model. This depicts lack of first order autocorrelation among the series in the models. With this results the study uses Driscoll-Kraay standard errors for model.

$ROE_{it} = \beta_0 + \beta_1 DER_{it} + \beta_2 EQR_{it} + \varepsilon_{it}$........Model 3

$ROE_{it} = -0.650 + 0.676*DER_{it} + 0.287*EQR_{it} +_{it}$.

The significance of the estimated regression model is observed, with the value F-statistics/Wald [140.61 (0.000)]: which depicts that the shared effect of Debt Ratio (DER) and Equity Ratio (EQR) on Return on Equity (ROE) is significant at 5% level of significance. Adjusted R-square value is 0.870 implying about 87.0% of variations in the Return on Equity. the coefficients of debt ratio and equity ratio are positively signed and consistent with expectation ($\beta_1 = 0.676 > 0$), this implies that a unit change in in debt ratio, equity ratio will lead to an increase of 0.676 in return on equity of quoted manufacturing companies in Nigeria. Therefore, the study reject the null hypotheses and accept the alternatives in models three and then concluded that financial leverage had significant effect on return on equity of quoted manufacturing companies in Nigeria.

Hypothesis Four
Research Objective: To determine the effect of financial leverage on liquidity of quoted manufacturing companies in Nigeria.

Research Question: What is the effect of financial leverage on the liquidity of quoted manufacturing companies in Nigeria?

Research Hypothesis (H_04): Financial leverage has no significant effect on the liquidity of quoted manufacturing companies in Nigeria.

Hausman Test results is found to be insignificant for the model four , (P-value >0.05). These indicate that Random effect estimator is most appropriate for the fourth model. The Breusch and Pagan LM Test is also employed and the significance of its result for the fourth model at 5% level of significance [P-values < 0.05]. Therefore, Random effect and Fixed Effect estimators are preferred to the rest estimators for analyzing this models.), Pesaran CD Test and the results that are seen in Table 7 show statistically insignificant value for the fourth model [P-values > 0.05]. This suggests the rejection of the null hypothesis of no cross sectional dependence only in the model. Also, Heteroskedasticity Test is employed for this models and the results are significant at 5% level of significance [P-values < 5%], which connote the rejection of the null hypothesis of homoscedasticity, thus

regression models do not have constant variance. lack of first order autocorrelation among the series in the models was found due to the insignificant results [P-values > 0.1] gotten from this Test results. Based on the results, Random-effects Regression with Robust standard errors and Fixed-effects Regression with Driscoll-Kraay standard errors are used accordingly.

$LIQ_{it} = \beta_0 + \beta_1 DER_{it} + \beta_2 EQR_{it} + \varepsilon_{it}$.....Model 4

$LIQ_{it} = 2.280 - 1.576 DER_{it} - 0.007 EQR_{it} + \varepsilon_{it}$

From Table 7, the selected regression model is significant at 5% level of significance; with F-statistics/Wald [89.68 (P – value = 0.000)]: which means the combined effect of Debt Ratio (DER) and Equity Ratio (EQR) on Liquidity (LIQ) is significant at 5% level of significance. Adjusted R-square value is 0.027 which signifies about 2.7% of variation in the Liquidity. the coefficients of debt ratio and equity ratio are negatively signed and inconsistent with expectation ($\beta_1 = -1.576 < 0$), Based on the explanatory variables results, it's seen that Debt Ratio (DER) has negative coefficient and the negative coefficient is significant {Coef. = -1.576; P-value = 0.003}. This implies that the impact of DER on the performance (in terms of Liquidity) of quoted manufacturing companies in Nigeria during the period of this study is negative and significant.

Furthermore, Equity Ratio (EQR) has coefficient that is negative and insignificant {Coef = -0.007; P-value = 0.503}, which depicts that EQR has negative and insignificant effect on the performance (in terms of Liquidity) of quoted manufacturing companies in Nigeria during the period of this study. From the analysis of this models, at the significance level of 0.05, Adj. R^2 = 0.027; F-Stat/Wald = {89.68 (0.000)} for model 4 which is less than 0.05 level of significant in each case, show enough proofs against the null hypotheses four {H_{04}}. The study reject the null hypotheses and accept the alternatives in models 4, and the study concluded that financial leverage had significant effect on liquidity of quoted manufacturing companies in Nigeria

DISCUSSION OF FINDINGS:
One of the major findings from this empirical analysis is that financial leverage has significant effect on cash flow of quoted manufacturing companies in Nigeria. This is in line with Syed and Tahidur (2017) findings; in their study, they analyzed and compared the impact of financial leverage on cash flow ratio of Multinational Companies (MNCs) and domestic companies listed on the Dhaka Stock Exchange (DSE) over a period of 20 years starting from 1996 to 2015. Their study found that Debt to asset ratio is positively related but Debt to equity ratio is negatively related with CFR in domestic companies. The study concluded that financial leverage ratios have significant influence on cash flows of domestic companies, though not on cash flows of MNCs in Bangladesh. Also, it is consistent with the results of Shenoy and Koch (1996) whose empirical results reveal that, cash flow tend to be negatively related in same period, though positively related to future cash flow across time.

Another finding of this empirical result is that financial leverage (measured by debt ratio and debt-equity ratio) has significant effect on return on asset of quoted manufacturing companies in Nigeria. Enekwe, Agu and Eziedo (2014) findings corroboratesd these results. Enekwe, Agu and Eziedo (2014) study sought to determine the effect of financial leverage on financial

performance of the Nigeria pharmaceutical companies over a period of twelve (12) years (2001 – 2012) for the three (3) selected companies. The results of the analysis showed that debt ratio (DR) and debt-equity ratio (DER) had negative relationship with Return on Assets (ROA). Besides, Studies on leverage and profitability ratios such as that of Lawal, Edwin, Monica and Adisa (2014) observed that capital structure measures (total debt and debt to equity ratio) are negatively related to firm performance

Moreso, finding of this empirical study shows a positive and significant effect on return on equity of quoted manufacturing companies in Nigeria. Kbarian (2013) findings corroborated these results. In his study, Kbarian investigated the effect of financial leverage and environment risk on performance of listed firms in Tehran stock exchange. The result shows that financial leverage, market risk and economic risk with return of equity have positive significant relationship.

the finding in this empirical study under this subsection is that financial leverage (measured by debt ratio and debt-equity ratio) has negative and significant effect on liquidity of quoted manufacturing companies in Nigeria. The findings of Utkarsh, Saurabh and Anik (2015) support these results. Utkarsh, Saurabh and Anik (2015) who examined the effect of both operating liquidity and financial leverage on the firm's performance and employed a sample of 151 Indian machinery firms and 10 years annual financial standalone data from 2004-05 to 2012-13 that was collected using CMIE Prowess database found that financial leverage has significant impact on different measures of operating liquidity.

VI.   CONCLUSION

This study formulated and tested four hypotheses: Financial leverage has a significant effect on cash flow, on return on asset, on return on equity, and on liquidity of a quoted manufacturing companies in Nigeria. Consequently, the study concluded by affirming that financial leverage statistically and positively affected financial stability of quoted manufacturing companies in Nigeria.

The study made the following **recommendations**

1. The managers should adopt appropriate capital structure policy that is appropriate in balancing the suitable debt and equity financing deemed necessary when there is yearly trend of financial instability.

2. Policy makers in Nigerian government and the agencies saddled with the responsibilities of policy formation affecting industrial and manufacturing companies operations should ensure friendly macroeconomic indexes policy that would directly or indirect affect these companies.

3. The investors are advised to be mindful of credit policies and corporate sustainability profile in terms of investigation the debt ratio and equity profile of companies as a guide for investment decisions.

4. Shareholders To shareholders of firms or companies the study would equip them with the understanding of how to make an informed decision with regard to how their firm equity measure up to the debt financing options available.

Table 1: Summary of Theoretical Propositions

S/N	Theory	The effect of increase in debt
1	Modigliani and Miller I	Debt has no effect under the assumed conditions
2	Pecking order	Debt has positive effect on financial stability
3	Trade – off	Debt has negative effect on financial stability
4	Agency Cost	Debt has positive effect on financial stability

Source: Researchers compilation but modelled after the works of Ishuza (2019)

Table 2: Selected Quoted Manufacturing companies

S/N	Companies
1	AG Leventis Plc
2	Berger Paints Plc
3	Cadbury Nig. Plc
4	DN Meyer Plc
5	Glaxo Smithline Consuming Nig. Plc
6	Guinness Plc
7	Neimeth International Phar.
8	Nestle Nig. Plc
9	PZ Cussions Plc
10	Nigeria Brewery
11	R.T Briscoe Plc
12	UAC Plc
13	Vitafoam Plc

Source:

Researcher (2019)

Table 3: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
CAF	130	0.113	0.257	-1.019	2.378
ROA	130	0.061	0.118	-0.449	0.326
ROE	130	0.043	1.286	-14.121	0.928
LIQ	130	1.368	1.273	0.131	14.160
DPO	130	0.413	0.629	-0.412	5.103

Source: Author's Computation (2020). Note: CAF = Cash Flow from Operation, ROA = Return on Asset, ROE = Return on Equity, LIQ = Liquidity

TABLE 4 : EFFECT OF FINANCIAL LEVERAGE ON CASH FLOW

VARIABLES	*Random-effects GLS Regression with Robust standard errors*
Observation =130	t-Stat(P-value)
LM Test	8.92[0.001]
Hausman Test	4.04[0.133]
Pesaran CD Test	-0.675[1.500]
Heterosc. Test	3000.10[0.000]
AutoCor. Test]	0.055 [0.818]
F.stat /Wald	14.21(0.001)
Adj. R^2	0.032
R^2	0.047
CONSTANT={COEF=0.236**; STD ERROR= 0.094}	2.49 (0.013)

TABLE 5 : EFFECT OF FINANCIAL LEVERAGE ON RETURN ON ASSET

VARIABLES	*Random-effects GLS regression with Driscoll-Kraay standard errors*
	t-Stat(P-value)
LM Test	114.27 [0.000]
Hausman Test	3.21 [0.201]
Pesaran CD Test	5.198 [0.000]
Heterosc. Test	1010.89 [0.000]
AutoCor. Test]	2.258 [0.159]
F.stat /Wald	161.63(0.000)
Adj. R^2	0.296
R^2	0.307
CONSTANT= {COEF=0.233; STD ERROR= 0.033}**	6.982(0.000)

Source: Author's Computation (2020). Note: *** $p<0.01$, ** $p<0.05$, * $p<0.1$

TABLE 6 : EFFECTS OF FINANCIAL LEVERAGE ON RETURN ON EQUITY OF QUOTED MANUFACTURING COMPANIES IN NIGERIA

VARIABLES	*Random-effects GLS regression with Driscoll-Kraay standard errors*
Observation =130	t-Stat(P-value)

LM Test	11.74 [0.000]
Hausman Test	13.31 [0.001]
Pesaran CD Test	2.327 [0.020]
Heterosc. Test	18022.87 [0.000]
AutoCor. Test]	2.106 [0.172]
F.stat /Wald	140.61(0.000)
Adj. R^2	0.870
R^2	0.872
CONSTANT= {COEF= -0.650**; STD ERROR= 0.217}	-2.997(0.015)

Source: Author's Computation (2020). Note: *** $p<0.01$, ** $p<0.05$, * $p<0.1$

TABLE 7 : EFFECTS OF FINANCIAL LEVERAGE ON LIQUIDITY OF QUOTED MANUFACTURING COMPANIES IN NIGERIA

VARIABLES	*Random-effects GLS regression with Driscoll-Kraay standard errors*
Observation =130	t-Stat(P-value)
LM Test	3.36 [0.034]
Hausman Test	2.34 [0.310]
Pesaran CD Test	1.616 [0.106]
Heterosc. Test	1.8e+05 [0.000]
AutoCor. Test]	0.923 [0.356]
F.stat /Wald	89.68(0.000)
Adj. R^2	0.042
R^2	0.042
CONSTANT= {COEF= 2.280; STD ERROR= 0.365}**	-6.242(0.000)

Source: Author's Computation (2020). Note: *** $p<0.01$, ** $p<0.05$, * $p<0.1$

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