DETERMINANTS OF FINANCIAL LEVERAGE OF SELECTED PUBLIC COMPANIES IN NIGERIA

[1] Kenneth Terfa Johnson & [2] Ibobo Kelvin Chukwuka

[1, 2] Department of Accountancy, Faculty of Management Sciences,
Nnamdi Azikiwe University, Awka.

Correspondence Email: terfakenneth@gmail.com

ABSTRACT

The study examines the determinants of financial leverage selected public companies in Nigeria for the period of six years from 2015-2020 both years inclusive. The study considered financial leverage determinants such as firm's tangibility, size, growth, profitability and age on the sample firms. Secondary data from the annual reports of the sample firm have been analysed using multiple regression. The result reveals that size and profitability are negatively related to leverage while age, growth and assets tangibility are positively related to leverage which implies they are strong determinants of leverage in the Nigerian public companies. Therefore, it is recommended among others that in carrying out financial leverage decision, the financial managers of public companies in Nigeria should deploy and properly measure size, age, growth, profitability and assets tangibility of their companies in order to have an optimum financing decision that minimize servicing cost.

Keyword: *Financial Leverage, Public Companies, Firm Profitability, Firm Growth, firm's tangibility, firm's age and Firm Size.*

INTRODUCTION

Financial leverage is an important thing in the firm's financial dealings and it looks about debt equity and other financial securities. It gives many funds to firms and has positively related with in the business sector in Nigeria. Aloa and Sanyaolu (2020), opined that financial leverage can be derived out of earnings before interest and also considered the difference of earning per share as the same. Financial leverage refers to Company use debt and equity as fixed income securities. Most of the firms used financial leverage as main element of the capital structure which to optimum wealth of shareholders'. But, there may be increased bankruptcy of the firms if they not concern about leverage in fairly. However financial leverage operates as a control for management in the firms and sometimes avoids financial risk also it used to achieve profits for firm and shareholders

(Hashini and Madumali 2018). As well as, financial leverage has been used as a technique to help of borrowed money to purchase assets.

Financial leverage has positively influence on firm performance because it can be treated as a mechanism for management financial discipline. This is not always applied to the firms with two components of debt. Firms with high level of indebtedness may result to significant financial challenges and that influence their performance negatively. The relevance of leverage can be found in its presence in the capital structure of the firm; it is necessary for the firm to take decision of leverage position in the capital structure (Hashini & Madumali 2018). According to Meyers and Majluf (1984), leverage defines capital structure of the firms. It is one of the most challenging decisions for the management of the organization to choose the mixture of debt and equity. Financial leverage save cost and reduces the risk of the owners. However, it becomes costly when firms are unable to use it efficiently. Firms have to pay financial charges on the leverage. If firms fail to apply leverage effectively, they have to suffer from cost of interest expenses on the amount of leverage which is to be repaid. Profitable firms prefer to use leverage because it reduces the risk of owner and more cost saving for the shareholders of such firms.

However, how the leverage of a firm is determined in a world in which cash flows are uncertain and in which capital can be obtained by many different media ranging from pure debt instruments to pure equity instruments is an unsettled issue, Rahul (2005). Financial leverage is cost saving and it also reduces the risk of the owners but it becomes costly when organizations are unable to use it efficiently. Companies have to pay financial charges on the leverage. If companies fail to use leverage effectively, they have to suffer from many problems because the amount of leverage is to be repaid with interest expense. Profitable companies prefer to use leverage because it reduces the risk of owner and more cost saving for the shareholders of the organization. Financial leverage

affects firm performance in aspect of profitability which has direct impact on the management performance, capital structure, stock price, wealth of shareholders and all the stakeholders (Hashini & Madumali 2018). The most dangerous effect of using financial leverage is that it multiples the losses. If time is sufficiently hard, a company that has borrowed heavily may not be able to repay its debt. The company then becomes bankrupt and shareholders lose their entire investment, because debt position affects returns to shareholders in good times and adversely affects them in bad times. In early days, the existence of financial leverage in the capital structure of a firm was considered a great weakness. The firm's leverage decision centres on the allocation between debt and equity in financing the company. However, how the leverage of a firm is determined in a world in which capital can be obtained by different media ranging from pure debt instrument to pure equity instrument and in which cash flow are uncertain in an unsettled issue (Ibrahim & Lau 2019). Previous studies such as Feras (2020), Firmike and Luh (2020), Ibrahim and Lau (2019), Hashini and Madumali (2018) have identified the determinants of leverage to include firm's growth, size, tangibility of assets, age and profitability. Still there are different positions on which are the factors that determines the leverage decisions of public companies in Nigeria. Also most of the studies done to determine the factors influencing leverage decisions were carried out in environment outside Nigeria and only in a single sector. Most of the studies done in Nigeria did not combine all variables used in this study which are firm size, age, growth, profitability and assets tangibility. This study seeks to improve on the previous studies by making use of combine variables and extending the time frame to 2020 while using public companies in Nigeria against a single sector as been used in the previous studies. The main objective of this study is to examine the determinants of financial leverage of selected public companies in Nigeria. The specific objectives are as follows;

1. To examine the relationship between firm's growth and financial leverage of selected public companies in Nigeria.
2. To examine the relationship between firm size and financial leverage of selected public companies in Nigeria.
3. To assess the relationship between tangible assets and financial leverage of selected public companies in Nigeria.
4. To assess the relationship between firm age and financial leverage of selected public companies in Nigeria.
5. To examine the relationship between profitability and financial leverage of selected public companies in Nigeria.

LITERATURE REVIEW

According to Maryam and Barjoyaibin (2012), leverage is the portion of the fixed costs which represents a risk to the firm. Operating leverage, a measure of operating risk, refers to the fixed operating costs found in the firm's income statement, whereas financial leverage is a measure of financial risk, refers to financing a portion of the firm's assets, bearing fixed financing charges in hopes of increasing the return to the common stockholders. The higher the financial leverage, the higher the financial risk, and the higher the cost of capital Shim and Siegel (1998). The firms Leverage ratio show how heavily the firm is in debt. When a firm borrows money, it promises to make a series of interest payments and then to repay the amount that it has borrowed. If profits rise, the debt holders continue to receive a fixed interest payment, so that all the gains go to the shareholders. Of course, the reverse happens if profits fall. In this case shareholders bear all the pain. If times are sufficiently hard, a firm that has borrowed heavily may not be able to pay its

debts. The firm is then bankrupt and shareholders lose their entire investment. Because debt increases return to shareholders in good times and reduces them in bad times, it is said to create financial leverage.

In general, the more debt a firm uses in relation to its total assets, the greater its financial leverage. Financial leverage is the magnification of risk and return introduced through the use of fixed-cost financing, such as debt and preferred stock. The more fixed-cost debt a firm uses, the greater was its expected risk and return Gitman (1991). Ogawa (2003) argues that corporate debt can affect investment by creating debt overhang. Debt overhang is defined as deterrence of new investment due to the presence of debt outstanding. It occurs when the face value of debt outstanding is greater than its market value. Due to the significant importance of the financial distress, understanding its determinants has had wide examination in the financial economics literature. Through the course of the investigation, the literature shows recognition that a firm's leverage is a main factor that negatively impacts the level of financial distress Opler and Titman (1994); Andrade and Kaplan (1998).

Determinants of Financial Leverage

Ibrahim and Lau (2019) posit that theoretical constructs of any empirical research are proxied indirectly through the use of firm level research. Ibrahim and Lau (2019) identified the determinants of leverage to include profitability, growth, asset tangibility, firm size, and firm age.

Firm Profitability and Leverage

Firm financial performance has been identified as a potential determinant of capital structure. According to the trade-off theory, profitable firms will incur more debt since they are likely to have a high tax burden and a low risk of bankruptcy (Odit & Gobardhum 2011). However, Myers and Majluf (1984) argue that successful companies do not need to place much dependence on

external funding since they rely on internal reserve. Hence, there is a negative relationship between debt and profitability Kuben (2008).

According to Odit and Gobardhum (2011) profitability is normally assumed to have a positive link with debt. This has been clarified by the pecking order theory, whereby firms prefer internal sources of finance to external sources. Profitable firms, having access to retained profits, may rely on it at opposed to outside sources as debt (Aloa & Sanyaolu 2020). Give the pecking order hypothesis firms tend to use internally generated fund first and then resort to external financing. This implies that profitable firms will have less amount of leverage (Akinlo & Asaolu 2012). We expect a negative relationship between profitability and leverage. There are no consistent theoretical predictions on the effects of profitability on leverage from point of view of the trade-off theory more profitable companies should have higher leverage because they have more income to shield from tax (Raheel & Shah 2015).

HO_1: Profitability has no positive relationship with financial leverage of selected public companies in Nigeria.

Firm Growth and Leverage

The relationship between growth and capital structure can be explained using pecking order theory. Growing firms place a higher demand on internal reserves and firm with high growth will have relatively high debt ratios (Marina & Ng Huey 2012). However, Myers and Rajan (1998) argues that the value of debts is inversely proportionate to the ratio of the value of growth over the maximized market value of the firm. Empirically, there is much controversy about the relationship between growth rate and level of leverage. According to the pecking order theory hypothesis, a firm will first use internally generated funds which may not be sufficient for a growing firm. And

next options for the growing firms is to use debt financing which implies that a growing firm will have a high leverage (Shehu 2011).

HO_2: Firm's growth has no positive relationship with financial leverage of selected public companies in Nigeria.

Firm Size and Leverage

Kuben (2008), assert that larger firms are more diversified and are therefore less susceptible to bankruptcy than smaller firms. Rajan and Zingales (1995) also hold that there is a positive relationship between firm size and leverage. Odit and Gobardhum (2011) considered firm size and an important determinant of a firm's financial leverage. Large firms tend to be more diversified and this has lower variance of earnings, which enable them to stand high leverage ratios. Hashini and Madumali (2018) they claim those smaller firms are more likely to depend on equity while larger firms are most preferably use debt. Shehu (2011) view firm size and leverage as a relationship of size to leverage of a firm, firm do not consider the bankruptcy cost as variable in deciding the level of leverage as these cost are fixed by constitution and constitute a smaller proportion of the total firm's value.

HO_3: Firm size has no positive relationship with financial leverage of selected public companies in Nigeria.

Tangibility of Assets and Leverage

Tangibility of assets is an essential determinant of firm's financial leverage. The extent to which a firm's asset are tangible should result in a firm having a greater liquidation value previous studies have review that leverage is positively associated with a firm's asset Kuben (2008). According to Shehu (2011), firm with large amount of fixed asset can borrow at relatively lower rate of interest

by providing the security of these assets to creditor. Empirical evidence reveal mix conclusion on the effect of tangibility on financial leverage across various studies.

HO_4: Tangibility of assets has no positive relationship with financial leverage of selected public companies in Nigeria.

Firm Age and Leverage

Age of a firm is a means of measure of goodwill in financial leverage model. As a going concern firm, it increases its capacity to take on more debt, hence age is positively related to debt. Before a bank grants a loan to firm they evaluate their credit worthiness of the business, Shehu (2011). According to Odit and Gobardhum (2011) age of the firm is normally viewed as a standard measure of reputation in capital structure models. Over time, from the life cycle perspective, the firm establishes itself as continuing business and thus increasing its capacity to take more debt.

HO_5: Firm age has no positive relationship with financial leverage of selected public companies in Nigeria.

Theoretical Framework

Most researchers on capital structure take as their point of departure the seminal work of Modigliani and Miller (1958), which derived the leverage irrelevance theorem concluding that capital structure does not impact firm value in a deal environment. The assumption of an ideal financial environment excludes the impact of tax, inflation and transaction costs. This theory knows as MMI, receiving citizen from fear who question the validity of their theory given the fact that the no firm actually operate in an environment without the impact of tax, inflation and transaction costs. This prompted Modiglani and Miller (1968) to issue a correction which referred to as MMII. They still argue that a change in the debt (equity ratio does not impact on firm value, however when taxes and other transaction cost are considered two factors needs to be

acknowledge, firms, a firm's weighted average cost of capital (WACC) firms cost of equity increases as it increases it debt since shareholders bear higher business risk due to the increase possibility of bankruptcy. The theories that guide this study are discussed as to include pecking order theory, trade-off theory, agency cost theory

Pecking Order Theory

The pecking order theory was propounded by Myers and Majluf (1984). They suggested that firm treated as great importance of retaining earnings than the issuance of new stock because their quarrel rely on internal equity obtained and are affordable as estimated to external equity. Firm has to raise their equity costs which carry to cost of flotation in terms of new issues shares. According to Rahul (2005), pecking order framework lays out the linkage between firm's capital structure, dividend and investment policies. The model suggests that firms prefer to use internal equity to pay dividend and finance new investment. It ranks internal equity at the top of the pecking order, followed by debt and then hybrids of debt-equity with external finance at the bottom of the pecking order. In summary, the pecking order theory states that business adhere to a hierarchy of financing sources and prefer internal financing when available, and if external financing is required debt is preferred over equity.

Trade- off Theory

The trade-off theory was propounded by Fischer, Heinkel and Zachner (1989). According to them Payment of interest on debt is a mandatory charge on the business of the firm, which is allowed as expenses for tax purpose. As a result, the presence of bankruptcy cost and favourable tax treatment of interest payment led to the development of static trade off theory. The proponents of trade off model argues that firms balance debt and equity position by making trade-off between the value

of tax shields on interest and the cost of bankruptcy or financial distress. In other words, keeping other things constant, higher the cost of bankruptcy, lower the debt and vice versa Rabul (2005). According to Kuben (2008) postulates that debt offers firms a tax shield and firms therefore pursue higher levels of debt in order to gain the maximum tax benefit and ultimately enhance profitability. However, high levels of debt increase the possibility of bankruptcy. The advantages of this approach include the possibility of deducting interest payment from company tax (Modigliani and Miller (1963).

Agency Cost Theory

The agency theory was propounded by Jensen and Mecking (1976). According to them capital structure is influenced by firm management, which has a long term impact on the firm's capital structure. However, management might be tempted to pursue personal incentives instead of maximizing shareholder value (Chandrasekharan 2012). Jensen and Mecking (1976) identified two types of conflicts, those between shareholders and managers and those between debt holders and equity holders. They postulate that conflicts between shareholders and managers occur since manager holders than one hundred percent of the residual claim Kuben (2008). According to Maryam and Barioyaibiu (2012), the theory implies that an optimal level of capital structure can be defined by minimizing the costs arising from the conflict between shareholders and managers interests.

Review of Empirical Studies

Yahaya and Tijjani (2021) examine how Firm size and age influence firm-level leverage on the oil and gas industries in Nigeria. The study used non-experimental research and correlational design. Data were extracted from annuals and accounts of 8 firms over a period of 13 years (2007-2019) and subjected to descriptive statistics (number of observations, mean, standard deviations, mean,

minimum and maximum means) and inferential statistics (multiple regression analysis). The results show that firm size has a negative and significant impact on firm-level financial leverage. Firm age has a positive and significant effect on firm-level leverage. The study recommended that for highly leveraged firms, they should take advantage of their experience and reduce leverage while reducing their investments in total assets.

Feras (2020) examines the determinants of financial Leverage on Productivity and performance of a firm. The study used Jordan listed companies. A total of 40 listed companies were used to obtain the data, and 200 observations were recorded, the data for the period of 2011 to 2015 were obtained for this study. The technique of panel data analysis was used with fixed effects, and random effects equations, Kao integration test and Hausman test were also applied. The study showed that the impact of growth, tangibility, financial leverage and combined leverage is significant on return on assets of a firm. In contrast, the impact of liquidity and operating leverage was insignificant. While in the case of productivity, it was seen that the impact of growth, liquidity, tangibility, operating Leverage, Financial Leverage and combined leverage is significant on the productivity of a firm. This research has its limitations when it comes to the size of sample and data collection and when it comes to the time constraints which limited the diversity of data as well. Also the research was not carried in Nigeria.

Firmike and Luh (2020) examine the effect of firm size, profitability, and leverage on firm value. The population of the research was companies in the consumer goods sector registered at Indonesia Stock Exchange in 2017-2019, and the sample size was 33 companies using saturated sampling technique. Multiple regression analysis was used to analysis the data. The results showed that firm size, profitability, and leverage has a positive and significant effect in firm value in companies in

the consumer goods sector listed on the Indonesia Stock Exchange (IDX) 2017- 2019. This study was done outside Nigeria which business environmental factors differ.

Edere and Ujuju (2020) examine the effect of financial leverage on value of firms in Nigeria in order to determine whether debt as a component of capital structure has positive or negative impact on value of firms in Nigeria. The Pearson correlation coefficient and Ordinary Least Squares (OLS) regression analysis were used to test the hypotheses. Secondary sources of information were applied in carrying out the analysis. The results of the study showed that long term debt has a significant positive effect on the value of our sampled companies' performance. Medium term debt and short term debts have significant positive influence on our sampled quoted companies' value and were statistically significant. The study recommended that firms should go ahead and finance their operations with long term debt, medium term debts and short term debts when the need arises in order to ensure that value is enhanced. This study was carried out in Nigerian firms however, the study examine financial leverage variables as they affect firms values against determining factors such as profitability, firm size, age, assets tangibility and growth.

Aloa and Sanyaolu (2020) examine the effect of leverage on the profitability of Nigerian manufacturing firms based on the data of seventeen (17) Nigerian consumer goods firms listed on the Nigerian Stock Exchange for the period of 2012 to 2017. The study adopted the dynamic panel model. The finding of the study revealed that leverage has a significant positive effect on profitability. The study recommended that companies in the Nigerian consumer goods industry should take advantage of debts' tax shield from the interest in their financial structure in order to improve their profitability level

Ibrahim and Lau (2019) the determinants of financial leverage of the surviving public listed companies in Malaysia. A total of 151 surviving publicly listed companies in the Bursa Malaysia

were selected from 2000 to 2015. A filtering approach was adopted on the total of 474 companies. The descriptive statistics result was applied and panel data analysis through the use of fixed effect model. This study used four determinants as independent variables, namely asset tangibility, growth opportunities, profitability and liquidity with firm size as a control variable. The financial leverage is measured by the short term debt ratio, long term debt ratio and debt ratio acting as the dependent variables. The findings reveal that asset tangibility and growth opportunities are both significant positively related to long term debt and debt ratio, showing that firms prefer to use long term debt to finance their fixed assets and growth, support the trade-off theory. Profitability and liquidity are found to be significant negatively related to short term debt ratio and debt ratio, consistent with the pecking order theory, implying that more profitable and liquid surviving companies tend to use internal sources (retained earnings) as priority in making their financial leverage decisions by utilizing these funds to finance business activities and expecting to have lower leverage. This study recommends the use of internal sources as priority for financial leverage decisions as compared to external sources for surviving and performance sustainability

Hashini and Madumali (2018) examine the effect of firm size on financial leverage. The study total assets and Sales Volume used to measure size of the firm while total debt ratio used to measure financial leverage. The regression analysis and descriptive statistic model were used for data analysis. The study used appropriated 10 listed manufacturing companies at Colombo Stock Exchange of Sri Lanka as sample over the period of 2012 to 2016. Secondary data from annual reports were extracted for data analysis. The study found that Sales Volume is a positively correlate and significantly affect Debt ratio in evaluating listed manufacturing companies at CSE in Sri Lanka. In addition to their attained that Total Assets has negatively relation with Debt ratio but it is insignificant level. This study examined only one variable which is firm size as it relates to

financial leverage, this is not enough to fully understand factors influencing leverage decision. It also deals with only manufacturing companies and outside Nigeria which results may not applies in other sectors and Nigeria based on differential in environmental factors.

METHODOLOGY.

This study used quantitative research design, where quantitative data were derived from annual reports of the selected public companies listed on the Nigerian Stock Exchange from 2015-2020. (Presently known as Nigerian Exchange Group PLC- NGX-Group PLC) The study adopted secondary data which were obtained through published annual reports on the Nigerian Stock Exchange official website (presently known as Nigerian Exchange Group PLC- NGX-Group PLC). The hypotheses were tested based on the information obtained from the historical data documented in the annual reports and accounts of the listed firms. This is because the phenomenon observed in the study has already taken place. The population of the study is made up of 177 public companies on the Nigerian Stock Exchange as at 31st December, 2020 (presently known as Nigerian Exchange Group PLC- NGX-Group PLC). The convenience sampling technique was used selecting 40 public companies in Nigeria as at 31st December 2020, for the period of 6(six) year's annual financial report from 2015- 2020.

Model Specification

LEvit = F(TANGit, SIZEit, GROWTHit, PROFit, AGEit, Eit)

$LEvit = \alpha_0 + B_1TANGit + B_2SIZEit + B_3GROWTHit + B_4PROFit + B_5AGEit + Eit$

Where

α_0 = Constant or intercept

B_{1-5} = Coefficients of explanatory variables

Et = Error term representing other explanatory variables that were not capture.

LEVit (leverage ratio) = represents leverage (measure as book value of long term debt divided by capital employed) i.e long term debts plus shareholders' funds.

The dependent variable is leverage while the independent variable is profitability, assets tangibility, growth, age and size. Chandrasekharan (2012) explain the measurement of financial leverage determinants as follows;

LEVit = $\frac{\text{Book value of long term debt}}{\text{Capital employed}}$

TANG = $\frac{\text{Fixed Asset}}{\text{Total Asset}}$

SIZE = Size of the firms (measured as log of turnover)

GROWTH = $\frac{\Delta \text{ Total Asset}}{\text{Total Asset}}$

PROF = $\frac{\text{PAT}}{\text{Capital Employed}}$

AGE = Number of years in which the firm was incorporated measured as the natural logarithm of number of the year of incorporation (no of year of incorporation)

The statistical method of descriptive statistics, correlation and regression analyses was used to analyse the data. Descriptive statistics are used to describe the initial characteristic of the data set and provide background information on the data used in the study, correlation on the other hand involves the investigation of relationship that exist between the dependent variable and the independent variables. Multiple regression analyses determine the specific function relating the dependent variable to the independent variables.

RESULTS AND DISCUSSIONS

Descriptive Statistics

The descriptive statistics of the variables used in the analysis are presented in table 1. Leverage constitutes the main variable of interest as it is the dependent variable. From the table1. Leverage has a mean value of 3.610798 and a median of 0.08834. The maximum value is 439.0054, while the minimum value is -0.20818. Leverage was positively skewed with a value of 10.76468 and a Jacque-Bera value of 121460.2. This suggests a high degree of variability of the data between time

series. Firm age had the highest mean with a value of 45.475 and also a median of 47. All other variables were positively skewed with profitability having the highest skewness of 10.92065.

Table 1: **Descriptive Statistics: Determinants of Financial Leverage Conduct**

	LEV	**TANG**	**SIZE**	**GROWTH**	**PROF**	**AGE**
Mean	3.610798	8.1889972	6.725244	0.294988	0.183709	45.475
Median	0.08834	0.418874	6.635903	0.119256	0.100529	47
Maximum	439.0054	846.9657	9.117901	12.72064	34.79403	79
Minimum	-0.20818	0.005959	4.00791	-1	-11.675	25
Std. Dev.	35.9151	77.66786	0.876485	1.38628	2.635892	11.52447
Skewness	10.76468	9.97558	-0.026931	7.197386	10.92065	0.515032
Kurtosis	121.7927	101.388	4.074503	58.32372	189519.5	8.897406
Jarque-Bera	121460.2	83904.75	9.645483	27232.7	189519.5	8.897406
Probability	0	0	0.008045	0	0	0.011694
Sum	722.1596	1637.794	1345.049	58.99763	36.74183	9095
Sum Sq. Dev.	256689	1200427	152.877	382.4329	1382.637	26429.87
Observation	200	200	200	200	200	200

Source: Author (2021)

Empirical Relationship between the Determinants of Financial Leverage

In an attempt to explore the relationship among variables used in this study, correlation analysis was carried out. Table2 shows the relationship among variables. The table shows that the coefficient of correlation of a variable with respect to itself is 1.000. The analysis showed that only tangibility had a positive relationship with leverage. Firm size, firm growth, profitability and firm age displayed a negative relationship with leverage in terms of coefficient; the highest coefficient was noticed between leverage and firm tangibility.

Table 2: Correlation: Determinants of Financial Leverage of Selected Consumers

Covariance Analysis: Ordinary					
Date: 09/02/21 Time: 19:00 Sample: 0.08834 1200 Included observation: 200					
Correlation Probability	LEV	TANG	SIZE	GROWTH	PROF	AGE
LEV	1					
TANG	0.986674 0	1 ---				
SIZE	-0.16157 0.0223	-0.16476 0.0197	1 ---			
GROWTH	-0.05607 0.4303	-0.06318 0.3741	0.051182 0.4717	1 ---		
PROF	-0.03891 0.5843	-0.03716 0.6014	0.045609 0.5213	0.028453 0.6892	1 ----	
AGE	-0.14255 0.044	-0.244723 0.0371	0.008926 0.005	-0.0361 0.9002	0.6119	

Source: Author (2021)

Regression Analysis

The results of the initial and final output are presented in table 3 and 4. From the initial output, it can be seen that firm tangibility and firm size had a positive relationship with leverage. Also firm growth and firm age exhibited a positive relationship with leverage. While a negative relationship was found to exist between leverage and profitability. The R-square value is 0.97 is very high and indicates that 97 percent of the systematic variations in the dependent variable has been explained by the model. This indicates that the estimated model has a good predictive power. The Durbin-Watson value of 2.97 is also high.

Table 3

Variables	Coefficient	T-ratio	Prob
C	-1.17297	-0.27598	0.7829
TANG	0.456779	81.70401	0
SIZE	0.074733	0.147977	0.8825
GROWTH	0.162734	0.536534	0.5922
PROF	-0.03188	-0.200053	0.8416
AGE	0.010962	0.286384	0.7749
R^2 = 0.973582		DW = 2.978298	

Source: Author (2021)

The final output is presented in table 4. A first order autoregressive technique was introduced to correct for autocorrelation in the first output. From the final output, tangibility, firm growth and firm age showed a positive relationship with leverage while firm size and profitability showed a negative relationship with leverage. This means that tangibility, firm growth and firm age are important determinants of leverage. The R-square value has increase in value to 0.98 meaning 98 percent of the systematic variations in leverage has been explained by the dependent variable. This shows that the model has good predictive power. The Durbin-Watson value is 2.33. This means the result can be relied upon for policy direction.

Table 4

Variables	Coefficient	T-Ratio	Prob
C	0.307899	0.114913	0.9086
TANG	0.452396	111.6592	0
SIZE	-0.10397	-0.322845	0.7472
GROWTH	0.089297	0.360449	0.7189
PROF	-0.01195	-0.097242	0.9226
AGE	0.01195	0.25254	0.8009
R^2 = 0.98		DW= -2.3	

Source: Author (2021)

Discussion of Results

From the result of the analysis, a negative relationship was observed between leverage and firm size. We therefore accept the null hypothesis and reject the alternative hypothesis. This result is

contrary to the findings of Feras (2020), Firmike and Luh (2020), Alao and Sanyaolu (2020) and Hashini and Madumali (2018) who found a positive relationship between firm size and leverage. While the result is consistent with the findings of Yahaya and Tijjani (2021) who found a negative relationship between firm size and leverage. Also, the result of the analysis showed that profitability had a negative relationship with leverage which we therefore accept the null hypothesis and reject the alternative hypothesis. This result is in agreement with the findings of Ibrahim and Lau (2019) who reveals that profitability has significantly negative relationship with leverage. While the result is inconsistent with the findings of Firmike and Luh (2020), Aloa and Sanyaolu (2020) who found positive relationship between profitability and leverage.

There is a positive relationship between leverage and assets tangibility from the result of the analysis. We therefore reject null hypothesis and accept the alternative hypothesis. This result is consistent with the findings of Ibrahim and Lau (2019) who found a positive relationship between assets tangibility and leverage. This was supported by the findings of Feras (2020) who also found a positive relationship between assets tangibility and leverage. Furthermore, the result of the analysis showed that leverage had a positive relationship with growth. We therefore reject the null hypothesis and accept the alternative hypothesis. This result is consistent with the findings of Ibrahim and Lau (2019) who found a positive relationship between growth and leverage. This was supported by the findings of Feras (2020) who also found a positive relationship between assets tangibility and leverage.

The result of the study showed a positive relationship between firm age and leverage. We therefore reject the null hypothesis while accepting the alternate hypothesis. The result is consistent with the result of Yahaya and Tijjani (2021) who found a positive relationship between firm age and leverage.

CONCLUSION

This study was carried out to examine determinants of financial leverage of selected public companies in Nigeria. The result of the empirical analysis showed that: Firm tangibility had a positive relationship with leverage ratio, Firm growth had a positive relationship with leverage ratio, Firm age had a positive relationship with leverage ratio, Firm size had a negative relationship with leverage ratio and Firm profitability had a negative relationship with leverage ratio. This study examined determinants of financial leverage of selected public companies. Financial leverage decisions are caused by certain factors such as firm tangibility, firm growth and firm age. From the study we found out that these three factors affect the conduct of leverage positively. Firm size and firm profitability had a negative impact on leverage conduct.

RECOMMENDATIONS

1. In carrying out financial leverage decision, the financial managers of public companies in Nigeria should deploy and properly measure size, age, growth, profitability and tangibility of their companies in order to have an optimum financing decision that minimize servicing cost.
2. Firm should carry out projects that would help enhance growth in all aspect of the firm. Growth in terms of revenue and assets would help increase the internal funding. This in turn will have a positive impact on the financial structure of the company as more of internally generated funds will be used instead of external borrowings.
3. Firms should not assume that making of profit shows good application of leverage as this was not found to be true from the analysis. Profitability could be as a result of factors such as assets tangibility.

4. Companies that are highly leveraged should use opportunity of their experience to reduce leverage while reducing their investments in total assets.

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