

THE DETERMINANTS OF CAPITAL STRUCTURE OF LISTED DEPOSIT MONEY BANKS IN NIGERIA

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Abstract: The study evaluates the determinants of capital structures of deposit money banks in Nigeria from 2011 to 2020. The study used 10 DMBs in Nigeria as sample of the study. The data employed were extracted from the sampled banks annual reports and accounts. Panel data regression was used to analysed the data. The study revealed that firm size has positive impact leverage of the sampled DMBs. Similarly, the study found that profitability has positive effect on leverage of DMBs. The study recommended that the management should DMBs in Nigeria should increase size of the banks by acquiring more assets because the study revealed a positive relationship between bank size and leverage. The implication of finding is that as size of firms increase leverage will as well increase. For bank to have access to debt and more deposit management need to expand the size of the bank. Management should as well improve on the growth of the banks by investing more on assets and other investment because leverage providers consider banks growth before providing debts. The marketing units of banks should put more efforts in order to increase the profitability of banks by gaining more customers that will deposit more money in their accounts. They should also provide means of given more gift to customers that have high deposits and leave certain high amount of money in their bank accounts.

Keywords: DMBs., capital structures, deposit money banks.

1. INTRODUCTION

Capital structure is one of the most puzzling areas of finance literature (Barine, 2012). The term "capital" can refer to a company's financial resources (Bello, et al., 2020). This capital could originate from two sources. Both internal and external sources are used. The term "internal source" refers to money raised from within a firm, usually from retained earnings (Bariweni, 2019). Firms may seek to the outside world for the capital they require to develop their operations in a similar way (Eniola, et al., 2017). External funding is money that comes from somewhere other than the organization's operations. External financing can be obtained by the number of co-owners in a business or by taking out a short or long-term loan. The use of equity, debt, or a combination of debt and equity by a company to support its operations in order to make a profit is referred to as the capital structure (Tanko, et al., 2021).

More importantly, the capital structure decision is at the heart of many other corporate finance decisions. One of the numerous goals of a corporate financial manager is to maintain a low cost of capital in order to maximise shareholder wealth. As a result, capital structure is one of the most effective management strategies for controlling capital costs. At a point where the cost of capital is the lowest, you have arrived at an optimal capital structure (Fisseha 2010). Furthermore, capital structure refers to the mix of debt, equity, and other kinds of funding that corporations and other institutions utilise to support long-term assets. The distinction between debt and equity is crucial in capital structure. Gearing or leverages are used to calculate the percentage of debt funding. Different factors influence a bank's capital structure; as a result, banks should try to figure out what their optimal, or best combination of funding is (Akhtar, et al., 2014).

Investors look at capital structure to see how banks fund their assets and determine how much risk they can take on. Profitability is one of the most important factors in determining the value of a company's performance, but how a bank's capital structure is mixed is also crucial in determining the possibility of a bank's failure. The best capital structure is one that reduces the likelihood of banks going bankrupt.

Furthermore, although the relationship between size and leverage is ambiguous, size is regarded a very essential variable when it comes to the research of determinants of capital structure. According to the Static trade-off approach, the larger the company is, the more likely it is to issue debt, resulting in a positive association between debt and size. One of the reasons for this is that the risk of bankruptcy decreases with the size of the company (Titman and Wessels, 1988). (Rajan and Zingales 1995) hypothesised that this link could be negative under the Pecking order theory. There is less asymmetry information about larger organisations, which reduces the odds of the new equity issue being undervalued and encourages large companies to seek equity financing. This implies that there is a negative link between business size and leverage, according to the pecking order theory.

As a result, there is debate over the relationship between firm growth rate and leverage; nonetheless, agency cost theory and pecking order theory explain the seemingly paradoxical relationship between growth rate and capital structure. According to agency cost theory, equity-controlled corporations have a tendency to invest inefficiently in order to expropriate money from their bondholders. Enterprises in growing industries, who have more flexibility in their future investment choices, are likely to pay a larger agency fee. As a result, growth rate is inversely proportional to the degree of long-term debt (Jensen and Meckling, 1976). In contrast to the agency cost hypothesis, the pecking order theory suggests a positive relationship between an enterprise's growth rate and its debt level. This is predicated on the logic that a higher rate of growth implies a bigger demand for cash, and hence, *ceteris paribus*, a greater reliance on debt as a preferred source of external funding (Sinha 1992). For example, pecking order theory claims that if a company issues security, management favours internal over external finance and debt over equity (Myers 1984). As a result, the pecking order shows that developing businesses have a higher proportion of debt in their capital structure than stationary businesses.

Furthermore, under the capital structure model, a firm's age is the typical measure of reputation; as a firm stays in business longer, it creates a reputation and goodwill for itself, which enhances its capacity to take on more debt; hence, age is positively associated to debt. Banks typically check a company's credit worthiness before giving a loan, which may involve looking at its years of operation. When it comes to highly indebted enterprises, they are essentially gambling with their creditors' money. If the investment is profitable, shareholders will receive a large portion of the profits, but if the project fails, creditors will be held responsible. Diamond (1984) proposes the use of corporate reputation to solve issues related with credit worthiness evaluation. He defines reputation as a company's good name that has developed through time and is acknowledged by the market, which has seen the company's capacity to meet its responsibilities on time.

The nature of the banking industry dictated that banks keep more capital than the regulatory body requires, in order to protect against future uncertainty and absorb any unanticipated circumstances. Financial and other institutions do not operate in a vacuum or in isolation from their immediate and wider environments, therefore both micro and macro factors can influence capital structure determinants. Despite multiple capitalization and recapitalization requirements by the regulatory body, banks in Nigeria appear to have not reached the appropriate level of capital structure, owing to the banking sector's constant failure. In order to improve operations, it is critical for both capital providers and the firm itself to identify the proper combination of debt and equity financing. Many developing countries have had banking issues that have necessitated extensive changes to overcome weak banking oversight and insufficient capital. Official capital structure requirements, in addition to deposit insurance (implicit or explicit), have been found to have an important role in aligning the interests of bank owners with depositors and other creditors (Berger, Herring & Szego, 1995).

Furthermore, despite the critical role played by banks in economic growth, studies on the drivers of capital structure in Nigeria focused mostly on the non-banking sector, and they generally limited their analysis to non-banking industries on the Nigerian stock exchange. Furthermore, many studies' scopes were under 10 years and were out of date with recent changes in the Nigerian economy; thus, this study aims to cover a broader time period while also extending the study's period to 2019, i.e., 10 years (2010-2019). Furthermore, all capital structure studies conducted in Nigeria fail to acknowledge the macro aspect of the determinant of capital structure in Nigerian money deposit banks. Furthermore, actual evidence has not yet decisively refuted the idea that banks hold the regulation minimum plus, to the best of the researcher's understanding. Furthermore, there are differing viewpoints on what determines a firm's capital structure, both

theoretically and empirically. Nigeria, like most other emerging countries, has little experience with capital structure. As a result, the study will concentrate on the factors that influence the capital structure of Nigerian deposit money institutions.

Hypotheses of the study

H01: Firm size does not have significant impact on DMBs capital structure

H02: Firm age does not have significant impact on DMBs capital structure

H01: Firm growth does not have significant impact on DMBs capital structure

H01: profitability does not have significant impact on DMBs capital structure

2. LITERATURE REVIEW

Anthony and Odunayo (2015) investigated the major determinants of capital structure of Nigerian quoted composite insurance companies. The secondary data extracted from the annual report of the purposeful composite insurance was analysed using panel data regression technique in this study, which followed a descriptive and explanatory research design. The findings revealed that tangibility, growth, and liquidity had a negative impact on leverage, whereas risk, return on asset, and size had a positive impact on leverage. It was also discovered that, with the exception of Return on Asset and growth, all of the variables identified are statistically significant. Anarfo (2015) investigated the factors that influence bank capital structure in Sub-Saharan Africa. The drivers of bank capital structure in Sub-Saharan Africa were investigated using panel data approaches in this study. Short-term debt ratio, long-term debt ratio, and overall debt ratio were the study's dependent variables. Return on asset, asset tangibility, bank size, total asset growth rate, corporate marginal tax rate, growth rate, interest on loans, and inflation rate were the independent variables. The study documented positive effect of all the independent variables on capital structure.

Arean, et al. (2014) used data from the financial statements of twenty-eight (28) agro-allied enterprises that were listed on the Nigeria Stock Exchange (NSE) from 2005 to 2010 to investigate the drivers of capital structure of agro-listed firms in Nigeria. Ordinary Least Squares (OLS) was the data analysis technique, and it was used to examine the identified firm-specific variables that affect short- and long-term debt ratios. The book value of total assets was used to scale all capital structures. Large enterprises were judged to have enough tangible assets at their disposal to pledge as security and access loan capital based on their short-term debt ratio. Because strong tangible assets lower the degree of loan loss incurred by debt providers if the firms' default, they use more short-term debts.

Growing publicly traded companies utilised more short-term indebtedness, owing to their high capital needs for new short-term investment prospects as well as the need to meet present liabilities and other overhead expenses. Growing businesses are thought to lack both tangible assets and low-cost long-term credit sources of information, relying instead on short-term debts. Furthermore, agro-listed firms with high taxes use more short-term debts in their finances, according to the findings. Highly profitable companies do not rely on short-term debts since they are thought to be liquid enough to fund short-term investments with retained earnings rather than short-term indebtedness.

The study by Igbinsosa and Chijinka (2014) focused on the factors that influence the capital structure of Nigerian companies in 2013. To determine the impact of two independent variables on debt ratio, cross-sectional least squares regression is used. The independent variables are the size and profitability of the company. Profitability is found to be a minor determinant of leverage and has a negative impact, while the impact of company size was not validated in the model. The study of corporate capital structure determinants has important implications for finance managers who can make better capital structure decisions to maximise shareholder wealth. Sayigan and Karabacak (2014) use dynamic panel data methods to conduct empirical testing to examine the impact of firm specific factors on corporate capital structure decisions in Turkish firms. The sample consists of 123 Turkish industrial companies registered on the Istanbul Stock Exchange (ISE), and the analysis is based on year-end observations from 1993 to 2002. The panel data methodology was used to examine six variables as company specific determinants of corporate capital structure: size, profitability and growth opportunities in plant, property, and equipment, growth opportunities in total assets, non-debt tax shields, and tangibility. All of the independent variables were shown to have a substantial impact on capital structure in the study.

With reference to capital structure models and theories, Aremu, et al. (2013) investigated the relationship between the level of leverage ratios and Size, Dividend Payout, Profitability, Tangibility, Liquidity, Growth, and Tax Charge; and to identify leverage ratios that indicate the most pertinent factor motivating the capital structure choice in the Nigerian Banking Industry between 2006 and 2010. The econometric procedure is used in this study to estimate the relationship

between bank capital structure and its key determinants. The numerical estimates of the coefficients in various equations were obtained using the pooled ordinary Least Square (Pooled OLS) technique. The study's findings revealed that bank size is an important factor in determining a bank's capital structure, and that it was the main determinant factor in the banking industry's leverage level in Nigeria between 2006 and 2010.

Saleem et al. (2013) examine the determinants of capital structure in Pakistani oil and gas enterprises using data from 2006 to 2011. The link between the dependent variable (Leverage) and the other variables was investigated using multiple regression approaches (Firm Size, Tangibility of Assets, Profitability, and Sales Growth). It is determined that leverage has a positive association with business size, tangibility of assets, and profitability. Sales growth, on the other hand, has a negative relationship with leverage.

When a firm's size has a positive coefficient, it signifies that the size of the firm is not a factor in determining the level of leverage. A proportional advantage of lower asymmetric information is provided by size. Pecking order hypothesis is supported by a positive relationship between profitability and profitability. The findings imply that in Pakistan's textile sector, more lucrative enterprises do not frequently finance their investments using loans. Firms that are more profitable tend to issue more debt and repurchase stock. Less lucrative businesses are more likely to topple. The size of the company is also important. Larger companies are more active in debt markets, whereas smaller companies are moderately more engaged in equity markets. Apart from being foreign, this study did not adequately describe how its variables were measured.

Chechet et al. (2013) examined the drivers of capital structure in Nigerian Chemical and Paints firms that were publicly traded in Nigeria from 2005 to 2009. The study used secondary data from annual reports and fact books from the Nigerian Stock Exchange (NSE) throughout the study period. The ordinary least square (OLS) method was used to see if there was a link between leverage ratio and the model's independent variables. The study finds that tangibility and profitability have a substantial impact on leverage at the 1% level in the Nigerian Chemical and Paints sector, but size, growth, and age had little impact on the dependent variable. It also demonstrates that both of the significant explanatory variables, tangibility and profitability, have negative coefficients. In contrast to both trade off theory and pecking order theory, the influence of tangibility on capital structure implies a negative association between tangibility and leverage. Furthermore, both the pecking order and the trade-off argument are contradicted by the link between growth rate and leverage level. Three of the five explanatory variables have a significant effect on the dependent variable, whereas the remaining two, profitability and tangibility, have no effect.

The capital structure drivers of five key non-financial corporations listed in the FTSE100 are investigated by Ahi (2013). The companies are from the oil and gas and mining industries. The study will take place over a 22-year period, from 1990 to 2012. Firms are picked based on their market capitalization. The panel data used in this study was chosen to do regression analysis with a fixed effects estimation model. Total debt ratio, profitability, growth, non-debt tax shield, liquidity, tangibility, and size are the variables used for this study. The empirical findings reveal that liquidity, profitability, and business size are the factors that influence total debt ratio changes.

Bassey et al. (2013) studied the capital structure of quoted and unquoted agro-based enterprises in Nigeria, looking at the factors that influence capital structure decisions. Descriptive statistics, the Z-test, and Ordinary Least Square regression were used to analyse data acquired by a multi-stage random sampling from the financial statements of 28 quoted and 60 unquoted agro-based enterprises over the period 2005-2010. Between quoted and unquoted agro-based enterprises, there were considerable disparities in capital structure (long term debt and total debt utilisation). Both sampled groups had a higher share of total indebtedness made up of short-term obligations. Firm size, asset structure, and growth coefficients all demonstrated significant positive correlations with both long- and short-term loan finance for both listed and unregistered agro-based enterprises, according to the regression results. The results also revealed that, for both listed and unregistered enterprises, age is positively and strongly associated to long-term debt.

In order to analyse the cross-sectional determinant of capital structure of 110 listed businesses in Nigeria for the year 2008, Ogbulu and Emeni (2012) employed a cross-sectional research design. The study discovered that size has a considerable favourable impact on the capital structure of listed firms in Nigeria using OLS methodologies. The determinants of a firm's corporate capital structure are still one of the most hotly discussed topics in corporate finance theory. The study looked at 110 companies that were listed on the Nigerian Stock Exchange between 2000 and 2005. The findings of this research have provided some insight into the capital structure of Nigerian firms. The study discovered that a company's size and age are important drivers of its capital structure.

analysis of any unit is referred to as census sampling. This strategy will be used since the data gathered will allow the researcher to conduct a more thorough analysis of the situation. Furthermore, the study will use three-point filters: the DMB must have been listed before 2011, must not have been delisted by December 31, 2020, and must include the study's data.

Only secondary sources of data will be used in this investigation. For a period of ten years, data for all of the study's variables was gathered from the annual reports and accounts of the studied companies (2011 to 2020). The factors of capital structure of listed Deposit money banks were analysed and statistically determined using multiple regressions. The study's data is based on a panel of people (that is cross-sectional time-series data). Panel data leads to clustered and probably connected inaccuracies over time. As a result, different panel data regression (generalised Least Square) alternatives, such as random effect GLS regression and fixed effect (within) regression, as well as panel data robustness tests, were performed.

Definition and Measurement of Variables

The researcher employed one dependent variable (Leverage = Debt to Equity Ratio) and four explanatory factors from most prominent and current empirical studies, including business size, firm growth, firm age, and profitability (ROA). The following are the selection measures for the dependent variable (leverage, which is a proxy for capital structure), as well as the independent variables (firm size, firm growth, firm age, and profitability).

Dependent Variable (LEVERAGE)

In the literature, many capital structure measurements have been explored; however, most studies employ a measure of leverage, which is a measure of a firm's indebtedness. There is no agreement on the best way to calculate leverage. The researcher investigated one measure of leverage, the Debt to Equity Ratio, in earlier studies such as Tanko, Siyanbola, Bako, and Dotun (2021) and Ashenafi (2005). As a result, the debt-to-equity ratio is calculated as

$$\text{Debt to Equity Ratio} = \frac{\text{Total liability}}{\text{Total Share Holder Equity}}$$

Independent Variables

i. Size: According to Handoo and Sharman (2014), large enterprises are more diversified, have more assets, and have more consistent cash flows; their risk of default is lower than that of smaller firms. The natural logarithm of a firm's total revenue was utilised in this study to determine its size.

The size of a company is a measure of its operational capacity. Various studies have utilised a variety of methods to determine the size of businesses. To calculate size, Benito (2003) uses the log of total assets. Similarly, the log of total assets is found to be a suitable measure of size in this study.

$$\text{SIZE} = \text{Natural Logarithm of Total Assets}$$

ii. Growth

Enterprises that have more capacity expansion initiatives, new product lines, acquisitions of other firms, and maintenance and replacement of existing assets have more growth possibilities. Firms with a lot of growth potential and a lot of cash flow volatility have an incentive to reduce debt in their capital structure over time. The rate of increase in total gross assets is used to calculate growth. The percentage change in assets is used to calculate the growth factor. As a metric of growth, Handoo et al. (2014) and Tanko et al. (2021) used annual percentage increases in total assets. This study calculates annual growth as a percentage increase in commercial banks' total assets.

$$\text{Growth} = \% \text{ change in Total Assets (TA)} = \frac{(\text{T Assets Current year} - \text{T Asset previous year}) * 100}{\text{T Assets current year}}$$

iii. Firm age: The age of a company can be determined by its age. When a corporation has been in business for a longer period of time (which is represented by variable age), it typically builds a reputation, particularly in the eyes of creditors, by meeting its payment obligations. The number of years each bank has been in operation is used to determine its age.

$$\text{AGE} = \text{The number of years in business as of the listing date (Tanko \& Saman, 2019).}$$

iv. Profitability: Creditors, owners, staff, and management all care about a bank's profitability. Return on Asset, Return on Equity, and Net Interest Margin are some of the common metrics used to assess a bank's profitability. Net income or profit after taxes is divided by total assets to calculate return on asset (ROA). It's also calculated by dividing net income by average total assets. To calculate ROA, (Tanko, et al., 2021; Tanko, 2020; Tanko & Dandago, 2019; Tanko & Saman, 2019; Aminu 2013; Soyemi, et al., 2013).

$$ROA = \frac{\text{Profit after interest and tax}}{\text{Total assets}}$$

Techniques for Data Analysis

The analysis will be presented using descriptive and inferential statistics. Data envelopment analysis (DEA) and linear regression will be used in a two-stage approach Simar and Wilson, (2015), Kimanzi et al (2020). The study will employ descriptive statistics to determine the centrality and dispersion of research variables. The mean will be used to indicate centrality, while the standard deviation, minimum, and maximum will be used to demonstrate dispersal. The correlation coefficient will be used to assess the nature of the link between the independent and dependent variables. As a result, in order to determine the impact of independent variables on the dependent variable, we would use multiple regressions, which is the most appropriate technique for determining the extent of impact of independent variables on the dependent variable, in accordance with the objectives and hypotheses formulated. The Stata Statistical Package will be used since it enables for testing for robustness and determining the impact of independent factors on the dependent variable, such as the heteroskedasticity test, fixed and random effect test, and multicollinearity test.

The research adopts the models below, consistent with prior studies on capital structure determinants;

$$LEV_{it} = \alpha_{it} + \beta_1 FS_{it} + \beta_2 GRWT_{it} + \beta_3 AG_{it} + \beta_4 PROF_{it} + \varepsilon_{it}$$

Where:

LEV= Leverage

SIZE = Size of the bank

GROWTH=Firm growth

AGE= Age

PROF= Profitability

α = Constant

ε = Error term

i= DMBs

t= Time

4. RESULTS AND DISCUSSIONS

Descriptive statistics

Table 1 presents descriptive statistics of the variables of the study. The mean, standard deviation, minimum, and maximum have been used to describe the data

Table 1: Descriptive Statistics

Variables	Obs.	Mean	Std. Dev.	Min.	Max.
Leverage	100	0.3648	0.1652	0.0321	0.9834
Firm size	100	7.2149	0.8018	5.6261	8.5897
Firm growth	100	57.5260	3.0058	-0.9975	297.797
Firm age	100	23.0000	14.7470	5.0000	49.0000
ROA	100	0.0175	0.1188	-0.3521	0.3870

Source: STATA 2021.

From the table above, leverage ranges from the minimum of 0.0321 to a maximum of 0.9834, while the mean is 0.3648. This shows that on average, the sampled firms have 36.48% as total debt in their capital structure during the period under review. The minimum value is an indication that some banks have as low as 36% of leverage, while some banks have up to 98% as total debt in their capital structure. The standard deviation of 0.1652 signifies that the data deviate from the mean value from both side by 16.52% implying that the data is not dispersed widely from the mean. This also proved that the sampled banks have more of leverage than equity financing in their capital structure. Furthermore, firm size (natural log of total assets) has a mean of 7.2149, while the minimum and maximum are 5.6261 and 8.5897 respectively. The standard deviation is 0.8018. This shows that the values are centred around the mean value i.e., there is not much dispersion away from the mean because, the standard deviation is less than the mean. Firm growth has a mean of 57.6261, while the range is from the minimum of -0.9975 up to a maximum of 297.797. This shows that on average the banks have annual firm growth of -99.75%. The deviation of 333.005 is an indication that there is much dispersion around the average firm growth by 333%. Some banks achieved the maximum of 297.797% firms' growth, while some banks resulted in negative growth as low 99.75%. The banks' age has a minimum of 5 and a maximum of 49 The mean age is 23 while the standard deviation is 14.7470 implying the age, measured in term of number of years since listing is widely dispersed away from the mean age. Moreover, the ROA has a mean of 0.0175, indicating that the banks were able to generate returns on investment of 1.75% during the period. The maximum of 0.3870 is a clear indication that some banks were able to generate ROA to the tune of 39%; while the minimum of -0.3521 is showing that some banks lost ROA to the tune of 35%.

Table 2: Correlation Matrix

Variables	Leverage	Firm size	Firm growth	Firm age	ROA
Leverage	1.00000				
Firm size	0.1589	1.0000			
Firm growth	-0.1095	-0.1102	1.0000		
Firm age	-0.0083	0.4088	-0.1296	1.0000	
ROA	-0.0977	0.4852	0.1020	0.0716	1.0000

Source: STATA, 2021

The correlation matrix is used to determine the degree of association between independent variables and dependent variable. It is also used to identify whether there is relationship among the independent variables themselves, to be able to detect if multicollinearity problem may exist.

From the table above we can see that the correlation coefficient between firm size and leverage is 0.1589. This suggests that there exist a weak but positive association between firm size and leverage of listed DMBs in Nigeria. The relationship between Firm Growth, Age, ROA and leverage are found to be negative and weak. This can be confirmed from the correlation coefficient value -0.1095, -0.0083 and -0.0977 respectively.

The relationships between independent variables themselves suggest to be minimal. In order to see whether the presence of multicollinearity will pose a problem to the statistical inferences, the study further conducted multicollinearity test, using Variance Inflation Factor (VIF) and tolerance value. The test reveals absence of multicollinearity, because VIF are consistently smaller than 10 while its reciprocals are consistently less than 1. The mean VIF for all the independent variables is 1.33. This suggests that the presence of multicollinearity is not enough to invalidate the statistical inference of the research finding.

Diagnostic tests

To avoid making wrong inferences, some robustness tests were conducted and the summary of the statistical results can be depicted from table 4.3 below.

Table 3: Summary of Robustness Tests

	Statistics	P-Values
Hausman-Chi2	1.87	0.7604
LMTRE-Chi2	25.78	0.0000
Hetest-Chi2	3.62	0.0570
Mean VIF	1.33	

Source: The Authors, 2016

Note: LMTRE is 'Breusch and Pagan Lagrangian Multiplier Test for Random Effect'

Data for the study is panel in nature and panel data may lead to error that are clustered and possibly correlated overtime. This is because each bank may have its own entity specific characteristic that can determine its capital structure (i.e., unobserved heterogeneity). And this may bias the outcome variable or even the explanatory variables. As such there is need to control for that. For that purpose, fixed effect (FE) regression and random effect (RE) regression were ran. The Hausman Test suggest that RE regression is more appropriate for the data. This can be confirmed from the Chi2 value of 1.87 with a probability value of 0.7604. This suggests that entity specific attributes have no significant effect on the outcome variable.

Since the Hausman test suggests the RE regression result, then there is need to further conduct another test to see whether there is a statistical variance among the unit in the panel. To test for that, ‘Breusch and Pagan Lagrangian Multiplier Test for Random Effect’ was adopted. Finally, the test result reveals that there is no statistically significant variance among the unit in the panel data all. This can be observed from the chi2 value of 25.78 and a P-value of 0.0000. Thus, this suggests that random effect technique is more appropriate for the data of this study.

However, after running hettest, the study observed the absence of heteroskedasticity in the panel data; as such the basic OLS would be reliable. This can be confirmed from the hettest result which revealed the chi2 value is 3.62 with a p-value of 0.0570. Furthermore, the study revealed that the data were not normally distributed as the data are all significant at 0.01 level of significance. Though, this was corrected through ladder.

In addition to that, multicollinearity test was also conducted using VIF and its reciprocal (1/VIF) i.e., tolerance value. No multicollinearity threat was found; as the VIF are consistently smaller than 10 while the tolerance values are consistently smaller than 1. The mean VIF is 1.33. All this proved that multicollinearity will not pose a problem to our inference and suggest the appropriateness of the model in fitting the independent variables of the study.

Table 4: Summary of Random effect Regression

	Coefficient	z-statistics	Probability value
Constant	-1.37168	0.89	0.373
Firm size	0.36368	1.62	0.104
Firm growth	0.00009	0.32	0.747
Age	-0.00310	-0.23	0.815
ROA	0.35372	-2.68	0.007
R ²	0.0729		

Source: STATA, 2021

From the table, the t-value for firm size (FS) is 1.62 and a beta coefficient is 0.36368 with a p-value of 0.104. This implies that FS has a significant positive effect on leverage of listed DMBs in Nigeria at 10% level. The beta coefficient indicates that an increase of FS by 1% will cause leverage to increase by 0.36368 (measured in term of natural log). The implication of this finding is that the higher the firm size the higher the leverage of listed DMBs in Nigeria. This provides evidence to reject the null hypothesis earlier formulated, which states that FS does not have significant impact on leverage of listed DBMs in Nigeria. The finding is in line with those of Aremu, et al. (2013); Anthony and Odunayo (2015). However, is inconsistent with the study of Bassey, et al. (2014)

The impact of firm growth on leverage is found to be positive and statistically insignificant at 5% level. This can be confirmed from the t-value of 0.32 and a p-value of 0.747. This implies that firm growth has insignificant impact on leverage of listed DMBs in Nigeria. The beta coefficient shows of 0.00009 shows that leverage increase by 0.0009% with an increase in firm growth by 1%. Therefore, the finding also provides enough evidence to accept the null hypothesis which stated that firm growth has no significant effect on the leverage of listed DMBs in Nigeria. This finding supports the finding of Barine (2012); Anthony and Odunayo (2015) and contradicts the finding of Chandrasekharan (2012)

The beta coefficient and t-value of Age are -0.00310 and -0. 23 respectively, with a p-value of 0.815. This shows that Age has a significant negative impact on leverage of listed DMBs in Nigeria, though insignificant. The beta coefficient is explaining that as the year of listing increase by one year the proportion of debt in the total asset will reduced 0.31%. The implication of this finding is that the higher the age the lower is going to be the leverage ratio. This provides evidence to accept the null hypothesis stating that Age does not have significant impact on leverage of listed DMBs in Nigeria. The finding has gotten support empirically from the works of Shehu (2011.); Chechet, et al. (2013) this however, contrary to our prior expectation which was based on the findings of Saleem, et al. (2013)

The impact of ROA on leverage is found to be positive and statistically significant at 1% level. This shows that the impact is very strong; this can be confirmed from the t-value of -2.68 and a p-value of 0.007. This implies that ROA has a significant impact on leverage of listed DMBs in Nigeria. Therefore, the finding also reject the null hypothesis which states that ROA has no significant effect on the leverage of listed DMBs in Nigeria. Positive coefficient indicates 1% increase of profitability will lead to 0.7% increase of leverage. This suggest that as firm increase its effort in terms of profitability the tendency of get leverage will also increases. This finding supports the finding of Saleem, et al. (2013). Though, the finding contradicts the finding of Uremu, (2012).

The overall result shows that (R^2) has the value of 0.0729. This indicates that the explanatory variables were able to explain the variation in the dependent variable (leverage) to the extent of 7.29%. The other 82.71% is explained by other factors not captured in the model. This could be both macro and micro variables that can also explained changes in leverage. The regression result reveals fitness of the model with wald chi2 of 8.66 and a p-value of 0.0701. Finally, the stdy come to conclude by saying that all the independent variables of the study determined the leverage of listed DMBs in Nigeria.

5. CONCLUSIONS AND RECOMMENDATIONS

This study examines the determinants of capital structure of Deposit Money Banks in Nigeria. The study analysed whether the determinants of capital structure affect the capital decisions of these banks. As a result of this research findings, it is found that the main determinant factors which contribute to the bank leverage level of the Banking industry in Nigeria between the years 2011 to 2020 are mainly bank size, growth, growth and return on assets. The study conclude that firm size, firm growth and profitability are the major determinants of leverage in DMBs in Nigeria.

The management should DMBs in Nigeria should increase size of the banks by acquiring more assets because the study revealed a positive relationship between bank size and leverage. The implication of finding is that as size of firms increase leverage will as well increase. For bank to have access to debt and more deposit management need to expand the size of the bank. Management should as well improve on the growth of the banks by investing more on assets and other investment because leverage providers consider banks growth before providing debts.

The marketing units of banks should put more efforts in order to increase the profitability of banks by gaining more customers that will deposit more money in their accounts. They should also provide means of given more gift to customers that have high deposits and leave certain high amount of money in their bank accounts.

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